BOTTOM MESONS
$(B = \pm 1)$

NODE=MXXX045

$B^+ = u\overline{b}$, $B^0 = d\overline{b}$, $\overline{B}^0 = \overline{d}\,b$, $B^- = \overline{u}\,b$, similarly for B^*'s

NODE=MXXX045

B-particle organization

NODE=S741

NODE=S741205

Many measurements of B decays involve admixtures of B hadrons. Previously we arbitrarily included such admixtures in the $B^\pm$ section, but because of their importance we have created two new sections: "$B^\pm/B^0$ Admixture" for $\Upsilon(4S)$ results and "$B^\pm/B^0/B^0_s/b$-baryon Admixture" for results at higher energies. Most inclusive decay branching fractions and χ_b at high energy are found in the Admixture sections. B^0-$\overline{B}^0$ mixing data are found in the B^0 section, while B^0_s-$\overline{B}^0_s$ mixing data and B-$\overline{B}$ mixing data for a B^0/B^0_s admixture are found in the B^0_s section. CP-violation data are found in the $B^\pm$, B^0, and $B^\pm$ B^0 Admixture sections. b-baryons are found near the end of the Baryon section. Recently, we also created a new section: "V_{cb} and V_{ub} CKM Matrix Elements."

The organization of the B sections is now as follows, where bullets indicate particle sections and brackets indicate reviews.

NODE=S741205
NODE=S741305

[Production and Decay of b-flavored Hadrons]
[A Short Note on HFLAV Activities]

- $B^\pm$
  - mass, mean life
  - branching fractions
  - polarization in $B^\pm$ decay
  - CP violation
- B^0
  - mass, mean life
  - branching fractions
  - [Polarization in B decay]
  - polarization in B^0 decay
  - [B-$\overline{B}$ Mixing]
  - B^0-$\overline{B}^0$ mixing
  - CP violation
- $B^\pm$ B^0 Admixture
  - branching fractions, CP violation
  - CP violation
- $B^\pm/B^0/B^0_s/b$-baryon Admixture
  - mean life
  - production fractions
  - branching fractions
  - χ_b at high energy
  - production fractions in hadronic Z decay
- V_{cb} and V_{ub} CKM Matrix Elements
  - [Determination of V_{cb} and V_{ub}]

NODE=S741305
NODE=S741310

- B^*, $B_1(5721)$, $B^*_J(5732)$, $B^*_2(5747)$, $B_J(5840)$, $B_J(5970)$
  - mass, width, branching fracions
- B^0_s
  - mass, mean life
  - branching fractions
  - polarization in B^0_s decay

B^0_s-$\overline{B}^0_s$ mixing

- B^*_s, $B_{s1}(5830)^0$, $B^*_{s2}(5840)^0$, $B^*_{sJ}(5850)$, $B_{sJ}(6063)^0$, $B_{sJ}(6114)^0$
  mass, width, branching fractions
- $B^\pm_c$
  mass, mean life
  branching fractions
- $B_c(2S)^\pm$
  mass, branching fractions

NODE=S741310
NODE=S741315

At the end of Baryon Listings:

- Λ_b
  mass, mean life
  branching fractions
- $\Lambda_b(5912)^0$, $\Lambda_b(5920)^0$, $\Lambda_b(6070)^0$, $\Lambda_b(6146)^0$, $\Lambda_b(6152)^0$
  mass, width, branchibg fractions
- Σ_b
  mass, width, branching fractions
- Σ^*_b, $\Sigma_b(6097)^+$, $\Sigma_b(6097)^-$
  mass, width, branching fractions
- Ξ^0_b, Ξ^-_b
  mass, mean life
  branching fractions, P, CP violation
- $\Xi'_b(5935)^-$, $\Xi_b(5945)^0$, $\Xi_b(5955)^-$, $\Xi_b(6100)^-$, $\Xi_b(6227)^-$, $\Xi_b(6227)^0$, $\Xi_b(6327)^0$, $\Xi_b(6333)^0$
  mass, width, branching fractions
- Ω^-_b
  mass, mean life
  branching fractions
- $\Omega_b(6316)^-$, $\Omega_b(6330)^-$, $\Omega_b(6340)^-$, $\Omega_b(6350)^-$
  mass, width, branching fractions
- b-baryon Admixture
  mean life
  branching fractions

NODE=S741315

See the related review(s):
Production and Decay of b-flavored Hadrons

NODE=S842

HEAVY FLAVOR AVERAGING GROUP

Revised February 2024 by U. Egede (Monash University) and A. Soffer (Tel Aviv University)

The Heavy Flavor Averaging Group (HFLAV) is an international collaboration of physicists from experiments measuring properties of heavy flavored particles, *i.e.*, hadrons containing b and c quarks, and τ leptons. HFLAV calculates and publishes [1] world average values of quantities such as lifetimes, branching fractions, form factors, mixing parameters, and CP-violating asymmetries. Most parameters concern decays of B and D mesons, and many are related to elements of the Cabibbo-Kobayashi-Maskawa (CKM) quark mixing matrix [2], [3].

HFLAV was originally formed in 2002 to continue the activities of the LEP Heavy Flavor Steering group. Since its inception, a wide range of results have become available from increasingly larger data sets. Consequently, HFLAV has expanded to include eight subgroups:

- b-hadron lifetimes and oscillations, including parameters of CP violation in b mixing;
- decay-time-dependent CP violation in B decays, and angles of the CKM Unitarity Triangle;
- semileptonic decays of b-hadrons ($B \to X\ell\nu$, $\ell = e, \mu, \tau$), including determinations of the CKM matrix elements $|V_{cb}|$ and $|V_{ub}|$;
- b-hadron decays to hadronic final states containing c-quarks (open charm and charmonium);
- (rarer) b-hadron decays to final states not containing c-quarks, including fully hadronic, semileptonic ($B \to X\ell\ell, X\nu\bar{\nu}$), leptonic, and radiative decays;
- CP- and T-violating asymmetries of D mesons and D^0–$\bar{D}^0$ mixing;
- c-hadron decays (hadronic, semileptonic, leptonic), properties of excited D states and charm baryons and determination of $|V_{cs}|$ and $|V_{cd}|$;
- τ-lepton physics including branching fractions, tests of lepton universality, determination of $|V_{us}|$, and searches for lepton flavor violation.

Each subgroup has one or two conveners and typically a half-dozen members representing experiments that conduct measurements in that area. Most groups contain representatives from the Belle II and LHCb experiments, and some groups have representatives from the ATLAS, BABAR, Belle, BESIII and CMS experiments. Members of HFLAV are appointed by their respective experimental collaborations. HFLAV has two co-leaders, who are appointed by the managements of Belle II and LHCb.

The averaging procedures used by HFLAV are similar to those of the PDG [4]. When sufficient information is available in publications when calculating world averages, common parameters used for different input measurements are adjusted (rescaled) to common values. The p-value of the fit is provided to indicate the consistency of the measurements included in the average. However, unlike the PDG, when obtaining a world average with a low p-value (*i.e.*, a large χ^2 per degree of freedom), HFLAV does not usually scale the resulting uncertainty. Rather, the systematic uncertainties of the measurements are reviewed with experts from the experiments to understand the discrepancy. Unless inconsistencies among measurements are found, no correction is made to the calculated uncertainty. Close communication between representatives of the experiments and HFLAV members who perform averages helps ensure that measurement uncertainties, known correlations, and systematic effects are properly accounted for. If a special treatment is needed to calculate an average, or if an approximation used in an average calculation might not be sufficiently accurate (*e.g.*, assuming Gaussian uncertainties when the likelihood function is non-Gaussian), a note is included in the HFLAV publication and online documentation to describe this.

In general, HFLAV uses all publicly available results that have written documentation such as a journal publication, preprint, or conference note. These include preliminary results presented at conferences and workshops. However, preliminary results that remain unpublished for an extended period of time, or for which no publication is planned, are not included. A special subset of HFLAV averages are included in the PDG listings; for these averages, only measurements that are published or accepted for publication are used. The averages provided by HFLAV are listed by the PDG as "Produced by HFLAV".

All HFLAV averages and input measurements are documented in an approximately biennial journal paper or preprint; the most recent version is Ref. [1]. The latest results and plots are posted on an extensive set of webpages that are updated several times per year; these are available at

`https://hflav.web.cern.ch`.

References:

1. Y. S. Amhis *et al.* (Heavy Flavor Averaging Group), Phys. Rev. **D107**, 052008 (2023) [arXiv:2206.07501], doi:10.1103/PhysRevD.107.052008, updated results and plots available at `https://hflav.web.cern.ch/`..
2. N. Cabibbo, Phys. Rev. Lett. **10**, 531 (1963).
3. M. Kobayashi and T. Maskawa, Prog. Theor. Phys. **49**, 652 (1973).
4. See Section 5 of the "Introduction" to this *Review*.

NODE=S041

$B^{\pm}$

$I(J^P) = \frac{1}{2}(0^-)$

Quantum numbers not measured. Values shown are quark-model predictions. NODE=S041

See also the $B^{\pm}/B^0$ ADMIXTURE and $B^{\pm}/B^0/B^0_s/b$-baryon ADMIXTURE sections.

$B^{\pm}$ MASS

NODE=S041M

The fit uses m_{B^+}, $(m_{B^0} - m_{B^+})$, and m_{B^0} to determine m_{B^+}, m_{B^0}, and the mass difference. NODE=S041M

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*	NODE=S041M
5279.41±0.07 OUR FIT						
5279.42±0.08 OUR AVERAGE						
$5279.44 \pm 0.05 \pm 0.07$		[1] AAIJ	23Q	LHCB	pp at 7, 8, 13 TeV	
$5279.38 \pm 0.11 \pm 0.33$		[2] AAIJ	12E	LHCB	pp at 7 TeV	
$5279.10 \pm 0.41 \pm 0.36$		[3] ACOSTA	06	CDF	$p\overline{p}$ at 1.96 TeV	
$5279.1 \pm 0.4 \pm 0.4$	526	[4] CSORNA	00	CLE2	$e^+e^- \to \Upsilon(4S)$	
$5279.1 \pm 1.7 \pm 1.4$	147	ABE	96B	CDF	$p\overline{p}$ at 1.8 TeV	
• • • We do not use the following data for averages, fits, limits, etc. • • •						
$5278.8 \pm 0.54 \pm 2.0$	362	ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$	SYCLP=A
$5278.3 \pm 0.4 \pm 2.0$		BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$	SYCLP=A
$5280.5 \pm 1.0 \pm 2.0$		[5] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$	SYCLP=A
$5275.8 \pm 1.3 \pm 3.0$	32	ALBRECHT	87C	ARG	$e^+e^- \to \Upsilon(4S)$	
$5278.2 \pm 1.8 \pm 3.0$	12	[6] ALBRECHT	87D	ARG	$e^+e^- \to \Upsilon(4S)$	
$5278.6 \pm 0.8 \pm 2.0$		BEBEK	87	CLEO	$e^+e^- \to \Upsilon(4S)$	SYCLP=A

[1] Uses $B^+ \to J/\psi \overline{\Lambda} p$ decays. NODE=S041M;LINKAGE=E

[2] Uses $B^+ \to J/\psi K^+$ fully reconstructed decays. NODE=S041M;LINKAGE=AA

[3] Uses exclusively reconstructed final states containing a $J/\psi \to \mu^+\mu^-$ decays. NODE=S041M;LINKAGE=AT

[4] CSORNA 00 uses fully reconstructed 526 $B^+ \to J/\psi^{(\prime)} K^+$ events and invariant masses without beam constraint. NODE=S041M;LINKAGE=N1

[5] ALBRECHT 90J assumes 10580 for $\Upsilon(4S)$ mass. Supersedes ALBRECHT 87C and ALBRECHT 87D. NODE=S041M;LINKAGE=BQ

[6] Found using fully reconstructed decays with $J/\psi(1S)$. ALBRECHT 87D assume $m_{\Upsilon(4S)}$ = 10577 MeV. NODE=S041M;LINKAGE=D

$B^{\pm}$ MEAN LIFE

NODE=S041T

See $B^{\pm}/B^0/B^0_s/b$-baryon ADMIXTURE section for data on B-hadron mean life averaged over species of bottom particles. NODE=S041T

VALUE (10^{-12} s)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*	NODE=S041T
1.638±0.004 OUR EVALUATION		(Produced by HFLAV)				→ UNCHECKED ←
$1.637 \pm 0.004 \pm 0.003$		AAIJ	14E	LHCB	pp at 7 TeV	
$1.639 \pm 0.009 \pm 0.009$		[1] AALTONEN	11	CDF	$p\overline{p}$ at 1.96 TeV	
$1.663 \pm 0.023 \pm 0.015$		[2] AALTONEN	11B	CDF	$p\overline{p}$ at 1.96 TeV	
$1.635 \pm 0.011 \pm 0.011$		[3] ABE	05B	BELL	$e^+e^- \to \Upsilon(4S)$	
$1.624 \pm 0.014 \pm 0.018$		[4] ABDALLAH	04E	DLPH	$e^+e^- \to Z$	
$1.636 \pm 0.058 \pm 0.025$		[5] ACOSTA	02C	CDF	$p\overline{p}$ at 1.8 TeV	
$1.673 \pm 0.032 \pm 0.023$		[6] AUBERT	01F	BABR	$e^+e^- \to \Upsilon(4S)$	
$1.648 \pm 0.049 \pm 0.035$		[7] BARATE	00R	ALEP	$e^+e^- \to Z$	
$1.643 \pm 0.037 \pm 0.025$		[8] ABBIENDI	99J	OPAL	$e^+e^- \to Z$	
$1.637 \pm 0.058 {}^{+0.045}_{-0.043}$		[7] ABE	98Q	CDF	$p\overline{p}$ at 1.8 TeV	
$1.66 \pm 0.06 \pm 0.03$		[8] ACCIARRI	98S	L3	$e^+e^- \to Z$	
$1.66 \pm 0.06 \pm 0.05$		[8] ABE	97J	SLD	$e^+e^- \to Z$	
$1.58 {}^{+0.21}_{-0.18} {}^{+0.04}_{-0.03}$	94	[5] BUSKULIC	96J	ALEP	$e^+e^- \to Z$	OCCUR=3
$1.61 \pm 0.16 \pm 0.12$		[7,9] ABREU	95Q	DLPH	$e^+e^- \to Z$	
$1.72 \pm 0.08 \pm 0.06$		[10] ADAM	95	DLPH	$e^+e^- \to Z$	
$1.52 \pm 0.14 \pm 0.09$		[7] AKERS	95T	OPAL	$e^+e^- \to Z$	

• • • We do not use the following data for averages, fits, limits, etc. • • •

$1.695 \pm 0.026 \pm 0.015$		[6] ABE	02H	BELL	Repl. by ABE 05B
$1.68 \pm 0.07 \pm 0.02$		[5] ABE	98B	CDF	Repl. by ACOSTA 02C
$1.56 \pm 0.13 \pm 0.06$		[7] ABE	96C	CDF	Repl. by ABE 98Q
$1.58 \pm 0.09 \pm 0.03$		[11] BUSKULIC	96J	ALEP	$e^+e^- \to Z$
$1.58 \pm 0.09 \pm 0.04$		[7] BUSKULIC	96J	ALEP	Repl. by BARATE 00R
1.70 ± 0.09		[12] ADAM	95	DLPH	$e^+e^- \to Z$
$1.61 \pm 0.16 \pm 0.05$	148	[5] ABE	94D	CDF	Repl. by ABE 98B
$1.30 {}^{+0.33}_{-0.29} \pm 0.16$	92	[7] ABREU	93D	DLPH	Sup. by ABREU 95Q
$1.56 \pm 0.19 \pm 0.13$	134	[10] ABREU	93G	DLPH	Sup. by ADAM 95
$1.51 {}^{+0.30}_{-0.28} {}^{+0.12}_{-0.14}$	59	[7] ACTON	93C	OPAL	Sup. by AKERS 95T
$1.47 {}^{+0.22}_{-0.19} {}^{+0.15}_{-0.14}$	77	[7] BUSKULIC	93D	ALEP	Sup. by BUSKULIC 96J

OCCUR=2
OCCUR=2

[1] Measured mean life using fully reconstructed decays ($J/\psi K^{(*)}$). NODE=S041T;LINKAGE=AA

[2] Measured using $B^- \to D^0\pi^-$ with $D^0 \to K^-\pi^+$ events that were selected using a silicon vertex trigger. NODE=S041T;LINKAGE=AL

[3] Measurement performed using a combined fit of CP-violation, mixing and lifetimes. NODE=S041T;LINKAGE=AE

[4] Measurement performed using an inclusive reconstruction and B flavor identification technique. NODE=S041T;LINKAGE=AB

[5] Measured mean life using fully reconstructed decays. NODE=S041T;LINKAGE=CD

[6] Events are selected in which one B meson is fully reconstructed while the second B meson is reconstructed inclusively. NODE=S041T;LINKAGE=FT

[7] Data analyzed using $D/D^*\ell X$ event vertices. NODE=S041T;LINKAGE=C

[8] Data analyzed using charge of secondary vertex. NODE=S041T;LINKAGE=M

[9] ABREU 95Q assumes $B(B^0 \to D^{**-}\ell^+\nu_\ell) = 3.2 \pm 1.7\%$. NODE=S041T;LINKAGE=CQ

[10] Data analyzed using vertex-charge technique to tag B charge. NODE=S041T;LINKAGE=F

[11] Combined result of $D/D^*\ell X$ analysis and fully reconstructed B analysis. NODE=S041T;LINKAGE=GC

[12] Combined ABREU 95Q and ADAM 95 result. NODE=S041T;LINKAGE=K

τ_{B^+}/τ_{B^-}

NODE=S041DT
NODE=S041DT

VALUE	DOCUMENT ID		TECN	COMMENT
$1.002 \pm 0.004 \pm 0.002$	[1] AAIJ	14E	LHCB	pp at 7 TeV

[1] Measured using $B^\pm \to J/\psi K^\pm$ decays. NODE=S041DT;LINKAGE=A

B^+ DECAY MODES

NODE=S041210;NODE=S041

B^- modes are charge conjugates of the modes below. Modes which do not identify the charge state of the B are listed in the $B^\pm/B^0$ ADMIXTURE section.

NODE=S041

The branching fractions listed below assume 50% $B^0\overline{B}^0$ and 50% B^+B^- production at the $\Upsilon(4S)$. We have attempted to bring older measurements up to date by rescaling their assumed $\Upsilon(4S)$ production ratio to 50:50 and their assumed D, D_s, D^*, and ψ branching ratios to current values whenever this would affect our averages and best limits significantly.

Indentation is used to indicate a subchannel of a previous reaction. All resonant subchannels have been corrected for resonance branching fractions to the final state so the sum of the subchannel branching fractions can exceed that of the final state.

For inclusive branching fractions, *e.g.*, $B \to D^\pm X$, the values usually are multiplicities, not branching fractions. They can be greater than one.

	Mode		Fraction (Γ_i/Γ)	Scale factor/ Confidence level	
	Semileptonic and leptonic modes				NODE=S041;CLUMP=A
Γ_1	$\ell^+\nu_\ell X$	[a]	(10.99 ± 0.28) %		DESIG=220
Γ_2	$e^+\nu_e X_c$		(10.8 ± 0.4) %		DESIG=473
Γ_3	$e^+\nu_e X$		(10.8 ± 2.7) %		DESIG=814
Γ_4	$\mu^+\nu_\mu X$		(11.3 ± 3.5) %		DESIG=813
Γ_5	$\ell^+\nu_\ell X_u$	[a]	$(1.65 \pm 0.21) \times 10^{-3}$		DESIG=768
Γ_6	$D\ell^+\nu_\ell X$	[a]	(9.5 ± 0.7) %		DESIG=485
Γ_7	$\overline{D}^0\ell^+\nu_\ell$	[a]	(2.21 ± 0.06) %		DESIG=145
Γ_8	$\tau^+\nu_\tau X$		(2.5 ± 0.4) %		DESIG=812
Γ_9	$\overline{D}^0\tau^+\nu_\tau$		$(7.7 \pm 2.5) \times 10^{-3}$		DESIG=498

Γ_{10}	$\overline{D}^*(2007)^0 \ell^+ \nu_\ell$	[a]	(5.53 ± 0.22) %		DESIG=146
Γ_{11}	$\overline{D}^*(2007)^0 e^+ \nu_e$				DESIG=787
Γ_{12}	$\overline{D}^*(2007)^0 \mu^+ \nu_\mu$				DESIG=788
Γ_{13}	$\overline{D}^*(2007)^0 \tau^+ \nu_\tau$		(1.88 ± 0.20) %		DESIG=499
Γ_{14}	$D^{(*)} n \pi \ell^+ \nu_\ell (n \geq 1)$	[a]	(1.83 ± 0.25) %		DESIG=505
Γ_{15}	$D^- \pi^+ \ell^+ \nu_\ell$	[a]	$(3.82 \pm 0.20) \times 10^{-3}$		DESIG=418
Γ_{16}	$\overline{D}_2^*(2460)^0 \ell^+ \nu_\ell$, $\overline{D}_2^{*0} \to D^- \pi^+$	[a]	$(1.59 \pm 0.10) \times 10^{-3}$		DESIG=504
Γ_{17}	$\overline{D}_0^*(2420)^0 \ell^+ \nu_\ell$, $\overline{D}_0^{*0} \to D^- \pi^+$	[a]	$(9 \pm 5) \times 10^{-4}$	S=2.6	DESIG=503
Γ_{18}	$D^{*-} \pi^+ \ell^+ \nu_\ell$	[a]	$(5.42 \pm 0.28) \times 10^{-3}$		DESIG=419
Γ_{19}	$\overline{D}_1(2420)^0 \ell^+ \nu_\ell$, $\overline{D}_1^0 \to D^{*-} \pi^+$	[a]	$(2.84 \pm 0.17) \times 10^{-3}$	S=1.1	DESIG=257
Γ_{20}	$\overline{D}_1'(2430)^0 \ell^+ \nu_\ell$, $\overline{D}_1'^0 \to D^{*-} \pi^+$	[a]	$(1.7 \pm 0.6) \times 10^{-3}$	S=1.8	DESIG=502
Γ_{21}	$\overline{D}_2^*(2460)^0 \ell^+ \nu_\ell$, $\overline{D}_2^{*0} \to D^{*-} \pi^+$	[a]	$(1.06 \pm 0.18) \times 10^{-3}$	S=1.7	DESIG=258
Γ_{22}	$\overline{D}^0 \pi^+ \pi^- \ell^+ \nu_\ell$	[a]	$(1.73 \pm 0.19) \times 10^{-3}$		DESIG=649
Γ_{23}	$\overline{D}_1(2420)^0 \ell^+ \nu_\ell$, $\overline{D}_1^0 \to \overline{D}^0 \pi^+ \pi^-$	[a]	$(1.05 \pm 0.14) \times 10^{-3}$		DESIG=783
Γ_{24}	$\overline{D}^{*0} \pi^+ \pi^- \ell^+ \nu_\ell$	[a]	$(7.0 \pm 1.7) \times 10^{-4}$		DESIG=650
Γ_{25}	$D_s^{(*)-} K^+ \ell^+ \nu_\ell$	[a]	$(6.1 \pm 1.0) \times 10^{-4}$		DESIG=616
Γ_{26}	$D_s^- K^+ \ell^+ \nu_\ell$	[a]	$(3.0 {}^{+1.4}_{-1.2}) \times 10^{-4}$		DESIG=600
Γ_{27}	$D_s^{*-} K^+ \ell^+ \nu_\ell$	[a]	$(2.9 \pm 1.9) \times 10^{-4}$		DESIG=571
Γ_{28}	$\pi^0 \ell^+ \nu_\ell$	[a]	$(7.80 \pm 0.27) \times 10^{-5}$		DESIG=417
Γ_{29}	$\pi^0 e^+ \nu_e$				DESIG=138
Γ_{30}	$\eta \ell^+ \nu_\ell$	[a]	$(3.5 \pm 0.4) \times 10^{-5}$		DESIG=327
Γ_{31}	$\eta' \ell^+ \nu_\ell$	[a]	$(2.4 \pm 0.7) \times 10^{-5}$		DESIG=479
Γ_{32}	$\omega \ell^+ \nu_\ell$	[a]	$(1.19 \pm 0.09) \times 10^{-4}$		DESIG=173
Γ_{33}	$\omega \mu^+ \nu_\mu$				DESIG=150
Γ_{34}	$\rho^0 \ell^+ \nu_\ell$	[a]	$(1.58 \pm 0.11) \times 10^{-4}$		DESIG=174
Γ_{35}	$\pi^+ \pi^- \ell^+ \nu_\ell$	[a]	$(2.3 \pm 0.4) \times 10^{-4}$		DESIG=767
Γ_{36}	$p \overline{p} \ell^+ \nu_\ell$	[a]	$(5.8 {}^{+2.6}_{-2.3}) \times 10^{-6}$		DESIG=630
Γ_{37}	$p \overline{p} \mu^+ \nu_\mu$		$(5.32 \pm 0.34) \times 10^{-6}$		DESIG=631
Γ_{38}	$p \overline{p} e^+ \nu_e$		$(8.2 {}^{+4.0}_{-3.3}) \times 10^{-6}$		DESIG=319
Γ_{39}	$e^+ \nu_e$		$< 9.8 \times 10^{-7}$	CL=90%	DESIG=182
Γ_{40}	$\mu^+ \nu_\mu$		$< 8.6 \times 10^{-7}$	CL=90%	DESIG=183
Γ_{41}	$\tau^+ \nu_\tau$		$(1.09 \pm 0.24) \times 10^{-4}$	S=1.2	DESIG=184
Γ_{42}	$\ell^+ \nu_\ell \gamma$	[a]	$< 3.0 \times 10^{-6}$	CL=90%	DESIG=547
Γ_{43}	$e^+ \nu_e \gamma$		$< 4.3 \times 10^{-6}$	CL=90%	DESIG=234
Γ_{44}	$\mu^+ \nu_\mu \gamma$		$< 3.4 \times 10^{-6}$	CL=90%	DESIG=235
Γ_{45}	$\mu^+ \mu^- \mu^+ \nu_\mu$		$< 1.6 \times 10^{-8}$	CL=95%	DESIG=729

Inclusive modes NODE=S041;CLUMP=J

Γ_{46}	$D^0 X$	(8.6 ± 0.7) %	DESIG=380
Γ_{47}	$\overline{D}^0 X$	(79 ± 4) %	DESIG=381
Γ_{48}	$D^+ X$	(2.5 ± 0.5) %	DESIG=382
Γ_{49}	$D^- X$	(9.9 ± 1.2) %	DESIG=383
Γ_{50}	$D_s^+ X$	$(7.9 {}^{+1.4}_{-1.3})$ %	DESIG=384
Γ_{51}	$D_s^- X$	$(1.10 {}^{+0.40}_{-0.32})$ %	DESIG=385
Γ_{52}	$\Lambda_c^+ X$	$(2.1 {}^{+0.9}_{-0.6})$ %	DESIG=386
Γ_{53}	$\overline{\Lambda}_c^- X$	$(2.8 {}^{+1.1}_{-0.9})$ %	DESIG=387
Γ_{54}	$\overline{c} X$	(97 ± 4) %	DESIG=388
Γ_{55}	$c X$	$(23.4 {}^{+2.2}_{-1.8})$ %	DESIG=389
Γ_{56}	$c / \overline{c} X$	(120 ± 6) %	DESIG=390

D, D^*, or D_s modes

NODE=S041;CLUMP=B

Γ_{57}	$\overline{D}^0 \pi^+$		$(4.61 \pm 0.10) \times 10^{-3}$		DESIG=1
Γ_{58}	$D_{CP(+1)} \pi^+$	[b]	$(2.04 \pm 0.20) \times 10^{-3}$		DESIG=314
Γ_{59}	$D_{CP(-1)} \pi^+$	[b]	$(2.1 \pm 0.4) \times 10^{-3}$		DESIG=315
Γ_{60}	$\overline{D}^0 \rho^+$		$(9.7 \pm 1.1) \times 10^{-3}$	S=2.1	DESIG=25
Γ_{61}	$\overline{D}^0 K^+$		$(3.64 \pm 0.15) \times 10^{-4}$		DESIG=256
Γ_{62}	$D_{CP(+1)} K^+$	[b]	$(1.81 \pm 0.08) \times 10^{-4}$		DESIG=316
Γ_{63}	$D_{CP(-1)} K^+$	[b]	$(2.04 \pm 0.13) \times 10^{-4}$		DESIG=317
Γ_{64}	$D^0 K^+$		$(3.60 \pm 0.24) \times 10^{-6}$		DESIG=724
Γ_{65}	$[K^- \pi^+]_D K^+$	[c]	$< 2.8 \times 10^{-7}$	CL=90%	DESIG=358
Γ_{66}	$[K^+ \pi^-]_D K^+$	[c]	$< 1.6 \times 10^{-5}$	CL=90%	DESIG=359
Γ_{67}	$[K^- \pi^+ \pi^0]_D K^+$		seen		DESIG=480;OUR EVAL;→ UNCHECKED ←
Γ_{68}	$[K^+ \pi^- \pi^0]_D K^+$		seen		DESIG=481;OUR EVAL;→ UNCHECKED ←
Γ_{69}	$[K^- \pi^+ \pi^+ \pi^-]_D K^+$		seen		DESIG=624;OUR EVAL;→ UNCHECKED ←
Γ_{70}	$[K^+ \pi^- \pi^+ \pi^-]_D K^+$		seen		DESIG=625;OUR EVAL;→ UNCHECKED ←
Γ_{71}	$[\pi^+ \pi^+ \pi^- \pi^-] K^+$				DESIG=689
Γ_{72}	$[\pi^+ \pi^- \pi^+ \pi^-]_D K^*(892)^+$				DESIG=714
Γ_{73}	$[K^- \pi^+]_D K^*(892)^+$	[c]			DESIG=425
Γ_{74}	$[K^+ \pi^-]_D K^*(892)^+$	[c]			DESIG=426
Γ_{75}	$[K^- \pi^+ \pi^- \pi^+]_D K^*(892)^+$				DESIG=713
Γ_{76}	$[K^+ \pi^- \pi^+ \pi^-]_D K^*(892)^+$				DESIG=712
Γ_{77}	$[K^- \pi^+]_D \pi^+$	[c]	$(6.3 \pm 1.1) \times 10^{-7}$		DESIG=399
Γ_{78}	$[K^+ \pi^-]_D \pi^+$		$(1.72 \pm 0.30) \times 10^{-4}$		DESIG=533
Γ_{79}	$[K^- \pi^+ \pi^0]_D \pi^+$		seen		DESIG=628;OUR EVAL;→ UNCHECKED ←
Γ_{80}	$[K^+ \pi^- \pi^0]_D \pi^+$		seen		DESIG=629;OUR EVAL;→ UNCHECKED ←
Γ_{81}	$[K^- \pi^+ \pi^+ \pi^-]_D \pi^+$		seen		DESIG=626;OUR EVAL;→ UNCHECKED ←
Γ_{82}	$[K^+ \pi^- \pi^+ \pi^-]_D \pi^+$		seen		DESIG=627;OUR EVAL;→ UNCHECKED ←
Γ_{83}	$([K^- \pi^+]_D \pi^0)_{D^*} \pi^+$				DESIG=557
Γ_{84}	$([K^+ \pi^-]_D \pi^0)_{D^*} \pi^+$				DESIG=558
Γ_{85}	$([K^- \pi^+]_D \gamma)_{D^*} \pi^+$				DESIG=559
Γ_{86}	$([K^+ \pi^-]_D \gamma)_{D^*} \pi^+$				DESIG=560
Γ_{87}	$([K^- \pi^+]_D \pi^0)_{D^*} K^+$				DESIG=561
Γ_{88}	$([K^+ \pi^-]_D \pi^0)_{D^*} K^+$				DESIG=562
Γ_{89}	$([K^- \pi^+]_D \gamma)_{D^*} K^+$				DESIG=563
Γ_{90}	$([K^+ \pi^-]_D \gamma)_{D^*} K^+$				DESIG=564
Γ_{91}	$[\pi^+ \pi^- \pi^0]_D K^-$		$(4.6 \pm 0.9) \times 10^{-6}$		DESIG=420
Γ_{92}	$[K^0_S K^+ \pi^-]_D K^+$		seen		DESIG=635;OUR EVAL;→ UNCHECKED ←
Γ_{93}	$[K^*(892)^- K^+]_D K^+$				DESIG=748
Γ_{94}	$[K^0_S K^- \pi^+]_D K^+$		seen		DESIG=637;OUR EVAL;→ UNCHECKED ←
Γ_{95}	$[K^*(892)^+ K^-]_D K^+$		seen		DESIG=638;OUR EVAL;→ UNCHECKED ←
Γ_{96}	$[K^0_S K^- \pi^+]_D \pi^+$		seen		DESIG=639;OUR EVAL;→ UNCHECKED ←
Γ_{97}	$[K^*(892)^+ K^-]_D \pi^+$		seen		DESIG=640;OUR EVAL;→ UNCHECKED ←
Γ_{98}	$[K^0_S K^+ \pi^-]_D \pi^+$		seen		DESIG=641;OUR EVAL;→ UNCHECKED ←
Γ_{99}	$[K^*(892)^- K^+]_D \pi^+$		seen		DESIG=642;OUR EVAL;→ UNCHECKED ←
Γ_{100}	$[K^+ K^- \pi^0]_D K^+$				DESIG=669
Γ_{101}	$[K^+ K^- \pi^0]_D \pi^+$				DESIG=670
Γ_{102}	$[\pi^+ \pi^- \pi^0]_D K^+$				DESIG=671
Γ_{103}	$[\pi^+ \pi^- \pi^0]_D \pi^+$				DESIG=672
Γ_{104}	$\overline{D}^0 K^*(892)^+$		$(5.3 \pm 0.4) \times 10^{-4}$		DESIG=279
Γ_{105}	$D_{CP(-1)} K^*(892)^+$	[b]	$(2.7 \pm 0.8) \times 10^{-4}$		DESIG=423
Γ_{106}	$D_{CP(+1)} K^*(892)^+$	[b]	$(6.2 \pm 0.7) \times 10^{-4}$		DESIG=424
Γ_{107}	$D^0 K^*(892)^+$		$(5.4 {}^{+1.8}_{-4.0}) \times 10^{-6}$		DESIG=725
Γ_{108}	$\overline{D}^0 K^+ \pi^+ \pi^-$		$(5.2 \pm 2.1) \times 10^{-4}$		DESIG=601
Γ_{109}	$[K^+ \pi^-]_D K^+ \pi^- \pi^+$				DESIG=673
Γ_{110}	$[K^- \pi^+]_D K^+ \pi^- \pi^+$				DESIG=674
Γ_{111}	$D_{CP(+1)} K^+ \pi^- \pi^+$				DESIG=675
Γ_{112}	$\overline{D}^0 K^+ \overline{K}^0$		$(3.73 \pm 0.34) \times 10^{-4}$		DESIG=286
Γ_{113}	$\overline{D}^0 K^+ \overline{K}^*(892)^0$		$(7.2 \pm 0.5) \times 10^{-4}$		DESIG=288

Γ_{114}	$\overline{D}^0\pi^+\pi^+\pi^-$		$(5.5 \pm 2.0) \times 10^{-3}$	S=3.6	DESIG=165
Γ_{115}	$[K^-\pi^+]_D\pi^+\pi^-\pi^+$				DESIG=676
Γ_{116}	$\overline{D}^0\pi^+\pi^+\pi^-$ nonresonant		$(5 \pm 4) \times 10^{-3}$		DESIG=166
Γ_{117}	$\overline{D}^0\pi^+\rho^0$		$(4.2 \pm 3.0) \times 10^{-3}$		DESIG=167
Γ_{118}	$\overline{D}^0 a_1(1260)^+$		$(4 \pm 4) \times 10^{-3}$		DESIG=168
Γ_{119}	$\overline{D}^0\omega\pi^+$		$(4.1 \pm 0.9) \times 10^{-3}$		DESIG=276
Γ_{120}	$D^*(2010)^-\pi^+\pi^+$		$(1.35 \pm 0.22) \times 10^{-3}$		DESIG=2
Γ_{121}	$D^*(2010)^- K^+\pi^+$		$(8.2 \pm 1.4) \times 10^{-5}$		DESIG=705
Γ_{122}	$\overline{D}_1(2420)^0\pi^+$, $\overline{D}{}_1^0 \to D^*(2010)^-\pi^+$		$(8.4 \pm 1.5) \times 10^{-4}$		DESIG=580
Γ_{123}	$D^-\pi^+\pi^+$		$(1.07 \pm 0.05) \times 10^{-3}$		DESIG=14
Γ_{124}	$D^- K^+\pi^+$		$(7.7 \pm 0.5) \times 10^{-5}$		DESIG=665
Γ_{125}	$D_0^*(2300)^0 K^+$, $D_0^{*0} \to D^-\pi^+$		$(6.1 \pm 2.4) \times 10^{-6}$		DESIG=666
Γ_{126}	$D_2^*(2460)^0 K^+$, $D_2^{*0} \to D^-\pi^+$		$(2.32 \pm 0.23) \times 10^{-5}$		DESIG=668
Γ_{127}	$D_1^*(2760)^0 K^+$, $D_1^{*0} \to D^-\pi^+$		$(3.6 \pm 1.2) \times 10^{-6}$		DESIG=667
Γ_{128}	$D^+ K^0$		$< 2 \times 10^{-6}$	CL=90%	DESIG=398
Γ_{129}	$D^+ K^+\pi^-$		$(5.6 \pm 1.1) \times 10^{-6}$		DESIG=687
Γ_{130}	$D^+\eta$		$< 1.2 \times 10^{-5}$	CL=90%	DESIG=778
Γ_{131}	$D_2^*(2460)^0 K^+$, $D_2^{*0} \to D^+\pi^-$		$< 6.3 \times 10^{-7}$	CL=90%	DESIG=688
Γ_{132}	$D^+ K^{*0}$		$< 4.9 \times 10^{-7}$	CL=90%	DESIG=565
Γ_{133}	$D^+\overline{K}^{*0}$		$< 1.4 \times 10^{-6}$	CL=90%	DESIG=614
Γ_{134}	$\overline{D}^*(2007)^0\pi^+$		$(5.17 \pm 0.15) \times 10^{-3}$		DESIG=15
Γ_{135}	$\overline{D}{}^{*0}_{CP(+1)}\pi^+$	[d]	$(2.9 \pm 0.6) \times 10^{-3}$		DESIG=432
Γ_{136}	$D^{*0}_{CP(-1)}\pi^+$	[d]	$(2.6 \pm 1.0) \times 10^{-3}$		DESIG=441
Γ_{137}	$\overline{D}^*(2007)^0\omega\pi^+$		$(4.5 \pm 1.2) \times 10^{-3}$		DESIG=275
Γ_{138}	$\overline{D}^*(2007)^0\rho^+$		$(9.8 \pm 1.7) \times 10^{-3}$		DESIG=169
Γ_{139}	$\overline{D}^*(2007)^0 K^+$		$(4.19 {}^{+0.31}_{-0.28}) \times 10^{-4}$		DESIG=270
Γ_{140}	$\overline{D}{}^{*0}_{CP(+1)} K^+$	[d]	$(2.75 \pm 0.35) \times 10^{-4}$		DESIG=433
Γ_{141}	$\overline{D}{}^{*0}_{CP(-1)} K^+$	[d]	$(2.31 \pm 0.31) \times 10^{-4}$		DESIG=442
Γ_{142}	$D^*(2007)^0 K^+$		$(4.5 \pm 1.2) \times 10^{-6}$		DESIG=726
Γ_{143}	$\overline{D}^*(2007)^0 K^*(892)^+$		$(8.1 \pm 1.4) \times 10^{-4}$		DESIG=280
Γ_{144}	$\overline{D}^*(2007)^0 K^+\overline{K}^0$		$(2.9 \pm 0.6) \times 10^{-4}$		DESIG=287
Γ_{145}	$\overline{D}^*(2007)^0 K^+\overline{K}^*(892)^0$		$(1.23 \pm 0.14) \times 10^{-3}$		DESIG=289
Γ_{146}	$\overline{D}^*(2007)^0\pi^+\pi^+\pi^-$		(1.03 ± 0.12) %		DESIG=211
Γ_{147}	$\overline{D}^*(2007)^0 a_1(1260)^+$		(1.9 ± 0.5) %		DESIG=221
Γ_{148}	$\overline{D}^*(2007)^0\pi^-\pi^+\pi^+\pi^0$		(1.8 ± 0.4) %		DESIG=274
Γ_{149}	$\overline{D}^{*0}\,3\pi^+\,2\pi^-$		$(5.7 \pm 1.2) \times 10^{-3}$		DESIG=379
Γ_{150}	$D^*(2010)^+\pi^0$		$< 3.6 \times 10^{-6}$		DESIG=240
Γ_{151}	$D^*(2010)^+ K^0$		$< 9.0 \times 10^{-6}$	CL=90%	DESIG=269
Γ_{152}	$D^*(2010)^-\pi^+\pi^+\pi^0$		(1.5 ± 0.7) %		DESIG=12
Γ_{153}	$D^*(2010)^-\pi^+\pi^+\pi^+\pi^-$		$(2.6 \pm 0.4) \times 10^{-3}$		DESIG=141
Γ_{154}	$\overline{D}^{**0}\pi^+$	[e]	$(5.6 \pm 1.2) \times 10^{-3}$		DESIG=464
Γ_{155}	$\overline{D}_1^*(2420)^0\pi^+$		$(1.5 \pm 0.6) \times 10^{-3}$	S=1.3	DESIG=214
Γ_{156}	$\overline{D}_1(2420)^0\pi^+ \times$ B($\overline{D}{}_1^0 \to \overline{D}^0\pi^+\pi^-$)		$(2.5 {}^{+1.6}_{-1.4}) \times 10^{-4}$	S=3.8	DESIG=443
Γ_{157}	$\overline{D}_1(2420)^0\pi^+ \times$ B($\overline{D}{}_1^0 \to \overline{D}^0\pi^+\pi^-$ (nonresonant))		$(2.2 \pm 0.9) \times 10^{-4}$		DESIG=579
Γ_{158}	$\overline{D}_1(2430)^0\pi^+$, $\overline{D}{}_1^0 \to D^*(2010)^-\pi^+$		$(3.5 \pm 0.6) \times 10^{-4}$		DESIG=739
Γ_{159}	$\overline{D}(2550)^0\pi^+$, $\overline{D}^0 \to D^*(2010)^-\pi^+$		$(7.2 \pm 1.4) \times 10^{-5}$		DESIG=740
Γ_{160}	$\overline{D}_J^*(2600)^0\pi^+$, $\overline{D}{}_J^{*0} \to D^*(2010)^-\pi^+$		$(6.8 \pm 1.3) \times 10^{-5}$		DESIG=741

Γ_{161}	$\overline{D}_2^*(2462)^0\pi^+$, $\overline{D}_2^{*0} \to D^-\pi^+$	$(3.56 \pm 0.24) \times 10^{-4}$		DESIG=348
Γ_{162}	$\overline{D}_2^*(2462)^0\pi^+$, $\overline{D}_2^{*0} \to \overline{D}^0\pi^-\pi^+$	$(2.2 \pm 1.0) \times 10^{-4}$		DESIG=581
Γ_{163}	$\overline{D}_2^*(2462)^0\pi^+$, $\overline{D}_2^{*0} \to \overline{D}^0\pi^-\pi^+$(nonresonant)	$< 1.6 \times 10^{-4}$	CL=90%	DESIG=583
Γ_{164}	$\overline{D}_2^*(2462)^0\pi^+$, $\overline{D}_2^{*0} \to D^*(2010)^-\pi^+$	$(2.1 \pm 1.0) \times 10^{-4}$		DESIG=582
Γ_{165}	$\overline{D}_0^*(2400)^0\pi^+ \times$ B($\overline{D}_0^*(2400)^0 \to D^-\pi^+$)	$(6.4 \pm 1.4) \times 10^{-4}$		DESIG=349
Γ_{166}	$\overline{D}_1(2421)^0\pi^+$, $\overline{D}_1^0 \to D^{*-}\pi^+$	$(7.4 \pm 1.0) \times 10^{-4}$		DESIG=350
Γ_{167}	$\overline{D}_2^*(2462)^0\pi^+$, $\overline{D}_2^{*0} \to D^{*-}\pi^+$	$(1.98 \pm 0.30) \times 10^{-4}$		DESIG=351
Γ_{168}	$\overline{D}_1'(2427)^0\pi^+$, $\overline{D}_1'^0 \to D^{*-}\pi^+$	$(3.5 \pm 0.9) \times 10^{-4}$	S=1.5	DESIG=352
Γ_{169}	$\overline{D}_1(2420)^0\pi^+ \times$B($\overline{D}_1^0 \to \overline{D}^{*0}\pi^+\pi^-$)	$< 6 \times 10^{-6}$	CL=90%	DESIG=444
Γ_{170}	$\overline{D}_1^*(2420)^0\rho^+$	$< 1.4 \times 10^{-3}$	CL=90%	DESIG=215
Γ_{171}	$\overline{D}_2^*(2460)^0\pi^+$	$< 1.3 \times 10^{-3}$	CL=90%	DESIG=212
Γ_{172}	$\overline{D}_2^*(2460)^0\pi^+ \times$B($\overline{D}_2^{*0} \to \overline{D}^{*0}\pi^+\pi^-$)	$< 2.2 \times 10^{-5}$	CL=90%	DESIG=445
Γ_{173}	$\overline{D}_1^*(2680)^0\pi^+$, $\overline{D}_1^*(2680)^0 \to D^-\pi^+$	$(8.4 \pm 2.1) \times 10^{-5}$		DESIG=701
Γ_{174}	$\overline{D}(2740)^0\pi^+$, $\overline{D}^0 \to D^*(2010)^-\pi^+$	$(3.3 \pm 1.5) \times 10^{-5}$		DESIG=742
Γ_{175}	$\overline{D}_3^*(2750)^0\pi^+$, $\overline{D}_3^{*0} \to D^*(2010)^-\pi^+$	$(1.10 \pm 0.32) \times 10^{-5}$		DESIG=743
Γ_{176}	$\overline{D}_3^*(2760)^0\pi^+$, $\overline{D}_3^*(2760)^0\pi^+ \to D^-\pi^+$	$(1.00 \pm 0.22) \times 10^{-5}$		DESIG=702
Γ_{177}	$\overline{D}_2^*(3000)^0\pi^+$, $\overline{D}_2^*(3000)^0\pi^+ \to D^-\pi^+$	$(2.0 \pm 1.4) \times 10^{-6}$		DESIG=703
Γ_{178}	$\overline{D}_2^*(2460)^0\rho^+$	$< 4.7 \times 10^{-3}$	CL=90%	DESIG=213
Γ_{179}	$\overline{D}^0 D_s^+$	$(9.3 \pm 0.6) \times 10^{-3}$		DESIG=72
Γ_{180}	$D_{s0}^*(2317)^+\overline{D}^0$, $D_{s0}^{*+} \to D_s^+\pi^0$	$(7.9 {}^{+1.5}_{-1.3}) \times 10^{-4}$		DESIG=321
Γ_{181}	$D_{s0}(2317)^+\overline{D}^0 \times$ B($D_{s0}(2317)^+ \to D_s^{*+}\gamma$)	$< 7.6 \times 10^{-4}$	CL=90%	DESIG=391
Γ_{182}	$D_{s0}(2317)^+\overline{D}^*(2007)^0 \times$ B($D_{s0}(2317)^+ \to D_s^+\pi^0$)	$(9 \pm 7) \times 10^{-4}$		DESIG=26
Γ_{183}	$D_{sJ}(2457)^+\overline{D}^0$	$(3.1 {}^{+1.0}_{-0.9}) \times 10^{-3}$		DESIG=322
Γ_{184}	$D_{sJ}(2457)^+\overline{D}^0 \times$ B($D_{sJ}(2457)^+ \to D_s^+\gamma$)	$(4.6 {}^{+1.3}_{-1.1}) \times 10^{-4}$		DESIG=28
Γ_{185}	$D_{sJ}(2457)^+\overline{D}^0 \times$ B($D_{sJ}(2457)^+ \to D_s^+\pi^+\pi^-$)	$< 2.2 \times 10^{-4}$	CL=90%	DESIG=392
Γ_{186}	$D_{sJ}(2457)^+\overline{D}^0 \times$ B($D_{sJ}(2457)^+ \to D_s^+\pi^0$)	$< 2.7 \times 10^{-4}$	CL=90%	DESIG=393
Γ_{187}	$D_{sJ}(2457)^+\overline{D}^0 \times$ B($D_{sJ}(2457)^+ \to D_s^{*+}\gamma$)	$< 9.8 \times 10^{-4}$	CL=90%	DESIG=394
Γ_{188}	$D_{sJ}(2457)^+\overline{D}^*(2007)^0$	(1.20 ± 0.30) %		DESIG=27
Γ_{189}	$D_{sJ}(2457)^+\overline{D}^*(2007)^0 \times$ B($D_{sJ}(2457)^+ \to D_s^+\gamma$)	$(1.4 {}^{+0.7}_{-0.6}) \times 10^{-3}$		DESIG=29
Γ_{190}	$\overline{D}^0 D_{s1}(2536)^+ \times$ B($D_{s1}(2536)^+ \to D^*(2007)^0 K^+ + D^*(2010)^+ K^0$)	$(4.0 \pm 1.0) \times 10^{-4}$		DESIG=566

Γ_{191}	$\overline{D}^0 D_{s1}(2536)^+ \times$ B$(D_{s1}(2536)^+ \to D^*(2007)^0 K^+)$	$(2.2 \pm 0.7) \times 10^{-4}$		DESIG=341
Γ_{192}	$\overline{D}^*(2007)^0 D_{s1}(2536)^+ \times$ B$(D_{s1}(2536)^+ \to D^*(2007)^0 K^+)$	$(5.5 \pm 1.6) \times 10^{-4}$		DESIG=342
Γ_{193}	$\overline{D}^0 D_{s1}(2536)^+ \times$ B$(D_{s1}(2536)^+ \to D^{*+} K^0)$	$(2.3 \pm 1.1) \times 10^{-4}$		DESIG=482
Γ_{194}	$\overline{D}^0 D_{sJ}(2700)^+ \times$ B$(D_{sJ}(2700)^+ \to D^0 K^+)$	$(5.6 \pm 1.8) \times 10^{-4}$	S=1.7	DESIG=500
Γ_{195}	$\overline{D}^{*0} D_{s1}(2536)^+, D^+_{s1} \to D^{*+} K^0$	$(3.9 \pm 2.6) \times 10^{-4}$		DESIG=483
Γ_{196}	$\overline{D}^0 D_{sJ}(2573)^+, D^+_{sJ} \to D^0 K^+$	$(8 \pm 15) \times 10^{-6}$		DESIG=644
Γ_{197}	$\overline{D}^{*0} D_{sJ}(2573), D^+_{sJ} \to D^0 K^+$	$< 2 \times 10^{-4}$	CL=90%	DESIG=343
Γ_{198}	$\overline{D}^*(2007)^0 D_{sJ}(2573), D^+_{sJ} \to D^0 K^+$	$< 5 \times 10^{-4}$	CL=90%	DESIG=344
Γ_{199}	$\overline{D}^0 D_s^{*+}$	$(7.6 \pm 1.6) \times 10^{-3}$		DESIG=175
Γ_{200}	$D^- D_s^+ \pi^+$			DESIG=795
Γ_{201}	$\overline{D}^*(2007)^0 D_s^+$	$(7.0 \pm 1.0) \times 10^{-3}$		DESIG=176
Γ_{202}	$\overline{D}^*(2007)^0 D_s^+, \overline{D}^{*0} \to D^- \pi^+$			DESIG=810
Γ_{203}	$\overline{D}^*(2007)^0 D_s^{*+}$	(1.71 ± 0.24) %		DESIG=177
Γ_{204}	$\overline{D}^*_2(2460)^0 D_s^+, \overline{D}^{*0}_2 \to D^- \pi^+$			DESIG=790
Γ_{205}	$\overline{D}^*_1(2600)^0 D_s^+, \overline{D}^{*0}_1 \to D^- \pi^+$			DESIG=791
Γ_{206}	$\overline{D}^*_3(2750)^0 D_s^+, \overline{D}^{*0}_3 \to D^- \pi^+$			DESIG=792
Γ_{207}	$\overline{D}^*_1(2760)^0 D_s^+, \overline{D}^{*0}_1 \to D^- \pi^+$			DESIG=793
Γ_{208}	$\overline{D}^*_J(3000)^0 D_s^+, \overline{D}^{*0}_J \to D^- \pi^+$			DESIG=794
Γ_{209}	$T^*_{cs0}(2900)^{++} D^-, T^{*++}_{cs0} \to D_s^+ \pi^+$			DESIG=796
Γ_{210}	$D_s^{(*)+} \overline{D}^{**0}$	(2.7 ± 1.2) %		DESIG=264
Γ_{211}	$\overline{D}^*(2007)^0 D^*(2010)^+$	$(8.1 \pm 1.7) \times 10^{-4}$		DESIG=259
Γ_{212}	$\overline{D}^0 D^*(2010)^+ + \overline{D}^*(2007)^0 D^+$	< 1.30 %	CL=90%	DESIG=260
Γ_{213}	$\overline{D}^0 D^*(2010)^+$	$(3.9 \pm 0.5) \times 10^{-4}$		DESIG=438
Γ_{214}	$\overline{D}^0 D^+$	$(3.8 \pm 0.4) \times 10^{-4}$		DESIG=261
Γ_{215}	$\overline{D}^0 D^+ K^0$	$(1.55 \pm 0.21) \times 10^{-3}$		DESIG=328
Γ_{216}	$D^+ \overline{D}^*(2007)^0$	$(6.3 \pm 1.7) \times 10^{-4}$		DESIG=459
Γ_{217}	$\overline{D}^*(2007)^0 D^+ K^0$	$(2.1 \pm 0.5) \times 10^{-3}$		DESIG=329
Γ_{218}	$\overline{D}^0 D^*(2010)^+ K^0$	$(3.8 \pm 0.4) \times 10^{-3}$		DESIG=330
Γ_{219}	$\overline{D}^*(2007)^0 D^*(2010)^+ K^0$	$(9.2 \pm 1.2) \times 10^{-3}$		DESIG=331
Γ_{220}	$\overline{D}^0 D^0 K^+$	$(1.45 \pm 0.33) \times 10^{-3}$	S=2.6	DESIG=332
Γ_{221}	$\overline{D}^*(2007)^0 D^0 K^+$	$(2.26 \pm 0.23) \times 10^{-3}$		DESIG=333
Γ_{222}	$\overline{D}^0 D^*(2007)^0 K^+$	$(6.3 \pm 0.5) \times 10^{-3}$		DESIG=334
Γ_{223}	$\overline{D}^*(2007)^0 D^*(2007)^0 K^+$	(1.12 ± 0.13) %		DESIG=335
Γ_{224}	$D^- D^+ K^+$	$(2.2 \pm 0.7) \times 10^{-4}$		DESIG=336
Γ_{225}	$T^*_{cs0}(2870)^0 D^+, T^{*0}_{cs0} \to D^- K^+$	$(1.2 \pm 0.5) \times 10^{-5}$		DESIG=763
Γ_{226}	$T^*_{cs1}(2900)^0 D^+, T^{*0}_{cs1} \to D^- K^+$	$(6.7 \pm 2.3) \times 10^{-5}$		DESIG=764
Γ_{227}	$D^- D^+ K^+$ nonresonant	$(5.3 \pm 1.8) \times 10^{-5}$		DESIG=765
Γ_{228}	$D^- D^*(2010)^+ K^+$	$(6.3 \pm 1.1) \times 10^{-4}$		DESIG=337
Γ_{229}	$D^*(2010)^- D^+ K^+$	$(6.0 \pm 1.3) \times 10^{-4}$		DESIG=338
Γ_{230}	EFF $K+$,EFF $\to D^*(2010)^{\mp} D^{\pm}$	$(1.5 \pm 0.4) \times 10^{-4}$		DESIG=821
Γ_{231}	$\eta_c(3945) K^+, \eta_c \to D^*(2010)^{\mp} D^{\pm}$	$(4.6 {}^{+2.7}_{-1.7}) \times 10^{-5}$		DESIG=822

Γ_{232}	$\chi_{c2}(3930)K^+$, $\chi_{c2} \to D^*(2010)^{\mp} D^{\pm}$	$(2.4\ ^{+1.0}_{-1.7}) \times 10^{-5}$		DESIG=823
Γ_{233}	$h_c(4000)K^+$, $h_c \to D^*(2010)^{\mp} D^{\pm}$	$(7.0\ ^{+2.5}_{-1.6}) \times 10^{-5}$		DESIG=824
Γ_{234}	$\chi_{c1}(4010)K^+$, $\chi_{c1} \to D^*(2010)^{\mp} D^{\pm}$	$(1.38\ ^{+0.31}_{-0.28}) \times 10^{-4}$		DESIG=825
Γ_{235}	$\psi(4040)K^+$, $\psi \to D^*(2010)^{\mp} D^{\pm}$	$(3.8\ ^{+1.1}_{-0.9}) \times 10^{-5}$		DESIG=826
Γ_{236}	$h_c(4300)K^+$, $h_c \to D^*(2010)^{\mp} D^{\pm}$	$(1.6\ ^{+0.4}_{-0.7}) \times 10^{-5}$		DESIG=827
Γ_{237}	$T^*_{\overline{c}s0}(2870)^0 K^+$, $T^{*0}_{\overline{c}s0} \to D^*(2010)^{\mp} D^{\pm}$	$(4.5\ ^{+1.2}_{-1.4}) \times 10^{-5}$		DESIG=828
Γ_{238}	$T^*_{\overline{c}s1}(2900)^0 K^+$, $T^{*0}_{\overline{c}s1} \to D^*(2010)^{\mp} D^{\pm}$	$(3.8\ ^{+1.7}_{-1.6}) \times 10^{-5}$		DESIG=829
Γ_{239}	NR K^+, NR $\to D^*(2010)^{\mp} D^{\pm}$	$(2.8\ ^{+0.5}_{-0.4}) \times 10^{-4}$		DESIG=830
Γ_{240}	NR K^+, NR $\to D^*(2010)^{\mp} D^{\pm}$	$(1.6\ ^{+1.3}_{-0.8}) \times 10^{-5}$		DESIG=831
Γ_{241}	NR K^+, NR $\to D^*(2010)^{\mp} D^{\pm}$	$(2.4\ ^{+0.6}_{-0.4}) \times 10^{-4}$		DESIG=832
Γ_{242}	NR K^+, NR $\to D^*(2010)^{\mp} D^{\pm}$	$(2.2\ ^{+0.7}_{-0.5}) \times 10^{-4}$		DESIG=833
Γ_{243}	$D^*(2010)^- D^*(2010)^+ K^+$	$(1.32 \pm 0.18) \times 10^{-3}$		DESIG=339
Γ_{244}	$(\overline{D}+\overline{D}^*)(D+D^*)K$	(4.05 ± 0.30) %		DESIG=340
Γ_{245}	$D_s^- D_s^+ K^+$	$(1.2 \pm 0.4) \times 10^{-4}$		DESIG=789
Γ_{246}	$D_s^+ \pi^0$	$(1.6 \pm 0.5) \times 10^{-5}$		DESIG=192
Γ_{247}	$D_s^{*+} \pi^0$	$< 2.6 \times 10^{-4}$	CL=90%	DESIG=193
Γ_{248}	$D_s^+ \eta$	$< 1.4 \times 10^{-5}$	CL=90%	DESIG=206
Γ_{249}	$D_s^{*+} \eta$	$< 1.7 \times 10^{-5}$	CL=90%	DESIG=207
Γ_{250}	$D_s^+ \rho^0$	$< 3.0 \times 10^{-4}$	CL=90%	DESIG=186
Γ_{251}	$D_s^{*+} \rho^0$	$< 4 \times 10^{-4}$	CL=90%	DESIG=188
Γ_{252}	$D_s^+ \omega$	$< 4 \times 10^{-4}$	CL=90%	DESIG=194
Γ_{253}	$D_s^{*+} \omega$	$< 6 \times 10^{-4}$	CL=90%	DESIG=195
Γ_{254}	$D_s^+ a_1(1260)^0$	$< 1.8 \times 10^{-3}$	CL=90%	DESIG=196
Γ_{255}	$D_s^{*+} a_1(1260)^0$	$< 1.3 \times 10^{-3}$	CL=90%	DESIG=197
Γ_{256}	$D_s^+ K^+ K^-$	$(7.5 \pm 1.0) \times 10^{-6}$		DESIG=711
Γ_{257}	$D_s^+ \phi$	$< 4.2 \times 10^{-7}$	CL=90%	DESIG=198
Γ_{258}	$D_s^{*+} \phi$	$< 1.2 \times 10^{-5}$	CL=90%	DESIG=199
Γ_{259}	$D_s^+ \overline{K}^0$	$< 3 \times 10^{-6}$	CL=90%	DESIG=200
Γ_{260}	$D_s^{*+} \overline{K}^0$	$< 6 \times 10^{-6}$	CL=90%	DESIG=31
Γ_{261}	$D_s^+ \overline{K}^*(892)^0$	$< 4.4 \times 10^{-6}$	CL=90%	DESIG=187
Γ_{262}	$D_s^+ K^{*0}$	$< 3.5 \times 10^{-6}$	CL=90%	DESIG=615
Γ_{263}	$D_s^{*+} \overline{K}^*(892)^0$	$< 3.5 \times 10^{-4}$	CL=90%	DESIG=190
Γ_{264}	$D_s^- \pi^+ K^+$	$(1.80 \pm 0.22) \times 10^{-4}$		DESIG=32
Γ_{265}	$D_s^{*-} \pi^+ K^+$	$(1.45 \pm 0.24) \times 10^{-4}$		DESIG=33
Γ_{266}	$D_s^- \pi^+ K^*(892)^+$	$< 5 \times 10^{-3}$	CL=90%	DESIG=34
Γ_{267}	$D_s^{*-} \pi^+ K^*(892)^+$	$< 7 \times 10^{-3}$	CL=90%	DESIG=35
Γ_{268}	$D_s^- K^+ K^+$	$(9.7 \pm 2.1) \times 10^{-6}$		DESIG=525
Γ_{269}	$D_s^{*-} K^+ K^+$	$< 1.5 \times 10^{-5}$	CL=90%	DESIG=526

Charmonium modes

NODE=S041;CLUMP=C

Γ_{270}	$\eta_c K^+$		$(1.10 \pm 0.07) \times 10^{-3}$	S=1.1	DESIG=265
Γ_{271}	$\eta_c K^*(892)^+$		$(1.2 \, ^{+0.5}_{-0.4}) \times 10^{-3}$		DESIG=496
Γ_{272}	$\eta_c K^+ \pi^+ \pi^-$		$< 3.9 \times 10^{-4}$	CL=90%	DESIG=651
Γ_{273}	$\eta_c K^+ \omega(782)$		$< 5.3 \times 10^{-4}$	CL=90%	DESIG=652
Γ_{274}	$\eta_c K^+ \eta$		$< 2.2 \times 10^{-4}$	CL=90%	DESIG=653
Γ_{275}	$\eta_c K^+ \pi^0$		$< 6.2 \times 10^{-5}$	CL=90%	DESIG=654
Γ_{276}	$\eta_c(2S) K^+$		$(4.4 \pm 1.0) \times 10^{-4}$		DESIG=439
Γ_{277}	$\eta_c(2S) K^+,\ \eta_c \to p\overline{p}$		$(3.5 \pm 0.8) \times 10^{-8}$		DESIG=620
Γ_{278}	$\eta_c(2S) K^+,\ \eta_c \to K^0_S K^\mp \pi^\pm$		$(3.4 \, ^{+2.3}_{-1.6}) \times 10^{-6}$		DESIG=576
Γ_{279}	$\eta_c(2S) K^+,\ \eta_c \to p\overline{p}\pi^+\pi^-$		$(1.12 \pm 0.18) \times 10^{-6}$		DESIG=731
Γ_{280}	$h_c(1P) K^+,\ h_c \to J/\psi \pi^+ \pi^-$		$< 3.4 \times 10^{-6}$	CL=90%	DESIG=434
Γ_{281}	$X(3730)^0 K^+,\ X^0 \to \eta_c \eta$		$< 4.6 \times 10^{-5}$	CL=90%	DESIG=655
Γ_{282}	$X(3730)^0 K^+,\ X^0 \to \eta_c \pi^0$		$< 5.7 \times 10^{-6}$	CL=90%	DESIG=656
Γ_{283}	$\eta_{c2}(1D) K^+,\ \eta_{c2} \to h_c \gamma$		$< 3.7 \times 10^{-5}$	CL=90%	DESIG=746
Γ_{284}	$\eta_{c2}(1D) \pi^+ K^0_S,\ \eta_{c2} \to h_c \gamma$		$< 1.1 \times 10^{-4}$	CL=90%	DESIG=747
Γ_{285}	$\psi_2(3823) K^+,\ \psi_2 \to J/\psi \pi^+ \pi^-$		$(2.8 \pm 0.6) \times 10^{-7}$		DESIG=745
Γ_{286}	$\psi_2(3823) K^+,\ \psi_2 \to J/\psi \eta$		$(1.2 \, ^{+0.7}_{-0.5}) \times 10^{-6}$		DESIG=769
Γ_{287}	$\psi_3(3842) K^+,\ \psi_3 \to J/\psi \eta$		$< 6.1 \times 10^{-7}$	CL=90%	DESIG=771
Γ_{288}	$\chi_{c1}(3872) K^+$		$(1.9 \pm 0.6) \times 10^{-4}$		DESIG=440
Γ_{289}	$\chi_{c0}(3915) K^+$		$< 2.8 \times 10^{-4}$	CL=90%	DESIG=709
Γ_{290}	$\chi_{c0}(3915) K^+,\ \chi_{c0} \to D^+ D^-$		$(8.1 \pm 3.3) \times 10^{-6}$		DESIG=758
Γ_{291}	$\chi_{c0}(3915) K^+,\ \chi_{c0} \to \eta_c \eta$		$< 4.7 \times 10^{-5}$	CL=90%	DESIG=659
Γ_{292}	$\chi_{c0}(3915) K^+,\ \chi_{c0} \to \eta_c \pi^0$		$< 1.7 \times 10^{-5}$	CL=90%	DESIG=660
Γ_{293}	$X(4014)^0 K^+,\ X^0 \to \eta_c \eta$		$< 3.9 \times 10^{-5}$	CL=90%	DESIG=661
Γ_{294}	$X(4014)^0 K^+,\ X^0 \to \eta_c \pi^0$		$< 1.2 \times 10^{-5}$	CL=90%	DESIG=662
Γ_{295}	$T_{c\overline{c}1}(3900)^0 K^+,\ T^0_{c\overline{c}1} \to \eta_c \pi^+ \pi^-$		$< 4.7 \times 10^{-5}$	CL=90%	DESIG=663
Γ_{296}	$T_{c\overline{c}1}(3900)^0 K^+,\ T^0_{c\overline{c}1} \to J/\psi \eta$		$< 4.3 \times 10^{-7}$	CL=90%	DESIG=774
Γ_{297}	$T_{c\overline{c}}(4020)^0 K^+,\ T^0_{c\overline{c}} \to \eta_c \pi^+ \pi^-$		$< 1.6 \times 10^{-5}$	CL=90%	DESIG=664
Γ_{298}	$\chi_{c1}(3872) K^*(892)^+$		$< 5 \times 10^{-4}$	CL=90%	DESIG=757
Γ_{299}	$\chi_{c1}(3872)^+ K^0,\ \chi^+_{c1} \to J/\psi(1S) \pi^+ \pi^0$	[f]	$< 6.1 \times 10^{-6}$	CL=90%	DESIG=402
Γ_{300}	$\chi_{c1}(3872) K^0 \pi^+$		$(2.4 \pm 1.1) \times 10^{-4}$		DESIG=643
Γ_{301}	$T_{c\overline{c}1}(4430)^+ K^0,\ T^+_{c\overline{c}1} \to J/\psi \pi^+$		$< 1.5 \times 10^{-5}$	CL=95%	DESIG=534
Γ_{302}	$T_{c\overline{c}1}(4430)^+ K^0,\ T^+_{c\overline{c}1} \to \psi(2S) \pi^+$		$< 4.7 \times 10^{-5}$	CL=95%	DESIG=535
Γ_{303}	$T_{c\overline{c}1}(4430)^0 K^+,\ T^0_{c\overline{c}1} \to J/\psi \eta$		$< 1.27 \times 10^{-6}$	CL=90%	DESIG=773
Γ_{304}	$\psi(4230)^0 K^+,\ \psi^0 \to J/\psi \pi^+ \pi^-$		$< 1.56 \times 10^{-5}$	CL=95%	DESIG=421
Γ_{305}	$\psi(4230) K^+,\ \psi \to J/\psi \eta$		$< 3.9 \times 10^{-7}$	CL=90%	DESIG=775
Γ_{306}	$\psi(4360) K^+,\ \psi \to J/\psi \eta$		$< 1.24 \times 10^{-6}$	CL=90%	DESIG=776
Γ_{307}	$\psi(4390) K^+,\ \psi \to J/\psi \eta$		$< 2.41 \times 10^{-6}$	CL=90%	DESIG=777
Γ_{308}	$\chi_{c0}(3915) K^+,\ \chi_{c0} \to J/\psi \gamma$		$< 1.4 \times 10^{-5}$	CL=90%	DESIG=461
Γ_{309}	$\chi_{c0}(3915) K^+,\ \chi_{c0} \to \chi_{c1}(1P) \pi^0$		$< 3.8 \times 10^{-5}$	CL=90%	DESIG=728
Γ_{310}	$X(3930)^0 K^+,\ X^0 \to J/\psi \gamma$		$< 2.5 \times 10^{-6}$	CL=90%	DESIG=462
Γ_{311}	$J/\psi(1S) K^+$		$(1.020 \pm 0.019) \times 10^{-3}$		DESIG=3
Γ_{312}	$J/\psi(1S) K^0 \pi^+$		$(1.14 \pm 0.11) \times 10^{-3}$		DESIG=612
Γ_{313}	$J/\psi(1S) K^+ \pi^+ \pi^-$		$(8.1 \pm 1.3) \times 10^{-4}$	S=2.5	DESIG=19
Γ_{314}	$J/\psi(1S) K^+ K^- K^+$		$(3.37 \pm 0.29) \times 10^{-5}$		DESIG=634
Γ_{315}	$\chi_{c0}(3915) K^+,\ \chi_{c0} \to p\overline{p}$		$< 7.1 \times 10^{-8}$	CL=95%	DESIG=621
Γ_{316}	$J/\psi(1S) K^*(892)^+$		$(1.43 \pm 0.08) \times 10^{-3}$		DESIG=142

Γ_{317}	$J/\psi(1S)K(1270)^+$	$(1.8 \pm 0.5) \times 10^{-3}$		DESIG=271
Γ_{318}	$J/\psi(1S)K(1400)^+$	$< 5 \times 10^{-4}$	CL=90%	DESIG=272
Γ_{319}	$J/\psi(1S)\eta K^+$	$(1.24 \pm 0.14) \times 10^{-4}$		DESIG=354
Γ_{320}	$\chi_{c1-odd}(3872)K^+$, $\chi_{c1-odd} \to J/\psi\eta$	$< 3.8 \times 10^{-6}$	CL=90%	DESIG=646
Γ_{321}	$\psi(4160)K^+$, $\psi \to J/\psi\eta$	$< 8.7 \times 10^{-7}$	CL=90%	DESIG=648
Γ_{322}	$J/\psi(1S)\eta' K^+$	$(3.1 \pm 0.4) \times 10^{-5}$		DESIG=477
Γ_{323}	$J/\psi(1S)\phi K^+$	$(5.0 \pm 0.4) \times 10^{-5}$		DESIG=268
Γ_{324}	$J/\psi(1S)K_1(1650)$, $K_1 \to \phi K^+$	$(6 {}^{+10}_{-6}) \times 10^{-6}$		DESIG=697
Γ_{325}	$J/\psi(1S)K^*(1680)^+$, $K^* \to \phi K^+$	$(3.4 {}^{+1.9}_{-2.2}) \times 10^{-6}$		DESIG=698
Γ_{326}	$J/\psi(1S)K_2^*(1980)$, $K_2^* \to \phi K^+$	$(1.5 {}^{+0.9}_{-0.5}) \times 10^{-6}$		DESIG=699
Γ_{327}	$J/\psi(1S)K(1830)^+$, $K(1830)^+ \to \phi K^+$	$(1.3 {}^{+1.3}_{-1.1}) \times 10^{-6}$		DESIG=700
Γ_{328}	$\chi_{c1}(4140)K^+$, $\chi_{c1} \to J/\psi(1S)\phi$	$(10 \pm 4) \times 10^{-6}$		DESIG=602
Γ_{329}	$\chi_{c1}(4274)K^+$, $\chi_{c1} \to J/\psi(1S)\phi$	$(3.6 {}^{+2.2}_{-1.8}) \times 10^{-6}$		DESIG=603
Γ_{330}	$\chi_{c0}(4500)K^+$, $\chi_{c0} \to J/\psi(1S)\phi$	$(3.3 {}^{+2.1}_{-1.7}) \times 10^{-6}$		DESIG=695
Γ_{331}	$\chi_{c0}(4700)K^+$, $\chi_{c0} \to J/\psi(1S)\phi$	$(6 {}^{+5}_{-4}) \times 10^{-6}$		DESIG=696
Γ_{332}	$J/\psi(1S)\omega K^+$	$(3.20 {}^{+0.60}_{-0.32}) \times 10^{-4}$		DESIG=528
Γ_{333}	$\chi_{c0}(3915)K^+$, $\chi_{c0} \to J/\psi\omega$	$(3.0 {}^{+0.9}_{-0.7}) \times 10^{-5}$		DESIG=555
Γ_{334}	$J/\psi(1S)\pi^+$	$(3.92 \pm 0.09) \times 10^{-5}$		DESIG=222
Γ_{335}	$J/\psi(1S)\pi^+\pi^+\pi^+\pi^-\pi^-$	$(1.17 \pm 0.13) \times 10^{-5}$		DESIG=693
Γ_{336}	$\psi(2S)\pi^+\pi^+\pi^-$	$(1.9 \pm 0.4) \times 10^{-5}$		DESIG=694
Γ_{337}	$J/\psi(1S)\rho^+$	$(4.1 \pm 0.5) \times 10^{-5}$	S=1.4	DESIG=226
Γ_{338}	$J/\psi(1S)\pi^+\pi^0$ nonresonant	$< 7.3 \times 10^{-6}$	CL=90%	DESIG=478
Γ_{339}	$J/\psi(1S)a_1(1260)^+$	$< 1.2 \times 10^{-3}$	CL=90%	DESIG=227
Γ_{340}	$J/\psi(1S)p\overline{p}\pi^+$	$< 5.0 \times 10^{-7}$	CL=90%	DESIG=617
Γ_{341}	$J/\psi(1S)p\overline{\Lambda}$	$(1.46 \pm 0.12) \times 10^{-5}$		DESIG=318
Γ_{342}	$J/\psi(1S)\overline{\Sigma}^0 p$	$< 1.1 \times 10^{-5}$	CL=90%	DESIG=422
Γ_{343}	$J/\psi(1S)D^+$	$< 1.2 \times 10^{-4}$	CL=90%	DESIG=395
Γ_{344}	$J/\psi(1S)\overline{D}^0\pi^+$	$< 2.5 \times 10^{-5}$	CL=90%	DESIG=396
Γ_{345}	$J/\psi(1S)D_s^+$	$< 2.8 \times 10^{-7}$	CL=90%	DESIG=834
Γ_{346}	$\psi(2S)\pi^+$	$(2.44 \pm 0.30) \times 10^{-5}$		DESIG=524
Γ_{347}	$\psi(2S)K^+$	$(6.24 \pm 0.21) \times 10^{-4}$		DESIG=20
Γ_{348}	$\psi(2S)K^*(892)^+$	$(6.7 \pm 1.4) \times 10^{-4}$	S=1.3	DESIG=143
Γ_{349}	$\psi(2S)K^0\pi^+$			DESIG=613
Γ_{350}	$\psi(2S)K^+\pi^+\pi^-$	$(4.3 \pm 0.5) \times 10^{-4}$		DESIG=144
Γ_{351}	$\psi(2S)\phi(1020)K^+$	$(4.0 \pm 0.7) \times 10^{-6}$		DESIG=691
Γ_{352}	$\psi(3770)K^+$	$(4.3 \pm 1.1) \times 10^{-4}$		DESIG=360
Γ_{353}	$\psi(3770)K+, \psi \to D^0\overline{D}^0$	$(1.5 \pm 0.5) \times 10^{-4}$	S=1.4	DESIG=361
Γ_{354}	$\psi(3770)K+, \psi \to D^+D^-$	$(9.4 \pm 3.5) \times 10^{-5}$		DESIG=362
Γ_{355}	$\psi(3770)K^+$, $\psi \to p\overline{p}$	$< 2 \times 10^{-7}$	CL=95%	DESIG=707
Γ_{356}	$\psi(3770)K^+$, $\psi \to J/\psi\eta$	$< 4.6 \times 10^{-7}$	CL=90%	DESIG=770
Γ_{357}	$\psi(4040)K^+$	$(1.6 \pm 0.5) \times 10^{-3}$		DESIG=647
Γ_{358}	$\psi(4040)K^+$, $\psi \to D^+D^-$	$(1.1 \pm 0.5) \times 10^{-5}$		DESIG=760
Γ_{359}	$\psi(4160)K^+$	$(5.1 \pm 2.7) \times 10^{-4}$		DESIG=619
Γ_{360}	$\psi(4160)K^+$, $\psi \to \overline{D}^0 D^0$	$(8 \pm 5) \times 10^{-5}$		DESIG=645
Γ_{361}	$\psi(4160)K^+$, $\psi \to D^+D^-$	$(1.5 \pm 0.6) \times 10^{-5}$		DESIG=761

Γ_{362}	$\psi(4415)K^+,\ \psi\to D^+D^-$	$(2.0\pm0.8)\times10^{-5}$		DESIG=762
Γ_{363}	$\psi(4415)K^+,\ \psi\to J/\psi\eta$	$<9.6\times10^{-7}$	CL=90%	DESIG=772
Γ_{364}	$\chi_{c0}\pi^+,\ \chi_{c0}\to\pi^+\pi^-$	$<1\times10^{-7}$	CL=90%	DESIG=409
Γ_{365}	$\chi_{c0}\pi^+,\ \chi_{c0}\to\pi^0\pi^0$	$<5\times10^{-7}$	CL=90%	DESIG=781
Γ_{366}	$\chi_{c0}K^+$	$(1.51{}^{+0.15}_{-0.13})\times10^{-4}$		DESIG=266
Γ_{367}	$\chi_{c0}K^0\pi^+$	$(1.45\pm0.21)\times10^{-3}$		DESIG=799
Γ_{368}	$\chi_{c0}K^*(892)^+$	$<2.1\times10^{-4}$	CL=90%	DESIG=435
Γ_{369}	$\chi_{c1}(1P)\pi^+$	$(2.2\pm0.5)\times10^{-5}$		DESIG=468
Γ_{370}	$\chi_{c1}(1P)K^+$	$(4.74\pm0.22)\times10^{-4}$		DESIG=171
Γ_{371}	$\chi_{c1}(1P)K^*(892)^+$	$(3.0\pm0.6)\times10^{-4}$	S=1.1	DESIG=216
Γ_{372}	$\chi_{c1}(1P)K^0\pi^+$	$(5.8\pm0.4)\times10^{-4}$		DESIG=611
Γ_{373}	$\chi_{c1}(1P)K^+\pi^0$	$(3.29\pm0.35)\times10^{-4}$		DESIG=678
Γ_{374}	$\chi_{c1}(1P)K^+\pi^+\pi^-$	$(3.74\pm0.30)\times10^{-4}$		DESIG=681
Γ_{375}	$\chi_{c1}(2P)K^+,\ \chi_{c1}(2P)\to\pi^+\pi^-\chi_{c1}(1P)$	$<1.1\times10^{-5}$	CL=90%	DESIG=684
Γ_{376}	$\chi_{c2}\pi^+,\ \chi_{c2}\to\pi^0\pi^0$	$<7\times10^{-7}$	CL=90%	DESIG=782
Γ_{377}	$\chi_{c2}K^+$	$(1.1\pm0.4)\times10^{-5}$		DESIG=436
Γ_{378}	$\chi_{c2}K^+,\ \chi_{c2}\to p\overline{p}\pi^+\pi^-$	$<1.9\times10^{-7}$		DESIG=730
Γ_{379}	$\chi_{c2}K^*(892)^+$	$<1.2\times10^{-4}$	CL=90%	DESIG=437
Γ_{380}	$\chi_{c2}K^0\pi^+$	$(1.24\pm0.25)\times10^{-4}$		DESIG=677
Γ_{381}	$\chi_{c2}K^+\pi^0$	$<6.2\times10^{-5}$	CL=90%	DESIG=679
Γ_{382}	$\chi_{c2}K^+\pi^+\pi^-$	$(1.34\pm0.19)\times10^{-4}$		DESIG=682
Γ_{383}	$\chi_{c2}(3930)K^+,\ \chi_{c2}\to D^+D^-$	$(1.6\pm0.6)\times10^{-5}$		DESIG=759
Γ_{384}	$\chi_{c2}(3930)\pi^+,\ \chi_{c2}\to\pi^+\pi^-$	$<1\times10^{-7}$	CL=90%	DESIG=542
Γ_{385}	$h_c(1P)K^+$	$(3.7\pm1.2)\times10^{-5}$		DESIG=467
Γ_{386}	$h_c(1P)K^+,\ h_c\to p\overline{p}$	$<6.4\times10^{-8}$	CL=95%	DESIG=622
	***K* or *K** modes**			NODE=S041;CLUMP=D
Γ_{387}	$K^0\pi^+$	$(2.39\pm0.06)\times10^{-5}$		DESIG=5
Γ_{388}	$K^+\pi^0$	$(1.32\pm0.04)\times10^{-5}$		DESIG=223
Γ_{389}	$\eta' K^+$	$(7.04\pm0.25)\times10^{-5}$		DESIG=248
Γ_{390}	$\eta' K^*(892)^+$	$(4.8{}^{+1.8}_{-1.6})\times10^{-6}$		DESIG=244
Γ_{391}	$\eta' K_0^*(1430)^+$	$(5.2\pm2.1)\times10^{-6}$		DESIG=552
Γ_{392}	$\eta' K_2^*(1430)^+$	$(2.8\pm0.5)\times10^{-5}$		DESIG=553
Γ_{393}	ηK^+	$(2.4\pm0.4)\times10^{-6}$	S=1.7	DESIG=245
Γ_{394}	$\eta K^*(892)^+$	$(1.93\pm0.16)\times10^{-5}$		DESIG=246
Γ_{395}	$\eta K_0^*(1430)^+$	$(1.8\pm0.4)\times10^{-5}$		DESIG=456
Γ_{396}	$\eta K_2^*(1430)^+$	$(9.1\pm3.0)\times10^{-6}$		DESIG=457
Γ_{397}	$\eta(1295)K^+\times$ B$(\eta(1295)\to\eta\pi\pi)$	$(2.9{}^{+0.8}_{-0.7})\times10^{-6}$		DESIG=510
Γ_{398}	$\eta(1405)K^+\times$ B$(\eta(1405)\to\eta\pi\pi)$	$<1.3\times10^{-6}$	CL=90%	DESIG=511
Γ_{399}	$\eta(1405)K^+\times$ B$(\eta(1405)\to K^*K)$	$<1.2\times10^{-6}$	CL=90%	DESIG=512
Γ_{400}	$\eta(1475)K^+\times$ B$(\eta(1475)\to K^*K)$	$(1.38{}^{+0.21}_{-0.18})\times10^{-5}$		DESIG=513
Γ_{401}	$f_1(1285)K^+$	$<2.0\times10^{-6}$	CL=90%	DESIG=514
Γ_{402}	$f_1(1420)K^+\times$ B$(f_1(1420)\to\eta\pi\pi)$	$<2.9\times10^{-6}$	CL=90%	DESIG=515
Γ_{403}	$f_1(1420)K^+\times$ B$(f_1(1420)\to K^*K)$	$<4.1\times10^{-6}$	CL=90%	DESIG=516
Γ_{404}	$\phi(1680)K^+\times$ B$(\phi(1680)\to K^*K)$	$<3.4\times10^{-6}$	CL=90%	DESIG=517
Γ_{405}	$f_0(1500)K^+$	$(3.7\pm2.2)\times10^{-6}$		DESIG=415
Γ_{406}	ωK^+	$(6.5\pm0.4)\times10^{-6}$		DESIG=251
Γ_{407}	$\omega K^*(892)^+$	$<7.4\times10^{-6}$	CL=90%	DESIG=252
Γ_{408}	$\omega(K\pi)_0^{*+}$	$(2.8\pm0.4)\times10^{-5}$		DESIG=530
Γ_{409}	$\omega K_0^*(1430)^+$	$(2.4\pm0.5)\times10^{-5}$		DESIG=531

Γ_{410}	$\omega K_2^*(1430)^+$	$(2.1 \pm 0.4) \times 10^{-5}$			DESIG=532
Γ_{411}	$a_0(980)^+ K^0 \times B(a_0(980)^+ \to \eta\pi^+)$	$< 3.9 \times 10^{-6}$	CL=90%		DESIG=378
Γ_{412}	$a_0(980)^0 K^+ \times B(a_0(980)^0 \to \eta\pi^0)$	$< 2.5 \times 10^{-6}$	CL=90%		DESIG=377
Γ_{413}	$K^*(892)^0 \pi^+$	$(1.01 \pm 0.08) \times 10^{-5}$			DESIG=6
Γ_{414}	$K^*(892)^+ \pi^0$	$(6.8 \pm 0.9) \times 10^{-6}$			DESIG=225
Γ_{415}	$K^+ \pi^- \pi^+$	$(5.10 \pm 0.29) \times 10^{-5}$			DESIG=282
Γ_{416}	$K^+ \pi^- \pi^+$ nonresonant	$(1.63 {}^{+0.21}_{-0.15}) \times 10^{-5}$			DESIG=59
Γ_{417}	$\omega(782) K^+$	$(6 \pm 9) \times 10^{-6}$			DESIG=507
Γ_{418}	$K^+ f_0(980) \times B(f_0(980) \to \pi^+\pi^-)$	$(9.4 {}^{+1.0}_{-1.2}) \times 10^{-6}$			DESIG=281
Γ_{419}	$f_2(1270)^0 K^+$	$(1.07 \pm 0.27) \times 10^{-6}$			DESIG=412
Γ_{420}	$f_0(1370)^0 K^+ \times B(f_0(1370)^0 \to \pi^+\pi^-)$	$< 1.07 \times 10^{-5}$	CL=90%		DESIG=413
Γ_{421}	$\rho(14500) K^+ \times B(\rho(1450)^0 \to \pi^+\pi^-)$	$< 1.17 \times 10^{-5}$	CL=90%		DESIG=414
Γ_{422}	$f_2'(1525) K^+ \times B(f_2'(1525) \to \pi^+\pi^-)$	$< 3.4 \times 10^{-6}$	CL=90%		DESIG=416
Γ_{423}	$K^+ \rho^0$	$(3.7 \pm 0.5) \times 10^{-6}$			DESIG=7
Γ_{424}	$K_0^*(1430)^0 \pi^+$	$(3.9 {}^{+0.6}_{-0.5}) \times 10^{-5}$		S=1.4	DESIG=410
Γ_{425}	$K_2^*(1430)^0 \pi^+$	$(5.6 {}^{+2.2}_{-1.5}) \times 10^{-6}$			DESIG=152
Γ_{426}	$K^*(1410)^0 \pi^+$	$< 4.5 \times 10^{-5}$	CL=90%		DESIG=427
Γ_{427}	$K^*(1680)^0 \pi^+$	$< 1.2 \times 10^{-5}$	CL=90%		DESIG=411
Γ_{428}	$K^+ \pi^0 \pi^0$	$(1.62 \pm 0.19) \times 10^{-5}$			DESIG=584
Γ_{429}	$f_0(980) K^+ \times B(f_0 \to \pi^0\pi^0)$	$(2.8 \pm 0.8) \times 10^{-6}$			DESIG=585
Γ_{430}	$K^- \pi^+ \pi^+$	$< 4.6 \times 10^{-8}$	CL=90%		DESIG=283
Γ_{431}	$K^- \pi^+ \pi^+$ nonresonant	$< 5.6 \times 10^{-5}$	CL=90%		DESIG=229
Γ_{432}	$K_1(1270)^0 \pi^+$	$< 4.0 \times 10^{-5}$	CL=90%		DESIG=550
Γ_{433}	$K_1(1400)^0 \pi^+$	$< 3.9 \times 10^{-5}$	CL=90%		DESIG=151
Γ_{434}	$K^0 \pi^+ \pi^0$	$< 6.6 \times 10^{-5}$	CL=90%		DESIG=305
Γ_{435}	$K_0^*(1430)^+ \pi^0$	$(1.19 {}^{+0.20}_{-0.23}) \times 10^{-5}$			DESIG=710
Γ_{436}	$K^0 \rho^+$	$(7.3 {}^{+1.0}_{-1.2}) \times 10^{-6}$			DESIG=224
Γ_{437}	$K^*(892)^+ \pi^+ \pi^-$	$(7.5 \pm 1.0) \times 10^{-5}$			DESIG=163
Γ_{438}	$K^*(892)^+ \rho^0$	$(4.6 \pm 1.1) \times 10^{-6}$			DESIG=153
Γ_{439}	$K^*(892)^+ f_0(980)$	$(4.2 \pm 0.7) \times 10^{-6}$			DESIG=455
Γ_{440}	$a_1^+ K^0$	$(3.5 \pm 0.7) \times 10^{-5}$			DESIG=487
Γ_{441}	$b_1^+ K^0 \times B(b_1^+ \to \omega\pi^+)$	$(9.6 \pm 1.9) \times 10^{-6}$			DESIG=508
Γ_{442}	$K^*(892)^0 \rho^+$	$(9.2 \pm 1.5) \times 10^{-6}$			DESIG=405
Γ_{443}	$K_1(1400)^+ \rho^0$	$< 7.8 \times 10^{-4}$	CL=90%		DESIG=154
Γ_{444}	$K_2^*(1430)^+ \rho^0$	$< 1.5 \times 10^{-3}$	CL=90%		DESIG=155
Γ_{445}	$b_1^0 K^+ \times B(b_1^0 \to \omega\pi^0)$	$(9.1 \pm 2.0) \times 10^{-6}$			DESIG=491
Γ_{446}	$b_1^+ K^{*0} \times B(b_1^+ \to \omega\pi^+)$	$< 5.9 \times 10^{-6}$	CL=90%		DESIG=543
Γ_{447}	$b_1^0 K^{*+} \times B(b_1^0 \to \omega\pi^0)$	$< 6.7 \times 10^{-6}$	CL=90%		DESIG=544
Γ_{448}	$K^+ \overline{K}^0$	$(1.32 \pm 0.17) \times 10^{-6}$		S=1.2	DESIG=241
Γ_{449}	$\overline{K}^0 K^+ \pi^0$	$< 2.4 \times 10^{-5}$	CL=90%		DESIG=306
Γ_{450}	$K^+ K_S^0 K_S^0$	$(1.05 \pm 0.04) \times 10^{-5}$			DESIG=323
Γ_{451}	$f_0(980) K^+,\ f_0 \to K_S^0 K_S^0$	$(1.47 \pm 0.33) \times 10^{-5}$			DESIG=597
Γ_{452}	$f_0(1710) K^+,\ f_0 \to K_S^0 K_S^0$	$(4.8 {}^{+4.0}_{-2.6}) \times 10^{-7}$			DESIG=598
Γ_{453}	$K^+ K_S^0 K_S^0$ nonresonant	$(2.0 \pm 0.4) \times 10^{-5}$			DESIG=599
Γ_{454}	$K_S^0 K_S^0 \pi^+$	$< 5.1 \times 10^{-7}$	CL=90%		DESIG=324
Γ_{455}	$K^+ K^- \pi^+$	$(5.2 \pm 0.4) \times 10^{-6}$			DESIG=284
Γ_{456}	$K^+ K^- \pi^+$ nonresonant	$(1.68 \pm 0.26) \times 10^{-6}$			DESIG=230
Γ_{457}	$K^+ \overline{K}^*(892)^0$	$(5.9 \pm 0.8) \times 10^{-7}$			DESIG=263

Γ_{458}	$K^+ \overline{K}_0^*(1430)^0$	$(3.8 \pm 1.3) \times 10^{-7}$			DESIG=501
Γ_{459}	$\pi^+ (K^+ K^-)_{S-wave}$	$(8.5 \pm 0.9) \times 10^{-7}$			DESIG=737
Γ_{460}	$\pi^+ K^+ K^-$, $m_{K^+K^-} < 1.1$ GeV	$(5.4 \pm 0.5) \times 10^{-6}$			DESIG=784
Γ_{461}	$K^+ K^+ \pi^-$	$< 1.1 \times 10^{-8}$	CL=90%		DESIG=285
Γ_{462}	$K^+ K^+ \pi^-$ nonresonant	$< 8.79 \times 10^{-5}$	CL=90%		DESIG=262
Γ_{463}	$f_2'(1525) K^+$	$(1.8 \pm 0.5) \times 10^{-6}$		S=1.1	DESIG=430
Γ_{464}	$K^+ f_J(2220)$				DESIG=326
Γ_{465}	$K^{*+} \pi^+ K^-$	$< 1.18 \times 10^{-5}$	CL=90%		DESIG=453
Γ_{466}	$K^*(892)^+ K^*(892)^0$	$(9.1 \pm 2.9) \times 10^{-7}$			DESIG=277
Γ_{467}	$K^{*+} K^+ \pi^-$	$< 6.1 \times 10^{-6}$	CL=90%		DESIG=454
Γ_{468}	$K^+ K^- K^+$	$(3.40 \pm 0.14) \times 10^{-5}$		S=1.4	DESIG=160
Γ_{469}	$K^+ \phi$	$(8.8 {}^{+0.7}_{-0.6}) \times 10^{-6}$		S=1.1	DESIG=8
Γ_{470}	$f_0(980) K^+ \times$ B($f_0(980) \to K^+ K^-$)	$(9.4 \pm 3.2) \times 10^{-6}$			DESIG=428
Γ_{471}	$a_2(1320) K^+ \times$ B($a_2(1320) \to K^+ K^-$)	$< 1.1 \times 10^{-6}$	CL=90%		DESIG=429
Γ_{472}	$X_0(1550) K^+ \times$ B($X_0(1550) \to K^+ K^-$)	$(4.3 \pm 0.7) \times 10^{-6}$			DESIG=450
Γ_{473}	$\phi(1680) K^+ \times$ B($\phi(1680) \to K^+ K^-$)	$< 8 \times 10^{-7}$	CL=90%		DESIG=431
Γ_{474}	$f_0(1710) K^+ \times$ B($f_0(1710) \to K^+ K^-$)	$(1.1 \pm 0.6) \times 10^{-6}$			DESIG=449
Γ_{475}	$K^+ K^- K^+$ nonresonant	$(2.38 {}^{+0.28}_{-0.50}) \times 10^{-5}$			DESIG=231
Γ_{476}	$K^*(892)^+ K^+ K^-$	$(3.6 \pm 0.5) \times 10^{-5}$			DESIG=164
Γ_{477}	$K^*(892)^+ \phi$	$(10.0 \pm 2.0) \times 10^{-6}$		S=1.7	DESIG=156
Γ_{478}	$K^0 K^+ K^- \pi^+$	$(3.40 \pm 0.33) \times 10^{-4}$			DESIG=797
Γ_{479}	$J/\psi K^+$, $J/\psi \to K^0 K^- \pi^+$	$(5.4 \pm 1.2) \times 10^{-6}$			DESIG=800
Γ_{480}	$\chi_{c1} K^+$, $\chi_{c1} \to K^0 K^- \pi^+$	$(2.25 \pm 0.25) \times 10^{-6}$			DESIG=801
Γ_{481}	$\eta_c K^+$, $\eta_c \to K^0 K^- \pi^+$	$(2.83 \pm 0.30) \times 10^{-5}$			DESIG=803
Γ_{482}	$\eta_c(2S) K^+$, $\eta_c(2S) \to K^0 K^- \pi^+$	$(3.3 \pm 0.4) \times 10^{-6}$			DESIG=802
Γ_{483}	$K^0 K^+ K^+ \pi^-$	$(2.80 \pm 0.30) \times 10^{-4}$			DESIG=798
Γ_{484}	$J/\psi K^+$, $J/\psi \to K^0 K^+ \pi^-$	$(5.4 \pm 1.3) \times 10^{-6}$			DESIG=804
Γ_{485}	$\chi_{c1} K^+$, $\chi_{c1} \to K^0 K^+ \pi^-$	$(2.06 \pm 0.32) \times 10^{-6}$			DESIG=805
Γ_{486}	$\eta_c K^+$, $\eta_c \to K^0 K^+ \pi^-$	$(3.00 \pm 0.34) \times 10^{-5}$			DESIG=806
Γ_{487}	$\eta_c(2S) K^+$, $\eta_c(2S) \to K^0 K^+ \pi^-$	$(3.1 \pm 0.6) \times 10^{-6}$			DESIG=807
Γ_{488}	$\phi (K\pi)_0^{*+}$	$(8.3 \pm 1.6) \times 10^{-6}$			DESIG=518
Γ_{489}	$\phi K_1(1270)^+$	$(6.1 \pm 1.9) \times 10^{-6}$			DESIG=519
Γ_{490}	$\phi K_1(1400)^+$	$< 3.2 \times 10^{-6}$	CL=90%		DESIG=157
Γ_{491}	$\phi K^*(1410)^+$	$< 4.3 \times 10^{-6}$	CL=90%		DESIG=520
Γ_{492}	$\phi K_0^*(1430)^+$	$(7.0 \pm 1.6) \times 10^{-6}$			DESIG=521
Γ_{493}	$\phi K_2^*(1430)^+$	$(8.4 \pm 2.1) \times 10^{-6}$			DESIG=158
Γ_{494}	$\phi K_2^*(1770)^+$	$< 1.50 \times 10^{-5}$	CL=90%		DESIG=522
Γ_{495}	$\phi K_2^*(1820)^+$	$< 1.63 \times 10^{-5}$	CL=90%		DESIG=523
Γ_{496}	$a_1^+ K^{*0}$	$< 3.6 \times 10^{-6}$	CL=90%		DESIG=554
Γ_{497}	$K^+ \phi \phi$	$(4.2 \pm 0.8) \times 10^{-6}$		S=2.2	DESIG=325
Γ_{498}	$\eta' \eta' K^+$	$< 2.5 \times 10^{-5}$	CL=90%		DESIG=452
Γ_{499}	$\omega \phi K^+$	$< 1.9 \times 10^{-6}$	CL=90%		DESIG=540
Γ_{500}	$X(1812) K^+ \times$ B($X \to \omega \phi$)	$< 3.2 \times 10^{-7}$	CL=90%		DESIG=541
Γ_{501}	$K^*(892)^+ \gamma$	$(3.92 \pm 0.22) \times 10^{-5}$		S=1.7	DESIG=9
Γ_{502}	$K_1(1270)^+ \gamma$	$(4.4 {}^{+0.7}_{-0.6}) \times 10^{-5}$			DESIG=53
Γ_{503}	$\eta K^+ \gamma$	$(7.9 \pm 0.9) \times 10^{-6}$			DESIG=403
Γ_{504}	$\eta' K^+ \gamma$	$(2.9 {}^{+1.0}_{-0.9}) \times 10^{-6}$			DESIG=451
Γ_{505}	$\phi K^+ \gamma$	$(2.7 \pm 0.4) \times 10^{-6}$		S=1.2	DESIG=347
Γ_{506}	$K^+ \pi^- \pi^+ \gamma$	$(2.58 \pm 0.15) \times 10^{-5}$		S=1.3	DESIG=307

Γ_{507}	$K^*(892)^0\pi^+\gamma$	$(2.33 \pm 0.12) \times 10^{-5}$		DESIG=308
Γ_{508}	$K^+\rho^0\gamma$	$(8.2 \pm 0.9) \times 10^{-6}$		DESIG=309
Γ_{509}	$(K^+\pi^-)_{NR}\pi^+\gamma$	$(9.9 {}^{+1.7}_{-2.0}) \times 10^{-6}$		DESIG=310
Γ_{510}	$K^0\pi^+\pi^0\gamma$	$(4.6 \pm 0.5) \times 10^{-5}$		DESIG=474
Γ_{511}	$K_1(1400)^+\gamma$	$(10 {}^{+5}_{-4}) \times 10^{-6}$		DESIG=54
Γ_{512}	$K^*(1410)^+\gamma$	$(2.7 {}^{+0.8}_{-0.6}) \times 10^{-5}$		DESIG=686
Γ_{513}	$K_0^*(1430)^0\pi^+\gamma$	$(1.32 {}^{+0.26}_{-0.32}) \times 10^{-6}$		DESIG=685
Γ_{514}	$K_2^*(1430)^+\gamma$	$(1.4 \pm 0.4) \times 10^{-5}$		DESIG=55
Γ_{515}	$K^*(1680)^+\gamma$	$(6.7 {}^{+1.7}_{-1.4}) \times 10^{-5}$		DESIG=56
Γ_{516}	$K_3^*(1780)^+\gamma$	$< 3.9 \times 10^{-5}$	CL=90%	DESIG=57
Γ_{517}	$K_4^*(2045)^+\gamma$	$< 9.9 \times 10^{-3}$	CL=90%	DESIG=58

Light unflavored meson modes

NODE=S041;CLUMP=E

Γ_{518}	$\rho^+\gamma$	$(9.8 \pm 2.5) \times 10^{-7}$		DESIG=267
Γ_{519}	$\pi^+\pi^0$	$(5.31 \pm 0.26) \times 10^{-6}$		DESIG=16
Γ_{520}	$\pi^+\pi^+\pi^-$	$(1.52 \pm 0.14) \times 10^{-5}$		DESIG=63
Γ_{521}	$\rho^0\pi^+$	$(8.3 \pm 1.2) \times 10^{-6}$		DESIG=4
Γ_{522}	$\pi^+ f_0(980),\ f_0 \to \pi^+\pi^-$	$< 1.5 \times 10^{-6}$	CL=90%	DESIG=61
Γ_{523}	$\pi^+ f_2(1270)$	$(2.2 {}^{+0.7}_{-0.4}) \times 10^{-6}$		DESIG=62
Γ_{524}	$\rho(1450)^0\pi^+,\ \rho^0 \to \pi^+\pi^-$	$(1.4 {}^{+0.6}_{-0.9}) \times 10^{-6}$		DESIG=406
Γ_{525}	$\rho(1450)^0\pi^+,\ \rho^0 \to K^+K^-$	$(1.60 \pm 0.14) \times 10^{-6}$		DESIG=735
Γ_{526}	$f_0(1370)\pi^+,\ f_0 \to \pi^+\pi^-$	$< 4.0 \times 10^{-6}$	CL=90%	DESIG=407
Γ_{527}	$f_0(1370)\pi^+,\ f_0 \to \pi^0\pi^0$	$< 1.1 \times 10^{-6}$	CL=90%	DESIG=780
Γ_{528}	$f_0(500)\pi^+,\ f_0 \to \pi^+\pi^-$	$< 4.1 \times 10^{-6}$	CL=90%	DESIG=408
Γ_{529}	$\pi^+\pi^-\pi^+$ nonresonant	$(5.3 {}^{+1.5}_{-1.1}) \times 10^{-6}$		DESIG=228
Γ_{530}	$\pi^+\pi^0\pi^0$	$(1.90 \pm 0.21) \times 10^{-5}$		DESIG=73
Γ_{531}	$\rho^+\pi^0$	$(1.06 {}^{+0.12}_{-0.13}) \times 10^{-5}$		DESIG=74
Γ_{532}	$\rho(1450)^+\pi^0,\ \rho^+ \to \pi^+\pi^0$	$(1.2 \pm 0.6) \times 10^{-6}$		DESIG=779
Γ_{533}	$\pi^+\pi^0\pi^0$ nonresonant	$< 6 \times 10^{-7}$	CL=90%	DESIG=785
Γ_{534}	$X pi+, X \to \pi^0\pi^0$	$(6.9 \pm 1.1) \times 10^{-6}$		DESIG=786
Γ_{535}	$\pi^+\pi^-\pi^+\pi^0$	$< 4.0 \times 10^{-3}$	CL=90%	DESIG=75
Γ_{536}	$\rho^+\rho^0$	$(2.40 \pm 0.19) \times 10^{-5}$		DESIG=76
Γ_{537}	$\rho^+ f_0(980),\ f_0 \to \pi^+\pi^-$	$< 2.0 \times 10^{-6}$	CL=90%	DESIG=458
Γ_{538}	$a_1(1260)^+\pi^0$	$(2.6 \pm 0.7) \times 10^{-5}$		DESIG=77
Γ_{539}	$a_1(1260)^0\pi^+$	$(2.0 \pm 0.6) \times 10^{-5}$		DESIG=78
Γ_{540}	$\omega\pi^+$	$(6.9 \pm 0.5) \times 10^{-6}$		DESIG=79
Γ_{541}	$\omega\rho^+$	$(1.59 \pm 0.21) \times 10^{-5}$		DESIG=253
Γ_{542}	$\eta\pi^+$	$(4.02 \pm 0.27) \times 10^{-6}$		DESIG=80
Γ_{543}	$\eta\rho^+$	$(7.0 \pm 2.9) \times 10^{-6}$	S=2.8	DESIG=247
Γ_{544}	$\eta'\pi^+$	$(2.7 \pm 0.9) \times 10^{-6}$	S=1.9	DESIG=242
Γ_{545}	$\eta'\rho^+$	$(9.7 \pm 2.2) \times 10^{-6}$		DESIG=243
Γ_{546}	$\phi\pi^+$	$(3.2 \pm 1.5) \times 10^{-8}$		DESIG=254
Γ_{547}	$\phi\rho^+$	$< 3.0 \times 10^{-6}$	CL=90%	DESIG=255
Γ_{548}	$a_0(980)^0\pi^+,\ a_0^0 \to \eta\pi^0$	$< 5.8 \times 10^{-6}$	CL=90%	DESIG=376
Γ_{549}	$a_0(980)^+\pi^0,\ a_0^+ \to \eta\pi^+$	$< 1.4 \times 10^{-6}$	CL=90%	DESIG=488
Γ_{550}	$\pi^+\pi^+\pi^+\pi^-\pi^-$	$< 8.6 \times 10^{-4}$	CL=90%	DESIG=81
Γ_{551}	$\rho^0 a_1(1260)^+$	$< 6.2 \times 10^{-4}$	CL=90%	DESIG=17
Γ_{552}	$\rho^0 a_2(1320)^+$	$< 7.2 \times 10^{-4}$	CL=90%	DESIG=18
Γ_{553}	$b_1^0\pi^+,\ b_1^0 \to \omega\pi^0$	$(6.7 \pm 2.0) \times 10^{-6}$		DESIG=492
Γ_{554}	$b_1^+\pi^0,\ b_1^+ \to \omega\pi^+$	$< 3.3 \times 10^{-6}$	CL=90%	DESIG=509
Γ_{555}	$\pi^+\pi^+\pi^+\pi^-\pi^-\pi^0$	$< 6.3 \times 10^{-3}$	CL=90%	DESIG=83
Γ_{556}	$b_1^+\rho^0,\ b_1^+ \to \omega\pi^+$	$< 5.2 \times 10^{-6}$	CL=90%	DESIG=545
Γ_{557}	$a_1(1260)^+ a_1(1260)^0$	< 1.3 %	CL=90%	DESIG=84
Γ_{558}	$b_1^0\rho^+,\ b_1^0 \to \omega\pi^0$	$< 3.3 \times 10^{-6}$	CL=90%	DESIG=546

Charged particle ($h^{\pm}$) modes

NODE=S041;CLUMP=I

$h^{\pm} = K^{\pm}$ or $\pi^{\pm}$ NODE=S041

Γ_{559}	$h^+ \pi^0$		$(1.6 \, ^{+0.7}_{-0.6}) \times 10^{-5}$		DESIG=249
Γ_{560}	ωh^+		$(1.38 \, ^{+0.27}_{-0.24}) \times 10^{-5}$		DESIG=250
Γ_{561}	$h^+ X^0$ (Familon)		$< 4.9 \times 10^{-5}$	CL=90%	DESIG=278
Γ_{562}	$K^+ X^0$, $X^0 \to \mu^+ \mu^-$		$< 1 \times 10^{-7}$	CL=95%	DESIG=708

Baryon modes

NODE=S041;CLUMP=F

Γ_{563}	$p \overline{p} \pi^+$		$(1.62 \pm 0.20) \times 10^{-6}$		DESIG=21
Γ_{564}	$p \overline{p} \pi^+$ nonresonant		$< 5.3 \times 10^{-5}$	CL=90%	DESIG=232
Γ_{565}	$p \overline{p} \pi^+ \pi^0$		$(4.6 \pm 1.3) \times 10^{-6}$		DESIG=744
Γ_{566}	$p \overline{p} \pi^+ \pi^+ \pi^-$				DESIG=22
Γ_{567}	$p \overline{p} K^+$		$(5.9 \pm 0.5) \times 10^{-6}$	S=1.5	DESIG=313
Γ_{568}	$\Theta(1710)^{++} \overline{p}$, $\Theta^{++} \to p K^+$	[g]	$< 9.1 \times 10^{-8}$	CL=90%	DESIG=400
Γ_{569}	$f_J(2220) K^+$, $f_J \to p \overline{p}$	[g]	$< 4.1 \times 10^{-7}$	CL=90%	DESIG=401
Γ_{570}	$p \overline{n} \pi^0$		$< 6.3 \times 10^{-6}$	CL=90%	DESIG=808
Γ_{571}	$p \overline{\Lambda}(1520)$		$(3.1 \pm 0.6) \times 10^{-7}$		DESIG=397
Γ_{572}	$p \overline{p} K^+$ nonresonant		$< 8.9 \times 10^{-5}$	CL=90%	DESIG=233
Γ_{573}	$p \overline{p} K^*(892)^+$		$(3.6 \, ^{+0.8}_{-0.7}) \times 10^{-6}$		DESIG=353
Γ_{574}	$f_J(2220) K^{*+}$, $f_J \to p \overline{p}$		$< 7.7 \times 10^{-7}$	CL=90%	DESIG=497
Γ_{575}	$p \overline{\Lambda}$		$(2.4 \, ^{+1.0}_{-0.9}) \times 10^{-7}$		DESIG=23
Γ_{576}	$p \overline{\Lambda} \gamma$		$(2.4 \, ^{+0.5}_{-0.4}) \times 10^{-6}$		DESIG=45
Γ_{577}	$p \overline{\Lambda} \pi^0$		$(3.0 \, ^{+0.7}_{-0.6}) \times 10^{-6}$		DESIG=493
Γ_{578}	$p \overline{\Sigma}(1385)^0$		$< 4.7 \times 10^{-7}$	CL=90%	DESIG=494
Γ_{579}	$\Delta^+ \overline{\Lambda}$		$< 8.2 \times 10^{-7}$	CL=90%	DESIG=495
Γ_{580}	$p \overline{\Sigma} \gamma$		$< 4.6 \times 10^{-6}$	CL=90%	DESIG=46
Γ_{581}	$p \overline{\Lambda} \pi^+ \pi^-$		$(1.13 \pm 0.13) \times 10^{-5}$		DESIG=24
Γ_{582}	$p \overline{\Lambda} \pi^+ \pi^-$ nonresonant		$(5.9 \pm 1.1) \times 10^{-6}$		DESIG=723
Γ_{583}	$p \overline{\Lambda} \rho^0$, $\rho^0 \to \pi^+ \pi^-$		$(4.8 \pm 0.9) \times 10^{-6}$		DESIG=548
Γ_{584}	$p \overline{\Lambda} f_2(1270)$, $f_2 \to \pi^+ \pi^-$		$(2.0 \pm 0.8) \times 10^{-6}$		DESIG=549
Γ_{585}	$p \overline{\Lambda} K^+ K^-$		$(4.1 \pm 0.7) \times 10^{-6}$		DESIG=716
Γ_{586}	$p \overline{\Lambda} \phi$		$(8.0 \pm 2.2) \times 10^{-7}$		DESIG=718
Γ_{587}	$\overline{p} \Lambda K^+ K^-$		$(3.7 \pm 0.6) \times 10^{-6}$		DESIG=717
Γ_{588}	$\Lambda \overline{\Lambda} \pi^+$		$< 9.4 \times 10^{-7}$	CL=90%	DESIG=356
Γ_{589}	$\Lambda \overline{\Lambda} K^+$		$(3.4 \pm 0.6) \times 10^{-6}$		DESIG=357
Γ_{590}	$\Lambda \overline{\Lambda} K^{*+}$		$(2.2 \, ^{+1.2}_{-0.9}) \times 10^{-6}$		DESIG=539
Γ_{591}	$\Lambda(1520) \overline{\Lambda} K^+$		$(2.2 \pm 0.7) \times 10^{-6}$		DESIG=719
Γ_{592}	$\Lambda \overline{\Lambda}(1520) K^+$		$< 2.08 \times 10^{-6}$		DESIG=720
Γ_{593}	$\overline{\Delta}^0 p$		$< 1.38 \times 10^{-6}$	CL=90%	DESIG=64
Γ_{594}	$\Delta^{++} \overline{p}$		$< 1.4 \times 10^{-7}$	CL=90%	DESIG=65
Γ_{595}	$D^+ p \overline{p}$		$< 1.5 \times 10^{-5}$	CL=90%	DESIG=303
Γ_{596}	$D^*(2010)^+ p \overline{p}$		$< 1.5 \times 10^{-5}$	CL=90%	DESIG=304
Γ_{597}	$\overline{D}^0 p \overline{p} \pi^+$		$(3.72 \pm 0.27) \times 10^{-4}$		DESIG=607
Γ_{598}	$\overline{D}^{*0} p \overline{p} \pi^+$		$(3.73 \pm 0.32) \times 10^{-4}$		DESIG=608
Γ_{599}	$D^- p \overline{p} \pi^+ \pi^-$		$(1.66 \pm 0.30) \times 10^{-4}$		DESIG=609
Γ_{600}	$D^{*-} p \overline{p} \pi^+ \pi^-$		$(1.86 \pm 0.25) \times 10^{-4}$		DESIG=610
Γ_{601}	$p \overline{\Lambda}^0 \overline{D}^0$		$(1.43 \pm 0.32) \times 10^{-5}$		DESIG=577
Γ_{602}	$p \overline{\Lambda}^0 \overline{D}^*(2007)^0$		$< 5 \times 10^{-5}$	CL=90%	DESIG=578
Γ_{603}	$\overline{\Lambda}_c^- p \pi^+$		$(2.2 \pm 0.4) \times 10^{-4}$	S=2.5	DESIG=239
Γ_{604}	$\overline{\Lambda}_c^- p K^+$		$(8.9 \pm 1.6) \times 10^{-6}$		DESIG=817
Γ_{605}	$\overline{\Lambda}_c^- \Delta(1232)^{++}$		$< 1.9 \times 10^{-5}$	CL=90%	DESIG=469
Γ_{606}	$\overline{\Lambda}_c^- \Delta_X(1600)^{++}$		$(4.6 \pm 0.9) \times 10^{-5}$		DESIG=470
Γ_{607}	$\overline{\Lambda}_c^- \Delta_X(2420)^{++}$		$(3.7 \pm 0.8) \times 10^{-5}$		DESIG=471

	Mode			Fraction		DESIG
Γ_{608}	$(\overline{\Lambda}_c^- p)_s \pi^+$		[h]	$(3.1 \pm 0.7) \times 10^{-5}$		DESIG=472
Γ_{609}	$\overline{\Sigma}_c(2520)^0 p$			$< 3 \times 10^{-6}$	CL=90%	DESIG=312
Γ_{610}	$\overline{\Sigma}_c(2800)^0 p$			$(2.6 \pm 0.9) \times 10^{-5}$		DESIG=529
Γ_{611}	$\overline{\Lambda}_c^- p \pi^+ \pi^0$			$(1.8 \pm 0.6) \times 10^{-3}$		DESIG=236
Γ_{612}	$\overline{\Lambda}_c^- p \pi^+ \pi^+ \pi^-$			$(2.2 \pm 0.7) \times 10^{-3}$		DESIG=237
Γ_{613}	$\overline{\Lambda}_c^- p \pi^+ \pi^+ \pi^- \pi^0$			< 1.34 %	CL=90%	DESIG=238
Γ_{614}	$\Lambda_c^+ \Lambda_c^- K^+$			$(4.9 \pm 0.7) \times 10^{-4}$		DESIG=463
Γ_{615}	$\Xi_c(2930)\Lambda_c^+,\ \Xi_c \to K^+ \Lambda_c^-$			$(1.7 \pm 0.5) \times 10^{-4}$		DESIG=715
Γ_{616}	$\overline{\Sigma}_c(2455)^0 p$			$(2.9 \pm 0.6) \times 10^{-5}$		DESIG=311
Γ_{617}	$\overline{\Sigma}_c(2455)^0 p \pi^0$			$(3.5 \pm 1.1) \times 10^{-4}$		DESIG=67
Γ_{618}	$\overline{\Sigma}_c(2455)^0 p \pi^- \pi^+$			$(3.5 \pm 1.0) \times 10^{-4}$		DESIG=298
Γ_{619}	$\overline{\Sigma}_c(2455)^{--} p \pi^+ \pi^+$			$(2.34 \pm 0.18) \times 10^{-4}$		DESIG=299
Γ_{620}	$\overline{\Lambda}_c(2593)^- / \overline{\Lambda}_c(2625)^- p \pi^+$			$< 1.9 \times 10^{-4}$	CL=90%	DESIG=66
Γ_{621}	$\overline{\Xi}_c^0 \Lambda_c^+$			$(9.5 \pm 2.3) \times 10^{-4}$		DESIG=721
Γ_{622}	$\Xi_c^0 \Lambda_c^+$			$< 2.6 \times 10^{-5}$	CL=95%	DESIG=815
Γ_{623}	$\overline{\Xi}_c^0 \Lambda_c^+,\ \overline{\Xi}_c^0 \to \overline{\Xi}^+ \pi^-$			$(1.76 \pm 0.29) \times 10^{-5}$		DESIG=465
Γ_{624}	$\overline{\Xi}_c^0 \Lambda_c^+,\ \overline{\Xi}_c^0 \to \overline{\Lambda} K^+ \pi^-$			$(1.14 \pm 0.26) \times 10^{-5}$		DESIG=466
Γ_{625}	$\overline{\Xi}_c^0 \Lambda_c^+,\ \overline{\Xi}_c^0 \to \overline{p} K^- K^- \pi^+$			$(5.5 \pm 1.9) \times 10^{-6}$		DESIG=722
Γ_{626}	$\Lambda_c^+ \overline{\Xi}_c'^0$			$< 6.5 \times 10^{-4}$	CL=90%	DESIG=732
Γ_{627}	$\Lambda_c^+ \overline{\Xi}_c(2645)^0$			$< 7.9 \times 10^{-4}$	CL=90%	DESIG=733
Γ_{628}	$\Lambda_c^+ \overline{\Xi}_c(2790)^0$			$(1.1 \pm 0.4) \times 10^{-3}$		DESIG=734
Γ_{629}	$p \psi_{DS}$					DESIG=809

Lepton Family number (*LF*) or Lepton number (*L*) or Baryon number (*B*) violating modes, or/and $\Delta B = 1$ weak neutral current (*B1*) modes

NODE=S041;CLUMP=G

	Mode			Fraction		DESIG
Γ_{630}	$\pi^+ \ell^+ \ell^-$	B1	[a]	$< 4.9 \times 10^{-8}$	CL=90%	DESIG=475
Γ_{631}	$\pi^+ e^+ e^-$	B1		$< 5.4 \times 10^{-8}$	CL=90%	DESIG=85
Γ_{632}	$\pi^+ \mu^+ \mu^-$	B1		$(1.78 \pm 0.23) \times 10^{-8}$		DESIG=88
Γ_{633}	$\rho(770)^+ e^+ e^-$	B1		$< 4.67 \times 10^{-7}$	CL=90%	DESIG=818
Γ_{634}	$\rho(770)^+ \mu^+ \mu^-$	B1		$< 3.81 \times 10^{-7}$	CL=90%	DESIG=819
Γ_{635}	$\rho(770)^+ \ell^+ \ell^-$	B1		$< 1.89 \times 10^{-7}$	CL=90%	DESIG=820
Γ_{636}	$\pi^+ \nu \overline{\nu}$	B1		$< 1.4 \times 10^{-5}$	CL=90%	DESIG=404
Γ_{637}	$K^+ \ell^+ \ell^-$	B1	[a]	$(4.7 \pm 0.5) \times 10^{-7}$	S=2.3	DESIG=345
Γ_{638}	$K^+ e^+ e^-$	B1		$(5.6 \pm 0.6) \times 10^{-7}$		DESIG=11
Γ_{639}	$K^+ \mu^+ \mu^-$	B1		$(4.53 \pm 0.35) \times 10^{-7}$	S=1.8	DESIG=10
Γ_{640}	$K^+ \mu^+ \mu^-$ nonresonant	B1		$(4.37 \pm 0.27) \times 10^{-7}$		DESIG=704
Γ_{641}	$K^+ \tau^+ \tau^-$	B1		$< 2.25 \times 10^{-3}$	CL=90%	DESIG=690
Γ_{642}	$K^+ \overline{\nu} \nu$	B1		$(2.3 \pm 0.7) \times 10^{-5}$		DESIG=273
Γ_{643}	$\rho^+ \nu \overline{\nu}$	B1		$< 3.0 \times 10^{-5}$	CL=90%	DESIG=489
Γ_{644}	$K^*(892)^+ \ell^+ \ell^-$	B1	[a]	$(1.01 \pm 0.11) \times 10^{-6}$	S=1.1	DESIG=346
Γ_{645}	$K^*(892)^+ e^+ e^-$	B1		$(1.55 {}^{+0.40}_{-0.31}) \times 10^{-6}$		DESIG=161
Γ_{646}	$K^*(892)^+ \mu^+ \mu^-$	B1		$(9.6 \pm 1.0) \times 10^{-7}$		DESIG=162
Γ_{647}	$K^*(892)^+ \nu \overline{\nu}$	B1		$< 4.0 \times 10^{-5}$	CL=90%	DESIG=490
Γ_{648}	$K^+ \pi^+ \pi^- \mu^+ \mu^-$	B1		$(4.3 \pm 0.4) \times 10^{-7}$		DESIG=632
Γ_{649}	$D_s^+ \mu^+ \mu^-$	B1		$< 2.4 \times 10^{-8}$	CL=90%	DESIG=816
Γ_{650}	$\phi K^+ \mu^+ \mu^-$	B1		$(7.9 {}^{+2.1}_{-1.7}) \times 10^{-8}$		DESIG=633
Γ_{651}	$\overline{\Lambda} p \nu \overline{\nu}$	B1		$< 3.0 \times 10^{-5}$	CL=90%	DESIG=736
Γ_{652}	$\pi^+ e^+ \mu^-$	LF		$< 6.4 \times 10^{-3}$	CL=90%	DESIG=86
Γ_{653}	$\pi^+ e^- \mu^+$	LF		$< 6.4 \times 10^{-3}$	CL=90%	DESIG=87
Γ_{654}	$\pi^+ e^\pm \mu^\mp$	LF		$< 1.7 \times 10^{-7}$	CL=90%	DESIG=476
Γ_{655}	$\pi^+ e^+ \tau^-$	LF		$< 7.4 \times 10^{-5}$	CL=90%	DESIG=586
Γ_{656}	$\pi^+ e^- \tau^+$	LF		$< 2.0 \times 10^{-5}$	CL=90%	DESIG=587
Γ_{657}	$\pi^+ e^\pm \tau^\mp$	LF		$< 7.5 \times 10^{-5}$	CL=90%	DESIG=588
Γ_{658}	$\pi^+ \mu^+ \tau^-$	LF		$< 6.2 \times 10^{-5}$	CL=90%	DESIG=589
Γ_{659}	$\pi^+ \mu^- \tau^+$	LF		$< 4.5 \times 10^{-5}$	CL=90%	DESIG=590
Γ_{660}	$\pi^+ \mu^\pm \tau^\mp$	LF		$< 7.2 \times 10^{-5}$	CL=90%	DESIG=591
Γ_{661}	$K^+ e^+ \mu^-$	LF		$< 7.0 \times 10^{-9}$	CL=90%	DESIG=89

Γ_{662}	$K^+ e^- \mu^+$	LF	$<$	6.4	$\times 10^{-9}$ CL=90%	DESIG=90
Γ_{663}	$K^+ e^\pm \mu^\mp$	LF	$<$	9.1	$\times 10^{-8}$ CL=90%	DESIG=446
Γ_{664}	$K^+ e^+ \tau^-$	LF	$<$	1.53	$\times 10^{-5}$ CL=90%	DESIG=592
Γ_{665}	$K^+ e^- \tau^+$	LF	$<$	1.5	$\times 10^{-5}$ CL=90%	DESIG=593
Γ_{666}	$K^+ e^\pm \tau^\mp$	LF	$<$	3.0	$\times 10^{-5}$ CL=90%	DESIG=594
Γ_{667}	$K^+ \mu^+ \tau^-$	LF	$<$	2.45	$\times 10^{-5}$ CL=90%	DESIG=595
Γ_{668}	$K^+ \mu^- \tau^+$	LF	$<$	5.9	$\times 10^{-6}$ CL=90%	DESIG=596
Γ_{669}	$K^+ \mu^\pm \tau^\mp$	LF	$<$	4.8	$\times 10^{-5}$ CL=90%	DESIG=486
Γ_{670}	$K^*(892)^+ e^+ \mu^-$	LF	$<$	1.3	$\times 10^{-6}$ CL=90%	DESIG=447
Γ_{671}	$K^*(892)^+ e^- \mu^+$	LF	$<$	9.9	$\times 10^{-7}$ CL=90%	DESIG=448
Γ_{672}	$K^*(892)^+ e^\pm \mu^\mp$	LF	$<$	1.4	$\times 10^{-6}$ CL=90%	DESIG=296
Γ_{673}	$\pi^- e^+ e^+$	L	$<$	2.3	$\times 10^{-8}$ CL=90%	DESIG=91
Γ_{674}	$\pi^- \mu^+ \mu^+$	L	$<$	4.0	$\times 10^{-9}$ CL=95%	DESIG=93
Γ_{675}	$\pi^- e^+ \mu^+$	L	$<$	1.5	$\times 10^{-7}$ CL=90%	DESIG=92
Γ_{676}	$\rho^- e^+ e^+$	L	$<$	1.7	$\times 10^{-7}$ CL=90%	DESIG=291
Γ_{677}	$\rho^- \mu^+ \mu^+$	L	$<$	4.2	$\times 10^{-7}$ CL=90%	DESIG=295
Γ_{678}	$\rho^- e^+ \mu^+$	L	$<$	4.7	$\times 10^{-7}$ CL=90%	DESIG=294
Γ_{679}	$K^- e^+ e^+$	L	$<$	3.0	$\times 10^{-8}$ CL=90%	DESIG=94
Γ_{680}	$K^- \mu^+ \mu^+$	L	$<$	4.1	$\times 10^{-8}$ CL=90%	DESIG=96
Γ_{681}	$K^- e^+ \mu^+$	L	$<$	1.6	$\times 10^{-7}$ CL=90%	DESIG=95
Γ_{682}	$K^*(892)^- e^+ e^+$	L	$<$	4.0	$\times 10^{-7}$ CL=90%	DESIG=290
Γ_{683}	$K^*(892)^- \mu^+ \mu^+$	L	$<$	5.9	$\times 10^{-7}$ CL=90%	DESIG=292
Γ_{684}	$K^*(892)^- e^+ \mu^+$	L	$<$	3.0	$\times 10^{-7}$ CL=90%	DESIG=293
Γ_{685}	$D^- e^+ e^+$	L	$<$	2.6	$\times 10^{-6}$ CL=90%	DESIG=572
Γ_{686}	$D^- e^+ \mu^+$	L	$<$	1.8	$\times 10^{-6}$ CL=90%	DESIG=573
Γ_{687}	$D^- \mu^+ \mu^+$	L	$<$	6.9	$\times 10^{-7}$ CL=95%	DESIG=574
Γ_{688}	$D^{*-} \mu^+ \mu^+$	L	$<$	2.4	$\times 10^{-6}$ CL=95%	DESIG=604
Γ_{689}	$D_s^- \mu^+ \mu^+$	L	$<$	5.8	$\times 10^{-7}$ CL=95%	DESIG=605
Γ_{690}	$\overline{D}^0 \pi^- \mu^+ \mu^+$	L	$<$	1.5	$\times 10^{-6}$ CL=95%	DESIG=606
Γ_{691}	$\Lambda^0 \mu^+$	L,B	$<$	6	$\times 10^{-8}$ CL=90%	DESIG=567
Γ_{692}	$\Lambda^0 e^+$	L,B	$<$	3.2	$\times 10^{-8}$ CL=90%	DESIG=568
Γ_{693}	$\overline{\Lambda}^0 \mu^+$	L,B	$<$	6	$\times 10^{-8}$ CL=90%	DESIG=569
Γ_{694}	$\overline{\Lambda}^0 e^+$	L,B	$<$	8	$\times 10^{-8}$ CL=90%	DESIG=570

[a] An ℓ indicates an e or a μ mode, not a sum over these modes. LINKAGE=DX

[b] An $CP(\pm1)$ indicates the CP=+1 and CP=−1 eigenstates of the D^0-$\overline{D}^0$ system. LINKAGE=CPE

[c] D denotes D^0 or $\overline{D}^0$. LINKAGE=DD

[d] D^{*0}_{CP+} decays into $D^0 \pi^0$ with the D^0 reconstructed in CP-even eigenstates $K^+ K^-$ and $\pi^+ \pi^-$. LINKAGE=CPD

[e] $\overline{D}^{**}$ represents an excited state with mass $2.2 < \mathrm{M} < 2.8$ GeV/c^2. LINKAGE=DSZ

[f] $\chi_{c1}(3872)^+$ is a hypothetical charged partner of the $\chi_{c1}(3872)$. LINKAGE=RX

[g] $\Theta(1710)^{++}$ is a possible narrow pentaquark state and $G(2220)$ is a possible glueball resonance. LINKAGE=PG

[h] $(\overline{\Lambda}_c^- p)_s$ denotes a low-mass enhancement near 3.35 GeV/c^2. LINKAGE=LP

FIT INFORMATION

An overall fit to 21 branching ratios uses 66 measurements to determine 13 parameters. The overall fit has a $\chi^2 = 68.7$ for 53 degrees of freedom.

The following *off-diagonal* array elements are the correlation coefficients $\left\langle\delta x_i \delta x_j\right\rangle/(\delta x_i \cdot \delta x_j)$, in percent, from the fit to the branching fractions, $x_i \equiv \Gamma_i/\Gamma_{\text{total}}$.

	x_{10}	x_{13}	x_{57}	x_{114}	x_{156}	x_{311}	x_{316}	x_{334}	x_{347}	x_{387}
x_{13}	33									
x_{57}	0	0								
x_{114}	0	0	5							
x_{156}	0	0	1	14						
x_{311}	0	0	0	0	0					
x_{316}	0	0	0	0	0	0				
x_{334}	0	0	0	0	0	86	0			
x_{347}	0	0	0	0	0	38	0	33		
x_{387}	0	0	0	0	0	0	0	0	0	
x_{448}	0	0	0	0	0	0	0	0	0	8
x_{639}	0	0	0	0	0	14	0	12	5	0
x_{646}	0	0	0	0	0	0	5	0	0	0

	x_{448}	x_{639}
x_{639}	0	
x_{646}	0	0

FIT INFORMATION

A multiparticle fit to $\eta_c(1S)$, $J/\psi(1S)$, $\psi(2S)$, $h_c(1P)$, and $B^{\pm}$ with the total width, 10 combinations of partial widths obtained from integrated cross section, and 38 branching ratios uses 113 measurements to determine 19 parameters. The overall fit has a $\chi^2 = 184.6$ for 94 degrees of freedom.

B^+ BRANCHING RATIOS

NODE=S041215

$\Gamma(\ell^+ \nu_\ell X)/\Gamma_{\text{total}}$ Γ_1/Γ

NODE=S041S95
NODE=S041S95

VALUE (units 10^{-2})	*DOCUMENT ID*		*TECN*	*COMMENT*
10.99±0.28 OUR EVALUATION	(Produced by HFLAV)			
10.76±0.32 OUR AVERAGE	Error includes scale factor of 1.1.			
11.17±0.25±0.28	[1] URQUIJO	07	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
10.28±0.26±0.39	[2] AUBERT,B	06Y	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
10.25±0.57±0.65	[3] ARTUSO	97	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
11.15±0.26±0.41	[4] OKABE	05	BELL	Repl. by URQUIJO 07
10.1 ±1.8 ±1.5	ATHANAS	94	CLE2	Sup. by ARTUSO 97

→ UNCHECKED ←

[1] URQUIJO 07 report a measurement of $(10.34 \pm 023 \pm 0.25)\%$ for the partial branching fraction of $B^+ \rightarrow e^+ \nu_e X_c$ decay with electron energy above 0.6 GeV. We converted the result to $B^+ \rightarrow e^+ \nu_e X$ branching fraction. NODE=S041S95;LINKAGE=UR

[2] The measurements are obtained for charged and neutral B mesons partial rates of semileptonic decay to electrons with momentum above 0.6 GeV/c in the B rest frame. The best precision on the ratio is achieved for a momentum threshold of 1.0 GeV: B($B^+ \rightarrow e^+ \nu_e X$) / B($B^0 \rightarrow e^+ \nu_e X$) = $1.074 \pm 0.041 \pm 0.026$. NODE=S041S95;LINKAGE=AE

[3] ARTUSO 97 uses partial reconstruction of $B \rightarrow D^* \ell \nu_\ell$ and inclusive semileptonic branching ratio from BARISH 96B ($0.1049 \pm 0.0017 \pm 0.0043$). NODE=S041S95;LINKAGE=B

[4] The measurements are obtained for charged and neutral B mesons partial rates of semileptonic decay to electrons with momentum above 0.6 GeV/c in the B rest frame, and their ratio of B($B^+ \rightarrow e^+ \nu_e X$)/B($B^0 \rightarrow e^+ \nu_e X$) = $1.08 \pm 0.05 \pm 0.02$. NODE=S041S95;LINKAGE=OK

$\Gamma(e^+\nu_e X_c)/\Gamma_{total}$ Γ_2/Γ

NODE=S041S00
NODE=S041S00

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
10.79±0.25±0.27	[1] URQUIJO	07	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Measure the independent B^+ and B^0 partial branching fractions with electron threshold energies of 0.4 GeV. NODE=S041S00;LINKAGE=UR

$\Gamma(\ell^+\nu_\ell X_u)/\Gamma_{total}$ Γ_5/Γ

NODE=S041A53

Requires E^*_ℓ > 1 GeV, where E^*_ℓ is letpon energy in B rest frame.

NODE=S041A53
NODE=S041A53

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
1.65±0.10±0.18	[1] CAO	21A	BELL	$e^+e^- \to \Upsilon(4S)$

[1] The correlation of 50% with B($B^0 \to \ell^+\nu_\ell X_u$)(letpon energy in B rest frame E^*_ℓ > 1 GeV) was reported. NODE=S041A53;LINKAGE=A

$\Gamma(\overline{D}^0\ell^+\nu_\ell)/\Gamma_{total}$ Γ_7/Γ

NODE=S041R68

$\ell = e$ or μ, not sum over e and μ modes.

NODE=S041R68
NODE=S041R68

VALUE (%)	DOCUMENT ID		TECN	COMMENT
2.21±0.06 OUR EVALUATION	(Produced by HFLAV)			
2.29±0.08 OUR AVERAGE				
2.29±0.08±0.09	[1] AUBERT	10	BABR	$e^+e^- \to \Upsilon(4S)$
2.34±0.03±0.13	AUBERT	09A	BABR	$e^+e^- \to \Upsilon(4S)$
2.21±0.13±0.19	[2] BARTELT	99	CLE2	$e^+e^- \to \Upsilon(4S)$
1.6 ±0.6 ±0.3	[3] FULTON	91	CLEO	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2.33±0.09±0.09	[1] AUBERT	08Q	BABR	Repl. by AUBERT 09A
1.94±0.15±0.34	[4] ATHANAS	97	CLE2	Repl. by BARTELT 99

→ UNCHECKED ←

[1] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S041R68;LINKAGE=BE
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R68;LINKAGE=L9
[3] FULTON 91 assumes equal production of $B^0\overline{B}^0$ and B^+B^- at the $\Upsilon(4S)$. NODE=S041R68;LINKAGE=B
[4] ATHANAS 97 uses missing energy and missing momentum to reconstruct neutrino. NODE=S041R68;LINKAGE=C

$\Gamma(\overline{D}^0\ell^+\nu_\ell)/\Gamma(\ell^+\nu_\ell X)$ Γ_7/Γ_1

NODE=S041C62
NODE=S041C62

VALUE	DOCUMENT ID		TECN	COMMENT
0.255±0.009±0.009	[1] AUBERT	10	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses a fully reconstructed B meson on the recoil side. NODE=S041C62;LINKAGE=AU

$\Gamma(\overline{D}^0\ell^+\nu_\ell)/\Gamma(D\ell^+\nu_\ell X)$ Γ_7/Γ_6

NODE=S041B04
NODE=S041B04

VALUE	DOCUMENT ID		TECN	COMMENT
0.230±0.020 OUR AVERAGE				
0.25 ±0.06	[1] AAIJ	19AC	LHCB	pp at 7 and 8 TeV
0.227±0.014±0.016	[2] AUBERT	07AN	BABR	$e^+e^- \to \Upsilon(4S)$

[1] The relative branching fractions of $B^- \to D^0, D^{*0}, D^{**0}$ in the $B^- \to D^0 X \mu^- \overline{\nu}$ channel are determined by fitting the distribution of the missing mass in $\overline{B}^{*0}_{s2} \to B^- K^+$ decays. NODE=S041B04;LINKAGE=A
[2] Uses a fully reconstructed B meson on the recoil side. NODE=S041B04;LINKAGE=AU

$\Gamma(\tau^+\nu_\tau X)/\Gamma(\ell^+\nu_\ell X)$ Γ_8/Γ_1

NODE=S041D23
NODE=S041D23

VALUE	DOCUMENT ID		TECN	COMMENT
0.228±0.016±0.036	[1] ADACHI	24B	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Measures the lepton in a primary decay of the signal B meson, while tagging the partner B in fully reconstructed hadronic decay modes. NODE=S041D23;LINKAGE=A

$\Gamma(\tau^+\nu_\tau X)/\Gamma(e^+\nu_e X)$ Γ_8/Γ_3

NODE=S041D24
NODE=S041D24

VALUE	DOCUMENT ID		TECN	COMMENT
0.232±0.020±0.037	[1] ADACHI	24B	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Measures the lepton in a primary decay of the signal B meson, while tagging the partner B in fully reconstructed hadronic decay modes. NODE=S041D24;LINKAGE=A

$\Gamma(\tau^+\nu_\tau X)/\Gamma(\mu^+\nu_\mu X)$ Γ_8/Γ_4

NODE=S041D25
NODE=S041D25

VALUE	DOCUMENT ID		TECN	COMMENT
0.222±0.027±0.050	[1] ADACHI	24B	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Measures the lepton in a primary decay of the signal B meson, while tagging the partner B in fully reconstructed hadronic decay modes. NODE=S041D25;LINKAGE=A

$\Gamma(\overline{D}^0 \tau^+ \nu_\tau)/\Gamma_{total}$ — Γ_9/Γ

NODE=S041C01

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
0.77±0.22±0.12	[1] BOZEK	10	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.67±0.37±0.13	[2] AUBERT	08N	BABR	Repl. by AUBERT 09S

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C01;LINKAGE=EP

[2] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S041C01;LINKAGE=AU

$\Gamma(\overline{D}^0 \tau^+ \nu_\tau)/\Gamma(\overline{D}^0 \ell^+ \nu_\ell)$ — Γ_9/Γ_7

NODE=S041C52

VALUE	DOCUMENT ID		TECN	COMMENT
0.44 ±0.07 OUR AVERAGE				
0.441±0.060±0.066	[1] AAIJ	23AR	LHCB	pp at 7 and 8 TeV
0.429±0.082±0.052	[2,3] LEES	12D	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.314±0.170±0.049	[2] AUBERT	09S	BABR	Repl. by LEES 12D

[1] Uses $\tau^+ \to \mu^+ \nu_\mu \overline{\nu}_\tau$ and μ^+ as ℓ^+. NODE=S041C52;LINKAGE=A

[2] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S041C52;LINKAGE=AU

[3] Uses $\tau^+ \to e^+ \nu_e \overline{\nu}_\tau$ and $\tau^+ \to \mu^+ \nu_\mu \overline{\nu}_\tau$ and e^+ or μ^+ as ℓ^+. NODE=S041C52;LINKAGE=LE

$\Gamma(\overline{D}^*(2007)^0 \ell^+ \nu_\ell)/\Gamma_{total}$ — Γ_{10}/Γ

NODE=S041R69

$\ell = e$ or μ, not sum over e and μ modes.

NODE=S041R69

→ UNCHECKED ←

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
5.53±0.22 OUR EVALUATION		(Produced by HFLAV)			
5.60±0.26 OUR FIT		Error includes scale factor of 1.5.			
5.58±0.26 OUR AVERAGE		Error includes scale factor of 1.5. See the ideogram below.			
5.40±0.02±0.21		AUBERT	09A	BABR	$e^+ e^- \to \Upsilon(4S)$
5.56±0.08±0.41		[1] AUBERT	08AT	BABR	$e^+ e^- \to \Upsilon(4S)$
6.50±0.20±0.43		[2] ADAM	03	CLE2	$e^+ e^- \to \Upsilon(4S)$
6.6 ±1.6 ±1.5		[3] ALBRECHT	92C	ARG	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
5.83±0.15±0.30		[4] AUBERT	08Q	BABR	Repl. by AUBERT 09A
6.50±0.20±0.43		[5] BRIERE	02	CLE2	$e^+ e^- \to \Upsilon(4S)$
5.13±0.54±0.64	302	[6] BARISH	95	CLE2	Repl. by ADAM 03
seen	398	[7] SANGHERA	93	CLE2	$e^+ e^- \to \Upsilon(4S)$
4.1 ±0.8 $^{+0.8}_{-0.9}$		[8] FULTON	91	CLEO	$e^+ e^- \to \Upsilon(4S)$
7.0 ±1.8 ±1.4		[9] ANTREASYAN	90B	CBAL	$e^+ e^- \to \Upsilon(4S)$

[1] Measured using the dependence of $B^- \to D^{*0} e^- \overline{\nu}_e$ decay differential rate and the form factor description by CAPRINI 98. NODE=S041R69;LINKAGE=ER

[2] Simultaneous measurements of both $B^0 \to D^*(2010)^- \ell \nu$ and $B^+ \to \overline{D}(2007)^0 \ell \nu$. NODE=S041R69;LINKAGE=DM

[3] ALBRECHT 92C reports 0.058±0.014±0.013. We rescale using the method described in STONE 94 but with the updated PDG 94 B($D^0 \to K^- \pi^+$). Assumes equal production of $B^0 \overline{B}^0$ and $B^+ B^-$ at the $\Upsilon(4S)$. NODE=S041R69;LINKAGE=C

[4] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S041R69;LINKAGE=BE

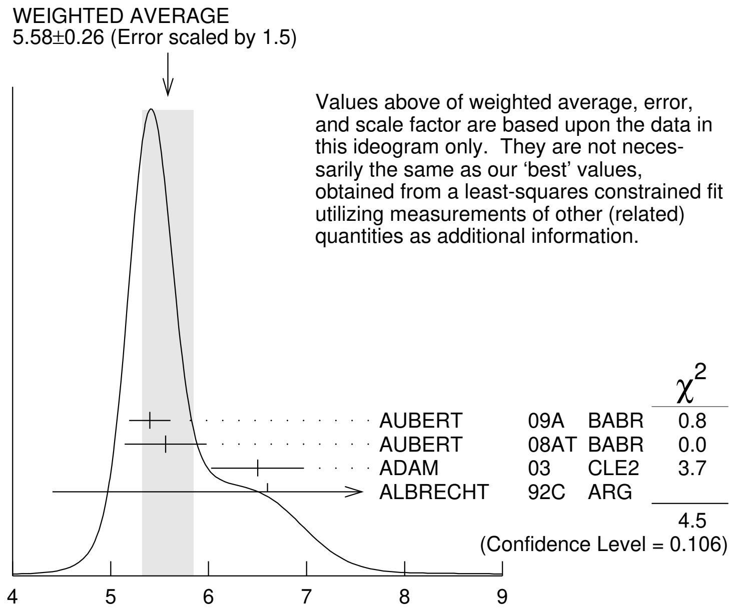
[5] The results are based on the same analysis and data sample reported in ADAM 03. NODE=S041R69;LINKAGE=R6

[6] BARISH 95 use B($D^0 \to K^- \pi^+$) = (3.91 ± 0.08 ± 0.17)% and B($D^{*0} \to D^0 \pi^0$) = (63.6 ± 2.3 ± 3.3)%. NODE=S041R69;LINKAGE=B1

[7] Combining $\overline{D}^{*0} \ell^+ \nu_\ell$ and $\overline{D}^{*-} \ell^+ \nu_\ell$ SANGHERA 93 test $V-A$ structure and fit the decay angular distributions to obtain $A_{FB} = 3/4*(\Gamma^- - \Gamma^+)/\Gamma = 0.14 \pm 0.06 \pm 0.03$. Assuming a value of V_{cb}, they measure V, A_1, and A_2, the three form factors for the $D^* \ell \nu_\ell$ decay, where results are slightly dependent on model assumptions. NODE=S041R69;LINKAGE=A

[8] Assumes equal production of $B^0 \overline{B}^0$ and $B^+ B^-$ at the $\Upsilon(4S)$. Uncorrected for D and D^* branching ratio assumptions. NODE=S041R69;LINKAGE=B

[9] ANTREASYAN 90B is average over B and $\overline{D}^*(2010)$ charge states. NODE=S041R69;LINKAGE=62



$\Gamma\left(\overline{D}^*(2007)^0 \ell^+ \nu_\ell\right)/\Gamma_{total}$ Γ_{10}/Γ

$\Gamma\left(\overline{D}^*(2007)^0 \ell^+ \nu_\ell\right)/\Gamma\left(D \ell^+ \nu_\ell X\right)$ Γ_{10}/Γ_6

NODE=S041B05
NODE=S041B05

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
0.582±0.018±0.030	[1] AUBERT	07AN	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Uses a fully reconstructed B meson on the recoil side.

NODE=S041B05;LINKAGE=AU

$\Gamma\left(\overline{D}^*(2007)^0 e^+ \nu_e\right)/\Gamma\left(\overline{D}^*(2007)^0 \mu^+ \nu_\mu\right)$ Γ_{11}/Γ_{12}

NODE=S041A86
NODE=S041A86

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
0.976±0.029±0.023	PRIM	23	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$

$\Gamma\left(\overline{D}^*(2007)^0 \tau^+ \nu_\tau\right)/\Gamma_{total}$ Γ_{13}/Γ

NODE=S041C02
NODE=S041C02

VALUE (units 10^{-2})	*DOCUMENT ID*		*TECN*	*COMMENT*
1.88±0.20 OUR FIT				
$\mathbf{2.12^{+0.28}_{-0.27}\pm0.29}$	[1] BOZEK	10	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2.25±0.48±0.28	[2] AUBERT	08N	BABR	Repl. by AUBERT 09S

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C02;LINKAGE=EP

[2] Uses a fully reconstructed B meson as a tag on the recoil side.

NODE=S041C02;LINKAGE=AU

$\Gamma\left(\overline{D}^*(2007)^0 \tau^+ \nu_\tau\right)/\Gamma\left(\overline{D}^*(2007)^0 \ell^+ \nu_\ell\right)$ Γ_{13}/Γ_{10}

NODE=S041C53
NODE=S041C53

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
0.335±0.034 OUR FIT				
0.322±0.032±0.022	[1,2] LEES	12D	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.346±0.073±0.034	[1] AUBERT	09S	BABR	Repl. by LEES 12D

[1] Uses a fully reconstructed B meson as a tag on the recoil side.

NODE=S041C53;LINKAGE=AU

[2] Uses $\tau^+ \rightarrow e^+ \nu_e \overline{\nu}_\tau$ and $\tau^+ \rightarrow \mu^+ \nu_\mu \overline{\nu}_\tau$ and e^+ or μ^+ as ℓ^+.

NODE=S041C53;LINKAGE=LE

$\Gamma\left(D^{(*)} n\pi \ell^+ \nu_\ell (n \geq 1)\right)/\Gamma\left(D \ell^+ \nu_\ell X\right)$ Γ_{14}/Γ_6

NODE=S041B06
NODE=S041B06

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
0.193±0.022 OUR AVERAGE				
0.21 ±0.07	[1,2] AAIJ	19AC	LHCB	pp at 7 and 8 TeV
0.191±0.013±0.019	[3] AUBERT	07AN	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] The relative branching fractions of $B^- \rightarrow D^0$, D^{*0}, D^{**0} in the $B^- \rightarrow D^0 X \mu^- \overline{\nu}$ channel are determined by fitting the distribution of the missing mass in $\overline{B}^{*0}_{s2} \rightarrow B^- K^+$ decays.

NODE=S041B06;LINKAGE=A

[2] In this measurement of $f_{D^{**0}} = B(B^- \rightarrow (D^{**0} \rightarrow D^0 X)\mu^- \overline{\nu})/B(B^- \rightarrow D^0 X \mu^- \overline{\nu})$, D^{**0} refers collectively to L = 1 states $D^*_0(2400)$, $D_1(2420)$, $D_1(2430)$, and $D^*_2(2460)$, as well as other resonances such as radially excited D mesons, and to nonresonant contributions with additional pions.

NODE=S041B06;LINKAGE=B

[3] Uses a fully reconstructed B meson on the recoil side.

NODE=S041B06;LINKAGE=AU

$\Gamma(D^-\pi^+\ell^+\nu_\ell)/\Gamma_{total}$ Γ_{15}/Γ

NODE=S041Q54

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
3.82±0.20 OUR AVERAGE				
3.78±0.13±0.17	MEIER	23	BELL	$e^+e^- \to \Upsilon(4S)$
4.2 ±0.6 ±0.3	[1] AUBERT	08Q	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
4.55±0.27±0.39	VOSSEN	18	BELL	Repl. by MEIER 23
4.1 ±0.6 ±0.1	[1,2] LIVENTSEV	08	BELL	Repl. by VOSSEN 18
5.3 ±0.9 ±0.1	[3] LIVENTSEV	05	BELL	Repl. by LIVENTSEV 08

[1] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S041Q54;LINKAGE=BE

[2] LIVENTSEV 08 reports $(4.0 \pm 0.4 \pm 0.6) \times 10^{-3}$ from a measurement of $[\Gamma(B^+ \to D^-\pi^+\ell^+\nu_\ell)/\Gamma_{total}]$ / $[B(B^+ \to \overline{D}^0\ell^+\nu_\ell)]$ assuming $B(B^+ \to \overline{D}^0\ell^+\nu_\ell) = (2.15 \pm 0.22) \times 10^{-2}$, which we rescale to our best value $B(B^+ \to \overline{D}^0\ell^+\nu_\ell) = (2.21 \pm 0.06) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041Q54;LINKAGE=LV

[3] LIVENTSEV 05 reports $[\Gamma(B^+ \to D^-\pi^+\ell^+\nu_\ell)/\Gamma_{total}]$ / $[B(B^0 \to D^-\ell^+\nu_\ell)]$ $= 0.25 \pm 0.03 \pm 0.03$ which we multiply by our best value $B(B^0 \to D^-\ell^+\nu_\ell) = (2.12 \pm 0.06) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041Q54;LINKAGE=LI

$\Gamma(\overline{D}_2^*(2460)^0\ell^+\nu_\ell,\ \overline{D}_2^{*0} \to D^-\pi^+)/\Gamma_{total}$ Γ_{16}/Γ

NODE=S041C07

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
1.59±0.10 OUR AVERAGE				
1.63±0.11±0.07	MEIER	23	BELL	$e^+e^- \to \Upsilon(4S)$
1.42±0.15±0.15	[1] AUBERT	09Y	BABR	$e^+e^- \to \Upsilon(4S)$
1.5 ±0.2 ±0.2	[2] AUBERT	08BL	BABR	$e^+e^- \to \Upsilon(4S)$
2.2 ±0.3 ±0.4	[2] LIVENTSEV	08	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Uses a simultaneous fit of all B semileptonic decays without full reconstruction of events. AUBERT 09Y reports $B(B^+ \to \overline{D}_2^*(2460)^0\ell^+\nu_\ell) \cdot B(\overline{D}_2^*(2460)^0 \to D^{(*)-}\pi^+) = (2.29 \pm 0.23 \pm 0.21) \times 10^{-3}$ and the authors have provided us the individual measurement. NODE=S041C07;LINKAGE=AU

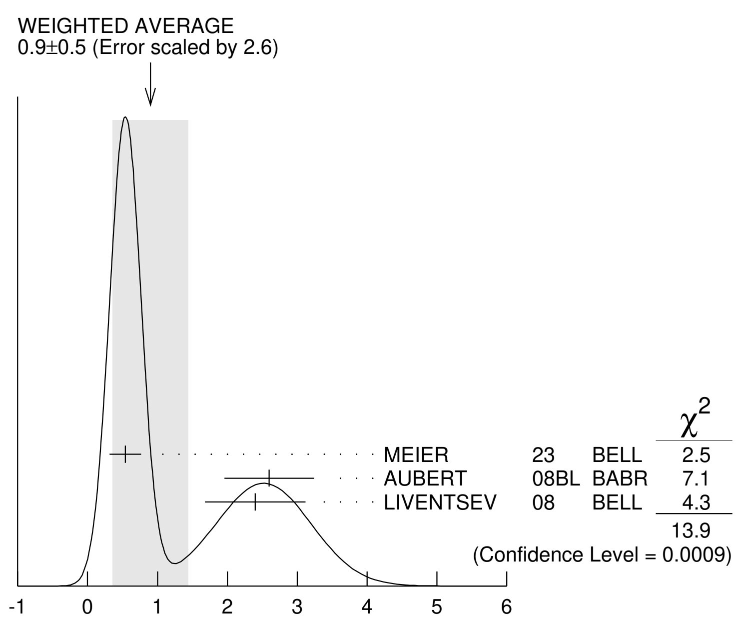
[2] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S041C07;LINKAGE=BE

$\Gamma(\overline{D}_0^*(2420)^0\ell^+\nu_\ell,\ \overline{D}_0^{*0} \to D^-\pi^+)/\Gamma_{total}$ Γ_{17}/Γ

NODE=S041C06

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
0.9 ±0.5 OUR AVERAGE	Error includes scale factor of 2.6. See the ideogram below.			
0.54±0.22±0.05	MEIER	23	BELL	$e^+e^- \to \Upsilon(4S)$
2.6 ±0.5 ±0.4	[1] AUBERT	08BL	BABR	$e^+e^- \to \Upsilon(4S)$
2.4 ±0.4 ±0.6	[1] LIVENTSEV	08	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S041C06;LINKAGE=BE



$\Gamma(\overline{D}_0^*(2420)^0\ell^+\nu_\ell,\ \overline{D}_0^{*0} \to D^-\pi^+)/\Gamma_{total}$ (units 10^{-3})

$\Gamma(D^{*-}\pi^+\ell^+\nu_\ell)/\Gamma_{total}$ — Γ_{18}/Γ

NODE=S041Q55
NODE=S041Q55

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
5.42±0.28 OUR AVERAGE				
5.30±0.19±0.25	MEIER	23	BELL	$e^+e^- \to \Upsilon(4S)$
5.9 ±0.5 ±0.4	[1] AUBERT	08Q	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
6.03±0.43±0.38	VOSSEN	18	BELL	Repl. by MEIER 23
6.6 ±1.0 ±0.2	[1,2] LIVENTSEV	08	BELL	Repl. by VOSSEN 18
5.9 ±1.4 ±0.1	[3,4] LIVENTSEV	05	BELL	Repl. by LIVENTSEV 08

[1] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S041Q55;LINKAGE=BE

[2] LIVENTSEV 08 reports $(6.4 \pm 0.8 \pm 0.9) \times 10^{-3}$ from a measurement of $[\Gamma(B^+ \to D^{*-}\pi^+\ell^+\nu_\ell)/\Gamma_{total}]$ / $[B(B^+ \to \overline{D}^0\ell^+\nu_\ell)]$ assuming $B(B^+ \to \overline{D}^0\ell^+\nu_\ell) = (2.15 \pm 0.22) \times 10^{-2}$, which we rescale to our best value $B(B^+ \to \overline{D}^0\ell^+\nu_\ell) = (2.21 \pm 0.06) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041Q55;LINKAGE=LV

[3] Excludes D^{*+} contribution to $D\pi$ modes. NODE=S041Q55;LINKAGE=EC

[4] LIVENTSEV 05 reports $[\Gamma(B^+ \to D^{*-}\pi^+\ell^+\nu_\ell)/\Gamma_{total}]$ / $[B(B^0 \to D^*(2010)^-\ell^+\nu_\ell)] = 0.12 \pm 0.02 \pm 0.02$ which we multiply by our best value $B(B^0 \to D^*(2010)^-\ell^+\nu_\ell) = (4.90 \pm 0.12) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041Q55;LINKAGE=LI

$\Gamma(\overline{D}_1(2420)^0\ell^+\nu_\ell,\ \overline{D}_1^0 \to D^{*-}\pi^+)/\Gamma_{total}$ — Γ_{19}/Γ

NODE=S041B32
NODE=S041B32

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
2.84±0.17 OUR AVERAGE Error includes scale factor of 1.1.				
2.49±0.23±0.14	MEIER	23	BELL	$e^+e^- \to \Upsilon(4S)$
2.97±0.17±0.17	[1] AUBERT	09Y	BABR	$e^+e^- \to \Upsilon(4S)$
2.9 ±0.3 ±0.3	[2] AUBERT	08BL	BABR	$e^+e^- \to \Upsilon(4S)$
4.2 ±0.7 ±0.7	[2] LIVENTSEV	08	BELL	$e^+e^- \to \Upsilon(4S)$
3.73±0.85±0.57	[3] ANASTASSOV	98	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Uses a simultaneous measurement of all B semileptonic decays without full reconstruction of events. NODE=S041B32;LINKAGE=AU

[2] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S041B32;LINKAGE=BE

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B32;LINKAGE=EP

$\Gamma(\overline{D}'_1(2430)^0\ell^+\nu_\ell,\ \overline{D}'^0_1 \to D^{*-}\pi^+)/\Gamma_{total}$ — Γ_{20}/Γ

NODE=S041C05
NODE=S041C05

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
1.7 ±0.6 OUR AVERAGE Error includes scale factor of 1.8.					
1.38±0.36±0.08		MEIER	23	BELL	$e^+e^- \to \Upsilon(4S)$
2.7 ±0.4 ±0.5		[1] AUBERT	08BL	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.7	90	[1] LIVENTSEV	08	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S041C05;LINKAGE=BE

$\Gamma(\overline{D}_2^*(2460)^0\ell^+\nu_\ell,\ \overline{D}_2^{*0} \to D^{*-}\pi^+)/\Gamma_{total}$ — Γ_{21}/Γ

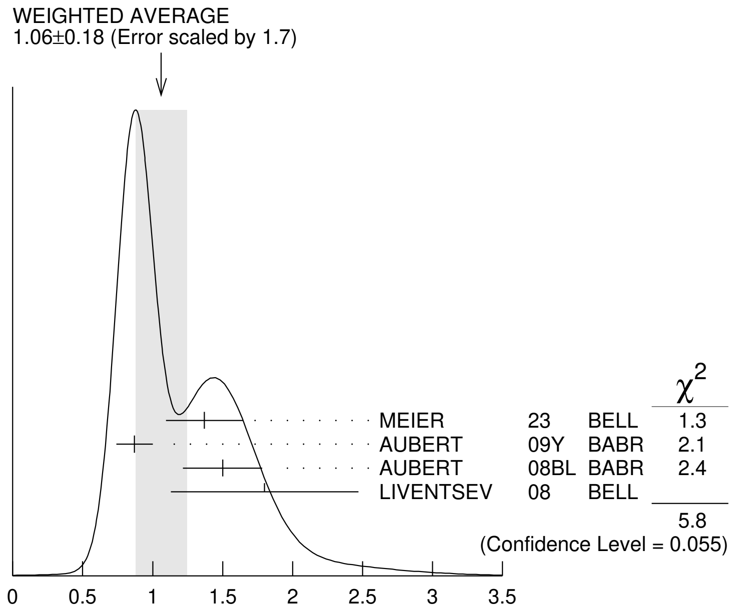
NODE=S041B33
NODE=S041B33

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
1.06±0.18 OUR AVERAGE Error includes scale factor of 1.7. See the ideogram below.					
1.37±0.26±0.09		MEIER	23	BELL	$e^+e^- \to \Upsilon(4S)$
0.87±0.11±0.07		[1] AUBERT	09Y	BABR	$e^+e^- \to \Upsilon(4S)$
1.5 ±0.2 ±0.2		[2] AUBERT	08BL	BABR	$e^+e^- \to \Upsilon(4S)$
1.8 ±0.6 ±0.3		[2] LIVENTSEV	08	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<1.6	90	[3] ANASTASSOV	98	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Uses a simultaneous fit of all B semileptonic decays without full reconstruction of events. AUBERT 09Y reports $B(B^+ \to \overline{D}_2^*(2460)^0\ell^+\nu_\ell) \cdot B(\overline{D}_2^*(2460)^0 \to D^{(*)-}\pi^+) = (2.29\pm0.23\pm0.21)\times10^{-3}$ and the authors have provided us the individual measurement. NODE=S041B33;LINKAGE=AU

[2] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S041B33;LINKAGE=BE

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B33;LINKAGE=EP



$\Gamma\left(\overline{D}_2^*(2460)^0 \ell^+ \nu_\ell,\ \overline{D}_2^{*0} \to D^{*-}\pi^+\right)/\Gamma_{total}$ (units 10^{-3})

$\Gamma\left(\overline{D}^0 \pi^+ \pi^- \ell^+ \nu_\ell\right)/\Gamma_{total}$ Γ_{22}/Γ

NODE=S041A78
NODE=S041A78

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
1.73±0.14±0.13	MEIER	23	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma\left(\overline{D}^0 \pi^+ \pi^- \ell^+ \nu_\ell\right)/\Gamma\left(\overline{D}^0 \ell^+ \nu_\ell\right)$ Γ_{22}/Γ_7

NODE=S041C91
NODE=S041C91

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
7.1±1.3±0.8	[1] LEES	16	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Measurement used electrons and muons as leptons.

NODE=S041C91;LINKAGE=A

$\Gamma\left(\overline{D}_1(2420)^0 \ell^+ \nu_\ell,\ \overline{D}_1^0 \to \overline{D}^0 \pi^+ \pi^-\right)/\Gamma_{total}$ Γ_{23}/Γ

NODE=S041A80
NODE=S041A80

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
1.05±0.11±0.08	MEIER	23	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma\left(\overline{D}^{*0} \pi^+ \pi^- \ell^+ \nu_\ell\right)/\Gamma\left(\overline{D}^*(2007)^0 \ell^+ \nu_\ell\right)$ Γ_{24}/Γ_{10}

NODE=S041C92
NODE=S041C92

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
1.4±0.7±0.4	[1] LEES	16	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Measurement used electrons and muons as leptons.

NODE=S041C92;LINKAGE=A

$\Gamma\left(\overline{D}^{*0} \pi^+ \pi^- \ell^+ \nu_\ell\right)/\Gamma_{total}$ Γ_{24}/Γ

NODE=S041A79
NODE=S041A79

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
7.0±1.5±0.8	MEIER	23	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma\left(D_s^{(*)-} K^+ \ell^+ \nu_\ell\right)/\Gamma_{total}$ Γ_{25}/Γ

NODE=S041C78
NODE=S041C78

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
6.1 ±1.0 OUR AVERAGE				
5.9 ±1.2 ±1.5	[1] STYPULA	12	BELL	$e^+e^- \to \Upsilon(4S)$
$6.13^{+1.04}_{-1.03}\pm0.67$	[1] DEL-AMO-SA...	11L	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C78;LINKAGE=EP

$\Gamma\left(D_s^- K^+ \ell^+ \nu_\ell\right)/\Gamma_{total}$ Γ_{26}/Γ

NODE=S041T92
NODE=S041T92

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
$\mathbf{3.0\pm0.9^{+1.1}_{-0.8}}$	[1] STYPULA	12	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T92;LINKAGE=EP

$\Gamma(D_s^{*-} K^+ \ell^+ \nu_\ell)/\Gamma_{total}$ — Γ_{27}/Γ

NODE=S041T70

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
$2.9\pm1.6^{+1.1}_{-1.0}$	[1,2] STYPULA 12	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T70;LINKAGE=EP

[2] STYPULA 12 provides also an upper limit of 0.56×10^{-3} at 90% CL for the same data. Also measures branching fraction of the combined modes of $D_s^- K^+ \ell^+ \nu_\ell$ and $D_s^{*-} K^+ \ell^+ \nu_\ell$ as $B(B^+ \to D_s^{(*)-} K^+ \ell^+ \nu_\ell) = (5.9 \pm 1.2 \pm 1.5) \times 10^{-4}$. NODE=S041T70;LINKAGE=ST

$\Gamma(\pi^0 \ell^+ \nu_\ell)/\Gamma_{total}$ — Γ_{28}/Γ

NODE=S041Q53

→ UNCHECKED ←

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
0.780±0.027 OUR EVALUATION	(Produced by HFLAV)		
0.748±0.029 OUR AVERAGE			
0.80 ±0.08 ±0.04	[1] SIBIDANOV 13	BELL	$e^+e^- \to \Upsilon(4S)$
0.77 ±0.04 ±0.03	[2] LEES 12AA	BABR	$e^+e^- \to \Upsilon(4S)$
0.705±0.025±0.035	[3] DEL-AMO-SA...11C	BABR	$e^+e^- \to \Upsilon(4S)$
0.82 ±0.09 ±0.05	[3] AUBERT 08AV	BABR	$e^+e^- \to \Upsilon(4S)$
0.77 ±0.14 ±0.08	[4] HOKUUE 07	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.74 ±0.05 ±0.10	[5] AUBERT,B 05O	BABR	Repl. by DEL-AMO-SANCHEZ 11C

[1] The signal events are tagged by a second B meson reconstructed in the fully hadronic decays. NODE=S041Q53;LINKAGE=A

[2] Uses loose neutrino reconstruction technique. Assumes $B(Y(4S) \to B^+B^-) = (51.6 \pm 0.6)\%$ and $B(Y(4S) \to B^0\overline{B}^0) = (48.4 \pm 0.6)\%$. NODE=S041Q53;LINKAGE=LE

[3] Using the isospin symmetry relation, B^+ and B^0 branching fractions are combined. NODE=S041Q53;LINKAGE=AB

[4] The signal events are tagged by a second B meson reconstructed in the semileptonic mode $B \to D^{(*)} \ell \nu_\ell$. NODE=S041Q53;LINKAGE=HO

[5] B^+ and B^0 decays combined assuming isospin symmetry. Systematic errors include both experimental and form-factor uncertainties. NODE=S041Q53;LINKAGE=IS

$\Gamma(\pi^0 e^+ \nu_e)/\Gamma_{total}$ — Γ_{29}/Γ

NODE=S041R70

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.9±0.2±0.2		[1] ALEXANDER 96T	CLE2	$e^+e^- \to \Upsilon(4S)$
<22	90	ANTREASYAN 90B	CBAL	$e^+e^- \to \Upsilon(4S)$

[1] Derived based in the reported B^0 result by assuming isospin symmetry: $\Gamma(B^0 \to \pi^- \ell^+ \nu) = 2\Gamma(B^+ \to \pi^0 \ell^+ \nu)$. NODE=S041R70;LINKAGE=2N

$\Gamma(\eta \ell^+ \nu_\ell)/\Gamma_{total}$ — Γ_{30}/Γ

NODE=S041T10

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
0.35 ±0.04 OUR AVERAGE				
0.283±0.055±0.034		[1] GEBAUER 22	BELL	$e^+e^- \to \Upsilon(4S)$
0.42 ±0.11 ±0.03		[2] BELENO 17	BELL	$e^+e^- \to \Upsilon(4S)$
0.38 ±0.05 ±0.05		[3] LEES 12AA	BABR	$e^+e^- \to \Upsilon(4S)$
0.31 ±0.06 ±0.08		[3] AUBERT 09Q	BABR	$e^+e^- \to \Upsilon(4S)$
0.64 ±0.20 ±0.03		[4] AUBERT 08AV	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.36 ±0.05 ±0.04		[3] DEL-AMO-SA...11F	BABR	Repl. by LEES 12AA
<1.01	90	[5] ADAM 07	CLE2	$e^+e^- \to \Upsilon(4S)$
0.84 ±0.31 ±0.18		[6] ATHAR 03	CLE2	Repl. by ADAM 07

[1] Assumes $B(\Upsilon(4S) \to B^+B^-) = (51.3 \pm 0.6)\%$. NODE=S041T10;LINKAGE=B

[2] Uses missing-mass technique by fully reconstructing the hadronic decay chain of the accompanying B. NODE=S041T10;LINKAGE=A

[3] Uses loose neutrino reconstruction technique. Assumes $B(\Upsilon(4S) \to B^+B^-) = (51.6 \pm 0.6)\%$ and $B(\Upsilon(4S) \to B^0\overline{B}^0) = (48.4 \pm 0.6)\%$. NODE=S041T10;LINKAGE=AU

[4] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T10;LINKAGE=EP

[5] The B^0 and B^+ results are combined assuming the isospin, B lifetimes, and relative charged/neutral B production at the $\Upsilon(4S)$. NODE=S041T10;LINKAGE=AD

[6] ATHAR 03 reports systematic errors 0.16 ± 0.09, which are experimental systematic and systematic due to model dependence. We combine these in quadrature. NODE=S041T10;LINKAGE=AT

$\Gamma(\eta' \ell^+ \nu_\ell)/\Gamma_{total}$ Γ_{31}/Γ

NODE=S041Q88
NODE=S041Q88

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
0.24 ±0.07 OUR AVERAGE					
0.279±0.129±0.030		[1] GEBAUER	22	BELL	$e^+e^- \to \Upsilon(4S)$
0.24 ±0.08 ±0.03		[2] LEES	12AA	BABR	$e^+e^- \to \Upsilon(4S)$
0.04 ±0.22 $^{+0.05}_{-0.02}$		[3] AUBERT	08AV	BABR	$e^+e^- \to \Upsilon(4S)$
2.66 ±0.80 ±0.56		[4] ADAM	07	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.72	90	[5] BELENO	17	BELL	$e^+e^- \to \Upsilon(4S)$
0.24 ±0.08 ±0.03		[2] DEL-AMO-SA...	11F	BABR	Repl. by LEES 12AA

[1] Assumes B($\Upsilon(4S) \to B^+B^-$) = (51.3 ± 0.6)%. NODE=S041Q88;LINKAGE=B

[2] Uses loose neutrino reconstruction technique. Assumes B($Y(4S) \to B^+B^-$) = (51.6 ± 0.6)% and B($Y(4S) \to B^0\overline{B}^0$) = (48.4 ± 0.6)%. NODE=S041Q88;LINKAGE=DE

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q88;LINKAGE=EP

[4] The B^0 and B^+ results are combined assuming the isospin, B lifetimes, and relative charged/neutral B production at the $\Upsilon(4S)$. Corresponds to 90% CL interval (1.20–4.46) × 10^{-4}. NODE=S041Q88;LINKAGE=AD

[5] Uses missing-mass technique by fully reconstructing the hadronic decay chain of the accompanying B. NODE=S041Q88;LINKAGE=A

$\Gamma(\omega \ell^+ \nu_\ell)/\Gamma_{total}$ Γ_{32}/Γ

NODE=S041S47

$\ell = e$ or μ, not sum over e and μ modes.

NODE=S041S47
NODE=S041S47

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
1.19±0.09 OUR AVERAGE					
1.21±0.14±0.08		[1,2] LEES	13A	BABR	$e^+e^- \to \Upsilon(4S)$
1.35±0.21±0.11		[3] LEES	13T	BABR	$e^+e^- \to \Upsilon(4S)$
1.07±0.16±0.07		[4] SIBIDANOV	13	BELL	$e^+e^- \to \Upsilon(4S)$
1.19±0.16±0.09		[2,5] LEES	12AA	BABR	$e^+e^- \to \Upsilon(4S)$
1.3 ±0.4 ±0.4		[6] SCHWANDA	04	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.14±0.16±0.08		[2] AUBERT	09Q	BABR	Repl. by LEES 13A
<2.1	90	[7] BEAN	93B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] LEES 13A reports (1.21 ± 0.14 ± 0.08) × 10^{-4} from a measurement of [$\Gamma(B^+ \to \omega \ell^+ \nu_\ell)/\Gamma_{total}$] × [B($\omega(782) \to \pi^+\pi^-\pi^0$)] assuming B($\omega(782) \to \pi^+\pi^-\pi^0$) = (89.2 ± 0.7) × 10^{-2}. NODE=S041S47;LINKAGE=LS

[2] Uses B($\Upsilon(4S) \to B^+B^-$) = (51.6 ± 0.6)% and B($\Upsilon(4S) \to B^0\overline{B}^0$) = (48.4 ± 0.6)%. NODE=S041S47;LINKAGE=NE

[3] Uses semileptonic tagging. Assumes B($\omega \to \pi^+\pi^-\pi^0$) = (89.2 ± 0.7)% and that the production ratio of B^+B^- to $B^0\overline{B}^0$ from $\Upsilon(4S)$ is 1.056 ± 0.028. The partial branching fractions in three bins of q^2 are also reported. NODE=S041S47;LINKAGE=JP

[4] The signal events are tagged by a second B meson reconstructed in the fully hadronic decays. NODE=S041S47;LINKAGE=B

[5] Uses loose neutrino reconstruction technique. NODE=S041S47;LINKAGE=LE

[6] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041S47;LINKAGE=EP

[7] BEAN 93B limit set using ISGW Model. Using isospin and the quark model to combine $\Gamma(\rho^0 \ell^+ \nu_\ell)$ and $\Gamma(\rho^- \ell^+ \nu_\ell)$ with this result, they obtain a limit <(1.6–2.7) × 10^{-4} at 90% CL for $B^+ \to \omega \ell^+ \nu_\ell$. The range corresponds to the ISGW, WSB, and KS models. An upper limit on $|V_{ub}/V_{cb}|$ < 0.8–0.13 at 90% CL is derived as well. NODE=S041S47;LINKAGE=A

$\Gamma(\omega \mu^+ \nu_\mu)/\Gamma_{total}$ Γ_{33}/Γ

NODE=S041R79
NODE=S041R79

VALUE	DOCUMENT ID		TECN
• • • We do not use the following data for averages, fits, limits, etc. • • •			
seen	[1] ALBRECHT	91C	ARG

[1] In ALBRECHT 91C, one event is fully reconstructed providing evidence for the $b \to u$ transition. NODE=S041R79;LINKAGE=A

$\Gamma(\rho^0 \ell^+ \nu_\ell)/\Gamma_{total}$ Γ_{34}/Γ

NODE=S041S48

$\ell = e$ or μ, not sum over e and μ modes.

NODE=S041S48
NODE=S041S48

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
1.58±0.11 OUR EVALUATION		(Produced by HFLAV)			
1.42±0.23 OUR AVERAGE		Error includes scale factor of 2.4. See the ideogram below.			
1.83±0.10±0.10		[1] SIBIDANOV	13	BELL	$e^+e^- \to \Upsilon(4S)$
0.94±0.08±0.14		[2] DEL-AMO-SA...	11C	BABR	$e^+e^- \to \Upsilon(4S)$
1.33±0.23±0.18		[3] HOKUUE	07	BELL	$e^+e^- \to \Upsilon(4S)$
1.34±0.15$^{+0.28}_{-0.32}$		[4] BEHRENS	00	CLE2	$e^+e^- \to \Upsilon(4S)$

→ UNCHECKED ←

• • • We do not use the following data for averages, fits, limits, etc. • • •

$1.16 \pm 0.11 \pm 0.30$		[2] AUBERT,B	05O	BABR	Repl. by DEL-AMO-SANCHEZ 11C	
$1.40 \pm 0.21 {}^{+0.32}_{-0.33}$		[4] BEHRENS	00	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$	OCCUR=2
$1.2 \pm 0.2 {}^{+0.3}_{-0.4}$		[4] ALEXANDER	96T	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$	
<2.1	90	[5] BEAN	93B	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$	

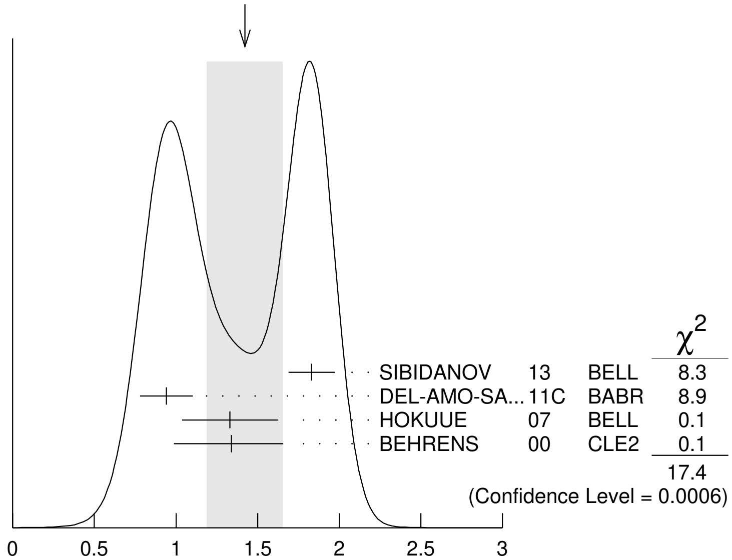
[1] The signal events are tagged by a second B meson reconstructed in the fully hadronic decays. NODE=S041S48;LINKAGE=B

[2] B^+ and B^0 decays combined assuming isospin symmetry. Systematic errors include both experimental and form-factor uncertainties. NODE=S041S48;LINKAGE=IS

[3] The signal events are tagged by a second B meson reconstructed in the semileptonic mode $B \rightarrow D^{(*)} \ell \nu_\ell$. NODE=S041S48;LINKAGE=HO

[4] Derived based in the reported B^0 result by assuming isospin symmetry: $\Gamma(B^0 \rightarrow \rho^- \ell^+ \nu) = 2\Gamma(B^+ \rightarrow \rho^0 \ell^+ \nu) \approx 2\Gamma(B^+ \rightarrow \omega \ell^+ \nu)$. NODE=S041S48;LINKAGE=2N

[5] BEAN 93B limit set using ISGW Model. Using isospin and the quark model to combine $\Gamma(\omega^0 \ell^+ \nu_\ell)$ and $\Gamma(\rho^- \ell^+ \nu_\ell)$ with this result, they obtain a limit $<(1.6\text{–}2.7) \times 10^{-4}$ at 90% CL for $B^+ \rightarrow \rho^0 \ell^+ \nu_\ell$. The range corresponds to the ISGW, WSB, and KS models. An upper limit on $|V_{ub}/V_{cb}| < 0.8\text{–}0.13$ at 90% CL is derived as well. NODE=S041S48;LINKAGE=A



$\Gamma\left(\rho^0 \ell^+ \nu_\ell\right)/\Gamma_{total}$ (units 10^{-4})

$\Gamma(\pi^+ \pi^- \ell^+ \nu_\ell)/\Gamma_{total}$ Γ_{35}/Γ

NODE=S041A38
NODE=S041A38

VALUE (units 10^{-5})	*DOCUMENT ID*		*TECN*	*COMMENT*
$\mathbf{22.7^{+1.9}_{-1.6} \pm 3.5}$	BELENO	21	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$

$\Gamma(p \overline{p} \ell^+ \nu_\ell)/\Gamma_{total}$ Γ_{36}/Γ

NODE=S041C82
NODE=S041C82

VALUE (units 10^{-6})	*DOCUMENT ID*		*TECN*	*COMMENT*
$\mathbf{5.8^{+2.4}_{-2.1} \pm 0.9}$	[1] TIEN	14	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C82;LINKAGE=EP

$\Gamma(p \overline{p} \mu^+ \nu_\mu)/\Gamma_{total}$ Γ_{37}/Γ

NODE=S041C83
NODE=S041C83

VALUE (units 10^{-6})	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<8.5	90	[1] TIEN	14	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C83;LINKAGE=EP

$\Gamma(p\overline{p}\mu^+\nu_\mu)/\Gamma(J/\psi(1S)K^+)$ — Γ_{37}/Γ_{311}

NODE=S041P88
NODE=S041P88

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
5.22±0.31±0.03	[1] AAIJ	20K	LHCB	pp at 7, 8 and 13 TeV

[1] AAIJ 20K reports $[\Gamma(B^+ \to p\overline{p}\mu^+\nu_\mu)/\Gamma(B^+ \to J/\psi(1S)K^+)]$ / $[B(J/\psi(1S) \to \mu^+\mu^-)]$ = $(8.75 \pm 0.39 \pm 0.35) \times 10^{-2}$ which we multiply by our best value $B(J/\psi(1S) \to \mu^+\mu^-) = (5.961 \pm 0.033) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041P88;LINKAGE=A

$\Gamma(p\overline{p}e^+\nu_e)/\Gamma_{total}$ — Γ_{38}/Γ

NODE=S041C2
NODE=S041C2

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$8.2^{+3.7}_{-3.2}\pm0.6$		[1] TIEN	14	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<5200	90	[2] ADAM	03B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C2;LINKAGE=EP

[2] Based on phase-space model; if $V-A$ model is used, the 90% CL upper limit becomes $< 1.2 \times 10^{-3}$. NODE=S041C2;LINKAGE=VA

$\Gamma(e^+\nu_e)/\Gamma_{total}$ — Γ_{39}/Γ

NODE=S041S55
NODE=S041S55

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
< 0.98	90	[1] SATOYAMA	07	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 3.5	90	[2] YOOK	15	BELL	$e^+e^- \to \Upsilon(4S)$
< 8	90	[1] AUBERT	10E	BABR	$e^+e^- \to \Upsilon(4S)$
< 1.9	90	[1] AUBERT	09V	BABR	$e^+e^- \to \Upsilon(4S)$
< 5.2	90	[1] AUBERT	08AD	BABR	$e^+e^- \to \Upsilon(4S)$
<15	90	ARTUSO	95	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041S55;LINKAGE=EP

[2] Assumes $B(\Upsilon(4S) \to B^+B^-) = 0.513 \pm 0.006$. NODE=S041S55;LINKAGE=A

$\Gamma(\mu^+\nu_\mu)/\Gamma_{total}$ — Γ_{40}/Γ

NODE=S041S56
NODE=S041S56

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
< 0.86	90	[1] PRIM	20	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.29 to 1.07	90	[2] SIBIDANOV	18	BELL	$e^+e^- \to \Upsilon(4S)$
< 2.7	90	[3] YOOK	15	BELL	$e^+e^- \to \Upsilon(4S)$
<11	90	[4] AUBERT	10E	BABR	$e^+e^- \to \Upsilon(4S)$
< 1.0	90	[4] AUBERT	09V	BABR	$e^+e^- \to \Upsilon(4S)$
< 5.6	90	[4] AUBERT	08AD	BABR	$e^+e^- \to \Upsilon(4S)$
< 1.7	90	[4,5] SATOYAMA	07	BELL	$e^+e^- \to \Upsilon(4S)$
< 6.6	90	AUBERT	04O	BABR	Repl. by AUBERT 09V
<21	90	ARTUSO	95	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] This is a 90% C.L. upper limit in the frequentist approach. The corresponding upper limit in the Bayesian approach is $< 8.9 \times 10^{-7}$. A 2.8 standard deviation signal above the background is found, with a measured branching fraction $(5.3 \pm 2.0 \pm 0.9) \times 10^{-7}$. NODE=S041S56;LINKAGE=D

[2] This is a 90% confidence interval in the frequentist approach. A 2.4 standard deviation signal above the background is found, with a measured branching fraction $(6.46 \pm 2.22 \pm 1.60) \times 10^{-7}$. NODE=S041S56;LINKAGE=B

[3] Assumes $B(\Upsilon(4S) \to B^+B^-) = 0.513 \pm 0.006$. NODE=S041S56;LINKAGE=A

[4] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041S56;LINKAGE=EP

[5] Superseded by SIBIDANOV 18. NODE=S041S56;LINKAGE=C

$\Gamma(\tau^+\nu_\tau)/\Gamma_{total}$ — Γ_{41}/Γ

NODE=S041S57

See the note on "Decay Constants of Charged Pseudoscalar Mesons" in the D_s^+ Listings. NODE=S041S57

NODE=S041S57

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
1.09±0.24 OUR AVERAGE		Error includes scale factor of 1.2.			
1.25±0.28±0.27		[1,2] KRONENBIT...	15	BELL	$e^+e^- \to \Upsilon(4S)$
$0.72^{+0.27}_{-0.25}\pm0.11$		[3] HARA	13	BELL	$e^+e^- \to \Upsilon(4S)$
$1.83^{+0.53}_{-0.49}\pm0.24$		[2,4] LEES	13K	BABR	$e^+e^- \to \Upsilon(4S)$
1.7 ±0.8 ±0.2		[2,5] AUBERT	10E	BABR	$e^+e^- \to \Upsilon(4S)$

• • • We do not use the following data for averages, fits, limits, etc. • • •

$1.54^{+0.38+0.29}_{-0.37-0.31}$		[2,6] HARA	10	BELL	Repl. by KRONENBITTER 15
$1.8\ ^{+0.9}_{-0.8}\ \pm0.45$		[2,7] AUBERT	08D	BABR	Repl. by LEES 13K
$0.9\ \pm0.6\ \pm0.1$		[2,5] AUBERT	07AL	BABR	Repl. by AUBERT 10E
< 2.6	90	[2] AUBERT	06K	BABR	$e^+e^- \to \Upsilon(4S)$
$1.79^{+0.56+0.46}_{-0.49-0.51}$		[2,7] IKADO	06	BELL	Repl. by HARA 13
< 4.2	90	[2] AUBERT,B	05B	BABR	Repl. by AUBERT 06K
< 8.3	90	[8] BARATE	01E	ALEP	$e^+e^- \to Z$
< 8.4	90	[2] BROWDER	01	CLE2	$e^+e^- \to \Upsilon(4S)$
< 5.7	90	[9] ACCIARRI	97F	L3	$e^+e^- \to Z$
<104	90	[10] ALBRECHT	95D	ARG	$e^+e^- \to \Upsilon(4S)$
< 22	90	ARTUSO	95	CLE2	$e^+e^- \to \Upsilon(4S)$
< 18	90	[11] BUSKULIC	95	ALEP	$e^+e^- \to Z$

[1] Requires one reconstructed semileptonic B decay $B^- \to D^{(*)0}\ell^-\overline{\nu}_\ell$ in the recoil. NODE=S041S57;LINKAGE=E
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041S57;LINKAGE=EP
[3] The authors combine their result with that from HARA 10 obtaining B($B^- \to \tau^-\overline{\nu}_\tau$)=$(0.96 \pm 0.26) \times 10^{-4}$ and deriving $f_B\ |V_{ub}|$=$(7.4 \pm 0.8 \pm 0.5) \times 10^{-4}$ GeV. NODE=S041S57;LINKAGE=D
[4] Requires a fully reconstructed hadronic B-decay in the recoil. Reports that this result combined with AUBERT 10E value gives B($B^- \to \tau^-\overline{\nu}_\tau$) = $(1.79 \pm 0.48) \times 10^{-4}$. NODE=S041S57;LINKAGE=LE
[5] Requires one reconstructed semileptonic B decay $B^- \to D^0\ell^-\overline{\nu}_\ell X$ in the recoil. NODE=S041S57;LINKAGE=UB
[6] Requires one reconstructed semileptonic B decay $B^- \to D^{(*)0}\ell^-\overline{\nu}_\ell X$ in the recoil. NODE=S041S57;LINKAGE=HA
[7] The analysis is based on a sample of events with one fully reconstructed tag B in a hadronic decay mode $B^- \to D^{(*)0}X^-$. NODE=S041S57;LINKAGE=BT
[8] The energy-flow and b-tagging algorithms were used. NODE=S041S57;LINKAGE=QK
[9] ACCIARRI 97F uses missing-energy technique and $f(b \to B^-) = (38.2 \pm 2.5)\%$. NODE=S041S57;LINKAGE=C
[10] ALBRECHT 95D uses full reconstruction of one B decay as tag. NODE=S041S57;LINKAGE=A
[11] BUSKULIC 95 uses same missing-energy technique as in $\overline{b} \to \tau^+\nu_\tau X$, but analysis is restricted to endpoint region of missing-energy distribution. NODE=S041S57;LINKAGE=B

$\Gamma(\ell^+\nu_\ell\gamma)/\Gamma_{\text{total}}$ — Γ_{42}/Γ

NODE=S041P01
NODE=S041P01

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
< 3.0 × 10^{-6}	90	[1,2] GELB	18	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 3.5 × 10^{-6}	90	[2,3] HELLER	15	BELL	$e^+e^- \to \Upsilon(4S)$
<15.6 × 10^{-6}	90	[2] AUBERT	09AT	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Supersedes HELLER 15. NODE=S041P01;LINKAGE=A
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041P01;LINKAGE=EP
[3] Superseded by GELB 18. NODE=S041P01;LINKAGE=B

$\Gamma(e^+\nu_e\gamma)/\Gamma_{\text{total}}$ — Γ_{43}/Γ

NODE=S041B9
NODE=S041B9

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
< 4.3 × 10^{-6}	90	[1,2] GELB	18	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 6.1 × 10^{-6}	90	[2,3] HELLER	15	BELL	$e^+e^- \to \Upsilon(4S)$
< 17 × 10^{-6}	90	[2] AUBERT	09AT	BABR	$e^+e^- \to \Upsilon(4S)$
<200 × 10^{-6}	90	[4] BROWDER	97	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Supersedes HELLER 15. NODE=S041B9;LINKAGE=B
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B9;LINKAGE=EP
[3] Superseded by GELB 18. NODE=S041B9;LINKAGE=C
[4] BROWDER 97 uses the hermiticity of the CLEO II detector to reconstruct the neutrino energy and momentum. NODE=S041B9;LINKAGE=A

$\Gamma(\mu^+\nu_\mu\gamma)/\Gamma_{\text{total}}$ — Γ_{44}/Γ

NODE=S041B10
NODE=S041B10

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
< 3.4 × 10^{-6}	90	[1,2] GELB	18	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 3.4 × 10^{-6}	90	[2,3] HELLER	15	BELL	$e^+e^- \to \Upsilon(4S)$
<24 × 10^{-6}	90	[2,4] AUBERT	09AT	BABR	$e^+e^- \to \Upsilon(4S)$
<52 × 10^{-6}	90	[5] BROWDER	97	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Supersedes HELLER 15. NODE=S041B10;LINKAGE=B
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B10;LINKAGE=EP
[3] Superseded by GELB 18. NODE=S041B10;LINKAGE=D
[4] Note that the value given by AUBERT 09AT is 24×10^{-6} in the paper abstract, and 26×10^{-6} in the paper itself (Table I). NODE=S041B10;LINKAGE=C
[5] BROWDER 97 uses the hermiticity of the CLEO II detector to reconstruct the neutrino energy and momentum. NODE=S041B10;LINKAGE=A

$\Gamma(\mu^+\mu^-\mu^+\nu_\mu)/\Gamma_{total}$ — Γ_{45}/Γ

NODE=S041P68

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.6 \times 10^{-8}$	95	[1] AAIJ	19P	LHCB	pp at 7, 8, 13 TeV

[1] AAIJ 19P limit established for the kinematic region where the lower of the two $M(\mu^+\mu^-)$ is less than 980 MeV/c^2.

NODE=S041P68;LINKAGE=A

$\Gamma(D^0 X)/\Gamma_{total}$ — Γ_{46}/Γ

NODE=S041Q24

VALUE	DOCUMENT ID		TECN	COMMENT
0.086±0.006±0.004	[1] AUBERT	07N	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.098±0.009±0.006	[1] AUBERT,BE	04B	BABR	Repl. by AUBERT 07N

[1] Events are selected by completely reconstructing one B and searching for a reconstructed charmed particle in the rest of the event. The last error includes systematic and charm branching ratio uncertainties.

NODE=S041Q24;LINKAGE=AU

$\Gamma(\overline{D}^0 X)/\Gamma_{total}$ — Γ_{47}/Γ

NODE=S041Q25

VALUE	DOCUMENT ID		TECN	COMMENT
$0.786\pm0.016^{+0.034}_{-0.033}$	[1] AUBERT	07N	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.793\pm0.025^{+0.045}_{-0.044}$	[1] AUBERT,BE	04B	BABR	Repl. by AUBERT 07N

[1] Events are selected by completely reconstructing one B and searching for a reconstructed charmed particle in the rest of the event. The last error includes systematic and charm branching ratio uncertainties.

NODE=S041Q25;LINKAGE=AU

$\Gamma(D^0 X)/[\Gamma(D^0 X)+\Gamma(\overline{D}^0 X)]$ — $\Gamma_{46}/(\Gamma_{46}+\Gamma_{47})$

NODE=S041Q26

VALUE	DOCUMENT ID		TECN	COMMENT
0.098±0.007±0.001	AUBERT	07N	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.110±0.010±0.003	AUBERT,BE	04B	BABR	Repl. by AUBERT 07N

$\Gamma(D^+ X)/\Gamma_{total}$ — Γ_{48}/Γ

NODE=S041Q27

VALUE	DOCUMENT ID		TECN	COMMENT
0.025±0.005±0.002	[1] AUBERT	07N	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.038±0.009±0.005	[1] AUBERT,BE	04B	BABR	Repl. by AUBERT 07N

[1] Events are selected by completely reconstructing one B and searching for a reconstructed charmed particle in the rest of the event. The last error includes systematic and charm branching ratio uncertainties.

NODE=S041Q27;LINKAGE=AU

$\Gamma(D^- X)/\Gamma_{total}$ — Γ_{49}/Γ

NODE=S041Q28

VALUE	DOCUMENT ID		TECN	COMMENT
0.099±0.008±0.009	[1] AUBERT	07N	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.098±0.012±0.014	[1] AUBERT,BE	04B	BABR	Repl. by AUBERT 07N

[1] Events are selected by completely reconstructing one B and searching for a reconstructed charmed particle in the rest of the event. The last error includes systematic and charm branching ratio uncertainties.

NODE=S041Q28;LINKAGE=AU

$\Gamma(D^+ X)/[\Gamma(D^+ X)+\Gamma(D^- X)]$ — $\Gamma_{48}/(\Gamma_{48}+\Gamma_{49})$

NODE=S041Q29

VALUE	DOCUMENT ID		TECN	COMMENT
0.204±0.035±0.001	AUBERT	07N	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.278±0.052±0.009	AUBERT,BE	04B	BABR	Repl. by AUBERT 07N

$\Gamma(D_s^+ X)/\Gamma_{total}$ — Γ_{50}/Γ

NODE=S041Q30

VALUE	DOCUMENT ID		TECN	COMMENT
$0.079\pm0.006^{+0.013}_{-0.011}$	[1] AUBERT	07N	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.143\pm0.016^{+0.051}_{-0.034}$	[1] AUBERT,BE	04B	BABR	Repl. by AUBERT 07N

[1] Events are selected by completely reconstructing one B and searching for a reconstructed charmed particle in the rest of the event. The last error includes systematic and charm branching ratio uncertainties.

NODE=S041Q30;LINKAGE=AU

$\Gamma(D_s^- X)/\Gamma_{total}$ Γ_{51}/Γ

NODE=S041Q31

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$0.011^{+0.004}_{-0.003}{}^{+0.002}_{-0.001}$		[1] AUBERT	07N	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.022	90	[1] AUBERT,BE	04B	BABR	Repl. by AUBERT 07N

[1] Events are selected by completely reconstructing one B and searching for a reconstructed charmed particle in the rest of the event. The last error includes systematic and charm branching ratio uncertainties.

NODE=S041Q31;LINKAGE=AU

$\Gamma(D_s^+ X)/[\Gamma(D_s^+ X)+\Gamma(D_s^- X)]$ $\Gamma_{50}/(\Gamma_{50}+\Gamma_{51})$

NODE=S041Q32

VALUE	DOCUMENT ID		TECN	COMMENT
$0.884\pm0.038\pm0.002$	AUBERT	07N	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.966\pm0.039\pm0.012$	AUBERT,BE	04B	BABR	Repl. by AUBERT 07N

$\Gamma(D_s^- X)/[\Gamma(D_s^+ X)+\Gamma(D_s^- X)]$ $\Gamma_{51}/(\Gamma_{50}+\Gamma_{51})$

NODE=S041Q33

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.126	90	AUBERT,BE	04B	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

$\Gamma(\Lambda_c^+ X)/\Gamma_{total}$ Γ_{52}/Γ

NODE=S041Q34

VALUE	DOCUMENT ID		TECN	COMMENT
$0.021\pm0.005^{+0.008}_{-0.004}$	[1] AUBERT	07N	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.029\pm0.008^{+0.011}_{-0.007}$	[1] AUBERT,BE	04B	BABR	Repl. by AUBERT 07N

[1] Events are selected by completely reconstructing one B and searching for a reconstructed charmed particle in the rest of the event. The last error includes systematic and charm branching ratio uncertainties.

NODE=S041Q34;LINKAGE=AU

$\Gamma(\overline{\Lambda}_c^- X)/\Gamma_{total}$ Γ_{53}/Γ

NODE=S041Q35

VALUE	DOCUMENT ID		TECN	COMMENT
$0.028\pm0.005^{+0.010}_{-0.007}$	[1] AUBERT	07N	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.035\pm0.008^{+0.013}_{-0.009}$	[1] AUBERT,BE	04B	BABR	Repl. by AUBERT 07N

[1] Events are selected by completely reconstructing one B and searching for a reconstructed charmed particle in the rest of the event. The last error includes systematic and charm branching ratio uncertainties.

NODE=S041Q35;LINKAGE=AU

$\Gamma(\Lambda_c^+ X)/[\Gamma(\Lambda_c^+ X)+\Gamma(\overline{\Lambda}_c^- X)]$ $\Gamma_{52}/(\Gamma_{52}+\Gamma_{53})$

NODE=S041Q36

VALUE	DOCUMENT ID		TECN	COMMENT
$0.427\pm0.071\pm0.001$	AUBERT	07N	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.452\pm0.090\pm0.003$	AUBERT,BE	04B	BABR	Repl. by AUBERT 07N

$\Gamma(\overline{c}X)/\Gamma_{total}$ Γ_{54}/Γ

NODE=S041Q37

VALUE	DOCUMENT ID		TECN	COMMENT
$0.968\pm0.019^{+0.041}_{-0.039}$	[1] AUBERT	07N	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.983\pm0.030^{+0.054}_{-0.051}$	[1] AUBERT,BE	04B	BABR	Repl. by AUBERT 07N

[1] Events are selected by completely reconstructing one B and searching for a reconstructed charmed particle in the rest of the event. The last error includes systematic and charm branching ratio uncertainties.

NODE=S041Q37;LINKAGE=AU

$\Gamma(cX)/\Gamma_{total}$ Γ_{55}/Γ

NODE=S041Q38

VALUE	DOCUMENT ID		TECN	COMMENT
$0.234\pm0.012^{+0.018}_{-0.014}$	[1] AUBERT	07N	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.330\pm0.022^{+0.055}_{-0.037}$	[1] AUBERT,BE	04B	BABR	Repl. by AUBERT 07N

[1] Events are selected by completely reconstructing one B and searching for a reconstructed charmed particle in the rest of the event. The last error includes systematic and charm branching ratio uncertainties.

NODE=S041Q38;LINKAGE=AU

$\Gamma(c/\overline{c}X)/\Gamma_{total}$ — Γ_{56}/Γ

NODE=S041Q39

VALUE	DOCUMENT ID		TECN	COMMENT
$1.202\pm0.023^{+0.053}_{-0.049}$	[1] AUBERT	07N	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1.313\pm0.037^{+0.088}_{-0.075}$	[1] AUBERT,BE	04B	BABR	Repl. by AUBERT 07N

[1] Events are selected by completely reconstructing one B and searching for a reconstructed charmed particle in the rest of the event. The last error includes systematic and charm branching ratio uncertainties.

NODE=S041Q39;LINKAGE=AU

$\Gamma(\overline{D}^0\pi^+)/\Gamma_{total}$ — Γ_{57}/Γ

NODE=S041R1

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
4.61±0.10 OUR FIT					
4.63±0.10 OUR AVERAGE					
4.53±0.02±0.15		BLOOMFIELD	22	BELL	$e^+e^- \to \Upsilon(4S)$
4.34±0.10±0.23		[1] KATO	18	BELL	$e^+e^- \to \Upsilon(4S)$
4.90±0.07±0.22		[2] AUBERT	07H	BABR	$e^+e^- \to \Upsilon(4S)$
4.9 ±0.6 ±0.2		[3] ABULENCIA	06J	CDF	$p\overline{p}$ at 1.96 TeV
4.49±0.21±0.23		[4] AUBERT,BE	06J	BABR	$e^+e^- \to \Upsilon(4S)$
4.97±0.12±0.29		[2,5] AHMED	02B	CLE2	$e^+e^- \to \Upsilon(4S)$
5.0 ±0.7 ±0.6	54	[6] BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$
$5.4\ ^{+1.8}_{-1.5}\ ^{+1.2}_{-0.9}$	14	[7] BEBEK	87	CLEO	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
4.68±0.26±0.04		[8] AUBERT,B	04P	BABR	Repl. by AUBERT 07H
5.5 ±0.4 ±0.5	304	[9] ALAM	94	CLE2	Repl. by AHMED 02B
2.0 ±0.8 ±0.6	12	[6] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$
1.9 ±1.0 ±0.6	7	[10] ALBRECHT	88K	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Measures absolute branching fractions using a missing-mass technique. NODE=S041R1;LINKAGE=F

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R1;LINKAGE=EP

[3] ABULENCIA 06J reports $[\Gamma(B^+ \to \overline{D}^0\pi^+)/\Gamma_{total}]$ / $[B(B^0 \to D^-\pi^+)] = 1.97 \pm 0.10 \pm 0.21$ which we multiply by our best value $B(B^0 \to D^-\pi^+) = (2.51 \pm 0.08) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041R1;LINKAGE=AL

[4] Uses a missing-mass method. Does not depend on D branching fractions or B^+/B^0 production rates. NODE=S041R1;LINKAGE=RT

[5] AHMED 02B reports an additional uncertainty on the branching ratios to account for 4.5% uncertainty on relative production of B^0 and B^+, which is not included here. NODE=S041R1;LINKAGE=H3

[6] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses the Mark III branching fractions for the D. NODE=S041R1;LINKAGE=B9

[7] BEBEK 87 value has been updated in BERKELMAN 91 to use same assumptions as noted for BORTOLETTO 92. NODE=S041R1;LINKAGE=A

[8] AUBERT,B 04P reports $[\Gamma(B^+ \to \overline{D}^0\pi^+)/\Gamma_{total}] \times [B(D^0 \to K^-\pi^+)] = (1.846 \pm 0.032 \pm 0.097) \times 10^{-4}$ which we divide by our best value $B(D^0 \to K^-\pi^+) = (3.945 \pm 0.030) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041R1;LINKAGE=AU

[9] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II absolute $B(D^0 \to K^-\pi^+)$ and the PDG 1992 $B(D^0 \to K^-\pi^+\pi^0)/B(D^0 \to K^-\pi^+)$ and $B(D^0 \to K^-2\pi^+\pi^-)/B(D^0 \to K^-\pi^+)$. NODE=S041R1;LINKAGE=E

[10] ALBRECHT 88K assumes $B^0\overline{B}^0$:B^+B^- ratio is 45:55. Superseded by ALBRECHT 90J. NODE=S041R1;LINKAGE=D

$\Gamma(\overline{D}^0\rho^+)/\Gamma_{total}$ — Γ_{60}/Γ

NODE=S041R25

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
0.97 ±0.11 OUR AVERAGE Error includes scale factor of 2.1. [0.0134 ± 0.0018 OUR 2024 AVERAGE]					
0.939±0.021±0.050		[1] ADACHI	24D	BELL	$e^+e^- \to \Upsilon(4S)$
1.35 ±0.12 ±0.15	212	[2] ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$
1.3 ±0.4 ±0.4	19	[3] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2.1 ±0.8 ±0.9	10	[4] ALBRECHT	88K	ARG	$e^+e^- \to \Upsilon(4S)$

NEW

[1] ADACHI 24D uses $B(\Upsilon(4S) \to B^+B^-) = 0.516 \pm 0.012$. NODE=S041R25;LINKAGE=B

[2] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II absolute $B(D^0 \to K^-\pi^+)$ and the PDG 1992 $B(D^0 \to K^-\pi^+\pi^0)/B(D^0 \to K^-\pi^+)$ and $B(D^0 \to K^-2\pi^+\pi^-)/B(D^0 \to K^-\pi^+)$. NODE=S041R25;LINKAGE=E

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses the Mark III branching fractions for the D. NODE=S041R25;LINKAGE=B9

[4] ALBRECHT 88K assumes $B^0\overline{B}^0$:B^+B^- ratio is 45:55. NODE=S041R25;LINKAGE=A

$\Gamma(\overline{D}^0 K^+)/\Gamma(\overline{D}^0 \pi^+)$ Γ_{61}/Γ_{57}

NODE=S041B07
NODE=S041B07

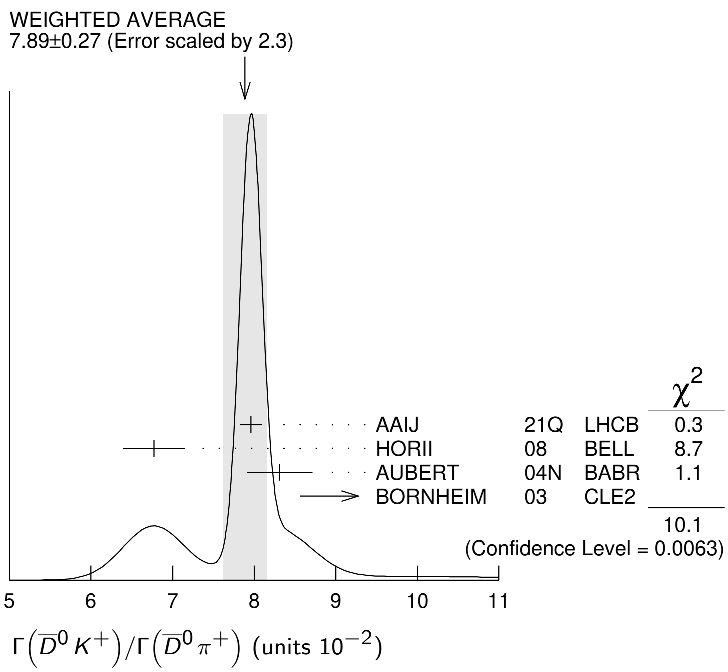
VALUE (units 10^{-2})		DOCUMENT ID		TECN	COMMENT
7.89 ±0.27 OUR AVERAGE		Error includes scale factor of 2.3. See the ideogram below.			
7.96 ±0.03 ±0.13		AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV
6.77 ±0.23 ±0.30		HORII	08	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
8.31 ±0.35 ±0.20		AUBERT	04N	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
9.9 $^{+1.4}_{-1.2}$ $^{+0.7}_{-0.6}$		BORNHEIM	03	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
7.768±0.038±0.066	[1,2]	AAIJ	18A	LHCB	pp at 7, 8, 13 TeV
7.79 ±0.06 ±0.19		AAIJ	16L	LHCB	pp at 7, 8 TeV
7.93 ±0.10 ±0.18	[3]	AAIJ	16L	LHCB	pp at 7, 8 TeV
7.71 ±0.17 ±0.26	[3]	AAIJ	13AE	LHCB	Repl. by AAIJ 16L
7.74 ±0.12 ±0.19		AAIJ	12M	LHCB	Repl. by AAIJ 16L
9.4 ±0.9 ±0.7		ABE	03D	BELL	Repl. by SWAIN 03
7.7 ±0.5 ±0.6		SWAIN	03	BELL	Repl. by HORII 08
7.9 ±0.9 ±0.6		ABE	01I	BELL	Repl. by ABE 03D
5.5 ±1.4 ±0.5		ATHANAS	98	CLE2	Repl. by BORNHEIM 03

OCCUR=2

[1] Supersedes AAIJ 16L. NODE=S041B07;LINKAGE=A

[2] Superseded by AAIJ 21Q. NODE=S041B07;LINKAGE=B

[3] Uses $B^\pm \rightarrow [K^\pm \pi^\mp \pi^+ \pi^-]_D h^\pm$ mode. NODE=S041B07;LINKAGE=AJ



$\Gamma(D_{CP(+1)} K^+)/\Gamma(D_{CP(+1)} \pi^+)$ Γ_{62}/Γ_{58}

NODE=S041B97
NODE=S041B97

VALUE		DOCUMENT ID		TECN	COMMENT
0.089±0.008 OUR AVERAGE					
0.089±0.008±0.003	[1,2]	ABE	06	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
0.088±0.016±0.005	[3]	AUBERT	04N	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.125±0.036±0.010	[3]	ABE	03D	BELL	Repl. by SWAIN 03
0.093±0.018±0.008	[3]	SWAIN	03	BELL	Repl. by ABE 06

[1] Reports a double ratio of B($B^+ \rightarrow D_{CP(+1)} K^+$)/B($B^+ \rightarrow D_{CP(+1)} \pi^+$) and B($B^+ \rightarrow \overline{D}^0 K^+$)/B($B^+ \rightarrow \overline{D}^0 \pi^+$), 1.13 ± 0.16 ± 0.08. We multiply by our best value of B($B^+ \rightarrow \overline{D}^0 K^+$)/B($B^+ \rightarrow \overline{D}^0 \pi^+$) = 0.083 ± 0.006. Our first error is their experiment's error and the second error is systematic error from using our best value. NODE=S041B97;LINKAGE=AB

[2] ABE 06 reports [$\Gamma(B^+ \rightarrow D_{CP(+1)} K^+)/\Gamma(B^+ \rightarrow D_{CP(+1)} \pi^+)$] / [$\Gamma(B^+ \rightarrow \overline{D}^0 K^+)/\Gamma(B^+ \rightarrow \overline{D}^0 \pi^+)$] = 1.13 ± 0.06 ± 0.08 which we multiply by our best value $\Gamma(B^+ \rightarrow \overline{D}^0 K^+)/\Gamma(B^+ \rightarrow \overline{D}^0 \pi^+)$ = 0.0789 ± 0.0027. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041B97;LINKAGE=AE

[3] CP=+1 eigenstate of $D^0 \overline{D}^0$ system is reconstructed via $K^+ K^-$ and $\pi^+ \pi^-$. NODE=S041B97;LINKAGE=A

$\Gamma(D_{CP(+1)}K^+)/\Gamma(\overline{D}^0 K^+)$ Γ_{62}/Γ_{61}

NODE=S041C18
NODE=S041C18

VALUE	DOCUMENT ID	TECN	COMMENT
0.497±0.009 OUR AVERAGE Error includes scale factor of 1.4. See the ideogram below.			
[0.495 ± 0.007 OUR 2024 AVERAGE]			
0.582±0.041±0.018	[1] ADACHI 24I	BELL	$e^+e^- \to \Upsilon(4S)$
0.494±0.008±0.006	[2] AAIJ 18A	LHCB	pp at 7, 8, 13 TeV
0.496±0.014±0.008	[3] AAIJ 18A	LHCB	pp at 7, 8, 13 TeV
0.489±0.010±0.009	[4] AAIJ 16L	LHCB	pp at 7, 8 TeV
0.65 ±0.12 ±0.06	[5] AALTONEN 10A	CDF	$p\overline{p}$ at 1.96 TeV
0.590±0.045±0.025	[6] DEL-AMO-SA..10G	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.504±0.019±0.006	[7] AAIJ 12M	LHCB	Repl. by AAIJ 16L
0.53 ±0.05 ±0.025	AUBERT 08AA	BABR	Repl. by DEL-AMO-SANCHEZ 10G
0.45 ±0.06 ±0.02	AUBERT 06J	BABR	Repl. by AUBERT 08AA

NEW

OCCUR=2

[1] Reports $R_{CP+} = 1.164 \pm 0.081 \pm 0.036$ that we have divided by 2. NODE=S041C18;LINKAGE=D

[2] Uses $D \to K^+K^-$ decay mode and reports $R_{CP+} = 0.988 \pm 0.015 \pm 0.011$ which we have divided by 2. NODE=S041C18;LINKAGE=B

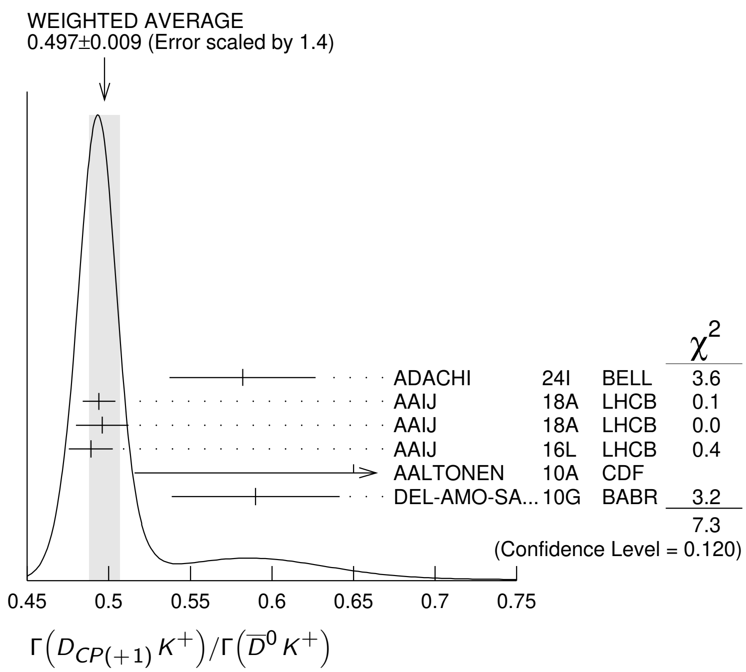
[3] Uses $D \to \pi^+\pi^-$ decay mode and reports $R_{CP+} = 0.992 \pm 0.027 \pm 0.015$ which we have divided by 2. NODE=S041C18;LINKAGE=C

[4] AAIJ 16L reports $R_{CP+} = 0.978 \pm 0.019 \pm 0.018$ which we have divided by 2. NODE=S041C18;LINKAGE=A

[5] Reports $R_{CP+} = 2\,(B(B^- \to D_{CP(+1)}K^-) + B(B^+ \to D_{CP(+1)}K^+))\,/\,(B(B^- \to D^0K^-) + B(B^+ \to \overline{D}^0K^+)) = 1.30 \pm 0.24 \pm 0.12$ that we have divided by 2. NODE=S041C18;LINKAGE=AA

[6] Reports $R_{CP+} = 1.18 \pm 0.09 \pm 0.05$ that we have divided by 2. NODE=S041C18;LINKAGE=DE

[7] AAIJ 12M reports $R_{CP+} = 1.007 \pm 0.038 \pm 0.012$ which we have divided by 2. NODE=S041C18;LINKAGE=AI



$\Gamma(D_{CP(-1)}K^+)/\Gamma(D_{CP(-1)}\pi^+)$ Γ_{63}/Γ_{59}

NODE=S041B98
NODE=S041B98

VALUE	DOCUMENT ID	TECN	COMMENT
0.097±0.016±0.007	[1] ABE 06	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.119±0.028±0.006	[2] ABE 03D	BELL	Repl. by SWAIN 03
0.108±0.019±0.007	[2] SWAIN 03	BELL	Repl. by ABE 06

[1] Reports a double ratio of $B(B^+ \to D_{CP(-1)}K^+)/B(B^+ \to D_{CP(-1)}\pi^+)$ and $B(B^+ \to \overline{D}^0K^+)/B(B^+ \to \overline{D}^0\pi^+)$, $1.17 \pm 0.14 \pm 0.14$. We multiply by our best value of $B(B^+ \to \overline{D}^0K^+)/B(B^+ \to \overline{D}^0\pi^+) = 0.083 \pm 0.006$. Our first error is their experiment's error and the second error is systematic error from using our best value. NODE=S041B98;LINKAGE=AB

[2] $CP=-1$ eigenstate of $D^0\overline{D}^0$ system is reconstructed via $K^0_S\pi^0$, $K^0_S\omega$, $K^0_S\phi$, $K^0_S\eta$, and $K^0_S\eta'$. NODE=S041B98;LINKAGE=A

$\Gamma(D_{CP(-1)} K^+)/\Gamma(\overline{D}^0 K^+)$ Γ_{63}/Γ_{61}

NODE=S041C19

VALUE	DOCUMENT ID		TECN	COMMENT
0.561±0.029 OUR AVERAGE				
[0.54 ± 0.04 OUR 2024 AVERAGE]				
0.576±0.037±0.010	[1] ADACHI	24I	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
0.54 ±0.04 ±0.02	[2] DEL-AMO-SA...	10G	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.515±0.05 ±0.025	AUBERT	08AA	BABR	Repl. by DEL-AMO-SANCHEZ 10G
0.43 ±0.05 ±0.02	AUBERT	06J	BABR	Repl. by AUBERT 08AA

NEW

[1] Reports $R_{CP+} = 1.151 \pm 0.074 \pm 0.019$ that we have divided by 2. NODE=S041C19;LINKAGE=A

[2] Reports $R_{CP+} = 1.07 \pm 0.08 \pm 0.04$ that we have divided by 2. NODE=S041C19;LINKAGE=DE

$\Gamma(D^0 K^+)/\Gamma(\overline{D}^0 K^+)$ Γ_{64}/Γ_{61}

NODE=S041P62

VALUE (units 10^{-3})	DOCUMENT ID
9.88±0.52 OUR EVALUATION	(Produced by HFLAV)

→ UNCHECKED ←

$\Gamma([K^-\pi^+]_D K^+)/\Gamma_{total}$ Γ_{65}/Γ

NODE=S041C51

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<2.8 × 10^{-7}	90	HORII	08	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<6.3 × 10^{-7}	90	SAIGO	05	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$

$\Gamma([K^-\pi^+]_D K^+)/\Gamma([K^+\pi^-]_D K^+)$ Γ_{65}/Γ_{66}

NODE=S041Q12

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
17.2±0.6 OUR AVERAGE					
[(14 ± 7) × 10^{-3} OUR 2024 AVERAGE Scale factor = 14.7]					
17.3±0.6		[1] AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV
22.0±8.6±2.6		[2] AALTONEN	11AJ	CDF	$p\overline{p}$ at 1.96 TeV
$16.3^{+4.4}_{-4.1}{}^{+0.7}_{-1.3}$		HORII	11	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
11 ±6 ±2		DEL-AMO-SA...	10H	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
18.8±1.1±1.0		[3] AAIJ	16L	LHCB	pp at 7, 8 TeV
15.2±2.0±0.4		AAIJ	12M	LHCB	Repl. by AAIJ 16L
$7.8^{+6.2}_{-5.7}{}^{+2.0}_{-2.8}$		HORII	08	BELL	Repl. by HORII 11
<29	90	[4] AUBERT	05G	BABR	Repl. by DEL-AMO-SANCHEZ 10H
<44	90	[5] SAIGO	05	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
<26	90	[6] AUBERT,B	04L	BABR	Repl. by AUBERT 05G

NEW

[1] AAIJ 21Q reports the charge-averaged rate, where the statistical and systematic uncertainties have been combined according to the correlations between the observables. The individual ratio of $B^- \rightarrow [K^+\pi^-]_D K^-$ and $B^- \rightarrow [K^-\pi^+]_D K^-$ and the ratio of $B^+ \rightarrow [K^-\pi^+]_D K^+$ and $B^+ \rightarrow [K^+\pi^-]_D K^+$ are also reported to be $(9.5 \pm 0.5 \pm 0.3) \times 10^{-3}$ and $(25.2 \pm 0.8 \pm 0.4) \times 10^{-3}$, respectively. NODE=S041Q12;LINKAGE=A

[2] AALTONEN 11AJ also measures the ratio separately for B^+ ($R^+(K)$) and B^- ($R^-(K)$) and obtains: $R^+(K) = (42.6 \pm 13.7 \pm 2.8) \times 10^{-3}$, $R^-(K) = (3.8 \pm 10.3 \pm 2.7) \times 10^{-3}$. NODE=S041Q12;LINKAGE=AA

[3] Superseded by AAIJ 21Q. NODE=S041Q12;LINKAGE=C

[4] AUBERT 05G extract a constraint on the magnitude of the ratio of amplitudes $|A(B^+ \rightarrow D^0 K^+) / A(B^+ \rightarrow \overline{D}^0 K^+)| < 0.23$ at 90% CL (Bayesian). Similar measurements from $B^+ \rightarrow D^{*0} K^+$ are also reported. NODE=S041Q12;LINKAGE=AB

[5] SAIGO 05 extract a constraint on the magnitude of the ratio of amplitudes $|A(B^+ \rightarrow D^0 K^+) / A(B^+ \rightarrow \overline{D}^0 K^+)| < 0.27$ at 90% CL. NODE=S041Q12;LINKAGE=SA

[6] AUBERT,B 04L extract a constraint on the magnitude of the ratio of amplitudes $|A(B^+ \rightarrow D^0 K^+)/A(B^+ \rightarrow \overline{D}^0 K^+)| < 0.22$ at 90% CL. NODE=S041Q12;LINKAGE=AU

$\Gamma([K^-\pi^+\pi^0]_D K^+)/\Gamma([K^+\pi^-\pi^0]_D K^+)$ Γ_{67}/Γ_{68}

NODE=S041Q89

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
13.1±1.6 OUR AVERAGE					
12.7±1.6±0.2		AAIJ	22T	LHCB	pp at 7, 8, 13 TeV
19.8±6.2±2.4		NAYAK	13	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
14.0±4.7±2.1		[1] AAIJ	15W	LHCB	Repl. by AAIJ 22T
<21	90	[2] LEES	11D	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
<39	95	[3] AUBERT	07BN	BABR	Repl. by LEES 11D

[1] Uses $D^0 \to K^- \pi^+ \pi^0$ for the favored mode, and $D^0 \to K^+ \pi^- \pi^0$ for the suppressed mode.
[2] Extracts a constraint on the magnitude of the ratio of amplitudes $|A(B^+ \to D^0 K^+)/A(B^+ \to \overline{D}^0 K^+)| < 0.13$ at 95% CL.
[3] Extracts a constraint on the magnitude of the ratio of amplitudes $|A(B^+ \to D^0 K^+)/A(B^+ \to \overline{D}^0 K^+)| < 0.19$ at 95% CL.

NODE=S041Q89;LINKAGE=A
NODE=S041Q89;LINKAGE=LE
NODE=S041Q89;LINKAGE=AU

$\Gamma([K^-\pi^+\pi^+\pi^-]_D K^+)/\Gamma([K^+\pi^-\pi^+\pi^-]_D K^+)$ — Γ_{69}/Γ_{70}

NODE=S041C79
NODE=S041C79

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
1.333±0.055±0.008	AAIJ	23I	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.40 ±0.15 ±0.06	[1] AAIJ	16L	LHCB	pp at 7, 8 TeV
1.24 ±0.27	AAIJ	13AE	LHCB	Repl. by AAIJ 16L

[1] Superseded by AAIJ 23I.

NODE=S041C79;LINKAGE=A

$\Gamma([\pi^+\pi^+\pi^-\pi^-] K^+)/\Gamma([K^+\pi^-\pi^+\pi^-]_D K^+)$ — Γ_{71}/Γ_{70}

NODE=S041P27
NODE=S041P27

VALUE	DOCUMENT ID		TECN	COMMENT
0.975±0.037±0.019	AAIJ	16L	LHCB	pp at 7, 8 TeV

$\Gamma([K^-\pi^+]_D K^*(892)^+)/\Gamma([K^+\pi^-]_D K^*(892)^+)$ — Γ_{73}/Γ_{74}

NODE=S041Q63
NODE=S041Q63

VALUE	DOCUMENT ID		TECN	COMMENT
0.012±0.004 OUR AVERAGE				
0.011±0.004±0.001	AAIJ	17BO	LHCB	pp at 7, 8, 13 TeV
0.066±0.031±0.010	AUBERT	09AJ	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.046±0.031±0.008	AUBERT,B	05V	BABR	Repl. by AUBERT 09AJ

$\Gamma([K^-\pi^+\pi^-\pi^+]_D K^*(892)^+)/\Gamma([K^+\pi^-\pi^+\pi^-]_D K^*(892)^+)$ — Γ_{75}/Γ_{76}

NODE=S041P50
NODE=S041P50

VALUE	DOCUMENT ID		TECN	COMMENT
0.011±0.005±0.003	AAIJ	17BO	LHCB	pp at 7, 8, 13 TeV

$\Gamma([\pi^+\pi^-\pi^+\pi^-]_D K^*(892)^+)/\Gamma([K^+\pi^-\pi^+\pi^-]_D K^*(892)^+)$ — Γ_{72}/Γ_{76}

NODE=S041P51
NODE=S041P51

VALUE	DOCUMENT ID		TECN	COMMENT
1.08±0.13±0.03	AAIJ	17BO	LHCB	pp at 7, 8, 13 TeV

$\Gamma([K^-\pi^+]_D \pi^+)/\Gamma_{total}$ — Γ_{77}/Γ

NODE=S041Q48
NODE=S041Q48

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
$6.29^{+1.02}_{-0.98}{}^{+0.37}_{-0.48}$	HORII	08	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$6.6\ ^{+1.9}_{-1.7}\ \pm0.5$	SAIGO	05	BELL	Repl. by HORII 08

$\Gamma([K^-\pi^+]_D \pi^+)/\Gamma([K^+\pi^-]_D \pi^+)$ — Γ_{77}/Γ_{78}

NODE=S041Q49
NODE=S041Q49
NEW

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
3.66±0.07 OUR AVERAGE				
[$(3.6 \pm 0.5) \times 10^{-3}$ OUR 2024 AVERAGE Scale factor = 7.9]				
3.68±0.07	[1] AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV
2.8 ±0.7 ±0.4	[2] AALTONEN	11AJ	CDF	$p\overline{p}$ at 1.96 TeV
$3.28^{+0.38}_{-0.36}{}^{+0.12}_{-0.18}$	HORII	11	BELL	$e^+e^- \to \Upsilon(4S)$
3.3 ±0.6 ±0.4	DEL-AMO-SA...	10H	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3.60±0.12±0.09	[3] AAIJ	16L	LHCB	pp at 7, 8 TeV
4.10±0.25±0.05	AAIJ	12M	LHCB	Repl. by AAIJ 16L
$3.40^{+0.55}_{-0.53}{}^{+0.15}_{-0.22}$	HORII	08	BELL	Repl. by HORII 11
$3.5\ ^{+1.0}_{-0.9}\ \pm0.2$	SAIGO	05	BELL	Repl. by HORII 08

[1] AAIJ 21Q gives the charge-averaged rate, where the statistical and systematic uncertainties have been combined according to the correlations between the observables. The individual ratio of $B^- \to [K^+\pi^-]_D K^-$ and $B^- \to [K^-\pi^+]_D K^-$ and the ratio of $B^+ \to [K^-\pi^+]_D \pi^+$ and $B^+ \to [K^+\pi^-]_D \pi^+$ are also reported to be $(4.15 \pm 0.08 \pm 0.04) \times 10^{-3}$ and $(3.20 \pm 0.07 \pm 0.04) \times 10^{-3}$, respectively.
[2] AALTONEN 11AJ also measures the ratio separately for B^+ ($R^+(\pi)$) and B^- ($R^-(\pi)$) and obtains: $R^+(\pi) = (2.4 \pm 1.0 \pm 0.4) \times 10^{-3}$, $R^-(K) = (3.1 \pm 1.1 \pm 0.4) \times 10^{-3}$.
[3] Superseded by AAIJ 21Q.

NODE=S041Q49;LINKAGE=A
NODE=S041Q49;LINKAGE=AA
NODE=S041Q49;LINKAGE=C

$\Gamma([K^-\pi^+\pi^0]_D\pi^+)/\Gamma([K^+\pi^-\pi^0]_D\pi^+)$ — Γ_{79}/Γ_{80}

NODE=S041C81

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
2.05±0.19 OUR AVERAGE				
2.07±0.20±0.03	AAIJ	22T	LHCB	pp at 7, 8, 13 TeV
$1.89\pm0.54^{+0.22}_{-0.25}$	NAYAK	13	BELL	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2.35±0.49±0.06	[1] AAIJ	15W	LHCB	Repl. by AAIJ 22T

[1] Uses $D^0\to K^-\pi^+\pi^0$ for the favored mode, and $D^0\to K^+\pi^-\pi^0$ for the suppressed mode.

NODE=S041C81;LINKAGE=A

$\Gamma([K^-\pi^+\pi^+\pi^-]_D\pi^+)/\Gamma([K^+\pi^-\pi^+\pi^-]_D\pi^+)$ — Γ_{81}/Γ_{82}

NODE=S041C80

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
3.45±0.07±0.01	AAIJ	23I	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3.77±0.18±0.06	[1] AAIJ	16L	LHCB	pp at 7, 8 TeV
3.7 ±0.4	AAIJ	13AE	LHCB	Repl. by AAIJ 16L

[1] Superseded by AAIJ 23I.

NODE=S041C80;LINKAGE=B

$\Gamma(([K^-\pi^+]_D\pi^0)_{D^*}\pi^+)/\Gamma(([K^+\pi^-]_D\pi^0)_{D^*}\pi^+)$ — Γ_{83}/Γ_{84}

NODE=S041QD0

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
4.3 ±0.7 OUR AVERAGE Error includes scale factor of 1.1. [$(4.4\pm0.6)\times10^{-3}$ OUR 2024 AVERAGE Scale factor = 1.1]				
4.71±0.77	[1] AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV
3.2 ±0.9 ±0.8	DEL-AMO-SA...	10H	BABR	$e^+e^-\to\Upsilon(4S)$

NEW

[1] AAIJ 21Q gives the charge-averaged rate, where the statistical and systematic uncertainties have been combined according to the correlations between the observables. The individual ratio of $B^-\to([K^+\pi^-]_D\pi^0)_{D^*}\pi^-$ to $B^-\to([K^-\pi^+]_D\pi^0)_{D^*}\pi^-$ and the ratio of $B^+\to([K^-\pi^+]_D\pi^0)_{D^*}\pi^+$ to $B^+\to([K^+\pi^-]_D\pi^0)_{D^*}\pi^+$, without inclusion of the neutral pion in the reconstruction, are also reported to be $(4.05\pm0.56\pm0.59)\times10^{-3}$ and $(5.36\pm0.56\pm0.58)\times10^{-3}$, respectively.

NODE=S041QD0;LINKAGE=A

$\Gamma(([K^-\pi^+]_D\gamma)_{D^*}\pi^+)/\Gamma(([K^+\pi^-]_D\gamma)_{D^*}\pi^+)$ — Γ_{85}/Γ_{86}

NODE=S041QD1

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
3.9 ±1.2 OUR AVERAGE [$(4.1\pm1.0)\times10^{-3}$ OUR 2024 AVERAGE]				
4.20±1.38	[1] AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV
2.7 ±1.4 ±2.2	DEL-AMO-SA...	10H	BABR	$e^+e^-\to\Upsilon(4S)$

NEW

[1] AAIJ 21Q gives the charge-averaged rate, where the statistical and systematic uncertainties have been combined according to the correlations between the observables. The individual the ratio of $B^-\to([K^+\pi^-]_D\gamma)_{D^*}\pi^-$ to $B^-\to([K^-\pi^+]_D\gamma)_{D^*}\pi^-$ and the ratio of $B^+\to([K^-\pi^+]_D\gamma)_{D^*}\pi^+$ to $B^+\to([K^+\pi^-]_D\gamma)_{D^*}\pi^+$, without inclusion of the photon in the reconstruction, are also reported to be $(4.72\pm0.92\pm1.18)\times10^{-3}$ and $(4.03\pm0.91\pm1.14)\times10^{-3}$, respectively.

NODE=S041QD1;LINKAGE=A

$\Gamma(([K^-\pi^+]_D\pi^0)_{D^*}K^+)/\Gamma(([K^+\pi^-]_D\pi^0)_{D^*}K^+)$ — Γ_{87}/Γ_{88}

NODE=S041QD2

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
2.6±2.7 OUR AVERAGE Error includes scale factor of 2.8. [$(2.8\pm2.8)\times10^{-3}$ OUR 2024 AVERAGE Scale factor = 3.0]				
11.8±3.4	[1] AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV
1.8±0.9±0.4	DEL-AMO-SA...	10H	BABR	$e^+e^-\to\Upsilon(4S)$

NEW

[1] AAIJ 21Q gives the charge-averaged rate, where the statistical and systematic uncertainties have been combined according to the correlations between the observables. The individual ratio of $B^-\to([K^+\pi^-]_D\pi^0)_{D^*}K^-$ to $B^-\to([K^-\pi^+]_D\pi^0)_{D^*}K^-$ and the ratio of $B^+\to([K^-\pi^+]_D\pi^0)_{D^*}K^+$ to $B^+\to([K^+\pi^-]_D\pi^0)_{D^*}K^+$, without inclusion of the neutral pion in the reconstruction, are also reported to be $(20.2\pm3.5\pm2.3)\times10^{-3}$ and $(3.3\pm3.5\pm2.2)\times10^{-3}$, respectively.

NODE=S041QD2;LINKAGE=A

$\Gamma(([K^-\pi^+]_D\gamma)_{D^*}K^+)/\Gamma(([K^+\pi^-]_D\gamma)_{D^*}K^+)$ — Γ_{89}/Γ_{90}

NODE=S041QD3

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
1.3± 1.6 OUR AVERAGE [$(1.4\pm1.6)\times10^{-3}$ OUR 2024 AVERAGE]				
16.3±37.3	[1] AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV
1.3± 1.4±0.8	DEL-AMO-SA...	10H	BABR	$e^+e^-\to\Upsilon(4S)$

NEW

[1] AAIJ 21Q gives the charge-averaged rate, where the statistical and systematic uncertainties have been combined according to the correlations between the observables. The individual ratio of $B^- \to ([K^+\pi^-]_D\gamma)_{D^*}K^-$ to $B^- \to ([K^-\pi^+]_D\gamma)_{D^*}K^-$ and the ratio of $B^+ \to ([K^-\pi^+]_D\gamma)_{D^*}K^+$ to $B^+ \to ([K^+\pi^-]_D\gamma)_{D^*}K^+$, without inclusion of the photon in the reconstruction, are also reported to be $(11.7 \pm 21.5 \pm 31.3) \times 10^{-3}$ and $(29.2 \pm 21.4 \pm 31.2) \times 10^{-3}$, respectively. NODE=S041QD3;LINKAGE=A

$\Gamma([\pi^+\pi^-\pi^0]_D K^-)/\Gamma_{total}$ — Γ_{91}/Γ

NODE=S041Q56

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
4.6±0.8±0.4	[1] AUBERT	07BJ	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
5.5±1.0±0.7	[1] AUBERT,B	05T	BABR	Repl. by AUBERT 07BJ

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q56;LINKAGE=EP

$\Gamma([K^0_S K^+\pi^-]_D K^+)/\Gamma([K^0_S K^+\pi^-]_D \pi^+)$ — Γ_{92}/Γ_{98}

NODE=S041RA9

VALUE	DOCUMENT ID		TECN	COMMENT
0.103±0.015 OUR AVERAGE	Error includes scale factor of 1.9.			
0.122±0.012±0.004	[1] ADACHI	23L	BELL	$e^+e^- \to \Upsilon(4S)$
0.092±0.009±0.004	[1] AAIJ	14V	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.081±0.008±0.004	[2] AAIJ	20N	LHCB	pp at 7, 8, 13 TeV

[1] The anaysis uses all of $D \to K^0_S K\pi$ Dalitz decays. NODE=S041RA9;LINKAGE=AA

[2] The analysis uses $D \to K^0_S K\pi$ Dalitz decays with $K^{*-}K^+$ region excluded. NODE=S041RA9;LINKAGE=A

$\Gamma([K^0_S K^-\pi^+]_D K^+)/\Gamma([K^0_S K^-\pi^+]_D \pi^+)$ — Γ_{94}/Γ_{96}

NODE=S041RA0

VALUE	DOCUMENT ID		TECN	COMMENT
0.075±0.013 OUR AVERAGE	Error includes scale factor of 1.7.			
0.093±0.013±0.003	[1] ADACHI	23L	BELL	$e^+e^- \to \Upsilon(4S)$
0.066±0.009±0.002	[1] AAIJ	14V	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.073±0.006±0.002	[2] AAIJ	20N	LHCB	pp at 7, 8, 13 TeV

[1] The anaysis uses all of $D \to K^0_S K\pi$ Dalitz decays. NODE=S041RA0;LINKAGE=AA

[2] The analysis uses $D \to K^0_S K\pi$ Dalitz decays with $K^{*-}K^+$ region excluded. NODE=S041RA0;LINKAGE=A

$\Gamma([K^*(892)^- K^+]_D K^+)/\Gamma([K^*(892)^- K^+]_D \pi^+)$ — Γ_{93}/Γ_{99}

NODE=S041RB1

VALUE	DOCUMENT ID		TECN	COMMENT
0.080±0.004 OUR AVERAGE				
0.093±0.012±0.005	[1] ADACHI	23L	BELL	$e^+e^- \to \Upsilon(4S)$
0.079±0.004±0.002	[1] AAIJ	20N	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.084±0.011±0.003	[1] AAIJ	14V	LHCB	Repl. by AAIJ 20N

[1] The Analysis uses $D \to K^*(892)K \to K^0_S K\pi$ decays. NODE=S041RB1;LINKAGE=AA

$\Gamma([K^*(892)^+ K^-]_D K^+)/\Gamma([K^*(892)^+ K^-]_D \pi^+)$ — Γ_{95}/Γ_{97}

NODE=S041RB2

VALUE	DOCUMENT ID		TECN	COMMENT
0.066±0.012 OUR AVERAGE	Error includes scale factor of 1.9.			
0.103±0.020±0.006	[1] ADACHI	23L	BELL	$e^+e^- \to \Upsilon(4S)$
0.062±0.006±0.003	[1] AAIJ	20N	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.056±0.013±0.002	[1] AAIJ	14V	LHCB	Repl. by AAIJ 20N

[1] The Analysis uses $D \to K^*(892)K \to K^0_S K\pi$ decays. NODE=S041RB2;LINKAGE=AA

$\Gamma([K^0_S K^+\pi^-]_D \pi^+)/\Gamma([K^0_S K^-\pi^+]_D \pi^+)$ — Γ_{98}/Γ_{96}

NODE=S041RA8

VALUE	DOCUMENT ID		TECN	COMMENT
1.47 ±0.05 OUR AVERAGE	Error includes scale factor of 1.2.			
1.428±0.057±0.002	[1] ADACHI	23L	BELL	$e^+e^- \to \Upsilon(4S)$
1.528±0.058±0.025	[1] AAIJ	14V	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.706±0.019±0.009	[2] AAIJ	20N	LHCB	pp at 7, 8, 13 TeV

[1] The anaysis uses all of $D \to K^0_S K\pi$ Dalitz decays. NODE=S041RA8;LINKAGE=AA

[2] The analysis uses $D \to K^0_S K\pi$ Dalitz decays with $K^{*-}K^+$ region excluded. NODE=S041RA8;LINKAGE=A

$\Gamma([K^+K^-\pi^0]_D K^+)/\Gamma([K^+K^-\pi^0]_D \pi^+)$ — $\Gamma_{100}/\Gamma_{101}$

NODE=S041RB3

VALUE	DOCUMENT ID		TECN	COMMENT
0.95±0.22±0.05	[1] AAIJ	15W	LHCB	pp at 7, 8 TeV

[1] Uses $D \to K^+K^-\pi^0$ mode. NODE=S041RB3;LINKAGE=A

$\Gamma([\pi^+\pi^-\pi^0]_D K^+)/\Gamma([\pi^+\pi^-\pi^0]_D \pi^+)$ — $\Gamma_{102}/\Gamma_{103}$

NODE=S041RB4

VALUE	DOCUMENT ID		TECN	COMMENT
0.98±0.11±0.05	[1] AAIJ	15W	LHCB	pp at 7, 8 TeV

[1] Uses $D \to \pi^+\pi^-\pi^0$ mode. NODE=S041RB4;LINKAGE=A

$\Gamma([K^*(892)^- K^+]_D \pi^+)/\Gamma([K^*(892)^+ K^-]_D \pi^+)$ — Γ_{99}/Γ_{97}

NODE=S041RB0

VALUE	DOCUMENT ID		TECN	COMMENT
2.56 ±0.06 OUR AVERAGE	Error includes scale factor of 1.2.			
2.412±0.132±0.019	[1] ADACHI	23L	BELL	$e^+e^- \to \Upsilon(4S)$
2.585±0.057±0.019	[1] AAIJ	20N	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2.57 ±0.13 ±0.06	[1] AAIJ	14V	LHCB	Repl. by AAIJ 20N

[1] The Analysis uses $D \to K^*(892) K \to K^0_S K \pi$ decays. NODE=S041RB0;LINKAGE=AA

$\Gamma(\overline{D}^0 K^*(892)^+)/\Gamma_{total}$ — Γ_{104}/Γ

NODE=S041B57

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
5.3 ±0.4 OUR AVERAGE				
5.29±0.30±0.34	[1] AUBERT	06Z	BABR	$e^+e^- \to \Upsilon(4S)$
6.1 ±1.6 ±1.7	[1] MAHAPATRA	02	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
6.3 ±0.7 ±0.5	[1] AUBERT	04Q	BABR	Repl. by AUBERT 06Z

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B57;LINKAGE=EP

$\Gamma(D_{CP(-1)} K^*(892)^+)/\Gamma(\overline{D}^0 K^*(892)^+)$ — $\Gamma_{105}/\Gamma_{104}$

NODE=S041Q61

VALUE	DOCUMENT ID		TECN	COMMENT
0.515±0.135±0.065	[1] AUBERT	09AJ	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.325±0.13 ±0.04	[2] AUBERT,B	05U	BABR	Repl. by AUBERT 09AJ

[1] The authors report $R_{CP-} = 1.03 \pm 0.27 \pm 0.13$ which is, assuming CP conservation, twice the value of the quoted above branching ratio, NODE=S041Q61;LINKAGE=AB

[2] The authors report $R_{CP-} = 0.65 \pm 0.26 \pm 0.08$ which is, assuming CP conservation, twice the value of the quoted above branching ratio. NODE=S041Q61;LINKAGE=AU

$\Gamma(D_{CP(+1)} K^*(892)^+)/\Gamma(\overline{D}^0 K^*(892)^+)$ — $\Gamma_{106}/\Gamma_{104}$

NODE=S041Q62

VALUE	DOCUMENT ID		TECN	COMMENT
1.16 ±0.08 OUR AVERAGE				
1.18 ±0.08 ±0.02	[1] AAIJ	18X	LHCB	pp at 7, 8, 13 TeV
1.085±0.175±0.045	[2] AUBERT	09AJ	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.18 ±0.08 ±0.01	[3] AAIJ	17BO	LHCB	Repl. by AAIJ 18X
0.98 ±0.20 ±0.055	[4] AUBERT,B	05U	BABR	Repl. by AUBERT 09AJ

[1] Measures the ratio separately for K^+K^- and $\pi^+\pi^-$ final states, $R_{KK} = 1.22 \pm 0.09 \pm 0.02$ and $R_{\pi\pi} = 1.08 \pm 0.14 \pm 0.03$, and combines the two results. NODE=S041Q62;LINKAGE=B

[2] The authors report $R_{CP+} = 2.17 \pm 0.35 \pm 0.09$ which is, assuming CP conservation, twice the value of the quoted above branching ratio, NODE=S041Q62;LINKAGE=AB

[3] Measures the ratio separately for K^+K^- and $\pi^+\pi^-$ final states, $R_{KK} = 1.22 \pm 0.09 \pm 0.01$ and $R_{\pi\pi} = 1.08 \pm 0.14 \pm 0.03$, and combines the two results. NODE=S041Q62;LINKAGE=A

[4] The authors report $R_{CP+} = 1.96 \pm 0.40 \pm 0.11$ which is, assuming CP conservation, twice the value of the quoted above branching ratio. NODE=S041Q62;LINKAGE=AU

$\Gamma(D^0 K^*(892)^+)/\Gamma(\overline{D}^0 K^*(892)^+)$ — $\Gamma_{107}/\Gamma_{104}$

NODE=S041P63

VALUE (units 10^{-3})	DOCUMENT ID
$10.2^{+3.2}_{-6.9}$ OUR EVALUATION	(Produced by HFLAV)

→ UNCHECKED ←

$\Gamma(\overline{D}^0 K^+\pi^+\pi^-)/\Gamma(\overline{D}^0 \pi^+\pi^+\pi^-)$ — $\Gamma_{108}/\Gamma_{114}$

NODE=S041T93

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
9.4±1.3±0.9	AAIJ	12T	LHCB	pp at 7 TeV

$\Gamma(D_{CP(+1)} K^+ \pi^- \pi^+)/\Gamma([K^+\pi^-]_D K^+ \pi^- \pi^+)$ $\Gamma_{111}/\Gamma_{109}$

NODE=S041RB5

VALUE	DOCUMENT ID		TECN	COMMENT
1.040±0.064	AAIJ	15BC	LHCB	pp at 7, 8 TeV

$\Gamma([K^-\pi^+]_D K^+ \pi^- \pi^+)/\Gamma([K^+\pi^-]_D K^+ \pi^- \pi^+)$ $\Gamma_{110}/\Gamma_{109}$

NODE=S041RB6

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
85^{+36}_{-33}	AAIJ	15BC	LHCB	pp at 7, 8 TeV

$\Gamma(\overline{D}^0 K^+ \overline{K}^0)/\Gamma_{total}$ Γ_{112}/Γ

NODE=S041B64

NEW

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
3.73±0.34 OUR AVERAGE				
[$(5.5 \pm 1.6) \times 10^{-4}$ OUR 2024 AVERAGE]				
3.65±0.35±0.04	[1] ADACHI	24L	BEL2	362 fb^{-1}, $e^+e^- \rightarrow \Upsilon(4S)$
5.4 ±1.6 ±0.1	[2] DRUTSKOY	02	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

[1] ADACHI 24L reports $(3.64 \pm 0.32 \pm 0.16) \times 10^{-4}$ from a measurement of $[\Gamma(B^+ \rightarrow \overline{D}^0 K^+ \overline{K}^0)/\Gamma_{total}] \times [B(\Upsilon(4S) \rightarrow B^+B^-)]$ assuming $B(\Upsilon(4S) \rightarrow B^+B^-) = (51.6 \pm 1.2) \times 10^{-2}$, which we rescale to our best value $B(\Upsilon(4S) \rightarrow B^+B^-) = (51.4 \pm 0.6) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S041B64;LINKAGE=C

[2] DRUTSKOY 02 reports $(5.5 \pm 1.4 \pm 0.8) \times 10^{-4}$ from a measurement of $[\Gamma(B^+ \rightarrow \overline{D}^0 K^+ \overline{K}^0)/\Gamma_{total}] \times [B(\Upsilon(4S) \rightarrow B^+B^-)]$ assuming $B(\Upsilon(4S) \rightarrow B^+B^-) = (50 \pm 0) \times 10^{-2}$, which we rescale to our best value $B(\Upsilon(4S) \rightarrow B^+B^-) = (51.4 \pm 0.6) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S041B64;LINKAGE=B

$\Gamma(\overline{D}^0 K^+ \overline{K}^*(892)^0)/\Gamma_{total}$ Γ_{113}/Γ

NODE=S041B66

NEW

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
7.2 ±0.5 OUR AVERAGE				
[$(7.5 \pm 1.7) \times 10^{-4}$ OUR 2024 AVERAGE]				
7.19±0.45±0.33	[1] ADACHI	24L	BEL2	$e^+e^- \rightarrow \Upsilon(4S)$
7.5 ±1.3 ±1.1	[2] DRUTSKOY	02	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Used 362 fb^{-1} Belle II data and $B(\Upsilon(4S) \rightarrow B^0\overline{B}^0)$=0.484 ± 0.012.

NODE=S041B66;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B66;LINKAGE=EP

$\Gamma(\overline{D}^0 \pi^+ \pi^+ \pi^-)/\Gamma_{total}$ Γ_{114}/Γ

NODE=S041R85

VALUE	DOCUMENT ID		TECN	COMMENT
0.0055±0.0020 OUR FIT Error includes scale factor of 3.6.				
0.0115±0.0029±0.0021	[1] BORTOLETTO	92	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$

[1] BORTOLETTO 92 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D.

NODE=S041R85;LINKAGE=B9

$\Gamma(\overline{D}^0 \pi^+ \pi^+ \pi^-)/\Gamma(\overline{D}^0 \pi^+)$ Γ_{114}/Γ_{57}

NODE=S041C66

VALUE	DOCUMENT ID		TECN	COMMENT
1.2 ±0.4 OUR FIT Error includes scale factor of 3.6.				
1.27±0.06±0.11	AAIJ	11E	LHCB	pp at 7 TeV

$\Gamma([K^-\pi^+]_D \pi^+ \pi^- \pi^+)/\Gamma([K^+\pi^-]_D K^+ \pi^- \pi^+)$ $\Gamma_{115}/\Gamma_{109}$

NODE=S041RB7

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
42.7±5.6	AAIJ	15BC	LHCB	pp at 7, 8 TeV

$\Gamma(\overline{D}^0 \pi^+ \pi^+ \pi^-$ nonresonant$)/\Gamma_{total}$ Γ_{116}/Γ

NODE=S041R86

VALUE	DOCUMENT ID		TECN	COMMENT
0.0051±0.0034±0.0023	[1] BORTOLETTO	92	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$

[1] BORTOLETTO 92 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D.

NODE=S041R86;LINKAGE=B9

$\Gamma(\overline{D}^0 \pi^+ \rho^0)/\Gamma_{total}$ Γ_{117}/Γ

NODE=S041R87

VALUE	DOCUMENT ID		TECN	COMMENT
0.0042±0.0023±0.0020	[1] BORTOLETTO	92	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$

[1] BORTOLETTO 92 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D.

NODE=S041R87;LINKAGE=B9

$\Gamma(\overline{D}^0 a_1(1260)^+)/\Gamma_{total}$ — Γ_{118}/Γ

NODE=S041R88

VALUE	DOCUMENT ID	TECN	COMMENT
0.0045±0.0019±0.0031	[1] BORTOLETTO92	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] BORTOLETTO 92 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D.

NODE=S041R88;LINKAGE=B9

$\Gamma(\overline{D}^0 \omega\pi^+)/\Gamma_{total}$ — Γ_{119}/Γ

NODE=S041B54

VALUE	DOCUMENT ID	TECN	COMMENT
0.0041±0.0007±0.0006	[1] ALEXANDER 01B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. The signal is consistent with all observed $\omega\pi^+$ having proceeded through the ρ'^+ resonance at mass $1349 \pm 25^{+10}_{-5}$ MeV and width $547 \pm 86^{+46}_{-45}$ MeV.

NODE=S041B54;LINKAGE=AK

$\Gamma(D^*(2010)^-\pi^+\pi^+)/\Gamma_{total}$ — Γ_{120}/Γ

NODE=S041R2

VALUE (units 10^{-3})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
1.35±0.22 OUR AVERAGE						
1.25±0.08±0.22			[1] ABE	04D	BELL	$e^+e^- \to \Upsilon(4S)$
1.9 ±0.7 ±0.3		14	[2] ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$
2.6 ±1.4 ±0.7		11	[3] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$
$2.4\ ^{+1.7}_{-1.6}\ ^{+1.0}_{-0.6}$		3	[4] BEBEK	87	CLEO	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<4.	90		[5] BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$
5. ±2. ±3.		7	[6] ALBRECHT	87C	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041R2;LINKAGE=AB

[2] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II $B(D^*(2010)^+ \to D^0\pi^+)$ and absolute $B(D^0 \to K^-\pi^+)$ and the PDG 1992 $B(D^0 \to K^-\pi^+\pi^0)/B(D^0 \to K^-\pi^+)$ and $B(D^0 \to K^-2\pi^+\pi^-)/B(D^0 \to K^-\pi^+)$.

NODE=S041R2;LINKAGE=EF

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses the Mark III branching fractions for the D.

NODE=S041R2;LINKAGE=9B

[4] BEBEK 87 value has been updated in BERKELMAN 91 to use same assumptions as noted for BORTOLETTO 92.

NODE=S041R2;LINKAGE=A

[5] BORTOLETTO 92 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D and $D^*(2010)$. The authors also find the product branching fraction into $D^{**}\pi$ followed by $D^{**} \to D^*(2010)\pi$ to be $0.0014^{+0.0008}_{-0.0006} \pm 0.0003$ where D^{**} represents all orbitally excited D mesons.

NODE=S041R2;LINKAGE=B9

[6] ALBRECHT 87C use PDG 86 branching ratios for D and $D^*(2010)$ and assume $B(\Upsilon(4S) \to B^+B^-) = 55\%$ and $B(\Upsilon(4S) \to B^0\overline{B}^0) = 45\%$. Superseded by ALBRECHT 90J.

NODE=S041R2;LINKAGE=B

$\Gamma(D^*(2010)^- K^+\pi^+)/\Gamma_{total}$ — Γ_{121}/Γ

NODE=S041P42

VALUE (units 10^{-5})	DOCUMENT ID	TECN	COMMENT
8.2±0.3±1.4	[1] AAIJ 17AR	LHCB	pp at 7 , 8 TeV

[1] The branching fraction of the normalization mode $B^+ \to D^{*-}\pi^+\pi^+$ is rescaled to the updated ratio of $\Upsilon(4S) \to B^+B^-$ to $\Upsilon(4S) \to B^0\overline{B}^0$ decay rates of 1.058 ± 0.024.

NODE=S041P42;LINKAGE=A

$\Gamma(D^*(2010)^- K^+\pi^+)/\Gamma(D^*(2010)^-\pi^+\pi^+)$ — $\Gamma_{121}/\Gamma_{120}$

NODE=S041P43

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
6.39±0.27±0.48	[1] AAIJ 17AR	LHCB	pp at 7, 8 TeV

[1] Uses $D^{*-} \to \overline{D}^0\pi^-$ and $\overline{D}^0 \to K^+\pi^-$ decays.

NODE=S041P43;LINKAGE=A

$\Gamma(\overline{D}_1(2420)^0\pi^+,\ \overline{D}_1^0 \to D^*(2010)^-\pi^+)/\Gamma_{total}$ — Γ_{122}/Γ

NODE=S041P97

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
8.42±0.08±1.46	[1] AAIJ 20D	LHCB	pp at 7, 8, 13 TeV

[1] AAIJ 20D used a 4-body amplitude analysis of $B^- \to D^{*+}\pi^-\pi^-$ decays.

NODE=S041P97;LINKAGE=A

$\Gamma(\overline{D}_1(2420)^0\pi^+,\ \overline{D}_1^0 \to D^*(2010)^-\pi^+)/\Gamma(\overline{D}^0\pi^+\pi^+\pi^-)$ — $\Gamma_{122}/\Gamma_{114}$

NODE=S041C69

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
9.3±1.6±0.9	[1] AAIJ 11E	LHCB	pp at 7 TeV

[1] AAIJ 11E reports $(9.3 \pm 1.6 \pm 0.9) \times 10^{-2}$ from a measurement of $[\Gamma(B^+ \to \overline{D}_1(2420)^0\pi^+,\ \overline{D}_1^0 \to D^*(2010)^-\pi^+)/\Gamma(B^+ \to \overline{D}^0\pi^+\pi^+\pi^-)] \times [B(D^*(2010)^+ \to D^0\pi^+)]$ assuming $B(D^*(2010)^+ \to D^0\pi^+) = (67.7 \pm 0.5) \times 10^{-2}$.

NODE=S041C69;LINKAGE=AA

$\Gamma(D^-\pi^+\pi^+)/\Gamma_{total}$ — Γ_{123}/Γ

NODE=S041R14

VALUE (units 10^{-3})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
1.07±0.05 OUR AVERAGE						
1.08±0.03±0.05			[1] AUBERT	09AB	BABR	$e^+e^- \to \Upsilon(4S)$
1.02±0.04±0.15			[1] ABE	04D	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<1.4	90		[2] ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$
<7	90		[3] BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$
$2.5\ ^{+4.1}_{-2.3}\ ^{+2.4}_{-0.8}$		1	[4] BEBEK	87	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R14;LINKAGE=EP

[2] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the Mark III $B(D^+ \to K^-2\pi^+)$. NODE=S041R14;LINKAGE=CC

[3] BORTOLETTO 92 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D. The product branching fraction into $D_0^*(2340)\pi$ followed by $D_0^*(2340) \to D\pi$ is < 0.005 at 90%CL and into $D_2^*(2460)$ followed by $D_2^*(2460) \to D\pi$ is < 0.004 at 90%CL. NODE=S041R14;LINKAGE=B9

[4] BEBEK 87 assume the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. $B(D^- \to K^+\pi^-\pi^-) = (9.1 \pm 1.3 \pm 0.4)\%$ is assumed. NODE=S041R14;LINKAGE=A

$\Gamma(D^-K^+\pi^+)/\Gamma(D^-\pi^+\pi^+)$ — $\Gamma_{124}/\Gamma_{123}$

NODE=S041T99

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
7.20±0.19±0.21	AAIJ	15V	LHCB	pp at 7, 8 TeV

$\Gamma(D_0^*(2300)^0K^+,\ D_0^{*0} \to D^-\pi^+)/\Gamma_{total}$ — Γ_{125}/Γ

NODE=S041D00

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
6.1±1.9±1.5	[1] AAIJ	15V	LHCB	pp at 7, 8 TeV

[1] Performs the amplitude analysis by fitting the square-Dalitz-plot distribution. NODE=S041D00;LINKAGE=A

$\Gamma(D_2^*(2460)^0K^+,\ D_2^{*0} \to D^-\pi^+)/\Gamma_{total}$ — Γ_{126}/Γ

NODE=S041D02

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
23.2±1.1±2.0	[1] AAIJ	15V	LHCB	pp at 7, 8 TeV

[1] Performs the amplitude analysis by fitting the square-Dalitz-plot distribution. NODE=S041D02;LINKAGE=A

$\Gamma(D_1^*(2760)^0K^+,\ D_1^{*0} \to D^-\pi^+)/\Gamma_{total}$ — Γ_{127}/Γ

NODE=S041D01

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
3.6±0.9±0.8	[1] AAIJ	15V	LHCB	pp at 7, 8 TeV

[1] Performs the amplitude analysis by fitting the square-Dalitz-plot distribution. NODE=S041D01;LINKAGE=A

$\Gamma(D^+K^0)/\Gamma_{total}$ — Γ_{128}/Γ

NODE=S041Q47

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2\ \times 10^{-6}$	90	KUMAR	23	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<2.9 \times 10^{-6}$	90	[1] DEL-AMO-SA...	10K	BABR	$e^+e^- \to \Upsilon(4S)$
$<5.0 \times 10^{-6}$	90	[1] AUBERT,B	05E	BABR	Repl. by DEL-AMO-SANCHEZ 10K

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q47;LINKAGE=EP

$\Gamma(D^+K^+\pi^-)/\Gamma(D^-K^+\pi^+)$ — $\Gamma_{129}/\Gamma_{124}$

NODE=S041P25

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
7.3±1.2±0.7	AAIJ	16M	LHCB	pp at 7, 8 TeV

$\Gamma(D^+\eta)/\Gamma_{total}$ — Γ_{130}/Γ

NODE=S041A72

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.2 \times 10^{-5}$	90	KUMAR	23	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(D_2^*(2460)^0K^+,\ D_2^{*0} \to D^+\pi^-)/\Gamma_{total}$ — Γ_{131}/Γ

NODE=S041P26

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<6.3 \times 10^{-7}$	90	AAIJ	16R	LHCB	pp at 7, 8 TeV

$\Gamma(D^+ K^{*0})/\Gamma_{total}$ Γ_{132}/Γ

NODE=S041P02
NODE=S041P02

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<4.9 × 10^{-7}	90	AAIJ	16M	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.8 \times 10^{-6}$	90	AAIJ	13R	LHCB	Repl. by AAIJ 16M
$<3.0 \times 10^{-6}$	90	[1] DEL-AMO-SA...	10K	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041P02;LINKAGE=EP

$\Gamma(D^+ \overline{K}^{*0})/\Gamma_{total}$ Γ_{133}/Γ

NODE=S041C76
NODE=S041C76

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<1.4	90	AAIJ	13R	LHCB	pp at 7 TeV

$\Gamma(\overline{D}^*(2007)^0 \pi^+)/\Gamma_{total}$ Γ_{134}/Γ

NODE=S041R15
NODE=S041R15

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
5.17 ±0.15 OUR AVERAGE					
5.35 ±0.04 ±0.22		AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV
4.82 ±0.12 ±0.35		[1] KATO	18	BELL	$e^+e^- \to \Upsilon(4S)$
5.52 ±0.17 ±0.42		[2] AUBERT	07H	BABR	$e^+e^- \to \Upsilon(4S)$
5.3 ±0.4 ±0.1		[3,4] AUBERT,BE	06J	BABR	$e^+e^- \to \Upsilon(4S)$
4.34 ±0.47 ±0.18		[5] BRANDENB...	98	CLE2	$e^+e^- \to \Upsilon(4S)$
5.2 ±0.7 ±0.7	71	[6] ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$
7.2 ±1.8 ±1.6		[7] BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$
4.0 ±1.4 ±1.2	9	[7] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
4.664±0.029±0.268		[8] AAIJ	18A	LHCB	pp at 7, 8, 13 TeV
2.7 ±4.4		[9] BEBEK	87	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Measures absolute branching fractions using a missing-mass technique.

NODE=S041R15;LINKAGE=B

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041R15;LINKAGE=EP

[3] AUBERT,BE 06J reports $[\Gamma(B^+ \to \overline{D}^*(2007)^0\pi^+)/\Gamma_{total}]$ / $[B(B^+ \to \overline{D}^0\pi^+)]$ = 1.14 ± 0.07 ± 0.04 which we multiply by our best value $B(B^+ \to \overline{D}^0\pi^+)$ = $(4.61 \pm 0.10) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S041R15;LINKAGE=AR

[4] Uses a missing-mass method. Does not depend on D branching fractions or B^+/B^0 production rates.

NODE=S041R15;LINKAGE=RT

[5] BRANDENBURG 98 assume equal production of B^+ and B^0 at $\Upsilon(4S)$ and use the D^* reconstruction technique. The first error is their experiment's error and the second error is the systematic error from the PDG 96 value of $B(D^* \to D\pi)$.

NODE=S041R15;LINKAGE=BG

[6] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II $B(D^*(2007)^0 \to D^0\pi^0)$ and absolute $B(D^0 \to K^-\pi^+)$ and the PDG 1992 $B(D^0 \to K^-\pi^+\pi^0)/B(D^0 \to K^-\pi^+)$ and $B(D^0 \to K^-2\pi^+\pi^-)/B(D^0 \to K^-\pi^+)$.

NODE=S041R15;LINKAGE=EB

[7] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D and $D^*(2010)$.

NODE=S041R15;LINKAGE=B9

[8] Superseded by AAIJ 21Q.

NODE=S041R15;LINKAGE=C

[9] This is a derived branching ratio, using the inclusive pion spectrum and other two-body B decays. BEBEK 87 assume the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$.

NODE=S041R15;LINKAGE=A

$\Gamma(\overline{D}^*(2007)^0 \omega\pi^+)/\Gamma_{total}$ Γ_{137}/Γ

NODE=S041B53
NODE=S041B53

VALUE	DOCUMENT ID		TECN	COMMENT
0.0045±0.0010±0.0007	[1] ALEXANDER	01B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. The signal is consistent with all observed $\omega\pi^+$ having proceeded through the ρ'^+ resonance at mass $1349 \pm 25^{+10}_{-5}$ MeV and width $547 \pm 86^{+46}_{-45}$ MeV.

NODE=S041B53;LINKAGE=AK

$\Gamma(\overline{D}^*(2007)^0 \rho^+)/\Gamma_{total}$ Γ_{138}/Γ

NODE=S041S41
NODE=S041S41

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.0098±0.0017 OUR AVERAGE					
0.0098±0.0006±0.0017		[1] CSORNA	03	CLE2	$e^+e^- \to \Upsilon(4S)$
0.010 ±0.006 ±0.004	7	[2] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.0168±0.0021±0.0028	86	[3] ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$ resonance. The second error combines the systematic and theoretical uncertainties in quadrature. CSORNA 03 includes data used in ALAM 94. A full angular fit to three complex helicity amplitudes is performed. NODE=S041S41;LINKAGE=EP

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D and $D^*(2010)$. NODE=S041S41;LINKAGE=B9

[3] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II B($D^*(2007)^0 \to D^0\pi^0$) and absolute B($D^0 \to K^-\pi^+$) and the PDG 1992 B($D^0 \to K^-\pi^+\pi^0$)/B($D^0 \to K^-\pi^+$) and B($D^0 \to K^-2\pi^+\pi^-$)/B($D^0 \to K^-\pi^+$). The nonresonant $\pi^+\pi^0$ contribution under the ρ^+ is negligible. NODE=S041S41;LINKAGE=BE

$\Gamma(\overline{D}^*(2007)^0 K^+)/\Gamma_{total}$ Γ_{139}/Γ

NODE=S041B48
NODE=S041B48

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
$4.19^{+0.31}_{-0.28}$ OUR AVERAGE			
$4.21^{+0.30}_{-0.26}\pm0.12$	[1] AUBERT 05N	BABR	$e^+e^- \to \Upsilon(4S)$
$4.0 \pm1.1 \pm0.1$	[2] ABE 01I	BELL	$e^+e^- \to \Upsilon(4S)$

[1] AUBERT 05N reports $[\Gamma(B^+ \to \overline{D}^*(2007)^0 K^+)/\Gamma_{total}] / [B(B^+ \to \overline{D}^*(2007)^0\pi^+)] = 0.0813 \pm 0.0040^{+0.0042}_{-0.0031}$ which we multiply by our best value B($B^+ \to \overline{D}^*(2007)^0\pi^+$) = $(5.17 \pm 0.15) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041B48;LINKAGE=AU

[2] ABE 01I reports $[\Gamma(B^+ \to \overline{D}^*(2007)^0 K^+)/\Gamma_{total}] / [B(B^+ \to \overline{D}^*(2007)^0\pi^+)] = 0.078 \pm 0.019 \pm 0.009$ which we multiply by our best value B($B^+ \to \overline{D}^*(2007)^0\pi^+$) = $(5.17 \pm 0.15) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041B48;LINKAGE=EB

$\Gamma(\overline{D}^{*0}_{CP(+1)} K^+)/\Gamma_{total}$ Γ_{140}/Γ

NODE=S041C47
NODE=S041C47

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
$2.75\pm0.29^{+0.21}_{-0.18}$	[1] AUBERT 08BF	BABR	$e^+e^- \to \Upsilon(4S)$

[1] AUBERT 08BF reports $[\Gamma(B^+ \to \overline{D}^{*0}_{CP(+1)} K^+)/\Gamma_{total}] / [B(B^+ \to \overline{D}^*(2007)^0 K^+)] = 0.655 \pm 0.065 \pm 0.020$ which we multiply by our best value B($B^+ \to \overline{D}^*(2007)^0 K^+$) = $(4.19^{+0.31}_{-0.28}) \times 10^{-4}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041C47;LINKAGE=AU

$\Gamma(\overline{D}^*(2007)^0 K^+)/\Gamma(\overline{D}^*(2007)^0\pi^+)$ $\Gamma_{139}/\Gamma_{134}$

NODE=S041P52
NODE=S041P52

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
8.51 ±0.12 ±0.48	[1] AAIJ 21Q	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
7.930±0.110±0.560	[2] AAIJ 18A	LHCB	pp at 7, 8, 13 TeV

[1] Uses semi-inclusive reconstruction of $B^+ \to ([K^+\pi^-]_D\gamma/\pi^0)_{D^*}K^+/\pi^+$. Decays of $D^* \to D\gamma/\pi^0$ are reconstructed without inclusion of π^0 or γ. NODE=S041P52;LINKAGE=A

[2] Superseded by AAIJ 21Q. NODE=S041P52;LINKAGE=B

$\Gamma(\overline{D}^{*0}_{CP(+1)} K^+)/\Gamma(\overline{D}^{*0}_{CP(+1)}\pi^+)$ $\Gamma_{140}/\Gamma_{135}$

NODE=S041Q71
NODE=S041Q71

VALUE	DOCUMENT ID	TECN	COMMENT
0.095±0.017 OUR AVERAGE			
0.11 ±0.02 ±0.02	[1] ABE 06	BELL	$e^+e^- \to \Upsilon(4S)$
0.086±0.021±0.007	[2] AUBERT 05N	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Reports a double ratio of B($B^+ \to D^{*0}_{CP(+1)}K^+$)/B($B^+ \to D^{*0}_{CP(+1)}\pi^+$) and B($B^+ \to \overline{D}^{*0}K^+$)/B($B^+ \to \overline{D}^{*0}\pi^+$), $1.41 \pm 0.25 \pm 0.06$. We multiply by our best value of B($B^+ \to \overline{D}^{*0}K^+$)/B($B^+ \to \overline{D}^{*0}\pi^+$) = 0.080 ± 0.011. Our first error is their experiment's error and the second error is systematic error from using our best value. NODE=S041Q71;LINKAGE=AB

[2] Uses $D^{*0} \to D^0\pi^0$ with D^0 reconstructed in the CP-even eigenstates K^+K^- and $\pi^+\pi^-$. NODE=S041Q71;LINKAGE=AU

$\Gamma(\overline{D}^{*0}_{CP(-1)} K^+)/\Gamma_{total}$ Γ_{141}/Γ

NODE=S041C48
NODE=S041C48

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
$2.31\pm0.27^{+0.17}_{-0.16}$	[1] AUBERT 08BF	BABR	$e^+e^- \to \Upsilon(4S)$

[1] AUBERT 08BF reports $[\Gamma(B^+ \to \overline{D}^{*0}_{CP(-1)} K^+)/\Gamma_{total}] / [B(B^+ \to \overline{D}^*(2007)^0 K^+)] = 0.55 \pm 0.06 \pm 0.02$ which we multiply by our best value B($B^+ \to \overline{D}^*(2007)^0 K^+$) = $(4.19^{+0.31}_{-0.28}) \times 10^{-4}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041C48;LINKAGE=AU

$\Gamma(\overline{D}^{*0}_{CP(-1)} K^+)/\Gamma(D^{*0}_{CP(-1)} \pi^+)$ — $\Gamma_{141}/\Gamma_{136}$

NODE=S041Q81

VALUE	DOCUMENT ID	TECN	COMMENT
0.09±0.03±0.01	[1] ABE 06	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Reports a double ratio of B($B^+ \to D^{*0}_{CP(-1)} K^+$)/B($B^+ \to D^{*0}_{CP(-1)} \pi^+$) and B($B^+ \to \overline{D}^{*0} K^+$)/B($B^+ \to \overline{D}^{*0} \pi^+$), $1.15 \pm 0.31 \pm 0.12$. We multiply by our best value of B($B^+ \to \overline{D}^{*0} K^+$)/B($B^+ \to \overline{D}^{*0} \pi^+$) $= 0.080 \pm 0.011$. Our first error is their experiment's error and the second error is systematic error from using our best value.

NODE=S041Q81;LINKAGE=AB

$\Gamma(D^*(2007)^0 K^+)/\Gamma(\overline{D}^*(2007)^0 K^+)$ — $\Gamma_{142}/\Gamma_{139}$

NODE=S041P64

VALUE (units 10^{-2})	DOCUMENT ID
$1.08^{+0.27}_{-0.29}$ OUR EVALUATION	(Produced by HFLAV)

→ UNCHECKED ←

$\Gamma(\overline{D}^*(2007)^0 K^*(892)^+)/\Gamma_{total}$ — Γ_{143}/Γ

NODE=S041B58

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
8.1±1.4 OUR AVERAGE			
8.3±1.1±1.0	[1] AUBERT 04K	BABR	$e^+e^- \to \Upsilon(4S)$
7.2±2.2±2.6	[2] MAHAPATRA 02	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B58;LINKAGE=AU

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and an unpolarized final state. NODE=S041B58;LINKAGE=PE

$\Gamma(\overline{D}^*(2007)^0 K^+ \overline{K}^0)/\Gamma_{total}$ — Γ_{144}/Γ

NODE=S041B65

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
2.94±0.54±0.20		[1] ADACHI 24L	BEL2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<10.6	90	[2] DRUTSKOY 02	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Used 362 fb^{-1} Belle II data and B($\Upsilon(4S) \to B^0\overline{B}^0$)=0.484 ± 0.012. NODE=S041B65;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B65;LINKAGE=EP

$\Gamma(\overline{D}^*(2007)^0 K^+ \overline{K}^*(892)^0)/\Gamma_{total}$ — Γ_{145}/Γ

NODE=S041B67

NEW

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
12.3 ±1.4 OUR AVERAGE			
[(15 ± 4) × 10^{-4} OUR 2024 AVERAGE]			
11.93±1.14±0.93	[1] ADACHI 24L	BEL2	$e^+e^- \to \Upsilon(4S)$
15.3 ±3.1 ±2.9	[2] DRUTSKOY 02	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Used 362 fb^{-1} Belle II data and B($\Upsilon(4S) \to B^0\overline{B}^0$)=0.484 ± 0.012. NODE=S041B67;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B67;LINKAGE=EP

$\Gamma(\overline{D}^*(2007)^0 \pi^+\pi^+\pi^-)/\Gamma_{total}$ — Γ_{146}/Γ

NODE=S041S92

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
1.03 ±0.12 OUR AVERAGE				
1.055±0.047±0.129		[1] MAJUMDER 04	BELL	$e^+e^- \to \Upsilon(4S)$
0.94 ±0.20 ±0.17	48	[2,3] ALAM 94	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041S92;LINKAGE=EP

[2] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II B($D^*(2007)^0 \to D^0\pi^0$) and absolute B($D^0 \to K^-\pi^+$) and the PDG 1992 B($D^0 \to K^-\pi^+\pi^0$)/B($D^0 \to K^-\pi^+$) and B($D^0 \to K^-2\pi^+\pi^-$)/B($D^0 \to K^-\pi^+$). NODE=S041S92;LINKAGE=EB

[3] The three pion mass is required to be between 1.0 and 1.6 GeV consistent with an a_1 meson. (If this channel is dominated by a_1^+, the branching ratio for $\overline{D}^{*0} a_1^+$ is twice that for $\overline{D}^{*0}\pi^+\pi^+\pi^-$.) NODE=S041S92;LINKAGE=EC

$\Gamma(\overline{D}^*(2007)^0 a_1(1260)^+)/\Gamma_{total}$ — Γ_{147}/Γ

NODE=S041S96

VALUE	DOCUMENT ID	TECN	COMMENT
0.0188±0.0040±0.0034	[1,2] ALAM 94	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] ALAM 94 value is twice their $\Gamma(\overline{D}^*(2007)^0\pi^+\pi^+\pi^-)/\Gamma_{total}$ value based on their observation that the three pions are dominantly in the $a_1(1260)$ mass range 1.0 to 1.6 GeV. NODE=S041S96;LINKAGE=A

[2] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II B($D^*(2007)^0 \to D^0\pi^0$) and absolute B($D^0 \to K^-\pi^+$) and the PDG 1992 B($D^0 \to K^-\pi^+\pi^0$)/B($D^0 \to K^-\pi^+$) and B($D^0 \to K^-2\pi^+\pi^-$)/B($D^0 \to K^-\pi^+$). NODE=S041S96;LINKAGE=EB

$\Gamma(\overline{D}^*(2007)^0\pi^-\pi^+\pi^+\pi^0)/\Gamma_{total}$ — Γ_{148}/Γ

NODE=S041B52

VALUE	DOCUMENT ID	TECN	COMMENT
0.0180±0.0024±0.0027	[1] ALEXANDER 01B	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. The signal is consistent with all observed $\omega\pi^+$ having proceeded through the ρ'^+ resonance at mass $1349 \pm 25^{+10}_{-5}$ MeV and width $547 \pm 86^{+46}_{-45}$ MeV. NODE=S041B52;LINKAGE=AK

$\Gamma(\overline{D}^{*0}3\pi^+2\pi^-)/\Gamma_{total}$ — Γ_{149}/Γ

NODE=S041Q23

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
5.67±0.91±0.85	[1] MAJUMDER 04	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q23;LINKAGE=EP

$\Gamma(D^*(2010)^+\pi^0)/\Gamma_{total}$ — Γ_{150}/Γ

NODE=S041B15

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<3.6 × 10⁻⁶		[1] IWABUCHI 08	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<1.7 \times 10^{-4}$	90	[2] BRANDENB... 98	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B15;LINKAGE=EP

[2] BRANDENBURG 98 assume equal production of B^+ and B^0 at $\Upsilon(4S)$ and use the D^* partial reconstruction technique. The first error is their experiment's error and the second error is the systematic error from the PDG 96 value of B($D^* \rightarrow D\pi$). NODE=S041B15;LINKAGE=BG

$\Gamma(D^*(2010)^+K^0)/\Gamma_{total}$ — Γ_{151}/Γ

NODE=S041B45

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<9.0 × 10⁻⁶	90	[1] AUBERT,B 05E	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<9.5 \times 10^{-5}$	90	[1] GRITSAN 01	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B45;LINKAGE=EP

$\Gamma(D^*(2010)^-\pi^+\pi^+\pi^0)/\Gamma_{total}$ — Γ_{152}/Γ

NODE=S041R12

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.0152±0.0071±0.0001	26	[1] ALBRECHT 90J	ARG	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.043 ±0.013 ±0.026	24	[2] ALBRECHT 87C	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[1] ALBRECHT 90J reports $0.018 \pm 0.007 \pm 0.005$ from a measurement of $[\Gamma(B^+ \rightarrow D^*(2010)^-\pi^+\pi^+\pi^0)/\Gamma_{total}] \times [B(D^*(2010)^+ \rightarrow D^0\pi^+)]$ assuming $B(D^*(2010)^+ \rightarrow D^0\pi^+) = 0.57 \pm 0.06$, which we rescale to our best value $B(D^*(2010)^+ \rightarrow D^0\pi^+) = (67.7 \pm 0.5) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D. NODE=S041R12;LINKAGE=B9

[2] ALBRECHT 87C use PDG 86 branching ratios for D and $D^*(2010)$ and assume $B(\Upsilon(4S) \rightarrow B^+B^-) = 55\%$ and $B(\Upsilon(4S) \rightarrow B^0\overline{B}^0) = 45\%$. Superseded by ALBRECHT 90J. NODE=S041R12;LINKAGE=A

$\Gamma(D^*(2010)^-\pi^+\pi^+\pi^+\pi^-)/\Gamma_{total}$ — Γ_{153}/Γ

NODE=S041R64

VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT
2.56±0.26±0.33		[1] MAJUMDER 04	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<10	90	[2] ALBRECHT 90J	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R64;LINKAGE=EP

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D and $D^*(2010)$. NODE=S041R64;LINKAGE=B9

$\Gamma(\overline{D}^{**0}\pi^+)/\Gamma_{total}$ — Γ_{154}/Γ

NODE=S041R03

D^{**0} represents an excited state with mass $2.2 < M < 2.8$ GeV/c². NODE=S041R03

NODE=S041R03

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
5.6±1.2±0.1	[1,2] AUBERT,BE 06J	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

[1] AUBERT,BE 06J reports $[\Gamma(B^+ \rightarrow \overline{D}^{**0}\pi^+)/\Gamma_{total}] / [B(B^+ \rightarrow \overline{D}^0\pi^+)] = 1.22 \pm 0.13 \pm 0.23$ which we multiply by our best value $B(B^+ \rightarrow \overline{D}^0\pi^+) = (4.61 \pm 0.10) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041R03;LINKAGE=AR

[2] Uses a missing-mass method. Does not depend on D branching fractions or B^+/B^0 production rates. NODE=S041R03;LINKAGE=RT

$\Gamma\big(\overline{D}{}_1^*(2420)^0\pi^+\big)/\Gamma_{total}$ — Γ_{155}/Γ

NODE=S041R93
NODE=S041R93

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.0015±0.0006 OUR AVERAGE Error includes scale factor of 1.3.					
0.0011±0.0005±0.0002	8	[1] ALAM	94	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
0.0025±0.0007±0.0006		[2] ALBRECHT	94D	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[1] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II B($D^*(2010)^+ \rightarrow D^0\pi^+$) and absolute B($D^0 \rightarrow K^-\pi^+$) and the PDG 1992 B($D^0 \rightarrow K^-\pi^+\pi^0$)/B($D^0 \rightarrow K^-\pi^+$) and assuming B($D_1(2420)^0 \rightarrow D^*(2010)^+\pi^-$) = 67%. NODE=S041R93;LINKAGE=EG

[2] ALBRECHT 94D assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II B($D^*(2010)^+ \rightarrow D^0\pi^+$) assuming B($D_1(2420)^0 \rightarrow D^*(2010)^+\pi^-$) = 67%. NODE=S041R93;LINKAGE=A

$\Gamma\big(\overline{D}_1(2420)^0\pi^+ \times \text{B}(\overline{D}{}_1^0 \rightarrow \overline{D}{}^0\pi^+\pi^-)\big)/\Gamma_{total}$ — Γ_{156}/Γ

NODE=S041Q82
NODE=S041Q82

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
$2.5^{+1.6}_{-1.4}$ OUR FIT Error includes scale factor of 3.8.				
$1.85\pm0.29^{+0.35}_{-0.55}$	[1] ABE	05A	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q82;LINKAGE=EP

$\Gamma\big(\overline{D}_1(2420)^0\pi^+ \times \text{B}(\overline{D}{}_1^0 \rightarrow \overline{D}{}^0\pi^+\pi^-)\big)/\Gamma\big(\overline{D}{}^0\pi^+\pi^+\pi^-\big)$ — $\Gamma_{156}/\Gamma_{114}$

NODE=S041C67
NODE=S041C67

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
$4.6^{+3.3}_{-2.7}$ OUR FIT Error includes scale factor of 3.9.				
10.3±1.5±0.9	AAIJ	11E	LHCB	pp at 7 TeV

$\Gamma\big(\overline{D}_1(2420)^0\pi^+ \times \text{B}(\overline{D}{}_1^0 \rightarrow \overline{D}{}^0\pi^+\pi^- \text{(nonresonant)})\big)/\Gamma\big(\overline{D}{}^0\pi^+\pi^+\pi^-\big)$ — $\Gamma_{157}/\Gamma_{114}$

NODE=S041C68
NODE=S041C68

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
4.0±0.7±0.5	[1] AAIJ	11E	LHCB	pp at 7 TeV

[1] Excludes decays where $\overline{D}_1(2420)^0 \rightarrow D*(2010)^-\pi^+$. NODE=S041C68;LINKAGE=AA

$\Gamma\big(\overline{D}_1(2430)^0\pi^+,\ \overline{D}{}_1^0 \rightarrow D^*(2010)^-\pi^+\big)/\Gamma_{total}$ — Γ_{158}/Γ

NODE=S041P78
NODE=S041P78

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
3.51±0.06±0.61	[1] AAIJ	20D	LHCB	pp at 7, 8, 13 TeV

[1] AAIJ 20D used a 4-body amplitude analysis of $B^- \rightarrow D^{*+}\pi^-\pi^-$ decays. NODE=S041P78;LINKAGE=A

$\Gamma\big(\overline{D}{}_2^*(2462)^0\pi^+,\ \overline{D}{}_2^{*0} \rightarrow D^-\pi^+\big)/\Gamma_{total}$ — Γ_{161}/Γ

NODE=S041Q01
NODE=S041Q01

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
3.56±0.24 OUR AVERAGE				
3.62±0.06±0.30	[1] AAIJ	16AH	LHCB	pp at 7, 8 TeV
3.5 ±0.2 ±0.4	[2] AUBERT	09AB	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
3.4 ±0.3 ±0.72	[2] ABE	04D	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Measured using a Dalitz plot analysis of $B^- \rightarrow D^+\pi^-\pi^-$ decays. NODE=S041Q01;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q01;LINKAGE=EP

$\Gamma\big(\overline{D}{}_2^*(2462)^0\pi^+,\ \overline{D}{}_2^{*0} \rightarrow \overline{D}{}^0\pi^-\pi^+\big)/\Gamma\big(\overline{D}{}^0\pi^+\pi^+\pi^-\big)$ — $\Gamma_{162}/\Gamma_{114}$

NODE=S041C70
NODE=S041C70

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
4.0±1.0±0.4	AAIJ	11E	LHCB	pp at 7 TeV

$\Gamma\big(\overline{D}{}_2^*(2462)^0\pi^+,\ \overline{D}{}_2^{*0} \rightarrow \overline{D}{}^0\pi^-\pi^+ \text{(nonresonant)}\big)/\Gamma\big(\overline{D}{}^0\pi^+\pi^+\pi^-\big)$ — $\Gamma_{163}/\Gamma_{114}$

NODE=S041C72
NODE=S041C72

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.0\times10^{-2}$	90	[1] AAIJ	11E	LHCB	pp at 7 TeV

[1] Excludes decays where $\overline{D}{}_2^*(2462)^0 \rightarrow D^*(2010)^-\pi^+$. NODE=S041C72;LINKAGE=AA

$\Gamma\big(\overline{D}{}_2^*(2462)^0\pi^+,\ \overline{D}{}_2^{*0} \rightarrow D^*(2010)^-\pi^+\big)/\Gamma\big(\overline{D}{}^0\pi^+\pi^+\pi^-\big)$ — $\Gamma_{164}/\Gamma_{114}$

NODE=S041C71
NODE=S041C71

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
3.9±1.2±0.4	[1] AAIJ	11E	LHCB	pp at 7 TeV

[1] Uses B($D^*(2010)^+ \rightarrow D^0\pi^+$) = (67.7 +- 0.5)%. NODE=S041C71;LINKAGE=AA

$\Gamma(\overline{D}{}_0^*(2400)^0\pi^+ \times B(\overline{D}{}_0^*(2400)^0 \to D^-\pi^+))/\Gamma_{total}$ — Γ_{165}/Γ

NODE=S041Q02

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
6.4±1.4 OUR AVERAGE				
6.8±0.3±2.0	[1] AUBERT	09AB	BABR	$e^+e^- \to \Upsilon(4S)$
6.1±0.6±1.8	[1] ABE	04D	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041Q02;LINKAGE=EP

$\Gamma(\overline{D}_1(2421)^0\pi^+,\ \overline{D}{}_1^0 \to D^{*-}\pi^+)/\Gamma_{total}$ — Γ_{166}/Γ

NODE=S041Q03

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
7.4 ±1.0 OUR AVERAGE				
7.95±0.09±1.34	[1] AAIJ	20D	LHCB	pp at 7, 8, 13 TeV
6.8 ±0.7 ±1.3	[2] ABE	04D	BELL	$e^+e^- \to \Upsilon(4S)$

[1] AAIJ 20D used a 4-body amplitude analysis of $B^- \to D^{*+}\pi^-\pi^-$ decays.

NODE=S041Q03;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041Q03;LINKAGE=AB

$\Gamma(\overline{D}{}_2^*(2462)^0\pi^+,\ \overline{D}{}_2^{*0} \to D^{*-}\pi^+)/\Gamma_{total}$ — Γ_{167}/Γ

NODE=S041Q04

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
1.98±0.30 OUR AVERAGE				
2.08±0.03±0.37	[1] AAIJ	20D	LHCB	pp at 7, 8, 13 TeV
1.8 ±0.3 ±0.4	[2] ABE	04D	BELL	$e^+e^- \to \Upsilon(4S)$

[1] AAIJ 20D used a 4-body amplitude analysis of $B^- \to D^{*+}\pi^-\pi^-$ decays.

NODE=S041Q04;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041Q04;LINKAGE=AB

$\Gamma(\overline{D}{}_1'(2427)^0\pi^+,\ \overline{D}{}_1'^0 \to D^{*-}\pi^+)/\Gamma_{total}$ — Γ_{168}/Γ

NODE=S041Q05

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
3.5 ±0.9 OUR AVERAGE Error includes scale factor of 1.5.				
2.96±0.30±0.63	[1] AAIJ	20D	LHCB	pp at 7, 8, 13 TeV
5.0 ±0.4 ±1.1	[2] ABE	04D	BELL	$e^+e^- \to \Upsilon(4S)$

[1] AAIJ 20D used a 4-body amplitude analysis of $B^- \to D^{*+}\pi^-\pi^-$ decays.

NODE=S041Q05;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041Q05;LINKAGE=AB

$\Gamma(\overline{D}_1(2420)^0\pi^+ \times B(\overline{D}{}_1^0 \to \overline{D}{}^{*0}\pi^+\pi^-))/\Gamma_{total}$ — Γ_{169}/Γ

NODE=S041Q83

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
<0.06	90	[1] ABE	05A	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041Q83;LINKAGE=EP

$\Gamma(\overline{D}{}_1^*(2420)^0\rho^+)/\Gamma_{total}$ — Γ_{170}/Γ

NODE=S041R94

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0014	90	[1] ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II $B(D^*(2010)^+ \to D^0\pi^+)$ assuming $B(D_1(2420)^0 \to D^*(2010)^+\pi^-) = 67\%$.

NODE=S041R94;LINKAGE=EG

$\Gamma(\overline{D}{}_2^*(2460)^0\pi^+)/\Gamma_{total}$ — Γ_{171}/Γ

NODE=S041R91

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0013	90	[1] ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.0028	90	[2] ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$
<0.0023	90	[3] ALBRECHT	94D	ARG	$e^+e^- \to \Upsilon(4S)$

OCCUR=2

[1] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the Mark III $B(D^+ \to K^-2\pi^+)$ and $B(D_2^*(2460)^0 \to D^+\pi^-) = 30\%$.

NODE=S041R91;LINKAGE=CD

[2] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the Mark III $B(D^+ \to K^-2\pi^+)$, the CLEO II $B(D^*(2010)^+ \to D^0\pi^+)$ and $B(D_2^*(2460)^0 \to D^*(2010)^+\pi^-) = 20\%$.

NODE=S041R91;LINKAGE=CE

[3] ALBRECHT 94D assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II $B(D^*(2010)^+ \to D^0\pi^+)$ and $B(D_2^*(2460)^0 \to D^*(2010)^+\pi^-) = 30\%$.

NODE=S041R91;LINKAGE=A

$\Gamma(\overline{D}{}_2^*(2460)^0\pi^+ \times B(\overline{D}{}_2^{*0} \to \overline{D}{}^{*0}\pi^+\pi^-))/\Gamma_{total}$ — Γ_{172}/Γ

NODE=S041Q84

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
<0.22	90	[1] ABE	05A	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041Q84;LINKAGE=EP

$\Gamma(\overline{D}{}_2^*(2460)^0 \rho^+)/\Gamma_{total}$ — Γ_{178}/Γ

NODE=S041R92

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0047	90	[1] ALAM	94	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
<0.005	90	[2] ALAM	94	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

OCCUR=2

[1] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the Mark III $B(D^+ \rightarrow K^- 2\pi^+)$ and $B(D_2^*(2460)^0 \rightarrow D^+\pi^-) = 30\%$. NODE=S041R92;LINKAGE=CD

[2] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the Mark III $B(D^+ \rightarrow K^- 2\pi^+)$, the CLEO II $B(D^*(2010)^+ \rightarrow D^0\pi^+)$ and $B(D_2^*(2460)^0 \rightarrow D^*(2010)^+\pi^-) = 20\%$. NODE=S041R92;LINKAGE=CE

$\Gamma(\overline{D}(2550)^0 \pi^+,\ \overline{D}{}^0 \rightarrow D^*(2010)^- \pi^+)/\Gamma_{total}$ — Γ_{159}/Γ

NODE=S041P79

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
0.72±0.01±0.14	[1] AAIJ	20D	LHCB	pp at 7, 8, 13 TeV

[1] AAIJ 20D used a 4-body amplitude analysis of $B^- \rightarrow D^{*+}\pi^-\pi^-$ decays. NODE=S041P79;LINKAGE=A

$\Gamma(\overline{D}{}_J^*(2600)^0 \pi^+,\ \overline{D}{}_J^{*0} \rightarrow D^*(2010)^- \pi^+)/\Gamma_{total}$ — Γ_{160}/Γ

NODE=S041P80

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
0.68±0.01±0.13	[1] AAIJ	20D	LHCB	pp at 7, 8, 13 TeV

[1] AAIJ 20D used a 4-body amplitude analysis of $B^- \rightarrow D^{*+}\pi^-\pi^-$ decays. NODE=S041P80;LINKAGE=A

$\Gamma(\overline{D}{}_1^*(2680)^0 \pi^+,\ \overline{D}{}_1^*(2680)^0 \rightarrow D^- \pi^+)/\Gamma_{total}$ — Γ_{173}/Γ

NODE=S041P38

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
0.84±0.06±0.20	[1] AAIJ	16AH	LHCB	pp at 7, 8 TeV

[1] Measured using a Dalitz plot analysis of $B^+ \rightarrow D^-\pi^+\pi^+$ decays. NODE=S041P38;LINKAGE=A

$\Gamma(\overline{D}(2740)^0 \pi^+,\ \overline{D}{}^0 \rightarrow D^*(2010)^- \pi^+)/\Gamma_{total}$ — Γ_{174}/Γ

NODE=S041P81

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
0.33±0.02±0.15	[1] AAIJ	20D	LHCB	pp at 7, 8, 13 TeV

[1] AAIJ 20D used a 4-body amplitude analysis of $B^- \rightarrow D^{*+}\pi^-\pi^-$ decays. NODE=S041P81;LINKAGE=A

$\Gamma(\overline{D}{}_3^*(2750)^0 \pi^+,\ \overline{D}{}_3^{*0} \rightarrow D^*(2010)^- \pi^+)/\Gamma_{total}$ — Γ_{175}/Γ

NODE=S041P83

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
0.11±0.01±0.03	[1] AAIJ	20D	LHCB	pp at 7, 8, 13 TeV

[1] AAIJ 20D used a 4-body amplitude analysis of $B^- \rightarrow D^{*+}\pi^-\pi^-$ decays. NODE=S041P83;LINKAGE=A

$\Gamma(\overline{D}{}_3^*(2760)^0 \pi^+,\ \overline{D}{}_3^*(2760)^0 \pi^+ \rightarrow D^- \pi^+)/\Gamma_{total}$ — Γ_{176}/Γ

NODE=S041P39

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
1.0±0.1±0.2	[1] AAIJ	16AH	LHCB	pp at 7, 8 TeV

[1] Measured using a Dalitz plot analysis of $B^+ \rightarrow D^-\pi^+\pi^+$ decays. NODE=S041P39;LINKAGE=A

$\Gamma(\overline{D}{}_2^*(3000)^0 \pi^+,\ \overline{D}{}_2^*(3000)^0 \pi^+ \rightarrow D^- \pi^+)/\Gamma_{total}$ — Γ_{177}/Γ

NODE=S041P40

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
2±1±1	[1] AAIJ	16AH	LHCB	pp at 7, 8 TeV

[1] Measured using a Dalitz plot analysis of $B^+ \rightarrow D^-\pi^+\pi^+$ decays. NODE=S041P40;LINKAGE=A

$\Gamma(\overline{D}{}^0 D_s^+)/\Gamma_{total}$ — Γ_{179}/Γ

NODE=S041R39

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
9.3±0.6 OUR AVERAGE				
[(9.0 ± 0.9) × 10^{-3} OUR 2024 AVERAGE]				
9.5±0.6±0.5	[1] ADACHI	24L	BEL2	$e^+e^- \rightarrow \Upsilon(4S)$
8.6±0.2±1.1	[2] AAIJ	13AP	LHCB	pp at 7 TeV
9.5±2.0±0.8	[3] AUBERT	06N	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
9.8±2.6±0.9	[4] GIBAUT	96	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
14 ±8 ±1	[5] ALBRECHT	92G	ARG	$e^+e^- \rightarrow \Upsilon(4S)$
13 ±6 ±1	[6] BORTOLETTO	90	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$

NEW

[1] Used 362 fb^{-1} Belle II data and $B(\Upsilon(4S) \rightarrow B^0\overline{B}{}^0)$=0.484 ± 0.012. NODE=S041R39;LINKAGE=B

[2] Uses $B(B^0 \rightarrow D^- D_s^+) = (7.2 \pm 0.8) \times 10^{-3}$. NODE=S041R39;LINKAGE=AI

[3] AUBERT 06N reports $(0.92 \pm 0.14 \pm 0.18) \times 10^{-2}$ from a measurement of $[\Gamma(B^+ \rightarrow \overline{D}{}^0 D_s^+)/\Gamma_{total}] \times [B(D_s^+ \rightarrow \phi\pi^+)]$ assuming $B(D_s^+ \rightarrow \phi\pi^+) = 0.0462 \pm 0.0062$, which we rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041R39;LINKAGE=AN

[4] GIBAUT 96 reports $0.0126 \pm 0.0022 \pm 0.0025$ from a measurement of $[\Gamma(B^+ \to \overline{D}^0 D_s^+)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.035$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041R39;LINKAGE=Z9

[5] ALBRECHT 92G reports $0.024 \pm 0.012 \pm 0.004$ from a measurement of $[\Gamma(B^+ \to \overline{D}^0 D_s^+)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes PDG 1990 D^0 branching ratios, e.g., $B(D^0 \to K^-\pi^+) = 3.71 \pm 0.25\%$. NODE=S041R39;LINKAGE=CA

[6] BORTOLETTO 90 reports 0.029 ± 0.013 from a measurement of $[\Gamma(B^+ \to \overline{D}^0 D_s^+)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.02$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041R39;LINKAGE=A

$\Gamma(\overline{D}^0 D^+)/\Gamma(\overline{D}^0 D_s^+)$ $\Gamma_{214}/\Gamma_{179}$

NODE=S041D16
NODE=S041D16

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
7.25±0.09±0.09	AAIJ 23AX	LHCB	pp at 7, 8, 13 TeV

$\Gamma(D_{s0}^*(2317)^+ \overline{D}^0,\ D_{s0}^{*+} \to D_s^+ \pi^0)/\Gamma_{total}$ Γ_{180}/Γ

NODE=S041C4
NODE=S041C4

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
$\mathbf{0.79^{+0.15}_{-0.13}}$ **OUR AVERAGE**			
$[(0.80^{+0.16}_{-0.13}) \times 10^{-3}$ OUR 2024 AVERAGE]			
$0.79^{+0.17}_{-0.16} \pm 0.01$	[1,2] CHOI 15A	BELL	$e^+e^- \to \Upsilon(4S)$
$0.80^{+0.35}_{-0.21} \pm 0.07$	[2,3] AUBERT,B 04S	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.65^{+0.26}_{-0.24} \pm 0.06$	[2,4] KROKOVNY 03B	BELL	Repl. by CHOI 15A

NEW

[1] CHOI 15A reports $(8.0^{+1.3}_{-1.2} \pm 1.1 \pm 0.4) \times 10^{-4}$ from a measurement of $[\Gamma(B^+ \to D_{s0}^*(2317)^+ \overline{D}^0,\ D_{s0}^{*+} \to D_s^+ \pi^0)/\Gamma_{total}] \times [B(D_s^+ \to K^+K^-\pi^+)]$ assuming $B(D_s^+ \to K^+K^-\pi^+) = (5.39 \pm 0.21) \times 10^{-2}$, which we rescale to our best value $B(D_s^+ \to K^+K^-\pi^+) = (5.45 \pm 0.08) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041C4;LINKAGE=B

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C4;LINKAGE=KR

[3] AUBERT,B 04S reports $(1.0 \pm 0.3^{+0.4}_{-0.2}) \times 10^{-3}$ from a measurement of $[\Gamma(B^+ \to D_{s0}^*(2317)^+ \overline{D}^0,\ D_{s0}^{*+} \to D_s^+ \pi^0)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.036 \pm 0.009$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041C4;LINKAGE=KT

[4] KROKOVNY 03B reports $(0.81^{+0.30}_{-0.27} \pm 0.24) \times 10^{-3}$ from a measurement of $[\Gamma(B^+ \to D_{s0}^*(2317)^+ \overline{D}^0,\ D_{s0}^{*+} \to D_s^+ \pi^0)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.036 \pm 0.009$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041C4;LINKAGE=TB

$\Gamma(D_{s0}(2317)^+ \overline{D}^0 \times B(D_{s0}(2317)^+ \to D_s^{*+}\gamma))/\Gamma_{total}$ Γ_{181}/Γ

NODE=S041Q40
NODE=S041Q40

VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT
<0.76	90	[1] KROKOVNY 03B	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q40;LINKAGE=KR

$\Gamma(D_{s0}(2317)^+ \overline{D}^*(2007)^0 \times B(D_{s0}(2317)^+ \to D_s^+\pi^0))/\Gamma_{total}$ Γ_{182}/Γ

NODE=S041Q19
NODE=S041Q19

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
$\mathbf{0.9 \pm 0.6^{+0.4}_{-0.3}}$	[1] AUBERT,B 04S	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q19;LINKAGE=AU

$\Gamma(D_{sJ}(2457)^+ \overline{D}^0)/\Gamma_{total}$ — Γ_{183}/Γ

NODE=S041C5

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
$3.1^{+1.0}_{-0.9}$ **OUR AVERAGE**			
$4.3 \pm 1.6 \pm 1.3$	[1] AUBERT 06N	BABR	$e^+ e^- \to \Upsilon(4S)$
$4.6^{+1.8}_{-1.6} \pm 1.0$	[2,3] AUBERT,B 04S	BABR	$e^+ e^- \to \Upsilon(4S)$
$2.1^{+1.1}_{-0.9} \pm 0.5$	[2,4] KROKOVNY 03B	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Uses a missing-mass method in the events that one of the B mesons is fully reconstructed. NODE=S041C5;LINKAGE=AN

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C5;LINKAGE=EP

[3] AUBERT,B 04S reports $[\Gamma(B^+ \to D_{sJ}(2457)^+ \overline{D}^0)/\Gamma_{total}] \times [B(D_{s1}(2460)^+ \to D_s^{*+} \pi^0)] = (2.2^{+0.8}_{-0.7} \pm 0.3) \times 10^{-3}$ which we divide by our best value $B(D_{s1}(2460)^+ \to D_s^{*+} \pi^0) = (48 \pm 11) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041C5;LINKAGE=KT

[4] KROKOVNY 03B reports $[\Gamma(B^+ \to D_{sJ}(2457)^+ \overline{D}^0)/\Gamma_{total}] \times [B(D_{s1}(2460)^+ \to D_s^{*+} \pi^0)] = (1.0^{+0.5}_{-0.4} \pm 0.1) \times 10^{-3}$ which we divide by our best value $B(D_{s1}(2460)^+ \to D_s^{*+} \pi^0) = (48 \pm 11) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041C5;LINKAGE=KU

$\Gamma(D_{sJ}(2457)^+ \overline{D}^0 \times B(D_{sJ}(2457)^+ \to D_s^+ \gamma))/\Gamma_{total}$ — Γ_{184}/Γ

NODE=S041Q21

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
$0.46^{+0.13}_{-0.11}$ **OUR AVERAGE**			
$0.48^{+0.19}_{-0.13} \pm 0.04$	[1,2] AUBERT,B 04S	BABR	$e^+ e^- \to \Upsilon(4S)$
$0.45^{+0.15}_{-0.14} \pm 0.04$	[1,3] KROKOVNY 03B	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q21;LINKAGE=KR

[2] AUBERT,B 04S reports $(0.6 \pm 0.2^{+0.2}_{-0.1}) \times 10^{-3}$ from a measurement of $[\Gamma(B^+ \to D_{sJ}(2457)^+ \overline{D}^0 \times B(D_{sJ}(2457)^+ \to D_s^+ \gamma))/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.036 \pm 0.009$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041Q21;LINKAGE=KU

[3] KROKOVNY 03B reports $(0.56^{+0.16}_{-0.15} \pm 0.17) \times 10^{-3}$ from a measurement of $[\Gamma(B^+ \to D_{sJ}(2457)^+ \overline{D}^0 \times B(D_{sJ}(2457)^+ \to D_s^+ \gamma))/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.036 \pm 0.009$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041Q21;LINKAGE=KT

$\Gamma(D_{sJ}(2457)^+ \overline{D}^0 \times B(D_{sJ}(2457)^+ \to D_s^+ \pi^+ \pi^-))/\Gamma_{total}$ — Γ_{185}/Γ

NODE=S041Q41

VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT
<0.22	90	[1] KROKOVNY 03B	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q41;LINKAGE=KR

$\Gamma(D_{sJ}(2457)^+ \overline{D}^0 \times B(D_{sJ}(2457)^+ \to D_s^+ \pi^0))/\Gamma_{total}$ — Γ_{186}/Γ

NODE=S041Q42

VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT
<0.27	90	[1] KROKOVNY 03B	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q42;LINKAGE=KR

$\Gamma(D_{sJ}(2457)^+ \overline{D}^0 \times B(D_{sJ}(2457)^+ \to D_s^{*+} \gamma))/\Gamma_{total}$ — Γ_{187}/Γ

NODE=S041Q43

VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT
<0.98	90	[1] KROKOVNY 03B	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q43;LINKAGE=KR

$\Gamma(D_{sJ}(2457)^+ \overline{D}^*(2007)^0)/\Gamma_{total}$ — Γ_{188}/Γ

NODE=S041Q20

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
12.0±3.0 OUR AVERAGE			
$11.2 \pm 2.6 \pm 2.0$	[1] AUBERT 06N	BABR	$e^+ e^- \to \Upsilon(4S)$
$16\ ^{+8}_{-6}\ \pm 4$	[2,3] AUBERT,B 04S	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Uses a missing-mass method in the events that one of the B mesons is fully reconstructed.
[2] AUBERT,B 04S reports $[\Gamma(B^+ \to D_{sJ}(2457)^+ \overline{D}^*(2007)^0)/\Gamma_{total}] \times [B(D_{s1}(2460)^+ \to D_s^{*+}\pi^0)] = (7.6 \pm 1.7^{+3.2}_{-2.4}) \times 10^{-3}$ which we divide by our best value $B(D_{s1}(2460)^+ \to D_s^{*+}\pi^0) = (48 \pm 11) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.
[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041Q20;LINKAGE=AN
NODE=S041Q20;LINKAGE=AU
NODE=S041Q20;LINKAGE=EP

$\Gamma(D_{sJ}(2457)^+ \overline{D}^*(2007)^0 \times B(D_{sJ}(2457)^+ \to D_s^+\gamma))/\Gamma_{total}$ Γ_{189}/Γ

NODE=S041Q22
NODE=S041Q22

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
$1.4 \pm 0.4^{+0.6}_{-0.4}$	[1] AUBERT,B 04S	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041Q22;LINKAGE=AU

$\Gamma(\overline{D}^0 D_{s1}(2536)^+ \times B(D_{s1}(2536)^+ \to D^*(2007)^0 K^+))/\Gamma_{total}$ Γ_{191}/Γ

NODE=S041C41
NODE=S041C41

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
$2.16 \pm 0.52 \pm 0.45$		[1] AUBERT 08B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<2	90	AUBERT 03X	BABR	Repl. by AUBERT 08B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C41;LINKAGE=EP

$\Gamma(\overline{D}^0 D_{s1}(2536)^+ \times B(D_{s1}(2536)^+ \to D^*(2007)^0 K^+ + D^*(2010)^+ K^0))/\Gamma_{total}$ Γ_{190}/Γ

NODE=S041C63
NODE=S041C63

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
$3.97 \pm 0.85 \pm 0.56$	[1,2] AUSHEV 11	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Uses $\Gamma(D^*(2007)^0 \to D^0\pi^0) / \Gamma(D^*(2007)^0 \to D^0\gamma) = 1.74 \pm 0.13$ and $\Gamma(D_{s1}(2536)^+ \to D^*(2007)^0 K^+) / \Gamma(D_{s1}(2536)^+ \to D^*(2010)^+ K^0) = 1.36 \pm 0.2$.
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C63;LINKAGE=AU
NODE=S041C63;LINKAGE=EP

$\Gamma(\overline{D}^*(2007)^0 D_{s1}(2536)^+ \times B(D_{s1}(2536)^+ \to D^*(2007)^0 K^+))/\Gamma_{total}$ Γ_{192}/Γ

NODE=S041C42
NODE=S041C42

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
$5.46 \pm 1.17 \pm 1.04$		[1] AUBERT 08B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<7	90	AUBERT 03X	BABR	Repl. by AUBERT 08B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C42;LINKAGE=EP

$\Gamma(\overline{D}^0 D_{s1}(2536)^+ \times B(D_{s1}(2536)^+ \to D^{*+} K^0))/\Gamma_{total}$ Γ_{193}/Γ

NODE=S041B01
NODE=S041B01

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
$2.30 \pm 0.98 \pm 0.43$	[1] AUBERT 08B	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B01;LINKAGE=EP

$\Gamma(\overline{D}^0 D_{sJ}(2700)^+ \times B(D_{sJ}(2700)^+ \to D^0 K^+))/\Gamma_{total}$ Γ_{194}/Γ

NODE=S041C03
NODE=S041C03

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
5.6 ± 1.8 OUR AVERAGE	Error includes scale factor of 1.7.		
$5.02 \pm 0.71 \pm 0.93$	[1] LEES 15C	BABR	$e^+e^- \to \Upsilon(4S)$
$11.3 \pm 2.2 {}^{+1.4}_{-2.8}$	[1] BRODZICKA 08	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C03;LINKAGE=EP

$\Gamma(\overline{D}^{*0} D_{s1}(2536)^+,\ D_{s1}^+ \to D^{*+} K^0)/\Gamma_{total}$ Γ_{195}/Γ

NODE=S041B02
NODE=S041B02

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
$3.92 \pm 2.46 \pm 0.83$	[1] AUBERT 08B	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B02;LINKAGE=EP

$\Gamma(\overline{D}^0 D_{sJ}(2573)^+,\ D_{sJ}^+ \to D^0 K^+)/\Gamma_{total}$ Γ_{196}/Γ

NODE=S041C86
NODE=S041C86

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
$0.08 \pm 0.14 \pm 0.05$	[1] LEES 15C	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C86;LINKAGE=EP

$\Gamma(\overline{D}^{*0} D_{sJ}(2573),\ D_{sJ}^+ \to D^0 K^+)/\Gamma_{total}$ Γ_{197}/Γ

NODE=S041C43
NODE=S041C43

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
<2	90	AUBERT 03X	BABR	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\overline{D}^*(2007)^0 D_{sJ}(2573),\ D_{sJ}^+ \to D^0 K^+)/\Gamma_{total}$ Γ_{198}/Γ

NODE=S041C44

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
<5	90	AUBERT	03X	BABR	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(\overline{D}^0 D_s^{*+})/\Gamma_{total}$ Γ_{199}/Γ

NODE=S041S49

VALUE	DOCUMENT ID		TECN	COMMENT
0.0076±0.0016 OUR AVERAGE				
0.0079±0.0017±0.0007	[1] AUBERT	06N	BABR	$e^+ e^- \to \Upsilon(4S)$
0.0068±0.0025±0.0006	[2] GIBAUT	96	CLE2	$e^+ e^- \to \Upsilon(4S)$
0.010 ±0.007 ±0.001	[3] ALBRECHT	92G	ARG	$e^+ e^- \to \Upsilon(4S)$

[1] AUBERT 06N reports $(0.77 \pm 0.15 \pm 0.13) \times 10^{-2}$ from a measurement of $[\Gamma(B^+ \to \overline{D}^0 D_s^{*+})/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.0462 \pm 0.0062$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041S49;LINKAGE=AN

[2] GIBAUT 96 reports $0.0087 \pm 0.0027 \pm 0.0017$ from a measurement of $[\Gamma(B^+ \to \overline{D}^0 D_s^{*+})/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.035$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041S49;LINKAGE=Z9

[3] ALBRECHT 92G reports $0.016 \pm 0.012 \pm 0.003$ from a measurement of $[\Gamma(B^+ \to \overline{D}^0 D_s^{*+})/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes PDG 1990 D^0 branching ratios, e.g., $B(D^0 \to K^-\pi^+) = 3.71 \pm 0.25\%$. NODE=S041S49;LINKAGE=CA

$\Gamma(\overline{D}^*(2007)^0 D_s^+,\ \overline{D}^{*0} \to D^-\pi^+)/\Gamma(D^- D_s^+ \pi^+)$ $\Gamma_{202}/\Gamma_{200}$

NODE=S041A95

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
14.7±1.3±2.7	[1] AAIJ	23B	LHCB	pp at 7, 8, 13 TeV

[1] Uses simultaneous fits of $\overline{B}^0 \to \overline{D}^0 D_s^+ \pi^-$ and $B^+ \to D^- D_s^+ \pi^+$ amplitudes assuming isospin symmetry. NODE=S041A95;LINKAGE=A

$\Gamma(\overline{D}^*(2007)^0 D_s^+)/\Gamma_{total}$ Γ_{201}/Γ

NODE=S041S50

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
7.0±1.0 OUR AVERAGE				
[0.0082 ± 0.0017 OUR 2024 AVERAGE]				
6.5±1.0±0.6	[1] ADACHI	24L	BEL2	$e^+ e^- \to \Upsilon(4S)$
7.8±1.8±0.7	[2] AUBERT	06N	BABR	$e^+ e^- \to \Upsilon(4S)$
11 ±4 ±1	[3] GIBAUT	96	CLE2	$e^+ e^- \to \Upsilon(4S)$
8 ±6 ±1	[4] ALBRECHT	92G	ARG	$e^+ e^- \to \Upsilon(4S)$

NEW

[1] Used 362 fb^{-1} Belle II data and $B(\Upsilon(4S) \to B^0\overline{B}^0)$=0.484 ± 0.012. NODE=S041S50;LINKAGE=A

[2] AUBERT 06N reports $(0.76 \pm 0.15 \pm 0.13) \times 10^{-2}$ from a measurement of $[\Gamma(B^+ \to \overline{D}^*(2007)^0 D_s^+)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.0462 \pm 0.0062$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041S50;LINKAGE=AN

[3] GIBAUT 96 reports $0.0140 \pm 0.0043 \pm 0.0035$ from a measurement of $[\Gamma(B^+ \to \overline{D}^*(2007)^0 D_s^+)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.035$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041S50;LINKAGE=Z9

[4] ALBRECHT 92G reports $0.013 \pm 0.009 \pm 0.002$ from a measurement of $[\Gamma(B^+ \to \overline{D}^*(2007)^0 D_s^+)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes PDG 1990 D^0 and $D^*(2007)^0$ branching ratios, e.g., $B(D^0 \to K^-\pi^+) = 3.71 \pm 0.25\%$ and $B(D^*(2007)^0 \to D^0\pi^0) = 55 \pm 6\%$. NODE=S041S50;LINKAGE=CA

$\Gamma(\overline{D}^*(2007)^0 D_s^{*+})/\Gamma_{total}$ Γ_{203}/Γ

NODE=S041S51

VALUE	DOCUMENT ID		TECN	COMMENT
0.0171±0.0024 OUR AVERAGE				
0.0167±0.0019±0.0015	[1] AUBERT	06N	BABR	$e^+ e^- \to \Upsilon(4S)$
0.024 ±0.009 ±0.002	[2] GIBAUT	96	CLE2	$e^+ e^- \to \Upsilon(4S)$
0.019 ±0.010 ±0.002	[3] ALBRECHT	92G	ARG	$e^+ e^- \to \Upsilon(4S)$

[1] AUBERT 06N reports $(1.62 \pm 0.22 \pm 0.18) \times 10^{-2}$ from a measurement of $[\Gamma(B^+ \to \overline{D}^*(2007)^0 D_s^{*+})/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.0462 \pm 0.0062$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041S51;LINKAGE=AN

[2] GIBAUT 96 reports $0.0310 \pm 0.0088 \pm 0.0065$ from a measurement of $[\Gamma(B^+ \to \overline{D}^*(2007)^0 D_s^{*+})/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.035$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041S51;LINKAGE=Z9

[3] ALBRECHT 92G reports $0.031 \pm 0.016 \pm 0.005$ from a measurement of $[\Gamma(B^+ \to \overline{D}^*(2007)^0 D_s^{*+})/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes PDG 1990 D^0 and $D^*(2007)^0$ branching ratios, e.g., $B(D^0 \to K^-\pi^+) = 3.71 \pm 0.25\%$ and $B(D^*(2007)^0 \to D^0\pi^0) = 55 \pm 6\%$. NODE=S041S51;LINKAGE=CA

$\Gamma(\overline{D}_2^*(2460)^0 D_s^+,\ \overline{D}_2^{*0} \to D^-\pi^+)/\Gamma(D^- D_s^+ \pi^+)$ — $\Gamma_{204}/\Gamma_{200}$

NODE=S041A96
NODE=S041A96

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
22.35±0.91±0.71	[1] AAIJ	23B	LHCB	pp at 7, 8, 13 TeV

[1] Uses simultaneous fits of $\overline{B}^0 \to \overline{D}^0 D_s^+ \pi^-$ and $B^+ \to D^- D_s^+ \pi^+$ amplitudes assuming isospin symmetry. NODE=S041A96;LINKAGE=A

$\Gamma(\overline{D}_1^*(2600)^0 D_s^+,\ \overline{D}_1^{*0} \to D^-\pi^+)/\Gamma(D^- D_s^+ \pi^+)$ — $\Gamma_{205}/\Gamma_{200}$

NODE=S041A97
NODE=S041A97

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
1.37±0.42±0.62	[1] AAIJ	23B	LHCB	pp at 7, 8, 13 TeV

[1] Uses simultaneous fits of $\overline{B}^0 \to \overline{D}^0 D_s^+ \pi^-$ and $B^+ \to D^- D_s^+ \pi^+$ amplitudes assuming isospin symmetry. NODE=S041A97;LINKAGE=A

$\Gamma(\overline{D}_3^*(2750)^0 D_s^+,\ \overline{D}_3^{*0} \to D^-\pi^+)/\Gamma(D^- D_s^+ \pi^+)$ — $\Gamma_{206}/\Gamma_{200}$

NODE=S041A98
NODE=S041A98

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
0.31±0.15±0.17	[1] AAIJ	23B	LHCB	pp at 7, 8, 13 TeV

[1] Uses simultaneous fits of $\overline{B}^0 \to \overline{D}^0 D_s^+ \pi^-$ and $B^+ \to D^- D_s^+ \pi^+$ amplitudes assuming isospin symmetry. NODE=S041A98;LINKAGE=A

$\Gamma(\overline{D}_1^*(2760)^0 D_s^+,\ \overline{D}_1^{*0} \to D^-\pi^+)/\Gamma(D^- D_s^+ \pi^+)$ — $\Gamma_{207}/\Gamma_{200}$

NODE=S041A99
NODE=S041A99

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
0.28±0.26±1.53	[1] AAIJ	23B	LHCB	pp at 7, 8, 13 TeV

[1] Uses simultaneous fits of $\overline{B}^0 \to \overline{D}^0 D_s^+ \pi^-$ and $B^+ \to D^- D_s^+ \pi^+$ amplitudes assuming isospin symmetry. NODE=S041A99;LINKAGE=A

$\Gamma(\overline{D}_J^*(3000)^0 D_s^+,\ \overline{D}_J^{*0} \to D^-\pi^+)/\Gamma(D^- D_s^+ \pi^+)$ — $\Gamma_{208}/\Gamma_{200}$

NODE=S041C00
NODE=S041C00

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
0.45±0.16±0.37	[1] AAIJ	23B	LHCB	pp at 7, 8, 13 TeV

[1] Uses simultaneous fits of $\overline{B}^0 \to \overline{D}^0 D_s^+ \pi^-$ and $B^+ \to D^- D_s^+ \pi^+$ amplitudes assuming isospin symmetry. NODE=S041C00;LINKAGE=A

$\Gamma(T_{cs0}^*(2900)^{++} D^-,\ T_{cs0}^{*++} \to D_s^+\pi^+)/\Gamma(D^- D_s^+ \pi^+)$ — $\Gamma_{209}/\Gamma_{200}$

NODE=S041C27
NODE=S041C27

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
2.25±0.67±0.77	[1] AAIJ	23B	LHCB	pp at 7, 8, 13 TeV

[1] Uses simultaneous fits of $\overline{B}^0 \to \overline{D}^0 D_s^+ \pi^-$ and $B^+ \to D^- D_s^+ \pi^+$ amplitudes assuming isospin symmetry. NODE=S041C27;LINKAGE=A

$\Gamma(D_s^{(*)+} \overline{D}^{**0})/\Gamma_{total}$ — Γ_{210}/Γ

NODE=S041B39
NODE=S041B39

VALUE	DOCUMENT ID		TECN	COMMENT
(2.73±0.93±0.68) × 10^{-2}	[1] AHMED	00B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] AHMED 00B reports their experiment's uncertainties $(\pm 0.78 \pm 0.48 \pm 0.68)\%$, where the first error is statistical, the second is systematic, and the third is the uncertainty in the $D_s \to \phi\pi$ branching fraction. We combine the first two in quadrature. NODE=S041B39;LINKAGE=AH

$\Gamma(\overline{D}^*(2007)^0 D^*(2010)^+)/\Gamma_{total}$ — Γ_{211}/Γ

NODE=S041B34

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
8.1±1.2±1.2		[1] AUBERT,B	06A	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<110	90	BARATE	98Q	ALEP	$e^+e^- \to Z$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B34;LINKAGE=EP

$[\Gamma(\overline{D}^0 D^*(2010)^+) + \Gamma(\overline{D}^*(2007)^0 D^+)]/\Gamma_{total}$ — Γ_{212}/Γ

NODE=S041B35

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
<130	90	BARATE	98Q	ALEP	$e^+e^- \to Z$

$\Gamma(\overline{D}^0 D^*(2010)^+)/\Gamma_{total}$ — Γ_{213}/Γ

NODE=S041Q74

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
3.9 ±0.5 OUR AVERAGE				
3.6 ±0.5 ±0.4	[1] AUBERT,B	06A	BABR	$e^+e^- \to \Upsilon(4S)$
4.57±0.71±0.56	[1] MAJUMDER	05	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041Q74;LINKAGE=EP

$\Gamma(\overline{D}^0 D^+)/\Gamma_{total}$ — Γ_{214}/Γ

NODE=S041B36

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
3.8 ±0.4 OUR AVERAGE					
3.85±0.31±0.38		[1] ADACHI	08	BELL	$e^+e^- \to \Upsilon(4S)$
3.8 ±0.6 ±0.5		[1] AUBERT,B	06A	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
4.83±0.78±0.58		[1] MAJUMDER	05	BELL	Repl. by ADACHI 08
<67	90	BARATE	98Q	ALEP	$e^+e^- \to Z$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B36;LINKAGE=EP

$\Gamma(\overline{D}^0 D^*(2010)^+)/\Gamma(\overline{D}^0 D^+)$ — $\Gamma_{213}/\Gamma_{214}$

NODE=S041D17

VALUE	DOCUMENT ID		TECN	COMMENT
0.271±0.007±0.005	AAIJ	23AX	LHCB	pp at 7, 8, 13 TeV

$\Gamma(\overline{D}^0 D^+ K^0)/\Gamma_{total}$ — Γ_{215}/Γ

NODE=S041C28

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
1.55±0.17±0.13		[1] DEL-AMO-SA...	11B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<2.8	90	[1] AUBERT	03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C28;LINKAGE=EP

$\Gamma(D^+ \overline{D}^*(2007)^0)/\Gamma_{total}$ — Γ_{216}/Γ

NODE=S041R49

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
6.3±1.4±1.0	[1] AUBERT,B	06A	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041R49;LINKAGE=EP

$\Gamma(\overline{D}^*(2007)^0 D^+ K^0)/\Gamma_{total}$ — Γ_{217}/Γ

NODE=S041C29

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
2.06±0.38±0.30		[1] DEL-AMO-SA...	11B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<6.1	90	[1] AUBERT	03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C29;LINKAGE=EP

$\Gamma(\overline{D}^0 D^*(2010)^+ K^0)/\Gamma_{total}$ — Γ_{218}/Γ

NODE=S041C30

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
3.81±0.31±0.23	[1] DEL-AMO-SA...	11B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$5.2\ ^{+1.0}_{-0.9}\ \pm0.7$	[1] AUBERT	03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C30;LINKAGE=EP

$\Gamma(\overline{D}^*(2007)^0 D^*(2010)^+ K^0)/\Gamma_{total}$ — Γ_{219}/Γ

NODE=S041C31

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
9.17±0.83±0.90	[1] DEL-AMO-SA..11B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$7.8\ ^{+2.3}_{-2.1}\ \pm1.4$	[1] AUBERT 03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C31;LINKAGE=EP

$\Gamma(\overline{D}^0 D^0 K^+)/\Gamma_{total}$ — Γ_{220}/Γ

NODE=S041C32

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
1.45±0.33 OUR AVERAGE	Error includes scale factor of 2.6.		
1.31±0.07±0.12	[1] DEL-AMO-SA..11B	BABR	$e^+e^- \to \Upsilon(4S)$
$2.22\pm0.22^{+0.26}_{-0.24}$	[1] BRODZICKA 08	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
1.17±0.21±0.15	[1] CHISTOV 04	BELL	Repl. by BRODZICKA 08
1.9 ±0.3 ±0.3	[1] AUBERT 03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C32;LINKAGE=EP

$\Gamma(\overline{D}^*(2007)^0 D^0 K^+)/\Gamma_{total}$ — Γ_{221}/Γ

NODE=S041C33

VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT
2.26±0.16±0.17		[1] DEL-AMO-SA..11B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<3.8	90	[1] AUBERT 03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C33;LINKAGE=EP

$\Gamma(\overline{D}^0 D^*(2007)^0 K^+)/\Gamma_{total}$ — Γ_{222}/Γ

NODE=S041C34

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
6.32±0.19±0.45	[1] DEL-AMO-SA..11B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
4.7 ±0.7 ±0.7	[1] AUBERT 03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C34;LINKAGE=EP

$\Gamma(\overline{D}^*(2007)^0 D^*(2007)^0 K^+)/\Gamma_{total}$ — Γ_{223}/Γ

NODE=S041C35

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
11.23±0.36±1.26	[1] DEL-AMO-SA..11B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$5.3\ ^{+1.1}_{-1.0}\ \pm1.2$	[1] AUBERT 03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C35;LINKAGE=EP

$\Gamma(D^- D^+ K^+)/\Gamma_{total}$ — Γ_{224}/Γ

NODE=S041C36

VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT
0.22±0.05±0.05		[1] DEL-AMO-SA..11B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<0.90	90	[1] CHISTOV 04	BELL	$e^+e^- \to \Upsilon(4S)$
<0.4	90	[1] AUBERT 03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C36;LINKAGE=EP

$\Gamma(T^*_{cs0}(2870)^0 D^+,\ T^{*0}_{cs0} \to D^- K^+)/\Gamma(D^- D^+ K^+)$ — $\Gamma_{225}/\Gamma_{224}$

NODE=S041A26

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
5.6±1.4±0.5	[1] AAIJ 20AI	LHCB	pp at 7, 8, 13 TeV

[1] Measured in Dalitz plot analysis of $B^+ \to D^- D^+ K^+$ decays.

NODE=S041A26;LINKAGE=A

$\Gamma(T^*_{cs1}(2900)^0 D^+,\ T^{*0}_{cs1} \to D^- K^+)/\Gamma(D^- D^+ K^+)$ — $\Gamma_{226}/\Gamma_{224}$

NODE=S041A27

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
30.6±2.4±2.1	[1] AAIJ 20AI	LHCB	pp at 7, 8, 13 TeV

[1] Measured in Dalitz plot analysis of $B^+ \to D^- D^+ K^+$ decays.

NODE=S041A27;LINKAGE=A

$\Gamma(D^- D^+ K^+ \text{nonresonant})/\Gamma(D^- D^+ K^+)$ — $\Gamma_{227}/\Gamma_{224}$

NODE=S041A28

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
24.2±2.2±0.5	[1] AAIJ	20AI	LHCB	pp at 7, 8, 13 TeV

[1] Measured in Dalitz plot analysis of $B^+ \rightarrow D^- D^+ K^+$ decays.

NODE=S041A28;LINKAGE=A

$\Gamma(D^- D^*(2010)^+ K^+)/\Gamma_{total}$ — Γ_{228}/Γ

NODE=S041C37

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
0.63±0.09±0.06		[1] DEL-AMO-SA...	11B	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.7	90	[1] AUBERT	03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C37;LINKAGE=EP

$\Gamma(D^- D^*(2010)^+ K^+)/\Gamma(\overline{D}^0 D^0 K^+)$ — $\Gamma_{228}/\Gamma_{220}$

NODE=S041A29

VALUE	DOCUMENT ID		TECN	COMMENT
0.517±0.015±0.017	[1] AAIJ	20AN	LHCB	pp at 7, 8, 13 TeV

[1] Uses $D^+ \rightarrow K^- \pi^+ \pi^+$, $D^0 \rightarrow K^- \pi^+$ and $D^0 \rightarrow K^- \pi^+ \pi^+ \pi^-$ decays.

NODE=S041A29;LINKAGE=A

$\Gamma(D^*(2010)^- D^+ K^+)/\Gamma_{total}$ — Γ_{229}/Γ

NODE=S041C38

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
0.60±0.10±0.08	[1] DEL-AMO-SA...	11B	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.5 ±0.3 ±0.2	[1] AUBERT	03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C38;LINKAGE=EP

$\Gamma(D^*(2010)^- D^+ K^+)/\Gamma(\overline{D}^0 D^0 K^+)$ — $\Gamma_{229}/\Gamma_{220}$

NODE=S041A30

VALUE	DOCUMENT ID		TECN	COMMENT
0.577±0.016±0.018	[1] AAIJ	20AN	LHCB	pp at 7, 8, 13 TeV

[1] Uses $D^+ \rightarrow K^- \pi^+ \pi^+$, $D^0 \rightarrow K^- \pi^+$ and $D^0 \rightarrow K^- \pi^+ \pi^+ \pi^-$ decays.

NODE=S041A30;LINKAGE=A

$\Gamma(D^- D^*(2010)^+ K^+)/\Gamma(D^*(2010)^- D^+ K^+)$ — $\Gamma_{228}/\Gamma_{229}$

NODE=S041A31

VALUE	DOCUMENT ID		TECN	COMMENT
0.907±0.033±0.014	[1] AAIJ	20AN	LHCB	pp at 7, 8, 13 TeV

[1] Uses $D^+ \rightarrow K^- \pi^+ \pi^+$, $D^0 \rightarrow K^- \pi^+$ and $D^0 \rightarrow K^- \pi^+ \pi^+ \pi^-$ decays.

NODE=S041A31;LINKAGE=A

$\Gamma(\text{EFF}\,K+, \text{EFF} \rightarrow D^*(2010)^\mp D^\pm)/\Gamma_{total}$ — Γ_{230}/Γ

NODE=S041D36

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
$1.48^{+0.32}_{-0.16}{}^{+0.26}_{-0.32}$	AAIJ	24AB	LHCB	pp at 7, 8, and 13 TeV

$\Gamma(\eta_c(3945) K^+,\ \eta_c \rightarrow D^*(2010)^\mp D^\pm)/\Gamma_{total}$ — Γ_{231}/Γ

NODE=S041D37

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
$0.46^{+0.08}_{-0.14}{}^{+0.26}_{-0.10}$	AAIJ	24AB	LHCB	pp at 7, 8, and 13 TeV

$\Gamma(h_c(4000) K^+,\ h_c \rightarrow D^*(2010)^\mp D^\pm)/\Gamma_{total}$ — Γ_{233}/Γ

NODE=S041D39

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
$0.70^{+0.14}_{-0.10}{}^{+0.21}_{-0.12}$	AAIJ	24AB	LHCB	pp at 7, 8, and 13 TeV

$\Gamma(\chi_{c2}(3930) K^+,\ \chi_{c2} \rightarrow D^*(2010)^\mp D^\pm)/\Gamma_{total}$ — Γ_{232}/Γ

NODE=S041D38

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
$0.24\pm0.06^{+0.08}_{-0.16}$	AAIJ	24AB	LHCB	pp at 7, 8, and 13 TeV

$\Gamma(\chi_{c1}(4010) K^+,\ \chi_{c1} \rightarrow D^*(2010)^\mp D^\pm)/\Gamma_{total}$ — Γ_{234}/Γ

NODE=S041D40

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
$1.38^{+0.22}_{-0.12}{}^{+0.22}_{-0.25}$	AAIJ	24AB	LHCB	pp at 7, 8, and 13 TeV

$\Gamma(\psi(4040) K^+,\ \psi \rightarrow D^*(2010)^\mp D^\pm)/\Gamma_{total}$ — Γ_{235}/Γ

NODE=S041D41

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
$0.38^{+0.08}_{-0.06}\pm0.07$	AAIJ	24AB	LHCB	pp at 7, 8, and 13 TeV

$\Gamma(h_c(4300)K^+,\ h_c \to D^*(2010)^{\mp} D^{\pm})/\Gamma_{total}$ — Γ_{236}/Γ

NODE=S041D42

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
$0.16^{+0.02}_{-0.06}{}^{+0.04}_{-0.03}$	AAIJ 24AB	LHCB	pp at 7, 8, and 13 TeV

$\Gamma(T^*_{\overline{c}s0}(2870)^0 K^+,\ T^{*0}_{\overline{c}s0} \to D^*(2010)^{\mp} D^{\pm})/\Gamma_{total}$ — Γ_{237}/Γ

NODE=S041D43

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
$0.45^{+0.06}_{-0.08}{}^{+0.10}_{-0.11}$	AAIJ 24AB	LHCB	pp at 7, 8, and 13 TeV

$\Gamma(T^*_{\overline{c}s1}(2900)^0 K^+,\ T^{*0}_{\overline{c}s1} \to D^*(2010)^{\mp} D^{\pm})/\Gamma_{total}$ — Γ_{238}/Γ

NODE=S041D44

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
$0.38^{+0.07}_{-0.10}{}^{+0.16}_{-0.12}$	AAIJ 24AB	LHCB	pp at 7, 8, and 13 TeV

$\Gamma(\text{NR}\,K^+,\ \text{NR} \to D^*(2010)^{\mp} D^{\pm})/\Gamma_{total}$ — Γ_{239}/Γ

NODE=S041D45

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
$2.78^{+0.32}_{-0.08}{}^{+0.37}_{-0.42}$	[1] AAIJ 24AB	LHCB	pp at 7, 8, and 13 TeV

[1] The NR_{1--} line shape is described by $f_R(m) = 1$.

NODE=S041D45;LINKAGE=A

$\Gamma(\text{NR}\,K^+,\ \text{NR} \to D^*(2010)^{\mp} D^{\pm})/\Gamma_{total}$ — Γ_{240}/Γ

NODE=S041D46

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
$0.16^{+0.08}_{-0.02}{}^{+0.10}_{-0.08}$	[1] AAIJ 24AB	LHCB	pp at 7, 8, and 13 TeV

[1] The NR_{0--} line shape is described by $f_R(m) = 1$.

NODE=S041D46;LINKAGE=A

$\Gamma(\text{NR}\,K^+,\ \text{NR} \to D^*(2010)^{\mp} D^{\pm})/\Gamma_{total}$ — Γ_{241}/Γ

NODE=S041D47

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
$2.42^{+0.26}_{-0.20}{}^{+0.53}_{-0.40}$	[1] AAIJ 24AB	LHCB	pp at 7, 8, and 13 TeV

[1] Only the S-wave component is considered, and the line shape is described by $f_R(m) = 1$.

NODE=S041D47;LINKAGE=A

$\Gamma(\text{NR}\,K^+,\ \text{NR} \to D^*(2010)^{\mp} D^{\pm})/\Gamma_{total}$ — Γ_{242}/Γ

NODE=S041D48

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
$2.18^{+0.46}_{-0.16}{}^{+0.48}_{-0.49}$	[1] AAIJ 24AB	LHCB	pp at 7, 8, and 13 TeV

[1] The NR_{0-+} line shapes is described by $f_R(m) = e^{(\alpha+\beta i)/(m^2-m_0^2)}$ with $m_0 = 4.35$ GeV. The parameters α and β are determined from the fit to the data.

NODE=S041D48;LINKAGE=A

$\Gamma(D^*(2010)^- D^*(2010)^+ K^+)/\Gamma_{total}$ — Γ_{243}/Γ

NODE=S041C39

VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT
1.32±0.13±0.12		[1] DEL-AMO-SA..11B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<1.8	90	[1] AUBERT 03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C39;LINKAGE=EP

$\Gamma((\overline{D}+\overline{D}^*)(D+D^*)K)/\Gamma_{total}$ — Γ_{244}/Γ

NODE=S041C40

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
4.05±0.11±0.28	[1] DEL-AMO-SA..11B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
3.5 ±0.3 ±0.5	[1] AUBERT 03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C40;LINKAGE=EP

$\Gamma(D_s^- D_s^+ K^+)/\Gamma(D^- D^+ K^+)$ — $\Gamma_{245}/\Gamma_{224}$

NODE=S041A94

VALUE	DOCUMENT ID	TECN	COMMENT
0.525±0.033±0.027±0.034	[1] AAIJ 23AI	LHCB	pp at 7, 8, 13 TeV

[1] AAIJ 23AI report that the last error is due to the uncertainties on the branching fractions of the $D_s^{\pm} \to K^{\mp}K^{\pm}\pi^{\pm}$ and $D^{\pm} \to K^{\mp}\pi^{\pm}\pi^{\pm}$ decays.

NODE=S041A94;LINKAGE=A

$\Gamma(D_s^+\pi^0)/\Gamma_{total}$ — Γ_{246}/Γ

NODE=S041S83
NODE=S041S83

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
$1.6^{+0.6}_{-0.5}\pm0.1$		[1] AUBERT	07M	BABR	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<16	90	[2] ALEXANDER	93B	CLE2	$e^+e^-\to\Upsilon(4S)$

[1] AUBERT 07M reports $[\Gamma(B^+\to D_s^+\pi^0)/\Gamma_{total}]\times[B(D_s^+\to\phi\pi^+)] = (7.0^{+2.4}_{-2.1}{}^{+0.6}_{-0.8})\times10^{-7}$ which we divide by our best value $B(D_s^+\to\phi\pi^+) = (4.5\pm0.4)\times10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041S83;LINKAGE=AU

[2] ALEXANDER 93B reports $<2.0\times10^{-4}$ from a measurement of $[\Gamma(B^+\to D_s^+\pi^0)/\Gamma_{total}]\times[B(D_s^+\to\phi\pi^+)]$ assuming $B(D_s^+\to\phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+\to\phi\pi^+) = 4.5\times10^{-2}$. NODE=S041S83;LINKAGE=XB

$\left[\Gamma(D_s^+\pi^0)+\Gamma(D_s^{*+}\pi^0)\right]/\Gamma_{total}$ — $(\Gamma_{246}+\Gamma_{247})/\Gamma$

NODE=S041S62
NODE=S041S62

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5\times10^{-4}$	90	[1] ALBRECHT	93E	ARG	$e^+e^-\to\Upsilon(4S)$

[1] ALBRECHT 93E reports $<0.9\times10^{-3}$ from a measurement of $[\left[\Gamma(B^+\to D_s^+\pi^0)+\Gamma(B^+\to D_s^{*+}\pi^0)\right]/\Gamma_{total}]\times[B(D_s^+\to\phi\pi^+)]$ assuming $B(D_s^+\to\phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+\to\phi\pi^+) = 4.5\times10^{-2}$. NODE=S041S62;LINKAGE=CA

$\Gamma(D_s^{*+}\pi^0)/\Gamma_{total}$ — Γ_{247}/Γ

NODE=S041S84
NODE=S041S84

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.6\times10^{-4}$	90	[1] ALEXANDER	93B	CLE2	$e^+e^-\to\Upsilon(4S)$

[1] ALEXANDER 93B reports $<3.2\times10^{-4}$ from a measurement of $[\Gamma(B^+\to D_s^{*+}\pi^0)/\Gamma_{total}]\times[B(D_s^+\to\phi\pi^+)]$ assuming $B(D_s^+\to\phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+\to\phi\pi^+) = 4.5\times10^{-2}$. NODE=S041S84;LINKAGE=XB

$\Gamma(D_s^+\eta)/\Gamma_{total}$ — Γ_{248}/Γ

NODE=S041S85
NODE=S041S85

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.4\times10^{-5}$	90	KUMAR	23	BELL	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<4\times10^{-4}$	90	[1] ALEXANDER	93B	CLE2	$e^+e^-\to\Upsilon(4S)$

[1] ALEXANDER 93B reports $<4.6\times10^{-4}$ from a measurement of $[\Gamma(B^+\to D_s^+\eta)/\Gamma_{total}]\times[B(D_s^+\to\phi\pi^+)]$ assuming $B(D_s^+\to\phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+\to\phi\pi^+) = 4.5\times10^{-2}$. NODE=S041S85;LINKAGE=XB

$\Gamma(D_s^{*+}\eta)/\Gamma_{total}$ — Γ_{249}/Γ

NODE=S041S86
NODE=S041S86

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.7\times10^{-5}$	90	KUMAR	23	BELL	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<6\times10^{-4}$	90	[1] ALEXANDER	93B	CLE2	$e^+e^-\to\Upsilon(4S)$

[1] ALEXANDER 93B reports $<7.5\times10^{-4}$ from a measurement of $[\Gamma(B^+\to D_s^{*+}\eta)/\Gamma_{total}]\times[B(D_s^+\to\phi\pi^+)]$ assuming $B(D_s^+\to\phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+\to\phi\pi^+) = 4.5\times10^{-2}$. NODE=S041S86;LINKAGE=XB

$\Gamma(D_s^+\rho^0)/\Gamma_{total}$ — Γ_{250}/Γ

NODE=S041S87
NODE=S041S87

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.0\times10^{-4}$	90	[1] ALEXANDER	93B	CLE2	$e^+e^-\to\Upsilon(4S)$

[1] ALEXANDER 93B reports $<3.7\times10^{-4}$ from a measurement of $[\Gamma(B^+\to D_s^+\rho^0)/\Gamma_{total}]\times[B(D_s^+\to\phi\pi^+)]$ assuming $B(D_s^+\to\phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+\to\phi\pi^+) = 4.5\times10^{-2}$. NODE=S041S87;LINKAGE=XB

$\left[\Gamma(D_s^+ \rho^0) + \Gamma(D_s^+ \overline{K}^*(892)^0)\right]/\Gamma_{total}$ $(\Gamma_{250}+\Gamma_{261})/\Gamma$

NODE=S041S60
NODE=S041S60

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<2.0 × 10⁻³	90	[1] ALBRECHT 93E	ARG	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] ALBRECHT 93E reports $< 3.4 \times 10^{-3}$ from a measurement of $[\left[\Gamma(B^+ \rightarrow D_s^+ \rho^0) + \Gamma(B^+ \rightarrow D_s^+ \overline{K}^*(892)^0)\right]/\Gamma_{total}] \times [B(D_s^+ \rightarrow \phi\pi^+)]$ assuming $B(D_s^+ \rightarrow \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 4.5 \times 10^{-2}$.

NODE=S041S60;LINKAGE=CA

$\Gamma(D_s^{*+} \rho^0)/\Gamma_{total}$ Γ_{251}/Γ

NODE=S041S88
NODE=S041S88

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<4 × 10⁻⁴	90	[1] ALEXANDER 93B	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] ALEXANDER 93B reports $< 4.8 \times 10^{-4}$ from a measurement of $[\Gamma(B^+ \rightarrow D_s^{*+} \rho^0)/\Gamma_{total}] \times [B(D_s^+ \rightarrow \phi\pi^+)]$ assuming $B(D_s^+ \rightarrow \phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 4.5 \times 10^{-2}$.

NODE=S041S88;LINKAGE=XB

$\left[\Gamma(D_s^{*+} \rho^0) + \Gamma(D_s^{*+} \overline{K}^*(892)^0)\right]/\Gamma_{total}$ $(\Gamma_{251}+\Gamma_{263})/\Gamma$

NODE=S041S61
NODE=S041S61

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<1.2 × 10⁻³	90	[1] ALBRECHT 93E	ARG	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] ALBRECHT 93E reports $< 2.0 \times 10^{-3}$ from a measurement of $[\left[\Gamma(B^+ \rightarrow D_s^{*+} \rho^0) + \Gamma(B^+ \rightarrow D_s^{*+} \overline{K}^*(892)^0)\right]/\Gamma_{total}] \times [B(D_s^+ \rightarrow \phi\pi^+)]$ assuming $B(D_s^+ \rightarrow \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 4.5 \times 10^{-2}$.

NODE=S041S61;LINKAGE=CA

$\Gamma(D_s^+ \omega)/\Gamma_{total}$ Γ_{252}/Γ

NODE=S041S63
NODE=S041S63

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<4 × 10⁻⁴	90	[1] ALEXANDER 93B	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<2.0 × 10⁻³	90	[2] ALBRECHT 93E	ARG	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] ALEXANDER 93B reports $< 4.8 \times 10^{-4}$ from a measurement of $[\Gamma(B^+ \rightarrow D_s^+ \omega)/\Gamma_{total}] \times [B(D_s^+ \rightarrow \phi\pi^+)]$ assuming $B(D_s^+ \rightarrow \phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 4.5 \times 10^{-2}$.

NODE=S041S63;LINKAGE=XB

[2] ALBRECHT 93E reports $< 3.4 \times 10^{-3}$ from a measurement of $[\Gamma(B^+ \rightarrow D_s^+ \omega)/\Gamma_{total}] \times [B(D_s^+ \rightarrow \phi\pi^+)]$ assuming $B(D_s^+ \rightarrow \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 4.5 \times 10^{-2}$.

NODE=S041S63;LINKAGE=CA

$\Gamma(D_s^{*+} \omega)/\Gamma_{total}$ Γ_{253}/Γ

NODE=S041S64
NODE=S041S64

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<6 × 10⁻⁴	90	[1] ALEXANDER 93B	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<1.1 × 10⁻³	90	[2] ALBRECHT 93E	ARG	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] ALEXANDER 93B reports $< 6.8 \times 10^{-4}$ from a measurement of $[\Gamma(B^+ \rightarrow D_s^{*+} \omega)/\Gamma_{total}] \times [B(D_s^+ \rightarrow \phi\pi^+)]$ assuming $B(D_s^+ \rightarrow \phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 4.5 \times 10^{-2}$.

NODE=S041S64;LINKAGE=XB

[2] ALBRECHT 93E reports $< 1.9 \times 10^{-3}$ from a measurement of $[\Gamma(B^+ \rightarrow D_s^{*+} \omega)/\Gamma_{total}] \times [B(D_s^+ \rightarrow \phi\pi^+)]$ assuming $B(D_s^+ \rightarrow \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 4.5 \times 10^{-2}$.

NODE=S041S64;LINKAGE=CA

$\Gamma(D_s^+ a_1(1260)^0)/\Gamma_{total}$ Γ_{254}/Γ

NODE=S041S65
NODE=S041S65

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<1.8 × 10⁻³	90	[1] ALBRECHT 93E	ARG	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] ALBRECHT 93E reports $< 3.0 \times 10^{-3}$ from a measurement of $[\Gamma(B^+ \rightarrow D_s^+ a_1(1260)^0)/\Gamma_{total}] \times [B(D_s^+ \rightarrow \phi\pi^+)]$ assuming $B(D_s^+ \rightarrow \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 4.5 \times 10^{-2}$.

NODE=S041S65;LINKAGE=CA

$\Gamma(D_s^{*+} a_1(1260)^0)/\Gamma_{total}$ Γ_{255}/Γ

NODE=S041S66
NODE=S041S66

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.3 × 10⁻³	90	[1] ALBRECHT	93E	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[1] ALBRECHT 93E reports $< 2.2 \times 10^{-3}$ from a measurement of $[\Gamma(B^+ \rightarrow D_s^{*+} a_1(1260)^0)/\Gamma_{total}] \times [B(D_s^+ \rightarrow \phi\pi^+)]$ assuming $B(D_s^+ \rightarrow \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 4.5 \times 10^{-2}$. NODE=S041S66;LINKAGE=CA

$\Gamma(D_s^+ K^+ K^-)/\Gamma(\overline{D}^0 D_s^+)$ $\Gamma_{256}/\Gamma_{179}$

NODE=S041P49
NODE=S041P49

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
8.0±0.9±0.1	[1] AAIJ	18B	LHCB	pp at 7, 8, 13 TeV

[1] AAIJ 18B reports $[\Gamma(B^+ \rightarrow D_s^+ K^+ K^-)/\Gamma(B^+ \rightarrow \overline{D}^0 D_s^+)] / [B(D^0 \rightarrow K^+ K^-)] = 0.197 \pm 0.015 \pm 0.017$ which we multiply by our best value $B(D^0 \rightarrow K^+ K^-) = (4.08 \pm 0.06) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041P49;LINKAGE=A

$\Gamma(D_s^+ \phi)/\Gamma_{total}$ Γ_{257}/Γ

NODE=S041S67
NODE=S041S67

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
< 0.42	90	[1] AAIJ	18B	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$1.7\ ^{+1.2}_{-0.7} \pm 0.1$		[2] AAIJ	13R	LHCB	Repl. by AAIJ 18B
< 1.9	90	[3] AUBERT	06F	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
<1000	90	[4] ALBRECHT	93E	ARG	$e^+e^- \rightarrow \Upsilon(4S)$
< 260	90	[5] ALEXANDER	93B	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[1] AAIJ 18B uses $B^+ \rightarrow D_s^+ \overline{D}^0$ decays for normalization. NODE=S041S67;LINKAGE=A

[2] AAIJ 13R reports $(1.87^{+1.25}_{-0.73} \pm 0.19 \pm 0.32) \times 10^{-6}$ from a measurement of $[\Gamma(B^+ \rightarrow D_s^+ \phi)/\Gamma_{total}] / [B(B^+ \rightarrow \overline{D}^0 D_s^+)]$ assuming $B(B^+ \rightarrow \overline{D}^0 D_s^+) = (10.0 \pm 1.7) \times 10^{-3}$, which we rescale to our best value $B(B^+ \rightarrow \overline{D}^0 D_s^+) = (9.3 \pm 0.6) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041S67;LINKAGE=AA

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041S67;LINKAGE=EP

[4] ALBRECHT 93E reports $< 1.7 \times 10^{-3}$ from a measurement of $[\Gamma(B^+ \rightarrow D_s^+ \phi)/\Gamma_{total}] \times [B(D_s^+ \rightarrow \phi\pi^+)]$ assuming $B(D_s^+ \rightarrow \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 4.5 \times 10^{-2}$. NODE=S041S67;LINKAGE=CA

[5] ALEXANDER 93B reports $< 3.1 \times 10^{-4}$ from a measurement of $[\Gamma(B^+ \rightarrow D_s^+ \phi)/\Gamma_{total}] \times [B(D_s^+ \rightarrow \phi\pi^+)]$ assuming $B(D_s^+ \rightarrow \phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 4.5 \times 10^{-2}$. NODE=S041S67;LINKAGE=XB

$\Gamma(D_s^{*+} \phi)/\Gamma_{total}$ Γ_{258}/Γ

NODE=S041S68
NODE=S041S68

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.2 × 10⁻⁵	90	[1] AUBERT	06F	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.3 \times 10^{-3}$	90	[2] ALBRECHT	93E	ARG	$e^+e^- \rightarrow \Upsilon(4S)$
$<3.5 \times 10^{-4}$	90	[3] ALEXANDER	93B	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041S68;LINKAGE=EP

[2] ALBRECHT 93E reports $< 2.1 \times 10^{-3}$ from a measurement of $[\Gamma(B^+ \rightarrow D_s^{*+} \phi)/\Gamma_{total}] \times [B(D_s^+ \rightarrow \phi\pi^+)]$ assuming $B(D_s^+ \rightarrow \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 4.5 \times 10^{-2}$. NODE=S041S68;LINKAGE=CA

[3] ALEXANDER 93B reports $< 4.2 \times 10^{-4}$ from a measurement of $[\Gamma(B^+ \rightarrow D_s^{*+} \phi)/\Gamma_{total}] \times [B(D_s^+ \rightarrow \phi\pi^+)]$ assuming $B(D_s^+ \rightarrow \phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 4.5 \times 10^{-2}$. NODE=S041S68;LINKAGE=XB

$\Gamma(D_s^+ \overline{K}^0)/\Gamma_{total}$ Γ_{259}/Γ

NODE=S041S69
NODE=S041S69

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<3 × 10⁻⁶	90	KUMAR	23	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.5 \times 10^{-3}$	90	[1] ALBRECHT	93E	ARG	$e^+e^- \rightarrow \Upsilon(4S)$
$<8 \times 10^{-4}$	90	[2] ALEXANDER	93B	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[1] ALBRECHT 93E reports $< 2.5 \times 10^{-3}$ from a measurement of $[\Gamma(B^+ \to D_s^+ \overline{K}^0)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5 \times 10^{-2}$. NODE=S041S69;LINKAGE=CA

[2] ALEXANDER 93B reports $< 10.3 \times 10^{-4}$ from a measurement of $[\Gamma(B^+ \to D_s^+ \overline{K}^0)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5 \times 10^{-2}$. NODE=S041S69;LINKAGE=XB

$\Gamma(D_s^{*+} \overline{K}^0)/\Gamma_{total}$ Γ_{260}/Γ

NODE=S041S70
NODE=S041S70

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<6 × 10^−6	90	KUMAR	23	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.9 \times 10^{-3}$	90	[1] ALBRECHT	93E	ARG	$e^+e^- \to \Upsilon(4S)$
$<9 \times 10^{-4}$	90	[2] ALEXANDER	93B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] ALBRECHT 93E reports $< 3.1 \times 10^{-3}$ from a measurement of $[\Gamma(B^+ \to D_s^{*+} \overline{K}^0)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5 \times 10^{-2}$. NODE=S041S70;LINKAGE=CA

[2] ALEXANDER 93B reports $< 10.9 \times 10^{-4}$ from a measurement of $[\Gamma(B^+ \to D_s^{*+} \overline{K}^0)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5 \times 10^{-2}$. NODE=S041S70;LINKAGE=XB

$\Gamma(D_s^+ \overline{K}^*(892)^0)/\Gamma_{total}$ Γ_{261}/Γ

NODE=S041S89
NODE=S041S89

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<4.4 × 10^−6	90	AAIJ	13R	LHCB	pp at 7 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<4 \times 10^{-4}$	90	[1] ALEXANDER	93B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] ALEXANDER 93B reports $< 4.4 \times 10^{-4}$ from a measurement of $[\Gamma(B^+ \to D_s^+ \overline{K}^*(892)^0)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5 \times 10^{-2}$. NODE=S041S89;LINKAGE=XB

$\Gamma(D_s^+ K^{*0})/\Gamma_{total}$ Γ_{262}/Γ

NODE=S041C77
NODE=S041C77

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<3.5	90	AAIJ	13R	LHCB	pp at 7 TeV

$\Gamma(D_s^{*+} \overline{K}^*(892)^0)/\Gamma_{total}$ Γ_{263}/Γ

NODE=S041S90
NODE=S041S90

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<3.5 × 10^−4	90	[1] ALEXANDER	93B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] ALEXANDER 93B reports $< 4.3 \times 10^{-4}$ from a measurement of $[\Gamma(B^+ \to D_s^{*+} \overline{K}^*(892)^0)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5 \times 10^{-2}$. NODE=S041S90;LINKAGE=XB

$\Gamma(D_s^- \pi^+ K^+)/\Gamma_{total}$ Γ_{264}/Γ

NODE=S041S71
NODE=S041S71

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
1.80±0.22 OUR AVERAGE					
$1.71^{+0.08}_{-0.07} \pm 0.25$		[1] WIECHCZYN...	09	BELL	$e^+e^- \to \Upsilon(4S)$
$2.02 \pm 0.13 \pm 0.38$		[1] AUBERT	08G	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<7	90	[2] ALBRECHT	93E	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041S71;LINKAGE=EP

[2] ALBRECHT 93E reports $< 1.1 \times 10^{-3}$ from a measurement of $[\Gamma(B^+ \to D_s^- \pi^+ K^+)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5 \times 10^{-2}$. NODE=S041S71;LINKAGE=CA

$\Gamma(D_s^{*-}\pi^+K^+)/\Gamma_{total}$ — Γ_{265}/Γ

NODE=S041S72

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
1.45±0.24 OUR AVERAGE				
$1.31^{+0.13}_{-0.12}\pm0.28$		[1] WIECHCZYN...09	BELL	$e^+e^-\to\Upsilon(4S)$
$1.67\pm0.16\pm0.35$		[1] AUBERT 08G	BABR	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<10	90	[2] ALBRECHT 93E	ARG	$e^+e^-\to\Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041S72;LINKAGE=EP

[2] ALBRECHT 93E reports $< 1.6\times10^{-3}$ from a measurement of $[\Gamma(B^+\to D_s^{*-}\pi^+K^+)/\Gamma_{total}]\times[B(D_s^+\to\phi\pi^+)]$ assuming $B(D_s^+\to\phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+\to\phi\pi^+) = 4.5\times10^{-2}$. NODE=S041S72;LINKAGE=CA

$\Gamma(D_s^-\pi^+K^*(892)^+)/\Gamma_{total}$ — Γ_{266}/Γ

NODE=S041S73

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<5 × 10^{-3}	90	[1] ALBRECHT 93E	ARG	$e^+e^-\to\Upsilon(4S)$

[1] ALBRECHT 93E reports $< 8.6\times10^{-3}$ from a measurement of $[\Gamma(B^+\to D_s^-\pi^+K^*(892)^+)/\Gamma_{total}]\times[B(D_s^+\to\phi\pi^+)]$ assuming $B(D_s^+\to\phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+\to\phi\pi^+) = 4.5\times10^{-2}$. NODE=S041S73;LINKAGE=CA

$\Gamma(D_s^{*-}\pi^+K^*(892)^+)/\Gamma_{total}$ — Γ_{267}/Γ

NODE=S041S74

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<7 × 10^{-3}	90	[1] ALBRECHT 93E	ARG	$e^+e^-\to\Upsilon(4S)$

[1] ALBRECHT 93E reports $< 1.1\times10^{-2}$ from a measurement of $[\Gamma(B^+\to D_s^{*-}\pi^+K^*(892)^+)/\Gamma_{total}]\times[B(D_s^+\to\phi\pi^+)]$ assuming $B(D_s^+\to\phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+\to\phi\pi^+) = 4.5\times10^{-2}$. NODE=S041S74;LINKAGE=CA

$\Gamma(D_s^-K^+K^+)/\Gamma_{total}$ — Γ_{268}/Γ

NODE=S041C10

VALUE (units 10^{-5})	DOCUMENT ID	TECN	COMMENT
0.97±0.21 OUR AVERAGE			
$0.93\pm0.22\pm0.10$	[1] WIECHCZYN...15	BELL	$e^+e^-\to\Upsilon(4S)$
$1.1\pm0.4\pm0.2$	[1] AUBERT 08G	BABR	$e^+e^-\to\Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C10;LINKAGE=EP

$\Gamma(D_s^-K^+K^+)/\Gamma(D_s^-\pi^+K^+)$ — $\Gamma_{268}/\Gamma_{264}$

NODE=S041C84

VALUE	DOCUMENT ID	TECN	COMMENT
0.054±0.013±0.006	WIECHCZYN...15	BELL	$e^+e^-\to\Upsilon(4S)$

$\Gamma(D_s^{*-}K^+K^+)/\Gamma_{total}$ — Γ_{269}/Γ

NODE=S041C12

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
<0.15	90	[1] AUBERT 08G	BABR	$e^+e^-\to\Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C12;LINKAGE=EP

$\Gamma(\eta_c K^+)/\Gamma_{total}$ — Γ_{270}/Γ

NODE=S041B40

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
1.10±0.07 OUR FIT Error includes scale factor of 1.1.			
1.11±0.12 OUR AVERAGE Error includes scale factor of 1.4.			
$0.96\pm0.12\pm0.06\pm0.03$	[1,2] LEES 20C	BABR	$e^+e^-\to\Upsilon(4S)$
$1.20\pm0.08\pm0.07$	[1] KATO 18	BELL	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$1.08^{+0.13}_{-0.12}{}^{+0.13}_{-0.14}$	[3] CHILIKIN 19	BELL	$e^+e^-\to\Upsilon(4S)$
0.87 ± 0.15	[1,4] AUBERT 06E	BABR	Repl. by LEES 20C
$1.35^{+0.27}_{-0.21}\pm0.11$	[5] AUBERT,B 05L	BABR	$e^+e^-\to\Upsilon(4S)$
$1.04\pm0.12\pm0.06$	[4,6] AUBERT,B 04B	BABR	$e^+e^-\to\Upsilon(4S)$
$1.25\pm0.14^{+0.39}_{-0.40}$	[7] FANG 03	BELL	$e^+e^-\to\Upsilon(4S)$
$0.69^{+0.26}_{-0.21}\pm0.22$	[8] EDWARDS 01	CLE2	$e^+e^-\to\Upsilon(4S)$

[1] Measures absolute branching fractions using a missing-mass technique. NODE=S041B40;LINKAGE=AT
[2] LEES 20C measurement's last uncertainty is due to the used $B(B^\pm \to K^\pm J/\psi)$ value. NODE=S041B40;LINKAGE=C
[3] CHILIKIN 19 reports $[\Gamma(B^+ \to \eta_c K^+)/\Gamma_{total}] \times [B(\eta_c(1S) \to p\overline{p}\pi^+\pi^-)] = (39.4^{+4.1+2.2}_{-3.9-1.8}) \times 10^{-7}$ which we divide by our best value $B(\eta_c(1S) \to p\overline{p}\pi^+\pi^-) = (3.7 \pm 0.5) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041B40;LINKAGE=B
[4] The ratio of $B(B^\pm \to K^\pm\eta_c)$ $B(\eta_c \to K\overline{K}\pi) = (7.4 \pm 0.5 \pm 0.7) \times 10^{-5}$ reported in AUBERT,B 04B and $B(B^\pm \to K^\pm\eta_c) = (8.7 \pm 1.5) \times 10^{-3}$ reported in AUBERT 06E contribute to the determination of $B(\eta_c \to K\overline{K}\pi)$, which is used by others for normalization. NODE=S041B40;LINKAGE=AV
[5] AUBERT,B 05L reports $[\Gamma(B^+ \to \eta_c K^+)/\Gamma_{total}] \times [B(\eta_c(1S) \to p\overline{p})] = (1.8^{+0.3}_{-0.2} \pm 0.2) \times 10^{-6}$ which we divide by our best value $B(\eta_c(1S) \to p\overline{p}) = (1.33 \pm 0.11) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041B40;LINKAGE=AE
[6] AUBERT,B 04B reports $[\Gamma(B^+ \to \eta_c K^+)/\Gamma_{total}] \times [B(\eta_c(1S) \to K\overline{K}\pi)] = (0.074 \pm 0.005 \pm 0.007) \times 10^{-3}$ which we divide by our best value $B(\eta_c(1S) \to K\overline{K}\pi) = (7.1 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041B40;LINKAGE=AU
[7] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B40;LINKAGE=EP
[8] EDWARDS 01 assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$. The correlated uncertainties (28.3)% from $B(J/\psi(1S) \to \gamma\eta_c)$ in those modes have been accounted for. NODE=S041B40;LINKAGE=A

$\Gamma(B^+ \to \eta_c K^+)/\Gamma_{total} \times \Gamma(\eta_c(1S) \to \gamma\gamma)/\Gamma_{total}$

$\Gamma_{270}/\Gamma \times \Gamma_{59}^{\eta_c(1S)}/\Gamma^{\eta_c(1S)}$

NODE=S041B08
NODE=S041B08

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$0.22^{+0.09+0.04}_{-0.07-0.02}$	[1] WICHT	08	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B08;LINKAGE=EP

$\Gamma(\eta_c K^*(892)^+)/\Gamma_{total}$ Γ_{271}/Γ

NODE=S041Q96
NODE=S041Q96

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
$1.2^{+0.5}_{-0.4} \pm 0.1$	[1,2] AUBERT	07AV	BABR	$e^+e^- \to \Upsilon(4S)$

[1] AUBERT 07AV reports $[\Gamma(B^+ \to \eta_c K^*(892)^+)/\Gamma_{total}] \times [B(\eta_c(1S) \to p\overline{p})] = (1.57^{+0.56+0.45}_{-0.46-0.36}) \times 10^{-6}$ which we divide by our best value $B(\eta_c(1S) \to p\overline{p}) = (1.33 \pm 0.11) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041Q96;LINKAGE=AU
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q96;LINKAGE=EP

$\Gamma(\eta_c K^+\pi^+\pi^-)/\Gamma_{total}$ Γ_{272}/Γ

NODE=S041C93
NODE=S041C93

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.9 \times 10^{-4}$	90	VINOKUROVA	15	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\eta_c K^+\omega(782))/\Gamma_{total}$ Γ_{273}/Γ

NODE=S041C94
NODE=S041C94

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5.3 \times 10^{-4}$	90	VINOKUROVA	15	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\eta_c K^+\eta)/\Gamma_{total}$ Γ_{274}/Γ

NODE=S041C95
NODE=S041C95

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.2 \times 10^{-4}$	90	VINOKUROVA	15	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\eta_c K^+\pi^0)/\Gamma_{total}$ Γ_{275}/Γ

NODE=S041C96
NODE=S041C96

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<6.2 \times 10^{-5}$	90	VINOKUROVA	15	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\eta_c(2S)K^+)/\Gamma_{total}$ Γ_{276}/Γ

NODE=S041Q77
NODE=S041Q77

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
4.4±1.0 OUR AVERAGE				
3.5±1.7±0.5±0.1	[1,2] LEES	20C	BABR	$e^+e^- \to \Upsilon(4S)$
4.8±1.1±0.3	[2] KATO	18	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3.4±1.8±0.3	[2] AUBERT	06E	BABR	Repl. by LEES 20C

[1] LEES 20C measurement's last uncertainty is due to the used $B(B^\pm \to K^\pm J/\psi)$ value. NODE=S041Q77;LINKAGE=A
[2] Measures absolute branching fractions using a missing-mass technique. NODE=S041Q77;LINKAGE=AT

$\Gamma(\eta_c(2S)K^+,\ \eta_c \to p\overline{p})/\Gamma_{total}$ Γ_{277}/Γ

NODE=S041BA2

VALUE (units 10^{-8})	CL%	DOCUMENT ID		TECN	COMMENT
3.47±0.72±0.26		[1] AAIJ	17AD	LHCB	pp at 7 and 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<10.6	95	[2] AAIJ	13S	LHCB	Repl. by AAIJ 17AD

[1] Measured relative to $B^+ \to J/\psi K^+$ decay with charmonia reconstructed in $p\overline{p}$ final state and using B($B^+ \to J/\psi K^+$) × B($J/\psi \to p\overline{p}$)= (2.17 ± 0.08) × 10^{-6}. The last uncertainty includes the uncertainty of B($B^+ \to J/\psi K^+$) × B($J/\psi \to p\overline{p}$).

[2] Measured relative to $B^+ \to J/\psi K^+$ decay with charmonia reconstructed in $p\overline{p}$ final state and using B($B^+ \to J/\psi K^+$) = (1.013 ± 0.034) × 10^{-3} and B($J/\psi \to p\overline{p}$) = (2.17 ± 0.07) × 10^{-3}.

NODE=S041BA2;LINKAGE=A
NODE=S041BA2;LINKAGE=AA

$\Gamma(\eta_c(2S)K^+,\ \eta_c \to p\overline{p}\pi^+\pi^-)/\Gamma_{total}$ Γ_{279}/Γ

NODE=S041P70

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
$\mathbf{11.2^{+1.8+0.5}_{-1.6-0.7}}$	CHILIKIN	19	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(B^+ \to h_c(1P)K^+)/\Gamma_{total} \times \Gamma(h_c(1P) \to \gamma\eta_c(1S))/\Gamma_{total}$ $\Gamma_{385}/\Gamma \times \Gamma_{30}^{h_c(1P)}/\Gamma^{h_c(1P)}$

NODE=S041C16

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
<0.48	90	[1] AUBERT	08AB	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses the production ratio of $(B^+B^-)/(B^0\overline{B}^0)$ = 1.026 ± 0.032 at $\Upsilon(4S)$.

NODE=S041C16;LINKAGE=PR

$\Gamma(B^+ \to \eta_c(2S)K^+)/\Gamma_{total} \times \Gamma(\eta_c(2S) \to \gamma\gamma)/\Gamma_{total}$ $\Gamma_{276}/\Gamma \times \Gamma_{22}^{\eta_c(2S)}/\Gamma^{\eta_c(2S)}$

NODE=S041B09

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.18	90	[1] WICHT	08	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B09;LINKAGE=EP

$\Gamma(\eta_c(2S)K^+,\ \eta_c \to K^0_S K^\mp\pi^\pm)/\Gamma_{total}$ Γ_{278}/Γ

NODE=S041C65

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$\mathbf{3.4^{+2.2+0.5}_{-1.5-0.4}}$	[1,2] VINOKUROVA	11	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^0 and B^+ from Upsilon(4S) decays.

[2] The first uncertainty includes both statistical and interference effects while the second is due to systematics.

NODE=S041C65;LINKAGE=EP
NODE=S041C65;LINKAGE=VI

$\Gamma(J/\psi(1S)K^+)/\Gamma_{total}$ Γ_{311}/Γ

NODE=S041R3

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
10.20± 0.19 OUR FIT					
10.18± 0.20 OUR AVERAGE					
10.32± 0.07±0.24		[1] CHOUDHURY	21	BELL	$e^+e^- \to \Upsilon(4S)$
9.4 ± 0.7 ±0.8		[2] CHILIKIN	19	BELL	$e^+e^- \to \Upsilon(4S)$
8.9 ± 0.6 ±0.5		[3] KATO	18	BELL	$e^+e^- \to \Upsilon(4S)$
8.1 ± 1.3 ±0.7		[3] AUBERT	06E	BABR	$e^+e^- \to \Upsilon(4S)$
10.61± 0.15±0.48		[4] AUBERT	05J	BABR	$e^+e^- \to \Upsilon(4S)$
10.4 ± 1.1 ±0.1		[5] AUBERT,B	05L	BABR	$e^+e^- \to \Upsilon(4S)$
10.2 ± 0.8 ±0.7		[4] JESSOP	97	CLE2	$e^+e^- \to \Upsilon(4S)$
9.24± 3.04±0.05		[6] BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$
8.09± 3.50±0.04	6	[7] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
10.1 ± 0.2 ±0.7		[4] ABE	03B	BELL	Repl. by CHOUDHURY 21
10.1 ± 0.3 ±0.5		[4] AUBERT	02	BABR	Repl. by AUBERT 05J
11.0 ± 1.5 ±0.9	59	[4] ALAM	94	CLE2	Repl. by JESSOP 97
22 ±10 ±2		BUSKULIC	92G	ALEP	$e^+e^- \to Z$
7 ± 4	3	[8] ALBRECHT	87D	ARG	$e^+e^- \to \Upsilon(4S)$
10 ± 7 ±2	3	[9] BEBEK	87	CLEO	$e^+e^- \to \Upsilon(4S)$
9 ± 5	3	[10] ALAM	86	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] CHOUDHURY 21 uses the relative production fraction of charged (f^{+-}) to neutral (f^{00}) B mesons at $\Upsilon(4S)$ value of f^{+-}/f^{00} = 1.058 ± 0.024. NODE=S041R3;LINKAGE=E

[2] CHILIKIN 19 reports $[\Gamma(B^+ \to J/\psi(1S)K^+)/\Gamma_{total}] \times [B(J/\psi(1S) \to p\overline{p}\pi^+\pi^-)] = (56.4^{+3.3}_{-3.2}{}^{+2.7}_{-2.5}) \times 10^{-7}$ which we divide by our best value $B(J/\psi(1S) \to p\overline{p}\pi^+\pi^-) = (6.0 \pm 0.5) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041R3;LINKAGE=D

[3] Measures absolute branching fractions using a missing-mass technique. NODE=S041R3;LINKAGE=AT

[4] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R3;LINKAGE=EP

[5] AUBERT,B 05L reports $[\Gamma(B^+ \to J/\psi(1S)K^+)/\Gamma_{total}] \times [B(J/\psi(1S) \to p\overline{p})] = (2.2 \pm 0.2 \pm 0.1) \times 10^{-6}$ which we divide by our best value $B(J/\psi(1S) \to p\overline{p}) = (2.120 \pm 0.029) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041R3;LINKAGE=AE

[6] BORTOLETTO 92 reports $(8 \pm 2 \pm 2) \times 10^{-4}$ from a measurement of $[\Gamma(B^+ \to J/\psi(1S)K^+)/\Gamma_{total}] \times [B(J/\psi(1S) \to e^+e^-)]$ assuming $B(J/\psi(1S) \to e^+e^-) = 0.069 \pm 0.009$, which we rescale to our best value $B(J/\psi(1S) \to e^+e^-) = (5.971 \pm 0.032) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R3;LINKAGE=AB

[7] ALBRECHT 90J reports $(7 \pm 3 \pm 1) \times 10^{-4}$ from a measurement of $[\Gamma(B^+ \to J/\psi(1S)K^+)/\Gamma_{total}] \times [B(J/\psi(1S) \to e^+e^-)]$ assuming $B(J/\psi(1S) \to e^+e^-) = 0.069 \pm 0.009$, which we rescale to our best value $B(J/\psi(1S) \to e^+e^-) = (5.971 \pm 0.032) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R3;LINKAGE=BA

[8] ALBRECHT 87D assume $B^+B^-/B^0\overline{B}^0$ ratio is 55/45. Superseded by ALBRECHT 90J. NODE=S041R3;LINKAGE=C

[9] BEBEK 87 value has been updated in BERKELMAN 91 to use same assumptions as noted for BORTOLETTO 92. NODE=S041R3;LINKAGE=A

[10] ALAM 86 assumes $B^\pm/B^0$ ratio is 60/40. NODE=S041R3;LINKAGE=B

$\Gamma(\eta_c K^+)/\Gamma(J/\psi(1S)K^+)$ — $\Gamma_{270}/\Gamma_{311}$

NODE=S041Q06
NODE=S041Q06

VALUE	DOCUMENT ID		TECN	COMMENT
0.94±0.10 OUR AVERAGE				
0.92±0.07±0.08	[1] AAIJ	13S	LHCB	pp at 7 TeV
1.33±0.10±0.43	[2] AUBERT,B	04B	BABR	$e^+e^- \to \Upsilon(4S)$

[1] AAIJ 13S reports $[\Gamma(B^+ \to \eta_c K^+)/\Gamma(B^+ \to J/\psi(1S)K^+)] \times [B(\eta_c(1S) \to p\overline{p})] / [B(J/\psi(1S) \to p\overline{p})] = 0.578 \pm 0.035 \pm 0.026$ which we multiply or divide by our best values $B(\eta_c(1S) \to p\overline{p}) = (1.33 \pm 0.11) \times 10^{-3}$, $B(J/\psi(1S) \to p\overline{p}) = (2.120 \pm 0.029) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best values. NODE=S041Q06;LINKAGE=AB

[2] Uses BABAR measurement of $B(B^+ \to J/\psi K^+) = (10.1 \pm 0.3 \pm 0.5) \times 10^{-4}$. NODE=S041Q06;LINKAGE=AU

$\Gamma(B^+ \to J/\psi(1S)K^+)/\Gamma_{total} \times \Gamma(J/\psi(1S) \to \gamma\gamma)/\Gamma_{total}$ — $\Gamma_{311}/\Gamma \times \Gamma^{J/\psi(1S)}_{391}/\Gamma^{J/\psi(1S)}$

NODE=S041C14
NODE=S041C14

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.16	90	[1] WICHT	08	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C14;LINKAGE=EP

$\Gamma(J/\psi(1S)K^+\pi^+\pi^-)/\Gamma_{total}$ — Γ_{313}/Γ

NODE=S041R19
NODE=S041R19

VALUE (units 10^{-3})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
0.81 ±0.13 OUR AVERAGE Error includes scale factor of 2.5. See the ideogram below.						
0.716±0.010±0.060			[1] GULER	11	BELL	$e^+e^- \to \Upsilon(4S)$
1.16 ±0.07 ±0.09			[1] AUBERT	05R	BABR	$e^+e^- \to \Upsilon(4S)$
0.69 ±0.18 ±0.12			[2] ACOSTA	02F	CDF	$p\overline{p}$ 1.8 TeV
1.39 ±0.81 ±0.01			[3] BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$
1.39 ±0.91 ±0.01		6	[4] ALBRECHT	87D	ARG	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<1.8	90		[5] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R19;LINKAGE=EP

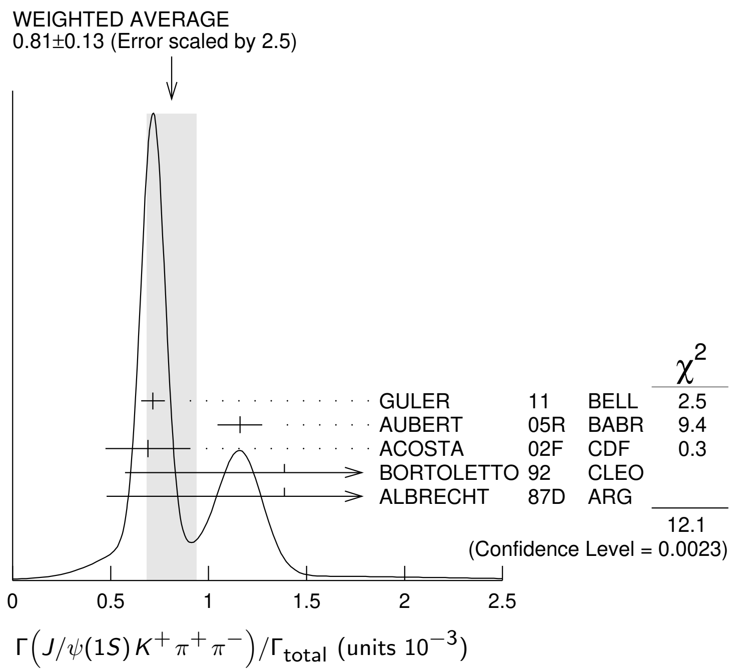
[2] ACOSTA 02F uses as reference of $B(B \to J/\psi(1S)K^+) = (10.1 \pm 0.6) \times 10^{-4}$. The second error includes the systematic error and the uncertainties of the branching ratio. NODE=S041R19;LINKAGE=CA

[3] BORTOLETTO 92 reports $(1.2 \pm 0.6 \pm 0.4) \times 10^{-3}$ from a measurement of $[\Gamma(B^+ \to J/\psi(1S)K^+\pi^+\pi^-)/\Gamma_{total}] \times [B(J/\psi(1S) \to e^+e^-)]$ assuming $B(J/\psi(1S) \to e^+e^-) = 0.069 \pm 0.009$, which we rescale to our best value $B(J/\psi(1S) \to e^+e^-) = (5.971 \pm 0.032) \times 10^{-2}$. Our first error is their experiment's error and our second error NODE=S041R19;LINKAGE=B9

is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

[4] ALBRECHT 87D reports $(1.2 \pm 0.8) \times 10^{-3}$ from a measurement of $[\Gamma(B^+ \to J/\psi(1S) K^+ \pi^+ \pi^-)/\Gamma_{total}] \times [B(J/\psi(1S) \to e^+ e^-)]$ assuming $B(J/\psi(1S) \to e^+ e^-) = 0.069 \pm 0.009$, which we rescale to our best value $B(J/\psi(1S) \to e^+ e^-) = (5.971 \pm 0.032) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. They actually report 0.0011 ± 0.0007 assuming $B^+ B^- / B^0 \overline{B}^0$ ratio is 55/45. We rescale to 50/50. Analysis explicitly removes $B^+ \to \psi(2S) K^+$. NODE=S041R19;LINKAGE=C

[5] ALBRECHT 90J reports $< 1.6 \times 10^{-3}$ from a measurement of $[\Gamma(B^+ \to J/\psi(1S) K^+ \pi^+ \pi^-)/\Gamma_{total}] \times [B(J/\psi(1S) \to e^+ e^-)]$ assuming $B(J/\psi(1S) \to e^+ e^-) = 0.069$, which we rescale to our best value $B(J/\psi(1S) \to e^+ e^-) = 5.971 \times 10^{-2}$. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R19;LINKAGE=9B



$\Gamma(J/\psi(1S) K^+ K^- K^+)/\Gamma_{total}$ — Γ_{314}/Γ

NODE=S041RA7
NODE=S041RA7

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
33.7±2.5±1.4	LEES	15	BABR	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(h_c(1P) K^+,\ h_c \to J/\psi \pi^+ \pi^-)/\Gamma_{total}$ — Γ_{280}/Γ

NODE=S041Q69
NODE=S041Q69

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.4 \times 10^{-6}$	90	[1] AUBERT	05R	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q69;LINKAGE=EP

$\Gamma(X(3730)^0 K^+,\ X^0 \to \eta_c \eta)/\Gamma_{total}$ — Γ_{281}/Γ

NODE=S041C97
NODE=S041C97

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<4.6 \times 10^{-5}$	90	VINOKUROVA	15	BELL	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(X(3730)^0 K^+,\ X^0 \to \eta_c \pi^0)/\Gamma_{total}$ — Γ_{282}/Γ

NODE=S041C98
NODE=S041C98

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5.7 \times 10^{-6}$	90	VINOKUROVA	15	BELL	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(\eta_{c2}(1D) K^+,\ \eta_{c2} \to h_c \gamma)/\Gamma_{total}$ — Γ_{283}/Γ

NODE=S041P86
NODE=S041P86

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.7 \times 10^{-5}$	90	CHILIKIN	20	BELL	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(\eta_{c2}(1D) \pi^+ K^0_S,\ \eta_{c2} \to h_c \gamma)/\Gamma_{total}$ — Γ_{284}/Γ

NODE=S041P87
NODE=S041P87

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.1 \times 10^{-4}$	90	CHILIKIN	20	BELL	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(\psi_2(3823) K^+,\ \psi_2 \to J/\psi \pi^+ \pi^-)/\Gamma_{total}$ Γ_{285}/Γ

NODE=S041P85
NODE=S041P85

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
2.82±0.54±0.13	[1] AAIJ	20S	LHCB	pp at 7, 8, 13 TeV

[1] The first error is statistic; the second error is the total systematic error.

NODE=S041P85;LINKAGE=A

$\Gamma(\psi_2(3823) K^+,\ \psi_2 \to J/\psi \eta)/\Gamma_{total}$ Γ_{286}/Γ

NODE=S041A56
NODE=S041A56

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$\mathbf{1.25^{+0.71}_{-0.53}\pm0.04}$	AAIJ	22D	LHCB	pp at 7, 8, 13 TeV

$\Gamma(\psi_3(3842) K^+,\ \psi_3 \to J/\psi \eta)/\Gamma_{total}$ Γ_{287}/Γ

NODE=S041A58
NODE=S041A58

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{<6.1 \times 10^{-7}}$	90	AAIJ	22D	LHCB	pp at 7, 8, 13 TeV

$\Gamma(\chi_{c1}(3872) K^+)/\Gamma_{total}$ Γ_{288}/Γ

NODE=S041C3
NODE=S041C3

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
1.9±0.6 OUR AVERAGE					
[$(2.3 \pm 0.6) \times 10^{-4}$ OUR 2024 AVERAGE]					
2.1±0.6±0.3±0.1		[1,2] LEES	20C	BABR	$e^+e^- \to \Upsilon(4S)$
1.2±1.1±0.1		[1,3] KATO	18	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2.3±0.6±0.7		[4,5] AUBERT	06	BABR	Repl. by AUBERT 08Y
<3.2	90	[1] AUBERT	06E	BABR	$e^+e^- \to \Upsilon(4S)$
2.9±0.9±0.9		[4,6] AUBERT	05R	BABR	Repl. by AUBERT 06
3.1±0.7±1.0		[7] CHOI	03	BELL	Repl. by CHOI 11

NEW

[1] Measures absolute branching fractions using a missing-mass technique. NODE=S041C3;LINKAGE=AT

[2] LEES 20C measurement's last uncertainty is due to the used $B(B^\pm \to K^\pm J/\psi)$ value. NODE=S041C3;LINKAGE=I

[3] KATO 18 value corresponds to upper limit of $< 2.6 \times 10^{-4}$ at 90% CL. NODE=S041C3;LINKAGE=K

[4] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C3;LINKAGE=EP

[5] AUBERT 06 reports $[\Gamma(B^+ \to \chi_{c1}(3872) K^+)/\Gamma_{total}] \times [B(\chi_{c1}(3872) \to \pi^+\pi^- J/\psi(1S))] = (10.1 \pm 2.5 \pm 1.0) \times 10^{-6}$ which we divide by our best value $B(\chi_{c1}(3872) \to \pi^+\pi^- J/\psi(1S)) = (4.3 \pm 1.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041C3;LINKAGE=F

[6] AUBERT 05R reports $[\Gamma(B^+ \to \chi_{c1}(3872) K^+)/\Gamma_{total}] \times [B(\chi_{c1}(3872) \to \pi^+\pi^- J/\psi(1S))] = (12.8 \pm 4.1) \times 10^{-6}$ which we divide by our best value $B(\chi_{c1}(3872) \to \pi^+\pi^- J/\psi(1S)) = (4.3 \pm 1.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041C3;LINKAGE=G

[7] CHOI 03 reports $[\Gamma(B^+ \to \chi_{c1}(3872) K^+)/\Gamma_{total}] \times [B(\chi_{c1}(3872) \to \pi^+\pi^- J/\psi(1S))] = (13.6 \pm 3.0 \pm 0.5) \times 10^{-6}$ which we divide by our best value $B(\chi_{c1}(3872) \to \pi^+\pi^- J/\psi(1S)) = (4.3 \pm 1.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041C3;LINKAGE=CH

$\Gamma(\chi_{c0}(3915) K^+)/\Gamma_{total}$ Γ_{289}/Γ

NODE=S041P47
NODE=S041P47

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{<2.8 \times 10^{-4}}$	90	[1] KATO	18	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Measures absolute branching fractions using a missing-mass technique.

NODE=S041P47;LINKAGE=A

$\Gamma(\chi_{c0}(3915) K^+,\ \chi_{c0} \to D^+ D^-)/\Gamma(D^- D^+ K^+)$ $\Gamma_{290}/\Gamma_{224}$

NODE=S041A21
NODE=S041A21

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
3.7±0.9±0.2	[1] AAIJ	20AI	LHCB	pp at 7, 8, 13 TeV

[1] Measured in Dalitz plot analysis of $B^+ \to D^- D^+ K^+$ decays.

NODE=S041A21;LINKAGE=A

$\Gamma(\chi_{c0}(3915) K^+,\ \chi_{c0} \to \eta_c \eta)/\Gamma_{total}$ Γ_{291}/Γ

NODE=S041P13
NODE=S041P13

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{<4.7 \times 10^{-5}}$	90	[1] VINOKUROVA	15	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Upper limit is corrected in the Erratum.

NODE=S041P13;LINKAGE=A

$\Gamma(\chi_{c0}(3915) K^+,\ \chi_{c0} \to \eta_c \pi^0)/\Gamma_{total}$ Γ_{292}/Γ

NODE=S041P14
NODE=S041P14

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{<1.7 \times 10^{-5}}$	90	[1] VINOKUROVA	15	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Upper limit is corrected in the Erratum.

NODE=S041P14;LINKAGE=A

$\Gamma(X(4014)^0 K^+,\ X^0 \to \eta_c \eta)/\Gamma_{total}$ Γ_{293}/Γ

NODE=S041P15
NODE=S041P15

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{<3.9 \times 10^{-5}}$	90	VINOKUROVA	15	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(X(4014)^0 K^+,\ X^0 \to \eta_c \pi^0)/\Gamma_{total}$ Γ_{294}/Γ

NODE=S041P16

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<1.2 × 10⁻⁵	90	VINOKUROVA 15	BELL	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(T_{c\overline{c}1}(3900)^0 K^+,\ T^0_{c\overline{c}1} \to \eta_c \pi^+ \pi^-)/\Gamma_{total}$ Γ_{295}/Γ

NODE=S041P17

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<4.7 × 10⁻⁵	90	VINOKUROVA 15	BELL	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(T_{c\overline{c}1}(3900)^0 K^+,\ T^0_{c\overline{c}1} \to J/\psi \eta)/\Gamma_{total}$ Γ_{296}/Γ

NODE=S041A60

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<4.3 × 10⁻⁷	90	AAIJ 22D	LHCB	pp at 7, 8, 13 TeV

$\Gamma(T_{c\overline{c}}(4020)^0 K^+,\ T^0_{c\overline{c}} \to \eta_c \pi^+ \pi^-)/\Gamma_{total}$ Γ_{297}/Γ

NODE=S041P18

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<1.6 × 10⁻⁵	90	VINOKUROVA 15	BELL	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(\chi_{c1}(3872) K^*(892)^+)/\Gamma_{total}$ Γ_{298}/Γ

NODE=S041P98

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<5 × 10⁻⁴ (CL = 90%) [<6 × 10⁻⁴ (CL = 90%) OUR 2024 BEST LIMIT]				
<5 × 10⁻⁴	90	[1,2] AUBERT 09B	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
5 × 10⁻⁴	90	[2,3] AUBERT 09B	BABR	$e^+ e^- \to \Upsilon(4S)$

OCCUR=2

[1] AUBERT 09B reports $[\Gamma(B^+ \to \chi_{c1}(3872) K^*(892)^+)/\Gamma_{total}] \times [B(\chi_{c1}(3872) \to \gamma J/\psi)] < 4.8 \times 10^{-6}$ which we divide by our best value $B(\chi_{c1}(3872) \to \gamma J/\psi) = 10 \times 10^{-3}$. NODE=S041P98;LINKAGE=A

[2] Uses $B(\Upsilon(4S) \to B^+ B^-) = (51.6 \pm 0.6)\%$ and $B(\Upsilon(4S) \to B^0 \overline{B}^0) = (48.4 \pm 0.6)\%$. NODE=S041P98;LINKAGE=B

[3] AUBERT 09B reports $[\Gamma(B^+ \to \chi_{c1}(3872) K^*(892)^+)/\Gamma_{total}] \times [B(\chi_{c1}(3872) \to \gamma \psi(2S))] < 28 \times 10^{-6}$ which we divide by our best value $B(\chi_{c1}(3872) \to \gamma \psi(2S)) = 0 \times 10^{-2}$. NODE=S041P98;LINKAGE=C

$\Gamma(\chi_{c1}(3872)^+ K^0,\ \chi^+_{c1} \to J/\psi(1S) \pi^+ \pi^0)/\Gamma_{total}$ Γ_{299}/Γ

NODE=S041Q52

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
< 6.1	90	[1,2] CHOI 11	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<22	90	[3] AUBERT 05B	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes $\pi^+ \pi^0$ originates from ρ^+. NODE=S041Q52;LINKAGE=CH

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q52;LINKAGE=EP

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. The isovector-X hypothesis is excluded with a likelihood test at 1×10^{-4} level. NODE=S041Q52;LINKAGE=AU

$\Gamma(\chi_{c1}(3872) K^0 \pi^+)/\Gamma_{total}$ Γ_{300}/Γ

NODE=S041C85

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
2.4±1.1 OUR AVERAGE [(3.0 ± 1.2) × 10⁻⁴ OUR 2024 AVERAGE]			
2.4±0.7±0.8	[1] BALA 15	BELL	$e^+ e^- \to \Upsilon(4S)$

NEW

[1] BALA 15 reports $[\Gamma(B^+ \to \chi_{c1}(3872) K^0 \pi^+)/\Gamma_{total}] \times [B(\chi_{c1}(3872) \to \pi^+ \pi^- J/\psi(1S))] = (10.6 \pm 3.0 \pm 0.9) \times 10^{-6}$ which we divide by our best value $B(\chi_{c1}(3872) \to \pi^+ \pi^- J/\psi(1S)) = (4.3 \pm 1.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041C85;LINKAGE=A

$\Gamma(T_{c\overline{c}1}(4430)^+ K^0,\ T^+_{c\overline{c}1} \to J/\psi \pi^+)/\Gamma_{total}$ Γ_{301}/Γ

NODE=S041C54

VALUE (units 10^{-5})	CL%	DOCUMENT ID	TECN	COMMENT
<1.5	95	[1] AUBERT 09AA	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C54;LINKAGE=EP

$\Gamma(T_{c\overline{c}1}(4430)^+ K^0,\ T^+_{c\overline{c}1} \to \psi(2S) \pi^+)/\Gamma_{total}$ Γ_{302}/Γ

NODE=S041C55

VALUE (units 10^{-5})	CL%	DOCUMENT ID	TECN	COMMENT
<4.7	95	[1] AUBERT 09AA	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C55;LINKAGE=EP

$\Gamma(T_{c\overline{c}1}(4430)^0 K^+,\ T^0_{c\overline{c}1} \to J/\psi \eta)/\Gamma_{total}$ Γ_{303}/Γ

NODE=S041A61

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<12.7 × 10⁻⁷	90	AAIJ 22D	LHCB	pp at 7, 8, 13 TeV

$\Gamma(\psi(4230)^0 K^+,\ \psi^0 \to J/\psi \pi^+ \pi^-)/\Gamma_{total}$ — Γ_{304}/Γ

NODE=S041Q57
NODE=S041Q57

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<15.6	95	[1,2] GARG	19	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<29	95	[2] AUBERT	06	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Corresponds to a 90% CL upper limit of $< 14 \times 10^{-6}$. NODE=S041Q57;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q57;LINKAGE=EP

$\Gamma(\psi(4230) K^+,\ \psi \to J/\psi \eta)/\Gamma_{total}$ — Γ_{305}/Γ

NODE=S041A62
NODE=S041A62

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.9 \times 10^{-7}$	90	AAIJ	22D	LHCB	pp at 7, 8, 13 TeV

$\Gamma(\psi(4360) K^+,\ \psi \to J/\psi \eta)/\Gamma_{total}$ — Γ_{306}/Γ

NODE=S041A63
NODE=S041A63

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<12.4 \times 10^{-7}$	90	AAIJ	22D	LHCB	pp at 7, 8, 13 TeV

$\Gamma(\psi(4390) K^+,\ \psi \to J/\psi \eta)/\Gamma_{total}$ — Γ_{307}/Γ

NODE=S041A64
NODE=S041A64

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<24.1 \times 10^{-7}$	90	AAIJ	22D	LHCB	pp at 7, 8, 13 TeV

$\Gamma(\chi_{c0}(3915) K^+,\ \chi_{c0} \to J/\psi \gamma)/\Gamma_{total}$ — Γ_{308}/Γ

NODE=S041R00
NODE=S041R00

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<14	90	[1] AUBERT,BE	06M	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R00;LINKAGE=EP

$\Gamma(\chi_{c0}(3915) K^+,\ \chi_{c0} \to \chi_{c1}(1P) \pi^0)/\Gamma_{total}$ — Γ_{309}/Γ

NODE=S041P67
NODE=S041P67

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.8 \times 10^{-5}$	90	[1] BHARDWAJ	19	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041P67;LINKAGE=A

$\Gamma(X(3930)^0 K^+,\ X^0 \to J/\psi \gamma)/\Gamma_{total}$ — Γ_{310}/Γ

NODE=S041R01
NODE=S041R01

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<2.5	90	[1] AUBERT,BE	06M	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R01;LINKAGE=EP

$\Gamma(J/\psi(1S) K^0 \pi^+)/\Gamma_{total}$ — Γ_{312}/Γ

NODE=S041C74
NODE=S041C74

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.101 ± 0.021	[1] AUBERT	09AA	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Does not report systematic uncertainties. NODE=S041C74;LINKAGE=AU

$\Gamma(J/\psi(1S) K^*(892)^+)/\Gamma_{total}$ — Γ_{316}/Γ

NODE=S041R65
NODE=S041R65

For polarization information see the Listings at the end of the "B^0 Branching Ratios" section.

NODE=S041R65

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
1.43 ±0.08 OUR FIT					
1.43 ±0.08 OUR AVERAGE					
$1.78\ ^{+0.36}_{-0.32} \pm 0.02$		[1,2] AUBERT	07AV	BABR	$e^+ e^- \to \Upsilon(4S)$
$1.454 \pm 0.047 \pm 0.097$		[2] AUBERT	05J	BABR	$e^+ e^- \to \Upsilon(4S)$
$1.28 \pm 0.07 \pm 0.14$		[2] ABE	02N	BELL	$e^+ e^- \to \Upsilon(4S)$
$1.41 \pm 0.23 \pm 0.24$		[2] JESSOP	97	CLE2	$e^+ e^- \to \Upsilon(4S)$
$1.58 \pm 0.47 \pm 0.27$		[3] ABE	96H	CDF	$p\overline{p}$ at 1.8 TeV
$1.50 \pm 1.08 \pm 0.01$		[4] BORTOLETTO	92	CLEO	$e^+ e^- \to \Upsilon(4S)$
$1.85 \pm 1.30 \pm 0.01$	2	[5] ALBRECHT	90J	ARG	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$1.37 \pm 0.09 \pm 0.11$		[2] AUBERT	02	BABR	Repl. by AUBERT 05J
$1.78 \pm 0.51 \pm 0.23$	13	[2] ALAM	94	CLE2	Sup. by JESSOP 97

[1] AUBERT 07AV reports $[\Gamma(B^+ \to J/\psi(1S) K^*(892)^+)/\Gamma_{total}] \times [B(J/\psi(1S) \to p\overline{p})] = (3.78^{+0.72}_{-0.64}{}^{+0.28}_{-0.23}) \times 10^{-6}$ which we divide by our best value $B(J/\psi(1S) \to p\overline{p}) = (2.120 \pm 0.029) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041R65;LINKAGE=AU

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R65;LINKAGE=EP

[3] ABE 96H assumes that $B(B^+ \to J/\psi K^+) = (1.02 \pm 0.14) \times 10^{-3}$. NODE=S041R65;LINKAGE=AH

[4] BORTOLETTO 92 reports $(1.3 \pm 0.9 \pm 0.3) \times 10^{-3}$ from a measurement of $[\Gamma(B^+ \to J/\psi(1S) K^*(892)^+)/\Gamma_{total}] \times [B(J/\psi(1S) \to e^+ e^-)]$ assuming $B(J/\psi(1S) \to e^+ e^-) = 0.069 \pm 0.009$, which we rescale to our best value $B(J/\psi(1S) \to e^+ e^-) = (5.971 \pm 0.032) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R65;LINKAGE=H9

[5] ALBRECHT 90J reports $(1.6 \pm 1.1 \pm 0.3) \times 10^{-3}$ from a measurement of $[\Gamma(B^+ \to J/\psi(1S) K^*(892)^+)/\Gamma_{total}] \times [B(J/\psi(1S) \to e^+ e^-)]$ assuming $B(J/\psi(1S) \to e^+ e^-) = 0.069 \pm 0.009$, which we rescale to our best value $B(J/\psi(1S) \to e^+ e^-) = (5.971 \pm 0.032) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R65;LINKAGE=9H

$\Gamma(J/\psi(1S) K^*(892)^+)/\Gamma(J/\psi(1S) K^+)$ — $\Gamma_{316}/\Gamma_{311}$

NODE=S041S98
NODE=S041S98

VALUE	DOCUMENT ID		TECN	COMMENT
1.39±0.09 OUR AVERAGE				
1.37±0.05±0.08	AUBERT	05J	BABR	$e^+ e^- \to \Upsilon(4S)$
1.45±0.20±0.17	[1] JESSOP	97	CLE2	$e^+ e^- \to \Upsilon(4S)$
1.92±0.60±0.17	ABE	96Q	CDF	$p\overline{p}$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.37±0.10±0.08	[2] AUBERT	02	BABR	Repl. by AUBERT 05J

[1] JESSOP 97 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. The measurement is actually measured as an average over kaon charged and neutral states. NODE=S041S98;LINKAGE=JJ

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041S98;LINKAGE=EP

$\Gamma(J/\psi(1S) K(1270)^+)/\Gamma_{total}$ — Γ_{317}/Γ

NODE=S041B49
NODE=S041B49

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
1.80±0.34±0.39	[1] ABE	01L	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Uses the PDG value of $B(B^+ \to J/\psi(1S) K^+) = (1.00 \pm 0.10) \times 10^{-3}$. NODE=S041B49;LINKAGE=A1

$\Gamma(J/\psi(1S) K(1400)^+)/\Gamma(J/\psi(1S) K(1270)^+)$ — $\Gamma_{318}/\Gamma_{317}$

NODE=S041B50
NODE=S041B50

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.30	90	ABE	01L	BELL	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(J/\psi(1S) \eta K^+)/\Gamma_{total}$ — Γ_{319}/Γ

NODE=S041Q08
NODE=S041Q08

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
12.4±1.4 OUR AVERAGE				
12.7±1.1±1.1	[1] IWASHITA	14	BELL	$e^+ e^- \to \Upsilon(4S)$
10.8±2.3±2.4	[1] AUBERT	04Y	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q08;LINKAGE=EP

$\Gamma(\chi_{c1-odd}(3872) K^+, \chi_{c1-odd} \to J/\psi\eta)/\Gamma_{total}$ — Γ_{320}/Γ

NODE=S041C89
NODE=S041C89

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<3.8 × 10⁻⁶	90	IWASHITA	14	BELL	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(\psi(4160) K^+, \psi \to J/\psi\eta)/\Gamma_{total}$ — Γ_{321}/Γ

NODE=S041C90
NODE=S041C90

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<8.7 \times 10^{-7}$	90	AAIJ	22D	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<7.4 \times 10^{-6}$	90	IWASHITA	14	BELL	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(J/\psi(1S) \eta' K^+)/\Gamma_{total}$ — Γ_{322}/Γ

NODE=S041Q86
NODE=S041Q86

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<8.8	90	[1] XIE	07	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q86;LINKAGE=EP

$\Gamma(J/\psi(1S)\eta' K^+)/\Gamma(\psi(2S)K^+)$ — $\Gamma_{322}/\Gamma_{347}$

NODE=S041A67

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
4.91±0.47±0.30	[1] AAIJ	23AK	LHCB	pp at 7, 8 and 13 TeV

[1] AAIJ 23AK measurements last uncertainty includes ±0.07 uncertainties on the branching fractions of the intermediate resonances. NODE=S041A67;LINKAGE=A

$\Gamma(J/\psi(1S)\phi K^+)/\Gamma_{total}$ — Γ_{323}/Γ

NODE=S041B43

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
5.0 ±0.4 OUR AVERAGE				
5.00±0.37±0.15	LEES	15	BABR	$e^+e^- \to \Upsilon(4S)$
4.4 ±1.4 ±0.5	[1] AUBERT	03O	BABR	$e^+e^- \to \Upsilon(4S)$
8.8 $^{+3.5}_{-3.0}$ ±1.3	[2] ANASTASSOV	00	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B43;LINKAGE=EP

[2] ANASTASSOV 00 finds 10 events on a background of 0.5 ± 0.2. Assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$, a uniform Dalitz plot distribution, isotropic $J/\psi(1S)$ and ϕ decays, and $B(B^+ \to J/\psi(1S)\phi K^+) = B(B^0 \to J/\psi(1S)\phi K^0)$. NODE=S041B43;LINKAGE=AV

$\Gamma(J/\psi(1S)K_1(1650),\ K_1 \to \phi K^+)/\Gamma(J/\psi(1S)\phi K^+)$ — $\Gamma_{324}/\Gamma_{323}$

NODE=S041P34

VALUE	DOCUMENT ID		TECN	COMMENT
0.12±0.10$^{+0.17}_{-0.06}$	[1] AAIJ	17	LHCB	pp at 7, 8 TeV

[1] Measured in amplitude analysis of $B^+ \to J/\psi(1S)\phi K^+$. NODE=S041P34;LINKAGE=A

$\Gamma(J/\psi(1S)K^*(1680)^+,\ K^* \to \phi K^+)/\Gamma(J/\psi(1S)\phi K^+)$ — $\Gamma_{325}/\Gamma_{323}$

NODE=S041P35

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
6.7±1.9$^{+3.2}_{-3.9}$	[1] AAIJ	17	LHCB	pp at 7, 8 TeV

[1] Measured in amplitude analysis of $B^+ \to J/\psi(1S)\phi K^+$. NODE=S041P35;LINKAGE=A

$\Gamma(J/\psi(1S)K_2^*(1980),\ K_2^* \to \phi K^+)/\Gamma(J/\psi(1S)\phi K^+)$ — $\Gamma_{326}/\Gamma_{323}$

NODE=S041P36

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
2.9±0.8$^{+1.7}_{-0.7}$	[1] AAIJ	17	LHCB	pp at 7, 8 TeV

[1] Measured in amplitude analysis of $B^+ \to J/\psi(1S)\phi K^+$. NODE=S041P36;LINKAGE=A

$\Gamma(J/\psi(1S)K(1830)^+,\ K(1830)^+ \to \phi K^+)/\Gamma(J/\psi(1S)\phi K^+)$ — $\Gamma_{327}/\Gamma_{323}$

NODE=S041P37

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
2.6±1.1$^{+2.3}_{-1.8}$	[1] AAIJ	17	LHCB	pp at 7, 8 TeV

[1] Measured in amplitude analysis of $B^+ \to J/\psi(1S)\phi K^+$. NODE=S041P37;LINKAGE=A

$\Gamma(\chi_{c1}(4140)K^+,\ \chi_{c1} \to J/\psi(1S)\phi)/\Gamma(J/\psi(1S)\phi K^+)$ — $\Gamma_{328}/\Gamma_{323}$

NODE=S041T94

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
0.19 ±0.08 OUR AVERAGE					
0.13 ±0.032$^{+4.8}_{-2.0}$		[1] AAIJ	17	LHCB	pp at 7, 8 TeV
0.19 ±0.07 ±0.04		[2] ABAZOV	14A	D0	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.133	90	LEES	15	BABR	$e^+e^- \to \Upsilon(4S)$
<0.07	90	[3] AAIJ	12AA	LHCB	pp at 7 TeV

[1] Measured in amplitude analysis of $B^+ \to J/\psi(1S)\phi K^+$. NODE=S041T94;LINKAGE=B

[2] Reported a threshold enhancement in the $J/\psi\phi$ mass distribution consistent with the $\chi_{c1}(4140)$ state with a statistical significance of 3.1 standard deviations. NODE=S041T94;LINKAGE=A

[3] Branching fractions are normalized to 382 ± 22 events of $B^+ \to J/\psi\phi K^+$. NODE=S041T94;LINKAGE=AA

$\Gamma(\chi_{c1}(4274)K^+,\ \chi_{c1} \to J/\psi(1S)\phi)/\Gamma(J/\psi(1S)\phi K^+)$ — $\Gamma_{329}/\Gamma_{323}$

NODE=S041T95

VALUE (units 10^{-2})	CL%	DOCUMENT ID		TECN	COMMENT
7.1±2.5$^{+3.5}_{-2.4}$		[1] AAIJ	17	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<18.1	90	LEES	15	BABR	$e^+e^- \to \Upsilon(4S)$
< 8	90	[2] AAIJ	12AA	LHCB	Repl. by AAIJ 17

[1] Measured in amplitude analysis of $B^+ \to J/\psi(1S)\phi K^+$. NODE=S041T95;LINKAGE=A

[2] Branching fractions are normalized to 382 ± 22 events of $B^+ \to J/\psi\phi K^+$. NODE=S041T95;LINKAGE=AA

$\Gamma(\chi_{c0}(4500)K^+,\ \chi_{c0}\to J/\psi(1S)\phi)/\Gamma(J/\psi(1S)\phi K^+)$ $\Gamma_{330}/\Gamma_{323}$

NODE=S041P32

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
$6.6\pm2.4^{+3.5}_{-2.3}$	[1] AAIJ	17	LHCB	pp at 7, 8 TeV

[1] Measured in amplitude analysis of $B^+ \to J/\psi(1S)\phi K^+$. NODE=S041P32;LINKAGE=A

$\Gamma(\chi_{c0}(4700)K^+,\ \chi_{c0}\to J/\psi(1S)\phi)/\Gamma(J/\psi(1S)\phi K^+)$ $\Gamma_{331}/\Gamma_{323}$

NODE=S041P33

VALUE	DOCUMENT ID		TECN	COMMENT
$0.12\pm0.05^{+0.09}_{-0.05}$	[1] AAIJ	17	LHCB	pp at 7, 8 TeV

[1] Measured in amplitude analysis of $B^+ \to J/\psi(1S)\phi K^+$. NODE=S041P33;LINKAGE=A

$\Gamma(J/\psi(1S)\omega K^+)/\Gamma_{total}$ Γ_{332}/Γ

NODE=S041C46

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
$3.2\pm0.1^{+0.6}_{-0.3}$	[1] DEL-AMO-SA...	10B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$3.5\pm0.2\pm0.4$	[1] AUBERT	08W	BABR	Repl. by DEL-AMO-SANCHEZ 10B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C46;LINKAGE=EP

$\Gamma(\chi_{c0}(3915)K^+,\ \chi_{c0}\to J/\psi\omega)/\Gamma_{total}$ Γ_{333}/Γ

NODE=S041C20

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
$3.0^{+0.7}_{-0.6}{}^{+0.5}_{-0.3}$	[1] DEL-AMO-SA...	10B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$4.9^{+1.0}_{-0.9}\pm0.5$	[1] AUBERT	08W	BABR	Repl. by DEL-AMO-SANCHEZ 10B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C20;LINKAGE=EP

$\Gamma(\chi_{c0}(3915)K^+,\ \chi_{c0}\to p\overline{p})/\Gamma_{total}$ Γ_{315}/Γ

NODE=S041BA3

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<7.1\times10^{-8}$	95	[1] AAIJ	13S	LHCB	pp at 7 TeV

[1] Measured relative to $B^+ \to J/\psi K^+$ decay with charmonia reconstructed in $p\overline{p}$ final state and using B($B^+ \to J/\psi K^+$) = $(1.013 \pm 0.034)\times10^{-3}$ and B($J/\psi \to p\overline{p}$) = $(2.17 \pm 0.07)\times10^{-3}$. NODE=S041BA3;LINKAGE=AA

$\Gamma(J/\psi(1S)\pi^+)/\Gamma_{total}$ Γ_{334}/Γ

NODE=S041B91

VALUE	DOCUMENT ID		TECN	COMMENT
$(3.92\pm0.09)\times10^{-5}$ OUR FIT				
$(3.8\pm0.6\pm0.3)\times10^{-5}$	[1] ABE	03B	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B91;LINKAGE=EP

$\Gamma(J/\psi(1S)\pi^+)/\Gamma(J/\psi(1S)K^+)$ $\Gamma_{334}/\Gamma_{311}$

NODE=S041S97

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
3.85 ± 0.04 OUR FIT					
3.85 ± 0.04 OUR AVERAGE					
$3.83\pm0.03\pm0.03$		AAIJ	17O	LHCB	pp at 7, 8 TeV
$3.5\pm0.3\pm1.2$		AABOUD	16L	ATLS	pp at 7, 8 TeV
$4.86\pm0.82\pm0.15$		ABULENCIA	09	CDF	$p\overline{p}$ at 1.96 TeV
$5.37\pm0.45\pm0.11$		AUBERT	04P	BABR	$e^+e^- \to \Upsilon(4S)$
$5.0^{+1.9}_{-1.7}\pm0.1$		ABE	96R	CDF	$p\overline{p}$ 1.8 TeV
5.2 ± 2.4		BISHAI	96	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$3.83\pm0.11\pm0.07$		AAIJ	12AC	LHCB	Repl. by AAIJ 17O
$3.91\pm0.78\pm0.19$		AUBERT	02F	BABR	Repl. by AUBERT 04P
4.3 ± 2.3	5	[1] ALEXANDER	95	CLE2	Sup. by BISHAI 96

[1] Assumes equal production of B^+B^- and $B^0\overline{B}^0$ on $\Upsilon(4S)$. NODE=S041S97;LINKAGE=A

$\Gamma(J/\psi(1S)\pi^+\pi^+\pi^+\pi^-\pi^-)/\Gamma(\psi(2S)K^+)$ $\Gamma_{335}/\Gamma_{347}$

NODE=S041P30

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
$1.88\pm0.17\pm0.09$	[1] AAIJ	17K	LHCB	pp at 7 and 8 TeV

[1] Contains also the contribution from $B^+ \to \psi(2S)[\to J/\psi\pi^+\pi^-]\pi^+\pi^+\pi^-$ decays. NODE=S041P30;LINKAGE=A

$\Gamma(\psi(2S)\pi^+\pi^+\pi^-)/\Gamma(\psi(2S)K^+)$ — $\Gamma_{336}/\Gamma_{347}$

NODE=S041P31

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
3.04±0.50±0.26	AAIJ	17K	LHCB	pp at 7 and 8 TeV

$\Gamma(J/\psi(1S)\rho^+)/\Gamma_{total}$ — Γ_{337}/Γ

NODE=S041S99

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
4.1 ±0.5 OUR AVERAGE Error includes scale factor of 1.4.					
$3.81^{+0.25}_{-0.24}\pm0.35$		AAIJ	19O	LHCB	pp at 7 and 8 TeV
5.0 ±0.7 ±0.3		[1] AUBERT	07AC	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<77	90	BISHAI	96	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041S99;LINKAGE=EP

$\Gamma(J/\psi(1S)\pi^+\pi^0\text{ nonresonant})/\Gamma_{total}$ — Γ_{338}/Γ

NODE=S041Q87

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
<0.73	90	[1] AUBERT	07AC	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q87;LINKAGE=EP

$\Gamma(J/\psi(1S)a_1(1260)^+)/\Gamma_{total}$ — Γ_{339}/Γ

NODE=S041B1

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.2\times10^{-3}$	90	BISHAI	96	CLE2	$e^+e^- \to \Upsilon(4S)$

$\Gamma(J/\psi(1S)p\overline{p}\pi^+)/\Gamma_{total}$ — Γ_{340}/Γ

NODE=S041T98

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5.0\times10^{-7}$	90	[1] AAIJ	13Z	LHCB	pp at 7 TeV

[1] Uses B($B^0_s \to J/\psi(1S)\pi^+\pi^-$) = $(1.98 \pm 0.20)\times10^{-4}$. NODE=S041T98;LINKAGE=A

$\Gamma(J/\psi(1S)p\overline{\Lambda})/\Gamma_{total}$ — Γ_{341}/Γ

NODE=S041C1

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
14.6±1.2 OUR AVERAGE					
15.1±0.8±1.0		[1] SIRUNYAN	19CM	CMS	pp at 8 TeV
$11.7\pm2.8^{+1.8}_{-2.3}$		[2] XIE	05	BELL	$e^+e^- \to \Upsilon(4S)$
$12\ ^{+9}_{-6}$		[2] AUBERT	03K	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<41	90	ZANG	04	BELL	$e^+e^- \to \Upsilon(4S)$

[1] SIRUNYAN 19CM reports B($B^+ \to J/\psi\overline{\Lambda}p$)/B($B^+ \to J/\psi K^*(892)$) = $(1.054 \pm 0.057 \pm 0.035 \pm 0.011)\times10^{-2}$ and rescaled with the best value of B($B^+ \to J/\psi K^*(892)$) =$(1.43 \pm 0.08)\times10^{-3}$, where the last uncertainty is the uncertainty from the branching fractions of $\overline{\Lambda}$ and $K^*(892)$ to reconstructed final states. NODE=S041C1;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C1;LINKAGE=EP

$\Gamma(J/\psi(1S)\overline{\Sigma}^0p)/\Gamma_{total}$ — Γ_{342}/Γ

NODE=S041C11

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.1\times10^{-5}$	90	[1] XIE	05	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C11;LINKAGE=EP

$\Gamma(J/\psi(1S)D^+)/\Gamma_{total}$ — Γ_{343}/Γ

NODE=S041Q44

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.2\times10^{-4}$ (CL = 90%) [$<12\times10^{-5}$ (CL = 90%) OUR 2024 BEST LIMIT]					
$<12\times10^{-5}$	90	[1] AUBERT	05U	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q44;LINKAGE=EP

$\Gamma(J/\psi(1S)\overline{D}^0\pi^+)/\Gamma_{total}$ — Γ_{344}/Γ

NODE=S041Q45

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
<2.5	90	[1] ZHANG	05B	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<5.2	90	[1] AUBERT	05R	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q45;LINKAGE=EP

$\Gamma(J/\psi(1S) D_s^+)/\Gamma_{total}$ Γ_{345}/Γ

NODE=S041D49

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<2.8 × 10^{-7}	90	AAIJ	24F	LHCB	pp at 7, 8, and 13 TeV

$\Gamma(\psi(2S)\pi^+)/\Gamma_{total}$ Γ_{346}/Γ

NODE=S041C08

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
2.44±0.22±0.20	[1] BHARDWAJ	08	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C08;LINKAGE=EP

$\Gamma(\psi(2S)\pi^+)/\Gamma(\psi(2S)K^+)$ $\Gamma_{346}/\Gamma_{347}$

NODE=S041C09

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
3.97±0.29 OUR AVERAGE				
3.95±0.40±0.12	AAIJ	12AC	LHCB	pp at 7 TeV
3.99±0.36±0.17	BHARDWAJ	08	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\psi(2S)K^+)/\Gamma_{total}$ Γ_{347}/Γ

NODE=S041R20

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
6.24± 0.21 OUR FIT					
6.40± 0.34 OUR AVERAGE					
4.6 ± 1.0 ±0.7		[1] LEES	20C	BABR	$e^+e^- \to \Upsilon(4S)$
6.4 ± 1.0 ±0.4		[1] KATO	18	BELL	$e^+e^- \to \Upsilon(4S)$
6.65± 0.17±0.55		[2] GULER	11	BELL	$e^+e^- \to \Upsilon(4S)$
6.17± 0.32±0.44		[2] AUBERT	05J	BABR	$e^+e^- \to \Upsilon(4S)$
7.8 ± 0.7 ±0.9		[2] RICHICHI	01	CLE2	$e^+e^- \to \Upsilon(4S)$
18 ± 8 ±4	5	[2] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
4.9 ± 1.6 ±0.4		[1] AUBERT	06E	BABR	Repl. by LEES 20C
6.9 ± 0.6		[2] ABE	03B	BELL	Repl. by GULER 11
6.4 ± 0.5 ±0.8		[2] AUBERT	02	BABR	Repl. by AUBERT 05J
6.1 ± 2.3 ±0.9	7	[2] ALAM	94	CLE2	Repl. by RICHICHI 01
<5 at 90% CL		[2] BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$
22 ±17	3	[3] ALBRECHT	87D	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Measures absolute branching fractions using a missing-mass technique. NODE=S041R20;LINKAGE=AT

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R20;LINKAGE=EP

[3] ALBRECHT 87D assume $B^+B^-/B^0\overline{B}^0$ ratio is 55/45. Superseded by ALBRECHT 90J. NODE=S041R20;LINKAGE=C

$\Gamma(\psi(2S)K^+)/\Gamma(J/\psi(1S)K^+)$ $\Gamma_{347}/\Gamma_{311}$

NODE=S041B46

VALUE	DOCUMENT ID		TECN	COMMENT
0.612±0.019 OUR FIT				
0.605±0.023 OUR AVERAGE				
0.58 ±0.11 ±0.02	[1] AAIJ	13S	LHCB	pp at 7 TeV
0.608±0.018±0.017	[2,3] AAIJ	12L	LHCB	pp at 7 TeV
0.63 ±0.05 ±0.08	ABAZOV	09Y	D0	$p\overline{p}$ at 1.96 TeV
0.558±0.082±0.056	ABE	98O	CDF	$p\overline{p}$ 1.8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.64 ±0.06 ±0.07	[4] AUBERT	02	BABR	$e^+e^- \to \Upsilon(4S)$

[1] AAIJ 13S reports $[\Gamma(B^+ \to \psi(2S)K^+)/\Gamma(B^+ \to J/\psi(1S)K^+)] \times [B(\psi(2S) \to p\overline{p})] / [B(J/\psi(1S) \to p\overline{p})] = 0.080 \pm 0.012 \pm 0.009$ which we multiply or divide by our best values $B(\psi(2S) \to p\overline{p}) = (2.94 \pm 0.09) \times 10^{-4}$, $B(J/\psi(1S) \to p\overline{p}) = (2.120 \pm 0.029) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best values. NODE=S041B46;LINKAGE=AB

[2] AAIJ 12L reports $0.594 \pm 0.006 \pm 0.016 \pm 0.015$ from a measurement of $[\Gamma(B^+ \to \psi(2S)K^+)/\Gamma(B^+ \to J/\psi(1S)K^+)] \times [B(J/\psi(1S) \to e^+e^-)] / [B(\psi(2S) \to e^+e^-)]$ assuming $B(J/\psi(1S) \to e^+e^-) = (5.94 \pm 0.06) \times 10^{-2}$, $B(\psi(2S) \to e^+e^-) = (7.72 \pm 0.17) \times 10^{-3}$, which we rescale to our best values $B(J/\psi(1S) \to e^+e^-) = (5.971 \pm 0.032) \times 10^{-2}$, $B(\psi(2S) \to e^+e^-) = (7.94 \pm 0.22) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best values. NODE=S041B46;LINKAGE=AA

[3] Assumes $B(J/\psi \to \mu^+\mu^-) / B(\psi(2S) \to \mu^+\mu^-) = B(J/\psi \to e^+e^-) / B(\psi(2S) \to e^+e^-) = 7.69 \pm 0.19$. NODE=S041B46;LINKAGE=AI

[4] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B46;LINKAGE=EP

$\Gamma(\psi(2S)K^*(892)^+)/\Gamma_{total}$ — Γ_{348}/Γ

NODE=S041R66
NODE=S041R66

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
6.7 ±1.4 OUR AVERAGE		Error includes scale factor of 1.3.			
5.92±0.85±0.89		[1] AUBERT	05J	BABR	$e^+e^- \to \Upsilon(4S)$
9.2 ±1.9 ±1.2		[1] RICHICHI	01	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<30	90	[1] ALAM	94	CLE2	Repl. by RICHICHI 01
<35	90	[1] BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$
<49	90	[1] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041R66;LINKAGE=EP

$\Gamma(\psi(2S)K^*(892)^+)/\Gamma(\psi(2S)K^+)$ — $\Gamma_{348}/\Gamma_{347}$

NODE=S041Q75
NODE=S041Q75

VALUE	DOCUMENT ID		TECN	COMMENT
0.96±0.15±0.09	AUBERT	05J	BABR	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\psi(2S)K^0\pi^+)/\Gamma_{total}$ — Γ_{349}/Γ

NODE=S041C75
NODE=S041C75

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.588±0.034	[1] AUBERT	09AA	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Does not report systematic uncertainties.

NODE=S041C75;LINKAGE=AU

$\Gamma(\psi(2S)K^+\pi^+\pi^-)/\Gamma_{total}$ — Γ_{350}/Γ

NODE=S041R67
NODE=S041R67

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
4.3 ± 0.5 OUR AVERAGE					
4.31± 0.20±0.50		[1] GULER	11	BELL	$e^+e^- \to \Upsilon(4S)$
19 ±11 ±4	3	[1] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041R67;LINKAGE=EP

$\Gamma(\psi(2S)\phi(1020)K^+)/\Gamma_{total}$ — Γ_{351}/Γ

NODE=S041P29
NODE=S041P29

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
4.0±0.4±0.6	[1,2] KHACHATRY...	17C	CMS	pp at 8 TeV

[1] Measured using $B^+ \to \psi(2S)K^+$ as a normalization channel. The second error represents total systematic uncertainties including those from branching fractions which were taken from PDG 16 as B($\phi \to K^+K^-$) = 0.489 ± 0.005 and B($B^+ \to \psi(2S)K^+$) = $(6.26 \pm 0.24) \times 10^{-4}$.

NODE=S041P29;LINKAGE=A

[2] An upper limit on the fraction of the non-ϕ component in $B^+ \to \psi(2S)K^+K^-K^+$ decays is set as 0.26 at the 95% confidence level.

NODE=S041P29;LINKAGE=B

$\Gamma(\psi(3770)K^+)/\Gamma_{total}$ — Γ_{352}/Γ

NODE=S041Q13
NODE=S041Q13

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
0.43±0.11 OUR AVERAGE					
0.32±0.20±0.05±0.01		[1,2] LEES	20C	BABR	$e^+e^- \to \Upsilon(4S)$
0.48±0.11±0.07		[3] CHISTOV	04	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.23	90	[2] KATO	18	BELL	$e^+e^- \to \Upsilon(4S)$
3.5 ±2.5 ±0.3		[2] AUBERT	06E	BABR	Repl. by LEES 20C

[1] LEES 20C measurement's last uncertainty is due to the used B($B^\pm \to K^\pm J/\psi$) value.

NODE=S041Q13;LINKAGE=A

[2] Measures absolute branching fractions using a missing-mass technique.

NODE=S041Q13;LINKAGE=AT

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041Q13;LINKAGE=CH

$\Gamma(\psi(3770)K^+)/\Gamma(D^-D^+K^+)$ — $\Gamma_{352}/\Gamma_{224}$

NODE=S041A20
NODE=S041A20

VALUE	DOCUMENT ID		TECN	COMMENT
$0.352 \pm 0.035^{+0.034}_{-0.031}$	[1,2] AAIJ	20AI	LHCB	pp at 7, 8, 13 TeV

[1] AAIJ 20AI reports $[\Gamma(B^+ \to \psi(3770)K^+)/\Gamma(B^+ \to D^-D^+K^+)] \times [B(\psi(3770) \to D^+D^-)] = (14.5 \pm 1.2 \pm 0.8) \times 10^{-2}$ which we divide by our best value $B(\psi(3770) \to D^+D^-) = (41 \pm 4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S041A20;LINKAGE=A

[2] Measured in Dalitz plot analysis of $B^+ \to D^-D^+K^+$ decays.

NODE=S041A20;LINKAGE=B

$\Gamma(\psi(3770) K+, \psi \to D^0 \overline{D}^0)/\Gamma_{total}$ — Γ_{353}/Γ

NODE=S041Q14

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
1.5 ±0.5 OUR AVERAGE	Error includes scale factor of 1.4.			
1.18±0.41±0.15	[1] LEES	15C	BABR	$e^+ e^- \to \Upsilon(4S)$
2.2 ±0.5 ±0.3	[1] BRODZICKA	08	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.41±0.30±0.22	[1] AUBERT	08B	BABR	Repl. by LEES 15C
3.4 ±0.8 ±0.5	[1] CHISTOV	04	BELL	Repl. by BRODZICKA 08

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041Q14;LINKAGE=EP

$\Gamma(\psi(3770) K+, \psi \to D^+ D^-)/\Gamma_{total}$ — Γ_{354}/Γ

NODE=S041Q15

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
0.94±0.35 OUR AVERAGE				
0.84±0.32±0.21	[1] AUBERT	08B	BABR	$e^+ e^- \to \Upsilon(4S)$
1.4 ±0.8 ±0.2	[1] CHISTOV	04	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041Q15;LINKAGE=EP

$\Gamma(\psi(3770) K^+, \psi \to p\overline{p})/\Gamma_{total}$ — Γ_{355}/Γ

NODE=S041P44

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2 \times 10^{-7}$	95	[1] AAIJ	17AD	LHCB	pp at 7 and 8 TeV

[1] Measured relative to $B^+ \to J/\psi K^+$ decay with charmonia reconstructed in $p\overline{p}$ final state and using $B(B^+ \to J/\psi K^+) \times B(J/\psi \to p\overline{p}) = (2.17 \pm 0.08) \times 10^{-6}$.

NODE=S041P44;LINKAGE=A

$\Gamma(\psi(3770) K^+, \psi \to J/\psi\eta)/\Gamma_{total}$ — Γ_{356}/Γ

NODE=S041A57

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<4.6 \times 10^{-7}$	90	AAIJ	22D	LHCB	pp at 7, 8, 13 TeV

$\Gamma(\psi(4040) K^+)/\Gamma_{total}$ — Γ_{357}/Γ

NODE=S041C88

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
1.6 ±0.5±0.2		[1] AAIJ	22D	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<3.0	90	[2] IWASHITA	14	BELL	$e^+ e^- \to \Upsilon(4S)$
<0.13	90	AAIJ	13BC	LHCB	pp at 7, 8 TeV

[1] AAIJ 22D reports $[\Gamma(B^+ \to \psi(4040) K^+)/\Gamma_{total}] \times [B(\psi(4040) \to J/\psi\eta)] = (8.53 \pm 2.35 \pm 0.30) \times 10^{-6}$ which we divide by our best value $B(\psi(4040) \to J/\psi\eta) = (5.2 \pm 0.7) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S041C88;LINKAGE=B

[2] IWASHITA 14 reports $[\Gamma(B^+ \to \psi(4040) K^+)/\Gamma_{total}] \times [B(\psi(4040) \to J/\psi\eta)] < 15.5 \times 10^{-6}$ which we divide by our best value $B(\psi(4040) \to J/\psi\eta) = 5.2 \times 10^{-3}$.

NODE=S041C88;LINKAGE=A

$\Gamma(\psi(4040) K^+, \psi \to D^+ D^-)/\Gamma(D^- D^+ K^+)$ — $\Gamma_{358}/\Gamma_{224}$

NODE=S041A23

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
5.0±1.3±0.4	[1] AAIJ	20AI	LHCB	pp at 7, 8, 13 TeV

[1] Measured in Dalitz plot analysis of $B^+ \to D^- D^+ K^+$ decays.

NODE=S041A23;LINKAGE=A

$\Gamma(\psi(4160) K^+)/\Gamma_{total}$ — Γ_{359}/Γ

NODE=S041T97

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
$5.1^{+1.3}_{-1.2}$±2.4	[1] AAIJ	13BC	LHCB	pp at 7, 8 TeV

[1] AAIJ 13BC reports $[\Gamma(B^+ \to \psi(4160) K^+)]/\Gamma_{total}] \times B(\psi(4160) \to \mu^+\mu^-) = (3.5^{+0.9}_{-0.8}) \times 10^{-9}$ which we devide by our best value $B(\psi(4160) \to e^+ e^-) = (6.9 \pm 3.3) \times 10^{-6}$ assuming lepton universality. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S041T97;LINKAGE=AA

$\Gamma(\psi(4160) K^+, \psi \to \overline{D}^0 D^0)/\Gamma_{total}$ — Γ_{360}/Γ

NODE=S041C87

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
0.84±0.41±0.33	[1] LEES	15C	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C87;LINKAGE=EP

$\Gamma(\psi(4160) K^+, \psi \to D^+ D^-)/\Gamma(D^- D^+ K^+)$ — $\Gamma_{361}/\Gamma_{224}$

NODE=S041A24

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
6.6±1.5±1.2	[1] AAIJ	20AI	LHCB	pp at 7, 8, 13 TeV

[1] Measured in Dalitz plot analysis of $B^+ \to D^- D^+ K^+$ decays.

NODE=S041A24;LINKAGE=A

$\Gamma(\psi(4415)K^+,\ \psi \to D^+D^-)/\Gamma(D^-D^+K^+)$ — $\Gamma_{362}/\Gamma_{224}$

NODE=S041A25
NODE=S041A25

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
9.2±1.4±1.5	[1] AAIJ	20AI	LHCB	pp at 7, 8, 13 TeV

[1] Measured in Dalitz plot analysis of $B^+ \to D^-D^+K^+$ decays.

NODE=S041A25;LINKAGE=A

$\Gamma(\psi(4415)K^+,\ \psi \to J/\psi\eta)/\Gamma_{total}$ — Γ_{363}/Γ

NODE=S041A59
NODE=S041A59

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<9.6\times10^{-7}$	90	AAIJ	22D	LHCB	pp at 7, 8, 13 TeV

$\Gamma(\chi_{c0}\pi^+,\ \chi_{c0} \to \pi^+\pi^-)/\Gamma_{total}$ — Γ_{364}/Γ

NODE=S041S04
NODE=S041S04

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.1	90	[1] AUBERT	09L	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.3	90	[1] AUBERT,B	05G	BABR	Repl. by AUBERT 09L

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041S04;LINKAGE=EP

$\Gamma(\chi_{c0}\pi^+,\ \chi_{c0} \to \pi^0\pi^0)/\Gamma_{total}$ — Γ_{365}/Γ

NODE=S041A75
NODE=S041A75

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5\times10^{-7}$	90	LAI	23	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\chi_{c0}K^+)/\Gamma_{total}$ — Γ_{366}/Γ

NODE=S041B41
NODE=S041B41

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
$1.51^{+0.15}_{-0.13}$ OUR AVERAGE					
$2.0\pm1.3\pm0.3\pm0.1$		[1,2] LEES	20C	BABR	$e^+e^- \to \Upsilon(4S)$
$1.8\ ^{+0.6}_{-0.5}\pm0.6$		[3] CHILIKIN	19	BELL	$e^+e^- \to \Upsilon(4S)$
$1.84\pm0.25\pm0.14$		[4,5] LEES	12O	BABR	$e^+e^- \to \Upsilon(4S)$
$1.68\pm0.32\pm0.16$		[4,6] LEES	12O	BABR	$e^+e^- \to \Upsilon(4S)$
$1.8\pm0.8\pm0.1$		[7] LEES	11I	BABR	$e^+e^- \to \Upsilon(4S)$
$1.23^{+0.27}_{-0.25}\pm0.06$		[4,8] AUBERT	08AI	BABR	$e^+e^- \to \Upsilon(4S)$
$4.3\pm2.0\pm0.3$		[9] AUBERT,BE	06M	BABR	$e^+e^- \to \Upsilon(4S)$
$1.12\pm0.12^{+0.30}_{-0.20}$		[4] GARMASH	06	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<3.3	90	[2] KATO	18	BELL	$e^+e^- \to \Upsilon(4S)$
<2.7	95	[10] AAIJ	13S	LHCB	pp at 7 TeV
<5	90	[4,11] WICHT	08	BELL	$e^+e^- \to \Upsilon(4S)$
<1.8	90	[2] AUBERT	06E	BABR	$e^+e^- \to \Upsilon(4S)$
$1.84\pm0.32\pm0.31$		[4,12] AUBERT	06O	BABR	Repl. by LEES 12O
<8.9	90	[4] AUBERT	05K	BABR	$e^+e^- \to \Upsilon(4S)$
$1.39\pm0.49\pm0.11$		[13] AUBERT,B	05N	BABR	Repl. by AUBERT 08AI
$1.96\pm0.35^{+2.00}_{-0.42}$		[4] GARMASH	05	BELL	Repl. by GARMASH 06
2.7 ± 0.7		[14] AUBERT	04T	BABR	Repl. by AUBERT,B 04P
$3.0\pm0.8\pm0.3$		[15] AUBERT,B	04P	BABR	Repl. by AUBERT,B 05N
$6.0\ ^{+2.1}_{-1.8}\pm1.1$		[16] ABE	02B	BELL	Repl. by GARMASH 05
<4.8	90	[17] EDWARDS	01	CLE2	$e^+e^- \to \Upsilon(4S)$

OCCUR=2
OCCUR=2

[1] LEES 20C measurement's last uncertainty is due to the used $B(B^\pm \to K^\pm J/\psi)$ value. NODE=S041B41;LINKAGE=D

[2] Measures absolute branching fractions using a missing-mass technique. NODE=S041B41;LINKAGE=UT

[3] CHILIKIN 19 reports $[\Gamma(B^+ \to \chi_{c0}K^+)/\Gamma_{total}] \times [B(\chi_{c0}(1P) \to p\bar{p}\pi^+\pi^-)] = (3.7^{+1.2}_{-1.0}{}^{+0.2}_{-0.3})\times10^{-7}$ which we divide by our best value $B(\chi_{c0}(1P) \to p\bar{p}\pi^+\pi^-) = (2.1\pm0.7)\times10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041B41;LINKAGE=C

[4] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B41;LINKAGE=EP

[5] Measured in the $B^+ \to K^+K^-K^+$ decay. NODE=S041B41;LINKAGE=LA

[6] Measured in the $B^+ \to K^+K^0_SK^0_S$ decay. NODE=S041B41;LINKAGE=LB

[7] LEES 11I reports $[\Gamma(B^+ \to \chi_{c0}K^+)/\Gamma_{total}] \times [B(\chi_{c0}(1P) \to \pi\pi)] = (1.53\pm0.66\pm0.27)\times10^{-6}$ which we divide by our best value $B(\chi_{c0}(1P) \to \pi\pi) = (8.6\pm0.4)\times10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041B41;LINKAGE=LE

[8] AUBERT 08AI reports $(0.70\pm0.10^{+0.12}_{-0.10})\times10^{-6}$ for $B(B^+ \to \chi_{c0}K^+) \times B(\chi_{c0} \to \pi^+\pi^-)$. We compute $B(B^+ \to \chi_{c0}K^+)$ using the PDG value $B(\chi_{c0} \to \pi\pi)=(8.6\pm$ NODE=S041B41;LINKAGE=UB

$0.4) \times 10^{-3}$ and 2/3 for the $\pi^+\pi^-$ fraction. Our first error is their experiment's error and the second error is systematic error from using our best value.

[9] AUBERT,BE 06M reports $[\Gamma(B^+ \to \chi_{c0} K^+)/\Gamma_{total}] \times [B(\chi_{c0}(1P) \to \gamma J/\psi(1S))] = (6.1 \pm 2.6 \pm 1.1) \times 10^{-6}$ which we divide by our best value $B(\chi_{c0}(1P) \to \gamma J/\psi(1S)) = (1.41 \pm 0.09) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. The significance of the observed signal is 2.4 σ. NODE=S041B41;LINKAGE=AP

[10] AAIJ 13S reports $[\Gamma(B^+ \to \chi_{c0} K^+)/\Gamma_{total}] \times [B(\chi_{c0}(1P) \to p\overline{p})] < 6 \times 10^{-8}$ which we divide by our best value $B(\chi_{c0}(1P) \to p\overline{p}) = 2.21 \times 10^{-4}$. NODE=S041B41;LINKAGE=AA

[11] WICHT 08 reports $[\Gamma(B^+ \to \chi_{c0} K^+)/\Gamma_{total}] \times [B(\chi_{c0}(1P) \to \gamma\gamma)] < 0.11 \times 10^{-6}$ which we divide by our best value $B(\chi_{c0}(1P) \to \gamma\gamma) = 2.06 \times 10^{-4}$. NODE=S041B41;LINKAGE=WI

[12] Measured in the $B^+ \to K^+ K^- K^+$ decay. NODE=S041B41;LINKAGE=AE

[13] AUBERT,B 05N reports $(0.66 \pm 0.22 \pm 0.08) \times 10^{-6}$ for $B(B^+ \to \chi_c^0 K^+) \times B(\chi_c^0 \to \pi^+\pi^-)$. We compute $B(B^+ \to \chi_c^0 K^+)$ using the PDG value $B(\chi_c^0 \to \pi^+\pi^-) = (7.1 \pm 0.6) \times 10^{-3}$ and 2/3 for the $\pi^+\pi^-$ fraction. NODE=S041B41;LINKAGE=AT

[14] The measurement performed using decay channels $\chi_{c0} \to \pi^+\pi^-$ and $\chi_{c0} \to K^+K^-$. The ratio of the branching ratios for these channels is found to be consistent with world average. NODE=S041B41;LINKAGE=AU

[15] AUBERT 04P reports $B(B^+ \to \chi_{c0} K^+) \times B(\chi_{c0} \to \pi^+\pi^-) = (1.5 \pm 0.4 \pm 0.1) \times 10^{-6}$ and used PDG value of $B(\chi_{c0} \to \pi\pi) = (7.4 \pm 0.8) \times 10^{-3}$ and Clebsh-Gordan coefficient to compute $B(B^\pm - > \chi_{c0} K^+)$. NODE=S041B41;LINKAGE=AB

[16] ABE 02B measures the ratio of $B(B^+ \to \chi_{c0} K^+)/B(B^+ \to J/\psi(1S) K^+) = 0.60 + 0.21 - 0.18 \pm 0.05 \pm 0.08$, where the third error is due to the uncertainty in the $B(\chi_{c0} \to \pi^+\pi^-)$, and uses $B(B^+ \to J/\psi(1S) K^+) = (10.0 \pm 1.0) \times 10^{-4}$ to obtain the result. NODE=S041B41;LINKAGE=B4

[17] EDWARDS 01 assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$. The correlated uncertainties (28.3)% from $B(J/\psi(1S) \to \gamma\eta_c)$ in those modes have been accounted for. NODE=S041B41;LINKAGE=A

$\Gamma(\chi_{c0} K^0 \pi^+)/\Gamma_{total}$ — Γ_{367}/Γ

NODE=S041D05

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
1.45±0.08±0.19	[1] AAIJ	23AH	LHCB	pp at 7, 8 and 13 TeV

[1] The second uncertainty includes systematic and reference branching reaction of $B^+ \to J/\psi K^+$ uncertainties. NODE=S041D05;LINKAGE=A

$\Gamma(\chi_{c0} K^*(892)^+)/\Gamma_{total}$ — Γ_{368}/Γ

NODE=S041Q70

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
< 2.1	90	[1] AUBERT	08BD	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<28.6	90	[1] AUBERT	05K	BABR	Repl. by AUBERT 08BD

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q70;LINKAGE=EP

$\Gamma(\chi_{c1}(1P)\pi^+)/\Gamma_{total}$ — Γ_{369}/Γ

NODE=S041RC1

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
2.2±0.4±0.3	[1] KUMAR	06	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041RC1;LINKAGE=EP

$\Gamma(\chi_{c1}(1P) K^+)/\Gamma_{total}$ — Γ_{370}/Γ

NODE=S041R90

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
4.74± 0.22 OUR AVERAGE				
4.0 ± 0.8 ±0.6 ±0.1	[1,2] LEES	20C	BABR	$e^+e^- \to \Upsilon(4S)$
9 $^{+3}_{-2}$ ±4	[3] CHILIKIN	19	BELL	$e^+e^- \to \Upsilon(4S)$
5.8 ± 0.9 ±0.5	[1] KATO	18	BELL	$e^+e^- \to \Upsilon(4S)$
4.94± 0.11±0.33	[4] BHARDWAJ	11	BELL	$e^+e^- \to \Upsilon(4S)$
4.5 ± 0.1 ±0.3	[5] AUBERT	09B	BABR	$e^+e^- \to \Upsilon(4S)$
15.5 ± 5.4 ±2.0	[6] ACOSTA	02F	CDF	$p\overline{p}$ 1.8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
8.1 ± 1.4 ±0.7	[1] AUBERT	06E	BABR	Repl. by LEES 20C
5.1 ± 0.4 ±0.2	[7] AUBERT,BE	06M	BABR	Repl. by AUBERT 09B
4.49± 0.19±0.53	[4] SONI	06	BELL	Repl. by BHARDWAJ 11
5.79± 0.26±0.65	[4] AUBERT	05J	BABR	Repl. by AUBERT,BE 06M
6.0 ± 0.9 ±0.2	[8] AUBERT	02	BABR	Repl. by AUBERT 05J
9.7 ± 4.0 ±0.9	[4] ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$
19 ±13 ±6	[9] ALBRECHT	92E	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Measures absolute branching fractions using a missing-mass technique. NODE=S041R90;LINKAGE=AT

[2] LEES 20C measurement's last uncertainty is due to the used B($B^{\pm} \to K^{\pm} J/\psi$) value. NODE=S041R90;LINKAGE=C

[3] CHILIKIN 19 reports [$\Gamma(B^+ \to \chi_{c1}(1P) K^+)/\Gamma_{total}$] × [B($\chi_{c1}(1P) \to p\overline{p}\pi^+\pi^-$)] = $(4.7^{+1.3}_{-1.2}{}^{+0.4}_{-0.2}) \times 10^{-7}$ which we divide by our best value B($\chi_{c1}(1P) \to p\overline{p}\pi^+\pi^-$) = $(5.0 \pm 1.9) \times 10^{-4}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041R90;LINKAGE=B

[4] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R90;LINKAGE=EP

[5] Uses $\chi_{c1,2} \to J/\psi\gamma$. Assumes B($\Upsilon(4S) \to B^+B^-$) = (51.6 ± 0.6)% and B($\Upsilon(4S) \to B^0\overline{B}^0$) = (48.4 ± 0.6)%. NODE=S041R90;LINKAGE=AU

[6] ACOSTA 02F uses as reference of B($B \to J/\psi(1S) K^+$) = $(10.1 \pm 0.6) \times 10^{-4}$. The second error includes the systematic error and the uncertainties of the branching ratio. NODE=S041R90;LINKAGE=CA

[7] AUBERT,BE 06M reports [$\Gamma(B^+ \to \chi_{c1}(1P) K^+)/\Gamma_{total}$] × [B($\chi_{c1}(1P) \to \gamma J/\psi(1S)$)] = $(1.76 \pm 0.07 \pm 0.12) \times 10^{-4}$ which we divide by our best value B($\chi_{c1}(1P) \to \gamma J/\psi(1S)$) = $(34.3 \pm 1.3) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041R90;LINKAGE=AP

[8] AUBERT 02 reports $(7.5 \pm 0.9 \pm 0.8) \times 10^{-4}$ from a measurement of [$\Gamma(B^+ \to \chi_{c1}(1P) K^+)/\Gamma_{total}$] × [B($\chi_{c1}(1P) \to \gamma J/\psi(1S)$)] assuming B($\chi_{c1}(1P) \to \gamma J/\psi(1S)$) = 0.273 ± 0.016, which we rescale to our best value B($\chi_{c1}(1P) \to \gamma J/\psi(1S)$) = $(34.3 \pm 1.3) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R90;LINKAGE=J3

[9] ALBRECHT 92E assumes no $\chi_{c2}(1P)$ production and B($\Upsilon(4S) \to B^+B^-$) = 50%. NODE=S041R90;LINKAGE=A

$\Gamma(\chi_{c1}(1P) K^+)/\Gamma(J/\psi(1S) K^+)$ — $\Gamma_{370}/\Gamma_{311}$

NODE=S041B47

VALUE	DOCUMENT ID		TECN	COMMENT
0.60±0.07±0.02	[1] AUBERT	02	BABR	$e^+e^- \to \Upsilon(4S)$

[1] AUBERT 02 reports 0.75 ± 0.08 ± 0.05 from a measurement of [$\Gamma(B^+ \to \chi_{c1}(1P) K^+)/\Gamma(B^+ \to J/\psi(1S) K^+)$] × [B($\chi_{c1}(1P) \to \gamma J/\psi(1S)$)] assuming B($\chi_{c1}(1P) \to \gamma J/\psi(1S)$) = 0.273 ± 0.016, which we rescale to our best value B($\chi_{c1}(1P) \to \gamma J/\psi(1S)$) = $(34.3 \pm 1.3) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B47;LINKAGE=J3

$\Gamma(\chi_{c1}(1P)\pi^+)/\Gamma(\chi_{c1}(1P) K^+)$ — $\Gamma_{369}/\Gamma_{370}$

NODE=S041QC1

VALUE	DOCUMENT ID		TECN	COMMENT
0.043±0.008±0.003	[1] KUMAR	06	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041QC1;LINKAGE=EP

$\Gamma(\chi_{c1}(1P) K^*(892)^+)/\Gamma_{total}$ — Γ_{371}/Γ

NODE=S041R95

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
3.0 ±0.6 OUR AVERAGE		Error includes scale factor of 1.1.			
2.6 ±0.5 ±0.4		[1] AUBERT	09B	BABR	$e^+e^- \to \Upsilon(4S)$
4.05±0.59±0.95		[2] SONI	06	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2.94±0.95±0.98		[2] AUBERT	05J	BABR	Repl. by AUBERT 09B
<21	90	[2] ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Uses $\chi_{c1,2} \to J/\psi\gamma$. Assumes B($\Upsilon(4S) \to B^+B^-$) = (51.6 ± 0.6)% and B($\Upsilon(4S) \to B^0\overline{B}^0$) = (48.4 ± 0.6)%. NODE=S041R95;LINKAGE=AU

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R95;LINKAGE=EP

$\Gamma(\chi_{c1}(1P) K^*(892)^+)/\Gamma(\chi_{c1}(1P) K^+)$ — $\Gamma_{371}/\Gamma_{370}$

NODE=S041Q76

VALUE	DOCUMENT ID		TECN	COMMENT
0.51±0.17±0.16	AUBERT	05J	BABR	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\chi_{c1}(1P) K^0\pi^+)/\Gamma_{total}$ — Γ_{372}/Γ

NODE=S041C26

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
5.75±0.26±0.32	[1] BHARDWAJ	16	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C26;LINKAGE=A

$\Gamma(\chi_{c1}(1P)K^0\pi^+)/\Gamma(J/\psi(1S)K^0\pi^+)$ — $\Gamma_{372}/\Gamma_{312}$

NODE=S041C73

VALUE	DOCUMENT ID		TECN	COMMENT
0.503±0.030±0.019	[1] LEES	12B	BABR	$e^+e^- \to \Upsilon(4S)$

[1] LEES 12B reports 0.501 ± 0.024 ± 0.028 from a measurement of $[\Gamma(B^+ \to \chi_{c1}(1P)K^0\pi^+)/\Gamma(B^+ \to J/\psi(1S)K^0\pi^+)] \times [B(\chi_{c1}(1P) \to \gamma J/\psi(1S))]$ assuming $B(\chi_{c1}(1P) \to \gamma J/\psi(1S)) = (34.4 \pm 1.5) \times 10^{-2}$, which we rescale to our best value $B(\chi_{c1}(1P) \to \gamma J/\psi(1S)) = (34.3 \pm 1.3) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041C73;LINKAGE=LE

$\Gamma(\chi_{c1}(1P)K^+\pi^0)/\Gamma_{total}$ — Γ_{373}/Γ

NODE=S041P03

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
3.29±0.29±0.19	[1] BHARDWAJ	16	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041P03;LINKAGE=A

$\Gamma(\chi_{c1}(1P)K^+\pi^+\pi^-)/\Gamma_{total}$ — Γ_{374}/Γ

NODE=S041P19

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
3.74±0.18±0.24	[1] BHARDWAJ	16	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041P19;LINKAGE=A

$\Gamma(\chi_{c1}(2P)K^+,\ \chi_{c1}(2P) \to \pi^+\pi^-\chi_{c1}(1P))/\Gamma_{total}$ — Γ_{375}/Γ

NODE=S041P22

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.1 × 10⁻⁵	90	[1,2] BHARDWAJ	16	BELL	$e^+e^- \to \Upsilon(4S)$

[1] BHARDWAJ 16 analysis fixes mass and width of the $\chi_{c1}(2P)$ state to 3920 MeV and 20 MeV. NODE=S041P22;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041P22;LINKAGE=B

$\Gamma(\chi_{c2}\pi^+,\ \chi_{c2} \to \pi^0\pi^0)/\Gamma_{total}$ — Γ_{376}/Γ

NODE=S041A76

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<7 × 10⁻⁷	90	LAI	23	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\chi_{c2}K^+)/\Gamma_{total}$ — Γ_{377}/Γ

NODE=S041Q72

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
$1.11^{+0.36}_{-0.34}$±0.09		[1] BHARDWAJ	11	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 1.8	90	[2] AUBERT	09B	BABR	$e^+e^- \to \Upsilon(4S)$
<20	90	[3] AUBERT	06E	BABR	$e^+e^- \to \Upsilon(4S)$
< 2.9	90	[1] SONI	06	BELL	Repl. by BHARDWAJ 11
< 3.0	90	[1] AUBERT	05K	BABR	Repl. by AUBERT 06E

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q72;LINKAGE=EP

[2] Uses $\chi_{c1,2} \to J/\psi\gamma$. Assumes $B(\Upsilon(4S) \to B^+B^-) = (51.6 \pm 0.6)\%$ and $B(\Upsilon(4S) \to B^0\overline{B}^0) = (48.4 \pm 0.6)\%$. NODE=S041Q72;LINKAGE=AU

[3] Perform measurements of absolute branching fractions using a missing mass technique. NODE=S041Q72;LINKAGE=AT

$\Gamma(\chi_{c2}K^+,\ \chi_{c2} \to p\overline{p}\pi^+\pi^-)/\Gamma_{total}$ — Γ_{378}/Γ

NODE=S041P69

VALUE	DOCUMENT ID		TECN	COMMENT
<1.9 × 10⁻⁷	CHILIKIN	19	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(B^+ \to \chi_{c2}K^+)/\Gamma_{total} \times \Gamma(\chi_{c2}(1P) \to \gamma\gamma)/\Gamma_{total}$ — $\Gamma_{377}/\Gamma \times \Gamma_{104}^{\chi_{c2}(1P)}/\Gamma^{\chi_{c2}(1P)}$

NODE=S041C13

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.09	90	[1] WICHT	08	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C13;LINKAGE=EP

$\Gamma(\chi_{c2}K^*(892)^+)/\Gamma_{total}$ — Γ_{379}/Γ

NODE=S041Q73

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<12 × 10⁻⁵	90	[1] AUBERT	09B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<12.7 \times 10^{-5}$	90	[2] SONI	06	BELL	$e^+e^- \to \Upsilon(4S)$
$< 1.2 \times 10^{-5}$	90	[2] AUBERT	05K	BABR	Repl. by AUBERT 09B

[1] Uses $\chi_{c1,2} \to J/\psi\gamma$. Assumes $B(\Upsilon(4S) \to B^+B^-) = (51.6 \pm 0.6)\%$ and $B(\Upsilon(4S) \to B^0\overline{B}^0) = (48.4 \pm 0.6)\%$. NODE=S041Q73;LINKAGE=AU

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q73;LINKAGE=EP

$\Gamma(\chi_{c2} K^0 \pi^+)/\Gamma_{total}$ Γ_{380}/Γ

NODE=S041P00

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
1.24±0.25 OUR AVERAGE				
9.2 ±2.1 ±1.3	[1] AAIJ	23AH	LHCB	pp at 7, 8 and 13 TeV
1.16±0.22±0.12	[2] BHARDWAJ	16	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

[1] The second uncertainty includes systematic and reference branching reaction of $B^+ \rightarrow J/\psi K^+$ uncertainties. NODE=S041P00;LINKAGE=B

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041P00;LINKAGE=A

$\Gamma(\chi_{c2} K^+ \pi^0)/\Gamma_{total}$ Γ_{381}/Γ

NODE=S041P04

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.62 × 10^{-4}	90	[1] BHARDWAJ	16	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041P04;LINKAGE=A

$\Gamma(\chi_{c2} K^+ \pi^+ \pi^-)/\Gamma_{total}$ Γ_{382}/Γ

NODE=S041P20

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
1.34±0.17±0.09	[1] BHARDWAJ	16	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041P20;LINKAGE=A

$\Gamma(\chi_{c2}(3930) K^+,\ \chi_{c2} \rightarrow D^+ D^-)/\Gamma(D^- D^+ K^+)$ $\Gamma_{383}/\Gamma_{224}$

NODE=S041A22

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
7.2±1.2±0.3	[1] AAIJ	20AI	LHCB	pp at 7, 8, 13 TeV

[1] Measured in Dalitz plot analysis of $B^+ \rightarrow D^- D^+ K^+$ decays. NODE=S041A22;LINKAGE=A

$\Gamma(\chi_{c2}(3930) \pi^+,\ \chi_{c2} \rightarrow \pi^+ \pi^-)/\Gamma_{total}$ Γ_{384}/Γ

NODE=S041C57

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.1	90	[1] AUBERT	09L	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C57;LINKAGE=EP

$\Gamma(h_c(1P) K^+)/\Gamma_{total}$ Γ_{385}/Γ

NODE=S041Q85

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
$3.7^{+1.0+0.8}_{-0.9-0.8}$		CHILIKIN	19	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<3.8	90	[1] FANG	06	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and B($h_c \rightarrow \eta_c \gamma$) = 50%. NODE=S041Q85;LINKAGE=EP

$\Gamma(h_c(1P) K^+,\ h_c \rightarrow p\overline{p})/\Gamma_{total}$ Γ_{386}/Γ

NODE=S041BA4

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<6.4 × 10^{-8}	95	[1] AAIJ	13S	LHCB	pp at 7 TeV

[1] Measured relative to $B^+ \rightarrow J/\psi K^+$ decay with charmonia reconstructed in $p\overline{p}$ final state and using B($B^+ \rightarrow J/\psi K^+$) = (1.013 ± 0.034) × 10^{-3} and B($J/\psi \rightarrow p\overline{p}$) = (2.17 ± 0.07) × 10^{-3}. NODE=S041BA4;LINKAGE=AA

$\Gamma(K^0 \pi^+)/\Gamma_{total}$ Γ_{387}/Γ

NODE=S041R5

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
23.9 ± 0.6 OUR FIT					
24.0 ± 0.6 OUR AVERAGE					
24.37± 0.71±0.86		ADACHI	24	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
23.97± 0.53±0.71		[1] DUH	13	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
23.9 ± 1.1 ±1.0		[1] AUBERT,BE	06C	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$18.8^{+3.7}_{-3.3}{}^{+2.1}_{-1.8}$		[1] BORNHEIM	03	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$22.8^{+0.8}_{-0.7}$ ±1.3		[1] LIN	07	BELL	Repl. by DUH 13
26.0 ± 1.3 ±1.0		[1] AUBERT,BE	05E	BABR	Repl. by AUBERT,BE 06C
22.3 ± 1.7 ±1.1		[1] AUBERT	04M	BABR	Repl. by AUBERT,BE 05E
22.0 ± 1.9 ±1.1		[1] CHAO	04	BELL	Repl. by LIN 07
$19.4^{+3.1}_{-3.0}$ ±1.6		[1] CASEY	02	BELL	Repl. by CHAO 04
$13.7^{+5.7}_{-4.8}{}^{+1.9}_{-1.8}$		[1] ABE	01H	BELL	Repl. by CASEY 02
$18.2^{+3.3}_{-3.0}$ ±2.0		[1] AUBERT	01E	BABR	Repl. by AUBERT 04M

$18.2\ ^{+\ 4.6}_{-\ 4.0}\ \pm 1.6$		[1] CRONIN-HEN...	00	CLE2	Repl. by BORNHEIM 03
$23\ ^{+11}_{-10}\ \pm 3.6$		GODANG	98	CLE2	Repl. by CRONIN-HENNESSY 00
< 48	90	ASNER	96	CLE2	Repl. by GODANG 98
<190	90	ALBRECHT	91B	ARG	$e^+ e^- \rightarrow \Upsilon(4S)$
<100	90	[2] AVERY	89B	CLEO	$e^+ e^- \rightarrow \Upsilon(4S)$
<680	90	AVERY	87	CLEO	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R5;LINKAGE=EP

[2] AVERY 89B reports $< 9 \times 10^{-5}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0 \overline{B}{}^0$. We rescale to 50%. NODE=S041R5;LINKAGE=A1

$\Gamma(K^+ \pi^0)/\Gamma_{total}$ Γ_{388}/Γ

NODE=S041R97
NODE=S041R97

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
13.2 ±0.4 OUR AVERAGE					
13.93±0.38±0.71		ADACHI	24	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
12.62±0.31±0.56		[1] DUH	13	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
13.6 ±0.6 ±0.7		[1] AUBERT	07BC	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
$12.9\ ^{+2.4}_{-2.2}\ ^{+1.2}_{-1.1}$		[1] BORNHEIM	03	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
12.4 ±0.5 ±0.6		[1] LIN	07A	BELL	Repl. by DUH 13
12.0 ±0.7 ±0.6		[1] AUBERT	05L	BABR	Repl. by AUBERT 07BC
$12.0\ \pm 1.3\ ^{+1.3}_{-0.9}$		[1] CHAO	04	BELL	Repl. by LIN 07A
$12.8\ ^{+1.2}_{-1.1}\ \pm 1.0$		[1] AUBERT	03L	BABR	Repl. by AUBERT 05L
$13.0\ ^{+2.5}_{-2.4}\ \pm 1.3$		[1] CASEY	02	BELL	Repl. by CHAO 04
$16.3\ ^{+3.5}_{-3.3}\ ^{+1.6}_{-1.8}$		[1] ABE	01H	BELL	Repl. by CASEY 02
$10.8\ ^{+2.1}_{-1.9}\ \pm 1.0$		[1] AUBERT	01E	BABR	Repl. by AUBERT 03L
$11.6\ ^{+3.0}_{-2.7}\ ^{+1.4}_{-1.3}$		[1] CRONIN-HEN...	00	CLE2	Repl. by BORNHEIM 03
<16	90	GODANG	98	CLE2	Repl. by CRONIN-HENNESSY 00
<14	90	ASNER	96	CLE2	Repl. by GODANG 98

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R97;LINKAGE=EP

$\Gamma(K^+ \pi^0)/\Gamma(K^0 \pi^+)$ $\Gamma_{388}/\Gamma_{387}$

NODE=S041B44
NODE=S041B44

VALUE	DOCUMENT ID		TECN	COMMENT
0.54±0.03±0.04	LIN	07A	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$2.38\ ^{+0.98}_{-1.10}\ ^{+0.39}_{-0.26}$	ABE	01H	BELL	Repl. by LIN 07A

$\Gamma(\eta' K^+)/\Gamma_{total}$ Γ_{389}/Γ

NODE=S041B24
NODE=S041B24

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
70.4± 2.5 OUR AVERAGE				
71.5± 1.3±3.2	[1] AUBERT	09AV	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
$61\ ^{+10}_{-\ 8}\ \pm 1$	[1,2] WICHT	08	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
69.2± 2.2±3.7	[1] SCHUEMANN	06	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
$80\ ^{+10}_{-\ 9}\ \pm 7$	[1] RICHICHI	00	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
70.0± 1.5±2.8	[1] AUBERT	07AE	BABR	Repl. by AUBERT 09AV
68.9± 2.0±3.2	[1] AUBERT	05M	BABR	Repl. by AUBERT 07AE
76.9± 3.5±4.4	[1] AUBERT	03W	BABR	Repl. by AUBERT 05M
$79\ ^{+12}_{-11}\ \pm 9$	[1] ABE	01M	BELL	Repl. by SCHUEMANN 06
70 ± 8 ±5	[1] AUBERT	01G	BABR	Repl. by AUBERT 03W
$65\ ^{+15}_{-14}\ \pm 9$	BEHRENS	98	CLE2	Repl. by RICHICHI 00

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B24;LINKAGE=EP

[2] WICHT 08 reports $[\Gamma(B^+ \rightarrow \eta' K^+)/\Gamma_{total}] \times [B(\eta'(958) \rightarrow \gamma\gamma)] = (1.40^{+0.16}_{-0.15}{}^{+0.15}_{-0.12}) \times 10^{-6}$ which we divide by our best value $B(\eta'(958) \rightarrow \gamma\gamma) = (2.307 \pm 0.033) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041B24;LINKAGE=WI

$\Gamma(\eta' K^*(892)^+)/\Gamma_{total}$ — Γ_{390}/Γ

NODE=S041B20
NODE=S041B20

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
$4.8^{+1.6}_{-1.4}\pm0.8$		[1] DEL-AMO-SA..10A	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$4.9^{+1.9}_{-1.7}\pm0.8$		[1] AUBERT 07E	BABR	Repl. by DEL-AMO-SANCHEZ 10A
$<$ 2.9	90	[1] SCHUEMANN 07	BELL	$e^+e^- \to \Upsilon(4S)$
$<$14	90	[1] AUBERT,B 04D	BABR	Repl. by AUBERT 07E
$<$35	90	[1] RICHICHI 00	CLE2	$e^+e^- \to \Upsilon(4S)$
$<$13	90	BEHRENS 98	CLE2	Repl. by RICHICHI 00

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B20;LINKAGE=EP

$\Gamma(\eta' K_0^*(1430)^+)/\Gamma_{total}$ — Γ_{391}/Γ

NODE=S041T63
NODE=S041T63

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
$5.2\pm1.9\pm1.0$	[1] DEL-AMO-SA..10A	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T63;LINKAGE=EP

$\Gamma(\eta' K_2^*(1430)^+)/\Gamma_{total}$ — Γ_{392}/Γ

NODE=S041T64
NODE=S041T64

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
$28.0^{+4.6}_{-4.3}\pm2.6$	[1] DEL-AMO-SA..10A	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T64;LINKAGE=EP

$\Gamma(\eta K^+)/\Gamma_{total}$ — Γ_{393}/Γ

NODE=S041B21
NODE=S041B21

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
2.4 ±0.4 OUR AVERAGE		Error includes scale factor of 1.7.		
$2.12\pm0.23\pm0.11$		[1] HOI 12	BELL	$e^+e^- \to \Upsilon(4S)$
$2.94^{+0.39}_{-0.34}\pm0.21$		[1] AUBERT 09AV	BABR	$e^+e^- \to \Upsilon(4S)$
$2.2\ ^{+2.8}_{-2.2}$		[1] RICHICHI 00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$2.21^{+0.48}_{-0.42}\pm0.01$		[1,2] WICHT 08	BELL	Repl. by HOI 12
$3.7\ \pm0.4\ \pm0.1$		[1] AUBERT 07AE	BABR	Repl. by AUBERT 09AV
$1.9\ \pm0.3\ ^{+0.2}_{-0.1}$		[1] CHANG 07B	BELL	Repl. by HOI 12
$3.3\ \pm0.6\ \pm0.3$		[1] AUBERT,B 05K	BABR	Repl. by AUBERT 07AE
$2.1\ \pm0.6\ \pm0.2$		[1] CHANG 05A	BELL	Repl. by CHANG 07B
$3.4\ \pm0.8\ \pm0.2$		[1] AUBERT 04H	BABR	Repl. by AUBERT,B 05K
$<$14	90	BEHRENS 98	CLE2	Repl. by RICHICHI 00

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B21;LINKAGE=EP

[2] WICHT 08 reports $[\Gamma(B^+ \to \eta K^+)/\Gamma_{total}] \times [B(\eta \to 2\gamma)] = (0.87^{+0.16}_{-0.15}{}^{+0.10}_{-0.07}) \times 10^{-6}$ which we divide by our best value $B(\eta \to 2\gamma) = (39.36 \pm 0.18) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S041B21;LINKAGE=WI

$\Gamma(\eta K^*(892)^+)/\Gamma_{total}$ — Γ_{394}/Γ

NODE=S041B22
NODE=S041B22

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
19.3±1.6 OUR AVERAGE				
$19.3^{+2.0}_{-1.9}\pm1.5$		[1] WANG 07B	BELL	$e^+e^- \to \Upsilon(4S)$
$18.9\pm1.8\pm1.3$		[1] AUBERT,B 06H	BABR	$e^+e^- \to \Upsilon(4S)$
$26.4^{+9.6}_{-8.2}\pm3.3$		[1] RICHICHI 00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$25.6\pm4.0\pm2.4$		[1] AUBERT,B 04D	BABR	Repl. by AUBERT,B 06H
$<$30	90	BEHRENS 98	CLE2	Repl. by RICHICHI 00

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B22;LINKAGE=EP

$\Gamma(\eta K_0^*(1430)^+)/\Gamma_{total}$ — Γ_{395}/Γ

NODE=S041T16
NODE=S041T16

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
$18.2\pm2.6\pm2.6$	[1] AUBERT,B 06H	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T16;LINKAGE=EP

$\Gamma(\eta K_2^*(1430)^+)/\Gamma_{total}$ — Γ_{396}/Γ

NODE=S041T17

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
9.1±2.7±1.4	[1] AUBERT,B	06H	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T17;LINKAGE=EP

$\Gamma(\eta(1295)K^+ \times B(\eta(1295) \to \eta\pi\pi))/\Gamma_{total}$ — Γ_{397}/Γ

NODE=S041T37

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$2.9^{+0.8}_{-0.7}\pm0.2$	[1] AUBERT	08X	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T37;LINKAGE=EP

$\Gamma(\eta(1405)K^+ \times B(\eta(1405) \to \eta\pi\pi))/\Gamma_{total}$ — Γ_{398}/Γ

NODE=S041T38

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<1.3	90	[1] AUBERT	08X	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T38;LINKAGE=EP

$\Gamma(\eta(1405)K^+ \times B(\eta(1405) \to K^*K))/\Gamma_{total}$ — Γ_{399}/Γ

NODE=S041T39

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<1.2	90	[1] AUBERT	08X	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T39;LINKAGE=EP

$\Gamma(\eta(1475)K^+ \times B(\eta(1475) \to K^*K))/\Gamma_{total}$ — Γ_{400}/Γ

NODE=S041T40

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$13.8^{+1.8+1.0}_{-1.7-0.6}$	[1] AUBERT	08X	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T40;LINKAGE=EP

$\Gamma(f_1(1285)K^+)/\Gamma_{total}$ — Γ_{401}/Γ

NODE=S041T41

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<2.0	90	[1] AUBERT	08X	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T41;LINKAGE=EP

$\Gamma(f_1(1420)K^+ \times B(f_1(1420) \to \eta\pi\pi))/\Gamma_{total}$ — Γ_{402}/Γ

NODE=S041T42

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<2.9	90	[1] AUBERT	08X	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T42;LINKAGE=EP

$\Gamma(f_1(1420)K^+ \times B(f_1(1420) \to K^*K))/\Gamma_{total}$ — Γ_{403}/Γ

NODE=S041T43

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<4.1	90	[1] AUBERT	08X	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T43;LINKAGE=EP

$\Gamma(\phi(1680)K^+ \times B(\phi(1680) \to K^*K))/\Gamma_{total}$ — Γ_{404}/Γ

NODE=S041T44

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<3.4	90	[1] AUBERT	08X	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T44;LINKAGE=EP

$\Gamma(f_0(1500)K^+)/\Gamma_{total}$ — Γ_{405}/Γ

NODE=S041T03

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
3.7± 2.2 OUR AVERAGE					
17 ± 4 ±12		[1] LEES	12O	BABR	$e^+e^- \to \Upsilon(4S)$
20 ±10 ±27		[2] LEES	12O	BABR	$e^+e^- \to \Upsilon(4S)$
$3.2^{+2.2}_{-2.3}\pm0.2$		[3,4] AUBERT	08AI	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<19	90	[4,5] AUBERT,B	05N	BABR	Repl. by AUBERT 08AI

OCCUR=2

[1] Measured in the $B^+ \to K^+ K^- K^+$ decay. NODE=S041T03;LINKAGE=LA
[2] Measured in the $B^+ \to K^+ K^0_S K^0_S$ decay. NODE=S041T03;LINKAGE=LB
[3] AUBERT 08AI reports $B(B^+ \to f_0(1500) K^+) \cdot B(f_0(1500) \to \pi^+\pi^-) = (0.73 \pm 0.21^{+0.47}_{-0.48}) \times 10^{-6}$. We divide this result by our best value of $B(f_0(1500) \to \pi\pi) = (34.5 \pm 2.2) \times 10^{-2}$ multiplied by 2/3 to account for the $\pi^+\pi^-$ fraction. Our first quoted uncertainty is the combined experiment's uncertainty and our second is the systematic uncertainty from using out best value. NODE=S041T03;LINKAGE=AU
[4] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T03;LINKAGE=EP
[5] AUBERT,B 05N reports $B(B^+ \to f_0(1500) K^+) \cdot B(f_0(1500) \to \pi^+\pi^-) < 4.4\times10^{-6}$. We divide this result by our best value of $B(f_0(1500) \to \pi\pi) = (34.5 \pm 2.2) \times 10^{-2}$ multiplied by 2/3 to account for the $\pi^+\pi^-$ fraction. Our first quoted uncertainty is the combined experiment's uncertainty and our second is the systematic uncertainty from using out best value. NODE=S041T03;LINKAGE=AB

$\Gamma(\omega K^+)/\Gamma_{total}$ — Γ_{406}/Γ

NODE=S041B25
NODE=S041B25

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
6.5±0.4 OUR AVERAGE					
6.8±0.4±0.4		[1] CHOBANOVA	14	BELL	$e^+e^- \to \Upsilon(4S)$
6.3±0.5±0.3		[1] AUBERT	07AE	BABR	$e^+e^- \to \Upsilon(4S)$
$3.2^{+2.4}_{-1.9}\pm0.8$		[1] JESSOP	00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
6.1±0.6±0.4		[1] AUBERT,B	06E	BABR	AUBERT 07AE
8.1±0.6±0.6		[1] JEN	06	BELL	Repl. by CHOBANOVA 14
4.8±0.8±0.4		[1] AUBERT	04H	BABR	Repl. by AUBERT,B 06E
$6.5^{+1.3}_{-1.2}\pm0.6$		[1] WANG	04A	BELL	Repl. by JEN 06
$9.2^{+2.6}_{-2.3}\pm1.0$		[1] LU	02	BELL	Repl. by WANG 04A
<4	90	[1] AUBERT	01G	BABR	$e^+e^- \to \Upsilon(4S)$
$1.5^{+7}_{-6}\pm2$		[1] BERGFELD	98	CLE2	Repl. by JESSOP 00

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B25;LINKAGE=EP

$\Gamma(\omega K^*(892)^+)/\Gamma_{total}$ — Γ_{407}/Γ

NODE=S041B26
NODE=S041B26

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
< 7.4	90	[1] AUBERT	09H	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 3.4	90	[1] AUBERT,B	06T	BABR	Repl. by AUBERT 09H
< 7.4	90	[1] AUBERT	05O	BABR	Repl. by AUBERT,B 06T
<87	90	[1] BERGFELD	98	CLE2	

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B26;LINKAGE=EP

$\Gamma(\omega (K\pi)^{*+}_0)/\Gamma_{total}$ — Γ_{408}/Γ

NODE=S041T51
NODE=S041T51
NODE=S041T51

$(K\pi)^{*+}_0$ is the total S-wave composed of $K^*_0(1430)$ and nonresonant that are described using LASS shape.

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
27.5±3.0±2.6	[1] AUBERT	09H	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T51;LINKAGE=EP

$\Gamma(\omega K^*_0(1430)^+)/\Gamma_{total}$ — Γ_{409}/Γ

NODE=S041T52
NODE=S041T52

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
24.0±2.6±4.4	[1] AUBERT	09H	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T52;LINKAGE=EP

$\Gamma(\omega K^*_2(1430)^+)/\Gamma_{total}$ — Γ_{410}/Γ

NODE=S041T53
NODE=S041T53

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
21.5±3.6±2.4	[1] AUBERT	09H	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T53;LINKAGE=EP

$\Gamma(a_0(980)^0 K^+ \times B(a_0(980)^0 \to \eta\pi^0))/\Gamma_{total}$ — Γ_{412}/Γ

NODE=S041RA5
NODE=S041RA5

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<2.5	90	[1] AUBERT,BE	04	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of charged and neutral B mesons from $\Upsilon(4S)$ decays. NODE=S041RA5;LINKAGE=EP

$\Gamma(a_0(980)^+ K^0 \times B(a_0(980)^+ \to \eta\pi^+))/\Gamma_{total}$ — Γ_{411}/Γ

NODE=S041RA6

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<3.9	90	[1] AUBERT,BE	04	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of charged and neutral B mesons from $\Upsilon(4S)$ decays. NODE=S041RA6;LINKAGE=EP

$\Gamma(K^*(892)^0\pi^+)/\Gamma_{total}$ — Γ_{413}/Γ

NODE=S041R6

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
10.1 ±0.8 OUR AVERAGE					
$10.1 \pm 1.7 \pm 1.0$		[1] LEES	17G	BABR	$e^+e^- \to \Upsilon(4S)$
$10.8 \pm 0.6 ^{+1.2}_{-1.4}$		[2] AUBERT	08AI	BABR	$e^+e^- \to \Upsilon(4S)$
$9.67 \pm 0.64 ^{+0.81}_{-0.89}$		[2] GARMASH	06	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$13.5 \pm 1.2 ^{+0.8}_{-0.9}$		[2] AUBERT,B	05N	BABR	Repl. by AUBERT 08AI
$9.8 \pm 0.9 ^{+1.1}_{-1.2}$		[2] GARMASH	05	BELL	Repl. by GARMASH 06
$15.5 \pm 1.8 ^{+1.5}_{-4.0}$		[2,3] AUBERT,B	04P	BABR	Repl. by AUBERT,B 05N
$19.4 ^{+4.2}_{-3.9} ^{+4.1}_{-7.1}$		[4] GARMASH	02	BELL	Repl. by GARMASH 05
<119	90	[5] ABE	00C	SLD	$e^+e^- \to Z$
< 16	90	[2] JESSOP	00	CLE2	$e^+e^- \to \Upsilon(4S)$
<390	90	[6] ADAM	96D	DLPH	$e^+e^- \to Z$
< 41	90	ASNER	96		CLE2	Repl. by JESSOP 00
<480	90	[6] ABREU	95N	DLPH	Sup. by ADAM 96D
<170	90	ALBRECHT	91B	ARG	$e^+e^- \to \Upsilon(4S)$
<150	90	[7] AVERY	89B	CLEO	$e^+e^- \to \Upsilon(4S)$
<260	90	AVERY	87	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Obtains the result from a Dalitz analysis of $B^+ \to K^0_S\pi^+\pi^0$ decays. The first error is statistical, the second combines all the systematic uncertainties reported in the paper, including signal modelling. NODE=S041R6;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R6;LINKAGE=EP

[3] AUBERT 04P also report a branching ratio for $B^+ \to$ "higher $K*$ resonances" π^+, $K* \to K^+\pi^-$, $(25.1 \pm 2.0^{+11.0}_{-5.7}) \times 10^{-6}$. NODE=S041R6;LINKAGE=AB

[4] Uses a reference decay mode $B^+ \to \overline{D}^0\pi^+$ and $\overline{D}^0 \to K^+\pi^-$ with $B(B^+ \to \overline{D}^0\pi^+) \cdot B(\overline{D}^0 \to K^+\pi^-) = (20.3 \pm 2.0) \times 10^{-5}$. NODE=S041R6;LINKAGE=GM

[5] ABE 00C assumes $B(Z \to b\overline{b})=(21.7 \pm 0.1)\%$ and the B fractions $f_{B^0}=f_{B^+}=(39.7^{+1.8}_{-2.2})\%$ and $f_{B_s}=(10.5^{+1.8}_{-2.2})\%$. NODE=S041R6;LINKAGE=KQ

[6] Assumes a B^0, B^- production fraction of 0.39 and a B_s production fraction of 0.12. NODE=S041R6;LINKAGE=SR

[7] AVERY 89B reports $< 1.3 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S041R6;LINKAGE=A1

$\Gamma(K^*(892)^+\pi^0)/\Gamma_{total}$ — Γ_{414}/Γ

NODE=S041R99

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
6.8±0.9 OUR AVERAGE					
$6.4 \pm 0.9 ^{+0.4}_{-0.5}$		[1] LEES	17G	BABR	$e^+e^- \to \Upsilon(4S)$
$8.2 \pm 1.5 \pm 1.1$		[2] LEES	11I	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$6.9 \pm 2.0 \pm 1.3$		[2] AUBERT	05X	BABR	Repl. by LEES 11I
<31	90	[2] JESSOP	00	CLE2	$e^+e^- \to \Upsilon(4S)$
<99	90	ASNER	96	CLE2	Repl. by JESSOP 00

[1] Obtains the result from a Dalitz analysis of $B^+ \to K^0_S\pi^+\pi^0$ decays. The first error is statistical, the second combines all the systematic uncertainties reported in the paper, including signal modelling. NODE=S041R99;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R99;LINKAGE=EP

$\Gamma(K^+\pi^-\pi^+)/\Gamma(K^+K^-K^+)$ — $\Gamma_{415}/\Gamma_{468}$

NODE=S041Q00

VALUE	DOCUMENT ID		TECN	COMMENT
1.703±0.011±0.022	AAIJ	20AJ	LHCB	pp at 7 and 8 TeV

$\Gamma(K^+\pi^-\pi^+)/\Gamma_{total}$ Γ_{415}/Γ

NODE=S041B60

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
51.0±2.9 OUR AVERAGE				
54.4±1.1±4.6	[1] AUBERT	08AI	BABR	$e^+e^- \to \Upsilon(4S)$
48.8±1.1±3.6	[1] GARMASH	06	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
64.1±2.4±4.0	[1] AUBERT,B	05N	BABR	Repl. by AUBERT 08AI
46.6±2.1±4.3	[1] GARMASH	05	BELL	Repl. by GARMASH 06
53.6±3.1±5.1	[1] GARMASH	04	BELL	Repl. by GARMASH 05
59.1±3.8±3.2	[2] AUBERT	03M	BABR	Repl. by AUBERT,B 05N
55.6±5.8±7.7	[3] GARMASH	02	BELL	Repl. by GARMASH 04

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B60;LINKAGE=EP

[2] Assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$; charm and charmonium contributions are subtracted, otherwise no assumptions about intermediate resonances. NODE=S041B60;LINKAGE=TM

[3] Uses a reference decay mode $B^+ \to \overline{D}^0\pi^+$ and $\overline{D}^0 \to K^+\pi^-$ with B($B^+ \to \overline{D}^0\pi^+$)·B($\overline{D}^0 \to K^+\pi^-$) = $(20.3 \pm 2.0) \times 10^{-5}$. NODE=S041B60;LINKAGE=GM

$\Gamma(K^+\pi^-\pi^+ \text{ nonresonant})/\Gamma_{total}$ Γ_{416}/Γ

NODE=S041R32

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$16.3^{+2.1}_{-1.5}$ OUR AVERAGE					
$9.3\pm1.0^{+6.9}_{-1.7}$		[1,2] AUBERT	08AI	BABR	$e^+e^- \to \Upsilon(4S)$
$16.9\pm1.3^{+1.7}_{-1.6}$		[1] GARMASH	06	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$2.9\pm0.6^{+0.8}_{-0.5}$		[1] AUBERT,B	05N	BABR	Repl. by AUBERT 08AI
$17.3\pm1.7^{+17.2}_{-8.0}$		[1] GARMASH	05	BELL	Repl. by GARMASH 06
$<$ 17	90	[1] AUBERT,B	04P	BABR	Repl. by AUBERT,B 05N
$<$330	90	[3] ADAM	96D	DLPH	$e^+e^- \to Z$
$<$ 28	90	BERGFELD	96B	CLE2	$e^+e^- \to \Upsilon(4S)$
$<$400	90	[3] ABREU	95N	DLPH	Sup. by ADAM 96D
$<$330	90	ALBRECHT	91E	ARG	$e^+e^- \to \Upsilon(4S)$
$<$190	90	[4] AVERY	89B	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R32;LINKAGE=EP

[2] Calculate the total nonresonant contribution by combining the S-wave composed of $K_0^*(1430)$ and nonresonant that are described using LASS shape. NODE=S041R32;LINKAGE=UB

[3] Assumes a B^0, B^- production fraction of 0.39 and a B_s production fraction of 0.12. NODE=S041R32;LINKAGE=SR

[4] AVERY 89B reports $< 1.7 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S041R32;LINKAGE=A1

$\Gamma(\omega(782)K^+)/\Gamma_{total}$ Γ_{417}/Γ

NODE=S041T34

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$5.9^{+8.8}_{-9.0}\pm0.5$	[1,2] AUBERT	08AI	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T34;LINKAGE=EP

[2] AUBERT 08AI reports $[\Gamma(B^+ \to \omega(782)K^+)/\Gamma_{total}] \times [B(\omega(782) \to \pi^+\pi^-)] = (0.09 \pm 0.13^{+0.036}_{-0.045}) \times 10^{-6}$ which we divide by our best value $B(\omega(782) \to \pi^+\pi^-) = (1.53 \pm 0.12) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041T34;LINKAGE=UB

$\Gamma(K^+f_0(980) \times B(f_0(980) \to \pi^+\pi^-))/\Gamma_{total}$ Γ_{418}/Γ

NODE=S041B59

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$9.4^{+1.0}_{-1.2}$ OUR AVERAGE					
$10.3\pm0.5^{+2.0}_{-1.4}$		[1] AUBERT	08AI	BABR	$e^+e^- \to \Upsilon(4S)$
$8.78\pm0.82^{+0.85}_{-1.76}$		[1] GARMASH	06	BELL	$e^+e^- \to \Upsilon(4S)$

• • • We do not use the following data for averages, fits, limits, etc. • • •

$9.47 \pm 0.97 ^{+0.62}_{-0.88}$		[1] AUBERT,B	05N	BABR	Repl. by AUBERT 08AI
$7.55 \pm 1.24 ^{+1.63}_{-1.18}$		[1] GARMASH	05	BELL	Repl. by GARMASH 06
$9.2 \pm 1.2 ^{+2.1}_{-2.6}$		[2] AUBERT,B	04P	BABR	Repl. by AUBERT,B 05N
$9.6 ^{+2.5}_{-2.3} ^{+3.7}_{-1.7}$		[3] GARMASH	02	BELL	Repl. by GARMASH 05
<80	90	[4] AVERY	89B	CLEO	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B59;LINKAGE=EP

[2] AUBERT,B 04P also reports B($B^+ \to$ "higher f^0 resonances" π^+, $f(980)^0 \to \pi^+\pi^-$) $= (3.2 \pm 1.2^{+6.0}_{-2.9}) \times 10^{-6}$. NODE=S041B59;LINKAGE=AU

[3] Uses a reference decay mode $B^+ \to \overline{D}^0 \pi^+$ and $\overline{D}^0 \to K^+\pi^-$ with B($B^+ \to \overline{D}^0 \pi^+$)×B($\overline{D}^0 \to K^+\pi^-$) = $(20.3 \pm 2.0) \times 10^{-5}$. Only charged pions from the $f_0(980)$ are used. NODE=S041B59;LINKAGE=GM

[4] AVERY 89B reports $< 7 \times 10^{-5}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0 \overline{B}^0$. We rescale to 50%. NODE=S041B59;LINKAGE=A1

$\Gamma(f_2(1270)^0 K^+)/\Gamma_{total}$ Γ_{419}/Γ

NODE=S041T00
NODE=S041T00

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
1.07 ± 0.27 OUR AVERAGE					
$0.89 ^{+0.38}_{-0.33} ^{+0.01}_{-0.03}$		[1,2] AUBERT	08AI	BABR	$e^+ e^- \to \Upsilon(4S)$
$1.33 \pm 0.30 ^{+0.23}_{-0.34}$		[1] GARMASH	06	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<16	90	[3] AUBERT,B	05N	BABR	Repl. by AUBERT 08AI
< 2.3	90	[4] GARMASH	05	BELL	Repl. by GARMASH 06

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T00;LINKAGE=EP

[2] AUBERT 08AI reports $(0.50 \pm 0.15 ^{+0.15}_{-0.11}) \times 10^{-6}$ for B($B^+ \to f_2(1270) K^+$) × B($f_2 \to \pi^+\pi^-$). We compute B($B^+ \to f_2(1270) K^+$) using the PDG value B($f_2(1270) \to \pi\pi$)=$(84.3^{+2.8}_{-1.0}) \times 10^{-2}$ and 2/3 for the $\pi^+\pi^-$ fraction. Our first error is their experiment's error and the second error is systematic error from using our best value. NODE=S041T00;LINKAGE=UB

[3] AUBERT,B 05N reports 8.9×10^{-6} at 90% CL for B($B^+ \to f_2(1270) K^+$) × B($f_2(1270) \to \pi^+\pi^-$). We rescaled it using the PDG value B($f_2(1270) \to \pi\pi$) = 84.7% and 2/3 for the $\pi^+\pi^-$ fraction. NODE=S041T00;LINKAGE=AT

[4] GARMASH 05 reports 1.3×10^{-6} at 90% CL for B($B^+ \to f_2(1270) K^+$) × B($f_2(1270) \to \pi^+\pi^-$). We rescaled it using the PDG value B($f_2(1270) \to \pi\pi$) = 84.7% and 2/3 for the $\pi^+\pi^-$ fraction. NODE=S041T00;LINKAGE=GA

$\Gamma(f_0(1370)^0 K^+ \times B(f_0(1370)^0 \to \pi^+\pi^-))/\Gamma_{total}$ Γ_{420}/Γ

NODE=S041T01
NODE=S041T01

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<10.7 \times 10^{-6}$	90	[1] AUBERT,B	05N	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T01;LINKAGE=EP

$\Gamma(\rho(14500) K^+ \times B(\rho(1450)^0 \to \pi^+\pi^-))/\Gamma_{total}$ Γ_{421}/Γ

NODE=S041T02
NODE=S041T02

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<11.7 \times 10^{-6}$	90	[1] AUBERT,B	05N	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T02;LINKAGE=EP

$\Gamma(f_2'(1525) K^+ \times B(f_2'(1525) \to \pi^+\pi^-))/\Gamma_{total}$ Γ_{422}/Γ

NODE=S041T04
NODE=S041T04

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.4 \times 10^{-6}$	90	[1] AUBERT,B	05N	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T04;LINKAGE=EP

$\Gamma(K^+ \rho^0)/\Gamma_{total}$ Γ_{423}/Γ

NODE=S041R7
NODE=S041R7

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
3.7 ± 0.5 OUR AVERAGE					
$3.56 \pm 0.45 ^{+0.57}_{-0.46}$		[1] AUBERT	08AI	BABR	$e^+ e^- \to \Upsilon(4S)$
$3.89 \pm 0.47 ^{+0.43}_{-0.41}$		[1] GARMASH	06	BELL	$e^+ e^- \to \Upsilon(4S)$

• • • We do not use the following data for averages, fits, limits, etc. • • •

$5.07\pm0.75^{+0.55}_{-0.88}$		[1] AUBERT,B	05N	BABR	Repl. by AUBERT 08AI
$4.78\pm0.75^{+1.01}_{-0.97}$		[1] GARMASH	05	BELL	Repl. by GARMASH 06
$<$ 6.2	90	[2] AUBERT,B	04P	BABR	Repl. by AUBERT,B 05N
$<$ 12	90	[3] GARMASH	02	BELL	$e^+e^- \to \Upsilon(4S)$
$<$ 86	90	[4] ABE	00C	SLD	$e^+e^- \to Z$
$<$ 17	90	[1] JESSOP	00	CLE2	$e^+e^- \to \Upsilon(4S)$
$<$120	90	[5] ADAM	96D	DLPH	$e^+e^- \to Z$
$<$ 19	90	ASNER	96	CLE2	Repl. by JESSOP 00
$<$190	90	[5] ABREU	95N	DLPH	Sup. by ADAM 96D
$<$180	90	ALBRECHT	91B	ARG	$e^+e^- \to \Upsilon(4S)$
$<$ 80	90	[6] AVERY	89B	CLEO	$e^+e^- \to \Upsilon(4S)$
$<$260	90	AVERY	87	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R7;LINKAGE=EP

[2] AUBERT 04P reports a central value of $(3.9 \pm 1.2^{+1.3}_{-3.5}) \times 10^{-6}$ for this branching ratio. NODE=S041R7;LINKAGE=AU

[3] Uses a reference decay mode $B^+ \to \overline{D}^0\pi^+$ and $\overline{D}^0 \to K^+\pi^-$ with $B(B^+ \to \overline{D}^0\pi^+)\cdot B(\overline{D}^0 \to K^+\pi^-) = (20.3 \pm 2.0) \times 10^{-5}$. NODE=S041R7;LINKAGE=GM

[4] ABE 00C assumes $B(Z \to b\overline{b})$=(21.7 ± 0.1)% and the B fractions $f_{B^0}=f_{B^+}=(39.7^{+1.8}_{-2.2})$% and $f_{B_s}=(10.5^{+1.8}_{-2.2})$%. NODE=S041R7;LINKAGE=KQ

[5] Assumes production fractions $f_{B^0} = f_{B^-} = 0.39$ and $f_{B_s} = 0.12$. NODE=S041R7;LINKAGE=DQ

[6] AVERY 89B reports $< 7 \times 10^{-5}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S041R7;LINKAGE=A1

$\Gamma(K_0^*(1430)^0\pi^+)/\Gamma_{total}$ Γ_{424}/Γ

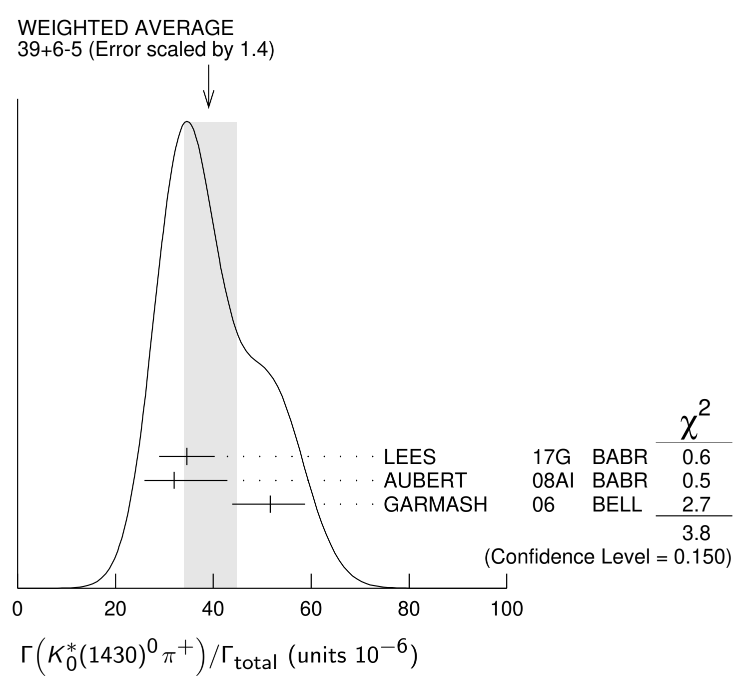
NODE=S041S08
NODE=S041S08

VALUE (units 10^{-6})	*DOCUMENT ID*	*TECN*	*COMMENT*
39^{+6}_{-5} OUR AVERAGE Error includes scale factor of 1.4. See the ideogram below.			
$34.6\pm3.3\pm$ 4.6	[1] LEES 17G	BABR	$e^+e^- \to \Upsilon(4S)$
$32.0\pm1.2^{+10.8}_{-6.0}$	[2] AUBERT 08AI	BABR	$e^+e^- \to \Upsilon(4S)$
$51.6\pm1.7^{+7.0}_{-7.5}$	[2] GARMASH 06	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$44.4\pm2.2\pm$ 5.3	[2,3] AUBERT,B 05N	BABR	Repl. by AUBERT 08AI
$45.0\pm2.9^{+15.0}_{-10.7}$	[2] GARMASH 05	BELL	Repl. by GARMASH 06

[1] Obtains the result from a Dalitz analysis of $B^+ \to K_S^0\pi^+\pi^0$ decays. The first error is statistical, the second combines all the systematic uncertainties reported in the paper, including signal modelling. NODE=S041S08;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041S08;LINKAGE=EP

[3] See erratum: AUBERT,BE 06A. NODE=S041S08;LINKAGE=ER



$\Gamma(K_2^*(1430)^0\pi^+)/\Gamma_{total}$ — Γ_{425}/Γ

NODE=S041R72
NODE=S041R72

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$5.6^{+2.2}_{-1.5}\pm0.1$		[1,2] AUBERT	08AI	BABR	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<$ 23	90	[3] AUBERT,B	05N	BABR	Repl. by AUBERT 08AI
$<$ 6.9	90	[4] GARMASH	05	BELL	$e^+e^-\to\Upsilon(4S)$
$<$680	90	ALBRECHT	91B	ARG	$e^+e^-\to\Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R72;LINKAGE=EP

[2] AUBERT 08AI reports $(1.85\pm0.41^{+0.61}_{-0.29})\times10^{-6}$ for B($B^+\to K_2^*(1430)^0\pi^+$) × B($K_2^*(1430)^0\to K^+\pi^-$). We compute B($B^+\to K_2^*(1430)^0\pi^+$) using the PDG value B($K_2^*(1430)^0\to K\pi$)=$(49.9\pm1.2)\times10^{-2}$ and 2/3 for the $K^+\pi^-$ fraction. Our first error is their experiment's error and the second error is systematic error from using our best value. NODE=S041R72;LINKAGE=UB

[3] AUBERT,B 05N reports 7.7×10^{-6} at 90% CL for B($B^+\to K_2^*(1430)^0\pi^+$) × B($K_2^*(1430)^0\to K^+\pi^-$). We rescaled it using the PDG value B($K_2^*(1430)^0\to K\pi$) = 49.9% and 2/3 for the $K^+\pi^-$ fraction. NODE=S041R72;LINKAGE=AT

[4] GARMASH 05 reports 2.3×10^{-6} at 90% CL for B($B^+\to K_2^*(1430)^0\pi^+$) × B($K_2^*(1430)^0\to K^+\pi^-$). We rescaled it using the PDG value B($K_2^*(1430)^0\to K\pi$) = 49.9% and 2/3 for the $K^+\pi^-$ mode. NODE=S041R72;LINKAGE=GA

$\Gamma(K^*(1410)^0\pi^+)/\Gamma_{total}$ — Γ_{426}/Γ

NODE=S041Q64
NODE=S041Q64

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<45	90	[1] GARMASH	05	BELL	$e^+e^-\to\Upsilon(4S)$

[1] GARMASH 05 reports 2.0×10^{-6} at 90% CL for B($B^+\to K^*(1410)^0\pi^+$) × B($K^*(1410)^0\to K^+\pi^-$). We rescaled it using the PDG value B($K^*(1410)^0\to K\pi$) = 6.6% and 2/3 for the $K^+\pi^-$ mode. NODE=S041Q64;LINKAGE=GA

$\Gamma(K^*(1680)^0\pi^+)/\Gamma_{total}$ — Γ_{427}/Γ

NODE=S041S09
NODE=S041S09

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<12	90	[1] GARMASH	05	BELL	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<15	90	[2] AUBERT,B	05N	BABR	$e^+e^-\to\Upsilon(4S)$

[1] GARMASH 05 reports 3.1×10^{-6} at 90% CL for B($B^+\to K^*(1680)^0\pi^+$) × B($K^*(1680)^0\to K^+\pi^-$). We rescaled it using the PDG value B($K^*(1680)^0\to K\pi$) = 38.7% and 2/3 for the $K^+\pi^-$ mode. NODE=S041S09;LINKAGE=GA

[2] AUBERT,B 05N reports 3.8×10^{-6} at 90% CL for B($B^+\to K^*(1680)^0\pi^+$) × B($K^*(1680)^0\to K^+\pi^-$). We rescaled it using the PDG value B($K^*(1680)^0\to K\pi$) = 38.7% and 2/3 for the $K^+\pi^-$ fraction. NODE=S041S09;LINKAGE=AT

$\Gamma(K^+\pi^0\pi^0)/\Gamma_{total}$ — Γ_{428}/Γ

NODE=S041T74
NODE=S041T74

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
16.2±1.2±1.5	[1] LEES	11I	BABR	$e^+e^-\to\Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T74;LINKAGE=EP

$\Gamma(f_0(980)K^+\times B(f_0\to\pi^0\pi^0))/\Gamma_{total}$ — Γ_{429}/Γ

NODE=S041T75
NODE=S041T75

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
2.8±0.6±0.5	[1] LEES	11I	BABR	$e^+e^-\to\Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T75;LINKAGE=EP

$\Gamma(K^-\pi^+\pi^+)/\Gamma_{total}$ — Γ_{430}/Γ

NODE=S041B61
NODE=S041B61

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<4.6\times10^{-8}$	90	AAIJ	17E	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<9.5\times10^{-7}$	90	[1] AUBERT	08BE	BABR	$e^+e^-\to\Upsilon(4S)$
$<4.5\times10^{-6}$	90	[1] GARMASH	04	BELL	$e^+e^-\to\Upsilon(4S)$
$<1.8\times10^{-6}$	90	[2] AUBERT	03M	BABR	Repl. by AUBERT 08BE
$<7.0\times10^{-6}$	90	[3] GARMASH	02	BELL	$e^+e^-\to\Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B61;LINKAGE=EP

[2] Assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$; charm and charmonium contributions are subtracted, otherwise no assumptions about intermediate resonances. NODE=S041B61;LINKAGE=TM

[3] Uses a reference decay mode $B^+\to\overline{D}^0\pi^+$ and $\overline{D}^0\to K^+\pi^-$ with B($B^+\to\overline{D}^0\pi^+$)·B($\overline{D}^0\to K^+\pi^-$) = $(20.3\pm2.0)\times10^{-5}$. NODE=S041B61;LINKAGE=GM

$\Gamma(K^-\pi^+\pi^+ \text{ nonresonant})/\Gamma_{total}$ — Γ_{431}/Γ

NODE=S041B3
NODE=S041B3

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<56	90	BERGFELD	96B	CLE2	$e^+e^- \to \Upsilon(4S)$

$\Gamma(K_1(1270)^0\pi^+)/\Gamma_{total}$ — Γ_{432}/Γ

NODE=S041T62
NODE=S041T62

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<4.0 \times 10^{-5}$	90	[1] AUBERT	10D	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T62;LINKAGE=EP

$\Gamma(K_1(1400)^0\pi^+)/\Gamma_{total}$ — Γ_{433}/Γ

NODE=S041R71
NODE=S041R71

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.9 \times 10^{-5}$	90	[1] AUBERT	10D	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<2.6 \times 10^{-3}$	90	ALBRECHT	91B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041R71;LINKAGE=EP

$\Gamma(K^0\pi^+\pi^0)/\Gamma_{total}$ — Γ_{434}/Γ

NODE=S041B82
NODE=S041B82

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$31.8 \pm 1.8 ^{+6.3}_{-2.1}$		[1] LEES	17G	BABR	$e^+e^- \to \Upsilon(4S)$
<66	90	[2] ECKHART	02	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Obtains the result from a Dalitz analysis of $B^+ \to K^0_S\pi^+\pi^0$ decays. The first error is statistical, the second combines all the systematic uncertainties reported in the paper, including signal modelling.

NODE=S041B82;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B82;LINKAGE=EP

$\Gamma(K^0\rho^+)/\Gamma_{total}$ — Γ_{436}/Γ

NODE=S041R98
NODE=S041R98

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$7.3^{+1.0}_{-1.2}$ OUR AVERAGE					
$6.5 \pm 1.1 ^{+0.8}_{-1.9}$		[1] LEES	17G	BABR	$e^+e^- \to \Upsilon(4S)$
$8.0^{+1.4}_{-1.3} \pm 0.6$		AUBERT	07Z	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<48	90	ASNER	96	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Obtains the result from a Dalitz analysis of $B^+ \to K^0_S\pi^+\pi^0$ decays. The first error is statistical, the second combines all the systematic uncertainties reported in the paper, including signal modelling.

NODE=S041R98;LINKAGE=A

$\Gamma(K_0^*(1430)^+\pi^0)/\Gamma_{total}$ — Γ_{435}/Γ

NODE=S041P48
NODE=S041P48

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$11.9 \pm 1.7 ^{+1.0}_{-1.6}$	[1] LEES	17G	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Obtains the result from a Dalitz analysis of $B^+ \to K^0_S\pi^+\pi^0$ decays. The first error is statistical, the second combines all the systematic uncertainties reported in the paper, including signal modelling.

NODE=S041P48;LINKAGE=A

$\Gamma(K^*(892)^+\pi^+\pi^-)/\Gamma_{total}$ — Γ_{437}/Γ

NODE=S041R83
NODE=S041R83

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$75.3 \pm 6.0 \pm 8.1$		[1] AUBERT,B	06U	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<1100	90	ALBRECHT	91E	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041R83;LINKAGE=EP

$\Gamma(K^*(892)^+\rho^0)/\Gamma_{total}$ — Γ_{438}/Γ

NODE=S041R73
NODE=S041R73

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$4.6 \pm 1.0 \pm 0.4$		[1] DEL-AMO-SA..11D		BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 6.1	90	[1] AUBERT,B	06G	BABR	Repl. by DEL-AMO-SANCHEZ 11D
$10.6^{+3.0}_{-2.6} \pm 2.4$		[1] AUBERT	03V	BABR	Repl. by AUBERT,B 06G
< 74	90	[2] GODANG	02	CLE2	$e^+e^- \to \Upsilon(4S)$
<900	90	ALBRECHT	91B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R73;LINKAGE=EP
[2] Assumes a helicity 00 configuration. For a helicity 11 configuration, the limit decreases to 4.9×10^{-5}. NODE=S041R73;LINKAGE=Z1

$\Gamma(K^*(892)^+ f_0(980))/\Gamma_{total}$ — Γ_{439}/Γ

NODE=S041T15
NODE=S041T15

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
4.2±0.6±0.3	[1] DEL-AMO-SA..	11D	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
5.2±1.2±0.5	[1] AUBERT,B	06G	BABR	Repl. by DEL-AMO-SANCHEZ 11D

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T15;LINKAGE=EP

$\Gamma(a_1^+ K^0)/\Gamma_{total}$ — Γ_{440}/Γ

NODE=S041T23
NODE=S041T23

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
34.9±5.0±4.4	[1,2] AUBERT	08F	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T23;LINKAGE=EP
[2] Assumes $a_1^\pm$ decays only to 3π and $B(a_1^\pm \to \pi^\pm \pi^\mp \pi^\pm) = 0.5$. NODE=S041T23;LINKAGE=UB

$\Gamma(b_1^+ K^0 \times B(b_1^+ \to \omega\pi^+))/\Gamma_{total}$ — Γ_{441}/Γ

NODE=S041T36
NODE=S041T36

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
9.6±1.7±0.9	[1] AUBERT	08AG	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T36;LINKAGE=EP

$\Gamma(K^*(892)^0 \rho^+)/\Gamma_{total}$ — Γ_{442}/Γ

NODE=S041S07
NODE=S041S07

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
9.2±1.5 OUR AVERAGE				
9.6±1.7±1.5	[1] AUBERT,B	06G	BABR	$e^+ e^- \to \Upsilon(4S)$
8.9±1.7±1.2	[1] ZHANG	05D	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041S07;LINKAGE=EP

$\Gamma(K_1(1400)^+ \rho^0)/\Gamma_{total}$ — Γ_{443}/Γ

NODE=S041R74
NODE=S041R74

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<7.8 \times 10^{-4}$	90	ALBRECHT	91B	ARG	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(K_2^*(1430)^+ \rho^0)/\Gamma_{total}$ — Γ_{444}/Γ

NODE=S041R75
NODE=S041R75

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.5 \times 10^{-3}$	90	ALBRECHT	91B	ARG	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(b_1^0 K^+ \times B(b_1^0 \to \omega\pi^0))/\Gamma_{total}$ — Γ_{445}/Γ

NODE=S041T26
NODE=S041T26

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
9.1±1.7±1.0	[1] AUBERT	07BI	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T26;LINKAGE=EP

$\Gamma(b_1^+ K^{*0} \times B(b_1^+ \to \omega\pi^+))/\Gamma_{total}$ — Γ_{446}/Γ

NODE=S041T56
NODE=S041T56

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5.9 \times 10^{-6}$	90	[1] AUBERT	09AF	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T56;LINKAGE=EP

$\Gamma(b_1^0 K^{*+} \times B(b_1^0 \to \omega\pi^0))/\Gamma_{total}$ — Γ_{447}/Γ

NODE=S041T57
NODE=S041T57

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<6.7 \times 10^{-6}$	90	[1] AUBERT	09AF	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T57;LINKAGE=EP

$\Gamma(K^+ \overline{K}^0)/\Gamma_{total}$ — Γ_{448}/Γ

NODE=S041B16
NODE=S041B16

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
1.32±0.17 OUR FIT Error includes scale factor of 1.2.					
1.19±0.18 OUR AVERAGE					
1.11±0.19±0.05		[1] DUH	13	BELL	$e^+ e^- \to \Upsilon(4S)$
1.61±0.44±0.09		[1] AUBERT,BE	06C	BABR	$e^+ e^- \to \Upsilon(4S)$

• • • We do not use the following data for averages, fits, limits, etc. • • •

$1.22^{+0.32}_{-0.28}{}^{+0.13}_{-0.16}$		[1] LIN	07	BELL	Repl. by DUH 13
$1.0 \pm 0.4 \pm 0.1$		[1] ABE	05G	BELL	Repl. by LIN 07
$1.5 \pm 0.5 \pm 0.1$		[1] AUBERT,BE	05E	BABR	Repl. by AUBERT,BE 06C
< 2.5	90	[1] AUBERT	04M	BABR	Repl. by AUBERT,BE 05E
< 3.3	90	[1] CHAO	04	BELL	$e^+ e^- \to \Upsilon(4S)$
< 3.3	90	[1] BORNHEIM	03	CLE2	$e^+ e^- \to \Upsilon(4S)$
< 2.0	90	[1] CASEY	02	BELL	Repl. by CHAO 04
< 5.0	90	[1] ABE	01H	BELL	$e^+ e^- \to \Upsilon(4S)$
< 2.4	90	[1] AUBERT	01E	BABR	$e^+ e^- \to \Upsilon(4S)$
< 5.1	90	[1] CRONIN-HEN...	00	CLE2	$e^+ e^- \to \Upsilon(4S)$
<21	90	GODANG	98	CLE2	Repl. by CRONIN-HENNESSY 00

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B16;LINKAGE=EP

$\Gamma(K^+ \overline{K}^0)/\Gamma(K^0 \pi^+)$ $\Gamma_{448}/\Gamma_{387}$

NODE=S041C56

VALUE	DOCUMENT ID		TECN	COMMENT
0.055±0.007 OUR FIT Error includes scale factor of 1.2.				
0.064±0.009±0.004	AAIJ	13BS	LHCB	pp at 7 TeV

$\Gamma(\overline{K}^0 K^+ \pi^0)/\Gamma_{total}$ Γ_{449}/Γ

NODE=S041B83

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{<24 \times 10^{-6}}$	90	[1] ECKHART	02	CLE2	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B83;LINKAGE=EP

$\Gamma(K^+ K^0_S K^0_S)/\Gamma_{total}$ Γ_{450}/Γ

NODE=S041C6

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
10.5 ±0.4 OUR AVERAGE				
$10.42 \pm 0.43 \pm 0.22$	[1] KALIYAR	19	BELL	$e^+ e^- \to \Upsilon(4S)$
$10.6 \pm 0.5 \pm 0.3$	[1,2] LEES	12O	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$10.7 \pm 1.2 \pm 1.0$	[1] AUBERT,B	04V	BABR	Repl. by LEES 12O
$13.4 \pm 1.9 \pm 1.5$	[1] GARMASH	04	BELL	Repl. by KALIYAR 19

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C6;LINKAGE=EP

[2] All intermediate charmonium and charm resonances are removed, except of χ_{c0}. NODE=S041C6;LINKAGE=LE

$\Gamma(f_0(980) K^+,\ f_0 \to K^0_S K^0_S)/\Gamma_{total}$ Γ_{451}/Γ

NODE=S041T88

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
14.7±2.8±1.8	[1] LEES	12O	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T88;LINKAGE=EP

$\Gamma(f_0(1710) K^+,\ f_0 \to K^0_S K^0_S)/\Gamma_{total}$ Γ_{452}/Γ

NODE=S041T89

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.48^{+0.40}_{-0.24} \pm 0.11}$	[1] LEES	12O	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T89;LINKAGE=EP

$\Gamma(K^+ K^0_S K^0_S \text{ nonresonant})/\Gamma_{total}$ Γ_{453}/Γ

NODE=S041T90

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
19.8±3.7±2.5	[1] LEES	12O	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T90;LINKAGE=EP

$\Gamma(K^0_S K^0_S \pi^+)/\Gamma_{total}$ Γ_{454}/Γ

NODE=S041C7

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{<5.1 \times 10^{-7}}$	90	[1] AUBERT	09J	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<8.7 \times 10^{-7}$		[1] KALIYAR	19	BELL	$e^+ e^- \to \Upsilon(4S)$
$<3.2 \times 10^{-6}$	90	[1] GARMASH	04	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C7;LINKAGE=EP

$\Gamma(K^+ K^- \pi^+)/\Gamma(K^+ K^- K^+)$ $\Gamma_{455}/\Gamma_{468}$

NODE=S041P99

VALUE	DOCUMENT ID		TECN	COMMENT
0.151±0.004±0.008	AAIJ	20AJ	LHCB	pp at 7 and 8 TeV

$\Gamma(K^+ K^- \pi^+)/\Gamma_{total}$ — Γ_{455}/Γ

NODE=S041B62
NODE=S041B62

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
5.2 ±0.4 OUR AVERAGE					
5.38±0.40±0.35		[1,2] HSU	17	BELL	$e^+ e^- \to \Upsilon(4S)$
5.0 ±0.5 ±0.5		[2] AUBERT	07BB	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<13	90	[2] GARMASH	04	BELL	$e^+ e^- \to \Upsilon(4S)$
< 6.3	90	[2,3] AUBERT	03M	BABR	Repl. by AUBERT 07BB
<12	90	[4] GARMASH	02	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] HSU 17 provides also measurement as a function of $K^+ K^-$ invariant mass. NODE=S041B62;LINKAGE=A
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B62;LINKAGE=EP
[3] Charm and charmonium contributions are subtracted, otherwise no assumptions about intermediate resonances. NODE=S041B62;LINKAGE=TM
[4] Uses a reference decay mode $B^+ \to \overline{D}^0 \pi^+$ and $\overline{D}^0 \to K^+ \pi^-$ with B($B^+ \to \overline{D}^0 \pi^+$)·B($\overline{D}^0 \to K^+ \pi^-$) = $(20.3 \pm 2.0) \times 10^{-5}$. NODE=S041B62;LINKAGE=GM

$\Gamma(K^+ K^- \pi^+ \text{ nonresonant})/\Gamma_{total}$ — Γ_{456}/Γ

NODE=S041B4
NODE=S041B4

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
1.68±0.23±0.13		[1] AAIJ	19AL	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<75	90	BERGFELD	96B	CLE2	$e^+ e^- \to \Upsilon(4S)$

[1] AAIJ 19AL reports $0.323 \pm 0.015 \pm 0.041$ fit fraction for $B^+ \to K^+ K^- \pi^+$ nonresonant from the amplitude analysis of $B^\pm \to \pi^\pm K^+ K^-$ decays. We use the PDG 19 value B($B^+ \to K^+ K^- \pi^+$) = $(5.2 \pm 0.4) \times 10^{-6}$ to obtain B($B^+ \to K^+ K^- \pi^+$ nonresonant). Our first error is the experiment's error and the second error is systematic error from using our best value. NODE=S041B4;LINKAGE=A

$\Gamma(K^+ \overline{K}^*(892)^0)/\Gamma_{total}$ — Γ_{457}/Γ

NODE=S041B38
NODE=S041B38

VALUE (units 10^{-7})	CL%	DOCUMENT ID		TECN	COMMENT
5.9±0.6±0.5		[1] AAIJ	19AL	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 11	90	[2] AUBERT	07AR	BABR	$e^+ e^- \to \Upsilon(4S)$
<1290	90	ABBIENDI	00B	OPAL	$e^+ e^- \to Z$
<1380	90	[3] ABE	00C	SLD	$e^+ e^- \to Z$
< 53	90	[2] JESSOP	00	CLE2	$e^+ e^- \to \Upsilon(4S)$

[1] AAIJ 19AL reports $(7.5 \pm 0.6 \pm 0.5) \times 10^{-2}$ fit fraction for $B^+ \to K^+ \overline{K}^*(892)^0$ from the amplitude analysis of $B^\pm \to \pi^\pm K^+ K^-$ decays. We use the PDG 19 value B($B^+ \to K^+ K^- \pi^+$) = $(5.2 \pm 0.4) \times 10^{-6}$ to obtain B($B^+ \to K^+ \overline{K}^*(892)^0$, $\overline{K}^*(892)^0 \to K^+ \pi^-$). We compute B($B^+ \to K^+ \overline{K}^*(892)^0$) using 2/3 of B($\overline{K}^*(892)^0 \to (K\pi)^0$) = (99.754 ± 0.021)% for the $K^+ \pi^-$ fraction. Our first error is the experiment's error and the second error is systematic error from using our best value. NODE=S041B38;LINKAGE=A
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B38;LINKAGE=EP
[3] ABE 00C assumes B($Z \to b\overline{b}$)=(21.7 ± 0.1)% and the B fractions f_{B^0}=f_{B^+}=$(39.7^{+1.8}_{-2.2})$% and f_{B_s}=$(10.5^{+1.8}_{-2.2})$%. NODE=S041B38;LINKAGE=KQ

$\Gamma(K^+ \overline{K}^*_0(1430)^0)/\Gamma_{total}$ — Γ_{458}/Γ

NODE=S041C04
NODE=S041C04

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
0.38±0.12±0.05		[1] AAIJ	19AL	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<2.2	90	[2] AUBERT	07AR	BABR	$e^+ e^- \to \Upsilon(4S)$

OCCUR=2

[1] AAIJ 19AL reports $(4.5 \pm 0.7 \pm 1.2) \times 10^{-2}$ for fit fraction for $B^+ \to K^+ \overline{K}^*_0(1430)^0$ from the amplitude analysis of $B^\pm \to \pi^\pm K^+ K^-$ decays. We use the PDG 19 value B($B^+ \to K^+ K^- \pi^+$) = $(5.2 \pm 0.4) \times 10^{-6}$ to obtain B($B^+ \to K^+ \overline{K}^*_0(1430)^0$, $\overline{K}^*_0(1430)^0 \to K^+ \pi^-$). We compute B($B^+ \to K^+ \overline{K}^*_0(1430)^0$) using 2/3 of PDG 19 value B($K^*_0(1430)^0 \to K\pi$) = (93 ± 10)% for the $K^+ \pi^-$ fraction. Our first error is the experiment's error and the second error is systematic error from using our best value. NODE=S041C04;LINKAGE=B
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C04;LINKAGE=EP

$\Gamma(\rho(1450)^0\pi^+,\ \rho^0 \to K^+K^-)/\Gamma_{total}$ — Γ_{525}/Γ

NODE=S041P74

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
1.60±0.08±0.12	[1] AAIJ	19AL	LHCB	pp at 7, 8 TeV

OCCUR=2

[1] AAIJ 19AL reports 0.307 ± 0.012 ± 0.009 fit fraction for $B^+ \to \rho(1450)\pi^+$ from the amplitude analysis of $B^\pm \to \pi^\pm K^+K^-$ decays. We use the PDG 19 value B($B^+ \to K^+K^-\pi^+$) = (5.2 ± 0.4) × 10^{-6} to obtain B($B^+ \to \rho(1450)\pi^+$, $\rho(1450) \to K^+K^-$). Our first error is the experiment's error and the second error is systematic error from using our best value.

NODE=S041P74;LINKAGE=B

$\Gamma(\pi^+(K^+K^-)_{S-wave})/\Gamma_{total}$ — Γ_{459}/Γ

NODE=S041P76

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
8.53±0.67±0.66	[1] AAIJ	19AL	LHCB	pp at 7, 8 TeV

[1] AAIJ 19AL reports 0.164 ± 0.008 ± 0.01 fit fraction for $B^+ \to \pi^+(K^+K^-)_{S-wave}$ in the region of 0.95 < m(K^+K^-) < 1.42 GeV/c^2 from the amplitude analysis of $B^\pm \to \pi^\pm K^+K^-$ decays. We use the PDG 19 value B($B^+ \to K^+K^-\pi^+$) = (5.2 ± 0.4) × 10^{-6} to obtain B($B^+ \to \pi^+(K^+K^-)_{S-wave}$). Our first error is the experiment's error and the second error is systematic error from using our best value.

NODE=S041P76;LINKAGE=A

$\Gamma(\pi^+K^+K^-,\ m_{K^+K^-} < 1.1\ \text{GeV})/\Gamma_{total}$ — Γ_{460}/Γ

NODE=S041A81

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
5.38±0.40±0.35	[1] HSU	23	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Investigated the angular distribution of K^+K^- pairs with invariant mass below 1.1 GeV/c^2, which exhibits both a strong enhancement in signal and very large direct CP violation.

NODE=S041A81;LINKAGE=A

$\Gamma(K^+K^+\pi^-)/\Gamma_{total}$ — Γ_{461}/Γ

NODE=S041B63

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.1 × 10^{-8}	90	AAIJ	17E	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.6 \times 10^{-7}$	90	[1] AUBERT	08BE	BABR	$e^+e^- \to \Upsilon(4S)$
$<2.4 \times 10^{-6}$	90	[1] GARMASH	04	BELL	$e^+e^- \to \Upsilon(4S)$
$<1.3 \times 10^{-6}$	90	[2] AUBERT	03M	BABR	Repl. by AUBERT 08BE
$<3.2 \times 10^{-6}$	90	[3] GARMASH	02	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B63;LINKAGE=EP

[2] Assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$; charm and charmonium contributions are subtracted, otherwise no assumptions about intermediate resonances.

NODE=S041B63;LINKAGE=TM

[3] Uses a reference decay mode $B^+ \to \overline{D}^0\pi^+$ and $\overline{D}^0 \to K^+\pi^-$ with B($B^+ \to \overline{D}^0\pi^+$)·B($\overline{D}^0 \to K^+\pi^-$) = (20.3 ± 2.0) × 10^{-5}.

NODE=S041B63;LINKAGE=GM

$\Gamma(K^+K^+\pi^-\ \text{nonresonant})/\Gamma_{total}$ — Γ_{462}/Γ

NODE=S041B37

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<87.9	90	ABBIENDI	00B	OPAL	$e^+e^- \to Z$

$\Gamma(f_2'(1525)K^+)/\Gamma_{total}$ — Γ_{463}/Γ

NODE=S041Q67

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
1.8 ±0.5 OUR AVERAGE	Error includes scale factor of 1.1.				
1.56±0.36±0.30		[1,2] LEES	12O	BABR	$e^+e^- \to \Upsilon(4S)$
2.8 ±0.9 $^{+0.5}_{-0.4}$		[1,3] LEES	12O	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<8	90	[1,4] GARMASH	05	BELL	$e^+e^- \to \Upsilon(4S)$

OCCUR=2

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041Q67;LINKAGE=EP

[2] Measured in the $B^+ \to K^+K^-K^+$ decay.

NODE=S041Q67;LINKAGE=LA

[3] Measured in the $B^+ \to K^+K^0_SK^0_S$ decay.

NODE=S041Q67;LINKAGE=LB

[4] GARMASH 05 reports B($B^+ \to f_2'(1525)K^+$) · B($f_2'(1525) \to K^+K^-$) < 4.9×10^{-6} at 90% CL. We divide this result by our best value of B($f_2'(1525) \to K\overline{K}$) = 88.8×$10^{-2}$ multiplied by 2/3 to account for the K^+K^- fraction.

NODE=S041Q67;LINKAGE=GA

$\Gamma(K^+f_J(2220))/\Gamma_{total}$ — Γ_{464}/Γ

NODE=S041C9

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
not seen	[1] HUANG	03	BELL	$e^+e^- \to \Upsilon(4S)$

[1] No evidence is found for such decay and set a limit on B($B^+ \to f_J(2220)$)×B($f_J(2220) \to \phi\phi$) < 1.2 × 10^{-6} at 90%CL where the $f_J(2220)$ is a possible glueball state.

NODE=S041C9;LINKAGE=A

$\Gamma(K^{*+}\pi^+K^-)/\Gamma_{total}$ Γ_{465}/Γ

NODE=S041T13
NODE=S041T13

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<11.8	90	[1] AUBERT,B 06U	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T13;LINKAGE=EP

$\Gamma(K^*(892)^+K^*(892)^0)/\Gamma_{total}$ Γ_{466}/Γ

NODE=S041B55
NODE=S041B55

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
0.91±0.29 OUR AVERAGE				
$0.77^{+0.35}_{-0.30}\pm0.12$		[1] GOH 15	BELL	$e^+e^- \to \Upsilon(4S)$
$1.2\pm0.5\pm0.1$		[2] AUBERT 09F	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<71	90	[3] GODANG 02	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Signal significance is 2.7 standard deviations. This measurement corresponds to an upper limit of $< 1.31 \times 10^{-6}$ at 90% CL.

NODE=S041B55;LINKAGE=A

[2] Signal signicance is 3.7 standard deviations.

NODE=S041B55;LINKAGE=B

[3] Assumes a helicity 00 configuration. For a helicity 11 configuration, the limit decreases to 4.8×10^{-5}.

NODE=S041B55;LINKAGE=Z1

$\Gamma(K^{*+}K^+\pi^-)/\Gamma_{total}$ Γ_{467}/Γ

NODE=S041T14
NODE=S041T14

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<6.1	90	[1] AUBERT,B 06U	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T14;LINKAGE=EP

$\Gamma(K^+K^-K^+)/\Gamma_{total}$ Γ_{468}/Γ

NODE=S041R80
NODE=S041R80

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
34.0±1.4 OUR AVERAGE Error includes scale factor of 1.4.				
$34.6\pm0.6\pm0.9$		[1,2] LEES 12O	BABR	$e^+e^- \to \Upsilon(4S)$
$30.6\pm1.2\pm2.3$		[1] GARMASH 05	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$35.2\pm0.9\pm1.6$		[1] AUBERT 06O	BABR	Repl. by LEES 12O
$32.8\pm1.8\pm2.8$		[1] GARMASH 04	BELL	Repl. by GARMASH 05
$29.6\pm2.1\pm1.6$		[3] AUBERT 03M	BABR	Repl. by AUBERT 06O
$35.3\pm3.7\pm4.5$		[4] GARMASH 02	BELL	Repl. by GARMASH 04
<200	90	[5] ADAM 96D	DLPH	$e^+e^- \to Z$
<320	90	[5] ABREU 95N	DLPH	Sup. by ADAM 96D
<350	90	ALBRECHT 91E	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041R80;LINKAGE=EP

[2] All intermediate charmonium and charm resonances are removed, except of χ_{c0}.

NODE=S041R80;LINKAGE=LE

[3] Assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$; charm and charmonium contributions are subtracted, otherwise no assumptions about intermediate resonances.

NODE=S041R80;LINKAGE=TM

[4] Uses a reference decay mode $B^+ \to \overline{D}^0\pi^+$ and $\overline{D}^0 \to K^+\pi^-$ with $B(B^+ \to \overline{D}^0\pi^+)\cdot B(\overline{D}^0 \to K^+\pi^-) = (20.3 \pm 2.0) \times 10^{-5}$.

NODE=S041R80;LINKAGE=GM

[5] Assumes B^0 and B^- production fractions of 0.39, and B_s production fraction of 0.12.

NODE=S041R80;LINKAGE=SR

$\Gamma(K^+\phi)/\Gamma_{total}$ Γ_{469}/Γ

NODE=S041R8
NODE=S041R8

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
$8.8^{+0.7}_{-0.6}$ OUR AVERAGE Error includes scale factor of 1.1.				
$9.2\pm0.4^{+0.7}_{-0.5}$		[1] LEES 12O	BABR	$e^+e^- \to \Upsilon(4S)$
$7.6\pm1.3\pm0.6$		[2] ACOSTA 05J	CDF	$p\overline{p}$ at 1.96 TeV
$9.60\pm0.92^{+1.05}_{-0.85}$		[1] GARMASH 05	BELL	$e^+e^- \to \Upsilon(4S)$
$5.5^{+2.1}_{-1.8}\pm0.6$		[1] BRIERE 01	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$8.4\pm0.7\pm0.7$		[1] AUBERT 06O	BABR	Repl. by LEES 12O
$10.0^{+0.9}_{-0.8}\pm0.5$		[1] AUBERT 04A	BABR	Repl. by AUBERT 06O
$9.4\pm1.1\pm0.7$		[1] CHEN 03B	BELL	Repl. by GARMASH 05
$14.6^{+3.0}_{-2.8}\pm2.0$		[3] GARMASH 02	BELL	Repl. by CHEN 03B
$7.7^{+1.6}_{-1.4}\pm0.8$		[1] AUBERT 01D	BABR	$e^+e^- \to \Upsilon(4S)$
<144	90	[4] ABE 00C	SLD	$e^+e^- \to Z$
< 5	90	[1] BERGFELD 98	CLE2	

<280	90	[5] ADAM	96D	DLPH	$e^+e^- \to Z$
< 12	90	ASNER	96	CLE2	$e^+e^- \to \Upsilon(4S)$
<440	90	[6] ABREU	95N	DLPH	Sup. by ADAM 96D
<180	90	ALBRECHT	91B	ARG	$e^+e^- \to \Upsilon(4S)$
< 90	90	[7] AVERY	89B	CLEO	$e^+e^- \to \Upsilon(4S)$
<210	90	AVERY	87	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R8;LINKAGE=EP

[2] Uses B($B^+ \to J/\psi K^+$) = $(1.00 \pm 0.04) \times 10^{-3}$ and B($J/\psi \to \mu^+\mu^-$) = 0.0588 ± 0.0010. NODE=S041R8;LINKAGE=AC

[3] Uses a reference decay mode $B^+ \to \overline{D}^0\pi^+$ and $\overline{D}^0 \to K^+\pi^-$ with B($B^+ \to \overline{D}^0\pi^+$)·B($\overline{D}^0 \to K^+\pi^-$) = $(20.3 \pm 2.0) \times 10^{-5}$. NODE=S041R8;LINKAGE=GM

[4] ABE 00C assumes B($Z \to b\overline{b}$)=(21.7 ± 0.1)% and the B fractions $f_{B^0}=f_{B^+}=(39.7^{+1.8}_{-2.2})$% and $f_{B_s}=(10.5^{+1.8}_{-2.2})$%. NODE=S041R8;LINKAGE=KQ

[5] ADAM 96D assumes $f_{B^0} = f_{B^-} = 0.39$ and $f_{B_s} = 0.12$. NODE=S041R8;LINKAGE=DQ

[6] Assumes a B^0, B^- production fraction of 0.39 and a B_s production fraction of 0.12. NODE=S041R8;LINKAGE=SR

[7] AVERY 89B reports $< 8 \times 10^{-5}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S041R8;LINKAGE=A1

$\Gamma(f_0(980)K^+ \times B(f_0(980) \to K^+K^-))/\Gamma_{total}$ — Γ_{470}/Γ

NODE=S041Q65
NODE=S041Q65

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
9.4±1.6±2.8		[1] LEES	12O	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
6.5±2.5±1.6		[1] AUBERT	06O	BABR	$e^+e^- \to \Upsilon(4S)$
<2.9	90	[1] GARMASH	05	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q65;LINKAGE=EP

$\Gamma(a_2(1320)K^+ \times B(a_2(1320) \to K^+K^-))/\Gamma_{total}$ — Γ_{471}/Γ

NODE=S041Q66
NODE=S041Q66

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.1 × 10^{-6}	90	[1] GARMASH	05	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q66;LINKAGE=EP

$\Gamma(X_0(1550)K^+ \times B(X_0(1550) \to K^+K^-))/\Gamma_{total}$ — Γ_{472}/Γ

NODE=S041T09

$X_0(1550)$ is a possible spin zero state near 1.55 GeV/c^2 invariant mass of K^+K^-. NODE=S041T09
NODE=S041T09

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
4.3±0.6±0.3	[1] AUBERT	06O	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T09;LINKAGE=EP

$\Gamma(\phi(1680)K^+ \times B(\phi(1680) \to K^+K^-))/\Gamma_{total}$ — Γ_{473}/Γ

NODE=S041Q68
NODE=S041Q68

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.8 × 10^{-6}	90	[1] GARMASH	05	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q68;LINKAGE=EP

$\Gamma(f_0(1710)K^+ \times B(f_0(1710) \to K^+K^-))/\Gamma_{total}$ — Γ_{474}/Γ

NODE=S041T08
NODE=S041T08

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
1.12±0.25±0.50	[1] LEES	12O	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.7 ±1.0 ±0.3	[1] AUBERT	06O	BABR	Repl. by LEES 12O

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T08;LINKAGE=EP

$\Gamma(K^+K^-K^+ \text{nonresonant})/\Gamma_{total}$ — Γ_{475}/Γ

NODE=S041B5
NODE=S041B5

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$23.8^{+2.8}_{-5.0}$ OUR AVERAGE					
22.8±2.7±7.6		[1] LEES	12O	BABR	$e^+e^- \to \Upsilon(4S)$
$24.0 \pm 1.5^{+2.6}_{-6.0}$		[1] GARMASH	05	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
50.0±6.0±4.0		[1] AUBERT	06O	BABR	Repl. by LEES 12O
<38	90	BERGFELD	96B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B5;LINKAGE=EP

$\Gamma(K^*(892)^+ K^+ K^-)/\Gamma_{total}$ — Γ_{476}/Γ

NODE=S041R84

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
36.2±3.3±3.6		[1] AUBERT,B	06U	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<1600	90	ALBRECHT	91E	ARG	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041R84;LINKAGE=EP

$\Gamma(K^*(892)^+ \phi)/\Gamma_{total}$ — Γ_{477}/Γ

NODE=S041R76

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
10.0±2.0 OUR AVERAGE		Error includes scale factor of 1.7.			
$11.2\pm1.0\pm0.9$		[1] AUBERT	07BA	BABR	$e^+ e^- \to \Upsilon(4S)$
$6.7^{+2.1+0.7}_{-1.9-1.0}$		[1] CHEN	03B	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$12.7^{+2.2}_{-2.0}\pm1.1$		[1] AUBERT	03V	BABR	Repl. by AUBERT 07BA
$9.7^{+4.2}_{-3.4}\pm1.7$		[1] AUBERT	01D	BABR	Repl. by AUBERT 03V
< 22.5	90	[1] BRIERE	01	CLE2	$e^+ e^- \to \Upsilon(4S)$
< 41	90	[1] BERGFELD	98	CLE2	
< 70	90	ASNER	96	CLE2	$e^+ e^- \to \Upsilon(4S)$
<1300	90	ALBRECHT	91B	ARG	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041R76;LINKAGE=EP

$\Gamma(K^0 K^+ K^- \pi^+)/\Gamma_{total}$ — Γ_{478}/Γ

NODE=S041D03

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
34.01±0.74±3.23	[1] AAIJ	23AH	LHCB	pp at 7, 8 and 13 TeV

[1] The second uncertainty includes systematic and reference branching reaction of $B^+ \to J/\psi K^+$ uncertainties.

NODE=S041D03;LINKAGE=A

$\Gamma(J/\psi K^+,\ J/\psi \to K^0 K^- \pi^+)/\Gamma_{total}$ — Γ_{479}/Γ

NODE=S041D06

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
5.43±0.12±1.23	[1] AAIJ	23AH	LHCB	pp at 7, 8 and 13 TeV

[1] The second uncertainty includes systematic and reference branching reaction of $B^+ \to \eta_c K^+$ uncertainties.

NODE=S041D06;LINKAGE=A

$\Gamma(\chi_{c1} K^+,\ \chi_{c1} \to K^0 K^- \pi^+)/\Gamma_{total}$ — Γ_{480}/Γ

NODE=S041D07

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
2.25±0.11±0.22	[1] AAIJ	23AH	LHCB	pp at 7, 8 and 13 TeV

[1] The second uncertainty includes systematic and reference branching reaction of $B^+ \to J/\psi K^+$ uncertainties.

NODE=S041D07;LINKAGE=A

$\Gamma(\eta_c K^+,\ \eta_c \to K^0 K^- \pi^+)/\Gamma_{total}$ — Γ_{481}/Γ

NODE=S041D08

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
2.83±0.07±0.29	[1] AAIJ	23AH	LHCB	pp at 7, 8 and 13 TeV

[1] The second uncertainty includes systematic and reference branching reaction of $B^+ \to J/\psi K^+$ uncertainties.

NODE=S041D08;LINKAGE=A

$\Gamma(\eta_c(2S) K^+,\ \eta_c(2S) \to K^0 K^- \pi^+)/\Gamma_{total}$ — Γ_{482}/Γ

NODE=S041D09

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
3.27±0.17±0.34	[1] AAIJ	23AH	LHCB	pp at 7, 8 and 13 TeV

[1] The second uncertainty includes systematic and reference branching reaction of $B^+ \to J/\psi K^+$ uncertainties.

NODE=S041D09;LINKAGE=A

$\Gamma(K^0 K^+ K^+ \pi^-)/\Gamma_{total}$ — Γ_{483}/Γ

NODE=S041D04

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
28.01±0.68±2.89	[1] AAIJ	23AH	LHCB	pp at 7, 8 and 13 TeV

[1] The second uncertainty includes systematic and reference branching reaction of $B^+ \to J/\psi K^+$ uncertainties.

NODE=S041D04;LINKAGE=A

$\Gamma(J/\psi K^+,\ J/\psi \to K^0 K^+ \pi^-)/\Gamma_{total}$ Γ_{484}/Γ

NODE=S041D10
NODE=S041D10

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
5.41±0.14±1.25	[1] AAIJ 23AH	LHCB	pp at 7, 8 and 13 TeV

[1] The second uncertainty includes systematic and reference branching reaction of $B^+ \to \eta_c K^+$ uncertainties.

NODE=S041D10;LINKAGE=A

$\Gamma(\chi_{c1} K^+,\ \chi_{c1} \to K^0 K^+ \pi^-)/\Gamma_{total}$ Γ_{485}/Γ

NODE=S041D11
NODE=S041D11

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
2.06±0.12±0.30	[1] AAIJ 23AH	LHCB	pp at 7, 8 and 13 TeV

[1] The second uncertainty includes systematic and reference branching reaction of $B^+ \to J/\psi K^+$ uncertainties.

NODE=S041D11;LINKAGE=A

$\Gamma(\eta_c K^+,\ \eta_c \to K^0 K^+ \pi^-)/\Gamma_{total}$ Γ_{486}/Γ

NODE=S041D12
NODE=S041D12

VALUE (units 10^{-5})	DOCUMENT ID	TECN	COMMENT
3.00±0.14±0.31	[1] AAIJ 23AH	LHCB	pp at 7, 8 and 13 TeV

[1] The second uncertainty includes systematic and reference branching reaction of $B^+ \to J/\psi K^+$ uncertainties.

NODE=S041D12;LINKAGE=A

$\Gamma(\eta_c(2S) K^+,\ \eta_c(2S) \to K^0 K^+ \pi^-)/\Gamma_{total}$ Γ_{487}/Γ

NODE=S041D13
NODE=S041D13

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
3.13±0.21±0.52	[1] AAIJ 23AH	LHCB	pp at 7, 8 and 13 TeV

[1] The second uncertainty includes systematic and reference branching reaction of $B^+ \to J/\psi K^+$ uncertainties.

NODE=S041D13;LINKAGE=A

$\Gamma(\phi (K\pi)_0^{*+})/\Gamma_{total}$ Γ_{488}/Γ

NODE=S041T50

$(K\pi)_0^{*+}$ is the total S-wave composed of $K_0^*(1430)$ and nonresonant that are described using LASS shape.

NODE=S041T50

NODE=S041T50

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
8.3±1.4±0.8	[1] AUBERT 08BI	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T50;LINKAGE=EP

$\Gamma(\phi K_1(1270)^+)/\Gamma_{total}$ Γ_{489}/Γ

NODE=S041T45
NODE=S041T45

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
6.1±1.6±1.1	[1] AUBERT 08BI	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T45;LINKAGE=EP

$\Gamma(\phi K_1(1400)^+)/\Gamma_{total}$ Γ_{490}/Γ

NODE=S041R77
NODE=S041R77

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
< 3.2	90	[1] AUBERT 08BI	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<1100	90	ALBRECHT 91B	ARG	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041R77;LINKAGE=EP

$\Gamma(\phi K^*(1410)^+)/\Gamma_{total}$ Γ_{491}/Γ

NODE=S041T46
NODE=S041T46

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<4.3	90	[1] AUBERT 08BI	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T46;LINKAGE=EP

$\Gamma(\phi K_0^*(1430)^+)/\Gamma_{total}$ Γ_{492}/Γ

NODE=S041T47
NODE=S041T47

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
7.0±1.3±0.9	[1] AUBERT 08BI	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T47;LINKAGE=EP

$\Gamma(\phi K_2^*(1430)^+)/\Gamma_{total}$ Γ_{493}/Γ

NODE=S041R78
NODE=S041R78

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
8.4±1.8±1.0		[1] AUBERT 08BI	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<3400	90	ALBRECHT 91B	ARG	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041R78;LINKAGE=EP

$\Gamma(\phi K_2^*(1770)^+)/\Gamma_{total}$ — Γ_{494}/Γ

NODE=S041T48

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<15.0	90	[1] AUBERT	08BI	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T48;LINKAGE=EP

$\Gamma(\phi K_2^*(1820)^+)/\Gamma_{total}$ — Γ_{495}/Γ

NODE=S041T49

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<16.3	90	[1] AUBERT	08BI	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T49;LINKAGE=EP

$\Gamma(a_1^+ K^{*0})/\Gamma_{total}$ — Γ_{496}/Γ

NODE=S041T65

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<3.6	90	[1,2] DEL-AMO-SA...	10I	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes $B(a_1^\pm \to \pi^\pm\pi^\mp\pi^\pm) = 0.5$

NODE=S041T65;LINKAGE=DE

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T65;LINKAGE=EP

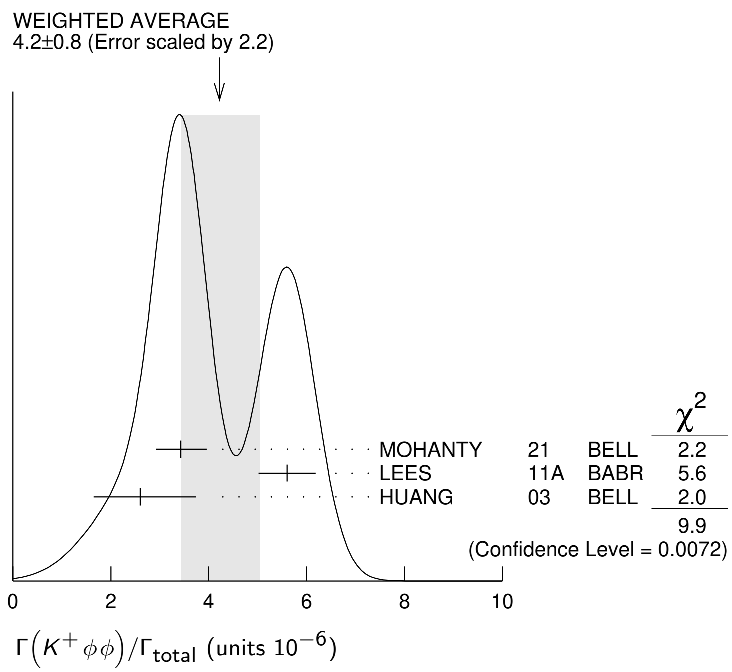
$\Gamma(K^+\phi\phi)/\Gamma_{total}$ — Γ_{497}/Γ

NODE=S041C8

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
4.2 ±0.8 OUR AVERAGE	Error includes scale factor of 2.2. See the ideogram below.			
$3.43^{+0.48}_{-0.46}\pm0.22$	[1] MOHANTY	21	BELL	$e^+e^- \to \Upsilon(4S)$
$5.6 \pm0.5 \pm0.3$	[1] LEES	11A	BABR	$e^+e^- \to \Upsilon(4S)$
$2.6\ ^{+1.1}_{-0.9}\ \pm0.3$	[1] HUANG	03	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$7.5 \pm1.0 \pm0.7$	[1] AUBERT,BE	06H	BABR	Repl. by LEES 11A

[1] Assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$ and the $\phi\phi$ invariant mass below 2.85 GeV/c^2.

NODE=S041C8;LINKAGE=A



$\Gamma(\eta'\eta' K^+)/\Gamma_{total}$ — Γ_{498}/Γ

NODE=S041T12

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<25	90	[1] AUBERT,B	06P	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T12;LINKAGE=EP

$\Gamma(\omega\phi K^+)/\Gamma_{total}$ — Γ_{499}/Γ

NODE=S041T54

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<1.9	90	[1] LIU	09	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T54;LINKAGE=EP

$\Gamma(X(1812)K^+ \times B(X \to \omega\phi))/\Gamma_{total}$ — Γ_{500}/Γ

NODE=S041T55

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.32	90	[1] LIU	09	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T55;LINKAGE=EP

$\Gamma(K^*(892)^+\gamma)/\Gamma_{total}$ — Γ_{501}/Γ

NODE=S041R9

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
3.92±0.22 OUR AVERAGE		Error includes scale factor of 1.7.			
3.76±0.10±0.12		[1] HORIGUCHI	17	BELL	$e^+e^- \to \Upsilon(4S)$
4.22±0.14±0.16		[2] AUBERT	09AO	BABR	$e^+e^- \to \Upsilon(4S)$
$3.76^{+0.89}_{-0.83}\pm0.28$		[3] COAN	00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
3.87±0.28±0.26		[4] AUBERT,BE	04A	BABR	Repl. by AUBERT 09AO
4.25±0.31±0.24		[3] NAKAO	04	BELL	Repl. by HORIGUCHI 17
3.83±0.62±0.22		[3] AUBERT	02C	BABR	Repl. by AUBERT,BE 04A
5.7 ±3.1 ±1.1		[5] AMMAR	93	CLE2	Repl. by COAN 00
< 55	90	[6] ALBRECHT	89G	ARG	$e^+e^- \to \Upsilon(4S)$
< 55	90	[6] AVERY	89B	CLEO	$e^+e^- \to \Upsilon(4S)$
<180	90	AVERY	87	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Uses $B(\Upsilon(4S) \to B^+B^-) = (51.4 \pm 0.6)\%$ and $B(\Upsilon(4S) \to B^0\overline{B}^0) = (48.6 \pm 0.6)\%$. NODE=S041R9;LINKAGE=C

[2] Uses $B(\Upsilon(4S) \to B^+B^-) = (51.6 \pm 0.6)\%$ and $B(\Upsilon(4S) \to B^0\overline{B}^0) = (48.4 \pm 0.6)\%$. NODE=S041R9;LINKAGE=AB

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R9;LINKAGE=EP

[4] Uses the production ratio of charged and neutral B from $\Upsilon(4S)$ decays $R^{+/0} = 1.006 \pm 0.048$. NODE=S041R9;LINKAGE=AU

[5] AMMAR 93 observed 4.1 ± 2.3 events above background. NODE=S041R9;LINKAGE=B

[6] Assumes the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. NODE=S041R9;LINKAGE=A1

$\Gamma(K_1(1270)^+\gamma)/\Gamma_{total}$ — Γ_{502}/Γ

NODE=S041R26

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
$4.4^{+0.7}_{-0.6}$ OUR AVERAGE					
$4.41^{+0.63}_{-0.44}\pm0.58$		[1,2] DEL-AMO-SA...	16	BABR	$e^+e^- \to \Upsilon(4S)$
4.3 ±0.9 ±0.9		[3] YANG	05	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 9.9	90	[3] NISHIDA	02	BELL	Repl. by YANG 05
<730	90	[4] ALBRECHT	89G	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Requires $M_{K\pi\pi} < 1.8$ GeV/c^2. NODE=S041R26;LINKAGE=A

[2] Uses $B(\Upsilon(4S) \to B^+B^-) = 0.513 \pm 0.006$. NODE=S041R26;LINKAGE=BP

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R26;LINKAGE=EP

[4] ALBRECHT 89G reports < 0.0066 assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S041R26;LINKAGE=A2

$\Gamma(\eta K^+\gamma)/\Gamma_{total}$ — Γ_{503}/Γ

NODE=S041S06

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
7.9±0.9 OUR AVERAGE				
7.7±1.0±0.4	[1,2] AUBERT	09	BABR	$e^+e^- \to \Upsilon(4S)$
$8.4\pm1.5^{+1.2}_{-0.9}$	[2,3] NISHIDA	05	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
10.0±1.3±0.5	[1,2] AUBERT,B	06M	BABR	Repl. by AUBERT 09

[1] $m_{\eta K} < 3.25$ GeV/c^2. NODE=S041S06;LINKAGE=AR

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041S06;LINKAGE=EP

[3] $m_{\eta K} < 2.4$ GeV/c^2 NODE=S041S06;LINKAGE=NI

$\Gamma(\eta' K^+\gamma)/\Gamma_{total}$ — Γ_{504}/Γ

NODE=S041T11

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$2.9^{+1.0}_{-0.9}$ OUR AVERAGE				
3.6±1.2±0.4	[1,2] WEDD	10	BELL	$e^+e^- \to \Upsilon(4S)$
$1.9^{+1.5}_{-1.2}\pm0.1$	[1,3] AUBERT,B	06M	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T11;LINKAGE=EP

[2] $m_{\eta' K} < 3.4$ GeV/c^2. NODE=S041T11;LINKAGE=WE

[3] Set the upper limit of 4.2×10^{-6} at 90% CL with $m_{\eta' K} < 3.25$ GeV/c^2. NODE=S041T11;LINKAGE=AR

$\Gamma(\phi K^+\gamma)/\Gamma_{total}$ Γ_{505}/Γ

NODE=S041RA3
NODE=S041RA3

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
2.7 ±0.4 OUR AVERAGE	Error includes scale factor of 1.2.			
2.48±0.30±0.24	[1] SAHOO	11A	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
3.5 ±0.6 ±0.4	[1] AUBERT	07Q	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3.4 ±0.9 ±0.4	[1] DRUTSKOY	04	BELL	Repl. by SAHOO 11A

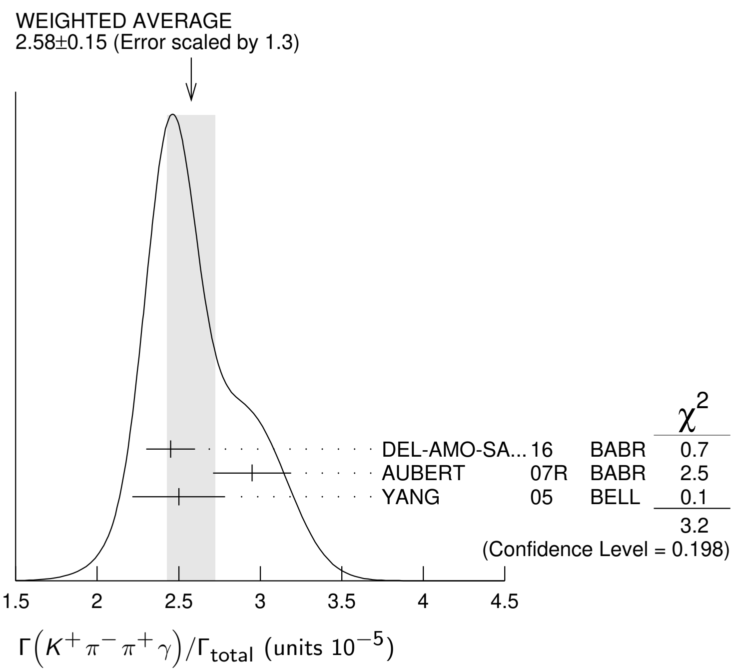
[1] Assumes equal production of B^+ and B^0 at $\Upsilon(4S)$. NODE=S041RA3;LINKAGE=EP

$\Gamma(K^+\pi^-\pi^+\gamma)/\Gamma_{total}$ Γ_{506}/Γ

NODE=S041B84
NODE=S041B84

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
2.58±0.15 OUR AVERAGE	Error includes scale factor of 1.3. See the ideogram below.			
2.45±0.09±0.12	[1,2] DEL-AMO-SA...	16	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
2.95±0.13±0.20	[1,3] AUBERT	07R	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
2.50±0.18±0.22	[3,4] YANG	05	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2.4 ±0.5 $^{+0.4}_{-0.2}$	[3,5] NISHIDA	02	BELL	Repl. by YANG 05

[1] $M_{K\pi\pi}$ < 1.8 GeV/c^2. NODE=S041B84;LINKAGE=AT
[2] Uses B($\Upsilon(4S) \rightarrow B^+B^-$) = 0.513 ± 0.006. NODE=S041B84;LINKAGE=BP
[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B84;LINKAGE=EP
[4] $M_{K\pi\pi}$ < 2.0 GeV/c^2. NODE=S041B84;LINKAGE=YA
[5] $M_{K\pi\pi}$ < 2.4 GeV/c^2. NODE=S041B84;LINKAGE=NB



$\Gamma(K^*(892)^0\pi^+\gamma)/\Gamma_{total}$ Γ_{507}/Γ

NODE=S041B85
NODE=S041B85

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
2.33±0.12 OUR AVERAGE				
2.34±0.09 $^{+0.08}_{-0.07}$	[1,2] DEL-AMO-SA...	16	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
2.0 $^{+0.7}_{-0.6}$ ±0.2	[3,4] NISHIDA	02	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Requires $M_{K\pi\pi}$ < 1.8 GeV/c^2. NODE=S041B85;LINKAGE=A
[2] Uses B($\Upsilon(4S) \rightarrow B^+B^-$) = 0.513 ± 0.006. NODE=S041B85;LINKAGE=BP
[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B85;LINKAGE=EP
[4] $M_{K\pi\pi}$ < 2.4 GeV/c^2. NODE=S041B85;LINKAGE=NB

$\Gamma(K^+\rho^0\gamma)/\Gamma_{total}$ — Γ_{508}/Γ

NODE=S041B86

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
8.2±0.4±0.8		[1,2] DEL-AMO-SA...	16	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<20	90	[3,4] NISHIDA	02	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Requires $M_{K\pi\pi} < 1.8$ GeV/c^2.
[2] Uses B($\Upsilon(4S) \to B^+B^-$) = 0.513 ± 0.006.
[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[4] $M_{K\pi\pi} < 2.4$ GeV/c^2.

NODE=S041B86;LINKAGE=A
NODE=S041B86;LINKAGE=BP
NODE=S041B86;LINKAGE=EP
NODE=S041B86;LINKAGE=NB

$\Gamma((K^+\pi^-)_{NR}\pi^+\gamma)/\Gamma_{total}$ — Γ_{509}/Γ

NODE=S041B87

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$9.9\pm0.7^{+1.5}_{-1.9}$		[1,2] DEL-AMO-SA...	16	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<9.2	90	[3,4] NISHIDA	02	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Requires $M_{K\pi\pi} < 1.8$ GeV/c^2.
[2] Uses B($\Upsilon(4S) \to B^+B^-$) = 0.513 ± 0.006.
[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[4] $M_{K\pi\pi} < 2.4$ GeV/c^2.

NODE=S041B87;LINKAGE=A
NODE=S041B87;LINKAGE=BP
NODE=S041B87;LINKAGE=EP
NODE=S041B87;LINKAGE=NB

$\Gamma(K^0\pi^+\pi^0\gamma)/\Gamma_{total}$ — Γ_{510}/Γ

NODE=S041T19

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
4.56±0.42±0.31	[1,2] AUBERT	07R	BABR	$e^+e^- \to \Upsilon(4S)$

[1] $M_{K\pi\pi} < 1.8$ GeV/c^2.
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T19;LINKAGE=AT
NODE=S041T19;LINKAGE=EP

$\Gamma(K_1(1400)^+\gamma)/\Gamma_{total}$ — Γ_{511}/Γ

NODE=S041R27

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$9.7^{+4.6}_{-2.9}{}^{+2.9}_{-2.4}$		[1,2] DEL-AMO-SA...	16	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 15	90	[3] YANG	05	BELL	$e^+e^- \to \Upsilon(4S)$
< 50	90	[3] NISHIDA	02	BELL	Repl. by YANG 05
<2200	90	[4] ALBRECHT	89G	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Requires $M_{K\pi\pi} < 1.8$ GeV/c^2.
[2] Uses B($\Upsilon(4S) \to B^+B^-$) = 0.513 ± 0.006.
[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[4] ALBRECHT 89G reports < 0.0020 assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%.

NODE=S041R27;LINKAGE=A
NODE=S041R27;LINKAGE=BP
NODE=S041R27;LINKAGE=EP
NODE=S041R27;LINKAGE=A2

$\Gamma(K^*(1410)^+\gamma)/\Gamma_{total}$ — Γ_{512}/Γ

NODE=S041P24

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
$2.71^{+0.54}_{-0.48}{}^{+0.59}_{-0.37}$	[1,2] DEL-AMO-SA...	16	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Requires $M_{K\pi\pi} < 1.8$ GeV/c^2.
[2] Uses B($\Upsilon(4S) \to B^+B^-$) = 0.513 ± 0.006.

NODE=S041P24;LINKAGE=B
NODE=S041P24;LINKAGE=BP

$\Gamma(K_0^*(1430)^0\pi^+\gamma)/\Gamma_{total}$ — Γ_{513}/Γ

NODE=S041P23

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$1.32^{+0.09}_{-0.10}{}^{+0.24}_{-0.30}$	[1,2] DEL-AMO-SA...	16	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Requires $M_{K\pi\pi} < 1.8$ GeV/c^2.
[2] Uses B($\Upsilon(4S) \to B^+B^-$) = 0.513 ± 0.006.

NODE=S041P23;LINKAGE=B
NODE=S041P23;LINKAGE=BP

$\Gamma(K_2^*(1430)^+\gamma)/\Gamma_{total}$ — Γ_{514}/Γ

NODE=S041R28

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
1.4 ±0.4 OUR AVERAGE					
$0.87^{+0.70}_{-0.53}{}^{+0.87}_{-1.04}$		[1,2] DEL-AMO-SA...	16	BABR	$e^+e^- \to \Upsilon(4S)$
1.45±0.40±0.15		[3] AUBERT,B	04U	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<140	90	[4] ALBRECHT	89G	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Requires $M_{K\pi\pi} < 1.8$ GeV/c^2. NODE=S041R28;LINKAGE=A
[2] Uses B($\Upsilon(4S) \to B^+ B^-$) = 0.513 ± 0.006. NODE=S041R28;LINKAGE=BP
[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R28;LINKAGE=AU
[4] ALBRECHT 89G reports < 0.0013 assuming the $\Upsilon(4S)$ decays 45% to $B^0 \overline{B}^0$. We rescale to 50%. NODE=S041R28;LINKAGE=A2

$\Gamma(K^*(1680)^+\gamma)/\Gamma_{total}$ Γ_{515}/Γ

NODE=S041R29
NODE=S041R29

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
$6.67^{+0.93}_{-0.78}{}^{+1.44}_{-1.14}$		[1,2] DEL-AMO-SA...16		BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<190	90	[3] ALBRECHT	89G	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Requires $M_{K\pi\pi} < 1.8$ GeV/c^2. NODE=S041R29;LINKAGE=B
[2] Uses B($\Upsilon(4S) \to B^+ B^-$) = 0.513 ± 0.006. NODE=S041R29;LINKAGE=BP
[3] ALBRECHT 89G reports < 0.0017 assuming the $\Upsilon(4S)$ decays 45% to $B^0 \overline{B}^0$. We rescale to 50%. NODE=S041R29;LINKAGE=A2

$\Gamma(K_3^*(1780)^+\gamma)/\Gamma_{total}$ Γ_{516}/Γ

NODE=S041R30
NODE=S041R30

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
< 39	90	[1,2] NISHIDA	05	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<5500	90	[3] ALBRECHT	89G	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R30;LINKAGE=EP
[2] Uses B($K_3^*(1780) \to \eta K$) = $0.11^{+0.05}_{-0.04}$. NODE=S041R30;LINKAGE=NS
[3] ALBRECHT 89G reports < 0.005 assuming the $\Upsilon(4S)$ decays 45% to $B^0 \overline{B}^0$. We rescale to 50%. NODE=S041R30;LINKAGE=A2

$\Gamma(K_4^*(2045)^+\gamma)/\Gamma_{total}$ Γ_{517}/Γ

NODE=S041R31
NODE=S041R31

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0099	90	[1] ALBRECHT	89G	ARG	$e^+e^- \to \Upsilon(4S)$

[1] ALBRECHT 89G reports < 0.0090 assuming the $\Upsilon(4S)$ decays 45% to $B^0 \overline{B}^0$. We rescale to 50%. NODE=S041R31;LINKAGE=A2

$\Gamma(\rho^+\gamma)/\Gamma_{total}$ Γ_{518}/Γ

NODE=S041B42
NODE=S041B42

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
0.98±0.25 OUR AVERAGE					
$1.20^{+0.42}_{-0.37} \pm 0.20$		[1] AUBERT	08BH	BABR	$e^+e^- \to \Upsilon(4S)$
$0.87^{+0.29}_{-0.27}{}^{+0.09}_{-0.11}$		[1] TANIGUCHI	08	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$1.10^{+0.37}_{-0.33} \pm 0.09$		[1] AUBERT	07L	BABR	Repl. by AUBERT 08BH
$0.55^{+0.42}_{-0.36}{}^{+0.09}_{-0.08}$		[1] MOHAPATRA	06	BELL	Repl. by TANIGUCHI 08
$0.9\ ^{+0.6}_{-0.5} \pm 0.1$	90	[1] AUBERT	05	BABR	Repl. by AUBERT 07L
< 2.2	90	[1] MOHAPATRA	05	BELL	$e^+e^- \to \Upsilon(4S)$
< 2.1	90	[1] AUBERT	04C	BABR	$e^+e^- \to \Upsilon(4S)$
<13	90	[1,2] COAN	00	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at $\Upsilon(4S)$. NODE=S041B42;LINKAGE=EP
[2] No evidence for a nonresonant $K\pi\gamma$ contamination was seen; the central value assumes no contamination. NODE=S041B42;LINKAGE=AP

$\Gamma(\pi^+\pi^0)/\Gamma_{total}$ Γ_{519}/Γ

NODE=S041R16
NODE=S041R16

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
5.31±0.26 OUR AVERAGE					
5.10±0.29±0.27		ADACHI	24	BELL	$e^+e^- \to \Upsilon(4S)$
5.86±0.26±0.38		[1] DUH	13	BELL	$e^+e^- \to \Upsilon(4S)$
5.02±0.46±0.29		[1] AUBERT	07BC	BABR	$e^+e^- \to \Upsilon(4S)$
$4.6\ ^{+1.8}_{-1.6}\ ^{+0.6}_{-0.7}$		[1] BORNHEIM	03	CLE2	$e^+e^- \to \Upsilon(4S)$

• • • We do not use the following data for averages, fits, limits, etc. • • •

6.5 ±0.4 ±0.4		[1] LIN	07A	BELL	Repl. by DUH 13
5.8 ±0.6 ±0.4		[1] AUBERT	05L	BABR	Repl. by AUBERT 07BC
5.0 ±1.2 ±0.5		[1] CHAO	04	BELL	Repl. by LIN 07A
5.5 $^{+1.0}_{-1.9}$ ±0.6		[1] AUBERT	03L	BABR	Repl. by AUBERT 05L
7.4 $^{+2.3}_{-2.2}$ ±0.9		[1] CASEY	02	BELL	Repl. by CHAO 04
< 13.4	90	[1] ABE	01H	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
< 9.6	90	[1] AUBERT	01E	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
< 12.7	90	[1] CRONIN-HEN...00		CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
< 20	90	GODANG	98	CLE2	Repl. by CRONIN-HENNESSY 00
< 17	90	ASNER	96	CLE2	Repl. by GODANG 98
< 240	90	[1] ALBRECHT	90B	ARG	$e^+e^- \rightarrow \Upsilon(4S)$
<2300	90	[2] BEBEK	87	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R16;LINKAGE=EP

[2] BEBEK 87 assume the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. NODE=S041R16;LINKAGE=A

$\Gamma(\pi^+\pi^0)/\Gamma(K^0\pi^+)$ $\Gamma_{519}/\Gamma_{387}$

NODE=S041T25
NODE=S041T25

VALUE	DOCUMENT ID		TECN	COMMENT
0.285±0.02±0.02	LIN	07A	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

$\Gamma(\pi^+\pi^+\pi^-)/\Gamma(K^+K^-K^+)$ $\Gamma_{520}/\Gamma_{468}$

NODE=S041A19
NODE=S041A19

VALUE	DOCUMENT ID		TECN	COMMENT
0.488±0.005±0.009	AAIJ	20AJ	LHCB	pp at 7 and 8 TeV

$\Gamma(\pi^+\pi^+\pi^-)/\Gamma_{total}$ Γ_{520}/Γ

NODE=S041R36
NODE=S041R36

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
15.2±0.6$^{+1.3}_{-1.2}$		[1] AUBERT	09L	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
16.2±1.2±0.9		[1] AUBERT,B	05G	BABR	Repl. by AUBERT 09L
10.9±3.3±1.6		[1] AUBERT	03M	BABR	Repl. by AUBERT 05G
<130	90	[2] ADAM	96D	DLPH	$e^+e^- \rightarrow Z$
<220	90	[3] ABREU	95N	DLPH	Sup. by ADAM 96D
<450	90	[4] ALBRECHT	90B	ARG	$e^+e^- \rightarrow \Upsilon(4S)$
<190	90	[5] BORTOLETTO	89	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$; charm and charmonium contributions are subtracted, otherwise no assumptions about intermediate resonances. NODE=S041R36;LINKAGE=TM

[2] ADAM 96D assumes $f_{B^0} = f_{B^-} = 0.39$ and $f_{B_s} = 0.12$. NODE=S041R36;LINKAGE=DQ

[3] Assumes a B^0, B^- production fraction of 0.39 and a B_s production fraction of 0.12. NODE=S041R36;LINKAGE=SR

[4] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$. NODE=S041R36;LINKAGE=Q

[5] BORTOLETTO 89 reports $< 1.7 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S041R36;LINKAGE=A1

$\Gamma(\rho^0\pi^+)/\Gamma_{total}$ Γ_{521}/Γ

NODE=S041R4
NODE=S041R4

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
8.3±1.2 OUR AVERAGE					
8.1±0.7$^{+1.3}_{-1.6}$		[1] AUBERT	09L	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
8.0$^{+2.3}_{-2.0}$±0.7		[1] GORDON	02	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
10.4$^{+3.3}_{-3.4}$±2.1		[1] JESSOP	00	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
8.8±1.0$^{+0.6}_{-0.9}$		[1] AUBERT,B	05G	BABR	Repl. by AUBERT 09L
9.5±1.1±0.9		[1] AUBERT	04Z	BABR	Repl. by AUBERT 05G
< 83	90	[2] ABE	00C	SLD	$e^+e^- \rightarrow Z$
<160	90	[3] ADAM	96D	DLPH	$e^+e^- \rightarrow Z$
< 43	90	ASNER	96	CLE2	Repl. by JESSOP 00
<260	90	[4] ABREU	95N	DLPH	Sup. by ADAM 96D
<150	90	[1] ALBRECHT	90B	ARG	$e^+e^- \rightarrow \Upsilon(4S)$
<170	90	[5] BORTOLETTO	89	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$
<230	90	[5] BEBEK	87	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$
<600	90	GILES	84	CLEO	Repl. by BEBEK 87

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R4;LINKAGE=EP

[2] ABE 00C assumes B($Z \rightarrow b\overline{b}$)=(21.7 ± 0.1)% and the B fractions f_{B^0}=f_{B^+}=$(39.7^{+1.8}_{-2.2})$% and f_{B_s}=$(10.5^{+1.8}_{-2.2})$%. NODE=S041R4;LINKAGE=KQ

[3] ADAM 96D assumes $f_{B^0} = f_{B^-} = 0.39$ and $f_{B_s} = 0.12$. NODE=S041R4;LINKAGE=DQ

[4] Assumes a B^0, B^- production fraction of 0.39 and a B_s production fraction of 0.12. NODE=S041R4;LINKAGE=SR

[5] Papers assume the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S041R4;LINKAGE=A1

$\left[\Gamma(K^*(892)^0\pi^+) + \Gamma(\rho^0\pi^+)\right]/\Gamma_{total}$ $(\Gamma_{413}+\Gamma_{521})/\Gamma$

NODE=S041B8
NODE=S041B8

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$170^{+120}_{-80}\pm 20$	[1] ADAM	96D	DLPH	$e^+e^- \rightarrow Z$

[1] ADAM 96D assumes $f_{B^0} = f_{B^-} = 0.39$ and $f_{B_s} = 0.12$. NODE=S041B8;LINKAGE=DQ

$\Gamma(\pi^+ f_0(980),\ f_0 \rightarrow \pi^+\pi^-)/\Gamma_{total}$ Γ_{522}/Γ

NODE=S041R34
NODE=S041R34

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
< 1.5	90	[1] AUBERT	09L	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 3.0	90	[1] AUBERT,B	05G	BABR	Repl. by AUBERT 09L
<140	90	[2] BORTOLETTO	89	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R34;LINKAGE=EP

[2] BORTOLETTO 89 reports $< 1.2 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S041R34;LINKAGE=A1

$\Gamma(\pi^+ f_2(1270))/\Gamma_{total}$ Γ_{523}/Γ

NODE=S041R35
NODE=S041R35

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$2.2^{+0.7}_{-0.4}$ OUR AVERAGE					
$17.0 \pm 2.4 \pm 2.1$		[1] AAIJ	19AL	LHCB	pp at 7, 8 TeV
$1.60^{+0.67}_{-0.44}{}^{+0.02}_{-0.05}$		[2,3] AUBERT	09L	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$4.09 \pm 1.28^{+0.05}_{-0.14}$		[3,4] AUBERT,B	05G	BABR	Repl. by AUBERT 09L
<240	90	[5] BORTOLETTO	89	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$

OCCUR=2

[1] AAIJ 19AL reports $0.075 \pm 0.008 \pm 0.007$ fit fraction for $B^+ \rightarrow f_2(1270)\pi^+$ from the amplitude analysis of $B^\pm \rightarrow \pi^\pm K^+K^-$ decays. We use the PDG 19 value B($B^+ \rightarrow K^+K^-\pi^+$) = $(5.2 \pm 0.4) \times 10^{-6}$ to obtain B($B^+ \rightarrow f_2(1270)\pi^+$, $f_2(1270) \rightarrow K^+K^-$). We compute B($B^+ \rightarrow f_2(1270)\pi^+$) using 1/2 of PDG 19 value of B($f_2(1270) \rightarrow K\overline{K}$) = $(4.6^{+0.5}_{-0.4})$% for K^+K^- fraction. Our first error is the experiment's error and the second error is systematic error from using our best value. NODE=S041R35;LINKAGE=B

[2] AUBERT 09L reports $[\Gamma(B^+ \rightarrow \pi^+ f_2(1270))/\Gamma_{total}] \times [B(f_2(1270) \rightarrow \pi^+\pi^-)] = (0.9 \pm 0.2 \pm 0.1^{+0.3}_{-0.1}) \times 10^{-6}$ which we divide by our best value B($f_2(1270) \rightarrow \pi^+\pi^-$) = $(56.2^{+1.9}_{-0.6}) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041R35;LINKAGE=AB

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R35;LINKAGE=EP

[4] AUBERT,B 05G reports $[\Gamma(B^+ \rightarrow \pi^+ f_2(1270))/\Gamma_{total}] \times [B(f_2(1270) \rightarrow \pi^+\pi^-)] = (2.3 \pm 0.6 \pm 0.4) \times 10^{-6}$ which we divide by our best value B($f_2(1270) \rightarrow \pi^+\pi^-$) = $(56.2^{+1.9}_{-0.6}) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041R35;LINKAGE=AU

[5] BORTOLETTO 89 reports $< 2.1 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S041R35;LINKAGE=A1

$\Gamma(\rho(1450)^0\pi^+,\ \rho^0 \rightarrow \pi^+\pi^-)/\Gamma_{total}$ Γ_{524}/Γ

NODE=S041S01
NODE=S041S01

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$1.4 \pm 0.4^{+0.5}_{-0.8}$		[1] AUBERT	09L	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<2.3	90	[1] AUBERT,B	05G	BABR	Repl. by AUBERT 09L

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041S01;LINKAGE=EP

$\Gamma(f_0(1370)\pi^+,\ f_0 \to \pi^+\pi^-)/\Gamma_{total}$ — Γ_{526}/Γ

NODE=S041S02

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<4.0	90	[1] AUBERT	09L	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<3.0	90	[1] AUBERT,B	05G	BABR	Repl. by AUBERT 09L

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041S02;LINKAGE=EP

$\Gamma(f_0(1370)\pi^+,\ f_0 \to \pi^0\pi^0)/\Gamma_{total}$ — Γ_{527}/Γ

NODE=S041A74

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.1 \times 10^{-6}$	90	LAI	23	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(f_0(500)\pi^+,\ f_0 \to \pi^+\pi^-)/\Gamma_{total}$ — Γ_{528}/Γ

NODE=S041S03

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<4.1	90	[1] AUBERT,B	05G	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041S03;LINKAGE=EP

$\Gamma(\pi^+\pi^-\pi^+ \text{ nonresonant})/\Gamma_{total}$ — Γ_{529}/Γ

NODE=S041B2

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$5.3 \pm 0.7^{+1.3}_{-0.8}$		[1] AUBERT	09L	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 4.6	90	[1] AUBERT,B	05G	BABR	Repl. by AUBERT 09L
<41	90	BERGFELD	96B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B2;LINKAGE=EP

$\Gamma(\pi^+\pi^0\pi^0)/\Gamma_{total}$ — Γ_{530}/Γ

NODE=S041R40

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
$1.90 \pm 0.15 \pm 0.14$		LAI	23	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<89	90	[1] ALBRECHT	90B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$.

NODE=S041R40;LINKAGE=Q

$\Gamma(\rho^+\pi^0)/\Gamma_{total}$ — Γ_{531}/Γ

NODE=S041R41

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
$1.06^{+0.12}_{-0.13}$ OUR AVERAGE					
$1.12 \pm 0.11^{+0.12}_{-0.18}$		[1] LAI	23	BELL	$e^+e^- \to \Upsilon(4S)$
$1.02 \pm 0.14 \pm 0.09$		[2] AUBERT	07X	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$1.32 \pm 0.23^{+0.14}_{-0.19}$		[2] ZHANG	05A	BELL	Repl. by LAI 23
$1.09 \pm 0.19 \pm 0.19$		[2] AUBERT	04Z	BABR	Repl. by AUBERT 07X
< 4.3	90	[2,3] JESSOP	00	CLE2	$e^+e^- \to \Upsilon(4S)$
< 7.7	90	ASNER	96	CLE2	Repl. by JESSOP 00
<55	90	[2] ALBRECHT	90B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] The second uncertainty includes both systematics $((\pm 0.09) \times 10^{-5})$ and possible interference with $B^+ \to \rho(1450)^+\pi^0$ $((^{+0.08}_{-0.16}) \times 10^{-5})$.

NODE=S041R41;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041R41;LINKAGE=EP

[3] Assumes no nonresonant contributions of $B^+ \to \pi^+\pi^0\pi^0$.

NODE=S041R41;LINKAGE=JE

$\Gamma(\rho(1450)^+\pi^0,\ \rho^+ \to \pi^+\pi^0)/\Gamma_{total}$ — Γ_{532}/Γ

NODE=S041A73

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$1.2 \pm 0.6 \pm 0.2$	LAI	23	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\pi^+\pi^0\pi^0 \text{ nonresonant})/\Gamma_{total}$ — Γ_{533}/Γ

NODE=S041A83

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<6 \times 10^{-7}$	90	LAI	23	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(X\,pi+, X \to \pi^0\pi^0)/\Gamma_{total}$ — Γ_{534}/Γ

NODE=S041A84

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$6.9 \pm 0.9 \pm 0.6$	LAI	23	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\pi^+\pi^-\pi^+\pi^0)/\Gamma_{total}$ Γ_{535}/Γ

NODE=S041R42

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<4.0 \times 10^{-3}$	90	[1] ALBRECHT	90B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$. NODE=S041R42;LINKAGE=Q

$\Gamma(\rho^+\rho^0)/\Gamma_{total}$ Γ_{536}/Γ

NODE=S041R43

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
24.0±1.9 OUR AVERAGE					
$23.7\pm1.4\pm1.4$		[1] AUBERT	09G	BABR	$e^+e^- \to \Upsilon(4S)$
$31.7\pm7.1^{+3.8}_{-6.7}$		[1,2] ZHANG	03B	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$16.8\pm2.2\pm2.3$		[1] AUBERT,BE	06G	BABR	Repl. by AUBERT 09G
$22.5^{+5.7}_{-5.4}\pm5.8$		[1] AUBERT	03V	BABR	Repl. by AUBERT,BE 06G
<1000	90	[1] ALBRECHT	90B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R43;LINKAGE=EP

[2] The systematic error includes the error associated with the helicity-mix uncertainty. NODE=S041R43;LINKAGE=ZP

$\Gamma(\rho^+ f_0(980),\ f_0 \to \pi^+\pi^-)/\Gamma_{total}$ Γ_{537}/Γ

NODE=S041T18

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<2.0	90	[1] AUBERT	09G	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<1.9	90	[1] AUBERT,BE	06G	BABR	Repl. by AUBERT 09G

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T18;LINKAGE=EP

$\Gamma(a_1(1260)^+\pi^0)/\Gamma_{total}$ Γ_{538}/Γ

NODE=S041R44

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
26.4±5.4±4.1		[1,2] AUBERT	07BL	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<1700	90	[1] ALBRECHT	90B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R44;LINKAGE=EP

[2] Assumes a_1^+ decays only to 3π and B($a_1^+ \to \pi^\pm\pi^\mp\pi^+$) = 0.5. NODE=S041R44;LINKAGE=UB

$\Gamma(a_1(1260)^0\pi^+)/\Gamma_{total}$ Γ_{539}/Γ

NODE=S041R45

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
20.4±4.7±3.4		[1,2] AUBERT	07BL	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<900	90	[1] ALBRECHT	90B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R45;LINKAGE=EP

[2] Assumes a_1^0 decays only to 3π and B($a_1^+ \to \pi^\pm\pi^\mp\pi^0$) = 1.0. NODE=S041R45;LINKAGE=UB

$\Gamma(\omega\pi^+)/\Gamma_{total}$ Γ_{540}/Γ

NODE=S041R46

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
6.9±0.5 OUR AVERAGE					
$6.7\pm0.5\pm0.4$		[1] AUBERT	07AE	BABR	$e^+e^- \to \Upsilon(4S)$
$6.9\pm0.6\pm0.5$		[1] JEN	06	BELL	$e^+e^- \to \Upsilon(4S)$
$11.3^{+3.3}_{-2.9}\pm1.4$		[1] JESSOP	00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$6.1\pm0.7\pm0.4$		[1] AUBERT,B	06E	BABR	Repl. by AUBERT 07AE
$5.5\pm0.9\pm0.5$		[1] AUBERT	04H	BABR	Repl. by AUBERT,B 06E
$5.7^{+1.4}_{-1.3}\pm0.6$		[1] WANG	04A	BELL	Repl. by JEN 06
$4.2^{+2.0}_{-1.8}\pm0.5$		[1] LU	02	BELL	Repl. by WANG 04A
$6.6^{+2.1}_{-1.8}\pm0.7$		[1] AUBERT	01G	BABR	Repl. by AUBERT 04H
<23	90	[1] BERGFELD	98	CLE2	Repl. by JESSOP 00
<400	90	[1] ALBRECHT	90B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R46;LINKAGE=EP

$\Gamma(\omega\rho^+)/\Gamma_{total}$ — Γ_{541}/Γ

NODE=S041B27
NODE=S041B27

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
15.9±1.6±1.4		[1] AUBERT	09H	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$10.6\pm2.1^{+1.6}_{-1.0}$		[1] AUBERT,B	06T	BABR	Repl. by AUBERT 09H
$12.6^{+3.7}_{-3.3}\pm1.6$		[1] AUBERT	05O	BABR	Repl. by AUBERT,B 06T
<61	90	[1] BERGFELD	98	CLE2	

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B27;LINKAGE=EP

$\Gamma(\eta\pi^+)/\Gamma_{total}$ — Γ_{542}/Γ

NODE=S041R47
NODE=S041R47

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
4.02±0.27 OUR AVERAGE					
4.07±0.26±0.21		[1] HOI	12	BELL	$e^+e^- \to \Upsilon(4S)$
4.00±0.40±0.24		[1] AUBERT	09AV	BABR	$e^+e^- \to \Upsilon(4S)$
$1.2\ ^{+2.8}_{-1.2}$		[1] RICHICHI	00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
5.0 ±0.5 ±0.3		[1] AUBERT	07AE	BABR	Repl. by AUBERT 09AV
4.2 ±0.4 ±0.2		[1] CHANG	07B	BELL	Repl. by HOI 12
5.1 ±0.6 ±0.3		[1] AUBERT,B	05K	BABR	Repl. by AUBERT 07AE
4.8 ±0.7 ±0.3		[1] CHANG	05A	BELL	Repl. by CHANG 07B
5.3 ±1.0 ±0.3		[1] AUBERT	04H	BABR	Repl. by AUBERT,B 05K
< 15	90	BEHRENS	98	CLE2	Repl. by RICHICHI 00
<700	90	[1] ALBRECHT	90B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041R47;LINKAGE=EP

$\Gamma(\eta\rho^+)/\Gamma_{total}$ — Γ_{543}/Γ

NODE=S041B23
NODE=S041B23

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
7.0±2.9 OUR AVERAGE Error includes scale factor of 2.8.					
9.9±1.2±0.8		[1] AUBERT	08AH	BABR	$e^+e^- \to \Upsilon(4S)$
$4.1^{+1.4}_{-1.3}\pm0.4$		[1] WANG	07B	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
8.4±1.9±1.1		[1] AUBERT,B	05K	BABR	Repl. by AUBERT 08AH
<14	90	[1] AUBERT,B	04D	BABR	Repl. by AUBERT,B 05K
<15	90	[1] RICHICHI	00	CLE2	$e^+e^- \to \Upsilon(4S)$
<32	90	BEHRENS	98	CLE2	Repl. by RICHICHI 00

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B23;LINKAGE=EP

$\Gamma(\eta'\pi^+)/\Gamma_{total}$ — Γ_{544}/Γ

NODE=S041B18
NODE=S041B18

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
2.7 ±0.9 OUR AVERAGE Error includes scale factor of 1.9.					
3.5 ±0.6 ±0.2		[1] AUBERT	09AV	BABR	$e^+e^- \to \Upsilon(4S)$
$1.76^{+0.67}_{-0.62}{}^{+0.15}_{-0.14}$		[1] SCHUEMANN	06	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
3.9 ±0.7 ±0.3		[1] AUBERT	07AE	BABR	Repl. by AUBERT 09AV
4.0 ±0.8 ±0.4		[1] AUBERT,B	05K	BABR	Repl. by AUBERT 07AE
< 4.5	90	[1] AUBERT	04H	BABR	Repl. by AUBERT,B 05K
< 7.0	90	[1] ABE	01M	BELL	$e^+e^- \to \Upsilon(4S)$
<12	90	[1] AUBERT	01G	BABR	$e^+e^- \to \Upsilon(4S)$
<12	90	[1] RICHICHI	00	CLE2	$e^+e^- \to \Upsilon(4S)$
<31	90	BEHRENS	98	CLE2	Repl. by RICHICHI 00

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B18;LINKAGE=EP

$\Gamma(\eta'\rho^+)/\Gamma_{total}$ — Γ_{545}/Γ

NODE=S041B19
NODE=S041B19

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{9.7^{+1.9}_{-1.8}\pm1.1}$		[1] DEL-AMO-SA..10A		BABR	$e^+e^- \to \Upsilon(4S)$

• • • We do not use the following data for averages, fits, limits, etc. • • •

$8.7^{+3.1}_{-2.8}{}^{+2.3}_{-1.3}$		[1] AUBERT	07E	BABR	Repl. by DEL-AMO-SANCHEZ 10A
< 5.8	90	[1] SCHUEMANN	07	BELL	$e^+ e^- \to \Upsilon(4S)$
<22	90	[1] AUBERT,B	04D	BABR	Repl. by AUBERT 07E
<33	90	[1] RICHICHI	00	CLE2	$e^+ e^- \to \Upsilon(4S)$
<47	90	BEHRENS	98	CLE2	Repl. by RICHICHI 00

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B19;LINKAGE=EP

$\Gamma(\phi\pi^+)/\Gamma_{total}$ Γ_{546}/Γ

NODE=S041B28
NODE=S041B28

VALUE (units 10^{-8})	CL%	DOCUMENT ID		TECN	COMMENT
3.2±1.5±0.3		[1] AAIJ	19AL	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 15	90	[2] AAIJ	14A	LHCB	Repl. by AAIJ 19AL
< 33	90	[3] KIM	12A	BELL	$e^+ e^- \to \Upsilon(4S)$
< 24	90	[3] AUBERT,B	06C	BABR	$e^+ e^- \to \Upsilon(4S)$
< 41	90	[3] AUBERT	04A	BABR	Repl. by AUBERT,B 06C
< 140	90	[3] AUBERT	01D	BABR	$e^+ e^- \to \Upsilon(4S)$
<15300	90	[4] ABE	00C	SLD	$e^+ e^- \to Z$
< 500	90	[3] BERGFELD	98	CLE2	

[1] AAIJ 19AL reports $(0.3 \pm 0.1 \pm 0.1) \times 10^{-2}$ fit fraction for $B^+ \to \phi(1020)\pi^+$ from the amplitude analysis of $B^\pm \to \pi^\pm K^+ K^-$ decays. We use the PDG 19 value $B(B^+ \to K^+ K^- \pi^+) = (5.2 \pm 0.4) \times 10^{-6}$ to obtain $B(B^+ \to \phi(1020)\pi^+, \phi(1020) \to K^+ K^-)$. We compute $B(B^+ \to \phi(1020)\pi^+)$ using the PDG 19 value of $B(\phi(1020) \to K^+ K^-) = (49.2 \pm 0.5)\%$. Our first error is the experiment's error and the second error is systematic error from using our best value. NODE=S041B28;LINKAGE=B

[2] Measures $B(B^+ \to \phi\pi^+)/B(B^+ \to \phi K^+) < 0.018$ at 90% C.L. and assumes $B(B^+ \to \phi K^+) = (8.8^{+0.7}_{-0.6}) \times 10^{-6}$. NODE=S041B28;LINKAGE=A

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B28;LINKAGE=EP

[4] ABE 00C assumes $B(Z \to b\overline{b})=(21.7 \pm 0.1)\%$ and the B fractions $f_{B^0}=f_{B^+}=(39.7^{+1.8}_{-2.2})\%$ and $f_{B_s}=(10.5^{+1.8}_{-2.2})\%$. NODE=S041B28;LINKAGE=KQ

$\Gamma(\phi\rho^+)/\Gamma_{total}$ Γ_{547}/Γ

NODE=S041B29
NODE=S041B29

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
< 3.0	90	[1] AUBERT	08BK	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<16		[1] BERGFELD	98	CLE2	

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B29;LINKAGE=EP

$\Gamma(a_0(980)^0\pi^+,\ a_0^0 \to \eta\pi^0)/\Gamma_{total}$ Γ_{548}/Γ

NODE=S041RA4
NODE=S041RA4

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<5.8	90	[1] AUBERT,BE	04	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of charged and neutral B mesons from $\Upsilon(4S)$ decays. NODE=S041RA4;LINKAGE=EP

$\Gamma(a_0(980)^+\pi^0,\ a_0^+ \to \eta\pi^+)/\Gamma_{total}$ Γ_{549}/Γ

NODE=S041T24
NODE=S041T24

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<1.4	90	[1] AUBERT	08A	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T24;LINKAGE=EP

$\Gamma(\pi^+\pi^+\pi^+\pi^-\pi^-)/\Gamma_{total}$ Γ_{550}/Γ

NODE=S041R48
NODE=S041R48

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<8.6 × 10⁻⁴	90	[1] ALBRECHT	90B	ARG	$e^+ e^- \to \Upsilon(4S)$

[1] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$. NODE=S041R48;LINKAGE=Q

$\Gamma(\rho^0 a_1(1260)^+)/\Gamma_{total}$ Γ_{551}/Γ

NODE=S041R17
NODE=S041R17

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<6.2 \times 10^{-4}$	90	[1] BORTOLETTO	89	CLEO	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<6.0 \times 10^{-4}$	90	[2] ALBRECHT	90B	ARG	$e^+ e^- \to \Upsilon(4S)$
$<3.2 \times 10^{-3}$	90	[1] BEBEK	87	CLEO	$e^+ e^- \to \Upsilon(4S)$

[1] BORTOLETTO 89 reports $< 5.4 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S041R17;LINKAGE=A1

[2] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$. NODE=S041R17;LINKAGE=Q

$\Gamma(\rho^0 a_2(1320)^+)/\Gamma_{total}$ — Γ_{552}/Γ

NODE=S041R18

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<7.2 × 10⁻⁴	90	[1] BORTOLETTO	89	CLEO	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<2.6 \times 10^{-3}$	90	[2] BEBEK	87	CLEO	$e^+ e^- \to \Upsilon(4S)$

[1] BORTOLETTO 89 reports $< 6.3 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0 \overline{B}^0$. We rescale to 50%.

[2] BEBEK 87reports $< 2.3 \times 10^{-3}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0 \overline{B}^0$. We rescale to 50%.

NODE=S041R18;LINKAGE=A1

NODE=S041R18;LINKAGE=B

$\Gamma(b_1^0 \pi^+,\ b_1^0 \to \omega \pi^0)/\Gamma_{total}$ — Γ_{553}/Γ

NODE=S041T27

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
6.7±1.7±1.0	[1] AUBERT	07BI	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T27;LINKAGE=EP

$\Gamma(b_1^+ \pi^0,\ b_1^+ \to \omega \pi^+)/\Gamma_{total}$ — Γ_{554}/Γ

NODE=S041T35

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<3.3	90	[1] AUBERT	08AG	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T35;LINKAGE=EP

$\Gamma(\pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^0)/\Gamma_{total}$ — Γ_{555}/Γ

NODE=S041R50

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<6.3 × 10⁻³	90	[1] ALBRECHT	90B	ARG	$e^+ e^- \to \Upsilon(4S)$

[1] ALBRECHT 90B limit assumes equal production of $B^0 \overline{B}^0$ and $B^+ B^-$ at $\Upsilon(4S)$.

NODE=S041R50;LINKAGE=Q

$\Gamma(b_1^+ \rho^0,\ b_1^+ \to \omega \pi^+)/\Gamma_{total}$ — Γ_{556}/Γ

NODE=S041T58

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<5.2 × 10⁻⁶	90	[1] AUBERT	09AF	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T58;LINKAGE=EP

$\Gamma(b_1^0 \rho^+,\ b_1^0 \to \omega \pi^0)/\Gamma_{total}$ — Γ_{558}/Γ

NODE=S041T59

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<3.3 × 10⁻⁶	90	[1] AUBERT	09AF	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T59;LINKAGE=EP

$\Gamma(a_1(1260)^+ a_1(1260)^0)/\Gamma_{total}$ — Γ_{557}/Γ

NODE=S041R51

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.3 × 10⁻²	90	[1] ALBRECHT	90B	ARG	$e^+ e^- \to \Upsilon(4S)$

[1] ALBRECHT 90B limit assumes equal production of $B^0 \overline{B}^0$ and $B^+ B^-$ at $\Upsilon(4S)$.

NODE=S041R51;LINKAGE=Q

$\Gamma(h^+ \pi^0)/\Gamma_{total}$ — Γ_{559}/Γ

NODE=S041B17

$h^+ = K^+$ or π^+

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$\mathbf{16^{+6}_{-5}\pm3.6}$	GODANG	98	CLE2	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(\omega h^+)/\Gamma_{total}$ — Γ_{560}/Γ

NODE=S041B30

$h^+ = K^+$ or π^+

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$\mathbf{13.8^{+2.7}_{-2.4}}$ **OUR AVERAGE**				
$13.4^{+3.3}_{-2.9}\pm1.1$	[1] LU	02	BELL	$e^+ e^- \to \Upsilon(4S)$
$14.3^{+3.6}_{-3.2}\pm2.0$	[1] JESSOP	00	CLE2	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$25\ ^{+8}_{-7}\ \pm3$	[1] BERGFELD	98	CLE2	Repl. by JESSOP 00

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B30;LINKAGE=EP

$\Gamma(h^+ X^0(\text{Familon}))/\Gamma_{total}$ — Γ_{561}/Γ

NODE=S041B56

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<49	90	[1] AMMAR	01B	CLE2	$e^+ e^- \to \Upsilon(4S)$

[1] AMMAR 01B searched for the two-body decay of the B meson to a massless neutral feebly-interacting particle X^0 such as the familon, the Nambu-Goldstone boson associated with a spontaneously broken global family symmetry.

NODE=S041B56;LINKAGE=A

$\Gamma(K^+ X^0,\ X^0 \to \mu^+\mu^-)/\Gamma_{total}$ — Γ_{562}/Γ

NODE=S041P46

X^0 stands here for a long-lived scalar particle.

NODE=S041P46
NODE=S041P46

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1 \times 10^{-7}$	95	[1] AAIJ	17AQ	LHCB	pp at 7, 8 TeV

[1] AAIJ 17AQ searched for a long-lived scalar particle $X^0 \to \mu^+\mu^-$ in the mass range 250–4700 MeV and lifetime range 0.1–1000 ps. The limit is between 10^{-7} and 2×10^{-10} in these ranges except in vetoed mass regions around K^0_S, J/ψ, $\psi(2S)$, and $\psi(3770)$.

NODE=S041P46;LINKAGE=A

$\Gamma(p\overline{p}\pi^+)/\Gamma_{total}$ — Γ_{563}/Γ

NODE=S041R21
NODE=S041R21

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
1.62±0.20 OUR AVERAGE					
$1.60^{+0.22}_{-0.19}\pm0.12$		[1,2,3] WEI	08	BELL	$e^+e^- \to \Upsilon(4S)$
$1.69\pm0.29\pm0.26$		[1] AUBERT	07AV	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$1.07\pm0.11\pm0.11$		[4] AAIJ	14AF	LHCB	pp at 7, 8 TeV
$3.06^{+0.73}_{-0.62}\pm0.37$		[1,3] WANG	04	BELL	Repl. by WEI 08
<3.7	90	[1,2] ABE	02K	BELL	Repl. by WANG 04
<500	90	[5] ABREU	95N	DLPH	Repl. by ADAM 96D
<160	90	[6] BEBEK	89	CLEO	$e^+e^- \to \Upsilon(4S)$
$570\pm150\pm210$		[7] ALBRECHT	88F	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R21;LINKAGE=EP

[2] Explicitly vetoes resonant production of $p\overline{p}$ from Charmonium states. NODE=S041R21;LINKAGE=EZ

[3] Also provides results with $m_{p\overline{p}} < 2.85$ GeV/c^2 and angular asymmetry of $p\overline{p}$ system. NODE=S041R21;LINKAGE=WN

[4] Requires $m_{p\overline{p}} < 2.85$ GeV/c^2. NODE=S041R21;LINKAGE=AA

[5] Assumes a B^0, B^- production fraction of 0.39 and a B_s production fraction of 0.12. NODE=S041R21;LINKAGE=SR

[6] BEBEK 89 reports $< 1.4\times10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S041R21;LINKAGE=A1

[7] ALBRECHT 88F reports $(5.2 \pm 1.4 \pm 1.9) \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S041R21;LINKAGE=B

$\Gamma(p\overline{p}\pi^+ \text{ nonresonant})/\Gamma_{total}$ — Γ_{564}/Γ

NODE=S041B6
NODE=S041B6

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<53	90	BERGFELD	96B	CLE2	$e^+e^- \to \Upsilon(4S)$

$\Gamma(p\overline{p}\pi^+\pi^0)/\Gamma_{total}$ — Γ_{565}/Γ

NODE=S041P84
NODE=S041P84

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
4.58±1.17±0.67	[1] CHU	20	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^0 and B^+ from $\Upsilon(4S)$ decays. This measurement is quoted for M($\pi^+\pi^0$) < 1.3 GeV. NODE=S041P84;LINKAGE=A

$\Gamma(p\overline{p}\pi^+\pi^+\pi^-)/\Gamma_{total}$ — Γ_{566}/Γ

NODE=S041R22
NODE=S041R22

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<5.2\times10^{-4}$	90	[1] ALBRECHT	88F	ARG	$e^+e^- \to \Upsilon(4S)$

[1] ALBRECHT 88F reports $< 4.7 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S041R22;LINKAGE=B

$\Gamma(p\overline{p}K^+)/\Gamma_{total}$ — Γ_{567}/Γ

NODE=S041B90
NODE=S041B90

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
5.9 ±0.5 OUR AVERAGE Error includes scale factor of 1.5.				
$5.54^{+0.27}_{-0.25}\pm0.36$	[1,2,3] WEI	08	BELL	$e^+e^- \to \Upsilon(4S)$
$6.7\pm0.5\pm0.4$	[1,3] AUBERT,B	05L	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$4.59^{+0.38}_{-0.34}\pm0.50$	[1,2,3] WANG	05A	BELL	Repl. by WEI 08
$5.66^{+0.67}_{-0.57}\pm0.62$	[1,2,3] WANG	04	BELL	Repl. by WANG 05A
$4.3^{+1.1}_{-0.9}\pm0.5$	[1,2] ABE	02K	BELL	Repl. by WANG 04

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B90;LINKAGE=EP

[2] Explicitly vetoes resonant production of $p\overline{p}$ from Charmonium states. NODE=S041B90;LINKAGE=EZ

[3] Provides also results with $m_{p\overline{p}} < 2.85$ GeV/c^2 and angular asymmetry of $p\overline{p}$ system. NODE=S041B90;LINKAGE=WN

$\Gamma(p\overline{p}K^+)/\Gamma(J/\psi(1S)K^+)$ $\Gamma_{567}/\Gamma_{311}$

NODE=S041BA1
NODE=S041BA1

VALUE	DOCUMENT ID		TECN	COMMENT
0.0104±0.0005±0.0001	[1,2] AAIJ	13S	LHCB	pp at 7 TeV

[1] AAIJ 13S reports $[\Gamma(B^+ \to p\overline{p}K^+)/\Gamma(B^+ \to J/\psi(1S)K^+)]$ / $[B(J/\psi(1S) \to p\overline{p})] = 4.91 \pm 0.19 \pm 0.14$ which we multiply by our best value $B(J/\psi(1S) \to p\overline{p}) = (2.120 \pm 0.029) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041BA1;LINKAGE=AA

[2] Measurement includes contribution where $p\overline{p}$ is produced in charmonia decays. NODE=S041BA1;LINKAGE=AB

$\Gamma(\Theta(1710)^{++}\overline{p},\ \Theta^{++} \to pK^+)/\Gamma_{total}$ Γ_{568}/Γ

NODE=S041Q50
NODE=S041Q50

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.091	90	[1] WANG	05A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.1	90	[1,2] AUBERT,B	05L	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q50;LINKAGE=EP

[2] Provides upper limits depending on the pentaquark masses between 1.43 to 2.0 GeV/c^2. NODE=S041Q50;LINKAGE=AU

$\Gamma(f_J(2220)K^+,\ f_J \to p\overline{p})/\Gamma_{total}$ Γ_{569}/Γ

NODE=S041Q51
NODE=S041Q51

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.41	90	[1] WANG	05A	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q51;LINKAGE=EP

$\Gamma(p\overline{n}\pi^0)/\Gamma_{total}$ Γ_{570}/Γ

NODE=S041D20
NODE=S041D20

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<6.3 \times 10^{-6}$	90	CHU	23	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(p\overline{\Lambda}(1520))/\Gamma_{total}$ Γ_{571}/Γ

NODE=S041Q46
NODE=S041Q46

VALUE (units 10^{-7})	CL%	DOCUMENT ID		TECN	COMMENT
3.15±0.48±0.27		[1] AAIJ	14AF	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$3.9\ ^{+1.0}_{-0.9} \pm 0.3$		[1] AAIJ	13AU	LHCB	Repl. by AAIJ 14AF
<15	90	[2] AUBERT,B	05L	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses $B(B^+ \to J/\psi K^+) = (1.016 \pm 0.033) \times 10^{-3}$, $B(J/\psi \to p\overline{p}) = (2.17 \pm 0.07) \times 10^{-3}$ and $B(\Lambda(1520) \to K^- p) = 0.234 \pm 0.016$. NODE=S041Q46;LINKAGE=AA

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q46;LINKAGE=EP

$\Gamma(p\overline{p}K^+\ \text{nonresonant})/\Gamma_{total}$ Γ_{572}/Γ

NODE=S041B7
NODE=S041B7

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<89	90	BERGFELD	96B	CLE2	$e^+e^- \to \Upsilon(4S)$

$\Gamma(p\overline{p}K^*(892)^+)/\Gamma_{total}$ Γ_{573}/Γ

NODE=S041Q07
NODE=S041Q07

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$3.6\ ^{+0.8}_{-0.7}$ OUR AVERAGE				
$3.38^{+0.73}_{-0.60} \pm 0.39$	[1,2] CHEN	08C	BELL	$e^+e^- \to \Upsilon(4S)$
$5.3 \pm 1.5 \pm 1.3$	[2] AUBERT	07AV	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$10.3\ ^{+3.6}_{-2.8}\ ^{+1.3}_{-1.7}$	[2,3] WANG	04	BELL	Repl. by CHEN 08C

[1] Explicitly vetoes resonant production of $p\overline{p}$ from charmonium states. NODE=S041Q07;LINKAGE=CH

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q07;LINKAGE=EP

[3] Explicitly vetoes resonant production of $p\overline{p}$ from charmonium states. The branching fraction for $M_{p\overline{p}} < 2.85$ GeV/c^2 is also reported. NODE=S041Q07;LINKAGE=WN

$\Gamma(f_J(2220)K^{*+},\ f_J \to p\overline{p})/\Gamma_{total}$ Γ_{574}/Γ

NODE=S041Q97
NODE=S041Q97

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.77	90	[1] AUBERT	07AV	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041Q97;LINKAGE=EP

$\Gamma(p\overline{\Lambda})/\Gamma_{total}$ Γ_{575}/Γ

NODE=S041R23
NODE=S041R23

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.24^{+0.10}_{-0.08}\pm0.03}$		[1] AAIJ	17R	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.32	90	[2] TSAI	07	BELL	$e^+e^- \to \Upsilon(4S)$
<0.49	90	[2] CHANG	05	BELL	Repl. by TSAI 07
<1.5	90	[2] BORNHEIM	03	CLE2	$e^+e^- \to \Upsilon(4S)$
<2.2	90	[2] ABE	02O	BELL	$e^+e^- \to \Upsilon(4S)$
<2.6	90	[2] COAN	99	CLE2	$e^+e^- \to \Upsilon(4S)$
<60	90	[3] AVERY	89B	CLEO	$e^+e^- \to \Upsilon(4S)$
<93	90	[4] ALBRECHT	88F	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Statistical significance of the signal is 4.1 standard deviations where the the normalisation is based on $B(B^+ \to K^0_S\pi^+) = (11.895 \pm 0.375) \times 10^{-06}$. NODE=S041R23;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R23;LINKAGE=EP

[3] AVERY 89B reports $< 5\times10^{-5}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S041R23;LINKAGE=A1

[4] ALBRECHT 88F reports $< 8.5\times10^{-5}$ assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S041R23;LINKAGE=B

$\Gamma(p\overline{\Lambda}\gamma)/\Gamma_{total}$ Γ_{576}/Γ

NODE=S041B99
NODE=S041B99

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{2.45^{+0.44}_{-0.38}\pm0.22}$		[1] WANG	07C	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$2.16^{+0.58}_{-0.53}\pm0.20$		[1] LEE	05	BELL	Repl. by WANG 07C
<3.9	90	[2] EDWARDS	03	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B99;LINKAGE=EP

[2] Corresponds to $E_\gamma > 1.5$ GeV. The limit changes to 3.3×10^{-6} for $E_\gamma > 2.0$ GeV. NODE=S041B99;LINKAGE=A

$\Gamma(p\overline{\Lambda}\pi^0)/\Gamma_{total}$ Γ_{577}/Γ

NODE=S041T30
NODE=S041T30

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$\mathbf{3.00^{+0.61}_{-0.53}\pm0.33}$	[1] WANG	07C	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T30;LINKAGE=EP

$\Gamma(p\overline{\Sigma}(1385)^0)/\Gamma_{total}$ Γ_{578}/Γ

NODE=S041T31
NODE=S041T31

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.47	90	[1] WANG	07C	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T31;LINKAGE=EP

$\Gamma(\Delta^+\overline{\Lambda})/\Gamma_{total}$ Γ_{579}/Γ

NODE=S041T32
NODE=S041T32

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.82	90	[1] WANG	07C	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T32;LINKAGE=EP

$\Gamma(p\overline{\Sigma}\gamma)/\Gamma_{total}$ Γ_{580}/Γ

NODE=S041B00
NODE=S041B00

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<4.6	90	[1] LEE	05	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<7.9	90	[2] EDWARDS	03	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B00;LINKAGE=EP

[2] Corresponds to $E_\gamma > 1.5$ GeV. The limit changes to 6.4×10^{-6} for $E_\gamma > 2.0$ GeV. NODE=S041B00;LINKAGE=A

$\Gamma(p\overline{\Lambda}\pi^+\pi^-)/\Gamma_{total}$ Γ_{581}/Γ

NODE=S041R24
NODE=S041R24

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{11.28^{+0.91}_{-0.72}\pm1.03}$		[1] CHEN	09C	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<200	90	[2] ALBRECHT	88F	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R24;LINKAGE=EP

[2] ALBRECHT 88F reports $< 1.8\times10^{-4}$ assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S041R24;LINKAGE=B

$\Gamma(p\overline{\Lambda}\pi^+\pi^-$ nonresonant$)/\Gamma_{total}$ — Γ_{582}/Γ

NODE=S041P61

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$\mathbf{5.92^{+0.88}_{-0.84}\pm0.69}$	[1] CHEN	09C	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041P61;LINKAGE=A

$\Gamma(p\overline{\Lambda}\rho^0,\ \rho^0\to\pi^+\pi^-)/\Gamma_{total}$ — Γ_{583}/Γ

NODE=S041T60

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$\mathbf{4.78^{+0.67}_{-0.64}\pm0.60}$	[1] CHEN	09C	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T60;LINKAGE=EP

$\Gamma(p\overline{\Lambda}f_2(1270),\ f_2\to\pi^+\pi^-)/\Gamma_{total}$ — Γ_{584}/Γ

NODE=S041T61

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$\mathbf{2.03^{+0.77}_{-0.72}\pm0.27}$	[1] CHEN	09C	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T61;LINKAGE=EP

$\Gamma(p\overline{\Lambda}K^+K^-)/\Gamma_{total}$ — Γ_{585}/Γ

NODE=S041P54

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$\mathbf{4.10^{+0.45}_{-0.43}\pm0.50}$	[1] LU	19	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041P54;LINKAGE=A

$\Gamma(p\overline{\Lambda}\phi)/\Gamma_{total}$ — Γ_{586}/Γ

NODE=S041P55

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.795\pm0.209\pm0.077}$	[1] LU	19	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041P55;LINKAGE=A

$\Gamma(\overline{p}\Lambda K^+K^-)/\Gamma_{total}$ — Γ_{587}/Γ

NODE=S041P56

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$\mathbf{3.70^{+0.39}_{-0.37}\pm0.44}$	[1] LU	19	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041P56;LINKAGE=A

$\Gamma(\Lambda\overline{\Lambda}\pi^+)/\Gamma_{total}$ — Γ_{588}/Γ

NODE=S041Q10

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.94	90	[1,2] CHANG	09	BELL	Repl. by CHANG 09
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<2.8	90	[2] LEE	04	BELL	$e^+e^- \to \Upsilon(4S)$

[1] For $m_{\Lambda\overline{\Lambda}} < 2.85$ GeV/c^2.

NODE=S041Q10;LINKAGE=CH

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041Q10;LINKAGE=EP

$\Gamma(\Lambda\overline{\Lambda}K^+)/\Gamma_{total}$ — Γ_{589}/Γ

NODE=S041Q11

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$\mathbf{3.38^{+0.41}_{-0.36}\pm0.41}$	[1,2] CHANG	09	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$2.91^{+0.9}_{-0.70}\pm0.38$	[2] LEE	04	BELL	Repl. by CHANG 09

[1] Excluding charmonium events in $2.85 < m_{\Lambda\overline{\Lambda}} < 3.128$ GeV/c^2 and $3.315 < m_{\Lambda\overline{\Lambda}} < 3.735$ GeV/c^2. Measurements in various $m_{\Lambda\overline{\Lambda}}$ bins are also reported.

NODE=S041Q11;LINKAGE=CH

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041Q11;LINKAGE=EP

$\Gamma(\Lambda\overline{\Lambda}K^{*+})/\Gamma_{total}$ — Γ_{590}/Γ

NODE=S041C61

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$\mathbf{2.19^{+1.13}_{-0.88}\pm0.33}$	[1,2] CHANG	09	BELL	$e^+e^- \to \Upsilon(4S)$

[1] For $m_{\Lambda\overline{\Lambda}} < 2.85$ GeV/c^2.

NODE=S041C61;LINKAGE=CH

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C61;LINKAGE=EP

$\Gamma(\Lambda(1520)\overline{\Lambda}K^+)/\Gamma_{total}$ Γ_{591}/Γ

NODE=S041P57
NODE=S041P57

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
2.23±0.63±0.25	[1] LU	19	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041P57;LINKAGE=A

$\Gamma(\Lambda\overline{\Lambda}(1520)K^+)/\Gamma_{total}$ Γ_{592}/Γ

NODE=S041P58
NODE=S041P58

VALUE	DOCUMENT ID		TECN	COMMENT
<2.08 × 10^{-6}	[1] LU	19	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041P58;LINKAGE=A

$\Gamma(\overline{\Delta}^0 p)/\Gamma_{total}$ Γ_{593}/Γ

NODE=S041R37
NODE=S041R37

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
< 1.38	90	[1] WEI	08	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<380	90	[2] BORTOLETTO	89	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] BORTOLETTO 89 reports $< 3.3 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.

NODE=S041R37;LINKAGE=EP
NODE=S041R37;LINKAGE=A1

$\Gamma(\Delta^{++}\overline{p})/\Gamma_{total}$ Γ_{594}/Γ

NODE=S041R38
NODE=S041R38

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
< 0.14	90	[1] WEI	08	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<150	90	[2] BORTOLETTO	89	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] BORTOLETTO 89 reports $< 1.3 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.

NODE=S041R38;LINKAGE=EP
NODE=S041R38;LINKAGE=A1

$\Gamma(D^+ p\overline{p})/\Gamma_{total}$ Γ_{595}/Γ

NODE=S041B80
NODE=S041B80

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.5 × 10^{-5}	90	[1] ABE	02W	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B80;LINKAGE=EP

$\Gamma(D^*(2010)^+ p\overline{p})/\Gamma_{total}$ Γ_{596}/Γ

NODE=S041B81
NODE=S041B81

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.5 × 10^{-5}	90	[1] ABE	02W	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B81;LINKAGE=EP

$\Gamma(\overline{D}^0 p\overline{p}\pi^+)/\Gamma_{total}$ Γ_{597}/Γ

NODE=S041C22
NODE=S041C22

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
3.72±0.11±0.25	[1,2] DEL-AMO-SA...	12	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses the values of D and D^* branching fractions from PDG 08.
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C22;LINKAGE=DA
NODE=S041C22;LINKAGE=EP

$\Gamma(\overline{D}^{*0} p\overline{p}\pi^+)/\Gamma_{total}$ Γ_{598}/Γ

NODE=S041C23
NODE=S041C23

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
3.73±0.17±0.27	[1,2] DEL-AMO-SA...	12	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses the values of D and D^* branching fractions from PDG 08.
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C23;LINKAGE=DA
NODE=S041C23;LINKAGE=EP

$\Gamma(D^- p\overline{p}\pi^+\pi^-)/\Gamma_{total}$ Γ_{599}/Γ

NODE=S041C24
NODE=S041C24

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
1.66±0.13±0.27	[1,2] DEL-AMO-SA...	12	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses the values of D and D^* branching fractions from PDG 08.
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C24;LINKAGE=DA
NODE=S041C24;LINKAGE=EP

$\Gamma(D^{*-} p\overline{p}\pi^+\pi^-)/\Gamma_{total}$ Γ_{600}/Γ

NODE=S041C25
NODE=S041C25

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
1.86±0.16±0.19	[1,2] DEL-AMO-SA...	12	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses the values of D and D^* branching fractions from PDG 08.
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041C25;LINKAGE=DA
NODE=S041C25;LINKAGE=EP

$\Gamma(p \overline{\Lambda}^0 \overline{D}^0)/\Gamma_{total}$ Γ_{601}/Γ

NODE=S041T72

VALUE (units 10^{-5})	DOCUMENT ID	TECN	COMMENT
$1.43^{+0.28}_{-0.25}\pm 0.18$	[1,2] CHEN 11F	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Uses B($\Lambda \to p\pi^-$) = 63.9 ± 0.5%, B($D^0 \to K^-\pi^+$) = 3.89 ± 0.05%, and B($D^0 \to K^-\pi^+\pi^0$) = 13.9 ± 0.5%. NODE=S041T72;LINKAGE=CH

[2] Assumes equal production of B^0 and B^+ from Upsilon(4S) decays. NODE=S041T72;LINKAGE=EP

$\Gamma(p \overline{\Lambda}^0 \overline{D}^*(2007)^0)/\Gamma_{total}$ Γ_{602}/Γ

NODE=S041T73

VALUE (units 10^{-5})	CL%	DOCUMENT ID	TECN	COMMENT
<5	90	[1,2,3] CHEN 11F	BELL	$e^+e^- \to \Upsilon(4S)$

[1] CHEN 11F reports $< 4.8\times10^{-5}$ from a measurement of [$\Gamma(B^+ \to p\overline{\Lambda}^0\overline{D}^*(2007)^0)/\Gamma_{total}$] / [B($D^*(2007)^0 \to D^0\pi^0$)] assuming B($D^*(2007)^0 \to D^0\pi^0$) = $(61.9\pm2.9)\times10^{-2}$, which we rescale to our best value B($D^*(2007)^0 \to D^0\pi^0$) = 64.7×10^{-2}. NODE=S041T73;LINKAGE=CE

[2] Uses B($\Lambda \to p\pi^-$) = 63.9 ± 0.5% and B($D^0 \to K^-\pi^+$) = 3.89 ± 0.05%. NODE=S041T73;LINKAGE=CH

[3] Assumes equal production of B^0 and B^+ from Upsilon(4S) decays. NODE=S041T73;LINKAGE=EP

$\Gamma(\overline{\Lambda}_c^- p\pi^+)/\Gamma_{total}$ Γ_{603}/Γ

NODE=S041B14

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
2.2 ±0.4 OUR AVERAGE Error includes scale factor of 2.5. See the ideogram below.			
[$(2.3 \pm 0.4)\times10^{-4}$ OUR 2024 AVERAGE Scale factor = 2.4]			
$2.68\pm0.15^{+0.11}_{-0.10}$	[1,2] AUBERT 08BN	BABR	$e^+e^- \to \Upsilon(4S)$
1.58±0.20±0.06	[1,3] GABYSHEV 06A	BELL	$e^+e^- \to \Upsilon(4S)$
1.9 ±0.5 ±0.1	[1,4] DYTMAN 02	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
1.5 ±0.4 ±0.1	[1,5] GABYSHEV 02	BELL	Repl. by GABYSHEV 06A
$6.2\ ^{+2.3}_{-2.0}\pm1.6$	[1,6] FU 97	CLE2	Repl. by DYTMAN 02

NEW

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B14;LINKAGE=EP

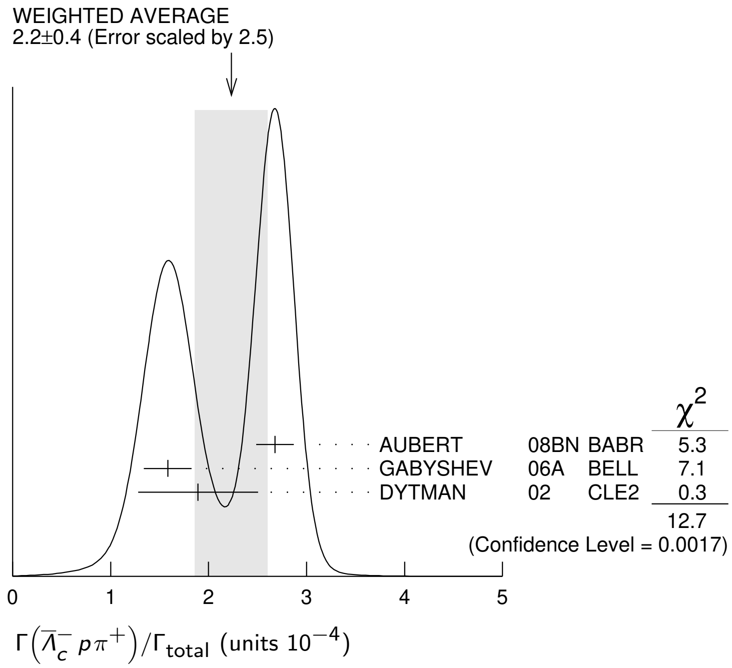
[2] AUBERT 08BN reports $(3.4 \pm 0.1 \pm 0.9)\times10^{-4}$ from a measurement of [$\Gamma(B^+ \to \overline{\Lambda}_c^- p\pi^+)/\Gamma_{total}$] × [B($\Lambda_c^+ \to pK^-\pi^+$)] assuming B($\Lambda_c^+ \to pK^-\pi^+$) = $(5.0\pm1.3)\times10^{-2}$, which we rescale to our best value B($\Lambda_c^+ \to pK^-\pi^+$) = $(6.35\pm0.25)\times10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041B14;LINKAGE=UB

[3] GABYSHEV 06A reports $(2.01\pm0.15\pm0.20)\times10^{-4}$ from a measurement of [$\Gamma(B^+ \to \overline{\Lambda}_c^- p\pi^+)/\Gamma_{total}$] × [B($\Lambda_c^+ \to pK^-\pi^+$)] assuming B($\Lambda_c^+ \to pK^-\pi^+$) = 0.05, which we rescale to our best value B($\Lambda_c^+ \to pK^-\pi^+$) = $(6.35\pm0.25)\times10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041B14;LINKAGE=GA

[4] DYTMAN 02 reports $(2.4^{+0.63}_{-0.62})\times10^{-4}$ from a measurement of [$\Gamma(B^+ \to \overline{\Lambda}_c^- p\pi^+)/\Gamma_{total}$] × [B($\Lambda_c^+ \to pK^-\pi^+$)] assuming B($\Lambda_c^+ \to pK^-\pi^+$) = 0.05, which we rescale to our best value B($\Lambda_c^+ \to pK^-\pi^+$) = $(6.35\pm0.25)\times10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041B14;LINKAGE=B9

[5] GABYSHEV 02 reports $(1.87^{+0.51}_{-0.49})\times10^{-4}$ from a measurement of [$\Gamma(B^+ \to \overline{\Lambda}_c^- p\pi^+)/\Gamma_{total}$] × [B($\Lambda_c^+ \to pK^-\pi^+$)] assuming B($\Lambda_c^+ \to pK^-\pi^+$) = 0.05, which we rescale to our best value B($\Lambda_c^+ \to pK^-\pi^+$) = $(6.35\pm0.25)\times10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041B14;LINKAGE=G9

[6] FU 97 uses PDG 96 values of Λ_c branching fraction. NODE=S041B14;LINKAGE=A



$\Gamma(\overline{\Lambda}_c^- pK^+)/\Gamma(\overline{\Lambda}_c^- p\pi^+)$ $\Gamma_{604}/\Gamma_{603}$

NODE=S041D28
NODE=S041D28

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
3.97±0.23±0.12	AAIJ	24T	LHCB	pp at 7, 8, 13 TeV

$\Gamma(\overline{\Lambda}_c^- \Delta(1232)^{++})/\Gamma_{total}$ Γ_{605}/Γ

NODE=S041R06
NODE=S041R06

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
<1.9	90	GABYSHEV	06A	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

$\Gamma(\overline{\Lambda}_c^- \Delta_X(1600)^{++})/\Gamma_{total}$ Γ_{606}/Γ

NODE=S041R07
NODE=S041R07

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
4.6±0.9 OUR AVERAGE [$(4.7 \pm 1.0) \times 10^{-5}$ OUR 2024 AVERAGE]				
4.6±0.9±0.2	[1] GABYSHEV	06A	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

NEW

[1] GABYSHEV 06A reports $(5.9 \pm 1.0 \pm 0.6) \times 10^{-5}$ from a measurement of $[\Gamma(B^+ \rightarrow \overline{\Lambda}_c^- \Delta_X(1600)^{++})/\Gamma_{total}] \times [B(\Lambda_c^+ \rightarrow pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = 0.05$, which we rescale to our best value $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S041R07;LINKAGE=GA

$\Gamma(\overline{\Lambda}_c^- \Delta_X(2420)^{++})/\Gamma_{total}$ Γ_{607}/Γ

NODE=S041R08
NODE=S041R08

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
3.7±0.8 OUR AVERAGE [$(3.8 \pm 0.8) \times 10^{-5}$ OUR 2024 AVERAGE]				
3.7±0.8±0.1	[1] GABYSHEV	06A	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

NEW

[1] GABYSHEV 06A reports $(4.7^{+1.0}_{-0.9} \pm 0.4) \times 10^{-5}$ from a measurement of $[\Gamma(B^+ \rightarrow \overline{\Lambda}_c^- \Delta_X(2420)^{++})/\Gamma_{total}] \times [B(\Lambda_c^+ \rightarrow pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = 0.05$, which we rescale to our best value $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S041R08;LINKAGE=GA

$\Gamma((\overline{\Lambda}_c^- p)_s \pi^+)/\Gamma_{total}$ Γ_{608}/Γ

NODE=S041R09

$(\overline{\Lambda}_c^- p)_s$ denotes a low-mass enhancement near 3.35 GeV/c^2.

NODE=S041R09
NODE=S041R09

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
$3.1^{+0.7}_{-0.6}$±0.1	[1] GABYSHEV	06A	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

[1] GABYSHEV 06A reports $(3.9^{+0.8}_{-0.7} \pm 0.4) \times 10^{-5}$ from a measurement of $[\Gamma(B^+ \rightarrow (\overline{\Lambda}_c^- p)_s \pi^+)/\Gamma_{total}] \times [B(\Lambda_c^+ \rightarrow pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = 0.05$, which we rescale to our best value $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S041R09;LINKAGE=GA

$\Gamma(\overline{\Sigma}_c(2520)^0 p)/\Gamma_{total}$ — Γ_{609}/Γ

NODE=S041B89

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
<0.3	90	[1,2] AUBERT	08BN	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<2.7	90	[1,2] GABYSHEV	06A	BELL	$e^+e^- \to \Upsilon(4S)$
<4.6	90	[1,2] GABYSHEV	02	BELL	Repl. by GABYSHEV 06A

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B89;LINKAGE=EP

[2] Uses the value for $\Lambda_c \to pK^-\pi^+$ branching ratio (5.0 ± 1.3)%. NODE=S041B89;LINKAGE=GB

$\Gamma(\overline{\Sigma}_c(2520)^0 p)/\Gamma(\overline{\Lambda}_c^- p\pi^+)$ — $\Gamma_{609}/\Gamma_{603}$

NODE=S041C49

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
<9	90	AUBERT	08BN	BABR	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\overline{\Sigma}_c(2800)^0 p)/\Gamma_{total}$ — Γ_{610}/Γ

NODE=S041C50

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
2.6±0.9 OUR AVERAGE [(2.7 ± 0.9) × 10^{-5} OUR 2024 AVERAGE]				
2.6±0.7±0.4	[1] AUBERT	08BN	BABR	$e^+e^- \to \Upsilon(4S)$

NEW

[1] AUBERT 08BN reports $[\Gamma(B^+ \to \overline{\Sigma}_c(2800)^0 p)/\Gamma_{total}]$ / $[B(B^+ \to \overline{\Lambda}_c^- p\pi^+)]$ = 0.117 ± 0.023 ± 0.024 which we multiply by our best value $B(B^+ \to \overline{\Lambda}_c^- p\pi^+)$ = (2.2 ± 0.4) × 10^{-4}. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041C50;LINKAGE=UB

$\Gamma(\overline{\Lambda}_c^- p\pi^+\pi^0)/\Gamma_{total}$ — Γ_{611}/Γ

NODE=S041B11

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
$1.81 \pm 0.29^{+0.52}_{-0.50}$		[1,2] DYTMAN	02	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<3.12	90	[3] FU	97	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B11;LINKAGE=EP

[2] DYTMAN 02 measurement uses $B(\Lambda_c^- \to \overline{p}K^+\pi^-)$ = 5.0 ± 1.3%. The second error includes the systematic and the uncertainty of the branching ratio. NODE=S041B11;LINKAGE=FP

[3] FU 97 uses PDG 96 values of Λ_c branching ratio. NODE=S041B11;LINKAGE=A

$\Gamma(\overline{\Lambda}_c^- p\pi^+\pi^+\pi^-)/\Gamma_{total}$ — Γ_{612}/Γ

NODE=S041B12

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
$2.25 \pm 0.25^{+0.63}_{-0.61}$		[1,2] DYTMAN	02	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<1.46	90	[3] FU	97	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B12;LINKAGE=EP

[2] DYTMAN 02 measurement uses $B(\Lambda_c^- \to \overline{p}K^+\pi^-)$ = 5.0 ± 1.3%. The second error includes the systematic and the uncertainty of the branching ratio. NODE=S041B12;LINKAGE=FP

[3] FU 97 uses PDG 96 values of Λ_c branching ratio. NODE=S041B12;LINKAGE=A

$\Gamma(\overline{\Lambda}_c^- p\pi^+\pi^+\pi^-\pi^0)/\Gamma_{total}$ — Γ_{613}/Γ

NODE=S041B13

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.34 × 10^{-2}	90	[1] FU	97	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] FU 97 uses PDG 96 values of Λ_c branching ratio. NODE=S041B13;LINKAGE=A

$\Gamma(\Lambda_c^+\Lambda_c^- K^+)/\Gamma_{total}$ — Γ_{614}/Γ

NODE=S041R02

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
4.9 ±0.7 OUR AVERAGE				
4.80±0.43±0.60	LI	18A	BELL	$e^+e^- \to \Upsilon(4S)$
$9.0 \pm 4.5 ^{+0.4}_{-0.3}$	[1,2] AUBERT	08H	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$6.2 ^{+2.5}_{-2.4} \pm 0.2$	[2,3] GABYSHEV	06	BELL	Repl. by LI 18A.

[1] AUBERT 08H reports $(1.14 \pm 0.15 \pm 0.62) \times 10^{-3}$ from a measurement of $[\Gamma(B^+ \to \Lambda_c^+ \Lambda_c^- K^+)/\Gamma_{total}] \times [B(\Lambda_c^+ \to pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \to pK^-\pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \to pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041R02;LINKAGE=AU

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R02;LINKAGE=EP

[3] GABYSHEV 06 reports $(7.9^{+1.0}_{-0.9} \pm 3.6) \times 10^{-4}$ from a measurement of $[\Gamma(B^+ \to \Lambda_c^+ \Lambda_c^- K^+)/\Gamma_{total}] \times [B(\Lambda_c^+ \to pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \to pK^-\pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \to pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041R02;LINKAGE=AG

$\Gamma(\Lambda_c^+ \Lambda_c^- K^+)/\Gamma(D^- D^+ K^+)$ — $\Gamma_{614}/\Gamma_{224}$

NODE=S041A71

NODE=S041A71

VALUE	DOCUMENT ID		TECN	COMMENT
2.36±0.11±0.33	[1] AAIJ	23X	LHCB	pp at 13 TeV

[1] The second uncertainty includes both systematic (± 0.22) and the charm decay branching fraction (± 0.25). NODE=S041A71;LINKAGE=A

$\Gamma(\Xi_c(2930)\Lambda_c^+,\ \Xi_c \to K^+ \Lambda_c^-)/\Gamma_{total}$ — Γ_{615}/Γ

NODE=S041P53

NODE=S041P53

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
1.73±0.45±0.21	[1] LI	18A	BELL	$e^+e^- \to \Upsilon(4S)$

[1] The $\Xi_c(2930)$ is found in its decay to $K^- \Lambda_c^+$ in $B^- \to K^- \Lambda_c^- \Lambda_c^+$ with a significance more than 5 sigma. NODE=S041P53;LINKAGE=A

$\Gamma(\overline{\Sigma}_c(2455)^0 p)/\Gamma_{total}$ — Γ_{616}/Γ

NODE=S041B88

NODE=S041B88

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
2.9±0.6 OUR AVERAGE [$(3.0 \pm 0.7) \times 10^{-5}$ OUR 2024 AVERAGE]					
2.9±0.6±0.1		[1,2] GABYSHEV	06A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<8	90	[1,3] DYTMAN	02	CLE2	$e^+e^- \to \Upsilon(4S)$
<9.3	90	[1,4] GABYSHEV	02	BELL	Repl. by GABYSHEV 06A

NEW

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B88;LINKAGE=EP

[2] GABYSHEV 06A reports $(3.7 \pm 0.7 \pm 0.4) \times 10^{-5}$ from a measurement of $[\Gamma(B^+ \to \overline{\Sigma}_c(2455)^0 p)/\Gamma_{total}] \times [B(\Lambda_c^+ \to pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \to pK^-\pi^+) = 0.05$, which we rescale to our best value $B(\Lambda_c^+ \to pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041B88;LINKAGE=GA

[3] DYTMAN 02 measurement uses $B(\Lambda_c^- \to \overline{p} K^+ \pi^-) = 5.0 \pm 1.3\%$. The second error includes the systematic and the uncertainty of the branching ratio. NODE=S041B88;LINKAGE=FP

[4] Uses the value for $\Lambda_c \to pK^-\pi^+$ branching ratio $(5.0 \pm 1.3)\%$. NODE=S041B88;LINKAGE=GB

$\Gamma(\overline{\Sigma}_c(2455)^0 p)/\Gamma(\overline{\Lambda}_c^- p\pi^+)$ — $\Gamma_{616}/\Gamma_{603}$

NODE=S041C17

NODE=S041C17

VALUE	DOCUMENT ID		TECN	COMMENT
0.123±0.012±0.008	[1] AUBERT	08BN	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041C17;LINKAGE=EP

$\Gamma(\overline{\Sigma}_c(2455)^0 p\pi^0)/\Gamma_{total}$ — Γ_{617}/Γ

NODE=S041B79

NODE=S041B79

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
3.5±1.1±0.1	[1,2] DYTMAN	02	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] DYTMAN 02 reports $(4.4 \pm 1.4) \times 10^{-4}$ from a measurement of $[\Gamma(B^+ \to \overline{\Sigma}_c(2455)^0 p\pi^0)/\Gamma_{total}] \times [B(\Lambda_c^+ \to pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \to pK^-\pi^+) = 0.05$, which we rescale to our best value $B(\Lambda_c^+ \to pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041B79;LINKAGE=B9

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B79;LINKAGE=EP

$\Gamma(\overline{\Sigma}_c(2455)^0 p\pi^-\pi^+)/\Gamma_{total}$ — Γ_{618}/Γ

NODE=S041B76

NODE=S041B76

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
3.5±1.0 OUR AVERAGE [$(3.5 \pm 1.1) \times 10^{-4}$ OUR 2024 AVERAGE]				
3.5±1.0±0.1	[1,2] DYTMAN	02	CLE2	$e^+e^- \to \Upsilon(4S)$

NEW

[1] DYTMAN 02 reports $(4.4 \pm 1.3) \times 10^{-4}$ from a measurement of $[\Gamma(B^+ \to \overline{\Sigma}_c(2455)^0 p \pi^- \pi^+)/\Gamma_{total}] \times [B(\Lambda_c^+ \to p K^- \pi^+)]$ assuming $B(\Lambda_c^+ \to p K^- \pi^+) = 0.05$, which we rescale to our best value $B(\Lambda_c^+ \to p K^- \pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041B76;LINKAGE=B9

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B76;LINKAGE=EP

$\Gamma(\overline{\Sigma}_c(2455)^{--} p \pi^+ \pi^+)/\Gamma_{total}$ Γ_{619}/Γ

NODE=S041B77
NODE=S041B77

VALUE (units 10^{-4})	*DOCUMENT ID*		*TECN*	*COMMENT*
2.34±0.18 OUR AVERAGE				
[$(2.38 \pm 0.19) \times 10^{-4}$ OUR 2024 AVERAGE]				
2.35±0.16±0.09	[1,2] LEES	12Z	BABR	$e^+ e^- \to \Upsilon(4S)$
2.2 ±0.8 ±0.1	[1,3] DYTMAN	02	CLE2	$e^+ e^- \to \Upsilon(4S)$

NEW

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B77;LINKAGE=EP

[2] LEES 12Z reports $(2.98 \pm 0.16 \pm 0.15 \pm 0.77) \times 10^{-4}$ from a measurement of $[\Gamma(B^+ \to \overline{\Sigma}_c(2455)^{--} p \pi^+ \pi^+)/\Gamma_{total}] \times [B(\Lambda_c^+ \to p K^- \pi^+)]$ assuming $B(\Lambda_c^+ \to p K^- \pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \to p K^- \pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041B77;LINKAGE=LE

[3] DYTMAN 02 reports $(2.8 \pm 0.9 \pm 0.5 \pm 0.7) \times 10^{-4}$ from a measurement of $[\Gamma(B^+ \to \overline{\Sigma}_c(2455)^{--} p \pi^+ \pi^+)/\Gamma_{total}] \times [B(\Lambda_c^+ \to p K^- \pi^+)]$ assuming $B(\Lambda_c^+ \to p K^- \pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \to p K^- \pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041B77;LINKAGE=B9

$\Gamma(\overline{\Lambda}_c(2593)^- / \overline{\Lambda}_c(2625)^- p \pi^+)/\Gamma_{total}$ Γ_{620}/Γ

NODE=S041B78
NODE=S041B78

VALUE	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
<1.9 × 10⁻⁴	90	[1,2] DYTMAN	02	CLE2	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041B78;LINKAGE=EP

[2] DYTMAN 02 measurement uses $B(\Lambda_c^- \to \overline{p} K^+ \pi^-) = 5.0 \pm 1.3\%$. The second error includes the systematic and the uncertainty of the branching ratio. NODE=S041B78;LINKAGE=FP

$\Gamma(\Xi_c^0 \Lambda_c^+)/\Gamma_{total}$ Γ_{621}/Γ

NODE=S041P59
NODE=S041P59

VALUE (units 10^{-4})	*DOCUMENT ID*		*TECN*	*COMMENT*
9.51±2.10±0.88	[1] LI	19A	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] First measured the absolute branching fraction using a missing-mass technique. NODE=S041P59;LINKAGE=A

$\Gamma(\Xi_c^0 \Lambda_c^+,\ \Xi_c^0 \to \Xi^+ \pi^-)/\Gamma_{total}$ Γ_{623}/Γ

NODE=S041R04
NODE=S041R04

VALUE (units 10^{-5})	*DOCUMENT ID*		*TECN*	*COMMENT*
1.76±0.29 OUR AVERAGE				
1.71±0.28±0.15	[1] LI	19A	BELL	$e^+ e^- \to \Upsilon(4S)$
2.0 ±0.7 ±0.1	[2,3] AUBERT	08H	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
4.4 $^{+1.8}_{-1.5}$ ±0.2	[3,4] CHISTOV	06A	BELL	Repl. by LI 19A

[1] Using a hadronic B-tagging method based on a full reconstruction. NODE=S041R04;LINKAGE=A

[2] AUBERT 08H reports $(2.51 \pm 0.89 \pm 0.61) \times 10^{-5}$ from a measurement of $[\Gamma(B^+ \to \Xi_c^0 \Lambda_c^+,\ \Xi_c^0 \to \Xi^+ \pi^-)/\Gamma_{total}] \times [B(\Lambda_c^+ \to p K^- \pi^+)]$ assuming $B(\Lambda_c^+ \to p K^- \pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \to p K^- \pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041R04;LINKAGE=AU

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R04;LINKAGE=EP

[4] CHISTOV 06A reports $(5.6^{+1.9}_{-1.5} \pm 1.9) \times 10^{-5}$ from a measurement of $[\Gamma(B^+ \to \Xi_c^0 \Lambda_c^+,\ \Xi_c^0 \to \Xi^+ \pi^-)/\Gamma_{total}] \times [B(\Lambda_c^+ \to p K^- \pi^+)]$ assuming $B(\Lambda_c^+ \to p K^- \pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \to p K^- \pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S041R04;LINKAGE=CH

$\Gamma(\Xi_c^0 \Lambda_c^+, \Xi_c^0 \to \Lambda K^+ \pi^-)/\Gamma_{total}$ — Γ_{624}/Γ

NODE=S041R05
NODE=S041R05

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
1.14±0.26 OUR AVERAGE				
1.11±0.26±0.10	[1] LI	19A	BELL	$e^+e^- \to \Upsilon(4S)$
1.3 ±0.8 ±0.1	[2,3] AUBERT	08H	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$3.2\ ^{+1.1}_{-0.9}\ \pm0.1$	[3,4] CHISTOV	06A	BELL	Repl. by LI 19A

[1] Using a hadronic B-tagging method based on a full reconstruction.

[2] AUBERT 08H reports $(1.70 \pm 0.93 \pm 0.53) \times 10^{-5}$ from a measurement of $[\Gamma(B^+ \to \Xi_c^0 \Lambda_c^+, \Xi_c^0 \to \Lambda K^+ \pi^-)/\Gamma_{total}] \times [B(\Lambda_c^+ \to pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \to pK^-\pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \to pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

[4] CHISTOV 06A reports $(4.0^{+1.1}_{-0.9} \pm 1.3) \times 10^{-5}$ from a measurement of $[\Gamma(B^+ \to \Xi_c^0 \Lambda_c^+, \Xi_c^0 \to \Lambda K^+ \pi^-)/\Gamma_{total}] \times [B(\Lambda_c^+ \to pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \to pK^-\pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \to pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S041R05;LINKAGE=A
NODE=S041R05;LINKAGE=AU
NODE=S041R05;LINKAGE=EP
NODE=S041R05;LINKAGE=CH

$\Gamma(\Xi_c^0 \Lambda_c^+, \Xi_c^0 \to pK^-K^-\pi^+)/\Gamma_{total}$ — Γ_{625}/Γ

NODE=S041P60
NODE=S041P60

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
5.47±1.78±0.57	[1] LI	19A	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Using a hadronic B-tagging method based on a full reconstruction.

NODE=S041P60;LINKAGE=A

$\Gamma(\Lambda_c^+ \Xi_c'^0)/\Gamma_{total}$ — Γ_{626}/Γ

NODE=S041P71
NODE=S041P71

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<6.5 \times 10^{-4}$	90	[1] LI	19G	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Uses fully reconstructed B^+ meson on tag side and recoil against Λ_c^+ on signal side.

NODE=S041P71;LINKAGE=A

$\Gamma(\Lambda_c^+ \Xi_c(2645)^0)/\Gamma_{total}$ — Γ_{627}/Γ

NODE=S041P72
NODE=S041P72

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<7.9 \times 10^{-4}$	90	[1] LI	19G	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Uses fully reconstructed B^+ meson on tag side and recoil against Λ_c^+ on signal side.

NODE=S041P72;LINKAGE=A

$\Gamma(\Lambda_c^+ \Xi_c(2790)^0)/\Gamma_{total}$ — Γ_{628}/Γ

NODE=S041P73
NODE=S041P73

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
1.1±0.4±0.2	[1] LI	19G	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Uses fully reconstructed B^+ meson on tag side and recoil against Λ_c^+ on signal side.

NODE=S041P73;LINKAGE=A

$\Gamma(p\psi_{DS})/\Gamma_{total}$ — Γ_{629}/Γ

NODE=S041D21
NODE=S041D21

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$< 10^{-7}$–10^{-5}	90	[1] LEES	23C	BABR	$e^+e^- \to \Upsilon(4S)$

[1] LEES 23C searched for ψ_{DS}, where ψ_{DS} is a dark sector antibaryon, in the recoil mass against p and the fully reconstructed accompanying B meson. The cited upper limit is for $m_{\psi_{DS}}$ between 1 and 4.3 GeV/c^2.

NODE=S041D21;LINKAGE=A

$\Gamma(\pi^+ \ell^+ \ell^-)/\Gamma_{total}$ — Γ_{630}/Γ

NODE=S041T20
NODE=S041T20

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<4.9 \times 10^{-8}$	90	[1] WEI	08A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<6.6 \times 10^{-8}$	90	[1] LEES	13M	BABR	$e^+e^- \to \Upsilon(4S)$
$<1.2 \times 10^{-7}$	90	[1] AUBERT	07AG	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T20;LINKAGE=EP

$\Gamma(\pi^+ e^+ e^-)/\Gamma_{total}$ — Γ_{631}/Γ

NODE=S041R52

Test for ΔB=1 weak neutral current. Allowed by higher-order electroweak interactions.

NODE=S041R52
NODE=S041R52

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
< 5.4 × 10^{-8} (CL = 90%) [<8.0 × 10^{-8} (CL = 90%) OUR 2024 BEST LIMIT]					
< 5.4 × 10^{-8}	90	ADACHI	24N	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<12.5 × 10^{-8}	90	[1] LEES	13M	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
< 8.0 × 10^{-8}	90	[1] WEI	08A	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
<18 × 10^{-8}	90	[1] AUBERT	07AG	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
< 3.9 × 10^{-3}	90	[2] WEIR	90B	MRK2	$e^+ e^-$ 29 GeV

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R52;LINKAGE=EP

[2] WEIR 90B assumes B^+ production cross section from LUND. NODE=S041R52;LINKAGE=A

$\Gamma(\pi^+ \mu^+ \mu^-)/\Gamma_{total}$ — Γ_{632}/Γ

NODE=S041R55

Test for ΔB=1 weak neutral current. Allowed by higher-order electroweak interactions.

NODE=S041R55
NODE=S041R55

VALUE (units 10^{-8})	CL%	DOCUMENT ID		TECN	COMMENT
1.78±0.22±0.03		[1] AAIJ	15AR	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 5.5	90	[2] LEES	13M	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
2.3 ±0.6 ±0.1		AAIJ	12AY	LHCB	Repl. by AAIJ 15AR
< 6.9	90	[2] WEI	08A	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
<28	90	[2] AUBERT	07AG	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] AAIJ 15AR reports $(1.83 \pm 0.24 \pm 0.05) \times 10^{-8}$ from a measurement of $[\Gamma(B^+ \rightarrow \pi^+ \mu^+ \mu^-)/\Gamma_{total}]$ / $[B(B^+ \rightarrow J/\psi(1S) K^+)]$ / $[B(J/\psi(1S) \rightarrow \mu^+ \mu^-)]$ assuming $B(B^+ \rightarrow J/\psi(1S) K^+) = (1.05 \pm 0.05) \times 10^{-3}$, $B(J/\psi(1S) \rightarrow \mu^+ \mu^-) = (5.961 \pm 0.033) \times 10^{-2}$, which we rescale to our best values $B(B^+ \rightarrow J/\psi(1S) K^+) = (1.020 \pm 0.019) \times 10^{-3}$, $B(J/\psi(1S) \rightarrow \mu^+ \mu^-) = (5.961 \pm 0.033) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best values. NODE=S041R55;LINKAGE=B

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R55;LINKAGE=EP

$\Gamma(\pi^+ \mu^+ \mu^-)/\Gamma(K^+ \mu^+ \mu^-)$ — $\Gamma_{632}/\Gamma_{639}$

NODE=S041T91
NODE=S041T91

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.053±0.014±0.001	AAIJ	12AY	LHCB	Repl. by AAIJ 15AR

$\Gamma(\rho(770)^+ e^+ e^-)/\Gamma_{total}$ — Γ_{633}/Γ

NODE=S041D33
NODE=S041D33

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<46.7 × 10^{-8}	90	ADACHI	24N	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$

$\Gamma(\rho(770)^+ \mu^+ \mu^-)/\Gamma_{total}$ — Γ_{634}/Γ

NODE=S041D34
NODE=S041D34

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<38.1 × 10^{-8}	90	ADACHI	24N	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$

$\Gamma(\rho(770)^+ \ell^+ \ell^-)/\Gamma_{total}$ — Γ_{635}/Γ

NODE=S041D35
NODE=S041D35

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<18.9 × 10^{-8}	90	[1] ADACHI	24N	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Where $\ell = e, \mu$. NODE=S041D35;LINKAGE=A

$\Gamma(\pi^+ \nu \overline{\nu})/\Gamma_{total}$ — Γ_{636}/Γ

NODE=S041S05

Test for ΔB=1 weak neutral current. Allowed by higher-order electroweak interactions.

NODE=S041S05
NODE=S041S05

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.4 × 10^{-5}	90	[1] GRYGIER	17	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<9.8 × 10^{-5}	90	[1] LUTZ	13	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
<1.7 × 10^{-4}	90	[1] CHEN	07D	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
<1.0 × 10^{-4}	90	[1] AUBERT	05H	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041S05;LINKAGE=EP

$\Gamma(K^+ \ell^+ \ell^-)/\Gamma_{total}$ Γ_{637}/Γ

NODE=S041RA1

Test for ΔB=1 weak neutral current. Allowed by higher-order electroweak interactions.

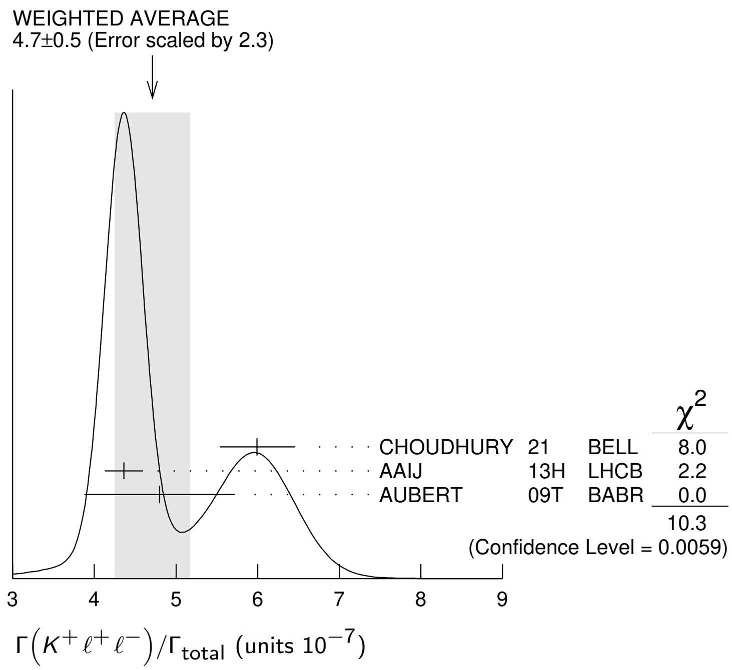
NODE=S041RA1
NODE=S041RA1

VALUE (units 10^{-7})	DOCUMENT ID	TECN	COMMENT
4.7 ±0.5 OUR AVERAGE Error includes scale factor of 2.3. See the ideogram below.			
$5.99^{+0.45}_{-0.43}\pm0.14$	CHOUDHURY 21	BELL	$e^+e^- \to \Upsilon(4S)$
$4.36\pm0.15\pm0.18$	[1] AAIJ 13H	LHCB	pp at 7 TeV
$4.8 \pm0.9 \pm0.2$	[2] AUBERT 09T	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$5.3\ ^{+0.6}_{-0.5}\ \pm0.3$	[2,3] WEI 09A	BELL	$e^+e^- \to \Upsilon(4S)$
$3.8\ ^{+0.9}_{-0.8}\ \pm0.2$	[2] AUBERT,B 06J	BABR	Repl. by AUBERT 09T
$5.3\ ^{+1.1}_{-1.0}\ \pm0.3$	[2] ISHIKAWA 03	BELL	Repl. by WEI 09A

[1] Uses B($B^+ \to J/\psi K^+ \to \mu^+\mu^- K^+$) = $(6.01 \pm 0.21) \times 10^{-5}$.
NODE=S041RA1;LINKAGE=AA

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
NODE=S041RA1;LINKAGE=EP

[3] Superseded by CHOUDHURY 21.
NODE=S041RA1;LINKAGE=A



$\Gamma(K^+ e^+ e^-)/\Gamma_{total}$ Γ_{638}/Γ

NODE=S041R11

Test for ΔB=1 weak neutral current. Allowed by higher-order electroweak interactions.

NODE=S041R11
NODE=S041R11

VALUE (units 10^{-7})	CL%	DOCUMENT ID	TECN	COMMENT
5.6 ±0.6 OUR AVERAGE				
$5.75^{+0.64}_{-0.61}\pm0.15$		CHOUDHURY 21	BELL	$e^+e^- \to \Upsilon(4S)$
$5.1\ ^{+1.2}_{-1.1}\ \pm0.2$		[1] AUBERT 09T	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$5.7\ ^{+0.9}_{-0.8}\ \pm0.3$		[1,2] WEI 09A	BELL	$e^+e^- \to \Upsilon(4S)$
$4.2\ ^{+1.2}_{-1.1}\ \pm0.2$		[1] AUBERT,B 06J	BABR	Repl. by AUBERT 09T
$10.5\ ^{+2.5}_{-2.2}\ \pm0.7$		[1] AUBERT 03U	BABR	Repl. by AUBERT,B 06J
$6.3\ ^{+1.9}_{-1.7}\ \pm0.3$		[3] ISHIKAWA 03	BELL	Repl. by WEI 09A
<14	90	[1] ABE 02	BELL	$e^+e^- \to \Upsilon(4S)$
<9	90	[1] AUBERT 02L	BABR	$e^+e^- \to \Upsilon(4S)$
<24	90	[4] ANDERSON 01B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
NODE=S041R11;LINKAGE=EP

[2] Superseded by CHOUDHURY 21.
NODE=S041R11;LINKAGE=B

[3] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. The second error is a total of systematic uncertainties including model dependence.
NODE=S041R11;LINKAGE=IS

[4] The result is for di-lepton masses above 0.5 GeV.
NODE=S041R11;LINKAGE=DL

$\Gamma(K^+\mu^+\mu^-)/\Gamma_{total}$ — Γ_{639}/Γ

NODE=S041R10

Test for ΔB=1 weak neutral current. Allowed by higher-order electroweak interactions.

NODE=S041R10
NODE=S041R10

VALUE (units 10^{-7})	CL%	DOCUMENT ID		TECN	COMMENT
4.53±0.35 OUR FIT Error includes scale factor of 1.8.					
4.5 ±0.6 OUR AVERAGE Error includes scale factor of 2.9.					
$6.24^{+0.65}_{-0.61}\pm0.16$		CHOUDHURY	21	BELL	$e^+e^- \to \Upsilon(4S)$
$4.29\pm0.07\pm0.21$		[1] AAIJ	14M	LHCB	pp at 7, 8 TeV
$4.1\ ^{+1.6}_{-1.5}\ \pm0.2$		[2] AUBERT	09T	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$4.36\pm0.15\pm0.18$		[3] AAIJ	13H	LHCB	Repl. by AAIJ 14M
$5.3\ ^{+0.8}_{-0.7}\ \pm0.3$		[2,4] WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
$3.1\ ^{+1.5}_{-1.2}\ \pm0.3$		[2] AUBERT,B	06J	BABR	Repl. by AUBERT 09T
$0.7\ ^{+1.9}_{-1.1}\ \pm0.2$		[2] AUBERT	03U	BABR	Repl. by AUBERT,B 06J
$4.5\ ^{+1.4}_{-1.2}\ \pm0.3$		[5] ISHIKAWA	03	BELL	Repl. by WEI 09A
$9.8\ ^{+4.6}_{-3.6}\ \pm1.6$		[2] ABE	02	BELL	Repl. by ISHIKAWA 03
< 12	90	[2] AUBERT	02L	BABR	$e^+e^- \to \Upsilon(4S)$
< 36.8	90	[6] ANDERSON	01B	CLE2	$e^+e^- \to \Upsilon(4S)$
< 52	90	[7] AFFOLDER	99B	CDF	$p\overline{p}$ at 1.8 TeV
< 100	90	[8] ABE	96L	CDF	Repl. by AFFOLDER 99B
< 2400	90	[9] ALBRECHT	91E	ARG	$e^+e^- \to \Upsilon(4S)$
<64000	90	[10] WEIR	90B	MRK2	e^+e^- 29 GeV
< 1700	90	[11] AVERY	89B	CLEO	$e^+e^- \to \Upsilon(4S)$
< 3800	90	[12] AVERY	87	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Uses B($B^+ \to J/\psi(1S)K^+$) = $(0.998 \pm 0.014 \pm 0.040) \times 10^{-3}$ for normalization. NODE=S041R10;LINKAGE=B

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R10;LINKAGE=EP

[3] Uses B($B^+ \to J/\psi K^+ \to \mu^+\mu^- K^+$) = $(6.01 \pm 0.21) \times 10^{-5}$. NODE=S041R10;LINKAGE=AI

[4] Superseded by CHOUDHURY 21. NODE=S041R10;LINKAGE=C

[5] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. The second error is a total of systematic uncertainties including model dependence. NODE=S041R10;LINKAGE=IS

[6] The result is for di-lepton masses above 0.5 GeV. NODE=S041R10;LINKAGE=DL

[7] AFFOLDER 99B measured relative to $B^+ \to J/\psi(1S)K^+$. NODE=S041R10;LINKAGE=N1

[8] ABE 96L measured relative to $B^+ \to J/\psi(1S)K^+$ using PDG 94 branching ratios. NODE=S041R10;LINKAGE=PB

[9] ALBRECHT 91E reports $< 2.2 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S041R10;LINKAGE=B2

[10] WEIR 90B assumes B^+ production cross section from LUND. NODE=S041R10;LINKAGE=A

[11] AVERY 89B reports $< 1.5 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S041R10;LINKAGE=A1

[12] AVERY 87 reports $< 3.2 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 40% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S041R10;LINKAGE=B1

$\Gamma(K^+\mu^+\mu^-$ nonresonant$)/\Gamma_{total}$ — Γ_{640}/Γ

NODE=S041P41
NODE=S041P41

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
4.37±0.15±0.23	[1] AAIJ	17Y	LHCB	pp at 7, 8 TeV

[1] Measured in amplitude analysis using model including short-distance $K^+\mu^+\mu^-$ and $\rho(770)$, $\omega(782)$, $\phi(1020)$, J/ψ, $\psi(2S)$, $\psi(3770)$, $\psi(4040)$, $\psi(4160)$, and $\psi(4415)$ contributions. NODE=S041P41;LINKAGE=A

$\Gamma(K^+\tau^+\tau^-)/\Gamma_{total}$ — Γ_{641}/Γ

NODE=S041P28
NODE=S041P28

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.25 \times 10^{-3}$	90	[1,2] LEES	17	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses only leptonic decays of τ and the quoted limit combines the final states $K^+e^+e^-$, $K^+\mu^+\mu^-$, and $K^+e^\pm\mu^\mp$. NODE=S041P28;LINKAGE=A

[2] If observed events are interpreted as a signal the branching fraction measurement becomes $(1.31^{+0.66}_{-0.61}{}^{+0.35}_{-0.25}) \times 10^{-3}$. NODE=S041P28;LINKAGE=B

$\Gamma(K^+\mu^+\mu^-)/\Gamma(J/\psi(1S)K^+)$ — $\Gamma_{639}/\Gamma_{311}$

NODE=S041T71
NODE=S041T71

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
0.444±0.034 OUR FIT Error includes scale factor of 1.7.				
0.46 ±0.04 ±0.02	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.38 ±0.05 ±0.02	AALTONEN	11L	CDF	Repl. by AALTONEN 11AI
0.59 ±0.15 ±0.03	AALTONEN	09B	CDF	Repl. by AALTONEN 11L

$\Gamma(K^+\overline{\nu}\nu)/\Gamma_{total}$ Γ_{642}/Γ

NODE=S041B51

Test for ΔB=1 weak neutral current. Allowed by higher-order electroweak interactions.

NODE=S041B51
NODE=S041B51

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
$2.3\pm0.5^{+0.5}_{-0.4}$		[1] ADACHI	24E	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<$ 4.1	90	[2] ABUDINEN	21	BEL2	$e^+e^- \rightarrow \Upsilon(4S)$
$<$ 1.9	90	[3,4] GRYGIER	17	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
$<$ 1.6	90	[4,5] LEES	13I	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$<$ 5.5	90	[4] LUTZ	13	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
$<$ 1.3	90	[4] DEL-AMO-SA...	10Q	BABR	Repl. by LEES 13I
$<$ 1.4	90	[4] CHEN	07D	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
$<$ 5.2	90	[4] AUBERT	05H	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$<$24	90	[4] BROWDER	01	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

OCCUR=3

[1] Taking an average value from two methods, using (1) a hadronic tagging of the other B meson in the event, and (2) an inclusive tagging method that exploits the inclusive properties of the other B meson in the event.

NODE=S041B51;LINKAGE=D

[2] Using an inclusive tagging method that exploits not only the properties of the $B^+ \rightarrow K^+\nu\overline{\nu}$ decay, but also the inclusive properties of the other B meson in the event.

NODE=S041B51;LINKAGE=B

[3] The result was reported in arXiv:1702.03224, but missing from the publication by mistake.

NODE=S041B51;LINKAGE=A

[4] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B51;LINKAGE=EP

[5] Also reported a limit $< 3.7 \times 10^{-5}$ at 90% CL obtained using a fully reconstructed hadronic B-tag evnets.

NODE=S041B51;LINKAGE=LE

$\Gamma(\rho^+\nu\overline{\nu})/\Gamma_{total}$ Γ_{643}/Γ

NODE=S041T28

Test for $\Delta B = 1$ weak neutral current. Allowed by higher-order electroweak interaction.

NODE=S041T28
NODE=S041T28

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.0 \times 10^{-5}$	90	[1] GRYGIER	17	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<2.13 \times 10^{-4}$	90	[1] LUTZ	13	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
$<1.5 \times 10^{-4}$	90	[1] CHEN	07D	BELL	Repl. by LUTZ 13

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T28;LINKAGE=EP

$\Gamma(K^*(892)^+\ell^+\ell^-)/\Gamma_{total}$ Γ_{644}/Γ

NODE=S041RA2

Test for ΔB=1 weak neutral current. Allowed by higher-order electroweak interactions.

NODE=S041RA2
NODE=S041RA2

VALUE (units 10^{-7})	CL%	DOCUMENT ID		TECN	COMMENT
10.1 ±1.1 OUR AVERAGE Error includes scale factor of 1.1.					
$9.24\pm0.93\pm0.67$		AAIJ	14M	LHCB	pp at 7, 8 TeV
$14.0\ ^{+4.0}_{-3.7}\ \pm0.9$		[1] AUBERT	09T	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$12.4\ ^{+2.3}_{-2.1}\ \pm1.3$		[1] WEI	09A	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$11.6\ \pm1.9$		[2] AAIJ	12AH	LHCB	Repl. by AAIJ 14M
$7.3\ ^{+5.0}_{-4.2}\ \pm2.1$		[1] AUBERT,B	06J	BABR	Repl. by AUBERT 09T
$<$22	90	[1] ISHIKAWA	03	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

OCCUR=2

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041RA2;LINKAGE=EP

[2] Measured in $B^+ \rightarrow K^*(892)^+\mu^+\mu^-$ decays.

NODE=S041RA2;LINKAGE=AA

$\Gamma(K^*(892)^+e^+e^-)/\Gamma_{total}$ Γ_{645}/Γ

NODE=S041R81

Test for ΔB=1 weak neutral current. Allowed by higher-order electroweak interactions.

NODE=S041R81
NODE=S041R81

VALUE (units 10^{-7})	CL%	DOCUMENT ID		TECN	COMMENT
$15.5^{+\ 4.0}_{-\ 3.1}$ OUR AVERAGE					
$13.8^{+\ 4.7}_{-\ 4.2}\pm0.8$		[1] AUBERT	09T	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$17.3^{+\ 5.0}_{-\ 4.2}\pm2.0$		[1] WEI	09A	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$7.5^{+\ 7.6}_{-\ 6.5}\pm3.8$		[1] AUBERT,B	06J	BABR	Repl. by AUBERT 09T
$2.0^{+13.4}_{-\ 8.7}\pm2.8$		[1] AUBERT	03U	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$<$ 46	90	[2] ISHIKAWA	03	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
$<$ 89	90	[1] ABE	02	BELL	Repl. by ISHIKAWA 03
$<$ 95	90	[1] AUBERT	02L	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$<$6900	90	[3] ALBRECHT	91E	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R81;LINKAGE=EP

[2] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. The second error is a total of systematic uncertainties including model dependence. NODE=S041R81;LINKAGE=IS

[3] ALBRECHT 91E reports $< 6.3 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 45% to $B^0 \overline{B}^0$. We rescale to 50%. NODE=S041R81;LINKAGE=B2

$\Gamma(K^*(892)^+ \mu^+ \mu^-)/\Gamma_{total}$ Γ_{646}/Γ

NODE=S041R82

Test for ΔB=1 weak neutral current. Allowed by higher-order electroweak interactions.

NODE=S041R82
NODE=S041R82

VALUE (units 10^{-7})	CL%	DOCUMENT ID		TECN	COMMENT
9.6 ± 1.0 OUR FIT					
9.6 ± 1.1 OUR AVERAGE					
$9.24 \pm 0.93 \pm 0.67$		[1] AAIJ	14M	LHCB	pp at 7, 8 TeV
$14.6 \begin{array}{l}+7.9\\-7.5\end{array} \pm 1.2$		[2] AUBERT	09T	BABR	$e^+ e^- \to \Upsilon(4S)$
$11.1 \begin{array}{l}+3.2\\-2.7\end{array} \pm 1.0$		[2] WEI	09A	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
11.6 ± 1.9		AAIJ	12AH	LHCB	Repl. by AAIJ 14M
$9.7 \begin{array}{l}+9.4\\-6.9\end{array} \pm 1.4$		[2] AUBERT,B	06J	BABR	Repl. by AUBERT 09T
$30.7 \begin{array}{l}+25.8\\-17.8\end{array} \pm 4.2$		[2] AUBERT	03U	BABR	$e^+ e^- \to \Upsilon(4S)$
$6.5 \begin{array}{l}+6.9\\-5.3\end{array} \begin{array}{l}+1.5\\-1.6\end{array}$		[3] ISHIKAWA	03	BELL	Repl. by WEI 09A
< 39	90	[2] ABE	02	BELL	Repl. by ISHIKAWA 03
<170	90	[2] AUBERT	02L	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Uses B($B^+ \to J/\psi(1S) K^*(892)^+$) = $(1.431 \pm 0.027 \pm 0.090) \times 10^{-3}$ for normalization. NODE=S041R82;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041R82;LINKAGE=EP

[3] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. The second error is a total of systematic uncertainties including model dependence. The 90% C.L. upper limit is 2.2×10^{-6}. NODE=S041R82;LINKAGE=IS

$\Gamma(K^*(892)^+ \mu^+ \mu^-)/\Gamma(J/\psi(1S) K^*(892)^+)$ $\Gamma_{646}/\Gamma_{316}$

NODE=S041T76
NODE=S041T76

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
0.67±0.08 OUR FIT				
0.67±0.22±0.04	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV

$\Gamma(K^*(892)^+ \nu \overline{\nu})/\Gamma_{total}$ Γ_{647}/Γ

NODE=S041T29

Test for $\Delta B = 1$ weak neutral current. Allowed by higher-order electroweak interaction.

NODE=S041T29
NODE=S041T29

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<\mathbf{4.0 \times 10^{-5}}$	90	[1] LUTZ	13	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<6.1 \times 10^{-5}$	90	[1] GRYGIER	17	BELL	$e^+ e^- \to \Upsilon(4S)$
$<6.4 \times 10^{-5}$	90	[1,2] LEES	13I	BABR	$e^+ e^- \to \Upsilon(4S)$
$<8 \times 10^{-5}$	90	AUBERT	08BC	BABR	Repl. by LEES 13I
$<1.4 \times 10^{-4}$	90	[1] CHEN	07D	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041T29;LINKAGE=EP

[2] Also reported a limit $< 11.6 \times 10^{-5}$ at 90% CL obtained using a fully reconstructed hadronic B-tag evnets. NODE=S041T29;LINKAGE=LE

$\Gamma(K^+ \pi^+ \pi^- \mu^+ \mu^-)/\Gamma(\psi(2S) K^+)$ $\Gamma_{648}/\Gamma_{347}$

NODE=S041BA0
NODE=S041BA0

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
$\mathbf{6.95^{+0.46}_{-0.43} \pm 0.34}$	AAIJ	14AZ	LHCB	pp at 7, 8 TeV

$\Gamma(\phi K^+ \mu^+ \mu^-)/\Gamma(J/\psi(1S) \phi K^+)$ $\Gamma_{650}/\Gamma_{323}$

NODE=S041BA6
NODE=S041BA6

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
$\mathbf{1.58^{+0.36}_{-0.32}{}^{+0.19}_{-0.07}}$	AAIJ	14AZ	LHCB	pp at 7, 8 TeV

$\Gamma(\overline{\Lambda} p \nu \overline{\nu})/\Gamma_{total}$ Γ_{651}/Γ

NODE=S041P75
NODE=S041P75

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<\mathbf{3.0 \times 10^{-5}}$	90	[1] LEES	19C	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Signal candidates are identified by first fully reconstructing B^+ in one of many possible exclusive decays to hadronic final states. NODE=S041P75;LINKAGE=A

$\Gamma(\pi^+ e^+ \mu^-)/\Gamma_{total}$ — Γ_{652}/Γ

NODE=S041R53

Test of lepton family number conservation.

NODE=S041R53
NODE=S041R53

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0064	90	[1] WEIR	90B	MRK2	$e^+ e^-$ 29 GeV

[1] WEIR 90B assumes B^+ production cross section from LUND.

NODE=S041R53;LINKAGE=A

$\Gamma(\pi^+ e^- \mu^+)/\Gamma_{total}$ — Γ_{653}/Γ

NODE=S041R54

Test of lepton family number conservation.

NODE=S041R54
NODE=S041R54

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0064	90	[1] WEIR	90B	MRK2	$e^+ e^-$ 29 GeV

[1] WEIR 90B assumes B^+ production cross section from LUND.

NODE=S041R54;LINKAGE=A

$\Gamma(\pi^+ e^\pm \mu^\mp)/\Gamma_{total}$ — Γ_{654}/Γ

NODE=S041T21
NODE=S041T21

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.7 \times 10^{-7}$	90	[1] AUBERT	07AG	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T21;LINKAGE=EP

$\Gamma(\pi^+ e^+ \tau^-)/\Gamma_{total}$ — Γ_{655}/Γ

NODE=S041T77

Test of lepton family number conservation.

NODE=S041T77
NODE=S041T77

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<74	90	[1] LEES	12P	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Uses a fully reconstructed hadronic B decay as a tag on the recoil side.

NODE=S041T77;LINKAGE=LE

$\Gamma(\pi^+ e^- \tau^+)/\Gamma_{total}$ — Γ_{656}/Γ

NODE=S041T78

Test of lepton family number conservation.

NODE=S041T78
NODE=S041T78

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<20	90	[1] LEES	12P	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Uses a fully reconstructed hadronic B decay as a tag on the recoil side.

NODE=S041T78;LINKAGE=LE

$\Gamma(\pi^+ e^\pm \tau^\mp)/\Gamma_{total}$ — Γ_{657}/Γ

NODE=S041T79

Test of lepton family number conservation.

NODE=S041T79
NODE=S041T79

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<75	90	[1,2] LEES	12P	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Assumes B($B^+ \rightarrow h^+ \ell^+ \tau^-$) = B($B^+ \rightarrow h^+ \ell^- \tau^+$).

NODE=S041T79;LINKAGE=ES

[2] Uses a fully reconstructed hadronic B decay as a tag on the recoil side.

NODE=S041T79;LINKAGE=LE

$\Gamma(\pi^+ \mu^+ \tau^-)/\Gamma_{total}$ — Γ_{658}/Γ

NODE=S041T80

Test of lepton family number conservation.

NODE=S041T80
NODE=S041T80

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<62	90	[1] LEES	12P	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Uses a fully reconstructed hadronic B decay as a tag on the recoil side.

NODE=S041T80;LINKAGE=LE

$\Gamma(\pi^+ \mu^- \tau^+)/\Gamma_{total}$ — Γ_{659}/Γ

NODE=S041T81

Test of lepton family number conservation.

NODE=S041T81
NODE=S041T81

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<45	90	[1] LEES	12P	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Uses a fully reconstructed hadronic B decay as a tag on the recoil side.

NODE=S041T81;LINKAGE=LE

$\Gamma(\pi^+ \mu^\pm \tau^\mp)/\Gamma_{total}$ — Γ_{660}/Γ

NODE=S041T82

Test of lepton family number conservation.

NODE=S041T82
NODE=S041T82

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<72	90	[1,2] LEES	12P	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Assumes B($B^+ \rightarrow h^+ \ell^+ \tau^-$) = B($B^+ \rightarrow h^+ \ell^- \tau^+$).

NODE=S041T82;LINKAGE=ES

[2] Uses a fully reconstructed hadronic B decay as a tag on the recoil side.

NODE=S041T82;LINKAGE=LE

$\Gamma(K^+ e^+ \mu^-)/\Gamma_{total}$ — Γ_{661}/Γ

NODE=S041R56

Test of lepton family number conservation.

NODE=S041R56
NODE=S041R56

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<7.0 × 10^{-9}	90	AAIJ	19AM	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<3.0 × 10^{-8}	90	CHOUDHURY	21	BELL	$e^+e^- \to \Upsilon(4S)$
<0.91 × 10^{-7}	90	[1] AUBERT,B	06J	BABR	$e^+e^- \to \Upsilon(4S)$
<8 × 10^{-7}	90	[1] AUBERT	02L	BABR	Repl. by AUBERT,B 06J
<6.4 × 10^{-3}	90	[2] WEIR	90B	MRK2	e^+e^- 29 GeV

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] WEIR 90B assumes B^+ production cross section from LUND.

NODE=S041R56;LINKAGE=EP
NODE=S041R56;LINKAGE=A

$\Gamma(K^+ e^- \mu^+)/\Gamma_{total}$ — Γ_{662}/Γ

NODE=S041R57

Test of lepton family number conservation.

NODE=S041R57
NODE=S041R57

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<6.4 × 10^{-9}	90	AAIJ	19AM	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<8.5 × 10^{-8}	90	CHOUDHURY	21	BELL	$e^+e^- \to \Upsilon(4S)$
<1.3 × 10^{-7}	90	[1] AUBERT,B	06J	BABR	$e^+e^- \to \Upsilon(4S)$
<6.4 × 10^{-3}	90	[2] WEIR	90B	MRK2	e^+e^- 29 GeV

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] WEIR 90B assumes B^+ production cross section from LUND.

NODE=S041R57;LINKAGE=EP
NODE=S041R57;LINKAGE=A

$\Gamma(K^+ e^\pm \mu^\mp)/\Gamma_{total}$ — Γ_{663}/Γ

NODE=S041T05
NODE=S041T05

VALUE (units 10^{-7})	CL%	DOCUMENT ID		TECN	COMMENT
<0.91	90	[1] AUBERT,B	06J	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T05;LINKAGE=EP

$\Gamma(K^+ e^+ \tau^-)/\Gamma_{total}$ — Γ_{664}/Γ

NODE=S041T83

Test of lepton family number conservation.

NODE=S041T83
NODE=S041T83

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.53 × 10^{-5}	90	[1] WATANUKI	23	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<4.3 × 10^{-5}	90	[2] LEES	12P	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses a fully reconstructed hadronic B^- decay as a tag on the recoil side.
[2] Uses a fully reconstructed hadronic B decay as a tag on the recoil side.

NODE=S041T83;LINKAGE=A
NODE=S041T83;LINKAGE=LE

$\Gamma(K^+ e^- \tau^+)/\Gamma_{total}$ — Γ_{665}/Γ

NODE=S041T84

Test of lepton family number conservation.

NODE=S041T84
NODE=S041T84

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.51 × 10^{-5}	90	[1] WATANUKI	23	BELL	$e^+e^- \to \Upsilon(4S)$
<1.5 × 10^{-5}	90	[2] LEES	12P	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses a fully reconstructed hadronic B^- decay as a tag on the recoil side.
[2] Uses a fully reconstructed hadronic B decay as a tag on the recoil side.

NODE=S041T84;LINKAGE=A
NODE=S041T84;LINKAGE=LE

$\Gamma(K^+ e^\pm \tau^\mp)/\Gamma_{total}$ — Γ_{666}/Γ

NODE=S041T85

Test of lepton family number conservation.

NODE=S041T85
NODE=S041T85

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<30	90	[1,2] LEES	12P	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes B($B^+ \to h^+ \ell^+ \tau^-$) = B($B^+ \to h^+ \ell^- \tau^+$).
[2] Uses a fully reconstructed hadronic B decay as a tag on the recoil side.

NODE=S041T85;LINKAGE=ES
NODE=S041T85;LINKAGE=LE

$\Gamma(K^+ \mu^+ \tau^-)/\Gamma_{total}$ — Γ_{667}/Γ

NODE=S041T86

Test of lepton family number conservation.

NODE=S041T86
NODE=S041T86

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<2.45 × 10^{-5}	90	[1] WATANUKI	23	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<4.5 × 10^{-5}	90	[2] LEES	12P	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses a fully reconstructed hadronic B^- decay as a tag on the recoil side.
[2] Uses a fully reconstructed hadronic B decay as a tag on the recoil side.

NODE=S041T86;LINKAGE=A
NODE=S041T86;LINKAGE=LE

$\Gamma(K^+ \mu^- \tau^+)/\Gamma_{total}$ — Γ_{668}/Γ

NODE=S041T87

Test of lepton family number conservation.

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.59 × 10⁻⁵	90	[1] WATANUKI 23	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<3.9 \times 10^{-5}$	90	[2] AAIJ 20P	LHCB	pp at 7, 8, 13 TeV
$<2.8 \times 10^{-5}$	90	[3] LEES 12P	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Uses a fully reconstructed hadronic B^- decay as a tag on the recoil side.
[2] Uses the $B^{*0}_{s2} \to B^+ K^-$ decays for kinematic constraints.
[3] Uses a fully reconstructed hadronic B decay as a tag on the recoil side.

NODE=S041T87;LINKAGE=B
NODE=S041T87;LINKAGE=A
NODE=S041T87;LINKAGE=LE

$\Gamma(K^+ \mu^\pm \tau^\mp)/\Gamma_{total}$ — Γ_{669}/Γ

NODE=S041T22

Test of lepton family number conservation.

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<48	90	[1,2] LEES 12P	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<77	90	[1] AUBERT 07AZ	BABR	Repl. by LEES 12P

[1] Uses a fully reconstructed hadronic B decay as a tag on the recoil side.
[2] Assumes $B(B^+ \to h^+ \ell^+ \tau^-) = B(B^+ \to h^+ \ell^- \tau^+)$.

NODE=S041T22;LINKAGE=AU
NODE=S041T22;LINKAGE=ES

$\Gamma(K^*(892)^+ e^+ \mu^-)/\Gamma_{total}$ — Γ_{670}/Γ

NODE=S041T06

VALUE (units 10^{-7})	CL%	DOCUMENT ID	TECN	COMMENT
<13	90	[1] AUBERT,B 06J	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T06;LINKAGE=EP

$\Gamma(K^*(892)^+ e^- \mu^+)/\Gamma_{total}$ — Γ_{671}/Γ

NODE=S041T07

VALUE (units 10^{-7})	CL%	DOCUMENT ID	TECN	COMMENT
<9.9	90	[1] AUBERT,B 06J	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041T07;LINKAGE=EP

$\Gamma(K^*(892)^+ e^\pm \mu^\mp)/\Gamma_{total}$ — Γ_{672}/Γ

NODE=S041B74

Test of lepton family number conservation.

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<1.4 × 10⁻⁶	90	[1] AUBERT,B 06J	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<7.9 \times 10^{-6}$	90	[1] AUBERT 02L	BABR	Repl. by AUBERT,B 06J

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B74;LINKAGE=EP

$\Gamma(\pi^- e^+ e^+)/\Gamma_{total}$ — Γ_{673}/Γ

NODE=S041R58

Test of total lepton number conservation.

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<2.3 × 10⁻⁸	90	[1] LEES 12J	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<1.6 \times 10^{-6}$	90	[1] EDWARDS 02B	CLE2	$e^+ e^- \to \Upsilon(4S)$
<0.0039	90	[2] WEIR 90B	MRK2	$e^+ e^-$ 29 GeV

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] WEIR 90B assumes B^+ production cross section from LUND.

NODE=S041R58;LINKAGE=EP
NODE=S041R58;LINKAGE=A

$\Gamma(\pi^- \mu^+ \mu^+)/\Gamma_{total}$ — Γ_{674}/Γ

NODE=S041R60

Test of total lepton number conservation.

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
< 4.0 × 10⁻⁹	95	[1] AAIJ 14AC	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$< 1.3 \times 10^{-8}$	95	[2] AAIJ 12AD	LHCB	Repl. by AAIJ 14AC
$< 4.4 \times 10^{-8}$	90	AAIJ 12C	LHCB	pp at 7 TeV
$<10.7 \times 10^{-8}$	90	[3] LEES 12J	BABR	$e^+ e^- \to \Upsilon(4S)$
$< 1.4 \times 10^{-6}$	90	[3] EDWARDS 02B	CLE2	$e^+ e^- \to \Upsilon(4S)$
$< 9.1 \times 10^{-3}$	90	[4] WEIR 90B	MRK2	$e^+ e^-$ 29 GeV

[1] Uses $B^+ \to J/\psi K^+$, $J/\psi \to \mu^+ \mu^-$ mode for normalization. Obtains neutrino-mass-dependent upper limits in the range 0.4–4.0 $\times 10^{-9}$. This limit is applicable for Majorana neutrino lifetime < 1 ps.
[2] Uses $B^+ \to J/\psi K^+$, $J/\psi \to \mu^+ \mu^-$ mode for normalization. Obtains neutrino-mass-dependent upper limits in the range 0.4–1.0 $\times 10^{-8}$.
[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[4] WEIR 90B assumes B^+ production cross section from LUND.

NODE=S041R60;LINKAGE=AI
NODE=S041R60;LINKAGE=AA
NODE=S041R60;LINKAGE=EP
NODE=S041R60;LINKAGE=A

$\Gamma(\pi^- e^+ \mu^+)/\Gamma_{total}$ Γ_{675}/Γ

NODE=S041R59

Test of total lepton number conservation.

NODE=S041R59
NODE=S041R59

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.5 × 10^{-7}	90	[1] LEES	14A	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<1.3 × 10^{-6}	90	[1] EDWARDS	02B	CLE2	$e^+ e^- \to \Upsilon(4S)$
<0.0064	90	[2] WEIR	90B	MRK2	$e^+ e^-$ 29 GeV

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] WEIR 90B assumes B^+ production cross section from LUND.

NODE=S041R59;LINKAGE=EP
NODE=S041R59;LINKAGE=A

$\Gamma(\rho^- e^+ e^+)/\Gamma_{total}$ Γ_{676}/Γ

NODE=S041B69

Test of total lepton number conservation.

NODE=S041B69
NODE=S041B69

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.17	90	[1] LEES	14A	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<2.6	90	[1] EDWARDS	02B	CLE2	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B69;LINKAGE=EP

$\Gamma(\rho^- \mu^+ \mu^+)/\Gamma_{total}$ Γ_{677}/Γ

NODE=S041B73

Test of total lepton number conservation.

NODE=S041B73
NODE=S041B73

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.42	90	LEES	14A	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<5.0	90	[1] EDWARDS	02B	CLE2	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B73;LINKAGE=EP

$\Gamma(\rho^- e^+ \mu^+)/\Gamma_{total}$ Γ_{678}/Γ

NODE=S041B72

Test of total lepton number conservation.

NODE=S041B72
NODE=S041B72

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.47	90	[1] LEES	14A	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<3.3	90	[1] EDWARDS	02B	CLE2	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B72;LINKAGE=EP

$\Gamma(K^- e^+ e^+)/\Gamma_{total}$ Γ_{679}/Γ

NODE=S041R61

Test of total lepton number conservation.

NODE=S041R61
NODE=S041R61

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<3.0 × 10^{-8}	90	[1] LEES	12J	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<1.0 × 10^{-6}	90	[1] EDWARDS	02B	CLE2	$e^+ e^- \to \Upsilon(4S)$
<0.0039	90	[2] WEIR	90B	MRK2	$e^+ e^-$ 29 GeV

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] WEIR 90B assumes B^+ production cross section from LUND.

NODE=S041R61;LINKAGE=EP
NODE=S041R61;LINKAGE=A

$\Gamma(K^- \mu^+ \mu^+)/\Gamma_{total}$ Γ_{680}/Γ

NODE=S041R63

Test of total lepton number conservation.

NODE=S041R63
NODE=S041R63

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<4.1 × 10^{-8}	90	AAIJ	12C	LHCB	pp at 7 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<6.7 × 10^{-8}	90	[1] LEES	12J	BABR	$e^+ e^- \to \Upsilon(4S)$
<1.8 × 10^{-6}	90	[1] EDWARDS	02B	CLE2	$e^+ e^- \to \Upsilon(4S)$
<9.1 × 10^{-3}	90	[2] WEIR	90B	MRK2	$e^+ e^-$ 29 GeV

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] WEIR 90B assumes B^+ production cross section from LUND.

NODE=S041R63;LINKAGE=EP
NODE=S041R63;LINKAGE=A

$\Gamma(K^- e^+ \mu^+)/\Gamma_{total}$ Γ_{681}/Γ

NODE=S041R62

Test of total lepton number conservation.

NODE=S041R62
NODE=S041R62

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.6 × 10^{-7}	90	[1] LEES	14A	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<2.0 × 10^{-6}	90	[1] EDWARDS	02B	CLE2	$e^+ e^- \to \Upsilon(4S)$
<0.0064	90	[2] WEIR	90B	MRK2	$e^+ e^-$ 29 GeV

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] WEIR 90B assumes B^+ production cross section from LUND.

NODE=S041R62;LINKAGE=EP
NODE=S041R62;LINKAGE=A

$\Gamma(K^*(892)^- e^+ e^+)/\Gamma_{total}$ — Γ_{682}/Γ

NODE=S041B68

Test of total lepton number conservation.

NODE=S041B68
NODE=S041B68

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.40	90	[1] LEES	14A	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<2.8	90	[1] EDWARDS	02B	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B68;LINKAGE=EP

$\Gamma(K^*(892)^- \mu^+ \mu^+)/\Gamma_{total}$ — Γ_{683}/Γ

NODE=S041B70

Test of total lepton number conservation.

NODE=S041B70
NODE=S041B70

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.59	90	[1] LEES	14A	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<8.3	90	[1] EDWARDS	02B	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B70;LINKAGE=EP

$\Gamma(K^*(892)^- e^+ \mu^+)/\Gamma_{total}$ — Γ_{684}/Γ

NODE=S041B71

Test of total lepton number conservation.

NODE=S041B71
NODE=S041B71

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.30	90	[1] LEES	14A	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<4.4	90	[1] EDWARDS	02B	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S041B71;LINKAGE=EP

$\Gamma(D_s^+ \mu^+ \mu^-)/\Gamma_{total}$ — Γ_{649}/Γ

NODE=S041D27
NODE=S041D27

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.4 \times 10^{-8}$	90	AAIJ	24F	LHCB	pp at 7, 8, 13 TeV

$\Gamma(D^- e^+ e^+)/\Gamma_{total}$ — Γ_{685}/Γ

NODE=S041BL1
NODE=S041BL1;CHECK LIMITS

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.6 \times 10^{-6}$	90	[1] LEES	14A	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$<2.6 \times 10^{-6}$	90	[1,2] SEON	11	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^0 and B^+ from Upsilon(4S) decays.

[2] Uses $D^- \rightarrow K^+\pi^-\pi^-$ mode and 3-body phase-space hypothesis for the signal decays.

NODE=S041BL1;LINKAGE=EP
NODE=S041BL1;LINKAGE=SE

$\Gamma(D^- e^+ \mu^+)/\Gamma_{total}$ — Γ_{686}/Γ

NODE=S041BL2
NODE=S041BL2

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.8 \times 10^{-6}$	90	[1,2] SEON	11	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<2.1 \times 10^{-6}$	90	[1] LEES	14A	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^0 and B^+ from Upsilon(4S) decays.

[2] Uses $D^- \rightarrow K^+\pi^-\pi^-$ mode and 3-body phase-space hypothesis for the signal decays.

NODE=S041BL2;LINKAGE=EP
NODE=S041BL2;LINKAGE=SE

$\Gamma(D^- \mu^+ \mu^+)/\Gamma_{total}$ — Γ_{687}/Γ

NODE=S041BL3
NODE=S041BL3

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$< 6.9 \times 10^{-7}$	95	[1] AAIJ	12AD	LHCB	pp at 7 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<17 \times 10^{-7}$	90	[2] LEES	14A	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$< 1.1 \times 10^{-6}$	90	[2,3] SEON	11	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Uses $B^+ \rightarrow \psi(2S) K^+$, $\psi(2S) \rightarrow J/\psi \pi^+\pi^-$ mode for normalization.

[2] Assumes equal production of B^0 and B^+ from Upsilon(4S) decays.

[3] Uses $D^- \rightarrow K^+\pi^-\pi^-$ mode and 3-body phase-space hypothesis for the signal decays.

NODE=S041BL3;LINKAGE=AA
NODE=S041BL3;LINKAGE=EP
NODE=S041BL3;LINKAGE=SE

$\Gamma(D^{*-} \mu^+ \mu^+)/\Gamma_{total}$ — Γ_{688}/Γ

NODE=S041BL4
NODE=S041BL4

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.4 \times 10^{-6}$	95	[1] AAIJ	12AD	LHCB	pp at 7 TeV

[1] Uses $B^+ \rightarrow \psi(2S) K^+$, $\psi(2S) \rightarrow J/\psi \pi^+\pi^-$ mode for normalization.

NODE=S041BL4;LINKAGE=AA

$\Gamma(D_s^- \mu^+ \mu^+)/\Gamma_{total}$ — Γ_{689}/Γ

NODE=S041BL5
NODE=S041BL5

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5.8 \times 10^{-7}$	95	[1] AAIJ	12AD	LHCB	pp at 7 TeV

[1] Uses $B^+ \rightarrow \psi(2S) K^+$, $\psi(2S) \rightarrow J/\psi \pi^+\pi^-$ mode for normalization. Obtains neutrino-mass-dependent upper limits in the range 1.5–8.0 $\times 10^{-7}$.

NODE=S041BL5;LINKAGE=AA

$\Gamma(\overline{D}^0\pi^-\mu^+\mu^+)/\Gamma_{total}$ Γ_{690}/Γ

NODE=S041BL6

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.5 × 10^{-6}	95	[1] AAIJ	12AD	LHCB	pp at 7 TeV

[1] Uses $B^+ \to \psi(2S)K^+$, $\psi(2S) \to J/\psi\pi^+\pi^-$ mode for normalization. Obtains neutrino-mass-dependent upper limits in the range 0.3–1.5 $\times 10^{-6}$.

NODE=S041BL6;LINKAGE=AA

$\Gamma(\Lambda^0\mu^+)/\Gamma_{total}$ Γ_{691}/Γ

NODE=S041T66

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<6 × 10^{-8}	90	[1,2] DEL-AMO-SA...11K		BABR	$e^+e^- \to \Upsilon(4S)$

[1] DEL-AMO-SANCHEZ 11K reports $< 6.1 \times 10^{-8}$ from a measurement of $[\Gamma(B^+ \to \Lambda^0\mu^+)/\Gamma_{total}] \times [B(\Lambda \to p\pi^-)]$ assuming $B(\Lambda \to p\pi^-) = (63.9 \pm 0.5) \times 10^{-2}$, which we rescale to our best value $B(\Lambda \to p\pi^-) = 64.1 \times 10^{-2}$.

NODE=S041T66;LINKAGE=DE

[2] Uses $B(\Upsilon(4S) \to B^0\overline{B}^0) = (51.6 \pm 0.6)\%$ and $B(\Upsilon(4S) \to B^+B^-) = (48.4 \pm 0.6)\%$.

NODE=S041T66;LINKAGE=NP

$\Gamma(\Lambda^0 e^+)/\Gamma_{total}$ Γ_{692}/Γ

NODE=S041T67

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<3.2 × 10^{-8}	90	[1,2] DEL-AMO-SA...11K		BABR	$e^+e^- \to \Upsilon(4S)$

[1] DEL-AMO-SANCHEZ 11K reports $< 3.2 \times 10^{-8}$ from a measurement of $[\Gamma(B^+ \to \Lambda^0 e^+)/\Gamma_{total}] \times [B(\Lambda \to p\pi^-)]$ assuming $B(\Lambda \to p\pi^-) = (63.9 \pm 0.5) \times 10^{-2}$, which we rescale to our best value $B(\Lambda \to p\pi^-) = 64.1 \times 10^{-2}$.

NODE=S041T67;LINKAGE=DE

[2] Uses $B(\Upsilon(4S) \to B^0\overline{B}^0) = (51.6 \pm 0.6)\%$ and $B(\Upsilon(4S) \to B^+B^-) = (48.4 \pm 0.6)\%$.

NODE=S041T67;LINKAGE=NP

$\Gamma(\overline{\Lambda}^0\mu^+)/\Gamma_{total}$ Γ_{693}/Γ

NODE=S041T68

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<6 × 10^{-8}	90	[1,2] DEL-AMO-SA...11K		BABR	$e^+e^- \to \Upsilon(4S)$

[1] DEL-AMO-SANCHEZ 11K reports $< 6.2 \times 10^{-8}$ from a measurement of $[\Gamma(B^+ \to \overline{\Lambda}^0\mu^+)/\Gamma_{total}] \times [B(\Lambda \to p\pi^-)]$ assuming $B(\Lambda \to p\pi^-) = (63.9 \pm 0.5) \times 10^{-2}$, which we rescale to our best value $B(\Lambda \to p\pi^-) = 64.1 \times 10^{-2}$.

NODE=S041T68;LINKAGE=DE

[2] Uses $B(\Upsilon(4S) \to B^0\overline{B}^0) = (51.6 \pm 0.6)\%$ and $B(\Upsilon(4S) \to B^+B^-) = (48.4 \pm 0.6)\%$.

NODE=S041T68;LINKAGE=NP

$\Gamma(\overline{\Lambda}^0 e^+)/\Gamma_{total}$ Γ_{694}/Γ

NODE=S041T69

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<8 × 10^{-8}	90	[1,2] DEL-AMO-SA...11K		BABR	$e^+e^- \to \Upsilon(4S)$

[1] DEL-AMO-SANCHEZ 11K reports $< 8.1 \times 10^{-8}$ from a measurement of $[\Gamma(B^+ \to \overline{\Lambda}^0 e^+)/\Gamma_{total}] \times [B(\Lambda \to p\pi^-)]$ assuming $B(\Lambda \to p\pi^-) = (63.9 \pm 0.5) \times 10^{-2}$, which we rescale to our best value $B(\Lambda \to p\pi^-) = 64.1 \times 10^{-2}$.

NODE=S041T69;LINKAGE=DE

[2] Uses $B(\Upsilon(4S) \to B^0\overline{B}^0) = (51.6 \pm 0.6)\%$ and $B(\Upsilon(4S) \to B^+B^-) = (48.4 \pm 0.6)\%$.

NODE=S041T69;LINKAGE=NP

$\Gamma(\Xi_c^0\Lambda_c^+)/\Gamma(\overline{\Xi}_c^0\Lambda_c^+)$ $\Gamma_{622}/\Gamma_{621}$

NODE=S041D26

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<2.7 × 10^{-2}	95	[1] GU	24	BELL	$e^+e^- \to \Upsilon(4S)$

[1] The signals are reconstructed in decay chains: $\Xi_c^0 \to \Xi^-\pi^+$, $\Lambda^0K^-\pi^+$, $pK^-K^-\pi^+$, and $\Lambda_c^- \to \overline{p}K_S^0$, $\overline{p}K^+\pi^-$.

NODE=S041D26;LINKAGE=A

POLARIZATION IN B^+ DECAY

NODE=S041230

In decays involving two vector mesons, one can distinguish among the states in which meson polarizations are both longitudinal (L) or both are transverse and parallel ($\parallel$) or perpendicular ($\perp$) to each other with the parameters Γ_L/Γ, $\Gamma_\perp/\Gamma$, and the relative phases $\phi_\parallel$ and $\phi_\perp$. See the definitions in the note on "Polarization in B Decays" review in the B^0 Particle Listings.

NODE=S041230

Γ_L/Γ in $B^+ \to \overline{D}^{*0}\rho^+$

NODE=S041P1

VALUE	DOCUMENT ID		TECN	COMMENT
0.892±0.018±0.016	CSORNA	03	CLE2	$e^+e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^+ \to \overline{D}^{*0}K^{*+}$

NODE=S041GL1

VALUE	DOCUMENT ID		TECN	COMMENT
0.86±0.06±0.03	AUBERT	04K	BABR	$e^+e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^+ \to \overline{D}^{*0}\ell^+\nu_\ell$

NODE=S041A87

VALUE	DOCUMENT ID		TECN	COMMENT
0.514±0.018±0.005	PRIM	23	BELL	$e^+e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^+ \to \overline{D}^{*0} e^+ \nu_e$

NODE=S041A88

VALUE	DOCUMENT ID		TECN	COMMENT
0.505±0.027±0.006	PRIM	23	BELL	$e^+ e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^+ \to \overline{D}^{*0} \mu^+ \nu_\mu$

NODE=S041A89

VALUE	DOCUMENT ID		TECN	COMMENT
0.522±0.025±0.007	PRIM	23	BELL	$e^+ e^- \to \Upsilon(4S)$

$\Delta(\Gamma_L/\Gamma)$ in $B^+ \to \overline{D}^{*0} \ell^+ \nu_\ell$

NODE=S041A90

$\Delta(\Gamma_L/\Gamma) = (\Gamma_L/\Gamma)^\mu - (\Gamma_L/\Gamma)^e$

NODE=S041A90

VALUE	DOCUMENT ID		TECN	COMMENT
0.017±0.037±0.009	PRIM	23	BELL	$e^+ e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^+ \to J/\psi K^{*+}$

NODE=S041GL2

VALUE	DOCUMENT ID		TECN	COMMENT
0.604±0.015±0.018	ITOH	05	BELL	$e^+ e^- \to \Upsilon(4S)$

$\Gamma_\perp/\Gamma$ in $B^+ \to J/\psi K^{*+}$

NODE=S041GP2

VALUE	DOCUMENT ID		TECN	COMMENT
0.180±0.014±0.010	ITOH	05	BELL	$e^+ e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^+ \to \omega K^{*+}$

NODE=S041P11

VALUE	DOCUMENT ID		TECN	COMMENT
0.41±0.18±0.05	AUBERT	09H	BABR	$e^+ e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^+ \to \omega K_2^*(1430)^+$

NODE=S041P12

VALUE	DOCUMENT ID		TECN	COMMENT
0.56±0.10±0.04	AUBERT	09H	BABR	$e^+ e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^+ \to K^{*+} \overline{K}^{*0}$

NODE=S041P05

VALUE	DOCUMENT ID		TECN	COMMENT
$0.82^{+0.15}_{-0.21}$ OUR AVERAGE				
$1.06 \pm 0.30 \pm 0.14$	[1] GOH	15	BELL	$e^+ e^- \to \Upsilon(4S)$
$0.75^{+0.16}_{-0.26} \pm 0.03$	[2,3] AUBERT	09F	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Signal significance 2.7 standard deviations. NODE=S041P05;LINKAGE=B
[2] Signal significance 3.7 standard deviations. NODE=S041P05;LINKAGE=A
[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S041P05;LINKAGE=EP

Γ_L/Γ in $B^+ \to \phi K^*(892)^+$

NODE=S041P3

VALUE	DOCUMENT ID		TECN	COMMENT
0.50±0.05 OUR AVERAGE				
$0.49 \pm 0.05 \pm 0.03$	AUBERT	07BA	BABR	$e^+ e^- \to \Upsilon(4S)$
$0.52 \pm 0.08 \pm 0.03$	CHEN	05A	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.46 \pm 0.12 \pm 0.03$	AUBERT	03V	BABR	Repl. by AUBERT 07BA

$\Gamma_\perp/\Gamma$ in $B^+ \to \phi K^{*+}$

NODE=S041Q58

VALUE	DOCUMENT ID		TECN	COMMENT
0.20±0.05 OUR AVERAGE				
$0.21 \pm 0.05 \pm 0.02$	AUBERT	07BA	BABR	$e^+ e^- \to \Upsilon(4S)$
$0.19 \pm 0.08 \pm 0.02$	CHEN	05A	BELL	$e^+ e^- \to \Upsilon(4S)$

$\phi_\parallel$ in $B^+ \to \phi K^{*+}$

NODE=S041Q59

VALUE (°)	DOCUMENT ID		TECN	COMMENT
2.34±0.18 OUR AVERAGE				
$2.47 \pm 0.20 \pm 0.07$	AUBERT	07BA	BABR	$e^+ e^- \to \Upsilon(4S)$
$2.10 \pm 0.28 \pm 0.04$	CHEN	05A	BELL	$e^+ e^- \to \Upsilon(4S)$

$\phi_\perp$ in $B^+ \to \phi K^{*+}$

NODE=S041Q60

VALUE (°)	DOCUMENT ID		TECN	COMMENT
2.58±0.17 OUR AVERAGE				
$2.69 \pm 0.20 \pm 0.03$	AUBERT	07BA	BABR	$e^+ e^- \to \Upsilon(4S)$
$2.31 \pm 0.30 \pm 0.07$	CHEN	05A	BELL	$e^+ e^- \to \Upsilon(4S)$

$\delta_0(B^+ \to \phi K^{*+})$

NODE=S041Q90

VALUE (rad)	DOCUMENT ID		TECN	COMMENT
3.07±0.18±0.06	AUBERT	07BA	BABR	$e^+ e^- \to \Upsilon(4S)$

$A^0_{CP}(B^+ \to \phi K^{*+})$

NODE=S041Q91

VALUE	DOCUMENT ID		TECN	COMMENT
0.17±0.11±0.02	AUBERT	07BA	BABR	$e^+ e^- \to \Upsilon(4S)$

$A^{\perp}_{CP}(B^+ \to \phi K^{*+})$

NODE=S041Q92

VALUE	DOCUMENT ID		TECN	COMMENT
0.22±0.24±0.08	AUBERT	07BA	BABR	$e^+ e^- \to \Upsilon(4S)$

$\Delta\phi_{\parallel}(B^+ \to \phi K^{*+})$

NODE=S041Q93

VALUE (rad)	DOCUMENT ID		TECN	COMMENT
0.07±0.20±0.05	AUBERT	07BA	BABR	$e^+ e^- \to \Upsilon(4S)$

$\Delta\phi_{\perp}(B^+ \to \phi K^{*+})$

NODE=S041Q94

VALUE (rad)	DOCUMENT ID		TECN	COMMENT
0.19±0.20±0.07	AUBERT	07BA	BABR	$e^+ e^- \to \Upsilon(4S)$

$\Delta\delta_0(B^+ \to \phi K^{*+})$

NODE=S041Q95

VALUE (rad)	DOCUMENT ID		TECN	COMMENT
0.20±0.18±0.03	AUBERT	07BA	BABR	$e^+ e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^+ \to \phi K_1(1270)^+$

NODE=S041Q98

VALUE	DOCUMENT ID		TECN	COMMENT
$0.46^{+0.12}_{-0.13}{}^{+0.06}_{-0.07}$	AUBERT	08BI	BABR	$e^+ e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^+ \to \phi K^*_2(1430)^+$

NODE=S041Q99

VALUE	DOCUMENT ID		TECN	COMMENT
$0.80^{+0.09}_{-0.10}\pm0.03$	AUBERT	08BI	BABR	$e^+ e^- \to \Upsilon(4S)$

$\delta_0(B^+ \to \phi K^*_2(1430)^+)$

NODE=S041P08

VALUE (rad)	DOCUMENT ID		TECN	COMMENT
3.59±0.19±0.12	AUBERT	08BI	BABR	$e^+ e^- \to \Upsilon(4S)$

$\Delta\delta_0(B^+ \to \phi K^*_2(1430)^+)$

NODE=S041P09

VALUE (rad)	DOCUMENT ID		TECN	COMMENT
−0.05±0.19±0.06	AUBERT	08BI	BABR	$e^+ e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^+ \to \rho^0 K^*(892)^+$

NODE=S041P4

VALUE	DOCUMENT ID		TECN	COMMENT
0.78±0.12±0.03	DEL-AMO-SA..11D		BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.96^{+0.04}_{-0.15}\pm0.04$	AUBERT	03V	BABR	Repl. by DEL-AMO-SANCHEZ 11D

$\Gamma_L/\Gamma(B^+ \to K^*(892)^0 \rho^+)$

NODE=S041P06

VALUE	DOCUMENT ID		TECN	COMMENT
0.48±0.08 OUR AVERAGE				
0.52±0.10±0.04	AUBERT,B	06G	BABR	$e^+ e^- \to \Upsilon(4S)$
$0.43\pm0.11^{+0.05}_{-0.02}$	ZHANG	05D	BELL	$e^+ e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^+ \to \mu^+ \mu^- K^*(892)^+$ ($1.0 < q^2 < 8.68$ GeV^2/c^4)

NODE=S041A39

VALUE	DOCUMENT ID		TECN	COMMENT
$0.60^{+0.31}_{-0.25}\pm0.13$	[1] SIRUNYAN	21AC	CMS	pp at 8 TeV

[1] SIRUNYAN 21AC measurement is performed in $1.0 < q^2 < 8.68$ GeV^2/c^4. Reports also measurements in several other q^2 intervals. NODE=S041A39;LINKAGE=A

Γ_L/Γ in $B^+ \to \mu^+ \mu^- K^*(892)^+$ ($1.1 < q^2 < 6.0$ GeV^2/c^4)

NODE=S041A49

VALUE	DOCUMENT ID		TECN	COMMENT
0.59±0.09±0.03	[1] AAIJ	21J	LHCB	pp at 7, 8, 13 TeV

[1] The full set of CP-averaged angular observables is measured as a function of the q^2. The measured Γ_L is related to the polarisation of the $K^*(892)^+$. NODE=S041A49;LINKAGE=A

Γ_L/Γ in $B^+ \to \mu^+\mu^- K^*(892)^+$ ($10.09 < q^2 < 12.86$ GeV^2/c^4)

NODE=S041A40
NODE=S041A40

VALUE	DOCUMENT ID		TECN	COMMENT
$0.88^{+0.10}_{-0.13}\pm0.05$	[1] SIRUNYAN	21AC	CMS	pp at 8 TeV

[1] SIRUNYAN 21AC measurement is performed in $10.09 < q^2 < 12.86$ GeV^2/c^4. Reports also measurements in several other q^2 intervals.

NODE=S041A40;LINKAGE=A

Γ_L/Γ in $B^+ \to \mu^+\mu^- K^*(892)^+$ ($14.18 < q^2 < 19.0$ GeV^2/c^4)

NODE=S041A41
NODE=S041A41

VALUE	DOCUMENT ID		TECN	COMMENT
$0.55^{+0.13}_{-0.10}\pm0.06$	[1] SIRUNYAN	21AC	CMS	pp at 8 TeV

[1] SIRUNYAN 21AC measurement is performed in $14.18 < q^2 < 19.0$ GeV^2/c^4. Reports also measurements in several other q^2 intervals.

NODE=S041A41;LINKAGE=A

Γ_L/Γ in $B^+ \to \mu^+\mu^- K^*(892)^+$ ($15.0 < q^2 < 19.0$ GeV^2/c^4)

NODE=S041A50
NODE=S041A50

VALUE	DOCUMENT ID		TECN	COMMENT
$0.40^{+0.13}_{-0.11}\pm0.03$	[1] AAIJ	21J	LHCB	pp at 7, 8, 13 TeV

[1] The full set of CP-averaged angular observables is measured as a function of the q^2. The measured Γ_L is related to the polarisation of the $K^*(892)^+$.

NODE=S041A50;LINKAGE=A

Γ_L/Γ in $B^+ \to \rho^+\rho^0$

NODE=S041P2
NODE=S041P2

VALUE	DOCUMENT ID		TECN	COMMENT
0.950±0.016 OUR AVERAGE				
0.950±0.015±0.006	AUBERT	09G	BABR	$e^+e^- \to \Upsilon(4S)$
0.948±0.106±0.021	ZHANG	03B	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.905\pm0.042^{+0.023}_{-0.027}$	AUBERT,BE	06G	BABR	Repl. by AUBERT 09G
$0.97\ ^{+0.03}_{-0.07}\pm0.04$	AUBERT	03V	BABR	Repl. by AUBERT,BE 06G

Γ_L/Γ in $B^+ \to \omega\rho^+$

NODE=S041P5
NODE=S041P5

VALUE	DOCUMENT ID		TECN	COMMENT
0.90±0.05±0.03	AUBERT	09H	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.82±0.11±0.02	AUBERT,B	06T	BABR	Repl. by AUBERT 09H
$0.88^{+0.12}_{-0.15}\pm0.03$	AUBERT	05O	BABR	Repl. by AUBERT,B 06T

Γ_L/Γ in $B^+ \to p\overline{p}K^*(892)^+$

NODE=S041P07
NODE=S041P07

VALUE	DOCUMENT ID		TECN	COMMENT
0.32±0.17±0.09	CHEN	08C	BELL	$e^+e^- \to \Upsilon(4S)$

CP VIOLATION

NODE=S041220

A_{CP} is defined as

NODE=S041220

$$\frac{B(B^- \to \overline{f}) - B(B^+ \to f)}{B(B^- \to \overline{f}) + B(B^+ \to f)},$$

the *CP*-violation charge asymmetry of exclusive B^- and B^+ decay.

$A_{CP}(B^+ \to J/\psi(1S)K^+)$

NODE=S041AX1
NODE=S041AX1

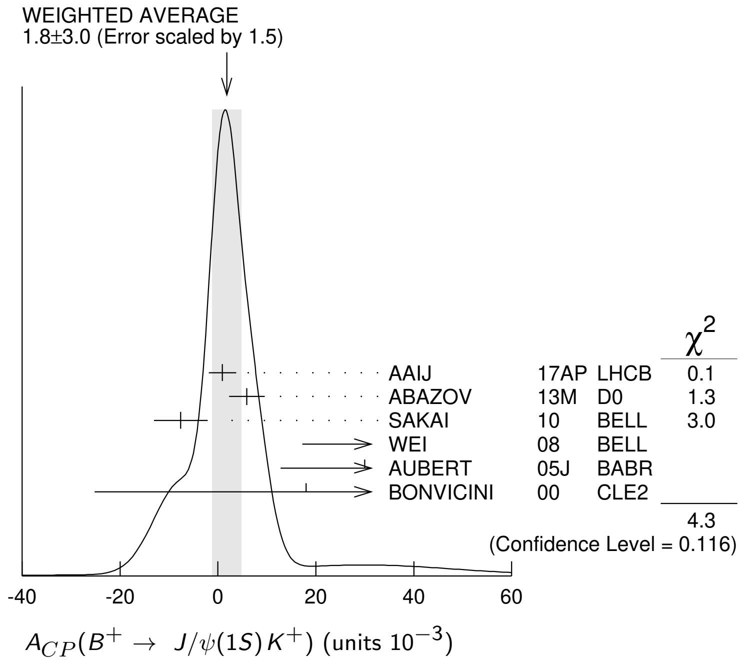
VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
1.8± 3.0 OUR AVERAGE	Error includes scale factor of 1.5. See the ideogram below.			
0.9± 2.7± 0.7	AAIJ	17AP	LHCB	pp at 7, 8 TeV
5.9± 3.6± 0.7	ABAZOV	13M	D0	$p\overline{p}$ at 1.96 TeV
− 7.6± 5.0± 2.2	SAKAI	10	BELL	$e^+e^- \to \Upsilon(4S)$
90 ±70 ±20	[1] WEI	08	BELL	$e^+e^- \to \Upsilon(4S)$
30 ±14 ±10	[2] AUBERT	05J	BABR	$e^+e^- \to \Upsilon(4S)$
18 ±43 ± 4	[3] BONVICINI	00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
7.5± 6.1± 3.0	[4] ABAZOV	08O	D0	Repl. by ABAZOV 13M
30 ±15 ± 6	AUBERT	04P	BABR	Repl. by AUBERT 05J
−26 ±22 ±17	ABE	03B	BELL	Repl. by SAKAI 10
3 ±30 ± 4	AUBERT	02F	BABR	Repl. by AUBERT 04P

[1] Uses $B^+ \to J/\psi K^+$, where $J/\psi \to p\overline{p}$. NODE=S041AX1;LINKAGE=WE

[2] The result reported corresponds to $-A_{CP}$. NODE=S041AX1;LINKAGE=AB

[3] A +0.3% correction is applied due to a slightly higher reconstruction efficiency for the positive kaons. NODE=S041AX1;LINKAGE=A

[4] Uses $J/\psi \to \mu^+\mu^-$ decay. NODE=S041AX1;LINKAGE=AZ



$A_{CP}(B^+ \to J/\psi(1S)\pi^+)$

NODE=S041AX9

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
1.8 ± 1.2 OUR AVERAGE	Error includes scale factor of 1.3.			
1.91 ± 0.89 ± 0.16	[1] AAIJ	17O	LHCB	pp at 7, 8 TeV
−4.2 ± 4.4 ± 0.9	ABAZOV	13M	D0	$p\overline{p}$ at 1.96 TeV
12.3 ± 8.5 ± 0.4	AUBERT	04P	BABR	$e^+e^- \to \Upsilon(4S)$
−2.3 ± 16.4 ± 1.5	ABE	03B	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.5 ± 2.7 ± 1.1	[2] AAIJ	12AC	LHCB	Repl. by AAIJ 17O
−9 ± 8 ± 3	[3] ABAZOV	08O	D0	Repl. by ABAZOV 13M
1 ± 22 ± 1	AUBERT	02F	BABR	Repl. by AUBERT 04P

[1] Obtained by using LHCb measurement of $A_{CP}(B^+ \to J/\psi K^+) = (0.09 \pm 0.27 \pm 0.07) \times 10^{-2}$ of AAIJ 17AP. NODE=S041AX9;LINKAGE=A

[2] Uses $A_{CP}(B^+ \to J/\psi K^+) = 0.001 \pm 0.007$ to extract production asymmetry. NODE=S041AX9;LINKAGE=AA

[3] Uses $J/\psi \to \mu^+\mu^-$ decay. NODE=S041AX9;LINKAGE=AZ

$A_{CP}(B^+ \to J/\psi\rho^+)$

NODE=S041AC5

VALUE	DOCUMENT ID		TECN	COMMENT
−0.05 ± 0.05 OUR AVERAGE				
$-0.045^{+0.056}_{-0.057} \pm 0.008$	AAIJ	19O	LHCB	pp at 7 and 8 TeV
−0.11 ± 0.12 ± 0.08	AUBERT	07AC	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to J/\psi K^*(892)^+)$

NODE=S041AW1

VALUE	DOCUMENT ID		TECN	COMMENT
−0.048 ± 0.029 ± 0.016	[1] AUBERT	05J	BABR	$e^+e^- \to \Upsilon(4S)$

[1] The result reported corresponds to $-A_{CP}$. NODE=S041AW1;LINKAGE=AB

$A_{CP}(B^+ \to \eta_c K^+)$

NODE=S041ABE

VALUE	DOCUMENT ID		TECN	COMMENT
0.01 ± 0.07 OUR AVERAGE	Error includes scale factor of 2.2.			
0.040 ± 0.034 ± 0.004	[1] AAIJ	14AF	LHCB	pp at 7, 8 TeV
−0.16 ± 0.08 ± 0.02	[1] WEI	08	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.046 ± 0.057 ± 0.007	[1] AAIJ	13AU	LHCB	Repl. by AAIJ 14AF

[1] Uses $B^+ \to \eta_c K^+$, where $\eta_c \to p\overline{p}$. NODE=S041ABE;LINKAGE=WE

$A_{CP}(B^+ \to \psi(2S)\pi^+)$

NODE=S041AZ2
NODE=S041AZ2

VALUE		DOCUMENT ID		TECN	COMMENT
0.03 ±0.06 OUR AVERAGE					
0.048±0.090±0.011	[1]	AAIJ	12AC	LHCB	pp at 7 TeV
0.022±0.085±0.016		BHARDWAJ	08	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Uses $A_{CP}(B^+ \to J/\psi K^+) = 0.001 \pm 0.007$ to extract production asymmetry.

NODE=S041AZ2;LINKAGE=AA

$A_{CP}(B^+ \to \psi(2S)K^+)$

NODE=S041AX2
NODE=S041AX2

VALUE		DOCUMENT ID		TECN	COMMENT
0.012±0.020 OUR AVERAGE Error includes scale factor of 1.5. See the ideogram below.					
0.092±0.058±0.004	[1]	AAIJ	14AF	LHCB	pp at 7, 8 TeV
0.024±0.014±0.008	[2]	AAIJ	12AC	LHCB	pp at 7 TeV
0.052±0.059±0.020		AUBERT	05J	BABR	$e^+e^- \to \Upsilon(4S)$
−0.042±0.020±0.017		ABE	03B	BELL	$e^+e^- \to \Upsilon(4S)$
0.02 ±0.091±0.01	[3]	BONVICINI	00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
−0.002±0.123±0.012	[1,2]	AAIJ	13AU	LHCB	Repl. by AAIJ 14AF

[1] Uses $\psi(2S) \to p\overline{p}$ decays.

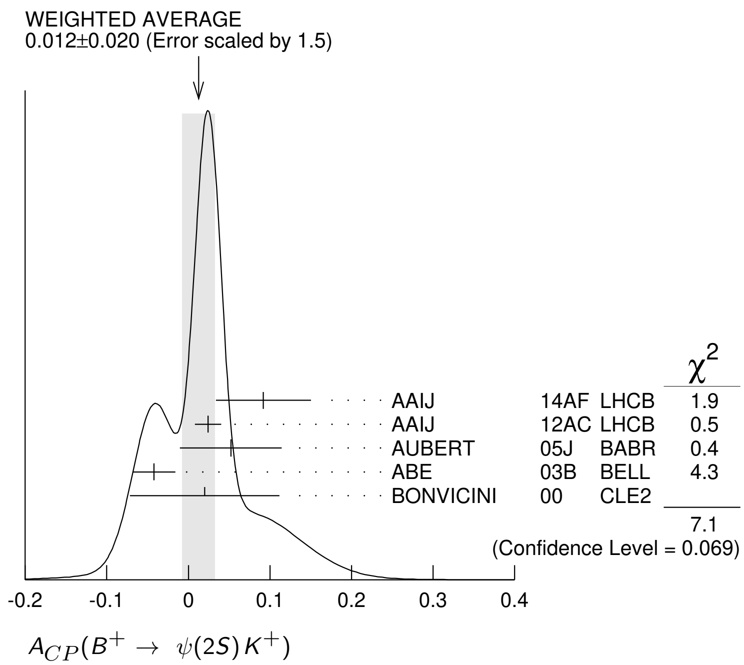
NODE=S041AX2;LINKAGE=AI

[2] Uses $A_{CP}(B^+ \to J/\psi K^+) = 0.001 \pm 0.007$ to extract production asymmetry.

NODE=S041AX2;LINKAGE=AA

[3] A +0.3% correction is applied due to a slightly higher reconstruction efficiency for the positive kaons.

NODE=S041AX2;LINKAGE=A



$A_{CP}(B^+ \to \psi(2S)K^*(892)^+)$

NODE=S041AW2
NODE=S041AW2

VALUE		DOCUMENT ID		TECN	COMMENT
0.077±0.207±0.051	[1]	AUBERT	05J	BABR	$e^+e^- \to \Upsilon(4S)$

[1] The result reported corresponds to $-A_{CP}$.

NODE=S041AW2;LINKAGE=AB

$A_{CP}(B^+ \to \chi_{c1}(1P)\pi^+)$

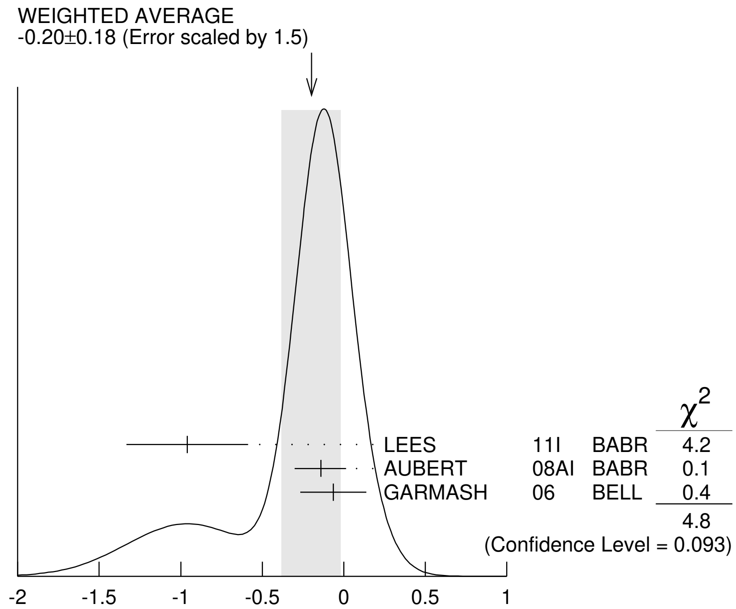
NODE=S041AW5
NODE=S041AW5

VALUE	DOCUMENT ID		TECN	COMMENT
0.07±0.18±0.02	KUMAR	06	BELL	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to \chi_{c0}K^+)$

NODE=S041CQ9
NODE=S041CQ9

VALUE	DOCUMENT ID		TECN	COMMENT
−0.20 ±0.18 OUR AVERAGE Error includes scale factor of 1.5. See the ideogram below.				
−0.96 ±0.37±0.04	LEES	11I	BABR	$e^+e^- \to \Upsilon(4S)$
$-0.14 \pm 0.15^{+0.03}_{-0.06}$	AUBERT	08AI	BABR	$e^+e^- \to \Upsilon(4S)$
$-0.065 \pm 0.20^{+0.035}_{-0.024}$	GARMASH	06	BELL	$e^+e^- \to \Upsilon(4S)$



$A_{CP}(B^+ \to \chi_{c0} K^+)$

$A_{CP}(B^+ \to \chi_{c1} K^+)$

NODE=S041AW3
NODE=S041AW3

VALUE		DOCUMENT ID		TECN	COMMENT
−0.009±0.033 OUR AVERAGE					
−0.01 ±0.03 ±0.02		KUMAR	06	BELL	$e^+ e^- \to \Upsilon(4S)$
−0.003±0.076±0.017	1	AUBERT	05J	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] The result reported corresponds to $-A_{CP}$.

NODE=S041AW3;LINKAGE=AB

$A_{CP}(B^+ \to \chi_{c1} K^*(892)^+)$

NODE=S041AW4
NODE=S041AW4

VALUE		DOCUMENT ID		TECN	COMMENT
0.471±0.378±0.268	1	AUBERT	05J	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] The result reported corresponds to $-A_{CP}$.

NODE=S041AW4;LINKAGE=AB

$A_{CP}(B^+ \to D^0 \ell^+ \nu_\ell)$

NODE=S041A02
NODE=S041A02

VALUE (units 10^{-2})		DOCUMENT ID		TECN	COMMENT
−0.14±0.14±0.14	1	ABAZOV	17A	D0	$p\overline{p}$ at 1.96 TeV

[1] Uses $D^0 \to K^- \pi^+$ decays and f(B^+) = 0.56 ± 0.01 from 10.4 fb^{-1} of Run II data.

NODE=S041A02;LINKAGE=A

$A_{CP}(B^+ \to \overline{D}^0 \pi^+)$

NODE=S041AD2
NODE=S041AD2

VALUE (units 10^{-3})		DOCUMENT ID		TECN	COMMENT
−3.2±3.5 OUR AVERAGE					
[(−3 ± 5) × 10^{-3} OUR 2024 AVERAGE]					
−5 ±4 ± 2		ADACHI	24I	BELL	$e^+ e^- \to \Upsilon(4S)$
1.9±3.6± 5.7		BLOOMFIELD	22	BELL	$e^+ e^- \to \Upsilon(4S)$
−6 ±5 ±10	1	AAIJ	13AE	LHCB	pp at 7 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
−8 ±8		ABE	06	BELL	Repl. by ADACHI 24I

NEW

[1] Uses $B^\pm \to [K^\pm \pi^\mp \pi^+ \pi^-]_D h^\pm$ mode.

NODE=S041AD2;LINKAGE=AJ

$A_{CP}(B^+ \to D_{CP(+1)} \pi^+)$

NODE=S041AD3
NODE=S041AD3

VALUE		DOCUMENT ID		TECN	COMMENT
−0.0088±0.0024 OUR AVERAGE					
[−0.0080 ± 0.0024 OUR 2024 AVERAGE]					
−0.02 ±0.014 ±0.002		ADACHI	24I	BELL	$e^+ e^- \to \Upsilon(4S)$
−0.008 ±0.002 ±0.002	1	AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV
−0.0098±0.0043±0.0021		AAIJ	16L	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
−0.008 ±0.003 ±0.002	2,3	AAIJ	18A	LHCB	pp at 7, 8, 13 TeV
−0.008 ±0.006 ±0.002	3,4	AAIJ	18A	LHCB	pp at 7, 8, 13 TeV
0.035 ±0.024		ABE	06	BELL	Repl. by ADACHI 24I

NEW

OCCUR=2

[1] Uses $D \to K^+ K^-$ and $D \to \pi^+ \pi^-$ decay modes.
[2] Uses $D \to K^+ K^-$ decay mode.
[3] Superseded by AAIJ 21Q.
[4] Uses $D \to \pi^+ \pi^-$ decay mode.

NODE=S041AD3;LINKAGE=D
NODE=S041AD3;LINKAGE=A
NODE=S041AD3;LINKAGE=E
NODE=S041AD3;LINKAGE=B

$A_{CP}(B^+ \to D_{CP(-1)}\pi^+)$

NODE=S041AD4
NODE=S041AD4

VALUE	DOCUMENT ID		TECN	COMMENT
−0.003±0.012 OUR AVERAGE [0.017 ± 0.026 OUR 2024 AVERAGE]				
−0.003±0.012±0.002	ADACHI	24I	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.017±0.026	ABE	06	BELL	Repl. by ADACHI 24I

NEW

$A_{CP}([K^{\mp}\pi^{\pm}\pi^+\pi^-]_D\pi^+)$

NODE=S041AYA
NODE=S041AYA

VALUE	DOCUMENT ID		TECN	COMMENT
0.070±0.019±0.006	AAIJ	23I	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.023±0.048±0.005	[1] AAIJ	16L	LHCB	pp at 7, 8 TeV
0.13 ±0.10	AAIJ	13AE	LHCB	Repl. by AAIJ 16L

[1] Superseded by AAIJ 23I.

NODE=S041AYA;LINKAGE=A

$A_{CP}(B^+ \to [\pi^+\pi^+\pi^-\pi^-]_D K^+)$

NODE=S041A00
NODE=S041A00

VALUE	DOCUMENT ID		TECN	COMMENT
0.061±0.013±0.002	AAIJ	23N	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.100±0.034±0.018	[1] AAIJ	16L	LHCB	pp at 7, 8 TeV

[1] Supersended by AAIJ 23N.

NODE=S041A00;LINKAGE=B

$A_{CP}(B^+ \to [\pi^+\pi^-\pi^+\pi^-]_D K^*(892)^+)$

NODE=S041A08
NODE=S041A08

VALUE	DOCUMENT ID		TECN	COMMENT
0.02±0.11±0.01	AAIJ	17BO	LHCB	pp at 7, 8, 13 TeV

$A_{CP}(B^+ \to [K^+K^-\pi^+\pi^-]_D K^+)$

NODE=S041A69
NODE=S041A69

VALUE	DOCUMENT ID		TECN	COMMENT
0.095±0.023±0.002	AAIJ	23N	LHCB	pp at 7, 8, 13 TeV

$A_{CP}(B^+ \to [K^+K^-\pi^+\pi^-]_D\pi^+)$

NODE=S041A70
NODE=S041A70

VALUE	DOCUMENT ID		TECN	COMMENT
−0.009±0.006±0.001	AAIJ	23N	LHCB	pp at 7, 8, 13 TeV

$A_{CP}(B^+ \to \overline{D}^0 K^+)$

NODE=S041AY2
NODE=S041AY2

VALUE	DOCUMENT ID		TECN	COMMENT
−0.018 ±0.004 OUR AVERAGE				
[−0.017 ± 0.005 OUR 2024 AVERAGE]				
−0.014 ±0.017 ±0.001	ADACHI	24I	BELL	$e^+e^- \to \Upsilon(4S)$
−0.019 ±0.005 ±0.002	[1] AAIJ	18A	LHCB	pp at 7, 8, 13 TeV
−0.0194±0.0072±0.0060	AAIJ	16L	LHCB	pp at 7, 8 TeV
0.010 ±0.026 ±0.005	[2] AAIJ	15W	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.000 ±0.012 ±0.002	[3] AAIJ	16L	LHCB	pp at 7, 8 TeV
−0.029 ±0.020 ±0.018	[3] AAIJ	13AE	LHCB	Repl. by AAIJ 16L
0.066 ±0.036	ABE	06	BELL	Repl. by ADACHI 24I
0.003 ±0.080 ±0.037	[4] ABE	03D	BELL	Repl. by SWAIN 03
0.04 ±0.06 ±0.03	[5] SWAIN	03	BELL	Repl. by ABE 06

NEW

OCCUR=2

[1] Supersedes AAIJ 16L. NODE=S041AY2;LINKAGE=D

[2] Uses $D^0 \to K^-\pi^+\pi^0$ for the favored mode, and $D^0 \to K^+\pi^-\pi^0$ for the suppressed mode. NODE=S041AY2;LINKAGE=B

[3] Uses $B^{\pm} \to [K^{\pm}\pi^{\mp}\pi^+\pi^-]_D h^{\pm}$ mode. NODE=S041AY2;LINKAGE=AJ

[4] Corresponds to 90% confidence range $-0.15 < A_{CP} < 0.16$. NODE=S041AY2;LINKAGE=A

[5] Corresponds to 90% confidence range $-0.07 < A_{CP} < 0.15$. NODE=S041AY2;LINKAGE=SW

$A_{CP}([K^{\mp}\pi^{\pm}\pi^+\pi^-]_D K^+)$

NODE=S041AYB
NODE=S041AYB

VALUE	DOCUMENT ID		TECN	COMMENT
−0.321±0.039±0.005	AAIJ	23I	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.313±0.102±0.038	[1] AAIJ	16L	LHCB	pp at 7, 8 TeV
−0.42 ±0.22	AAIJ	13AE	LHCB	Repl. by AAIJ 16L

[1] Superseded by AAIJ 23I.

NODE=S041AYB;LINKAGE=A

$A_{CP}(B^+ \to [\pi^+\pi^+\pi^-\pi^-]_D \pi^+)$ NODE=S041A01

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
−8.2±3.1±0.7	AAIJ	23N	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−4.1±7.9±2.4	[1] AAIJ	16L	LHCB	pp at 7, 8 TeV

[1] Superseded by AAIJ 23N. NODE=S041A01;LINKAGE=B

$A_{CP}(B^+ \to [K^-\pi^+]_D K^+)$ NODE=S041AC0

VALUE	DOCUMENT ID		TECN	COMMENT
−0.58±0.21 OUR AVERAGE				
−0.82±0.44±0.09	AALTONEN	11AJ	CDF	$p\overline{p}$ at 1.96 TeV
$-0.39^{+0.26}_{-0.28}{}^{+0.04}_{-0.03}$	HORII	11	BELL	$e^+e^- \to \Upsilon(4S)$
$-0.86\pm0.47^{+0.12}_{-0.16}$	DEL-AMO-SA...	10H	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-0.1^{+0.8}_{-1.0}\pm0.4$	HORII	08	BELL	Repl. by HORII 11
$+0.88^{+0.77}_{-0.62}\pm0.06$	SAIGO	05	BELL	Repl. by HORII 08

$A_{CP}(B^+ \to [K^-\pi^+\pi^0]_D K^+)$ NODE=S041AK2

VALUE	DOCUMENT ID		TECN	COMMENT
−0.27±0.27 OUR AVERAGE Error includes scale factor of 2.4.				
−0.38±0.12±0.02	AAIJ	22T	LHCB	pp at 7, 8, 13 TeV
0.41±0.30±0.05	NAYAK	13	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.20±0.27±0.04	[1] AAIJ	15W	LHCB	Repl. by AAIJ 22T

[1] Uses $D^0 \to K^-\pi^+\pi^0$ for the favored mode, and $D^0 \to K^+\pi^-\pi^0$ for the suppressed mode. NODE=S041AK2;LINKAGE=A

$A_{CP}(B^+ \to [K^+\pi^-\pi^0]_D K^+)$ NODE=S041A65

VALUE	DOCUMENT ID		TECN	COMMENT
−0.024±0.013±0.002	AAIJ	22T	LHCB	pp at 7, 8, 13 TeV

$A_{CP}(B^+ \to [K^+K^-\pi^0]_D K^+)$ NODE=S041AG0

VALUE	DOCUMENT ID		TECN	COMMENT
0.067±0.073±0.003	AAIJ	22T	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.30 ±0.20 ±0.02	[1] AAIJ	15W	LHCB	Repl. by AAIJ 22T

[1] Uses $D \to K^+K^-\pi^0$ mode. NODE=S041AG0;LINKAGE=A

$A_{CP}(B^+ \to [\pi^+\pi^-\pi^0]_D K^+)$ NODE=S041AG1

VALUE	DOCUMENT ID		TECN	COMMENT
0.109±0.043±0.003	AAIJ	22T	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.054±0.091±0.011	[1] AAIJ	15W	LHCB	Repl. by AAIJ 22T

[1] Uses $D \to \pi^+\pi^-\pi^0$ mode. NODE=S041AG1;LINKAGE=A

$A_{CP}(B^+ \to \overline{D}^0 K^*(892)^+)$ NODE=S041A09

VALUE	DOCUMENT ID		TECN	COMMENT
−0.007±0.019 OUR AVERAGE				
−0.004±0.023±0.008	[1] AAIJ	17BO	LHCB	pp at 7, 8, 13 TeV
−0.013±0.031±0.009	[2] AAIJ	17BO	LHCB	pp at 7, 8, 13 TeV OCCUR=2

[1] Uses $B^\pm \to [K^\pm\pi^\mp]_D K^*(892)^\pm$ decay mode. NODE=S041A09;LINKAGE=A

[2] Uses $B^\pm \to [K^\pm\pi^\mp\pi^+\pi^-]_D K^*(892)^\pm$ decay mode. NODE=S041A09;LINKAGE=B

$A_{CP}(B^+ \to [K^-\pi^+]_{\overline{D}} K^*(892)^+)$ NODE=S041AC4

VALUE	DOCUMENT ID		TECN	COMMENT
−0.75±0.16 OUR AVERAGE				
−0.81±0.17±0.04	AAIJ	17BO	LHCB	pp at 7, 8, 13 TeV
−0.34±0.43±0.16	AUBERT	09AJ	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.22±0.61±0.17	AUBERT,B	05V	BABR	Repl. by AUBERT 09AJ

$A_{CP}(B^+ \to [K^-\pi^+\pi^-\pi^+]_{\overline{D}} K^*(892)^+)$ NODE=S041A07

VALUE	DOCUMENT ID		TECN	COMMENT
−0.45±0.21±0.14	AAIJ	17BO	LHCB	pp at 7, 8, 13 TeV

$A_{CP}(B^+ \to [K^-\pi^+]_D\pi^+)$

NODE=S041AC1

VALUE	DOCUMENT ID		TECN	COMMENT
0.00±0.09 OUR AVERAGE				
0.13±0.25±0.02	AALTONEN	11AJ	CDF	$p\overline{p}$ at 1.96 TeV
$-0.04\pm0.11^{+0.02}_{-0.01}$	HORII	11	BELL	$e^+e^- \to \Upsilon(4S)$
0.03±0.17±0.04	DEL-AMO-SA...	10H	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-0.02^{+0.15}_{-0.16}\pm0.04$	HORII	08	BELL	Repl. by HORII 11
$+0.30^{+0.29}_{-0.25}\pm0.06$	SAIGO	05	BELL	Repl. by HORII 08

$A_{CP}(B^+ \to [K^-\pi^+\pi^0]_D\pi^+)$

NODE=S041AP2

VALUE	DOCUMENT ID		TECN	COMMENT
0.08 ±0.09 OUR AVERAGE				
0.069±0.094±0.016	AAIJ	22T	LHCB	pp at 7, 8, 13 TeV
$0.16\pm0.27^{+0.03}_{-0.04}$	NAYAK	13	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.438±0.190±0.011	[1] AAIJ	15W	LHCB	Repl. by AAIJ 22T

[1] Uses $D^0 \to K^-\pi^+\pi^0$ for the favored mode, and $D^0 \to K^+\pi^-\pi^0$ for the suppressed mode. NODE=S041AP2;LINKAGE=A

$A_{CP}(B^+ \to [K^+K^-\pi^0]_D\pi^+)$

NODE=S041AG2

VALUE	DOCUMENT ID		TECN	COMMENT
−0.001±0.019±0.002	AAIJ	22T	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.030±0.040±0.005	[1] AAIJ	15W	LHCB	Repl. by AAIJ 22T

[1] Uses $D \to K^+K^-$ mode. NODE=S041AG2;LINKAGE=A

$A_{CP}(B^+ \to [\pi^+\pi^-\pi^0]_D\pi^+)$

NODE=S041AG3

VALUE	DOCUMENT ID		TECN	COMMENT
0.001±0.010±0.002	AAIJ	22T	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.016±0.020±0.004	[1] AAIJ	15W	LHCB	Repl. by AAIJ 22T

[1] Uses $D \to \pi^+\pi^-$ mode. NODE=S041AG3;LINKAGE=A

$A_{CP}(B^+ \to [K^-\pi^+]_{(D\pi)}\pi^+)$

NODE=S041AC6

VALUE	DOCUMENT ID		TECN	COMMENT
−0.09±0.27±0.05	DEL-AMO-SA..	10H	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to [K^-\pi^+]_{(D\gamma)}\pi^+)$

NODE=S041AC7

VALUE	DOCUMENT ID		TECN	COMMENT
−0.65±0.55±0.22	DEL-AMO-SA..	10H	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to [K^-\pi^+]_{(D\pi)}K^+)$

NODE=S041AC8

VALUE	DOCUMENT ID		TECN	COMMENT
0.77±0.35±0.12	DEL-AMO-SA..	10H	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to [K^-\pi^+]_{(D\gamma)}K^+)$

NODE=S041AC9

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.36\pm0.94^{+0.25}_{-0.41}}$	DEL-AMO-SA..	10H	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to [\pi^+\pi^-\pi^0]_D K^+)$

NODE=S041AC2

VALUE	DOCUMENT ID		TECN	COMMENT
−0.02±0.15±0.03	[1] AUBERT	07BJ	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.02±0.16±0.03	AUBERT,B	05T	BABR	Repl. by AUBERT 07BJ

[1] Uses a Dalitz plot analysis of $D^0 \to \pi^+\pi^-\pi^0$. Also reports the one-sigma regions: $0.06 < r_B < 0.78$, $-30^\circ < \gamma < 76^\circ$, and $-27^\circ < \delta < 78^\circ$. NODE=S041AC2;LINKAGE=UB

$A_{CP}(B^+ \to [K^0_S K^+ \pi^-]_D K^+)$

NODE=S041AC3

VALUE	DOCUMENT ID		TECN	COMMENT
0.00 ±0.09 OUR AVERAGE Error includes scale factor of 1.4.				
$-0.089 \pm 0.091 \pm 0.011$	[1] ADACHI	23L	BELL	$e^+ e^- \to \Upsilon(4S)$
$0.095 \pm 0.089 \pm 0.018$	[2] AAIJ	20N	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.040 \pm 0.091 \pm 0.018$	[1] AAIJ	14V	LHCB	Repl. by AAIJ 20N

[1] The analysis uses all of $D \to K^0_S K \pi$ Dalitz decays. NODE=S041AC3;LINKAGE=B

[2] The analysis uses $D \to K^0_S K \pi$ Dalitz decays with $K^{*-} K^+$ region excluded. NODE=S041AC3;LINKAGE=A

$A_{CP}(B^+ \to [K^0_S K^- \pi^+]_D K^+)$

NODE=S041ACA

VALUE	DOCUMENT ID		TECN	COMMENT
0.00 ±0.07 OUR AVERAGE				
$0.109 \pm 0.133 \pm 0.013$	[1] ADACHI	23L	BELL	$e^+ e^- \to \Upsilon(4S)$
$-0.038 \pm 0.075 \pm 0.011$	[2] AAIJ	20N	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.233 \pm 0.129 \pm 0.024$	[1] AAIJ	14V	LHCB	Repl. by AAIJ 20N

[1] The anaysis uses all of $D \to K^0_S K \pi$ Dalitz decays. NODE=S041ACA;LINKAGE=AA

[2] The analysis uses $D \to K^0_S K \pi$ Dalitz decays with $K^{*-} K^+$ region excluded. NODE=S041ACA;LINKAGE=A

$A_{CP}(B^+ \to [K^0_S K^- \pi^+]_D \pi^+)$

NODE=S041ACB

VALUE	DOCUMENT ID		TECN	COMMENT
−0.003±0.014 OUR AVERAGE				
$-0.028 \pm 0.031 \pm 0.009$	[1] ADACHI	23L	BELL	$e^+ e^- \to \Upsilon(4S)$
$0.003 \pm 0.015 \pm 0.003$	[2] AAIJ	20N	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-0.052 \pm 0.029 \pm 0.017$	[1] AAIJ	14V	LHCB	Repl. by AAIJ 20N

[1] The anaysis uses all of $D \to K^0_S K \pi$ Dalitz decays. NODE=S041ACB;LINKAGE=AA

[2] The analysis uses $D \to K^0_S K \pi$ Dalitz decays with $K^{*-} K^+$ region excluded. NODE=S041ACB;LINKAGE=A

$A_{CP}(B^+ \to [K^0_S K^+ \pi^-]_D \pi^+)$

NODE=S041ACC

VALUE	DOCUMENT ID		TECN	COMMENT
−0.016±0.025 OUR AVERAGE Error includes scale factor of 1.5.				
$0.018 \pm 0.026 \pm 0.009$	[1] ADACHI	23L	BELL	$e^+ e^- \to \Upsilon(4S)$
$-0.034 \pm 0.020 \pm 0.003$	[2] AAIJ	20N	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-0.025 \pm 0.024 \pm 0.010$	[1] AAIJ	14V	LHCB	Repl. by AAIJ 20N

[1] The anaysis uses all of $D \to K^0_S K \pi$ Dalitz decays. NODE=S041ACC;LINKAGE=AA

[2] The analysis uses $D \to K^0_S K \pi$ Dalitz decays with $K^{*-} K^+$ region excluded. NODE=S041ACC;LINKAGE=A

$A_{CP}(B^+ \to [K^*(892)^- K^+]_D K^+)$

NODE=S041ACD

VALUE	DOCUMENT ID		TECN	COMMENT
0.08 ±0.05 OUR AVERAGE				
$0.055 \pm 0.119 \pm 0.020$	[1] ADACHI	23L	BELL	$e^+ e^- \to \Upsilon(4S)$
$0.084 \pm 0.049 \pm 0.008$	[1] AAIJ	20N	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.026 \pm 0.109 \pm 0.029$	[1] AAIJ	14V	LHCB	Repl. by AAIJ 20N

[1] The Analysis uses $D \to K^*(892) K \to K^0_S K \pi$ decays. NODE=S041ACD;LINKAGE=AA

$A_{CP}(B^+ \to [K^*(892)^+ K^-]_D K^+)$

NODE=S041ACE

VALUE	DOCUMENT ID		TECN	COMMENT
0.07 ±0.09 OUR AVERAGE				
$0.231 \pm 0.184 \pm 0.014$	[1] ADACHI	23L	BELL	$e^+ e^- \to \Upsilon(4S)$
$0.021 \pm 0.094 \pm 0.017$	[1] AAIJ	20N	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.336 \pm 0.208 \pm 0.026$	[1] AAIJ	14V	LHCB	Repl. by AAIJ 20N

[1] The Analysis uses $D \to K^*(892) K \to K^0_S K \pi$ decays. NODE=S041ACE;LINKAGE=AA

$A_{CP}(B^+ \to [K^*(892)^+ K^-]_D \pi^+)$

NODE=S041ACF

VALUE	DOCUMENT ID		TECN	COMMENT
0.007±0.016 OUR AVERAGE				
0.009±0.046±0.009	[1] ADACHI	23L	BELL	$e^+ e^- \to \Upsilon(4S)$
0.007±0.017±0.003	[1] AAIJ	20N	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.054±0.043±0.017	[1] AAIJ	14V	LHCB	Repl. by AAIJ 20N

[1] The Analysis uses $D \to K^*(892) K \to K^0_S K \pi$ decays.

NODE=S041ACF;LINKAGE=AA

$A_{CP}(B^+ \to [K^*(892)^- K^+]_D \pi^+)$

NODE=S041ACG

VALUE	DOCUMENT ID		TECN	COMMENT
−0.013±0.020 OUR AVERAGE Error includes scale factor of 1.9.				
0.046±0.029±0.016	[1] ADACHI	23L	BELL	$e^+ e^- \to \Upsilon(4S)$
−0.020±0.011±0.003	[1] AAIJ	20N	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.012±0.028±0.010	[1] AAIJ	14V	LHCB	Repl. by AAIJ 20N

[1] The Analysis uses $D \to K^*(892) K \to K^0_S K \pi$ decays.

NODE=S041ACG;LINKAGE=AA

$A_{CP}(B^+ \to D_{CP(+1)} K^+)$

NODE=S041AY3

VALUE	DOCUMENT ID		TECN	COMMENT
0.132±0.015 OUR AVERAGE Error includes scale factor of 1.8.				
0.125±0.058±0.014	ADACHI	24I	BELL	$e^+ e^- \to \Upsilon(4S)$
0.136±0.009±0.001	[1] AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV
0.097±0.018±0.009	AAIJ	16L	LHCB	pp at 7, 8 TeV
0.39 ±0.17 ±0.04	AALTONEN	10A	CDF	$p\bar{p}$ at 1.96 TeV
0.25 ±0.06 ±0.02	[2] DEL-AMO-SA..	10G	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.126±0.014±0.002	[3,4] AAIJ	18A	LHCB	pp at 7, 8, 13 TeV
0.115±0.025±0.007	[4,5] AAIJ	18A	LHCB	pp at 7, 8, 13 TeV (OCCUR=2)
0.145±0.032±0.010	[6] AAIJ	12M	LHCB	Repl. by AAIJ 16L
0.27 ±0.09 ±0.04	AUBERT	08AA	BABR	Repl. by DEL-AMO-SANCHEZ 10G
0.06 ±0.14 ±0.05	ABE	06	BELL	Repl. by ADACHI 24I
0.35 ±0.13 ±0.04	AUBERT	06J	BABR	Repl. by AUBERT 08AA
0.07 ±0.17 ±0.06	AUBERT	04N	BABR	Repl. by AUBERT 06J
0.29 ±0.26 ±0.05	[7] ABE	03D	BELL	Repl. by SWAIN 03
0.06 ±0.19 ±0.04	[8] SWAIN	03	BELL	Repl. by ABE 06

[1] Uses $D \to K^+ K^-$ and $D \to \pi^+ \pi^-$ decay modes. NODE=S041AY3;LINKAGE=D

[2] Reports the first evidence for direct CP violation in $B \to D K$ decays with 3.6 standard deviations. NODE=S041AY3;LINKAGE=DE

[3] Uses $D \to K^+ K^-$ decay mode. NODE=S041AY3;LINKAGE=B

[4] Superseded by AAIJ 21Q. NODE=S041AY3;LINKAGE=E

[5] Uses $D \to \pi^+ \pi^-$ decay mode. NODE=S041AY3;LINKAGE=C

[6] AAIJ 12M reports an evidence of direct CP violation in $B^\pm \to D K^\pm$ decays with a total significance of 5.8 σ. NODE=S041AY3;LINKAGE=AI

[7] Corresponds to 90% confidence range $-0.14 < A_{CP} < 0.73$. NODE=S041AY3;LINKAGE=A

[8] Corresponds to 90% confidence range $-0.26 < A_{CP} < 0.38$. NODE=S041AY3;LINKAGE=SW

$A_{ADS}(B^+ \to D K^+)$

NODE=S041AA1

$$A_{ADS}(B^+ \to D K^+) = \frac{(R_K^- - R_K^+)}{(R_K^- + R_K^+)} \text{ where}$$

NODE=S041AA1

$$R_K^- = \Gamma(B^- \to [K^+ \pi^-]_D K^-) \,/\, \Gamma(B^- \to [K^- \pi^+]_D K^-) \text{ and}$$
$$R_K^+ = \Gamma(B^+ \to [K^- \pi^+]_D K^+) \,/\, \Gamma(B^+ \to [K^+ \pi^-]_D K^+)$$

NODE=S041AA1

VALUE	DOCUMENT ID		TECN	COMMENT
−0.451±0.026	[1] AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.403±0.056±0.011	[2] AAIJ	16L	LHCB	pp at 7, 8 TeV
−0.52 ±0.15 ±0.02	AAIJ	12M	LHCB	Repl. by AAIJ 16L

[1] The statistical and systematic uncertainties have been combined according to the correlations between the R_K^- and R_K^+ observables. NODE=S041AA1;LINKAGE=A

[2] Superseded by AAIJ 21Q. NODE=S041AA1;LINKAGE=B

$A_{ADS}(B^+ \to D\pi^+)$ NODE=S041AA2

$A_{ADS}(B^+ \to D\pi^+) = \frac{(R^-_\pi - R^+_\pi)}{(R^-_\pi + R^+_\pi)}$ where NODE=S041AA2

$R^-_\pi = \Gamma(B^- \to [K^+\pi^-]_D\pi^-) / \Gamma(B^- \to [K^-\pi^+]_D\pi^-)$ and

$R^+_\pi = \Gamma(B^+ \to [K^-\pi^+]_D\pi^+) / \Gamma(B^+ \to [K^+\pi^-]_D\pi^+)$

VALUE	DOCUMENT ID		TECN	COMMENT
0.129±0.014	[1] AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.100±0.031±0.009	[2] AAIJ	16L	LHCB	pp at 7, 8 TeV
0.143±0.062±0.011	AAIJ	12M	LHCB	Repl. by AAIJ 16L

NODE=S041AA2

[1] The statistical and systematic uncertainties have been combined according to the correlations between the R^-_π and R^+_π observables. NODE=S041AA2;LINKAGE=A

[2] Superseded by AAIJ 21Q. NODE=S041AA2;LINKAGE=B

$A_{ADS}(B^+ \to [D\gamma]_{D^*}K^+)$ NODE=S041A45

$A_{ADS}(B^+ \to D^*(D\gamma)K^+) = (R^-_K - R^+_K) / (R^-_K + R^+_K)$, where NODE=S041A45

$R^-_K = \Gamma(B^- \to (\gamma[K^+\pi^-]_D)_{D^*}K^-) / \Gamma(B^- \to (\gamma[K^-\pi^+]_D)_{D^*}K^-)$ and

$R^+_K = \Gamma(B^+ \to (\gamma[K^-\pi^+]_D)_{D^*}K^+) / \Gamma(B^+ \to (\gamma[K^+\pi^-]_D)_{D^*}K^+)$

VALUE	DOCUMENT ID		TECN	COMMENT
−0.558±1.349	[1] AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV

NODE=S041A45

[1] The statistical and systematic uncertainties have been combined according to the correlations between the R^-_K and R^+_K observables. NODE=S041A45;LINKAGE=A

$A_{ADS}(B^+ \to [D\pi^0]_{D^*}K^+)$ NODE=S041A46

$A_{ADS}(B^+ \to D^*(D\pi^0)K^+) = (R^-_K - R^+_K) / (R^-_K + R^+_K)$, where NODE=S041A46

$R^-_K = \Gamma(B^- \to ([K^+\pi^-]_D\pi^0)_{D^*}K^-) / \Gamma(B^- \to ([K^-\pi^+]_D\pi^0)_{D^*}K^-)$ and

$R^+_K = \Gamma(B^+ \to ([K^-\pi^+]_D\pi^0)_{D^*}K^+) / \Gamma(B^+ \to ([K^+\pi^-]_D\pi^0)_{D^*}K^+)$

VALUE	DOCUMENT ID		TECN	COMMENT
0.717±0.286	[1] AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV

NODE=S041A46

[1] The statistical and systematic uncertainties have been combined according to the correlations between the R^-_K and R^+_K observables. NODE=S041A46;LINKAGE=A

$A_{ADS}(B^+ \to [D\gamma]_{D^*}\pi^+)$ NODE=S041A47

$A_{ADS}(B^+ \to D^*(D\gamma)\pi^+) = (R^-_\pi - R^+_\pi) / (R^-_\pi + R^+_\pi)$, where NODE=S041A47

$R^-_\pi = \Gamma(B^- \to (\gamma[K^+\pi^-]_D)_{D^*}\pi^-) / \Gamma(B^- \to (\gamma[K^-\pi^+]_D)_{D^*}\pi^-)$ and

$R^+_\pi = \Gamma(B^+ \to (\gamma[K^-\pi^+]_D)_{D^*}\pi^+) / \Gamma(B^+ \to (\gamma[K^+\pi^-]_D)_{D^*}\pi^+)$

VALUE	DOCUMENT ID		TECN	COMMENT
0.079±0.128	[1] AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV

NODE=S041A47

[1] The statistical and systematic uncertainties have been combined according to the correlations between the R^-_π and R^+_π observables. NODE=S041A47;LINKAGE=A

$A_{ADS}(B^+ \to [D\pi^0]_{D^*}\pi^+)$ NODE=S041A48

$A_{ADS}(B^+ \to D^*(D\pi^0)\pi^+) = (R^-_\pi - R^+_\pi) / (R^-_\pi + R^+_\pi)$, where NODE=S041A48

$R^-_\pi = \Gamma(B^- \to ([K^+\pi^-]_D\pi^0)_{D^*}\pi^-) / \Gamma(B^- \to ([K^-\pi^+]_D\pi^0)_{D^*}\pi^-)$ and

$R^+_\pi = \Gamma(B^+ \to ([K^-\pi^+]_D\pi^0)_{D^*}\pi^+) / \Gamma(B^+ \to ([K^+\pi^-]_D\pi^0)_{D^*}\pi^+)$

VALUE	DOCUMENT ID		TECN	COMMENT
−0.140±0.059	[1] AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV

NODE=S041A48

[1] The statistical and systematic uncertainties have been combined according to the correlations between the R^-_π and R^+_π observables. NODE=S041A48;LINKAGE=A

$A_{ADS}(B^+ \to [K^-\pi^+]_D K^+\pi^-\pi^+)$ NODE=S041AA3

NODE=S041AA3

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{-0.33^{+0.36}_{-0.34}}$	AAIJ	15BC	LHCB	pp at 7, 8 TeV

$A_{ADS}(B^+ \to [K^-\pi^+]_D\pi^+\pi^-\pi^+)$ NODE=S041AA4

NODE=S041AA4

VALUE	DOCUMENT ID		TECN	COMMENT
−0.013±0.087	AAIJ	15BC	LHCB	pp at 7, 8 TeV

$A_{CP}(B^+ \to D_{CP(-1)} K^+)$ NODE=S041AY4

VALUE	DOCUMENT ID		TECN	COMMENT
−0.14 ±0.05 OUR AVERAGE				
[−0.10 ± 0.07 OUR 2024 AVERAGE]				
−0.167±0.057±0.006	ADACHI	24I	BELL	$e^+e^- \to \Upsilon(4S)$
−0.09 ±0.07 ±0.02	DEL-AMO-SA...	10G	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.09 ±0.09 ±0.02	AUBERT	08AA	BABR	Repl. by DEL-AMO-SANCHEZ 10G
−0.12 ±0.14 ±0.05	ABE	06	BELL	Repl. by ADACHI 24I
−0.06 ±0.13 ±0.04	AUBERT	06J	BABR	Repl. by AUBERT 08AA
−0.22 ±0.24 ±0.04	[1] ABE	03D	BELL	Repl. by SWAIN 03
−0.19 ±0.17 ±0.05	[2] SWAIN	03	BELL	Repl. by ABE 06

NODE=S041AY4 NEW

[1] Corresponds to 90% confidence range $-0.62 < A_{CP} < 0.18$. NODE=S041AY4;LINKAGE=A

[2] Corresponds to 90% confidence range $-0.47 < A_{CP} < 0.11$. NODE=S041AY4;LINKAGE=SW

$A_{CP}(B^+ \to [K^+K^-]_D K^+\pi^-\pi^+)$ NODE=S041AA5

VALUE	DOCUMENT ID		TECN	COMMENT
−0.045±0.064±0.011	AAIJ	15BC	LHCB	pp at 7, 8 TeV

NODE=S041AA5

$A_{CP}(B^+ \to [\pi^+\pi^-]_D K^+\pi^-\pi^+)$ NODE=S041AA6

VALUE	DOCUMENT ID		TECN	COMMENT
−0.054±0.101±0.011	AAIJ	15BC	LHCB	pp at 7, 8 TeV

NODE=S041AA6

$A_{CP}(B^+ \to [K^-\pi^+]_D K^+\pi^-\pi^+)$ NODE=S041AA7

VALUE	DOCUMENT ID		TECN	COMMENT
0.013±0.019±0.013	AAIJ	15BC	LHCB	pp at 7, 8 TeV

NODE=S041AA7

$A_{CP}(B^+ \to [K^+K^-]_D \pi^+\pi^-\pi^+)$ NODE=S041AA8

VALUE	DOCUMENT ID		TECN	COMMENT
−0.019±0.011±0.010	AAIJ	15BC	LHCB	pp at 7, 8 TeV

NODE=S041AA8

$A_{CP}(B^+ \to [\pi^+\pi^-]_D \pi^+\pi^-\pi^+)$ NODE=S041AA9

VALUE	DOCUMENT ID		TECN	COMMENT
−0.013±0.016±0.010	AAIJ	15BC	LHCB	pp at 7, 8 TeV

NODE=S041AA9

$A_{CP}(B^+ \to [K^-\pi^+]_D \pi^+\pi^-\pi^+)$ NODE=S041AA0

VALUE	DOCUMENT ID		TECN	COMMENT
−0.002±0.003±0.011	AAIJ	15BC	LHCB	pp at 7, 8 TeV

NODE=S041AA0

$A_{CP}(B^+ \to [\overline{D}^0\gamma]_{\overline{D}^*}\pi^+)$ NODE=S041D29

VALUE	DOCUMENT ID		TECN	COMMENT
−0.004±0.004±0.001	AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.000±0.006±0.001	[1] AAIJ	18A	LHCB	pp at 7, 8, 13 TeV

NODE=S041D29

[1] Superseded by AAIJ 21Q. NODE=S041D29;LINKAGE=A

$A_{CP}(B^+ \to [\overline{D}^0\pi^0]_{\overline{D}^*}\pi^+)$ NODE=S041AD5

VALUE	DOCUMENT ID		TECN	COMMENT
0.0007±0.0022 OUR AVERAGE				
[−0.0004 ± 0.0021 OUR 2024 AVERAGE Scale factor = 1.1]				
0.001 ±0.002 ±0.001	AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV
−0.014 ±0.015	ABE	06	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.002 ±0.003 ±0.001	[1] AAIJ	18A	LHCB	pp at 7, 8, 13 TeV

NODE=S041AD5 NEW OCCUR=2 OCCUR=3

[1] Superseded by AAIJ 21Q. NODE=S041AD5;LINKAGE=F

$A_{CP}(B^+ \to [\overline{D}^0\gamma]_{\overline{D}^{*0}_{CP(-1)}}\pi^+)$ NODE=S041D31

VALUE	DOCUMENT ID		TECN	COMMENT
0.000±0.014±0.006	AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.003±0.017±0.002	[1] AAIJ	18A	LHCB	pp at 7, 8, 13 TeV

NODE=S041D31 OCCUR=3

[1] Superseded by AAIJ 21Q. NODE=S041D31;LINKAGE=A

$A_{CP}(B^+ \to [\overline{D}^0\pi^0]_{D^{*0}_{CP(+1)}}\pi^+)$

NODE=S041AD6

VALUE	DOCUMENT ID		TECN	COMMENT	
0.012±0.008 OUR AVERAGE					NEW
[0.010 ± 0.007 OUR 2024 AVERAGE]					
0.013±0.007±0.003	AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV	OCCUR=2
−0.021±0.045	ABE	06	BELL	$e^+e^- \to \Upsilon(4S)$	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.025±0.010±0.003	[1] AAIJ	18A	LHCB	pp at 7, 8, 13 TeV	OCCUR=2

[1] Superseded by AAIJ 21Q. NODE=S041AD6;LINKAGE=E

$A_{CP}(B^+ \to [\overline{D}^0\pi^0]_{D^{*0}_{CP(-1)}}\pi^+)$

NODE=S041AD7

VALUE	DOCUMENT ID		TECN	COMMENT
−0.090±0.051	ABE	06	BELL	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to [\overline{D}^0\gamma]_{\overline{D}^{*0}}K^+)$

NODE=S041D30

VALUE	DOCUMENT ID		TECN	COMMENT
−0.004±0.014±0.003	[1] AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.001±0.021±0.007	[2] AAIJ	18A	LHCB	pp at 7, 8, 13 TeV

[1] The $\overline{D}^0 \to K^+\pi^-$ decay is used. NODE=S041D30;LINKAGE=B

[2] Superseded by AAIJ 21Q. NODE=S041D30;LINKAGE=A

$A_{CP}(B^+ \to [\overline{D}^0\pi^0]_{\overline{D}^{*0}}K^+)$

NODE=S041AD8

VALUE	DOCUMENT ID		TECN	COMMENT	
0.017±0.007 OUR AVERAGE					NEW
[0.012 ± 0.010 OUR 2024 AVERAGE Scale factor = 1.5]					
0.020±0.007±0.003	[1] AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV	OCCUR=2
−0.06 ±0.04 ±0.01	AUBERT	08BF	BABR	$e^+e^- \to \Upsilon(4S)$	
−0.089±0.086	ABE	06	BELL	$e^+e^- \to \Upsilon(4S)$	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.006±0.012±0.004	[2] AAIJ	18A	LHCB	pp at 7, 8, 13 TeV	OCCUR=2

[1] The $\overline{D}^0 \to K^+\pi^-$ decay is used. NODE=S041AD8;LINKAGE=C

[2] Superseded by AAIJ 21Q. NODE=S041AD8;LINKAGE=E

$A_{CP}(B^+ \to [\overline{D}^0\gamma]_{\overline{D}^{*0}_{CP(-1)}}K^+)$

NODE=S041D32

VALUE	DOCUMENT ID		TECN	COMMENT
0.123±0.054±0.031	AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.276±0.094±0.047	[1] AAIJ	18A	LHCB	pp at 7, 8, 13 TeV

[1] Superseded by AAIJ 21Q. NODE=S041D32;LINKAGE=A

$A_{CP}(B^+ \to [D^0\pi^0]_{D^{*0}_{CP(+1)}}K^+)$

NODE=S041AC+

VALUE	DOCUMENT ID		TECN	COMMENT	
−0.115±0.020 OUR AVERAGE					NEW
[−0.09 ± 0.05 OUR 2024 AVERAGE Scale factor = 2.6]					
−0.115±0.019±0.009	AAIJ	21Q	LHCB	pp at 7, 8, 13 TeV	OCCUR=2
−0.11 ±0.09 ±0.01	AUBERT	08BF	BABR	$e^+e^- \to \Upsilon(4S)$	
−0.20 ±0.22 ±0.04	ABE	06	BELL	$e^+e^- \to \Upsilon(4S)$	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
−0.151±0.033±0.011	[1] AAIJ	18A	LHCB	pp at 7, 8, 13 TeV	OCCUR=2
−0.10 ±0.23 $^{+0.03}_{-0.04}$	AUBERT	05N	BABR	Repl. by AUBERT 08BF	

[1] Superseded by AAIJ 21Q. NODE=S041AC+;LINKAGE=E

$A_{CP}(B^+ \to [D^0\pi^0]_{D^{*0}_{CP(-1)}}K^+)$

NODE=S041AD1

VALUE	DOCUMENT ID		TECN	COMMENT
0.07±0.10 OUR AVERAGE				
+0.06±0.10±0.02	AUBERT	08BF	BABR	$e^+e^- \to \Upsilon(4S)$
+0.13±0.30±0.08	ABE	06	BELL	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to D_{CP(+1)} K^*(892)^+)$

NODE=S041AD+
NODE=S041AD+

VALUE	DOCUMENT ID	TECN	COMMENT
0.08±0.06 OUR AVERAGE			
0.08±0.06±0.01	[1] AAIJ 17BO	LHCB	pp at 7, 8, 13 TeV
0.09±0.13±0.06	AUBERT 09AJ	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
−0.08±0.19±0.08	AUBERT,B 05U	BABR	Repl. by AUBERT 09AJ

[1] Measures the asymmetry separately for K^+K^- and $\pi^+\pi^-$ final states, $A(KK) = 0.06 \pm 0.07 \pm 0.01$and $A(\pi\pi) = 0.15 \pm 0.13 \pm 0.01$, and combines the two results. The value of $A(\pi\pi)$ was updated in AAIJ 18X.

NODE=S041AD+;LINKAGE=A

$A_{CP}(B^+ \to D_{CP(-1)} K^*(892)^+)$

NODE=S041AD-
NODE=S041AD-

VALUE	DOCUMENT ID	TECN	COMMENT
−0.23±0.21±0.07	AUBERT 09AJ	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
−0.26±0.40±0.12	AUBERT,B 05U	BABR	Repl. by AUBERT 09AJ

$A_{CP}(B^+ \to D_s^+ \phi)$

NODE=S041ADP
NODE=S041ADP

VALUE	DOCUMENT ID	TECN	COMMENT
−0.01±0.41±0.03	AAIJ 13R	LHCB	pp at 7 TeV

$A_{CP}(B^+ \to D_s^+ \overline{D}^0)$

NODE=S041A10
NODE=S041A10

VALUE (%)	DOCUMENT ID	TECN	COMMENT
0.5±0.2±0.6	[1] AAIJ 23AX	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
−0.4±0.5±0.5	AAIJ 18W	LHCB	Repl. by AAIJ 23AX

[1] The last error includes the uncertainty from $A_{CP}(B^+ \to J/\psi K^+)$.

NODE=S041A10;LINKAGE=A

$A_{CP}(B^+ \to D_s^{*+} \overline{D}^0)$

NODE=S041D14
NODE=S041D14

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
−0.5±1.1±1.0	[1] AAIJ 23AX	LHCB	pp at 7, 8, 13 TeV

[1] The last error includes the uncertainty from $A_{CP}(B^+ \to J/\psi K^+)$.

NODE=S041D14;LINKAGE=A

$A_{CP}(B^+ \to D_s^+ \overline{D}^{*0})$

NODE=S041D15
NODE=S041D15

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
1.1±0.8±0.7	[1] AAIJ 23AX	LHCB	pp at 7, 8, 13 TeV

[1] The last error includes the uncertainty from $A_{CP}(B^+ \to J/\psi K^+)$.

NODE=S041D15;LINKAGE=A

$A_{CP}(B^+ \to D^{*+} \overline{D}^{*0})$

NODE=S041AS1
NODE=S041AS1

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
1.3± 2.6 OUR AVERAGE			
2.3± 2.1±1.7	[1] AAIJ 23AX	LHCB	pp at 7, 8, 13 TeV
−15 ±11 ±2	AUBERT,B 06A	BABR	$e^+e^- \to \Upsilon(4S)$

[1] The last error includes the uncertainty from $A_{CP}(B^+ \to J/\psi K^+)$.

NODE=S041AS1;LINKAGE=A

$A_{CP}(B^+ \to D^{*+} \overline{D}^0)$

NODE=S041AS2
NODE=S041AS2

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
3.1± 1.7 OUR AVERAGE			
3.3± 1.6±0.7	[1] AAIJ 23AX	LHCB	pp at 7, 8, 13 TeV
−6 ±13 ±2	AUBERT,B 06A	BABR	$e^+e^- \to \Upsilon(4S)$

[1] The last error includes the uncertainty from $A_{CP}(B^+ \to J/\psi K^+)$.

NODE=S041AS2;LINKAGE=A

$A_{CP}(B^+ \to D^+ \overline{D}^{*0})$

NODE=S041AS3
NODE=S041AS3

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
0.0± 2.4 OUR AVERAGE			
− 0.2± 2.0±1.4	[1] AAIJ 23AX	LHCB	pp at 7, 8, 13 TeV
13 ±18 ±4	AUBERT,B 06A	BABR	$e^+e^- \to \Upsilon(4S)$

[1] The last error includes the uncertainty from $A_{CP}(B^+ \to J/\psi K^+)$.

NODE=S041AS3;LINKAGE=A

$A_{CP}(B^+ \to D^+ \overline{D}^0)$

NODE=S041AS4

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
2.4± 1.1 OUR AVERAGE			
2.5± 1.0±0.5	[1] AAIJ 23AX	LHCB	pp at 7, 8, 13 TeV
0 ± 8 ±2	ADACHI 08	BELL	$e^+e^- \to \Upsilon(4S)$
−13 ±14 ±2	AUBERT,B 06A	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
2.3± 2.7±0.4	AAIJ 18W	LHCB	Repl. by AAIJ 23AX

[1] The last error includes the uncertainty from $A_{CP}(B^+ \to J/\psi K^+)$. NODE=S041AS4;LINKAGE=A

$A_{CP}(B^+ \to K^0_S \pi^+)$

NODE=S041AX4

VALUE	DOCUMENT ID	TECN	COMMENT
−0.003±0.015 OUR AVERAGE	Error includes scale factor of 1.1.		
0.046±0.029±0.007	ADACHI 24	BELL	$e^+e^- \to \Upsilon(4S)$
−0.022±0.025±0.010	AAIJ 13BS	LHCB	pp at 7 TeV
−0.011±0.021±0.006	DUH 13	BELL	$e^+e^- \to \Upsilon(4S)$
−0.029±0.039±0.010	[1] AUBERT,BE 06C	BABR	$e^+e^- \to \Upsilon(4S)$
0.18 ±0.24	[2] CHEN 00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.03 ±0.03 ±0.01	LIN 07	BELL	Repl. by DUH 13
−0.09 ±0.05 ±0.01	[3] AUBERT,BE 05E	BABR	Repl. by AUBERT,BE 06C
0.05 ±0.05 ±0.01	[4] CHAO 05A	BELL	Repl. by LIN 07
−0.05 ±0.08 ±0.01	[5] AUBERT 04M	BABR	Repl. by AUBERT,BE 05E
$0.07\ ^{+0.09}_{-0.08}\ ^{+0.01}_{-0.03}$	[6] UNNO 03	BELL	Repl. by CHAO 05A
0.46 ±0.15 ±0.02	[7] CASEY 02	BELL	Repl. by UNNO 03
$0.098\ ^{+0.430}_{-0.343}\ ^{+0.020}_{-0.063}$	[8] ABE 01K	BELL	Repl. by CASEY 02
−0.21 ±0.18 ±0.03	[9] AUBERT 01E	BABR	Repl. by AUBERT 04M

[1] Corresponds to 90% confidence range $-0.092 < A_{CP} < 0.036$. NODE=S041AX4;LINKAGE=AE
[2] Corresponds to 90% confidence range $-0.22 < A_{CP} < 0.56$. NODE=S041AX4;LINKAGE=A
[3] Corresponds to 90% confidence range $-0.16 < A_{CP} < -0.02$. NODE=S041AX4;LINKAGE=AB
[4] Corresponds to 90% confidence range $-0.04 < A_{CP} < 0.13$. NODE=S041AX4;LINKAGE=CO
[5] Corresponds to 90% confidence range $-0.18 < A_{CP} < 0.08$. NODE=S041AX4;LINKAGE=AU
[6] Corresponds to 90% confidence range $-0.10 < A_{CP} < +0.22$. NODE=S041AX4;LINKAGE=UN
[7] Corresponds to 90% confidence range $+0.19 < A_{CP} < +0.72$. NODE=S041AX4;LINKAGE=CA
[8] Corresponds to 90% confidence range $-0.53 < A_{CP} < 0.82$. NODE=S041AX4;LINKAGE=AX
[9] Corresponds to 90% confidence range $-0.51 < A_{CP} < 0.09$. NODE=S041AX4;LINKAGE=L3

$A_{CP}(B^+ \to K^+ \pi^0)$

NODE=S041AX3

VALUE	DOCUMENT ID	TECN	COMMENT
0.027±0.012 OUR AVERAGE			
0.013±0.027±0.005	ADACHI 24	BELL	$e^+e^- \to \Upsilon(4S)$
0.025±0.015±0.007	AAIJ 21H	LHCB	pp at 13 TeV
0.043±0.024±0.002	DUH 13	BELL	$e^+e^- \to \Upsilon(4S)$
0.030±0.039±0.010	AUBERT 07BC	BABR	$e^+e^- \to \Upsilon(4S)$
−0.29 ±0.23	[1] CHEN 00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.07 ±0.03 ±0.01	LIN 08	BELL	Repl. by DUH 13
0.06 ±0.06 ±0.01	[2] AUBERT 05L	BABR	Repl. by AUBERT 07BC
0.06 ±0.06 ±0.02	[2] CHAO 05A	BELL	Repl. by CHAO 04B
0.04 ±0.05 ±0.02	[3] CHAO 04B	BELL	Repl. by LIN 08
−0.09 ±0.09 ±0.01	[4] AUBERT 03L	BABR	Repl. by AUBERT 05L
−0.02 ±0.19 ±0.02	[5] CASEY 02	BELL	Repl. by CHAO 04B
$-0.059\ ^{+0.222}_{-0.196}\ ^{+0.055}_{-0.017}$	[6] ABE 01K	BELL	Repl. by CASEY 02
0.00 ±0.18 ±0.04	[7] AUBERT 01E	BABR	Repl. by AUBERT 03L

[1] Corresponds to 90% confidence range $-0.67 < A_{CP} < 0.09$. NODE=S041AX3;LINKAGE=A
[2] Corresponds to a 90% CL interval of $-0.06 < A_{CP} < 0.18$. NODE=S041AX3;LINKAGE=CO
[3] Corresponds to 90% CL interval of $-0.05 < A_{CP} < 0.13$. NODE=S041AX3;LINKAGE=CH
[4] Corresponds to 90% confidence range $-0.24 < A_{CP} < 0.06$. NODE=S041AX3;LINKAGE=3L
[5] Corresponds to 90% confidence range $-0.35 < A_{CP} < +0.30$. NODE=S041AX3;LINKAGE=CA
[6] Corresponds to 90% confidence range $-0.40 < A_{CP} < 0.36$. NODE=S041AX3;LINKAGE=AX
[7] Corresponds to 90% confidence range $-0.30 < A_{CP} < +0.30$. NODE=S041AX3;LINKAGE=L3

$A_{CP}(B^+ \to \eta' K^+)$

NODE=S041AX5

VALUE		DOCUMENT ID		TECN	COMMENT
0.004±0.011 OUR AVERAGE					
−0.002±0.012±0.006	[1]	AAIJ	15O	LHCB	pp at 7, 8 TeV
$0.008^{+0.017}_{-0.018}\pm0.009$		AUBERT	09AV	BABR	$e^+e^- \to \Upsilon(4S)$
0.028±0.028±0.021		SCHUEMANN	06	BELL	$e^+e^- \to \Upsilon(4S)$
0.03 ±0.12	[2]	CHEN	00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.010±0.022±0.006		AUBERT	07AE	BABR	Repl. by AUBERT 09AV
0.033±0.028±0.005	[3]	AUBERT	05M	BABR	Repl. by AUBERT 07AE
0.037±0.045±0.011	[4]	AUBERT	03W	BABR	Repl. by AUBERT 05M
−0.11 ±0.11 ±0.02	[5]	AUBERT	02E	BABR	Repl. by AUBERT 05M
−0.015±0.070±0.009	[6]	CHEN	02B	BELL	Repl. by SCHUEMANN 06
0.06 ±0.15 ±0.01	[7]	ABE	01M	BELL	Repl. by CHEN 02B

[1] Obtained using $A_{CP}(B^\pm \to J/\psi K^\pm) = (0.3 \pm 0.6) \times 10^{-2}$. NODE=S041AX5;LINKAGE=B

[2] Corresponds to 90% confidence range $-0.17 < A_{CP} < 0.23$. NODE=S041AX5;LINKAGE=A

[3] Corresponds to 90% confidence range $-0.012 < A_{CP} < 0.078$. NODE=S041AX5;LINKAGE=AU

[4] Corresponds to 90% confidence range $-0.04 < A_{CP} < 0.11$. NODE=S041AX5;LINKAGE=BW

[5] Corresponds to 90% confidence range $-0.28 < A_{CP} < 0.07$. NODE=S041AX5;LINKAGE=AY

[6] Corresponds to 90% confidence range $-0.13 < A_{CP} < 0.10$. NODE=S041AX5;LINKAGE=C

[7] Corresponds to 90% confidence range $-0.20 < A_{CP} < 0.32$. NODE=S041AX5;LINKAGE=AX

$A_{CP}(B^+ \to \eta' K^*(892)^+)$

NODE=S041CR7

VALUE		DOCUMENT ID		TECN	COMMENT
−0.26±0.27±0.02		DEL-AMO-SA...	10A	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$-0.30^{+0.33}_{-0.37}\pm0.02$	[1]	AUBERT	07E	BABR	Repl. by DEL-AMO-SANCHEZ 10A

[1] Reports A_{CP} with the opposite sign convention. NODE=S041CR7;LINKAGE=OS

$A_{CP}(B^+ \to \eta' K_0^*(1430)^+)$

NODE=S041CT7

VALUE	DOCUMENT ID		TECN	COMMENT
0.06±0.20±0.02	DEL-AMO-SA...	10A	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to \eta' K_2^*(1430)^+)$

NODE=S041CT8

VALUE	DOCUMENT ID		TECN	COMMENT
0.15±0.13±0.02	DEL-AMO-SA...	10A	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to \eta K^+)$

NODE=S041CP3

VALUE	DOCUMENT ID		TECN	COMMENT
−0.37±0.08 OUR AVERAGE				
−0.38±0.11±0.01	HOI	12	BELL	$e^+e^- \to \Upsilon(4S)$
−0.36±0.11±0.03	AUBERT	09AV	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.22±0.11±0.01	AUBERT	07AE	BABR	Repl. by AUBERT 09AV
−0.39±0.16±0.03	CHANG	07B	BELL	Repl. by HOI 12
−0.20±0.15±0.01	AUBERT,B	05K	BABR	Repl. by AUBERT 07AE
−0.49±0.31±0.07	CHANG	05A	BELL	Repl. by CHANG 07B
−0.52±0.24±0.01	AUBERT	04H	BABR	Repl. by AUBERT,B 05K

$A_{CP}(B^+ \to \eta K^*(892)^+)$

NODE=S041CP1

VALUE	DOCUMENT ID		TECN	COMMENT
0.02±0.06 OUR AVERAGE				
0.03±0.10±0.01	WANG	07B	BELL	$e^+e^- \to \Upsilon(4S)$
0.01±0.08±0.02	AUBERT,B	06H	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.13±0.14±0.02	AUBERT,B	04D	BABR	Repl. by AUBERT,B 06H

$A_{CP}(B^+ \to \eta K_0^*(1430)^+)$

NODE=S041CR5

VALUE	DOCUMENT ID		TECN	COMMENT
0.05±0.13±0.02	AUBERT,B	06H	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to \eta K_2^*(1430)^+)$

NODE=S041CR6

VALUE	DOCUMENT ID		TECN	COMMENT
−0.45±0.30±0.02	AUBERT,B	06H	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to \omega K^+)$

NODE=S041AY1

VALUE	DOCUMENT ID		TECN	COMMENT
-0.02 ± 0.04 OUR AVERAGE				
$-0.03 \pm 0.04 \pm 0.01$	CHOBANOVA	14	BELL	$e^+ e^- \to \Upsilon(4S)$
$-0.01 \pm 0.07 \pm 0.01$	AUBERT	07AE	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.05 \pm 0.09 \pm 0.01$	AUBERT,B	06E	BABR	Repl. by AUBERT 07AE
$0.05 ^{+0.08}_{-0.07} \pm 0.01$	JEN	06	BELL	Repl. by CHOBANOVA 14
$-0.09 \pm 0.17 \pm 0.01$	AUBERT	04H	BABR	Repl. by AUBERT,B 06E
$0.06 ^{+0.21}_{-0.18} \pm 0.01$	[1] WANG	04A	BELL	Repl. by JEN 06
$-0.21 \pm 0.28 \pm 0.03$	[2] LU	02	BELL	Repl. by WANG 04A

[1] Corresponds to 90% CL interval $0.15 < A_{CP} < 0.90$ NODE=S041AY1;LINKAGE=WA

[2] Corresponds to 90% confidence range $-0.70 < A_{CP} < +0.38$. NODE=S041AY1;LINKAGE=A

$A_{CP}(B^+ \to \omega K^{*+})$

NODE=S041CT0

VALUE	DOCUMENT ID		TECN	COMMENT
$+0.29 \pm 0.35 \pm 0.02$	AUBERT	09H	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to \omega (K\pi)^{*+}_0)$

NODE=S041CT2

VALUE	DOCUMENT ID		TECN	COMMENT
$-0.10 \pm 0.09 \pm 0.02$	AUBERT	09H	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to \omega K^*_2(1430)^+)$

NODE=S041CT3

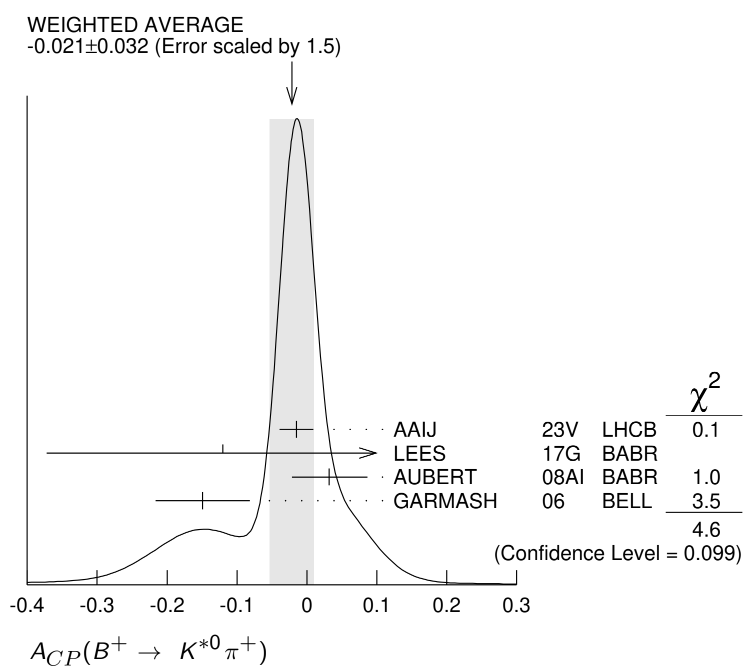
VALUE	DOCUMENT ID		TECN	COMMENT
$+0.14 \pm 0.15 \pm 0.02$	AUBERT	09H	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to K^{*0} \pi^+)$

NODE=S041CQ4

VALUE	DOCUMENT ID		TECN	COMMENT
-0.021 ± 0.032 OUR AVERAGE Error includes scale factor of 1.5. See the ideogram below.				
$-0.015 \pm 0.021 \pm 0.012$	AAIJ	23V	LHCB	pp at 13 TeV
$-0.12 \pm 0.21 ^{+0.08}_{-0.14}$	[1] LEES	17G	BABR	$e^+ e^- \to \Upsilon(4S)$
$0.032 \pm 0.052 ^{+0.016}_{-0.013}$	AUBERT	08AI	BABR	$e^+ e^- \to \Upsilon(4S)$
$-0.149 \pm 0.064 \pm 0.022$	GARMASH	06	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.068 \pm 0.078 ^{+0.070}_{-0.067}$	AUBERT,B	05N	BABR	Repl. by AUBERT 08AI

[1] Obtains the result from a Dalitz analysis of $B^+ \to K^0_S \pi^+ \pi^0$ decays. The first error is statistical, the second combines all the systematic uncertainties reported in the paper, including signal modelling. NODE=S041CQ4;LINKAGE=A



$A_{CP}(B^+ \to K^*(892)^+ \pi^0)$ NODE=S041CP8

VALUE	DOCUMENT ID	TECN	COMMENT
−0.39±0.21 OUR AVERAGE Error includes scale factor of 1.6.			
$-0.52 \pm 0.14^{+0.06}_{-0.05}$	[1] LEES 17G	BABR	$e^+ e^- \to \Upsilon(4S)$
$-0.06 \pm 0.24 \pm 0.04$	LEES 11I	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.04 \pm 0.29 \pm 0.05$	AUBERT 05X	BABR	Repl. by LEES 11I

[1] Obtains the result from a Dalitz analysis of $B^+ \to K^0_S \pi^+ \pi^0$ decays. The first error is statistical, the second combines all the systematic uncertainties reported in the paper, including signal modelling. NODE=S041CP8;LINKAGE=A

$A_{CP}(B^+ \to K^+ \pi^- \pi^+)$ NODE=S041AY6

VALUE	DOCUMENT ID	TECN	COMMENT
0.015±0.006 OUR AVERAGE Error includes scale factor of 1.4.			
$0.011 \pm 0.002 \pm 0.004$	[1] AAIJ 23U	LHCB	pp at 13 TeV
$0.025 \pm 0.004 \pm 0.008$	[1] AAIJ 14BO	LHCB	pp at 7, 8 TeV
$0.028 \pm 0.020 \pm 0.023$	AUBERT 08AI	BABR	$e^+ e^- \to \Upsilon(4S)$
$0.049 \pm 0.026 \pm 0.020$	GARMASH 06	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.032 \pm 0.008 \pm 0.008$	AAIJ 13AZ	LHCB	Repl. by AAIJ 14BO
$-0.013 \pm 0.037 \pm 0.011$	AUBERT,B 05N	BABR	Repl. by AUBERT 08AI
$0.01 \pm 0.07 \pm 0.03$	AUBERT 03M	BABR	Repl. by AUBERT,B 05N

[1] The second error includes both systematics and the uncertainties from CP asymmetries in restricted regions of phase space. NODE=S041AY6;LINKAGE=A

$A_{CP}(B^+ \to K^+ K^- K^+$ nonresonant) NODE=S041CU6

VALUE	DOCUMENT ID	TECN	COMMENT
0.060±0.044±0.019	LEES 12O	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to f(980)^0 K^+)$ NODE=S041CU7

VALUE	DOCUMENT ID	TECN	COMMENT
−0.08±0.08±0.04	[1] LEES 12O	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Measured in the $B^+ \to K^+ K^- K^+$ decay. NODE=S041CU7;LINKAGE=LE

$A_{CP}(B^+ \to f_2(1270) K^+)$ NODE=S041CR0

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{-0.68^{+0.19}_{-0.17}}$ **OUR AVERAGE**			
$-0.85 \pm 0.22^{+0.26}_{-0.13}$	AUBERT 08AI	BABR	$e^+ e^- \to \Upsilon(4S)$
$-0.59 \pm 0.22 \pm 0.036$	GARMASH 06	BELL	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to f_0(1500) K^+)$ NODE=S041CS5

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{0.28 \pm 0.26^{+0.15}_{-0.14}}$	AUBERT 08AI	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to f'_2(1525)^0 K^+)$ NODE=S041CQ5

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{-0.08^{+0.05}_{-0.04}}$ **OUR AVERAGE**			
$0.18 \pm 0.18 \pm 0.04$	[1] LEES 11I	BABR	$e^+ e^- \to \Upsilon(4S)$
$-0.106 \pm 0.050^{+0.036}_{-0.015}$	AUBERT 08AI	BABR	$e^+ e^- \to \Upsilon(4S)$
$-0.077 \pm 0.065^{+0.046}_{-0.026}$	GARMASH 06	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.14 \pm 0.10 \pm 0.04$	[2] LEES 12O	BABR	$e^+ e^- \to \Upsilon(4S)$
$-0.31 \pm 0.25 \pm 0.08$	[3] AUBERT 06O	BABR	Repl. by LEES 12O
$0.088 \pm 0.095^{+0.097}_{-0.056}$	AUBERT,B 05N	BABR	Repl. by AUBERT 08AI

[1] Measured in $B^+ \to f_0 K^+$ with $f_0 \to \pi^0 \pi^0$ decay. NODE=S041CQ5;LINKAGE=LE

[2] Measured in the $B^+ \to K^+ K^- K^+$ decay assuming $A_{CP}(B^+ \to f'_2(1525)^0 K^+) = A_{CP}(B^+ \to f_0(1500)^0 K^+) = A_{CP}(B^+ \to f_0(1710)^0 K^+)$ NODE=S041CQ5;LINKAGE=LA

[3] Measured in the $B^+ \to K^+ K^- K^+$ decay. NODE=S041CQ5;LINKAGE=AE

$A_{CP}(B^+ \to \rho^0 K^+)$

NODE=S041CQ6

VALUE	DOCUMENT ID		TECN	COMMENT
0.160±0.021 OUR AVERAGE				
0.150±0.019±0.011	AAIJ	23V	LHCB	pp at 13 TeV
$0.44 \pm 0.10 {}^{+0.06}_{-0.14}$	AUBERT	08AI	BABR	$e^+e^- \to \Upsilon(4S)$
$0.30 \pm 0.11 {}^{+0.11}_{-0.04}$	GARMASH	06	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.32 \pm 0.13 {}^{+0.10}_{-0.08}$	AUBERT,B	05N	BABR	Repl. by AUBERT 08AI

$A_{CP}(B^+ \to K^0 \pi^+ \pi^0)$

NODE=S041A06

VALUE	DOCUMENT ID		TECN	COMMENT
0.07±0.05±0.04	[1] LEES	17G	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Obtains the result from a Dalitz analysis of $B^+ \to K^0_S \pi^+ \pi^0$ decays. The first error is statistical, the second combines all the systematic uncertainties reported in the paper, including signal modelling.

NODE=S041A06;LINKAGE=A

$A_{CP}(B^+ \to K_0^*(1430)^0 \pi^+)$

NODE=S041CQ7

VALUE	DOCUMENT ID		TECN	COMMENT
0.061±0.032 OUR AVERAGE				
$0.14 \pm 0.10 {}^{+0.14}_{-0.06}$	[1] LEES	17G	BABR	$e^+e^- \to \Upsilon(4S)$
$0.032 \pm 0.035 {}^{+0.034}_{-0.028}$	AUBERT	08AI	BABR	$e^+e^- \to \Upsilon(4S)$
$0.076 \pm 0.038 {}^{+0.028}_{-0.022}$	GARMASH	06	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-0.064 \pm 0.032 {}^{+0.023}_{-0.026}$	AUBERT,B	05N	BABR	Repl. by AUBERT 08AI

[1] Obtains the result from a Dalitz analysis of $B^+ \to K^0_S \pi^+ \pi^0$ decays. The first error is statistical, the second combines all the systematic uncertainties reported in the paper, including signal modelling.

NODE=S041CQ7;LINKAGE=A

$A_{CP}(B^+ \to K_0^*(1430)^+ \pi^0)$

NODE=S041A05

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.26 \pm 0.12 {}^{+0.14}_{-0.08}}$	[1] LEES	17G	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Obtains the result from a Dalitz analysis of $B^+ \to K^0_S \pi^+ \pi^0$ decays. The first error is statistical, the second combines all the systematic uncertainties reported in the paper, including signal modelling.

NODE=S041A05;LINKAGE=A

$A_{CP}(B^+ \to K_2^*(1430)^0 \pi^+)$

NODE=S041CS4

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.05 \pm 0.23 {}^{+0.18}_{-0.08}}$	AUBERT	08AI	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to K^+ \pi^0 \pi^0)$

NODE=S041CU4

VALUE	DOCUMENT ID		TECN	COMMENT
−0.06±0.06±0.04	LEES	11I	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to K^0 \rho^+)$

NODE=S041CR9

VALUE	DOCUMENT ID		TECN	COMMENT
−0.03±0.15 OUR AVERAGE				
$0.21 \pm 0.19 {}^{+0.24}_{-0.20}$	[1] LEES	17G	BABR	$e^+e^- \to \Upsilon(4S)$
−0.12±0.17±0.02	AUBERT	07Z	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Obtains the result from a Dalitz analysis of$B^+ \to K^0_S \pi^+ \pi^0$ decays. The first error is statistical, the second combines all the systematic uncertainties reported in the paper, including signal modelling.

NODE=S041CR9;LINKAGE=A

$A_{CP}(B^+ \to K^{*+} \pi^+ \pi^-)$

NODE=S041AKP

VALUE	DOCUMENT ID		TECN	COMMENT
0.07±0.07±0.04	AUBERT,B	06U	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to \rho^0 K^*(892)^+)$

NODE=S041AZ1

VALUE	DOCUMENT ID		TECN	COMMENT
0.31±0.13±0.03	DEL-AMO-SA..	11D	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.20 {}^{+0.32}_{-0.29} \pm 0.04$	AUBERT	03V	BABR	Repl. by DEL-AMO-SANCHEZ 11D

$A_{CP}(B^+ \to K^*(892)^+ f_0(980))$

NODE=S041CR3

VALUE	DOCUMENT ID	TECN	COMMENT
$-0.15 \pm 0.12 \pm 0.03$	DEL-AMO-SA..11D	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$-0.34 \pm 0.21 \pm 0.03$	AUBERT,B 06G	BABR	Repl. by DEL-AMO-SANCHEZ 11D

$A_{CP}(B^+ \to a_1^+ K^0)$

NODE=S041CS1

VALUE	DOCUMENT ID	TECN	COMMENT
$+0.12 \pm 0.11 \pm 0.02$	AUBERT 08F	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to b_1^+ K^0)$

NODE=S041CS6

VALUE	DOCUMENT ID	TECN	COMMENT
$-0.03 \pm 0.15 \pm 0.02$	AUBERT 08AG	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to K^*(892)^0 \rho^+)$

NODE=S041CR4

VALUE	DOCUMENT ID	TECN	COMMENT
$-0.01 \pm 0.16 \pm 0.02$	AUBERT,B 06G	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to b_1^0 K^+)$

NODE=S041CS2

VALUE	DOCUMENT ID	TECN	COMMENT
$-0.46 \pm 0.20 \pm 0.02$	AUBERT 07BI	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to K^0 K^+)$

NODE=S041CQ8

VALUE	DOCUMENT ID	TECN	COMMENT
0.04 ± 0.14 OUR AVERAGE			
$0.014 \pm 0.168 \pm 0.002$	DUH 13	BELL	$e^+ e^- \to \Upsilon(4S)$
$0.10 \pm 0.26 \pm 0.03$	[1] AUBERT,BE 06C	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.13 \; {}^{+0.23}_{-0.24} \pm 0.02$	LIN 07	BELL	Repl. by DUH 13
$0.15 \pm 0.33 \pm 0.03$	[2] AUBERT,BE 05E	BABR	Repl. by AUBERT,BE 06C

[1] Corresponds to 90% confidence range $-0.31 < A_{CP} < 0.54$. NODE=S041CQ8;LINKAGE=AE

[2] Corresponds to 90% confidence range $-0.43 < A_{CP} < 0.68$. NODE=S041CQ8;LINKAGE=AU

$A_{CP}(B^+ \to K_S^0 K^+)$

NODE=S041CQA

VALUE	DOCUMENT ID	TECN	COMMENT
$-0.21 \pm 0.14 \pm 0.01$	AAIJ 13BS	LHCB	pp at 7 TeV

$A_{CP}(B^+ \to K^+ K_S^0 K_S^0)$

NODE=S041AY8

VALUE	DOCUMENT ID	TECN	COMMENT
0.025 ± 0.031 OUR AVERAGE			
$0.016 \pm 0.039 \pm 0.009$	KALIYAR 19	BELL	$e^+ e^- \to \Upsilon(4S)$
$0.04 \; {}^{+0.04}_{-0.05} \pm 0.02$	LEES 12O	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$-0.04 \pm 0.11 \pm 0.02$	[1] AUBERT,B 04V	BABR	Repl. by LEES 12O

[1] Corresponds to 90% confidence range $-0.23 < A_{CP} < 0.15$. NODE=S041AY8;LINKAGE=AU

$A_{CP}(B^+ \to K^+ K^- \pi^+)$

NODE=S041CKK

VALUE	DOCUMENT ID	TECN	COMMENT
-0.115 ± 0.008 OUR AVERAGE			
$-0.114 \pm 0.007 \pm 0.004$	[1] AAIJ 23U	LHCB	pp at 13 TeV
$-0.170 \pm 0.073 \pm 0.017$	[2] HSU 17	BELL	$e^+ e^- \to \Upsilon(4S)$
$-0.123 \pm 0.017 \pm 0.014$	[1] AAIJ 14BO	LHCB	pp at 7, 8 TeV
$0.00 \pm 0.10 \pm 0.03$	AUBERT 07BB	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$-0.141 \pm 0.040 \pm 0.019$	[3] AAIJ 14	LHCB	Repl. by AAIJ 14BO

[1] The second error includes both systematics and the uncertainties from CP asymmetries in restricted regions of phase space. NODE=S041CKK;LINKAGE=A

[2] HSU 17 provides also measurement as a function of $K^+ K^-$ invariant mass. NODE=S041CKK;LINKAGE=B

[3] AAIJ 14 reports $A_{CP}(B^+ \to K^+ K^- \pi^+) = -0.648 \pm 0.070 \pm 0.013 \pm 0.007$ in the Dalitz plot region of $m^2_{K^+ K^-} < 1.5$ GeV^2/c^4. The third uncertainty is due to the CP asymmetry of the $B^\pm \to J/\psi K^\pm$ reference mode uncertainty. NODE=S041CKK;LINKAGE=AA

$A_{CP}(B^+ \to K^+ K^- \pi^+$ nonresonant) NODE=S041A18

VALUE	DOCUMENT ID		TECN	COMMENT
−0.107±0.053±0.035	[1] AAIJ	19AL	LHCB	pp at 7, 8 TeV

[1] Uses amplitude analysis of $B^\pm \to \pi^\pm K^+ K^-$ decays. NODE=S041A18;LINKAGE=A

$A_{CP}(B^+ \to \pi^+ K^+ K^-, m_{K^+K^-} < 1.1$ GeV) NODE=S041A82

VALUE	DOCUMENT ID		TECN	COMMENT
−0.170±0.073±0.017	[1] HSU	23	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Investigated the angular distribution of K^+K^- pairs with invariant mass below 1.1 GeV/c^2, which exhibits both a strong enhancement in signal and very large direct CP violation. NODE=S041A82;LINKAGE=A

$A_{CP}(B^+ \to K^+ \overline{K}^*(892)^0)$ NODE=S041A12

VALUE	DOCUMENT ID		TECN	COMMENT
0.04 ±0.05 OUR AVERAGE				
0.007±0.054±0.032	AAIJ	23V	LHCB	pp at 13 TeV
0.123±0.087±0.045	[1] AAIJ	19AL	LHCB	pp at 7, 8 TeV

[1] Uses amplitude analysis of $B^\pm \to \pi^\pm K^+ K^-$ decays. NODE=S041A12;LINKAGE=A

$A_{CP}(B^+ \to K^+ \overline{K}^*_0(1430)^0)$ NODE=S041A13

VALUE	DOCUMENT ID		TECN	COMMENT
0.104±0.149±0.088	[1] AAIJ	19AL	LHCB	pp at 7, 8 TeV

[1] Uses amplitude analysis of $B^\pm \to \pi^\pm K^+ K^-$ decays. NODE=S041A13;LINKAGE=A

$A_{CP}(B^+ \to \phi\pi^+)$ NODE=S041A14

VALUE	DOCUMENT ID		TECN	COMMENT
0.098±0.436±0.266	[1] AAIJ	19AL	LHCB	pp at 7, 8 TeV

[1] Uses amplitude analysis of $B^\pm \to \pi^\pm K^+ K^-$ decays. NODE=S041A14;LINKAGE=B

$A_{CP}(B^+ \to \pi^+ (K^+K^-)_{S-wave})$ NODE=S041A17

VALUE	DOCUMENT ID		TECN	COMMENT
−0.664±0.038±0.019	[1] AAIJ	19AL	LHCB	pp at 7, 8 TeV

[1] Uses amplitude analysis of $B^\pm \to \pi^\pm K^+ K^-$ decays in the $\pi\pi - KK$ rescattering mass region of $0.95 < m(K^+K^-) < 1.42$ GeV/c^2. NODE=S041A17;LINKAGE=A

$A_{CP}(B^+ \to K^+ K^- K^+)$ NODE=S041AY7

VALUE	DOCUMENT ID		TECN	COMMENT
−0.036±0.004 OUR AVERAGE				
−0.037±0.002±0.004	[1] AAIJ	23U	LHCB	pp at 13 TeV
−0.036±0.004±0.007	[1] AAIJ	14BO	LHCB	pp at 7, 8 TeV
$-0.017^{+0.019}_{-0.014}\pm0.014$	[2] LEES	12O	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.043±0.009±0.008	AAIJ	13AZ	LHCB	Repl. by AAIJ 14BO
−0.017±0.026±0.015	AUBERT	06O	BABR	Repl. by LEES 12O
0.02 ±0.07 ±0.03	AUBERT	03M	BABR	Repl. by AUBERT 06O

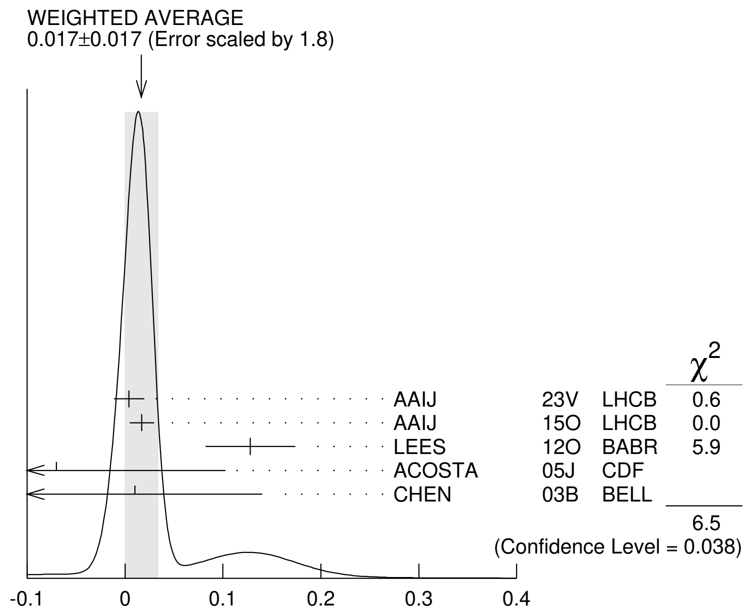
[1] The second error includes both systematics and the uncertainties from CP asymmetries in restricted regions of phase space. NODE=S041AY7;LINKAGE=A

[2] All intermediate charmonium and charm resonances are removed, except of χ_{c0}. NODE=S041AY7;LINKAGE=LE

$A_{CP}(B^+ \to \phi K^+)$ NODE=S041AX7

VALUE	DOCUMENT ID		TECN	COMMENT
0.017±0.017 OUR AVERAGE Error includes scale factor of 1.8. See the ideogram below.				
0.004±0.014±0.007	AAIJ	23V	LHCB	pp at 13 TeV
0.017±0.011±0.006	[1] AAIJ	15O	LHCB	pp at 7, 8 TeV
0.128±0.044±0.013	LEES	12O	BABR	$e^+e^- \to \Upsilon(4S)$
$-0.07 \pm0.17 ^{+0.03}_{-0.02}$	ACOSTA	05J	CDF	$p\overline{p}$ at 1.96 TeV
0.01 ±0.12 ±0.05	[2] CHEN	03B	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.022±0.021±0.009	AAIJ	14A	LHCB	Repl. by AAIJ 15O
0.00 ±0.08 ±0.02	AUBERT	06O	BABR	Repl. by LEES 12O
0.04 ±0.09 ±0.01	[3] AUBERT	04A	BABR	Repl. by AUBERT 06O
−0.05 ±0.20 ±0.03	[4] AUBERT	02E	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Obtained using $A_{CP}(B^{\pm} \to J/\psi K^{\pm}) = (0.3 \pm 0.6) \times 10^{-2}$. NODE=S041AX7;LINKAGE=A
[2] Corresponds to 90% confidence range $-0.20 < A_{CP} < 0.22$. NODE=S041AX7;LINKAGE=CH
[3] Corresponds to 90% confidence range $-0.10 < A_{CP} < 0.18$. NODE=S041AX7;LINKAGE=AU
[4] Corresponds to 90% confidence range $-0.37 < A_{CP} < 0.28$. NODE=S041AX7;LINKAGE=AY



$A_{CP}(B^+ \to \phi K^+)$

$A_{CP}(B^+ \to X_0(1550) K^+)$

NODE=S041CXK

VALUE	DOCUMENT ID	TECN	COMMENT
−0.04±0.07±0.02	[1] AUBERT 06O	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Measured in the $B^+ \to K^+ K^- K^+$ decay. NODE=S041CXK;LINKAGE=AU

$A_{CP}(B^+ \to K^{*+} K^+ K^-)$

NODE=S041AKK

VALUE	DOCUMENT ID	TECN	COMMENT
0.11±0.08±0.03	AUBERT,B 06U	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to \phi K^*(892)^+)$

NODE=S041AX8

VALUE	DOCUMENT ID	TECN	COMMENT
−0.01±0.08 OUR AVERAGE			
0.00±0.09±0.04	AUBERT 07BA	BABR	$e^+e^- \to \Upsilon(4S)$
−0.02±0.14±0.03	[1] CHEN 05A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.16±0.17±0.03	AUBERT 03V	BABR	Repl. by AUBERT 07BA
$-0.13\pm0.29^{+0.08}_{-0.11}$	[2] CHEN 03B	BELL	Repl. by CHEN 05A
$-0.43^{+0.36}_{-0.30}\pm0.06$	[3] AUBERT 02E	BABR	Repl. by AUBERT 03V

[1] Corresponds to 90% confidence range $-0.25 < A_{CP} < 0.22$. NODE=S041AX8;LINKAGE=CE
[2] Corresponds to 90% confidence range $-0.64 < A_{CP} < 0.36$. NODE=S041AX8;LINKAGE=CH
[3] Corresponds to 90% confidence range $-0.88 < A_{CP} < 0.18$. NODE=S041AX8;LINKAGE=AY

$A_{CP}(B^+ \to \phi (K\pi)_0^{*+})$

NODE=S041CT1

VALUE	DOCUMENT ID	TECN	COMMENT
0.04±0.15±0.04	AUBERT 08BI	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to \phi K_1(1270)^+)$

NODE=S041CS8

VALUE	DOCUMENT ID	TECN	COMMENT
0.15±0.19±0.05	AUBERT 08BI	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to \phi K_2^*(1430)^+)$

NODE=S041CS9

VALUE	DOCUMENT ID	TECN	COMMENT
−0.23±0.19±0.06	AUBERT 08BI	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to K^+ \phi\phi)$

NODE=S041CT9

VALUE	DOCUMENT ID		TECN	COMMENT
−0.08±0.07 OUR AVERAGE				
−0.02±0.11±0.11	[1] MOHANTY	21	BELL	$e^+ e^- \to \Upsilon(4S)$
−0.10±0.08±0.02	[1] LEES	11A	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes $m_{\phi\phi} < 2.85$ GeV/c^2.

NODE=S041CT9;LINKAGE=A

$A_{CP}(B^+ \to K^+ [\phi\phi]_{\eta_c})$

NODE=S041CTB

VALUE	DOCUMENT ID		TECN	COMMENT
0.10±0.08 OUR AVERAGE				
0.12±0.12±0.01	[1] MOHANTY	21	BELL	$e^+ e^- \to \Upsilon(4S)$
0.09±0.10±0.02	[1] LEES	11A	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] $m_{\phi\phi}$ is consistent with η_c mass in [2.94, 3.02] GeV/c^2.

NODE=S041CTB;LINKAGE=LE

$A_{CP}(B^+ \to K^*(892)^+ \gamma)$

NODE=S041AKG

VALUE	DOCUMENT ID		TECN	COMMENT
0.014±0.018 OUR AVERAGE				
0.011±0.023±0.003	[1] HORIGUCHI	17	BELL	$e^+ e^- \to \Upsilon(4S)$
0.018±0.028±0.007	AUBERT	09AO	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Uses B($\Upsilon(4S) \to B^+ B^-$) = (51.4 ± 0.6)% and B($\Upsilon(4S) \to B^0 \overline{B}^0$) = (48.6 ± 0.6)%.

NODE=S041AKG;LINKAGE=A

$A_{CP}(B^+ \to X_s \gamma)$

NODE=S041A11

VALUE	DOCUMENT ID		TECN	COMMENT
0.0275±0.0184±0.0032	[1] WATANUKI	19	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Using a sum-of-exclusive technique with $m_{X_s} < 2.8$ GeV/c^2.

NODE=S041A11;LINKAGE=A

$A_{CP}(B^+ \to \eta K^+ \gamma)$

NODE=S041CQ3

VALUE	DOCUMENT ID		TECN	COMMENT
−0.12±0.07 OUR AVERAGE				
−0.09±0.10±0.01	[1] AUBERT	09	BABR	$e^+ e^- \to \Upsilon(4S)$
−0.16±0.09±0.06	[2] NISHIDA	05	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.09±0.12±0.01	[1] AUBERT,B	06M	BABR	Repl. by AUBERT 09

[1] $m_{\eta K} < 3.25$ GeV/c^2.

NODE=S041CQ3;LINKAGE=AR

[2] $m_{\eta K} < 2.4$ GeV/c^2

NODE=S041CQ3;LINKAGE=NI

$A_{CP}(B^+ \to \phi K^+ \gamma)$

NODE=S041APK

VALUE	DOCUMENT ID		TECN	COMMENT
−0.13±0.11 OUR AVERAGE Error includes scale factor of 1.1.				
−0.03±0.11±0.08	SAHOO	11A	BELL	$e^+ e^- \to \Upsilon(4S)$
−0.26±0.14±0.05	AUBERT	07Q	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to \rho^+ \gamma)$

NODE=S041CS7

VALUE	DOCUMENT ID		TECN	COMMENT
−0.11±0.32±0.09	TANIGUCHI	08	BELL	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to \pi^+ \pi^0)$

NODE=S041AX0

VALUE	DOCUMENT ID		TECN	COMMENT
−0.01 ±0.04 OUR AVERAGE Error includes scale factor of 1.1.				
−0.081±0.054±0.008	ADACHI	24	BELL	$e^+ e^- \to \Upsilon(4S)$
0.025±0.043±0.007	DUH	13	BELL	$e^+ e^- \to \Upsilon(4S)$
0.03 ±0.08 ±0.01	AUBERT	07BC	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.07 ±0.06 ±0.01	LIN	08	BELL	Repl. by DUH 13
−0.01 ±0.10 ±0.02	[1] AUBERT	05L	BABR	Repl. by AUBERT 07BC
0.00 ±0.10 ±0.02	[2] CHAO	05A	BELL	Repl. by CHAO 04B
−0.02 ±0.10 ±0.01	[3] CHAO	04B	BELL	Repl. by LIN 08
$-0.03\ ^{+0.18}_{-0.17}\ \pm0.02$	[4] AUBERT	03L	BABR	Repl. by AUBERT 05L
$0.30\ \pm0.30\ ^{+0.06}_{-0.04}$	[5] CASEY	02	BELL	Repl. by CHAO 04B

[1] Corresponds to a 90% CL interval of $-0.19 < A_{CP} < 0.21$.

NODE=S041AX0;LINKAGE=AU

[2] Corresponds to a 90% CL interval of $-0.17 < A_{CP} < 0.16$.

NODE=S041AX0;LINKAGE=CO

[3] This corresponds to 90% CL interval of $-0.18 < A_{CP} < 0.14$.

NODE=S041AX0;LINKAGE=CH

[4] Corresponds to 90% confidence range $-0.32 < A_{CP} < 0.27$.

NODE=S041AX0;LINKAGE=3L

[5] Corresponds to 90% confidence range $-0.23 < A_{CP} < +0.86$.

NODE=S041AX0;LINKAGE=CA

$A_{CP}(B^+ \to \pi^+\pi^-\pi^+)$

NODE=S041AY5

VALUE	DOCUMENT ID	TECN	COMMENT
0.076±0.008 OUR AVERAGE Error includes scale factor of 1.5.			
0.080±0.004±0.004	[1] AAIJ 23U	LHCB	pp at 13 TeV
0.058±0.008±0.011	[1] AAIJ 14BO	LHCB	pp at 7, 8 TeV
$0.032\pm0.044{}^{+0.040}_{-0.037}$	AUBERT 09L	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.117±0.021±0.011	[2] AAIJ 14	LHCB	Repl. by AAIJ 14BO
−0.007±0.077±0.025	AUBERT,B 05G	BABR	Repl. by AUBERT 09L
−0.39 ±0.33 ±0.12	AUBERT 03M	BABR	Repl. by AUBERT 05G

[1] The second error includes both systematics and the uncertainties from CP asymmetries in restricted regions of phase space. NODE=S041AY5;LINKAGE=A

[2] AAIJ 14 reports $A_{CP}(B^+ \to \pi^+\pi^-\pi^+) = 0.584\pm0.082\pm0.027\pm0.007$ in the Dalitz plot region of $m^2_{\pi^+\pi^-} > 15$ GeV^2/c^4 or $m^2_{\pi^+\pi^-} < 0.4$ GeV^2/c^4. The third uncertainty is due to the CP asymmetry of the $B^\pm \to J/\psi K^\pm$ reference mode uncertainty. NODE=S041AY5;LINKAGE=AA

$A_{CP}(B^+ \to \pi^+\pi^0\pi^0)$

NODE=S041A77

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
9.2±6.8±0.7	LAI 23	BELL	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to \rho^0\pi^+)$

NODE=S041CP4

VALUE	DOCUMENT ID	TECN	COMMENT
0.003±0.014 OUR AVERAGE			
−0.004±0.017±0.009	AAIJ 23V	LHCB	pp at 13 TeV
0.007±0.011±0.016	[1] AAIJ 20A	LHCB	pp at 7, 8 TeV
$0.18\pm0.07{}^{+0.05}_{-0.15}$	AUBERT 09L	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$-0.074\pm0.120{}^{+0.035}_{-0.055}$	AUBERT,B 05G	BABR	Repl. by AUBERT 09L
−0.19 ±0.11 ±0.02	AUBERT 04Z	BABR	Repl. by AUBERT,B 05G

[1] This result is obtained with an amplitude analysis of $B^+ \to \pi^+\pi^+\pi^-$ decays, using the isobar model within the mass range 1.0 < m($\pi^+\pi^-$) < 1.5 GeV to describe the $\pi^+\pi^-$ S-wave contribution. NODE=S041CP4;LINKAGE=A

$A_{CP}(B^+ \to f_2(1270)\pi^+)$

NODE=S041CQ0

VALUE	DOCUMENT ID	TECN	COMMENT
0.40 ±0.06 OUR AVERAGE			
0.468±0.061±0.046	[1] AAIJ 20A	LHCB	pp at 7, 8 TeV
0.267±0.102±0.048	[2] AAIJ 19AL	LHCB	pp at 7, 8 TeV
$0.41\pm0.25{}^{+0.18}_{-0.15}$	AUBERT 09L	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$-0.004\pm0.247{}^{+0.028}_{-0.032}$	AUBERT,B 05G	BABR	Repl. by AUBERT 09L

[1] This result is obtained with an amplitude analysis of $B^+ \to \pi^+\pi^+\pi^-$ decays, using the isobar model within the mass range 1.0 < m($\pi^+\pi^-$) < 1.5 GeV to describe the $\pi^+\pi^-$ S-wave contribution. NODE=S041CQ0;LINKAGE=B

[2] Uses amplitude analysis of $B^\pm \to \pi^\pm K^+K^-$ decays. NODE=S041CQ0;LINKAGE=A

$A_{CP}(B^+ \to \rho^0(1450)\pi^+)$

NODE=S041CT4

VALUE	DOCUMENT ID	TECN	COMMENT
−0.11 ±0.05 OUR AVERAGE			
−0.129±0.033±0.359	[1] AAIJ 20A	LHCB	pp at 7, 8 TeV
−0.109±0.044±0.024	[2] AAIJ 19AL	LHCB	pp at 7, 8 TeV
$-0.06\pm0.28{}^{+0.23}_{-0.40}$	AUBERT 09L	BABR	$e^+e^- \to \Upsilon(4S)$

[1] This result is obtained with an amplitude analysis of $B^+ \to \pi^+\pi^+\pi^-$ decays, using the isobar model within the mass range 1.0 < m($\pi^+\pi^-$) < 1.5 GeV to describe the $\pi^+\pi^-$ S-wave contribution. NODE=S041CT4;LINKAGE=B

[2] Uses amplitude analysis of $B^\pm \to \pi^\pm K^+K^-$ decays. NODE=S041CT4;LINKAGE=A

$A_{CP}(B^+ \to \rho_3(1690)\pi^+)$

NODE=S041A16

VALUE	DOCUMENT ID	TECN	COMMENT
−0.801±0.114±0.253	[1] AAIJ 20A	LHCB	pp at 7, 8 TeV

[1] This result is obtained with an amplitude analysis of $B^+ \to \pi^+\pi^+\pi^-$ decays, using the isobar model within the mass range 1.0 < m($\pi^+\pi^-$) < 1.5 GeV to describe the $\pi^+\pi^-$ S-wave contribution. NODE=S041A16;LINKAGE=A

$A_{CP}(B^+ \to f_0(1370)\pi^+)$

NODE=S041CT5

VALUE	DOCUMENT ID		TECN	COMMENT
0.72±0.15±0.16	AUBERT	09L	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to \pi^+\pi^-\pi^+$ nonresonant$)$

NODE=S041CT6

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{-0.14\pm0.14^{+0.18}_{-0.08}}$	AUBERT	09L	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to \rho^+\pi^0)$

NODE=S041CP5

VALUE	DOCUMENT ID		TECN	COMMENT
0.03 ±0.10 OUR AVERAGE				
$0.080\pm0.150^{+0.023}_{-0.075}$	LAI	23	BELL	$e^+e^- \to \Upsilon(4S)$
−0.01 ±0.13 ±0.02	AUBERT	07X	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.06\pm0.17^{+0.04}_{-0.05}$	ZHANG	05A	BELL	Repl. by LAI 23
0.24 ±0.16 ±0.06	AUBERT	04Z	BABR	Repl. by AUBERT 07X

$A_{CP}(B^+ \to X\pi^+,\ X \to \pi^0\pi^0)$

NODE=S041A85

VALUE	DOCUMENT ID		TECN	COMMENT
0.182±0.116±0.007	LAI	23	BELL	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to \rho^+\rho^0)$

NODE=S041AY9

VALUE	DOCUMENT ID		TECN	COMMENT
−0.05 ±0.05 OUR AVERAGE				
−0.054±0.055±0.010	AUBERT	09G	BABR	$e^+e^- \to \Upsilon(4S)$
0.00 ±0.22 ±0.03	ZHANG	03B	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.12 ±0.13 ±0.10	AUBERT,BE	06G	BABR	Repl. by AUBERT 09G
−0.19 ±0.23 ±0.03	AUBERT	03V	BABR	Repl. by AUBERT,BE 06G

$A_{CP}(B^+ \to \omega\pi^+)$

NODE=S041AX6

VALUE	DOCUMENT ID		TECN	COMMENT
−0.04 ±0.05 OUR AVERAGE				
−0.048±0.065±0.038	[1] AAIJ	20A	LHCB	pp at 7, 8 TeV
−0.02 ±0.08 ±0.01	AUBERT	07AE	BABR	$e^+e^- \to \Upsilon(4S)$
−0.02 ±0.09 ±0.01	JEN	06	BELL	$e^+e^- \to \Upsilon(4S)$
−0.34 ±0.25	[2] CHEN	00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.01 ±0.10 ±0.01	AUBERT,B	06E	BABR	Repl. by AUBERT 07AE
0.03 ±0.16 ±0.01	AUBERT	04H	BABR	Repl. by AUBERT,B 06E
$0.50^{+0.23}_{-0.20}\pm0.02$	[3] WANG	04A	BELL	Repl. by JEN 06
$-0.01^{+0.29}_{-0.31}\pm0.03$	[4] AUBERT	02E	BABR	Repl. by AUBERT 04H

[1] This result is obtained with an amplitude analysis of $B^+ \to \pi^+\pi^+\pi^-$ decays, using the isobar model within the mass range $1.0 < m(\pi^+\pi^-) < 1.5$ GeV to describe the $\pi^+\pi^-$ S-wave contribution. NODE=S041AX6;LINKAGE=B

[2] Corresponds to 90% confidence range $-0.75 < A_{CP} < 0.07$. NODE=S041AX6;LINKAGE=A

[3] Corresponds to 90% CL interval $-0.25 < A_{CP} < 0.41$ NODE=S041AX6;LINKAGE=WA

[4] Corresponds to 90% confidence range $-0.50 < A_{CP} < 0.46$. NODE=S041AX6;LINKAGE=AY

$A_{CP}(B^+ \to \omega\rho^+)$

NODE=S041CP9

VALUE	DOCUMENT ID		TECN	COMMENT
−0.20±0.09±0.02	AUBERT	09H	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.04±0.18±0.02	AUBERT,B	06T	BABR	Repl. by AUBERT 09H
0.05±0.26±0.02	AUBERT	05O	BABR	Repl. by AUBERT,B 06T

$A_{CP}(B^+ \to \eta\pi^+)$

NODE=S041CP2

VALUE	DOCUMENT ID		TECN	COMMENT
−0.14±0.07 OUR AVERAGE Error includes scale factor of 1.4.				
−0.19±0.06±0.01	HOI	12	BELL	$e^+e^- \to \Upsilon(4S)$
−0.03±0.09±0.03	AUBERT	09AV	BABR	$e^+e^- \to \Upsilon(4S)$

• • • We do not use the following data for averages, fits, limits, etc. • • •

−0.08±0.10±0.01	AUBERT	07AE	BABR	Repl. by AUBERT 09AV
−0.23±0.09±0.02	CHANG	07B	BELL	Repl. by HOI 12
−0.13±0.12±0.01	AUBERT,B	05K	BABR	Repl. by AUBERT 07AE
0.07±0.15±0.03	CHANG	05A	BELL	Repl. by CHANG 07B
−0.44±0.18±0.01	AUBERT	04H	BABR	Repl. by AUBERT,B 05K

$A_{CP}(B^+ \rightarrow \eta\rho^+)$

NODE=S041CQ2

VALUE	DOCUMENT ID		TECN	COMMENT
0.11±0.11 OUR AVERAGE				
0.13±0.11±0.02	AUBERT	08AH	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$-0.04^{+0.34}_{-0.32}\pm0.01$	WANG	07B	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.02±0.18±0.02	AUBERT,B	05K	BABR	Repl. by AUBERT 08AH

$A_{CP}(B^+ \rightarrow \eta'\pi^+)$

NODE=S041CQ1

VALUE	DOCUMENT ID		TECN	COMMENT
0.06±0.16 OUR AVERAGE				
0.03±0.17±0.02	AUBERT	09AV	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$0.20^{+0.37}_{-0.36}\pm0.04$	SCHUEMANN	06	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.21±0.17±0.01	AUBERT	07AE	BABR	Repl. by AUBERT 09AV
0.14±0.16±0.01	AUBERT,B	05K	BABR	Repl. by AUBERT 07AE

$A_{CP}(B^+ \rightarrow \eta'\rho^+)$

NODE=S041CR8

VALUE	DOCUMENT ID		TECN	COMMENT
0.26±0.17±0.02	DEL-AMO-SA...	10A	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.04±0.28±0.02	[1] AUBERT	07E	BABR	Repl. by DEL-AMO-SANCHEZ 10A

[1] Reports A_{CP} with the opposite sign convention.

NODE=S041CR8;LINKAGE=OS

$A_{CP}(B^+ \rightarrow b_1^0\pi^+)$

NODE=S041CS3

VALUE	DOCUMENT ID		TECN	COMMENT
+0.05±0.16±0.02	AUBERT	07BI	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

$A_{CP}(B^+ \rightarrow p\overline{p}\pi^+)$

NODE=S041CP6

VALUE	DOCUMENT ID		TECN	COMMENT
0.00±0.04 OUR AVERAGE				
−0.02±0.05±0.02	[1] WEI	08	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
+0.04±0.07±0.04	AUBERT	07AV	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.16±0.22±0.01	WANG	04	BELL	Repl. by WEI 08

[1] Requires $m_{p\overline{p}} < 2.85$ GeV/c^2.

NODE=S041CP6;LINKAGE=WE

$A_{CP}(B^+ \rightarrow p\overline{p}K^+)$

NODE=S041CP7

VALUE	DOCUMENT ID		TECN	COMMENT
0.00 ±0.04 OUR AVERAGE Error includes scale factor of 2.2.				
0.021±0.020±0.004	[1] AAIJ	14AF	LHCB	pp at 7, 8 TeV
−0.17 ±0.10 ±0.02	[1] WEI	08	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
$-0.16\ ^{+0.07}_{-0.08}\ \pm0.04$	[1] AUBERT,B	05L	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.047±0.036±0.007	[1] AAIJ	13AU	LHCB	Repl. by AAIJ 14AF
−0.05 ±0.11 ±0.01	WANG	04	BELL	Repl. by WEI 08

[1] Requires $m_{p\overline{p}} < 2.85$ GeV/c^2.

NODE=S041CP7;LINKAGE=WE

$A_{CP}(B^+ \rightarrow p\overline{p}K^*(892)^+)$

NODE=S041AW6

VALUE	DOCUMENT ID		TECN	COMMENT
0.21±0.16 OUR AVERAGE Error includes scale factor of 1.4.				
−0.01±0.19±0.02	CHEN	08C	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
+0.32±0.13±0.05	AUBERT	07AV	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

$A_{CP}(B^+ \rightarrow p\overline{\Lambda}\gamma)$

NODE=S041CLG

VALUE	DOCUMENT ID		TECN	COMMENT
+0.17±0.16±0.05	WANG	07C	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

$A_{CP}(B^+ \to p\overline{\Lambda}\pi^0)$ NODE=S041CS0

VALUE	DOCUMENT ID		TECN	COMMENT
+0.01±0.17±0.04	WANG	07C	BELL	$e^+e^- \to \Upsilon(4S)$

NODE=S041CS0

$A_{CP}(B^+ \to K^+\ell^+\ell^-)$ NODE=S041CR1

VALUE	DOCUMENT ID		TECN	COMMENT
−0.02±0.08 OUR AVERAGE				
−0.03±0.14±0.01	[1] LEES	12S	BABR	$e^+e^- \to \Upsilon(4S)$
−0.18±0.18±0.01	AUBERT	09T	BABR	$e^+e^- \to \Upsilon(4S)$
+0.04±0.10±0.02	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.07±0.22±0.02	AUBERT,B	06J	BABR	Repl. by AUBERT 09T

NODE=S041CR1

[1] Measured in the union of $0.10 < q^2 < 8.12$ GeV^2/c^4 and $q^2 > 10.11$ GeV^2/c^4. LEES 12S reports also individual measurements $A_{CP}(B^+ \to K^+\ell^+\ell^-) = 0.02 \pm 0.18 \pm 0.01$ for $0.10 < q^2 < 8.12$ GeV^2/c^4 and $A_{CP}(B^+ \to K^+\ell^+\ell^-) = -0.06^{+0.22}_{-0.21} \pm 0.01$ for $q^2 > 10.11$ GeV^2/c^4. NODE=S041CR1;LINKAGE=LE

$A_{CP}(B^+ \to K^+e^+e^-)$ NODE=S041CU0

VALUE	DOCUMENT ID		TECN	COMMENT
+0.14±0.14±0.03	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$

NODE=S041CU0

$A_{CP}(B^+ \to K^+\mu^+\mu^-)$ NODE=S041CU1

VALUE	DOCUMENT ID		TECN	COMMENT
0.011±0.017 OUR AVERAGE				
0.012±0.017±0.001	AAIJ	14AN	LHCB	pp at 7, 8 TeV
−0.05 ±0.13 ±0.03	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.000±0.033±0.009	AAIJ	13BN	LHCB	Repl. by AAIJ 14AN

NODE=S041CU1

$A_{CP}(B^+ \to \pi^+\mu^+\mu^-)$ NODE=S041CU8

VALUE	DOCUMENT ID		TECN	COMMENT
−0.11±0.12±0.01	AAIJ	15AR	LHCB	pp at 7, 8 TeV

NODE=S041CU8

$A_{CP}(B^+ \to K^{*+}\ell^+\ell^-)$ NODE=S041CR2

VALUE	DOCUMENT ID		TECN	COMMENT
−0.09±0.14 OUR AVERAGE				
$0.01^{+0.26}_{-0.24}\pm0.02$	AUBERT	09T	BABR	$e^+e^- \to \Upsilon(4S)$
$-0.13^{+0.17}_{-0.16}\pm0.01$	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.03±0.23±0.03	AUBERT,B	06J	BABR	Repl. by AUBERT 09T

NODE=S041CR2

$A_{CP}(B^+ \to K^*e^+e^-)$ NODE=S041CU2

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{-0.14^{+0.23}_{-0.22}\pm0.02}$	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$

NODE=S041CU2

$A_{CP}(B^+ \to K^*\mu^+\mu^-)$ NODE=S041CU3

VALUE	DOCUMENT ID		TECN	COMMENT
−0.12±0.24±0.02	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$

NODE=S041CU3

CP VIOLATION PARAMETERS IN $B^+ \to DK^+$ AND SIMILAR DECAYS NODE=S041320

The parameters r_{B^+} and δ_{B^+} are the magnitude ratio and strong phase difference between the amplitudes of A($B^+ \to \overline{D}^{(*)0}K^{(*)+}$) and A($B^- \to D^{(*)0}K^{(*)-}$). The measured observables are defined as $x_\pm = r_{B^+}\cos(\delta_{B^+} \pm \gamma)$ and $y_\pm = r_{B^+}\sin(\delta_{B^+} \pm \gamma)$, and can be used to measure the CKM angle γ. NODE=S041320

"OUR EVALUATION" is provided by the Heavy Flavor Averaging Group (HFLAV). It is derived from combinations of their results on $B^+ \to DK^+$ and related processes.

γ

NODE=S041GGM

For angle $\gamma(\phi_3)$ of the CKM unitarity triangle, see the review on "*CP* Violation" in the Reviews section.

NODE=S041GGM

NODE=S041GGM

VALUE (°)	CL%	DOCUMENT ID	TECN	COMMENT
$65.9^{+2.9}_{-3.1}$ OUR EVALUATION		(Produced by HFLAV)		
75 ± 8 OUR AVERAGE		[(72 ± 7)° OUR 2017 AVERAGE]		
75.2± 7.6		[1] ADACHI 24T	BELL	$e^+e^- \to \Upsilon(4S))$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
92^{+21}_{-17}		[2] AAIJ 24H	LHCB	pp at 7, 8, 13 TeV
49^{+22}_{-19}		[3] AAIJ 24U	LHCB	pp at 7, 8, 13 TeV
69^{+13}_{-14}		[4] AAIJ 23BA	LHCB	pp at 7, 8, 13 TeV
$54.8^{+6.0}_{-5.8}{}^{+6.7}_{-4.3}$		[5] AAIJ 23I	LHCB	pp at 7, 8, 13 TeV
116^{+12}_{-14}		[6] AAIJ 23N	LHCB	pp at 7, 8, 13 TeV
78.4±11.4± 1.1		[7,8] ABUDINEN 22	BELL	$e^+e^- \to \Upsilon(4S)$
$65.4^{+3.8}_{-4.2}$		[9] AAIJ 21AM	LHCB	pp at 7, 8, 13 TeV
$68.7^{+5.2}_{-5.1}$		[7] AAIJ 21L	LHCB	pp at 7, 8, 13 TeV
44 ±12		[10,11] AAIJ 21M	LHCB	pp at 7, 8, 13 TeV
$5.7^{+10.2}_{-8.8}\pm 6.7$		[12] RESMI 19	BELL	$e^+e^- \to \Upsilon(4S)$
87^{+11}_{-12}		[13] AAIJ 18AD	LHCB	Repl. by AAIJ 21L
128^{+17}_{-22}		[14] AAIJ 18U	LHCB	pp at 7, 8 TeV
5–86 or 185–266		[15] AAIJ 18Z	LHCB	pp at 7, 8 TeV
80^{+21}_{-22}		[16] AAIJ 16AA	LHCB	Repl. by AAIJ 16Z
$72.2^{+6.8}_{-7.3}$		[17] AAIJ 16AQ	LHCB	Repl. by AAIJ 21AM
71 ±20		[18,19,20] AAIJ 16Z	LHCB	Repl. by AAIJ 24U
74^{+20}_{-19}		AAIJ 15BC	LHCB	pp at 7, 8 TeV
$63.5^{+7.2}_{-6.7}$		[21,22] AAIJ 15K	LHCB	pp at 7, 8 TeV
62^{+15}_{-14}		[23] AAIJ 14BA	LHCB	Repl. by AAIJ 21L
84^{+49}_{-42}		[24] AAIJ 14BE	LHCB	Repl. by AAIJ 14BA
115^{+28}_{-43}		[25] AAIJ 14BF	LHCB	Repl. by AAIJ 18U
$72.6^{+9.7}_{-17.2}$		[26] AAIJ 13AK	LHCB	Repl. by AAIJ 21AM
69^{+17}_{-16}		[27] LEES 13B	BABR	$e^+e^- \to \Upsilon(4S)$
44^{+43}_{-38}		[28,29] AAIJ 12AQ	LHCB	Repl. by AAIJ 13AK
$77.3^{+15.1}_{-14.9}\pm 5.9$		[29,30] AIHARA 12	BELL	$e^+e^- \to \Upsilon(4S)$.
68 ±14 ± 5		[31] DEL-AMO-SA...10F	BABR	Repl. by LEES 13B
7 to 173	95	[32] DEL-AMO-SA...10G	BABR	$e^+e^- \to \Upsilon(4S)$
$78.4^{+10.8}_{-11.6}\pm 9.6$		[33] POLUEKTOV 10	BELL	$e^+e^- \to \Upsilon(4S)$
162 ±56		[34] AUBERT 09R	BABR	$e^+e^- \to \Upsilon(4S)$
$76^{+22}_{-23}\pm 7.1$		[35] AUBERT 08AL	BABR	Repl. by DEL-AMO-SANCHEZ 10F
$53^{+15}_{-18}\pm 10$		[36] POLUEKTOV 06	BELL	Repl. by POLUEKTOV 10
$70\pm 31{}^{+18}_{-15}$		[37] AUBERT,B 05Y	BABR	Repl. by AUBERT 08AL
$77^{+17}_{-19}\pm 17$		[38] POLUEKTOV 04	BELL	Repl. by POLUEKTOV 06

→ UNCHECKED ←
NEW

[1] Uses combined sample of Belle and Belle II experiments in B^+ decays to DK^+, D^*K^+, and $D\pi^+$ final states.

NODE=S041GGM;LINKAGE=BA

[2] Extracted from yields of partially reconstructed $B^\pm \to D^*K^\pm$, $D^* \to D\pi^0/\gamma$, $D \to K^0_S\pi^+\pi^-/K^0_SK^+K^-$ decays. The uncertainty is predominantly statistical. Its correlation with the AAIJ 23BA result is found to be less than 3%.

NODE=S041GGM;LINKAGE=Z

[3] A model-independent binned Dalitz plot analysis of the decays $B^0 \to DK^{*0}$, with $D \to K^0_S h^+ h^-$, $h = \pi$, K. Angle γ is required to satisfy $0 < \gamma < 180$ degrees. NODE=S041GGM;LINKAGE=W

[4] Measured using $B^\pm \to D^* K^\pm$ and $B^\pm \to D^* \pi^\pm$ decays analysing the signal yield variation with the fully reconstructed $D^* \to D\pi^0/\gamma$, $D \to K^0_S \pi^+\pi^- / K^0_S K^+ K^-$ decays. The model-independent approach uses external strong phase input from BESIII and CLEO collaborations. NODE=S041GGM;LINKAGE=V

[5] Measured using $B^\pm \to D[K^\mp \pi^\pm \pi^\pm \pi^\mp] h^\pm$ decays in bins of the phase space of the D decay. The third uncertainty includes systematic and finite knowledge of the D-meson decay parameters. NODE=S041GGM;LINKAGE=T

[6] A model-dependent binned analysis of the decays $B^\pm \to [K^+ K^- \pi^+ \pi^-]_D h^\pm$is used. NODE=S041GGM;LINKAGE=U

[7] Uses binned Dalitz plot analysis of $D \to K^0_S \pi^+\pi^-$ and $K^0_S K^+ K^-$ from $B^\pm \to DK^\pm$ modes. Strong phase measurements from CLEO-c and BES-III of the D decay over the Dalitz plot are used as input. Value is modulo 180°. NODE=S041GGM;LINKAGE=N

[8] Supersedes AIHARA 12. NODE=S041GGM;LINKAGE=S

[9] AAIJ 21AM presents a combination of existing measurements from LHCb collaboration. It includes also charm mixing parameters. NODE=S041GGM;LINKAGE=O

[10] Measured in $B^0_s \to D^\pm_s K^\mp \pi^\pm \pi^\mp$ decays in restricted phase space with m$(K^+\pi^+\pi^-)$ $<$ 1950 MeV, m$(K^+\pi^-) <$ 1200 MeV and m$(\pi^+\pi^-) <$ 1200 MeV. The value is modulo 180°. NODE=S041GGM;LINKAGE=M

[11] A model-independent coherence factor for the decay $B_s \to D_s K\pi\pi$ (in the restricted phase space region) is also reported. NODE=S041GGM;LINKAGE=P

[12] Uses binned analysis of $D \to K^0_S \pi^+\pi^-\pi^0$ from $B^\pm \to DK^\pm$ modes over the phase space. Strong phase measurements from RESMI 18 analysis of CLEO-c data of the D decay over the phase space binning are used as input. NODE=S041GGM;LINKAGE=L

[13] Uses binned Dalitz plot analysis of $D \to K^0_S \pi^+\pi^-$ and $K^0_S K^+ K^-$ from $B^\pm \to DK^\pm$ modes. Strong phase measurements from CLEO-c of the D decay over the Dalitz plot are used as input. NODE=S041GGM;LINKAGE=I

[14] Measured in $B^0_s \to D^\mp_s K^\pm$ decays, constraining $-2\beta_s$ by the measurement of $\phi_s = 0.030 \pm 0.033$ from HFLAV. The value is modulo 180°. NODE=S041GGM;LINKAGE=J

[15] AAIJ 18Z reports the intervals (5–86)° or (185–266)° at 68% C.L. The extraction uses the time dependent CP violation measurement in $B^0 \to D^\mp \pi^\pm$ decays with external input and some theoretical assumptions. NODE=S041GGM;LINKAGE=K

[16] Uses Dalitz plot analysis of $D \to K^0_S \pi^+\pi^-$ decays coming from $B^0 \to DK^*(892)^0$ modes. Measures $r_{B^0} = 0.39 \pm 0.13$, and $\delta_{B^0} = 197^{+24}_{-20}$ degrees. NODE=S041GGM;LINKAGE=C

[17] A combination of measurements from analyses of time-integrated $B^+ \to DK^+$, $B^0 \to DK^{(*)0}$, $B^0 \to DK^+\pi^-$, and $B^+ \to DK^+\pi^+\pi^-$ tree-level decays. In addition, results from a time-dependent analysis of $B^0_s \to D_s K$ decays are included. NODE=S041GGM;LINKAGE=B

[18] A model-independent binned Dalitz plot analysis of the decays $B^0 \to DK^{*0}$, with $D \to K^0_S \pi^+\pi^-$ and $D \to K^0_S K^+ K^-$. The results cannot be combined with the model-dependent analysis of the same dataset reported in AAIJ 16AA. NODE=S041GGM;LINKAGE=E

[19] Angle γ required to satisfy $0 < \gamma < 180$ degrees. NODE=S041GGM;LINKAGE=F

[20] Uses Dalitz plot analysis of $D \to K^0_S \pi^+\pi^-$, $K^0_S K^+ K^-$ decays coming from $B^0 \to DK^*(892)^0$ modes. NODE=S041GGM;LINKAGE=Y

[21] Obtained by measuring time-dependent CP asymmetry in $B^0_s \to K^+K^-$ and using a U-spin relation between $B^0_s \to K^+K^-$ and $B^0 \to \pi^+\pi^-$. NODE=S041GGM;LINKAGE=H

[22] Results are also presented using additional inputs on $B^0 \to \pi^0\pi^0$ and $B^+ \to \pi^+\pi^0$ decays from other experiments and isospin symmetry assumptions. The dependence of the results on the maximum allowed amount of U-spin breaking up to 50% is also included. NODE=S041GGM;LINKAGE=IH

[23] Uses binned Dalitz plot analysis of $B^+ \to DK^+$ decays, with $D \to K^0_S \pi^+\pi^-$ and $D \to K^0_S K^+ K^-$. Strong phase measurements from CLEO-c (LIBBY 10) of the D decay over the Dalitz plot are used as input. Solution that satisfies $0 < \gamma < 180$ is chosen. NODE=S041GGM;LINKAGE=A

[24] AAIJ 14BE uses model-dependent analysis of $D \to K^0_S \pi^+\pi^-$ amplitudes. The model is the same as in DEL-AMO-SANCHEZ 10F. NODE=S041GGM;LINKAGE=IA

[25] Measured in $B^0_s \to D^\mp_s K^\pm$ decays, constraining $-2\beta_s$ by the measurement of $\phi_s = 0.01 \pm 0.07 \pm 0.0$ from AAIJ 13AR. The value is modulo 180° at 68% CL. NODE=S041GGM;LINKAGE=G

[26] Presents a confidence region $55.4° < \gamma < 82.3°$ at 68% CL with best fit value 72.6° and includes both statistical and systematic uncertainties. The corresponding 95% CL is $40.2\ ° < \gamma < 92.7°$. The value is determined from combination of measuremets using D meson decaying to K^+K^-, $\pi^+\pi^-$, $K^\pm\pi^\mp$, $K^0_S \pi^+\pi^-$, $K^0_S K^+K^-$, and $K^\pm\pi^\mp\pi^\pm\pi^\mp$. Combines $B^\pm \to DK^\pm$ and $B^\pm \to D\pi^\pm$. NODE=S041GGM;LINKAGE=AJ

[27] Reports combination of published measurements using GGSZ, GLW, and ADS methods. Reports also 2σ range of 41–102° and a 5.9σ significance for $\gamma(B^+ \to D^{(*)0} K^{(*)+}) \neq 0$ hypothesis. NODE=S041GGM;LINKAGE=LE

[28] Reports combined statistical and systematic uncertainties. NODE=S041GGM;LINKAGE=AA

[29] Uses binned Dalitz plot of $\overline{D}^0 \to K^0_S \pi^+\pi^-$ decays from $B^+ \to \overline{D}^0 K^+$. Measurement of strong phases in $\overline{D}^0 \to K^0_S \pi^+\pi^-$ Dalitz plot from LIBBY 10 is used as input. NODE=S041GGM;LINKAGE=AH

[30] We combined the systematics in quadrature. The authors report separately the contribution to the systematic uncertainty due to the uncertainty on the bin-averaged strong phase difference between D^0 and $\overline{D}^0$ amplitudes. Superseded by ABUDINEN 22.

NODE=S041GGM;LINKAGE=AI

[31] Uses Dalitz plot analysis of $\overline{D}^0 \to K^0_S \pi^+ \pi^-$, $K^0_S K^+ K^-$ decays from $B^+ \to D^{(*)} K^+$, $D K^{*+}$ modes. The corresponding two standard deviation interval for γ is $39^\circ < \gamma < 98^\circ$. CP conservation in the combined result is ruled out with a significance of 3.5 standard deviations.

NODE=S041GGM;LINKAGE=DE

[32] Reports confidence intervals for the CKM angle γ from the measured values of the GLW parameters using $B^\pm \to D K^\pm$ decays with D mesons decaying to non-$CP(K\pi)$, CP-even ($K^+ K^-$, $\pi^+\pi^-$), and CP-odd ($K^0_S \pi^0$, $K^0_S \omega$) states.

NODE=S041GGM;LINKAGE=DA

[33] Uses Dalitz plot analysis of $\overline{D}^0 \to K^0_S \pi^+ \pi^-$ decays from $B^+ \to D^{(*)} K^+$ modes. The corresponding two standard deviation interval for γ is $54.2^\circ < \gamma < 100.5^\circ$. CP conservation in the combined result is ruled out with a significance of 3.5 standard deviations.

NODE=S041GGM;LINKAGE=PU

[34] Uses Dalitz plot analysis of $D^0 \to K^0_S \pi^+ \pi^-$ decays coming from $B^0 \to D^0 K^{*0}$ modes. The corresponding 95% CL interval is $77^\circ < \gamma < 247^\circ$. A 180 degree ambiguity is implied.

NODE=S041GGM;LINKAGE=D

[35] Uses Dalitz plot analysis of $\overline{D}^0 \to K^0_S \pi^+ \pi^-$ and $\overline{D}^0 \to K^0_S K^+ K^-$ decays coming from $B^\pm \to D^{(*)} K^{(*)\pm}$ modes. The corresponding two standard deviation interval is $29^\circ < \gamma < 122^\circ$.

NODE=S041GGM;LINKAGE=AB

[36] Uses a Dalitz plot analysis of the $\overline{D}^0 \to K^0_S \pi^+ \pi^-$ decays; Combines the $D K^+$, $D^* K^+$ and $D K^{*+}$ modes. The corresponding two standard deviations interval for gamma is $8^\circ < \gamma < 111^\circ$.

NODE=S041GGM;LINKAGE=PL

[37] Uses a Dalitz plot analysis of neutral $D \to K^0_S \pi^+ \pi^-$ decays coming from $B^\pm \to D K^\pm$ and $B^\pm \to D^{*0} K^\pm$ followed by $D^{*0} \to D\pi^0$, $D\gamma$. The corresponding two standard deviations interval for gamma is $12^\circ < \gamma < 137^\circ$. AUBERT,B 05Y also reports the amplitude ratios and the strong phases.

NODE=S041GGM;LINKAGE=AU

[38] Uses a Dalitz plot analysis of the 3-body $D \to K^0_S \pi^+ \pi^-$ decays coming from $B^\pm \to D K^\pm$ and $B^\pm \to D^* K^\pm$ followed by $D^* \to D\pi^0$; here we use D to denote that the neutral D meson produced in the decay is an admixture of D^0 and $\overline{D}^0$. The corresponding two standard deviations interval for γ is $26^\circ < \gamma < 126^\circ$. POLUEKTOV 04 also reports the amplitude ratios and the strong phases.

NODE=S041GGM;LINKAGE=PO

$r_B(B^+ \to D^0 K^+)$

NODE=S041ARX

r_B and δ_B are the amplitude ratio and relative strong phase between the amplitudes of $A(B^+ \to D^0 K^+)$ and $A(B^+ \to \overline{D}^0 K^+)$,

NODE=S041ARX

NODE=S041ARX

→ UNCHECKED ← NEW

VALUE (units 10^{-2})	CL%	DOCUMENT ID	TECN	COMMENT
9.94± 0.26 OUR EVALUATION		(Produced by HFLAV)		
11.5 ± 1.3 OUR AVERAGE		[0.095 ± 0.008 OUR 2018 AVERAGE]		
$11.5^{+1.2}_{-1.3}$		[1] ADACHI 24T	BELL	$e^+e^- \to \Upsilon(4S)$)
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$9.46 \pm 0.31^{+0.30}_{-0.24}$		[2] AAIJ 23I	LHCB	pp at 7, 8, 13 TeV
11.0 ± 2.0		[3] AAIJ 23N	LHCB	pp at 7, 8, 13 TeV
12.9 ± 2.4 ±0.2		[4] ABUDINEN 22	BELL	$e^+e^- \to \Upsilon(4S)$
$9.04^{+0.77}_{-0.75}$		[5] AAIJ 21L	LHCB	pp at 7, 8, 13 TeV
32.3 ±14.7 ±5.6		[6] RESMI 19	BELL	$e^+e^- \to \Upsilon(4S)$
$8.6^{+1.3}_{-1.4}$		[7] AAIJ 18AD	LHCB	Repl. by AAIJ 21L
$8.0^{+1.9}_{-2.1}$		[4] AAIJ 14BA	LHCB	Repl. by AAIJ 21L
6 ± 4		[8] AAIJ 14BE	LHCB	Repl. by AAIJ 14BA
9.7 ± 1.1		[9] AAIJ 13AE	LHCB	pp at 7 TeV
$9.2^{+1.3}_{-1.2}$		[10] LEES 13B	BABR	$e^+e^- \to \Upsilon(4S)$
7 ± 4		[11,12] AAIJ 12AQ	LHCB	pp at 7 TeV
14.5 ± 3.0 ±1.5		[12,13] AIHARA 12	BELL	$e^+e^- \to \Upsilon(4S)$.
<13	90	[14] LEES 11D	BABR	$e^+e^- \to \Upsilon(4S)$
9.6 ± 2.9 ±0.6		[15] DEL-AMO-SA...10F	BABR	Repl. by LEES 13B
$9.5^{+5.1}_{-4.1}$		[16] DEL-AMO-SA...10H	BABR	Repl. by LEES 13B
$16.0^{+4.0}_{-3.8}{}^{+5.1}_{-1.5}$		[17] POLUEKTOV 10	BELL	$e^+e^- \to \Upsilon(4S)$
8.6 ± 3.2 ±1.5		[18] AUBERT 08AL	BABR	Repl. by DEL-AMO-SANCHEZ 10F
<19	90	HORII 08	BELL	$e^+e^- \to \Upsilon(4S)$
$15.9^{+5.4}_{-5.0}$ ±5.0		[19] POLUEKTOV 06	BELL	Repl. by POLUEKTOV 10
12 ± 8 ±5		[20] AUBERT,B 05Y	BABR	Repl. by AUBERT 08AL

[1] Uses combined sample of Belle and Belle II experiments in B^+ decays to $D K^+$, $D^* K^+$, and $D\pi^+$ final states. NODE=S041ARX;LINKAGE=J

[2] Measured using $B^\pm \to D[K^\mp \pi^\pm \pi^\pm \pi^\mp] h^\pm$ decays in bins of the phase space of the D decay. The third uncertainty includes systematic and finite knowledge of the D-meson decay parameters. NODE=S041ARX;LINKAGE=I

[3] A model-dependent binned analysis of the decays $B^\pm \to [K^+ K^- \pi^+ \pi^-]_D h^\pm$is used. NODE=S041ARX;LINKAGE=H

[4] Uses binned Dalitz plot analysis of $B^+ \to D K^+$ decays, with $D \to K^0_S \pi^+ \pi^-$ and $D \to K^0_S K^+ K^-$. Strong phase measurements from CLEO-c (LIBBY 10) of the D decay over the Dalitz plot are used as input. Supersedes AIHARA 12. NODE=S041ARX;LINKAGE=A

[5] Uses binned analysis of $D \to K^0_S \pi^+ \pi^- \pi^0$ from $B^\pm \to D K^\pm$ modes over the phase space. Strong phase measurements from CLEO-c and BES-III data of the D decay over the phase space binning are used as input. NODE=S041ARX;LINKAGE=D

[6] Uses binned analysis of $D \to K^0_S \pi^+ \pi^- \pi^0$ from $B^\pm \to D K^\pm$ modes over the phase space. Strong phase measurements from RESMI 18 analysis of CLEO-c data of the D decay over the phase space binning are used as input. NODE=S041ARX;LINKAGE=C

[7] Uses binned Dalitz plot analysis of $D \to K^0_S \pi^+ \pi^-$ and $K^0_S K^+ K^-$ from $B^\pm \to D K^\pm$ modes. Strong phase measurements from CLEO-c of the D decay over the Dalitz plot are used as input. NODE=S041ARX;LINKAGE=B

[8] AAIJ 14BE uses model-dependent analysis of $D \to K^0_S \pi^+ \pi^-$ amplitudes. The model is the same as in DEL-AMO-SANCHEZ 10F. NODE=S041ARX;LINKAGE=IA

[9] Uses $B^\pm \to [K^\pm \pi^\mp \pi^+ \pi^-]_D h^\pm$ mode. NODE=S041ARX;LINKAGE=AJ

[10] Reports combination of published measurements using GGSZ, GLW, and ADS methods. NODE=S041ARX;LINKAGE=LS

[11] Reports combined statistical and systematic uncertainties. NODE=S041ARX;LINKAGE=AA

[12] Uses binned Dalitz plot of $\overline{D}^0 \to K^0_S \pi^+ \pi^-$ decays from $B^+ \to \overline{D}^0 K^+$. Measurement of strong phases in $\overline{D}^0 \to K^0_S \pi^+ \pi^-$ Dalitz plot from LIBBY 10 is used as input. NODE=S041ARX;LINKAGE=AH

[13] We combined the systematics in quadrature. The authors report separately the contribution to the systematic uncertainty due to the uncertainty on the bin-averaged strong phase difference between D^0 and $\overline{D}^0$ amplitudes. Superseded by ABUDINEN 22. NODE=S041ARX;LINKAGE=AI

[14] Uses decays of neutral D to $K^- \pi^+ \pi^0$. NODE=S041ARX;LINKAGE=LE

[15] Uses Dalitz plot analysis of $\overline{D}^0 \to K^0_S \pi^+ \pi^-$, $K^0_S K^+ K^-$ decays from $B^+ \to D^{(*)} K^{(*)+}$ modes. The corresponding two standard deviation interval is $0.037 < r_B < 0.155$. NODE=S041ARX;LINKAGE=DE

[16] Uses the Cabibbo suppressed decay of $B^+ \to \overline{D} K^+$ followed by $\overline{D} \to K^- \pi^+$. NODE=S041ARX;LINKAGE=DL

[17] Uses Dalitz plot analysis of $\overline{D}^0 \to K^0_S \pi^+ \pi^-$ decays from $B^+ \to D^0 K^+$ modes. The corresponding two standard deviation interval is $0.084 < r_B < 0.239$. NODE=S041ARX;LINKAGE=PU

[18] Uses Dalitz plot analysis of $\overline{D}^0 \to K^0_S \pi^+ \pi^-$ and $\overline{D}^0 \to K^0_S K^+ K^-$ decays coming from $B^\pm \to D^{(*)} K^{(*)\pm}$ modes. NODE=S041ARX;LINKAGE=AB

[19] Uses a Dalitz plot analysis of the $\overline{D}^0 \to K^0_S \pi^+ \pi^-$ decays; Combines the $D K^+$, $D^* K^+$ and $D K^{*+}$ modes. NODE=S041ARX;LINKAGE=PO

[20] Uses a Dalitz analysis of neutral D decays to $K^0_S \pi^+ \pi^-$ in the processes $B^\pm \to D^{(*)} K^\pm$, $D^* \to D\pi^0$, $D\gamma$. NODE=S041ARX;LINKAGE=AU

$\delta_B(B^+ \to D^0 K^+)$

NODE=S041DRX

NODE=S041DRX

VALUE (°)	DOCUMENT ID	TECN	COMMENT
$127.7^{+3.6}_{-3.9}$ OUR EVALUATION (Produced by HFLAV)			
138^{+9}_{-10} OUR AVERAGE [$(123 \pm 10)^\circ$ OUR 2018 AVERAGE]			
$137.8^{+8.5}_{-9.8}$	[1] ADACHI 24T	BELL	$e^+ e^- \to \Upsilon(4S))$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$134.6 \pm 6.0^{+8.6}_{-8.7}$	[2] AAIJ 23I	LHCB	pp at 7, 8, 13 TeV
81^{+14}_{-13}	[3] AAIJ 23N	LHCB	pp at 7, 8, 13 TeV
$124.8 \pm 12.9 \pm 1.8$	[4,5] ABUDINEN 22	BELL	$e^+ e^- \to \Upsilon(4S)$
$118.3^{+5.5}_{-5.6}$	[6] AAIJ 21L	LHCB	pp at 7, 8, 13 TeV
$83.4^{+18.3}_{-16.6} \pm 5.1$	[7] RESMI 19	BELL	$e^+ e^- \to \Upsilon(4S)$
101 ± 11	[8] AAIJ 18AD	LHCB	Repl. by AAIJ 21L
134^{+14}_{-15}	[4] AAIJ 14BA	LHCB	Repl. by AAIJ 21L
115^{+41}_{-51}	[9] AAIJ 14BE	LHCB	Repl. by AAIJ 14BA
105^{+16}_{-17}	[10] LEES 13B	BABR	$e^+ e^- \to \Upsilon(4S)$

→ UNCHECKED ←

NEW

$137\ ^{+35}_{-46}$	[11,12] AAIJ	12AQ	LHCB	pp at 7 TeV
$129.9\pm15.0\pm\ 6.0$	[12,13] AIHARA	12	BELL	$e^+e^- \to \Upsilon(4S)$
$119\ ^{+19}_{-20}\ \pm\ 4$	[14] DEL-AMO-SA...	10F	BABR	Repl. by LEES 13B
$136.7^{+13.0}_{-15.8}\pm23.2$	[15] POLUEKTOV	10	BELL	$e^+e^- \to \Upsilon(4S)$
$109\ ^{+27}_{-30}\ \pm\ 8$	[16] AUBERT	08AL	BABR	Repl. by DEL-AMO-SANCHEZ 10F
$145.7^{+19.0}_{-19.7}\pm23.1$	[17] POLUEKTOV	06	BELL	Repl. by POLUEKTOV 10
$104\ \pm45\ ^{+23}_{-32}$	[18] AUBERT,B	05Y	BABR	Repl. by AUBERT 08AL

[1] Uses combined sample of Belle and Belle II experiments in B^+ decays to DK^+, D^*K^+, and $D\pi^+$ final states. NODE=S041DRX;LINKAGE=J

[2] Measured using $B^\pm \to D[K^\mp\pi^\pm\pi^\pm\pi^\mp]h^\pm$ decays in bins of the phase space of the D decay. The third uncertainty includes systematic and finite knowledge of the D-meson decay parameters. NODE=S041DRX;LINKAGE=I

[3] A model-dependent binned analysis of the decays $B^\pm \to [K^+K^-\pi^+\pi^-]_D h^\pm$ is used. NODE=S041DRX;LINKAGE=H

[4] Uses binned Dalitz plot analysis of $B^+ \to DK^+$ decays, with $D \to K^0_S\pi^+\pi^-$ and $D \to K^0_S K^+K^-$. Strong phase measurements from CLEO-c (LIBBY 10) of the D decay over the Dalitz plot are used as input. NODE=S041DRX;LINKAGE=A

[5] Supersedes AIHARA 12. NODE=S041DRX;LINKAGE=G

[6] Uses binned Dalitz plot analysis of $D \to K^0_S\pi^+\pi^-$ and $K^0_S K^+K^-$ from $B^\pm \to DK^\pm$ modes. Strong phase measurements from CLEO-c and BES-III of the D decay over the Dalitz plot are used as input. Value is modulo 180°. NODE=S041DRX;LINKAGE=D

[7] Uses binned analysis of $D \to K^0_S\pi^+\pi^-\pi^0$ from $B^\pm \to DK^\pm$ modes over the phase space. Strong phase measurements from RESMI 18 analysis of CLEO-c data of the D decay over the phase space binning are used as input. NODE=S041DRX;LINKAGE=C

[8] Uses binned Dalitz plot analysis of $D \to K^0_S\pi^+\pi^-$ and $K^0_S K^+K^-$ from $B^\pm \to DK^\pm$ modes. Strong phase measurements from CLEO-c of the D decay over the Dalitz plot are used as input. NODE=S041DRX;LINKAGE=B

[9] AAIJ 14BE uses model-dependent analysis of $D \to K^0_S\pi^+\pi^-$ amplitudes. The model is the same as in DEL-AMO-SANCHEZ 10F. NODE=S041DRX;LINKAGE=IA

[10] Reports combination of published measurements using GGSZ, GLW, and ADS methods. NODE=S041DRX;LINKAGE=LE

[11] Reports combined statistical and systematic uncertainties. NODE=S041DRX;LINKAGE=AA

[12] Uses binned Dalitz plot of $\overline{D}^0 \to K^0_S\pi^+\pi^-$ decays from $B^+ \to \overline{D}^0K^+$. Measurement of strong phases in $\overline{D}^0 \to K^0_S\pi^+\pi^-$ Dalitz plot from LIBBY 10 is used as input. NODE=S041DRX;LINKAGE=AH

[13] We combined the systematics in quadrature. The authors report separately the contribution to the systematic uncertainty due to the uncertainty on the bin-averaged strong phase difference between D^0 and $\overline{D}^0$ amplitudes. Superseded by ABUDINEN 22. NODE=S041DRX;LINKAGE=AI

[14] Uses Dalitz plot analysis of $\overline{D}^0 \to K^0_S\pi^+\pi^-$, $K^0_S K^+K^-$ decays from $B^+ \to D^{(*)}K^{(*)+}$ modes. The corresponding two standard deviation interval is $75^\circ < \delta_B < 157^\circ$. NODE=S041DRX;LINKAGE=DE

[15] Uses Dalitz plot analysis of $\overline{D}^0 \to K^0_S\pi^+\pi^-$ decays from $B^+ \to \overline{D}^0K^+$ modes. The corresponding two standard deviation interval is $102.2^\circ < \delta_B < 162.3^\circ$. NODE=S041DRX;LINKAGE=PU

[16] Uses Dalitz plot analysis of $\overline{D}^0 \to K^0_S\pi^+\pi^-$ and $\overline{D}^0 \to K^0_S K^+K^-$ decays coming from $B^\pm \to D^{(*)}K^{(*)\pm}$ modes. NODE=S041DRX;LINKAGE=AB

[17] Uses a Dalitz plot analysis of the $\overline{D}^0 \to K^0_S\pi^+\pi^-$ decays; Combines the DK^+, D^*K^+ and DK^{*+} modes. NODE=S041DRX;LINKAGE=PO

[18] Uses a Dalitz analysis of neutral D decays to $K^0_S\pi^+\pi^-$ in the processes $B^\pm \to D^{(*)}K^\pm$, $D^* \to D\pi^0$, $D\gamma$. NODE=S041DRX;LINKAGE=AU

$r_B(B^+ \to D^0\pi^+)$

NODE=S041A32
NODE=S041A32

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
$16.5^{+5.5}_{-5.2}$	[1] ADACHI	24T	BELL	$e^+e^- \to \Upsilon(4S)$)
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$4.5^{+1.1}_{-1.0}{}^{+0.5}_{-0.4}$	[2] AAIJ	23I	LHCB	pp at 7, 8, 13 TeV
$4.1^{+5.4}_{-4.1}$	[3] AAIJ	23N	LHCB	pp at 7, 8, 13 TeV
$17\ \pm6\ \pm1$	[4] ABUDINEN	22	BELL	$e^+e^- \to \Upsilon(4S)$
5.0 ± 1.7	[4] AAIJ	21L	LHCB	pp at 7, 8, 13 TeV

[1] Uses combined sample of Belle and Belle II experiments in B^+ decays to $D K^+$, $D^* K^+$, and $D\pi^+$ final states.
[2] Measured using $B^\pm \to D[K^\mp \pi^\pm \pi^\pm \pi^\mp] h^\pm$ decays in bins of the phase space of the D decay. The third uncertainty includes systematic and finite knowledge of the D-meson decay parameters.
[3] A model-dependent binned analysis of the decays $B^\pm \to [K^+ K^- \pi^+ \pi^-]_D h^\pm$ is used.
[4] Uses binned Dalitz plot analysis of $D \to K^0_S \pi^+ \pi^-$ and $K^0_S K^+ K^-$ from $B^\pm \to D\pi^\pm$ modes. Strong phase measurements from CLEO-c and BES-III of the D decay over the Dalitz plot are used as input.

NODE=S041A32;LINKAGE=E
NODE=S041A32;LINKAGE=D
NODE=S041A32;LINKAGE=C
NODE=S041A32;LINKAGE=A

$\delta_B(B^+ \to D^0 \pi^+)$

NODE=S041A33
NODE=S041A33

VALUE (°)	DOCUMENT ID		TECN	COMMENT
$347.0^{+8.7}_{-9.6}$	[1] ADACHI	24T	BELL	$e^+ e^- \to \Upsilon(4S))$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$311.8^{+14.7+15.0}_{-15.0-15.2}$	[2] AAIJ	23I	LHCB	pp at 7, 8, 13 TeV
$298\ ^{+62}_{-118}$	[3] AAIJ	23N	LHCB	pp at 7, 8, 13 TeV
$341.0 \pm 17.0 \pm 2.9$	[4] ABUDINEN	22	BELL	$e^+ e^- \to \Upsilon(4S)$
$291\ ^{+24}_{-26}$	[4] AAIJ	21L	LHCB	pp at 7, 8, 13 TeV

[1] Uses combined sample of Belle and Belle II experiments in B^+ decays to $D K^+$, $D^* K^+$, and $D\pi^+$ final states.
[2] Measured using $B^\pm \to D[K^\mp \pi^\pm \pi^\pm \pi^\mp] h^\pm$ decays in bins of the phase space of the D decay. The third uncertainty includes systematic and finite knowledge of the D-meson decay parameters.
[3] A model-dependent binned analysis of the decays $B^\pm \to [K^+ K^- \pi^+ \pi^-]_D h^\pm$ is used.
[4] Uses binned Dalitz plot analysis of $D \to K^0_S \pi^+ \pi^-$ and $K^0_S K^+ K^-$ from $B^\pm \to D\pi^\pm$ modes. Strong phase measurements from CLEO-c and BES-III of the D decay over the Dalitz plot are used as input. Value is modulo 180°.

NODE=S041A33;LINKAGE=E
NODE=S041A33;LINKAGE=D
NODE=S041A33;LINKAGE=C
NODE=S041A33;LINKAGE=A

$r_B(B^+ \to D^0 K^{*+})$

NODE=S041ARZ

r_B and δ_B are the amplitude ratio and relative strong phase between the amplitudes of $A_{CP}(B^+ \to D^0 K^{*+})$ and $A_{CP}(B^+ \to \overline{D}^0 K^{*+})$,

NODE=S041ARZ
NODE=S041ARZ

VALUE	DOCUMENT ID		TECN	COMMENT
$0.101^{+0.016}_{-0.034}$ OUR EVALUATION (Produced by HFLAV)				
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.143^{+0.048}_{-0.049}$	[1] LEES	13B	BABR	$e^+ e^- \to \Upsilon(4S)$
$0.166^{+0.073}_{-0.069}$	[2] DEL-AMO-SA...	10F	BABR	Repl. by LEES 13B
0.31 ± 0.07	[3] AUBERT	09AJ	BABR	Repl. by LEES 13B
$0.181^{+0.088}_{-0.108} \pm 0.042$	[4] AUBERT	08AL	BABR	Repl. by AUBERT 09AJ
$0.564^{+0.216}_{-0.155} \pm 0.093$	[5] POLUEKTOV	06	BELL	$e^+ e^- \to \Upsilon(4S)$

→ UNCHECKED ←

[1] Reports combination of published measurements using GGSZ, GLW, and ADS methods.
[2] DEL-AMO-SANCHEZ 10F reports $r_B \cdot k = 0.149^{+0.066}_{-0.062}$ for k = 0.9.
[3] Obtained by combining the GLW and ADS methods. The 2-sigma range corresponds to [0.17, 0.43].
[4] Uses Dalitz plot analysis of $\overline{D}^0 \to K^0_S \pi^+ \pi^-$ and $\overline{D}^0 \to K^0_S K^+ K^-$ decays coming from $B^\pm \to D^{(*)} K^{(*)\pm}$ modes.
[5] Uses a Dalitz plot analysis of the $\overline{D}^0 \to K^0_S \pi^+ \pi^-$ decays; Combines the $D K^+$, $D^* K^+$ and $D K^{*+}$ modes.

NODE=S041ARZ;LINKAGE=LE
NODE=S041ARZ;LINKAGE=DE
NODE=S041ARZ;LINKAGE=AU
NODE=S041ARZ;LINKAGE=AB
NODE=S041ARZ;LINKAGE=PO

$\delta_B(B^+ \to D^0 K^{*+})$

NODE=S041DRZ
NODE=S041DRZ

VALUE (°)	DOCUMENT ID		TECN	COMMENT
$48\ ^{+59}_{-16}$ OUR EVALUATION (Produced by HFLAV)				
• • • We do not use the following data for averages, fits, limits, etc. • • •				
101 ± 43	[1] LEES	13B	BABR	$e^+ e^- \to \Upsilon(4S)$
111 ± 32	DEL-AMO-SA...	10F	BABR	Repl. by LEES 13B
$104\ ^{+39}_{-37} \pm 18$	[2] AUBERT	08AL	BABR	Repl. by LEES 13B
$242.6^{+20.2}_{-23.2} \pm 49.4$	[3] POLUEKTOV	06	BELL	$e^+ e^- \to \Upsilon(4S)$

→ UNCHECKED ←

[1] Reports combination of published measurements using GGSZ, GLW, and ADS methods. NODE=S041DRZ;LINKAGE=LE
[2] Uses Dalitz plot analysis of $\overline{D}^0 \to K^0_S \pi^+ \pi^-$ and $\overline{D}^0 \to K^0_S K^+ K^-$ decays coming from $B^\pm \to D^{(*)} K^{(*)\pm}$ modes. NODE=S041DRZ;LINKAGE=AB
[3] Uses a Dalitz plot analysis of the $\overline{D}^0 \to K^0_S \pi^+ \pi^-$ decays; Combines the $D K^+$, $D^* K^+$ and $D K^{*+}$ modes. NODE=S041DRZ;LINKAGE=PO

$r_B(B^+ \to D^{*0} K^+)$

NODE=S041ARY

r_B and δ_B are the amplitude ratio and relative strong phase between the amplitudes of $A(B^+ \to D^{*0} K^+)$ and $A(B^+ \to \overline{D}^{*0} K^+)$,

NODE=S041ARY

NODE=S041ARY

VALUE	DOCUMENT ID	TECN	COMMENT
$0.104^{+0.013}_{-0.014}$ OUR EVALUATION (Produced by HFLAV)			
0.23 ±0.07 OUR AVERAGE [$0.114^{+0.023}_{-0.040}$ OUR 2018 AVERAGE Scale factor = 1.2]			
$0.229^{+0.068}_{-0.067}$	[1] ADACHI 24T	BELL	$e^+ e^- \to \Upsilon(4S)$)
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.080^{+0.022}_{-0.023}$	[2] AAIJ 24H	LHCB	pp at 7, 8, 13 TeV
0.15 ± 0.03	[3] AAIJ 23BA	LHCB	pp at 7, 8, 13 TeV
$0.106^{+0.019}_{-0.036}$	[4] LEES 13B	BABR	$e^+ e^- \to \Upsilon(4S)$
$0.133^{+0.042}_{-0.039} \pm 0.013$	[5] DEL-AMO-SA...10F	BABR	Repl. by LEES 13B
$0.096^{+0.035}_{-0.051}$	[6] DEL-AMO-SA...10H	BABR	Repl. by LEES 13B
$0.196^{+0.072}_{-0.069}{}^{+0.064}_{-0.017}$	[7] POLUEKTOV 10	BELL	$e^+ e^- \to \Upsilon(4S)$
$0.135 \pm 0.050 \pm 0.012$	[8] AUBERT 08AL	BABR	Repl. by DEL-AMO-SANCHEZ 10F
$0.175^{+0.108}_{-0.099} \pm 0.050$	[9] POLUEKTOV 06	BELL	Repl. by POLUEKTOV 10
$0.17 \pm 0.10 \pm 0.04$	[10] AUBERT,B 05Y	BABR	Repl. by AUBERT 08AL

→ UNCHECKED ←

NEW

[1] Uses combined sample of Belle and Belle II experiments in B^+ decays to $D K^+$, $D^* K^+$, and $D\pi^+$ final states. NODE=S041ARY;LINKAGE=D
[2] Extracted from yields of partially reconstructed $B^\pm \to D^* K^\pm$, $D^* \to D\pi^0/\gamma$, $D \to K^0_S \pi^+\pi^- / K^0_S K^+ K^-$ decays. The uncertainty is predominantly statistical. Its correlation with the AAIJ 23BA result is found to be less than 3%. NODE=S041ARY;LINKAGE=B
[3] Measured using $B^\pm \to D^* K^\pm$ decays analysing the signal yield variation with the fully reconstructed $D^* \to D\pi^0/\gamma$, $D \to K^0_S \pi^+\pi^- / K^0_S K^+ K^-$ decays. The model-independent approach uses external strong phase input from BESIII and CLEO collaborations. NODE=S041ARY;LINKAGE=A
[4] Reports combination of published measurements using GGSZ, GLW, and ADS methods. NODE=S041ARY;LINKAGE=LE
[5] Uses Dalitz plot analysis of $\overline{D}^0 \to K^0_S \pi^+\pi^-$, $K^0_S K^+ K^-$ decays from $B^+ \to D^{(*)} K^{(*)+}$ modes. The corresponding two standard deviation interval is $0.049 < r^*_B < 0.215$. NODE=S041ARY;LINKAGE=DE
[6] Uses the Cabibbo suppressed decay of $B^+ \to \overline{D}^* K^+$ followed by $\overline{D}^* \to \overline{D}\pi^0$ or $\overline{D}\gamma$, and $\overline{D} \to K^-\pi^+$. NODE=S041ARY;LINKAGE=DL
[7] Uses Dalitz plot analysis of $\overline{D}^0 \to K^0_S \pi^+\pi^-$ decays from $B^+ \to D^{*0} K^+$ modes. The corresponding two standard deviation interval is $0.061 < r^*_B < 0.271$. NODE=S041ARY;LINKAGE=PU
[8] Uses Dalitz plot analysis of $\overline{D}^0 \to K^0_S \pi^+\pi^-$ and $\overline{D}^0 \to K^0_S K^+ K^-$ decays coming from $B^\pm \to D^{(*)} K^{(*)\pm}$ modes. NODE=S041ARY;LINKAGE=AB
[9] Uses a Dalitz plot analysis of the $\overline{D}^0 \to K^0_S \pi^+\pi^-$ decays; Combines the $D K^+$, $D^* K^+$ and $D K^{*+}$ modes. NODE=S041ARY;LINKAGE=PO
[10] Uses a Dalitz analysis of neutral D decays to $K^0_S \pi^+\pi^-$ in the processes $B^\pm \to D^{(*)} K^\pm$, $D^* \to D\pi^0$, $D\gamma$. NODE=S041ARY;LINKAGE=AU

$\delta_B(B^+ \to D^{*0} K^+)$

NODE=S041DRY
NODE=S041DRY

VALUE (°)	DOCUMENT ID	TECN	COMMENT
$314.8^{+\ 7.9}_{-\ 9.9}$ OUR EVALUATION (Produced by HFLAV)			
$342\ ^{+14}_{-16}$ OUR AVERAGE [$(310^{+22}_{-28})°$ OUR 2018 AVERAGE Scale factor = 1.3]			
$342\ ^{+14}_{-16}$	[1] ADACHI 24T	BELL	$e^+ e^- \to \Upsilon(4S)$)

→ UNCHECKED ←

NEW

• • • We do not use the following data for averages, fits, limits, etc. • • •

$310\ ^{+15}_{-20}$	[2] AAIJ	24H	LHCB	pp at 7, 8, 13 TeV
$311\ \pm 14$	[3] AAIJ	23BA	LHCB	pp at 7, 8, 13 TeV
$294\ ^{+21}_{-31}$	[4] LEES	13B	BABR	$e^+e^- \to \Upsilon(4S)$
$278\ \pm 21\ \pm\ 6$	[5] DEL-AMO-SA...	10F	BABR	Repl. by LEES 13B
$341.9^{+18.0}_{-19.6}\pm 23.1$	[6] POLUEKTOV	10	BELL	$e^+e^- \to \Upsilon(4S)$
$297\ ^{+27}_{-29}\ \pm\ 6.4$	[7] AUBERT	08AL	BABR	Repl. by DEL-AMO-SANCHEZ 10F
$302.0^{+33.8}_{-35.1}\pm 23.7$	[8] POLUEKTOV	06	BELL	Repl. by POLUEKTOV 10
$296\ \pm 41\ ^{+20}_{-19}$	[9] AUBERT,B	05Y	BABR	Repl. by AUBERT 08AL

[1] Uses combined sample of Belle and Belle II experiments in B^+ decays to $D K^+$, $D^* K^+$, and $D\pi^+$ final states. NODE=S041DRY;LINKAGE=C

[2] Extracted from yields of partially reconstructed $B^\pm \to D^* K^\pm$, $D^* \to D\pi^0/\gamma$, $D \to K^0_S \pi^+\pi^- / K^0_S K^+ K^-$ decays. The uncertainty is predominantly statistical. Its correlation with the AAIJ 23BA result is found to be less than 3%. NODE=S041DRY;LINKAGE=B

[3] Measured using $B^\pm \to D^* K^\pm$ decays analysing the signal yield variation with the fully reconstructed $D^* \to D\pi^0/\gamma$, $D \to K^0_S \pi^+\pi^- / K^0_S K^+ K^-$ decays. The model-independent approach uses external strong phase input from BESIII and CLEO collaborations. NODE=S041DRY;LINKAGE=A

[4] Reports combination of published measurements using GGSZ, GLW, and ADS methods. We added 360° to the value of $(-66^{+21}_{-31})°$ quoted by LEES 13B. NODE=S041DRY;LINKAGE=LE

[5] Uses Dalitz plot analysis of $\overline{D}^0 \to K^0_S \pi^+\pi^-$, $K^0_S K^+ K^-$ decays from $B^+ \to D^{(*)} K^{(*)+}$ modes. The corresponding two standard deviation interval is $236° < \delta^*_B < 322°$. NODE=S041DRY;LINKAGE=DE

[6] Uses Dalitz plot analysis of $\overline{D}^0 \to K^0_S \pi^+\pi^-$ decays from $B^+ \to D^* K^+$ modes. The corresponding two standard deviation interval is $296.5° < \delta^*_B < 382.7°$. NODE=S041DRY;LINKAGE=PU

[7] Uses Dalitz plot analysis of $\overline{D}^0 \to K^0_S \pi^+\pi^-$ and $\overline{D}^0 \to K^0_S K^+ K^-$ decays coming from $B^\pm \to D^{(*)} K^{(*)\pm}$ modes. NODE=S041DRY;LINKAGE=AB

[8] Uses a Dalitz plot analysis of the $\overline{D}^0 \to K^0_S \pi^+\pi^-$ decays; Combines the $D K^+$, $D^* K^+$ and $D K^{*+}$ modes. NODE=S041DRY;LINKAGE=PO

[9] Uses a Dalitz analysis of neutral D decays to $K^0_S \pi^+\pi^-$ in the processes $B^\pm \to D^{(*)} K^\pm$, $D^* \to D\pi^0$, $D\gamma$. NODE=S041DRY;LINKAGE=AU

$r_B(B^+ \to D^{*0}\pi^+)$ NODE=S041D18

r_B and δ_B are the amplitude ratio and relative strong phase between the amplitudes of $A(B^+ \to D^{*0}\pi^+)$ and $A(B^+ \to \overline{D}^{*0}\pi^+)$. NODE=S041D18

NODE=S041D18

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.009^{+0.005}_{-0.007}$	[1] AAIJ	24H	LHCB	pp at 7, 8, 13 TeV
$0.01\ \pm 0.01$	[2] AAIJ	23BA	LHCB	pp at 7, 8, 13 TeV

[1] Extracted from yields of partially reconstructed $B^\pm \to D^* K^\pm$, $D^* \to D\pi^0/\gamma$, $D \to K^0_S \pi^+\pi^- / K^0_S K^+ K^-$ decays. The uncertainty is predominantly statistical. Its correlation with the AAIJ 23BA result is found to be less than 3%. NODE=S041D18;LINKAGE=B

[2] Measured using $B^\pm \to D^* \pi^\pm$ decays analysing the signal yield variation with the fully reconstructed $D^* \to D\pi^0/\gamma$, $D \to K^0_S \pi^+\pi^- / K^0_S K^+ K^-$ decays. The model-independent approach uses external strong phase input from BESIII and CLEO collaborations. NODE=S041D18;LINKAGE=A

$\delta_B(B^+ \to D^{*0}\pi^+)$ NODE=S041D19

NODE=S041D19

VALUE (°)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
304^{+37}_{-38}	[1] AAIJ	24H	LHCB	pp at 7, 8, 13 TeV
37 ± 37	[2] AAIJ	23BA	LHCB	pp at 7, 8, 13 TeV

[1] Extracted from yields of partially reconstructed $B^\pm \to D^* K^\pm$, $D^* \to D\pi^0/\gamma$, $D \to K^0_S \pi^+\pi^- / K^0_S K^+ K^-$ decays. The uncertainty is predominantly statistical. Its correlation with the AAIJ 23BA result is found to be less than 3%. NODE=S041D19;LINKAGE=B

[2] Measured using $B^\pm \to D^* \pi^\pm$ decays analysing the signal yield variation with the fully reconstructed $D^* \to D\pi^0/\gamma$, $D \to K^0_S \pi^+\pi^- / K^0_S K^+ K^-$ decays. The model-independent approach uses external strong phase input from BESIII and CLEO collaborations. NODE=S041D19;LINKAGE=A

PARTIAL BRANCHING FRACTIONS

NODE=S041240

B($B^+ \to K^{*+} \ell^+ \ell^-$) ($q^2 < 2.0$ GeV^2/c^4)

NODE=S041PB1
NODE=S041PB1

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
1.4 ±0.5 OUR AVERAGE				
$1.37^{+0.60}_{-0.58}$	AAIJ	12AH	LHCB	pp at 7 TeV
1.30±0.98±0.14	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV

B($B^+ \to K^{*+} \ell^+ \ell^-$) ($2.0 < q^2 < 4.3$ GeV^2/c^4)

NODE=S041PB2
NODE=S041PB2

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
1.1 ±0.5 OUR AVERAGE				
$1.24^{+0.60}_{-0.55}$	AAIJ	12AH	LHCB	pp at 7 TeV
0.71±1.00±0.15	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV

B($B^+ \to K^{*+} \ell^+ \ell^-$) ($4.3 < q^2 < 8.68$ GeV^2/c^4)

NODE=S041PB3
NODE=S041PB3

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
$2.4^{+0.8}_{-0.7}$ OUR AVERAGE				
$2.50^{+0.88}_{-0.74}$	AAIJ	12AH	LHCB	pp at 7 TeV
1.71±1.58±0.49	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV

B($B^+ \to K^{*+} \ell^+ \ell^-$) ($10.09 < q^2 < 12.86$ GeV^2/c^4)

NODE=S041PB4
NODE=S041PB4

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
2.1 ±0.6 OUR AVERAGE				
$2.13^{+0.72}_{-0.66}$	AAIJ	12AH	LHCB	pp at 7 TeV
1.97±0.99±0.22	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV

B($B^+ \to K^{*+} \ell^+ \ell^-$) ($14.18 < q^2 < 16.0$ GeV^2/c^4)

NODE=S041PB5
NODE=S041PB5

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
$0.86^{+0.40}_{-0.32}$ OUR AVERAGE				
$1.00^{+0.47}_{-0.38}$	AAIJ	12AH	LHCB	pp at 7 TeV
0.52±0.61±0.09	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV

B($B^+ \to K^{*+} \ell^+ \ell^-$) ($15.0 < q^2 < 19.0$ GeV^2/c^4)

NODE=S041PBO
NODE=S041PBO

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
$1.78^{+0.32}_{-0.29}$ OUR AVERAGE				
$2.9^{+1.0}_{-0.8}$ ±0.3	[1] WEHLE	21	BELL	$e^+ e^- \to \Upsilon(4S)$
$2.1^{+1.2}_{-1.0}$ ±0.2	[2] WEHLE	21	BELL	$e^+ e^- \to \Upsilon(4S)$
$1.58^{+0.32}_{-0.29}$±0.11	[3] AAIJ	14M	LHCB	pp at 7, 8 TeV

OCCUR=2

[1] Measured with $\mu^+ \mu^-$ as lepton pair. NODE=S041PBO;LINKAGE=B

[2] Measured with $e^+ e^-$ as lepton pair. NODE=S041PBO;LINKAGE=C

[3] Uses B($B^+ \to J/\psi(1S) K^*(892)^+$) = $(1.431 \pm 0.027 \pm 0.090) \times 10^{-3}$ for normalization and $\mu^+ \mu^-$ as a lepton pair. NODE=S041PBO;LINKAGE=A

B($B^+ \to K^{*+} \ell^+ \ell^-$) ($q^2 > 16.0$ GeV^2/c^4)

NODE=S041PB6
NODE=S041PB6

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
1.3 ±0.4 OUR AVERAGE				
1.25±0.46	AAIJ	12AH	LHCB	pp at 7 TeV
1.57±0.96±0.17	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV

B($B^+ \to K^{*+} \ell^+ \ell^-$) ($1.0 < q^2 < 6.0$ GeV^2/c^4)

NODE=S041PB7
NODE=S041PB7

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
$1.72^{+0.40}_{-0.32}$ OUR AVERAGE				
$1.2^{+0.9}_{-0.7}$ ±0.2	[1,2] WEHLE	21	BELL	$e^+ e^- \to \Upsilon(4S)$
$1.7^{+1.0}_{-1.0}$ ±0.2	[2,3] WEHLE	21	BELL	$e^+ e^- \to \Upsilon(4S)$
$1.79^{+0.41}_{-0.37}$±0.13	[4] AAIJ	14M	LHCB	pp at 7, 8 TeV
2.57±1.61±0.40	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV

OCCUR=2

• • • We do not use the following data for averages, fits, limits, etc. • • •

$2.90^{+0.90}_{-0.85}$	AAIJ	12AH	LHCB	Repl. by AAIJ 14M

[1] Measured with $\mu^+\mu^-$ as lepton pair. NODE=S041PB7;LINKAGE=B
[2] Result is determined for the range $1.1 < q^2 < 6.0$ GeV^4/c^2. NODE=S041PB7;LINKAGE=C
[3] Measured with e^+e^- as lepton pair. NODE=S041PB7;LINKAGE=D
[4] Uses B($B^+ \to J/\psi(1S) K^*(892)^+$) = $(1.431 \pm 0.027 \pm 0.090) \times 10^{-3}$ for normalization and $\mu^+\mu^-$ as a lepton pair. Measured in $1.1 < q^2 < 6.0$ GeV^2/c^4. NODE=S041PB7;LINKAGE=A

B($B^+ \to K^{*+}\ell^+\ell^-$) ($0.0 < q^2 < 4.3$ GeV^2/c^4)

NODE=S041PB8
NODE=S041PB8

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
2.01±1.39±0.27	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV

B($B^+ \to K^{*+}e^+e^-$) ($0.045 < q^2 < 6.0$ GeV^2/c^4)

NODE=S041A54
NODE=S041A54

VALUE (units 10^{-8})	DOCUMENT ID		TECN	COMMENT
$55 \pm 11^{+5}_{-4}$	[1] AAIJ	22J	LHCB	pp at 7, 8, 13 TeV

[1] The reported value is converted from the measured $dB/dq^2 = (9.2^{+1.9}_{-1.8}{}^{+0.8}_{-0.6}) \times 10^{-8}$ (GeV^2/c^4)$^{-1}$ by multiplying by the $\Delta q^2 = 5.955$ GeV^2/c^4 range. NODE=S041A54;LINKAGE=A

B($B^+ \to K^{*+}\mu^+\mu^-$) / B($B^+ \to K^{*+}e^+e^-$) ($0.045 < q^2 < 1.1$ GeV^2/c^4)

NODE=S041A35
NODE=S041A35

VALUE	DOCUMENT ID		TECN	COMMENT
$0.62^{+0.60}_{-0.36} \pm 0.07$	WEHLE	21	BELL	$e^+e^- \to \Upsilon(4S)$

B($B^+ \to K^{*+}\mu^+\mu^-$) / B($B^+ \to K^{*+}e^+e^-$) ($1.1 < q^2 < 6.0$ GeV^2/c^4)

NODE=S041A36
NODE=S041A36

VALUE	DOCUMENT ID		TECN	COMMENT
$0.72^{+0.99}_{-0.44} \pm 0.14$	WEHLE	21	BELL	$e^+e^- \to \Upsilon(4S)$

B($B^+ \to K^{*+}\mu^+\mu^-$) / B($B^+ \to K^{*+}e^+e^-$) ($0.045 < q^2 < 6.0$ GeV^2/c^4)

NODE=S041A55
NODE=S041A55

VALUE	DOCUMENT ID		TECN	COMMENT
$0.70^{+0.18}_{-0.13}{}^{+0.03}_{-0.04}$	AAIJ	22J	LHCB	pp at 7, 8, 13 TeV

B($B^+ \to K^{*+}\mu^+\mu^-$)/B($B^+ \to K^{*+}e^+e^-$) ($15.0 < q^2 < 19.0$ GeV^2/c^4)

NODE=S041A37
NODE=S041A37

VALUE	DOCUMENT ID		TECN	COMMENT
$1.40^{+1.99}_{-0.68} \pm 0.11$	WEHLE	21	BELL	$e^+e^- \to \Upsilon(4S)$

B($B^+ \to K^+\ell^+\ell^-$) ($q^2 < 2.0$ GeV^2/c^4)

NODE=S041PB9
NODE=S041PB9

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
0.51 ±0.08 OUR AVERAGE	Error includes scale factor of 1.5.			
0.556±0.053±0.027	[1] AAIJ	13H	LHCB	pp at 7 TeV
0.36 ±0.11 ±0.03	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV

[1] Measured in $0.05 < q^2 < 2.0$ GeV^2/c^4 range. NODE=S041PB9;LINKAGE=AA

B($B^+ \to K^+\ell^+\ell^-$) ($2.0 < q^2 < 4.3$ GeV^2/c^4)

NODE=S041PBA
NODE=S041PBA

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
0.60 ±0.07 OUR AVERAGE	Error includes scale factor of 1.3.			
0.573±0.053±0.023	AAIJ	13H	LHCB	pp at 7 TeV
0.80 ±0.15 ±0.05	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV

B($B^+ \to K^+\ell^+\ell^-$) ($4.3 < q^2 < 8.68$ GeV^2/c^4)

NODE=S041PBB
NODE=S041PBB

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
1.03 ±0.07 OUR AVERAGE				
1.003±0.070±0.039	AAIJ	13H	LHCB	pp at 7 TeV
1.18 ±0.19 ±0.09	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV

B($B^+ \to K^+\ell^+\ell^-$) ($10.09 < q^2 < 12.86$ GeV^2/c^4)

NODE=S041PBC
NODE=S041PBC

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
0.58 ±0.05 OUR AVERAGE				
0.565±0.050±0.022	AAIJ	13H	LHCB	pp at 7 TeV
0.68 ±0.12 ±0.05	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV

$B(B^+ \to K^+ \ell^+ \ell^-)$ ($14.18 < q^2 < 16.0$ GeV^2/c^4)

NODE=S041PBD
NODE=S041PBD

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
0.40 ±0.05 OUR AVERAGE	Error includes scale factor of 1.4.			
0.377±0.036±0.015	AAIJ	13H	LHCB	pp at 7 TeV
0.53 ±0.10 ±0.03	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV

$B(B^+ \to K^+ \ell^+ \ell^-)$ ($16.0 < q^2 < 18.0$ GeV^2/c^4)

NODE=S041PBH
NODE=S041PBH

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
0.354±0.036±0.018	AAIJ	13H	LHCB	pp at 7 TeV

$B(B^+ \to K^+ \ell^+ \ell^-)$ ($18.0 < q^2 < 22.0$ GeV^2/c^4)

NODE=S041PBI

F_H is a fractional contribution of (pseudo) scalar and tensor amplitudes to the decay width in the massless muon approximation.

NODE=S041PBI

NODE=S041PBI

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
0.312±0.040±0.016	AAIJ	13H	LHCB	pp at 7 TeV

$B(B^+ \to K^+ \ell^+ \ell^-)$ ($15.0 < q^2 < 22.0$ GeV^2/c^4)

NODE=S041PBN
NODE=S041PBN

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
0.85±0.03±0.04	[1] AAIJ	14M	LHCB	pp at 7, 8 TeV

[1] Uses $B(B^+ \to J/\psi(1S) K^+) = (0.998 \pm 0.014 \pm 0.040) \times 10^{-3}$ for normalization and $\mu^+ \mu^-$ as a lepton pair.

NODE=S041PBN;LINKAGE=A

$B(B^+ \to K^+ \ell^+ \ell^-)$ ($16.0 < q^2$ GeV^2/c^4)

NODE=S041PBE
NODE=S041PBE

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
0.48±0.11±0.03	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV

$B(B^+ \to K^+ \ell^+ \ell^-)$ ($1.0 < q^2 < 6.0$ GeV^2/c^4)

NODE=S041PBF
NODE=S041PBF

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
1.26 ±0.12 OUR AVERAGE	Error includes scale factor of 1.9. See the ideogram below.			
2.30 $^{+0.41}_{-0.38}$ ±0.05	[1] CHOUDHURY	21	BELL	$e^+ e^- \to \Upsilon(4S)$
1.66 $^{+0.32}_{-0.29}$ ±0.04	[2] CHOUDHURY	21	BELL	$e^+ e^- \to \Upsilon(4S)$
1.40 $^{+0.98}_{-0.34}$ ±0.69	[3] AAIJ	19S	LHCB	pp at 7, 8, 13 TeV
1.19 ±0.034±0.059	[4] AAIJ	14M	LHCB	pp at 7, 8 TeV
1.41 ±0.20 ±0.10	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.56 $^{+0.19}_{-0.15}$ $^{+0.06}_{-0.04}$	[5] AAIJ	14AR	LHCB	pp at 7, 8 TeV
1.205±0.085±0.070	AAIJ	13H	LHCB	Repl. by AAIJ 14M

OCCUR=2

[1] Measured for $B^+ \to K^+ \mu^+ \mu^-$ decays. Measurements in other q^2 bins are also reported.

NODE=S041PBF;LINKAGE=C

[2] Measured for $B^+ \to K^+ e^+ e^-$ decays. Measurements in other q^2 bins are also reported.

NODE=S041PBF;LINKAGE=D

[3] Measured by taking the ratio of the branching fraction from $B^+ \to K^+ e^+ e^-$ and $B^+ \to J/\psi(e^+ e^-) K^+$ decays and multiplying it by the measured value of $B^+ \to J/\psi K^+$ and $J/\psi \to e^+ e^-$ as in PDG 18. The branching fraction of $B^+ \to K^+ e^+ e^-$ is determined in the region $1.1 < q^2 < 6$ GeV^2/c^4.

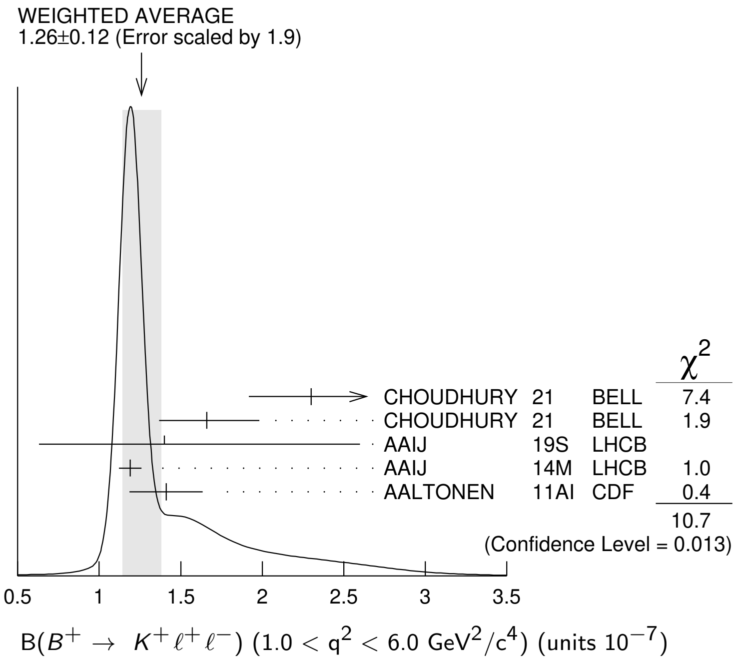
NODE=S041PBF;LINKAGE=B

[4] Uses $B(B^+ \to J/\psi(1S) K^+) = (0.998 \pm 0.014 \pm 0.040) \times 10^{-3}$ for normalization and $\mu^+ \mu^-$ for leptons. Measured for $1.1 < q^2 < 6.0$ GeV^2/c^4.

NODE=S041PBF;LINKAGE=A

[5] Measured by taking the ratio of the branching fraction from $B^+ \to K^+ e^+ e^-$ and $B^+ \to J/\psi(e^+ e^-) K^+$decays and multiplying it by the measured value of $B^+ \to J/\psi K^+$ and $J/\psi \to e^+ e^-$ as in PDG 12.The branching fraction of $B^+ \to K^+ e^+ e^-$ is determined in the region $1 < q^2 < 6$ GeV^2/c^4.

NODE=S041PBF;LINKAGE=E



$B(B^+ \to K^+\mu^+\mu^-)$ / $B(B^+ \to K^+e^+e^-)$ $(0.1 < q^2 < 1.1\ GeV^2/c^4)$

NODE=S041A66

VALUE	*DOCUMENT ID*	*TECN*	*COMMENT*
$\mathbf{0.994^{+0.090}_{-0.082}{}^{+0.029}_{-0.027}}$	AAIJ 23AB	LHCB	pp at 7, 8, 13 TeV

$B(B^+ \to K^+\mu^+\mu^-)$ / $B(B^+ \to K^+e^+e^-)$ $(1.0 < q^2 < 6.0\ GeV^2/c^4)$

NODE=S041PBP

VALUE	*DOCUMENT ID*	*TECN*	*COMMENT*
0.96 ±0.05 OUR AVERAGE			
$0.949^{+0.042}_{-0.041}\pm0.022$	[1] AAIJ 23AB	LHCB	pp at 7, 8, 13 TeV
$1.39\ ^{+0.36}_{-0.33}\ \pm0.02$	[2] CHOUDHURY 21	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.846^{+0.042}_{-0.039}{}^{+0.013}_{-0.012}$	[3,4] AAIJ 22V	LHCB	pp at 7, 8, 13 TeV
$0.846^{+0.060}_{-0.054}{}^{+0.016}_{-0.014}$	[3,5] AAIJ 19S	LHCB	pp at 7, 8, 13 TeV
$0.745^{+0.090}_{-0.074}\pm0.036$	[3] AAIJ 14AR	LHCB	pp at 7, 8 TeV

[1] Measured for the region $1.1 < q^2 < 6.0$ GeV^2/c^4. NODE=S041PBP;LINKAGE=F

[2] Measurements in other q^2 bins are also reported. NODE=S041PBP;LINKAGE=C

[3] The ratio is determined using the relative branching fractions of the decays $B^+ \to K^+\ell^+\ell^-$ and $B^+ \to J/\psi(\to \ell^+\ell^-) K^+$, with $\ell = e, \mu$. Measured for the region $1.1 < q^2 < 6.0$ GeV^2/c^4. NODE=S041PBP;LINKAGE=B

[4] Superseded by AAIJ 23AB. NODE=S041PBP;LINKAGE=H

[5] Superseded by AAIJ 22V. NODE=S041PBP;LINKAGE=E

$B(B^+ \to K^+\ell^+\ell^-)$ $(0.0 < q^2 < 4.3\ GeV^2/c^4)$

NODE=S041PBG

VALUE (units 10^{-7})	*DOCUMENT ID*	*TECN*	*COMMENT*
1.13±0.19±0.08	AALTONEN 11AI	CDF	$p\overline{p}$ at 1.96 TeV

$B(B^+ \to K^+\pi^+\pi^-\mu^+\mu^-)$ $(1.00 < q^2 < 6.00\ GeV^2/c^4)$

NODE=S041PBQ

VALUE (units 10^{-7})	*DOCUMENT ID*	*TECN*	*COMMENT*
$\mathbf{1.38^{+0.15}_{-0.14}\pm0.08}$	AAIJ 14AZ	LHCB	pp at 7, 8 TeV

$B(B^+ \to K^+\pi^+\pi^-\mu^+\mu^-)$ $(0.10 < q^2 < 2.00\ GeV^2/c^4)$

NODE=S041PBR

VALUE (units 10^{-7})	*DOCUMENT ID*	*TECN*	*COMMENT*
$\mathbf{1.33^{+0.13}_{-0.12}\pm0.09}$	AAIJ 14AZ	LHCB	pp at 7, 8 TeV

$B(B^+ \to K^+\pi^+\pi^-\mu^+\mu^-)$ $(2.00 < q^2 < 4.30\ GeV^2/c^4)$

NODE=S041PBS

VALUE (units 10^{-8})	*DOCUMENT ID*	*TECN*	*COMMENT*
$\mathbf{5.38^{+0.94}_{-0.87}\pm0.35}$	AAIJ 14AZ	LHCB	pp at 7, 8 TeV

$B(B^+ \to K^+\pi^+\pi^-\mu^+\mu^-)$ $(4.30 < q^2 < 8.68$ GeV^2/c^4)

NODE=S041PBT
NODE=S041PBT

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
$1.01^{+0.12}_{-0.13}\pm0.09$	AAIJ	14AZ	LHCB	pp at 7, 8 TeV

$B(B^+ \to K^+\pi^+\pi^-\mu^+\mu^-)$ $(10.09 < q^2 < 12.86$ GeV^2/c^4)

NODE=S041PBU
NODE=S041PBU

VALUE (units 10^{-8})	DOCUMENT ID		TECN	COMMENT
$5.07^{+0.94}_{-0.89}\pm0.47$	AAIJ	14AZ	LHCB	pp at 7, 8 TeV

$B(B^+ \to K^+\pi^+\pi^-\mu^+\mu^-)$ $(14.18 < q^2 < 19.00$ GeV^2/c^4)

NODE=S041PBV
NODE=S041PBV

VALUE (units 10^{-8})	DOCUMENT ID		TECN	COMMENT
$0.48^{+0.39}_{-0.29}\pm0.05$	AAIJ	14AZ	LHCB	pp at 7, 8 TeV

$B(B^+ \to \pi^+\mu^+\mu^-)/B(B^+ \to K^+\mu^+\mu^-)$ $(1.00 < q^2 < 6.00$ GeV^2/c^4)

NODE=S041PBW
NODE=S041PBW

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
3.8±0.9±0.1	AAIJ	15AR	LHCB	pp at 7, 8 TeV

$B(B^+ \to \pi^+\mu^+\mu^-)$ $(1.00 < q^2 < 6.00$ GeV^2/c^4)

NODE=S041PBY
NODE=S041PBY

VALUE (units 10^{-9})	DOCUMENT ID		TECN	COMMENT
$4.55^{+1.05}_{-1.00}\pm0.15$	AAIJ	15AR	LHCB	pp at 7, 8 TeV

$B(B^+ \to \pi^+\mu^+\mu^-)$ $(15.00 < q^2 < 22.00$ GeV^2/c^4)

NODE=S041PBZ
NODE=S041PBZ

VALUE (units 10^{-9})	DOCUMENT ID		TECN	COMMENT
$3.29^{+0.84}_{-0.70}\pm0.07$	AAIJ	15AR	LHCB	pp at 7, 8 TeV

$B(B^+ \to \pi^+\mu^+\mu^-)/B(B^+ \to K^+\mu^+\mu^-)$ $(15.0 < q^2 < 22.0$ GeV^2/c^4)

NODE=S041PBX
NODE=S041PBX

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
3.7±0.8±0.1	AAIJ	15AR	LHCB	pp at 7, 8 TeV

$A_{FB}(B^+ \to K^+\mu^+\mu^-)$ $(1.1 < q^2 < 6.0$ GeV^2/c^4)

NODE=S041PBJ

A_{FB} is the forward-backward angular asymmetry of the lepton pair in $B \to K^{(*)}\ell^+\ell^-$ decay as defined in B^+, B^0 admixture particle listings.

NODE=S041PBJ

NODE=S041PBJ

VALUE	DOCUMENT ID		TECN	COMMENT
−0.003±0.017 OUR AVERAGE				
$-0.14\ ^{+0.07}_{-0.06}\ \pm0.03$	[1] SIRUNYAN	18DX	CMS	pp at 8 TeV
0.005±0.015±0.010	[2] AAIJ	14O	LHCB	pp at 7,8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.02\ ^{+0.05}_{-0.03}\ ^{+0.02}_{-0.01}$	AAIJ	13H	LHCB	Repl. by AAIJ 14O

[1] Measurement is performed in $1.0 < q^2 < 6.0$ GeV^2/c^4. SIRUNYAN 18DX reports also measurements in several other q^2 intervals.

NODE=S041PBJ;LINKAGE=B

[2] AAIJ 14O reports 68% C.L. interval, which we encode as midpoint with uncertainty as half of the width of interval.

NODE=S041PBJ;LINKAGE=A

$A_{FB}(B^+ \to K^+\mu^+\mu^-)$ $(15.0 < q^2 < 22.0$ GeV^2/c^4)

NODE=S041PBK
NODE=S041PBK

VALUE	DOCUMENT ID		TECN	COMMENT
−0.015±0.015±0.01	[1] AAIJ	14O	LHCB	pp at 7, 8 TeV

[1] AAIJ 14O reports 68% C.L. interval, which we encode as midpoint with uncertainty as half of the width of interval.

NODE=S041PBK;LINKAGE=A

$F_H(B^+ \to K^+\mu^+\mu^-)$ $(1.1 < q^2 < 6.0$ GeV^2/c^4)

NODE=S041PBL

F_H is a fractional contribution of (pseudo) scalar and tensor amplitudes to the decay width in the massless muon approximation.

NODE=S041PBL

NODE=S041PBL

VALUE	DOCUMENT ID		TECN	COMMENT
0.04±0.04 OUR AVERAGE				
$0.38^{+0.17}_{-0.21}\pm0.09$	[1] SIRUNYAN	18DX	CMS	pp at 8 TeV
0.03±0.03±0.02	[2] AAIJ	14O	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.05^{+0.08}_{-0.05}{}^{+0.04}_{-0.02}$	AAIJ	13H	LHCB	Repl. by AAIJ 14O

[1] Measurement is performed in $1.0 < q^2 < 6.0$ GeV^2/c^4. SIRUNYAN 18DX reports also measurements in several other q^2 intervals.

NODE=S041PBL;LINKAGE=B

[2] AAIJ 14O reports 68% C.L. interval, which we encode as midpoint with uncertainty as half of the width of interval.

NODE=S041PBL;LINKAGE=A

$F_H(B^+ \to K^+ \mu^+ \mu^-)$ ($15.0 < q^2 < 22.0$ GeV^2/c^4)

NODE=S041PBM

F_H is a fractional contribution of (pseudo) scalar and tensor amplitudes to the decay width in the massless muon approximation.

NODE=S041PBM

VALUE	DOCUMENT ID		TECN	COMMENT
0.035±0.035±0.02	[1] AAIJ	14O	LHCB	pp at 7, 8 TeV

NODE=S041PBM

[1] AAIJ 14O reports 68% C.L. interval, which we encode as midpoint with uncertainty as half of the width of interval.

NODE=S041PBM;LINKAGE=A

FORWARD-BACKWARD ASYMMETRIES

NODE=S041250

The forward-backward assymmetry is defined as A_{FB} = [N(q_{FB} > 0) − N(q_{FB} < 0)] / [N(q_{FB} > 0) + N(q_{FB} < 0)], where q_{FB} = − $q_B \cdot \text{sgn}(\eta_B)$ with q_B as the B hadron electric charge, η_B as its pseudorapidity, and sgn(η_B) as a sign function of η_B.

NODE=S041250

$A_{FB}(B^\pm \to J/\psi K^\pm)$

NODE=S041FBJ
NODE=S041FBJ

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
−0.24±0.41±0.19	ABAZOV	15	D0	$p\overline{p}$ at 1.96 TeV

A_{FB} in $B^+ \to \overline{D}^{*0} e^+ \nu_e$

NODE=S041A91
NODE=S041A91

VALUE	DOCUMENT ID		TECN	COMMENT
0.234±0.026±0.006	PRIM	23	BELL	$e^+ e^- \to \Upsilon(4S)$

A_{FB} in $B^+ \to \overline{D}^{*0} \mu^+ \nu_\mu$

NODE=S041A92
NODE=S041A92

VALUE	DOCUMENT ID		TECN	COMMENT
0.243±0.026±0.006	PRIM	23	BELL	$e^+ e^- \to \Upsilon(4S)$

$\Delta(A_{FB}) = (A^\mu_{FB} - A^e_{FB})$ in $B^+ \to \overline{D}^{*0} \ell^+ \nu_\ell$

NODE=S041A93
NODE=S041A93

VALUE	DOCUMENT ID		TECN	COMMENT
0.008±0.037±0.009	PRIM	23	BELL	$e^+ e^- \to \Upsilon(4S)$

$A_{FB}(B^\pm \to K^*(892)^+ \mu^+ \mu^-)$ ($1.0 < q^2 < 8.68$ GeV^2/c^4)

NODE=S041A42
NODE=S041A42

VALUE	DOCUMENT ID		TECN	COMMENT
$-0.14^{+0.32}_{-0.35}\pm0.17$	[1,2] SIRUNYAN	21AC	CMS	pp at 8 TeV

[1] SIRUNYAN 21AC measurement is performed in $1.0 < q^2 < 8.68$ GeV^2/c^4. Reports also measurements in several other q^2 intervals.

NODE=S041A42;LINKAGE=A

[2] A_{FB} is defined with respect to $\mu^+\mu^-$ direction and not the B direction.

NODE=S041A42;LINKAGE=B

$A_{FB}(B^\pm \to K^*(892)^+ \mu^+ \mu^-)$ ($1.1 < q^2 < 6.0$ GeV^2/c^4)

NODE=S041A51
NODE=S041A51

VALUE	DOCUMENT ID		TECN	COMMENT
$-0.08^{+0.07}_{-0.08}\pm0.02$	[1] AAIJ	21J	LHCB	pp at 7, 8, 13 TeV

[1] The full set of CP-averaged angular observables is measured as a function of the q^2. The A_{FB} is measured related to the dimuon system.

NODE=S041A51;LINKAGE=A

$A_{FB}(B^\pm \to K^*(892)^+ \mu^+ \mu^-)$ ($10.09 < q^2 < 12.86$ GeV^2/c^4)

NODE=S041A43
NODE=S041A43

VALUE	DOCUMENT ID		TECN	COMMENT
$0.09^{+0.16}_{-0.11}\pm0.04$	[1,2] SIRUNYAN	21AC	CMS	pp at 8 TeV

[1] SIRUNYAN 21AC measurement is performed in $10.09 < q^2 < 12.86$ GeV^2/c^4. Reports also measurements in several other q^2 intervals.

NODE=S041A43;LINKAGE=A

[2] A_{FB} is defined with respect to $\mu^+\mu^-$ direction and not the B direction.

NODE=S041A43;LINKAGE=B

$A_{FB}(B^\pm \to K^*(892)^+ \mu^+ \mu^-)$ ($14.18 < q^2 < 19.0$ GeV^2/c^4)

NODE=S041A44
NODE=S041A44

VALUE	DOCUMENT ID		TECN	COMMENT
$0.33^{+0.11}_{-0.07}\pm0.05$	[1,2] SIRUNYAN	21AC	CMS	pp at 8 TeV

[1] SIRUNYAN 21AC measurement is performed in $14.18 < q^2 < 19.0$ GeV^2/c^4. Reports also measurements in several other q^2 intervals.

NODE=S041A44;LINKAGE=A

[2] A_{FB} is defined with respect to $\mu^+\mu^-$ direction and not the B direction.

NODE=S041A44;LINKAGE=B

$A_{FB}(B^\pm \to K^*(892)^+ \mu^+ \mu^-)$ ($15.0 < q^2 < 19.0$ GeV^2/c^4)

NODE=S041A52
NODE=S041A52

VALUE	DOCUMENT ID		TECN	COMMENT
0.31±0.06±0.04	[1] AAIJ	21J	LHCB	pp at 7, 8, 13 TeV

[1] The full set of CP-averaged angular observables is measured as a function of the q^2. The A_{FB} is measured related to the dimuon system.

NODE=S041A52;LINKAGE=A

$A_P(B^+) = [\sigma(B^-) - \sigma(B^+)] / [\sigma(B^-) + \sigma(B^+)]$

NODE=S041A03

Production asymmetries

NODE=S041A03
NODE=S041A03

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT	
−5.7±1.7 OUR AVERAGE					
−7.0±0.8±3.1	[1] AAIJ	23U	LHCB	pp at 13 TeV	
−4.1±4.9±1.0	[2] AAIJ	17AP	LHCB	pp at 7 TeV	
−5.3±3.1±1.0	[2] AAIJ	17AP	LHCB	pp at 8 TeV	OCCUR=2
−2.3±2.4±3.7	[3] AAIJ	17BF	LHCB	pp at 7 TeV	
−7.4±1.5±3.2	[3] AAIJ	17BF	LHCB	pp at 8 TeV	OCCUR=2

[1] The second error includes the uncertainties from $A_{CP}(B^+ \to J/\psi K^+) = 0.0018 \pm 0.0030$. NODE=S041A03;LINKAGE=H

[2] AAIJ 17AP uses $B^+ \to \overline{D}^0 \pi^+$ decays with B^+ transverse momenta p_T and rapidities y in the region of $2 < p_T < 30$ GeV/c and $2.1 < y < 4.5$. NODE=S041A03;LINKAGE=A

[3] AAIJ 17BF uses $B^+ \to J/\psi K^+$ decays with B^+ transverse momenta p_T and rapidities y in the region of $0 < p_T < 30$ GeV/c and $2.1 < y < 4.5$. NODE=S041A03;LINKAGE=C

$B^\pm$ REFERENCES

NODE=S041

AAIJ	24AB	PRL 133 131902	R. Aaij *et al.*	(LHCb Collab.)	REFID=63014
AAIJ	24F	JHEP 2402 032	R. Aaij *et al.*	(LHCb Collab.)	REFID=62831
AAIJ	24H	JHEP 2402 118	R. Aaij *et al.*	(LHCb Collab.)	REFID=62835
AAIJ	24T	JHEP 2408 132	R. Aaij	(LHCb Collab.)	REFID=62879
AAIJ	24U	EPJ C84 206	R. Aaij *et al.*	(LHCb Collab.)	REFID=62884
ADACHI	24	PR D109 012001	I. Adachi *et al.*	(BELLE II Collab.)	REFID=62572
ADACHI	24B	PRL 132 211804	I. Adachi *et al.*	(BELLE II Collab.)	REFID=62729
ADACHI	24D	PR D109 L111103	I. Adachi *et al.*	(BELLE II Collab.)	REFID=62803
ADACHI	24E	PR D109 112006	I. Adachi *et al.*	(BELLE II Collab.)	REFID=62807
ADACHI	24I	JHEP 2405 212	I. Adachi *et al.*	(BELLE II, BELLE Collab.)	REFID=62857
ADACHI	24L	JHEP 2408 206	I. Adachi *et al.*	(BELLE II Collab.)	REFID=62947
ADACHI	24N	PRL 133 101804	I. Adachi *et al.*	(BELLE and BELLE II Collab.)	REFID=63043
ADACHI	24T	JHEP 2410 143	I. Adachi *et al.*	(BELLE II Collab.)	REFID=63129
GU	24	PRL 133 071802	T. Gu *et al.*	(BELLE Collab.)	REFID=62744
AAIJ	23AB	PRL 131 051803	R. Aaij *et al.*	(LHCb Collab.)	REFID=62318
Also		PR D108 032002	R. Aaij *et al.*	(LHCb Collab.)	REFID=62342
AAIJ	23AH	PR D108 032010	R. Aaij *et al.*	(LHCb Collab.)	REFID=62349
AAIJ	23AI	PR D108 034012	R. Aaij *et al.*	(LHCb Collab.)	REFID=62357
AAIJ	23AK	JHEP 2308 174	R. Aaij *et al.*	(LHCb Collab.)	REFID=62374
Also		JHEP 2308 174	R. Aaij *et al.*	(LHCb Collab.)	REFID=62374
AAIJ	23AR	PRL 131 111802	R. Aaij *et al.*	(LHCb Collab.)	REFID=62445
AAIJ	23AX	JHEP 2309 202	R. Aaij *et al.*	(LHCb Collab.)	REFID=62535
AAIJ	23B	PR D108 012017	R. Aaij *et al.*	(LHCb Collab.)	REFID=62091
AAIJ	23BA	JHEP 2312 013	R. Aaij *et al.*	(LHCb Collab.)	REFID=62543
AAIJ	23I	JHEP 2307 138	R. Aaij *et al.*	(LHCb Collab.)	REFID=62143
AAIJ	23N	EPJ C83 547	R. Aaij *et al.*	(LHCb Collab.)	REFID=62167
Also		EPJ C83 672 (errat.)	R. Aaij *et al.*	(LHCb Collab.)	REFID=62173
AAIJ	23Q	PRL 131 031901	R. Aaij *et al.*	(LHCb Collab.)	REFID=62234
AAIJ	23U	PR D108 012008	R. Aaij *et al.*	(LHCb Collab.)	REFID=62292
AAIJ	23V	PR D108 012013	R. Aaij *et al.*	(LHCb Collab.)	REFID=62296
AAIJ	23X	PR D108 012020	R. Aaij *et al.*	(LHCb Collab.)	REFID=62300
ADACHI	23L	JHEP 2309 146	I. Adachi *et al.*	(BELLE II Collab.)	REFID=62530
CHU	23	PR D108 112007	K.-N. Chu *et al.*	(BELLE Collab.)	REFID=62515
HSU	23	PR D107 032013	C.-L. Hsu *et al.*	(BELLE Collab.)	REFID=62250
KUMAR	23	PR D107 L031101	M. Kumar *et al.*	(BELLE Collab.)	REFID=62246
LAI	23	PRL 130 181804	Y.-T. Lai *et al.*	(BELLE Collab.)	REFID=62219
LEES	23C	PRL 131 201801	J.P. Lees *et al.*	(BABAR Collab.)	REFID=62465
MEIER	23	PR D107 092003	F. Meier *et al.*	(BELLE Collab.)	REFID=62272
PRIM	23	PR D108 012002	M.T. Prim *et al.*	(BELLE Collab.)	REFID=62303
WATANUKI	23	PRL 130 261802	S. Watanuki *et al.*	(BELLE Collab.)	REFID=62228
AAIJ	22D	JHEP 2204 046	R. Aaij *et al.*	(LHCb Collab.)	REFID=61647
AAIJ	22J	PRL 128 191802	R. Aaij *et al.*	(LHCb Collab.)	REFID=61677
AAIJ	22T	JHEP 2207 099	R. Aaij *et al.*	(LHCb Collab.)	REFID=61814
AAIJ	22V	NATP 18 277	R. Aaij *et al.*	(LHCb Collab.)	REFID=61862
ABUDINEN	22	JHEP 2202 063	F. Abudinen *et al.*	(BELLE and BELLE II Collab.)	REFID=61777
BLOOMFIELD	22	PR D105 072007	T. Bloomfield *et al.*	(BELLE Collab.)	REFID=61738
GEBAUER	22	PR D106 032013	U. Gebauer *et al.*	(BELLE Collab.)	REFID=61768
AAIJ	21AM	JHEP 2112 141	R. Aaij *et al.*	(LHCb Collab.)	REFID=61595
AAIJ	21H	PRL 126 091802	R. Aaij *et al.*	(LHCb Collab.)	REFID=61170
AAIJ	21J	PRL 126 161802	R. Aaij *et al.*	(LHCb Collab.)	REFID=61179
AAIJ	21L	JHEP 2102 169	R. Aaij *et al.*	(LHCb Collab.)	REFID=61281
AAIJ	21M	JHEP 2103 137	R. Aaij *et al.*	(LHCb Collab.)	REFID=61288
AAIJ	21Q	JHEP 2104 081	R. Aaij *et al.*	(LHCb Collab.)	REFID=61300
ABUDINEN	21	PRL 127 181802	F. Abudinen *et al.*	(BELLE II Collab.)	REFID=61503
BELENO	21	PR D103 112001	C. Beleno *et al.*	(BELLE Collab.)	REFID=61244
CAO	21A	PR D104 012008	L. Cao *et al.*	(BELLE Collab.)	REFID=61361
CHOUDHURY	21	JHEP 2103 105	S. Choudhury *et al.*	(BELLE Collab.)	REFID=61037
MOHANTY	21	PR D103 052013	S. Mohanty *et al.*	(BELLE Collab.)	REFID=61222
SIRUNYAN	21AC	JHEP 2104 124	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=61403
WEHLE	21	PRL 126 161801	S. Wehle *et al.*	(BELLE Collab.)	REFID=61178
AAIJ	20A	PRL 124 031801	R. Aaij *et al.*	(LHCb Collab.)	REFID=60209
Also		PR D101 012006	R. Aaij *et al.*	(LHCb Collab.)	REFID=60213
AAIJ	20AI	PR D102 112003	R. Aaij *et al.*	(LHCb Collab.)	REFID=60739
AAIJ	20AJ	PR D102 112010	R. Aaij *et al.*	(LHCb Collab.)	REFID=60745
AAIJ	20AN	JHEP 2012 139	R. Aaij *et al.*	(LHCb Collab.)	REFID=60765
AAIJ	20D	PR D101 032005	R. Aaij *et al.*	(LHCb Collab.)	REFID=60253
AAIJ	20K	JHEP 2003 146	R. Aaij *et al.*	(LHCb Collab.)	REFID=60485
AAIJ	20N	JHEP 2006 058	R. Aaij *et al.*	(LHCb Collab.)	REFID=60501
AAIJ	20P	JHEP 2006 129	R. Aaij *et al.*	(LHCb Collab.)	REFID=60504
AAIJ	20S	JHEP 2008 123	R. Aaij *et al.*	(LHCb Collab.)	REFID=60526
CHILIKIN	20	JHEP 2005 034	K. Chilikin *et al.*	(BELLE Collab.)	REFID=60493
CHU	20	PR D101 052012	K. Chu *et al.*	(BELLE Collab.)	REFID=60275
LEES	20C	PRL 124 152001	J.P. Lees *et al.*	(BABAR Collab.)	REFID=60554

PRIM	20	PR D101 032007	M.T. Prim *et al.*	(BELLE Collab.)	REFID=60255
AAIJ	19AC	PR D99 092009	R. Aaij *et al.*	(LHCb Collab.)	REFID=59879
AAIJ	19AL	PRL 123 231802	R. Aaij *et al.*	(LHCb Collab.)	REFID=60073
AAIJ	19AM	PRL 123 241802	R. Aaij *et al.*	(LHCb Collab.)	REFID=60076
AAIJ	19O	EPJ C79 537	R. Aaij *et al.*	(LHCb Collab.)	REFID=59731
AAIJ	19P	EPJ C79 675	R. Aaij *et al.*	(LHCb Collab.)	REFID=59736
AAIJ	19S	PRL 122 191801	R. Aaij *et al.*	(LHCb Collab.)	REFID=59781
BHARDWAJ	19	PR D99 111101	V. Bhardwaj *et al.*	(BELLE Collab.)	REFID=59884
CHILIKIN	19	PR D100 012001	K. Chilikin *et al.*	(BELLE Collab.)	REFID=59899
GARG	19	PR D99 071102	R. Garg *et al.*	(BELLE Collab.)	REFID=59851
KALIYAR	19	PR D99 031102	A.B. Kaliyar *et al.*	(BELLE Collab.)	REFID=59619
LEES	19C	PR D100 111101	J.P. Lees *et al.*	(BABAR Collab.)	REFID=60035
LI	19A	PRL 122 082001	Y.B. Li *et al.*	(BELLE Collab.)	REFID=59595
LI	19G	PR D100 112010	Y. Li *et al.*	(BELLE Collab.)	REFID=60044
LU	19	PR D99 032003	P.-C. Lu *et al.*	(BELLE Collab.)	REFID=59614
PDG	19	RPP 2019 at pdg.lbl.gov	M. Tanabashi *et al.*	(PDG Collab.)	REFID=59587
RESMI	19	JHEP 1910 178	P.K. Resmi *et al.*	(BELLE Collab.)	REFID=60088
SIRUNYAN	19CM	JHEP 1912 100	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=60101
WATANUKI	19	PR D99 032012	S. Watanuki *et al.*	(BELLE Collab.)	REFID=59618
AAIJ	18A	PL B777 16	R. Aaij *et al.*	(LHCb Collab.)	REFID=58624
AAIJ	18AD	JHEP 1808 176	R. Aaij *et al.*	(LHCb Collab.)	REFID=59138
Also		JHEP 1810 107 (errat.)	R. Aaij *et al.*	(LHCb Collab.)	REFID=59352
AAIJ	18B	JHEP 1801 131	R. Aaij *et al.*	(LHCb Collab.)	REFID=58793
AAIJ	18U	JHEP 1803 059	R. Aaij *et al.*	(LHCb Collab.)	REFID=59090
AAIJ	18W	JHEP 1805 160	R. Aaij *et al.*	(LHCb Collab.)	REFID=59099
AAIJ	18X	JHEP 1805 067	R. Aaij *et al.*	(LHCb Collab.)	REFID=59105
AAIJ	18Z	JHEP 1806 084	R. Aaij *et al.*	(LHCb Collab.)	REFID=59118
GELB	18	PR D98 112016	M. Gelb *et al.*	(BELLE Collab.)	REFID=59506
KATO	18	PR D97 012005	Y. Kato *et al.*	(BELLE Collab.)	REFID=58715
LI	18A	EPJ C78 252	Y.B. Li *et al.*	(BELLE Collab.)	REFID=59162
PDG	18	PR D98 030001	M. Tanabashi *et al.*	(PDG Collab.)	REFID=59304
RESMI	18	JHEP 1801 082	P.K. Resmi *et al.*		REFID=58790
SIBIDANOV	18	PRL 121 031801	A. Sibidanov *et al.*	(BELLE Collab.)	REFID=58854
SIRUNYAN	18DX	PR D98 112011	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=59501
VOSSEN	18	PR D98 012005	A. Vossen *et al.*	(BELLE Collab.)	REFID=58961
AAIJ	17	PR D95 012002	R. Aaij *et al.*	(LHCb Collab.)	REFID=57636
AAIJ	17AD	PL B769 305	R. Aaij *et al.*	(LHCb Collab.)	REFID=57896
AAIJ	17AP	PR D95 052005	R. Aaij *et al.*	(LHCb Collab.)	REFID=57969
AAIJ	17AQ	PR D95 071101	R. Aaij *et al.*	(LHCb Collab.)	REFID=57974
AAIJ	17AR	PR D96 011101	R. Aaij *et al.*	(LHCb Collab.)	REFID=58007
AAIJ	17BF	PL B774 139	R. Aaij *et al.*	(LHCb Collab.)	REFID=58252
AAIJ	17BO	JHEP 1711 156	R. Aaij *et al.*	(LHCb Collab.)	REFID=58343
AAIJ	17E	PL B765 307	R. Aaij *et al.*	(LHCb Collab.)	REFID=57708
AAIJ	17K	EPJ C77 72	R. Aaij *et al.*	(LHCb Collab.)	REFID=57766
AAIJ	17O	JHEP 1703 036	R. Aaij *et al.*	(LHCb Collab.)	REFID=57798
AAIJ	17R	JHEP 1704 162	R. Aaij *et al.*	(LHCb Collab.)	REFID=57811
AAIJ	17Y	EPJ C77 161	R. Aaij *et al.*	(LHCb Collab.)	REFID=57846
ABAZOV	17A	PR D95 031101	V.M. Abazov *et al.*	(D0 Collab.)	REFID=57641
BELENO	17	PR D96 091102	C. Beleno *et al.*	(BELLE Collab.)	REFID=58303
GRYGIER	17	PR D96 091101	J. Grygier *et al.*	(BELLE Collab.)	REFID=58302
HORIGUCHI	17	PRL 119 191802	T. Horiguchi *et al.*	(BELLE Collab.)	REFID=58275
HSU	17	PR D96 031101	C.-L. Hsu *et al.*	(BELLE Collab.)	REFID=58025
KHACHATRY...	17C	PL B764 66	V. Khachatryan *et al.*	(CMS Collab.)	REFID=57701
LEES	17	PRL 118 031802	J.P. Lees *et al.*	(BABAR Collab.)	REFID=57762
LEES	17G	PR D96 072001	J.P. Lees *et al.*	(BABAR Collab.)	REFID=58299
AABOUD	16L	EPJ C76 513	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=57469
AAIJ	16AA	JHEP 1608 137	R. Aaij *et al.*	(LHCb Collab.)	REFID=57349
AAIJ	16AH	PR D94 072001	R. Aaij *et al.*	(LHCb Collab.)	REFID=57518
AAIJ	16AQ	JHEP 1612 087	R. Aaij *et al.*	(LHCb Collab.)	REFID=57665
AAIJ	16L	PL B760 117	R. Aaij *et al.*	(LHCb Collab.)	REFID=57241
AAIJ	16M	PR D93 051101	R. Aaij *et al.*	(LHCb Collab.)	REFID=57259
AAIJ	16R	PR D93 119902	R. Aaij *et al.*	(LHCb Collab.)	REFID=57290
AAIJ	16Z	JHEP 1606 131	R. Aaij *et al.*	(LHCb Collab.)	REFID=57338
BHARDWAJ	16	PR D93 052016	V. Bhardwaj *et al.*	(BELLE Collab.)	REFID=57272
DEL-AMO-SA...	16	PR D93 052013	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=57269
LEES	16	PRL 116 041801	J.P. Lees *et al.*	(BABAR Collab.)	REFID=57108
PDG	16	CP C40 100001	C. Patrignani *et al.*	(PDG Collab.)	REFID=57140
AAIJ	15AR	JHEP 1510 034	R. Aaij *et al.*	(LHCb Collab.)	REFID=56856
AAIJ	15BC	PR D92 112005	R. Aaij *et al.*	(LHCb Collab.)	REFID=57012
AAIJ	15K	PL B741 1	R. Aaij *et al.*	(LHCb Collab.)	REFID=56383
AAIJ	15O	PRL 115 051801	R. Aaij *et al.*	(LHCb Collab.)	REFID=56483
AAIJ	15V	PR D91 092002	R. Aaij *et al.*	(LHCb Collab.)	REFID=56575
Also		PR D93 119901 (errat.)	R. Aaij *et al.*	(LHCb Collab.)	REFID=57289
AAIJ	15W	PR D91 112014	R. Aaij *et al.*	(LHCb Collab.)	REFID=56587
ABAZOV	15	PRL 114 051803	V.M. Abazov *et al.*	(D0 Collab.)	REFID=56379
BALA	15	PR D91 051101	A. Bala *et al.*	(BELLE Collab.)	REFID=56408
CHOI	15A	PR D91 092011	S.-K. Choi *et al.*	(BELLE Collab.)	REFID=56577
GOH	15	PR D91 071101	Y.M. Goh *et al.*	(BELLE Collab.)	REFID=56560
HELLER	15	PR D91 112009	A. Heller *et al.*	(BELLE Collab.)	REFID=56586
KRONENBIT...	15	PR D92 051102	B. Kronenbitter *et al.*	(BELLE Collab.)	REFID=56877
LEES	15	PR D91 012003	J.P. Lees *et al.*	(BABAR Collab.)	REFID=56289
LEES	15C	PR D91 052002	J.P. Lees *et al.*	(BABAR Collab.)	REFID=56412
VINOKUROVA	15	JHEP 1506 132	A. Vinokurova *et al.*	(BELLE Collab.)	REFID=56706
Also		JHEP 1702 088 (errat.)	A. Vinokurava *et al.*	(BELLE Collab.)	REFID=57795
WIECHCZYN...	15	PR D91 032008	J. Wiechczynski *et al.*	(BELLE Collab.)	REFID=56407
YOOK	15	PR D91 052016	Y. Yook *et al.*	(BELLE Collab.)	REFID=56552
AAIJ	14	PRL 112 011801	R. Aaij *et al.*	(LHCb Collab.)	REFID=55622
AAIJ	14A	PL B728 85	R. Aaij *et al.*	(LHCb Collab.)	REFID=55625
AAIJ	14AC	PRL 112 131802	R. Aaij *et al.*	(LHCb Collab.)	REFID=55845
AAIJ	14AF	PRL 113 141801	R. Aaij *et al.*	(LHCb Collab.)	REFID=55891
AAIJ	14AN	JHEP 1409 177	R. Aaij *et al.*	(LHCb Collab.)	REFID=56009
AAIJ	14AR	PRL 113 151601	R. Aaij *et al.*	(LHCb Collab.)	REFID=56070
AAIJ	14AZ	JHEP 1410 064	R. Aaij *et al.*	(LHCb Collab.)	REFID=56164
AAIJ	14BA	JHEP 1410 097	R. Aaij *et al.*	(LHCb Collab.)	REFID=56167
AAIJ	14BE	NP B888 169	R. Aaij *et al.*	(LHCb Collab.)	REFID=56187
AAIJ	14BF	JHEP 1411 060	R. Aaij *et al.*	(LHCb Collab.)	REFID=56197
AAIJ	14BO	PR D90 112004	R. Aaij *et al.*	(LHCb Collab.)	REFID=56330
AAIJ	14E	JHEP 1404 114	R. Aaij *et al.*	(LHCb Collab.)	REFID=55689
AAIJ	14M	JHEP 1406 133	R. Aaij *et al.*	(LHCb Collab.)	REFID=55726

AAIJ	14O	JHEP 1405 082	R. Aaij *et al.*	(LHCb Collab.)	REFID=55728
AAIJ	14V	PL B733 36	R. Aaij *et al.*	(LHCb Collab.)	REFID=55764
ABAZOV	14A	PR D89 012004	V.M. Abazov *et al.*	(D0 Collab.)	REFID=55650
CHOBANOVA	14	PR D90 012002	V. Chobanova *et al.*	(BELLE Collab.)	REFID=55819
IWASHITA	14	PTEP 2014 043C01	T. Iwashita *et al.*	(BELLE Collab.)	REFID=55925
LEES	14A	PR D89 011102	J.P. Lees *et al.*	(BABAR Collab.)	REFID=55691
TIEN	14	PR D89 011101	K.-J. Tien *et al.*	(BELLE Collab.)	REFID=55620
AAIJ	13AE	PL B723 44	R. Aaij *et al.*	(LHCb Collab.)	REFID=55082
AAIJ	13AK	PL B726 151	R. Aaij *et al.*	(LHCb Collab.)	REFID=55097
AAIJ	13AP	PR D87 092007	R. Aaij *et al.*	(LHCb Collab.)	REFID=55150
AAIJ	13AR	PR D87 112010	R. Aaij *et al.*	(LHCb Collab.)	REFID=55159
AAIJ	13AU	PR D88 052015	R. Aaij *et al.*	(LHCb Collab.)	REFID=55193
AAIJ	13AZ	PRL 111 101801	R. Aaij *et al.*	(LHCb Collab.)	REFID=55223
AAIJ	13BC	PRL 111 112003	R. Aaij *et al.*	(LHCb Collab.)	REFID=55229
AAIJ	13BN	PRL 111 151801	R. Aaij *et al.*	(LHCb Collab.)	REFID=55414
AAIJ	13BS	PL B726 646	R. Aaij *et al.*	(LHCb Collab.)	REFID=55438
AAIJ	13H	JHEP 1302 105	R. Aaij *et al.*	(LHCb Collab.)	REFID=54859
AAIJ	13R	JHEP 1302 043	R. Aaij *et al.*	(LHCb Collab.)	REFID=54991
AAIJ	13S	EPJ C73 2462	R. Aaij *et al.*	(LHCb Collab.)	REFID=55008
AAIJ	13Z	JHEP 1309 006	R. Aaij *et al.*	(LHCb Collab.)	REFID=55048
ABAZOV	13M	PRL 110 241801	V.M. Abazov *et al.*	(D0 Collab.)	REFID=55214
DUH	13	PR D87 031103	Y. T. Duh *et al.*	(BELLE Collab.)	REFID=54957
HARA	13	PRL 110 131801	K. Hara *et al.*	(BELLE Collab.)	REFID=54961
LEES	13A	PR D87 032004	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54854
LEES	13B	PR D87 052015	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54948
LEES	13I	PR D87 112005	J.P. Lees *et al.*	(BABAR Collab.)	REFID=55161
LEES	13K	PR D88 031102	J.P. Lees *et al.*	(BABAR Collab.)	REFID=55166
LEES	13M	PR D88 032012	J.P. Lees *et al.*	(BABAR Collab.)	REFID=55178
LEES	13T	PR D88 072006	J.P. Lees *et al.*	(BABAR Collab.)	REFID=55458
LUTZ	13	PR D87 111103	O. Lutz *et al.*	(BELLE Collab.)	REFID=55147
NAYAK	13	PR D88 091104	M. Nayak *et al.*	(BELLE Collab.)	REFID=55486
SIBIDANOV	13	PR D88 032005	A. Sibidanov *et al.*	(BELLE Collab.)	REFID=55176
AAIJ	12AA	PR D85 091103	R. Aaij *et al.*	(LHCb Collab.)	REFID=54263
AAIJ	12AC	PR D85 091105	R. Aaij *et al.*	(LHCb Collab.)	REFID=54372
AAIJ	12AD	PR D85 112004	R. Aaij *et al.*	(LHCb Collab.)	REFID=54373
AAIJ	12AH	JHEP 1207 133	R. Aaij *et al.*	(LHCb Collab.)	REFID=54472
AAIJ	12AQ	PL B718 43	R. Aaij *et al.*	(LHCb Collab.)	REFID=54594
AAIJ	12AY	JHEP 1212 125	R. Aaij *et al.*	(LHCb Collab.)	REFID=54766
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AAIJ	12E	PL B708 241	R. Aaij *et al.*	(LHCb Collab.)	REFID=54043
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AAIJ	12M	PL B712 203	R. Aaij *et al.*	(LHCb Collab.)	REFID=54173
Also		PL B713 351 (errat.)	R. Aaij *et al.*	(LHCb Collab.)	REFID=54174
AAIJ	12T	PRL 108 161801	R. Aaij *et al.*	(LHCb Collab.)	REFID=54214
AIHARA	12	PR D85 112014	H. Aihara *et al.*	(BELLE Collab.)	REFID=54412
DEL-AMO-SA...	12	PR D85 092017	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=54286
HOI	12	PRL 108 031801	C.-T. Hoi *et al.*	(BELLE Collab.)	REFID=54011
KIM	12A	PR D86 031101	J.H. Kim *et al.*	(BELLE Collab.)	REFID=54426
LEES	12AA	PR D86 092004	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54717
LEES	12B	PR D85 052003	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54042
LEES	12D	PRL 109 101802	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54261
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LEES	12J	PR D85 071103	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54377
LEES	12O	PR D85 112010	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54382
LEES	12P	PR D86 012004	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54383
LEES	12S	PR D86 032012	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54386
LEES	12Z	PR D86 091102	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54716
PDG	12	PR D86 010001	J. Beringer *et al.*	(PDG Collab.)	REFID=54066
STYPULA	12	PR D86 072007	J. Stypula *et al.*	(BELLE Collab.)	REFID=54633
AAIJ	11E	PR D84 092001	R. Aaij *et al.*	(LHCb Collab.)	REFID=53856
Also		PR D85 039904 (errat.)	R. Aaij *et al.*	(LHCb Collab.)	REFID=54371
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AALTONEN	11AJ	PR D84 091504	T. Aaltonen *et al.*	(CDF Collab.)	REFID=53889
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AALTONEN	11L	PRL 106 161801	T. Aaltonen *et al.*	(CDF Collab.)	REFID=16443
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BHARDWAJ	11	PRL 107 091803	V. Bhardwaj *et al.*	(BELLE Collab.)	REFID=53779
CHEN	11F	PR D84 071501	P. Chen *et al.*	(BELLE Collab.)	REFID=53814
CHOI	11	PR D84 052004	S.-K. Choi *et al.*	(BELLE Collab.)	REFID=53934
DEL-AMO-SA...	11B	PR D83 032004	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=53665
DEL-AMO-SA...	11C	PR D83 032007	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=53666
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LEES	11I	PR D84 092007	J.P. Lees *et al.*	(BABAR Collab.)	REFID=53891
SAHOO	11A	PR D84 071101	H. Sahoo *et al.*	(BELLE Collab.)	REFID=53810
SEON	11	PR D84 071106	O. Seon *et al.*	(BELLE Collab.)	REFID=53812
VINOKUROVA	11	PL B706 139	A. Vinokurova *et al.*	(BELLE Collab.)	REFID=53927
AALTONEN	10A	PR D81 031105	T. Aaltonen *et al.*	(CDF Collab.)	REFID=53239
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AUBERT	10D	PR D81 052009	B. Aubert *et al.*	(BABAR Collab.)	REFID=53217
AUBERT	10E	PR D81 051101	B. Aubert *et al.*	(BABAR Collab.)	REFID=53218
BOZEK	10	PR D82 072005	A. BOZEK *et al.*	(BELLE Collab.)	REFID=53454
DEL-AMO-SA...	10A	PR D82 011502	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=53325
DEL-AMO-SA...	10B	PR D82 011101	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=53362
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DEL-AMO-SA...	10H	PR D82 072006	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=53456
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DEL-AMO-SA...	10Q	PR D82 112002	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=53575
HARA	10	PR D82 071101	K. Hara *et al.*	(BELLE Collab.)	REFID=53464
LIBBY	10	PR D82 112006	J. Libby *et al.*	(CLEO Collab.)	REFID=53583
POLUEKTOV	10	PR D81 112002	A. Poluektov *et al.*	(BELLE Collab.)	REFID=53340

SAKAI	10	PR D82 091104	K. Sakai *et al.*	(BELLE Collab.)	REFID=53473
WEDD	10	PR D81 111104	R. Wedd *et al.*	(BELLE Collab.)	REFID=53344
AALTONEN	09B	PR D79 011104	T. Aaltonen *et al.*	(CDF Collab.)	REFID=52686
ABAZOV	09Y	PR D79 111102	V.M. Abazov *et al.*	(D0 Collab.)	REFID=52939
ABULENCIA	09	PR D79 112003	A. Abulencia *et al.*	(CDF Collab.)	REFID=52950
AUBERT	09	PR D79 011102	B. Aubert *et al.*	(BABAR Collab.)	REFID=52639
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CHANG	09	PR D79 052006	Y.-W. Chang *et al.*	(BELLE Collab.)	REFID=52822
CHEN	09C	PR D80 111103	P. Chen *et al.*	(BELLE Collab.)	REFID=53177
LIU	09	PR D79 071102	C. Liu *et al.*	(BELLE Collab.)	REFID=52752
WEI	09A	PRL 103 171801	J.-T. Wei *et al.*	(BELLE Collab.)	REFID=53061
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WIECHCZYN...	09	PR D80 052005	J. Wiechczynski *et al.*	(BELLE Collab.)	REFID=53033
ABAZOV	08O	PRL 100 211802	V.M. Abazov *et al.*	(D0 Collab.)	REFID=52393
ADACHI	08	PR D77 091101	I. Adachi *et al.*	(BELLE Collab.)	REFID=52344
AUBERT	08A	PR D77 011101	B. Aubert *et al.*	(BABAR Collab.)	REFID=52119
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BHARDWAJ	08	PR D78 051104	V. Bhardwaj *et al.*	(BELLE Collab.)	REFID=52425
BRODZICKA	08	PRL 100 092001	J. Brodzicka *et al.*	(BELLE Collab.)	REFID=52144
CHEN	08C	PRL 100 251801	J.-H. Chen *et al.*	(BELLE Collab.)	REFID=52442
HORII	08	PR D78 071901	Y. Horii *et al.*	(BELLE Collab.)	REFID=52533
IWABUCHI	08	PRL 101 041601	M. Iwabuchi *et al.*	(BELLE Collab.)	REFID=52445
LIN	08	NAT 452 332	S.-W. Lin *et al.*	(BELLE Collab.)	REFID=52509
LIVENTSEV	08	PR D77 091503	D. Liventsev *et al.*	(BELLE Collab.)	REFID=52230
PDG	08	PL B667 1	C. Amsler *et al.*	(PDG Collab.)	REFID=52166
TANIGUCHI	08	PRL 101 111801	N. Taniguchi *et al.*	(BELLE Collab.)	REFID=52449
WEI	08	PL B659 80	J.-T. Wei *et al.*	(BELLE Collab.)	REFID=52086
WEI	08A	PR D78 011101	J.-T. Wei *et al.*	(BELLE Collab.)	REFID=52409
WICHT	08	PL B662 323	J. Wicht *et al.*	(BELLE Collab.)	REFID=52204
ADAM	07	PRL 99 041802	N.E. Adam *et al.*	(CLEO Collab.)	REFID=51868
Also		PR D76 012007	D.M. Asner *et al.*	(CLEO Collab.)	REFID=51855
AUBERT	07AC	PR D76 031101	B. Aubert *et al.*	(BABAR Collab.)	REFID=51857
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AUBERT	07N	PR D75 072002	B. Aubert *et al.*	(BABAR Collab.)	REFID=51678
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CHANG	07B	PR D75 071104	P. Chang *et al.*	(BELLE Collab.)	REFID=51784
CHEN	07D	PRL 99 221802	K.-F. Chen *et al.*	(BELLE Collab.)	REFID=52024
HOKUUE	07	PL B648 139	T. Hokuue *et al.*	(BELLE Collab.)	REFID=51672
LIN	07	PRL 98 181804	S.-W. Lin *et al.*	(BELLE Collab.)	REFID=51752
LIN	07A	PRL 99 121601	S.-W. Lin *et al.*	(BELLE Collab.)	REFID=51921
SATOYAMA	07	PL B647 67	N. Satoyama *et al.*	(BELLE Collab.)	REFID=51649
SCHUEMANN	07	PR D75 092002	J. Schuemann *et al.*	(BELLE Collab.)	REFID=51793
TSAI	07	PR D75 111101	Y.-T. Tsai *et al.*	(BELLE Collab.)	REFID=51800
URQUIJO	07	PR D75 032001	P. Urquijo *et al.*	(BELLE Collab.)	REFID=51647
WANG	07B	PR D75 092005	C.H. Wang *et al.*	(BELLE Collab.)	REFID=51796
WANG	07C	PR D76 052004	M.-Z. Wang *et al.*	(BELLE Collab.)	REFID=51935
XIE	07	PR D75 017101	Q.L. Xie *et al.*	(BELLE Collab.)	REFID=51732
ABE	06	PR D73 051106	K. Abe *et al.*	(BELLE Collab.)	REFID=51095
ABULENCIA	06J	PRL 96 191801	A. Abulencia *et al.*	(CDF Collab.)	REFID=51210
ACOSTA	06	PRL 96 202001	D. Acosta *et al.*	(CDF Collab.)	REFID=51231
AUBERT	06	PR D73 011101	B. Aubert *et al.*	(BABAR Collab.)	REFID=51017
AUBERT	06E	PRL 96 052002	B. Aubert *et al.*	(BABAR Collab.)	REFID=51059
AUBERT	06F	PR D73 011103	B. Aubert *et al.*	(BABAR Collab.)	REFID=51086
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AUBERT,B	06Y	PR D74 091105	B. Aubert *et al.*	(BABAR Collab.)	REFID=51498
AUBERT,BE	06A	PR D74 099903 (errat.)	B. Aubert *et al.*	(BABAR Collab.)	REFID=51506
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AUBERT,BE	06M	PR D74 071101	B. Aubert *et al.*	(BABAR Collab.)	REFID=51454
CHISTOV	06A	PR D74 111105	R. Chistov *et al.*	(BELLE Collab.)	REFID=51588
FANG	06	PR D74 012007	F. Fang *et al.*	(BELLE Collab.)	REFID=51159
GABYSHEV	06	PRL 97 202003	N. Gabyshev *et al.*	(BELLE Collab.)	REFID=51488
GABYSHEV	06A	PRL 97 242001	N. Gabyshev *et al.*	(BELLE Collab.)	REFID=51565
GARMASH	06	PRL 96 251803	A. Garmash *et al.*	(BELLE Collab.)	REFID=51162
IKADO	06	PRL 97 251802	K. Ikado *et al.*	(BELLE Collab.)	REFID=51572
JEN	06	PR D74 111101	C.-M. Jen *et al.*	(BELLE Collab.)	REFID=51573
KUMAR	06	PR D74 051103	R. Kumar *et al.*	(BELLE Collab.)	REFID=51338
MOHAPATRA	06	PRL 96 221601	D. Mohapatra *et al.*	(BELLE Collab.)	REFID=51235
POLUEKTOV	06	PR D73 112009	A. Poluektov *et al.*	(BELLE Collab.)	REFID=51287
SCHUEMANN	06	PRL 97 061802	J. Schuemann *et al.*	(BELLE Collab.)	REFID=51250
SONI	06	PL B634 155	N. Soni *et al.*	(BELLE Collab.)	REFID=51093
ABE	05A	PRL 94 221805	K. Abe *et al.*	(BELLE Collab.)	REFID=50755
ABE	05B	PR D71 072003	K. Abe *et al.*	(BELLE Collab.)	REFID=50517
Also		PR D71 079903 (errat.)	K. Abe *et al.*	(BELLE Collab.)	REFID=50555
ABE	05G	PRL 95 231802	K. Abe *et al.*	(BELLE Collab.)	REFID=50936
ACOSTA	05J	PRL 95 031801	D. Acosta *et al.*	(CDF Collab.)	REFID=50685
AUBERT	05	PRL 94 011801	B. Aubert *et al.*	(BABAR Collab.)	REFID=50366
AUBERT	05B	PR D71 031501	B. Aubert *et al.*	(BABAR Collab.)	REFID=50498
AUBERT	05G	PR D72 032004	B. Aubert *et al.*	(BABAR Collab.)	REFID=50572
AUBERT	05H	PRL 94 101801	B. Aubert *et al.*	(BABAR Collab.)	REFID=50581
AUBERT	05J	PRL 94 141801	B. Aubert *et al.*	(BABAR Collab.)	REFID=50590
AUBERT	05K	PRL 94 171801	B. Aubert *et al.*	(BABAR Collab.)	REFID=50591
AUBERT	05L	PRL 94 181802	B. Aubert *et al.*	(BABAR Collab.)	REFID=50593
AUBERT	05M	PRL 94 191802	B. Aubert *et al.*	(BABAR Collab.)	REFID=50606
AUBERT	05N	PR D71 031102	B. Aubert *et al.*	(BABAR Collab.)	REFID=50616
AUBERT	05O	PR D71 031103	B. Aubert *et al.*	(BABAR Collab.)	REFID=50617
AUBERT	05R	PR D71 071103	B. Aubert *et al.*	(BABAR Collab.)	REFID=50627
AUBERT	05U	PR D71 091103	B. Aubert *et al.*	(BABAR Collab.)	REFID=50635
AUBERT	05X	PR D71 111101	B. Aubert *et al.*	(BABAR Collab.)	REFID=50662
AUBERT,B	05B	PRL 95 041804	B. Aubert *et al.*	(BABAR Collab.)	REFID=50688
AUBERT,B	05E	PR D72 011102	B. Aubert *et al.*	(BABAR Collab.)	REFID=50701
AUBERT,B	05G	PR D72 052002	B. Aubert *et al.*	(BABAR Collab.)	REFID=50775
AUBERT,B	05K	PRL 95 131803	B. Aubert *et al.*	(BABAR Collab.)	REFID=50826
AUBERT,B	05L	PR D72 051101	B. Aubert *et al.*	(BABAR Collab.)	REFID=50827
AUBERT,B	05N	PR D72 072003	B. Aubert *et al.*	(BABAR Collab.)	REFID=50838
Also		PR D74 099903 (errat.)	B. Aubert *et al.*	(BABAR Collab.)	REFID=51506
AUBERT,B	05O	PR D72 051102	B. Aubert *et al.*	(BABAR Collab.)	REFID=50892
AUBERT,B	05T	PR D72 071102	B. Aubert *et al.*	(BABAR Collab.)	REFID=50898
AUBERT,B	05U	PR D72 071103	B. Aubert *et al.*	(BABAR Collab.)	REFID=50897
AUBERT,B	05V	PR D72 071104	B. Aubert *et al.*	(BABAR Collab.)	REFID=50900
AUBERT,B	05Y	PRL 95 121802	B. Aubert *et al.*	(BABAR Collab.)	REFID=50919
AUBERT,BE	05E	PRL 95 221801	B. Aubert *et al.*	(BABAR Collab.)	REFID=50948
CHANG	05	PR D71 072007	M.-C. Chang *et al.*	(BELLE Collab.)	REFID=50631
CHANG	05A	PR D71 091106	P. Chang *et al.*	(BELLE Collab.)	REFID=50638
CHAO	05A	PR D71 031502	Y. Chao *et al.*	(BELLE Collab.)	REFID=50619

CHEN	05A	PRL 94 221804	K.-F. Chen *et al.*	(BELLE Collab.)	REFID=50659
GARMASH	05	PR D71 092003	A. Garmash *et al.*	(BELLE Collab.)	REFID=50641
ITOH	05	PRL 95 091601	R. Itoh *et al.*	(BELLE Collab.)	REFID=50559
LEE	05	PRL 95 061802	Y.-J. Lee *et al.*	(BELLE Collab.)	REFID=50696
LIVENTSEV	05	PR D72 051109	D. Liventsev *et al.*	(BELLE Collab.)	REFID=50903
MAJUMDER	05	PRL 95 041803	G. Majumder *et al.*	(BELLE Collab.)	REFID=50689
MOHAPATRA	05	PR D72 011101	D. Mohapatra *et al.*	(BELLE Collab.)	REFID=50700
NISHIDA	05	PL B610 23	S. Nishida *et al.*	(BELLE Collab.)	REFID=50596
OKABE	05	PL B614 27	T. Okabe *et al.*	(BELLE Collab.)	REFID=50601
SAIGO	05	PRL 94 091601	M. Saigo *et al.*	(BELLE Collab.)	REFID=50579
WANG	05A	PL B617 141	M.-Z. Wang *et al.*	(BELLE Collab.)	REFID=50651
XIE	05	PR D72 051105	Q.L. Xie *et al.*	(BELLE Collab.)	REFID=50902
YANG	05	PRL 94 111802	H. Yang *et al.*	(BELLE Collab.)	REFID=50585
ZHANG	05A	PRL 94 031801	J. Zhang *et al.*	(BELLE Collab.)	REFID=50486
ZHANG	05B	PR D71 091107	L.M. Zhang *et al.*	(BELLE Collab.)	REFID=50639
ZHANG	05D	PRL 95 141801	J. Zhang *et al.*	(BELLE Collab.)	REFID=50825
ABDALLAH	04E	EPJ C33 307	J. Abdallah *et al.*	(DELPHI Collab.)	REFID=49917
ABE	04D	PR D69 112002	K. Abe *et al.*	(BELLE Collab.)	REFID=50011
AUBERT	04A	PR D69 011102	B. Aubert *et al.*	(BABAR Collab.)	REFID=49719
AUBERT	04C	PRL 92 111801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49670
AUBERT	04H	PRL 92 061801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49867
AUBERT	04K	PRL 92 141801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49926
AUBERT	04M	PRL 92 201802	B. Aubert *et al.*	(BABAR Collab.)	REFID=49928
AUBERT	04N	PRL 92 202002	B. Aubert *et al.*	(BABAR Collab.)	REFID=49929
AUBERT	04O	PRL 92 221803	B. Aubert *et al.*	(BABAR Collab.)	REFID=49930
AUBERT	04P	PRL 92 241802	B. Aubert *et al.*	(BABAR Collab.)	REFID=49931
AUBERT	04Q	PR D69 051101	B. Aubert *et al.*	(BABAR Collab.)	REFID=49954
AUBERT	04T	PR D69 071103	B. Aubert *et al.*	(BABAR Collab.)	REFID=49958
AUBERT	04Y	PRL 93 041801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49997
AUBERT	04Z	PRL 93 051802	B. Aubert *et al.*	(BABAR Collab.)	REFID=50001
AUBERT,B	04B	PR D70 011101	B. Aubert *et al.*	(BABAR Collab.)	REFID=50043
AUBERT,B	04D	PR D70 032006	B. Aubert *et al.*	(BABAR Collab.)	REFID=50051
AUBERT,B	04L	PRL 93 131804	B. Aubert *et al.*	(BABAR Collab.)	REFID=50087
AUBERT,B	04P	PR D70 092001	B. Aubert *et al.*	(BABAR Collab.)	REFID=50193
AUBERT,B	04S	PRL 93 181801	B. Aubert *et al.*	(BABAR Collab.)	REFID=50195
AUBERT,B	04U	PR D70 091105	B. Aubert *et al.*	(BABAR Collab.)	REFID=50241
AUBERT,B	04V	PRL 93 181805	B. Aubert *et al.*	(BABAR Collab.)	REFID=50265
AUBERT,BE	04	PR D70 111102	B. Aubert *et al.*	(BABAR Collab.)	REFID=50371
AUBERT,BE	04A	PR D70 112006	B. Aubert *et al.*	(BABAR Collab.)	REFID=50377
AUBERT,BE	04B	PR D70 091106	B. Aubert *et al.*	(BABAR Collab.)	REFID=50416
CHAO	04	PR D69 111102	Y. Chao *et al.*	(BELLE Collab.)	REFID=50006
CHAO	04B	PRL 93 191802	Y. Chao *et al.*	(BELLE Collab.)	REFID=50272
CHISTOV	04	PRL 93 051803	R. Chistov *et al.*	(BELLE Collab.)	REFID=50002
DRUTSKOY	04	PRL 92 051801	A. Drutskoy *et al.*	(BELLE Collab.)	REFID=49717
GARMASH	04	PR D69 012001	A. Garmash *et al.*	(BELLE Collab.)	REFID=49642
LEE	04	PRL 93 211801	Y.-J. Lee *et al.*	(BELLE Collab.)	REFID=50276
MAJUMDER	04	PR D70 111103	G. Majumder *et al.*	(BELLE Collab.)	REFID=50372
NAKAO	04	PR D69 112001	M. Nakao *et al.*	(BELLE Collab.)	REFID=50010
POLUEKTOV	04	PR D70 072003	A. Poluektov *et al.*	(BELLE Collab.)	REFID=50223
SCHWANDA	04	PRL 93 131803	C. Schwanda *et al.*	(BELLE Collab.)	REFID=50086
WANG	04	PRL 92 131801	M.Z. Wang *et al.*	(BELLE Collab.)	REFID=49936
WANG	04A	PR D70 012001	C.H. Wang *et al.*	(BELLE Collab.)	REFID=50045
ZANG	04	PR D69 017101	S.L. Zang *et al.*	(BELLE Collab.)	REFID=49637
ABE	03B	PR D67 032003	K. Abe *et al.*	(BELLE Collab.)	REFID=49205
ABE	03D	PRL 90 131803	K. Abe *et al.*	(BELLE Collab.)	REFID=49220
ADAM	03	PR D67 032001	N.E. Adam *et al.*	(CLEO Collab.)	REFID=49204
ADAM	03B	PR D68 012004	N.E. Adam *et al.*	(CLEO Collab.)	REFID=49507
ATHAR	03	PR D68 072003	S.B. Athar *et al.*	(CLEO Collab.)	REFID=49666
AUBERT	03K	PRL 90 231801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49439
AUBERT	03L	PRL 91 021801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49493
AUBERT	03M	PRL 91 051801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49513
AUBERT	03O	PRL 91 071801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49515
AUBERT	03U	PRL 91 221802	B. Aubert *et al.*	(BABAR Collab.)	REFID=49648
AUBERT	03V	PRL 91 171802	B. Aubert *et al.*	(BABAR Collab.)	REFID=49663
AUBERT	03W	PRL 91 161801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49664
AUBERT	03X	PR D68 092001	B. Aubert *et al.*	(BABAR Collab.)	REFID=49665
BORNHEIM	03	PR D68 052002	A. Bornheim *et al.*	(CLEO Collab.)	REFID=49546
CHEN	03B	PRL 91 201801	K.-F. Chen *et al.*	(BELLE Collab.)	REFID=49639
CHOI	03	PRL 91 262001	S.-K. Choi *et al.*	(BELLE Collab.)	REFID=49628
CSORNA	03	PR D67 112002	S.E. Csorna *et al.*	(CLEO Collab.)	REFID=49435
EDWARDS	03	PR D68 011102	K.W. Edwards *et al.*	(CLEO Collab.)	REFID=49504
FANG	03	PRL 90 071801	F. Fang *et al.*	(BELLE Collab.)	REFID=49206
HUANG	03	PRL 91 241802	H.-C. Huang *et al.*	(BELLE Collab.)	REFID=49621
ISHIKAWA	03	PRL 91 261601	A. Ishikawa *et al.*	(BELLE Collab.)	REFID=49641
KROKOVNY	03B	PRL 91 262002	P. Krokovny *et al.*	(BELLE Collab.)	REFID=49615
SWAIN	03	PR D68 051101	S.K. Swain *et al.*	(BELLE Collab.)	REFID=49545
UNNO	03	PR D68 011103	Y. Unno *et al.*	(BELLE Collab.)	REFID=49505
ZHANG	03B	PRL 91 221801	J. Zhang *et al.*	(BELLE Collab.)	REFID=49634
ABE	02	PRL 88 021801	K. Abe *et al.*	(BELLE Collab.)	REFID=48518
ABE	02B	PRL 88 031802	K. Abe *et al.*	(BELLE Collab.)	REFID=48520
ABE	02H	PRL 88 171801	K. Abe *et al.*	(BELLE Collab.)	REFID=48633
ABE	02K	PRL 88 181803	K. Abe *et al.*	(BELLE Collab.)	REFID=48690
ABE	02N	PL B538 11	K. Abe *et al.*	(BELLE Collab.)	REFID=48769
ABE	02O	PR D65 091103	K. Abe *et al.*	(BELLE Collab.)	REFID=48790
ABE	02W	PRL 89 151802	K. Abe *et al.*	(BELLE Collab.)	REFID=48980
ACOSTA	02C	PR D65 092009	D. Acosta *et al.*	(CDF Collab.)	REFID=48794
ACOSTA	02F	PR D66 052005	D. Acosta *et al.*	(CDF Collab.)	REFID=48998
AHMED	02B	PR D66 031101	S. Ahmed *et al.*	(CLEO Collab.)	REFID=48901
AUBERT	02	PR D65 032001	B. Aubert *et al.*	(BABAR Collab.)	REFID=48514
AUBERT	02C	PRL 88 101805	B. Aubert *et al.*	(BABAR Collab.)	REFID=48600
AUBERT	02E	PR D65 051101	B. Aubert *et al.*	(BABAR Collab.)	REFID=48636
AUBERT	02F	PR D65 091101	B. Aubert *et al.*	(BABAR Collab.)	REFID=48637

AUBERT	02L	PRL 88 241801	B. Aubert *et al.*	(BABAR Collab.)	REFID=48751
BRIERE	02	PRL 89 081803	R. Briere *et al.*	(CLEO Collab.)	REFID=48758
CASEY	02	PR D66 092002	B.C.K. Casey *et al.*	(BELLE Collab.)	REFID=49071
CHEN	02B	PL B546 196	K.-F. Chen *et al.*	(BELLE Collab.)	REFID=48992
DRUTSKOY	02	PL B542 171	A. Drutskoy *et al.*	(BELLE Collab.)	REFID=48780
DYTMAN	02	PR D66 091101	S.A. Dytman *et al.*	(CLEO Collab.)	REFID=49070
ECKHART	02	PRL 89 251801	E. Eckhart *et al.*	(CLEO Collab.)	REFID=49080
EDWARDS	02B	PR D65 111102	K.W. Edwards *et al.*	(CLEO Collab.)	REFID=48799
GABYSHEV	02	PR D66 091102	N. Gabyshev *et al.*	(BELLE Collab.)	REFID=49102
GARMASH	02	PR D65 092005	A. Garmash *et al.*	(BELLE Collab.)	REFID=48634
GODANG	02	PRL 88 021802	R. Godang *et al.*	(CLEO Collab.)	REFID=48519
GORDON	02	PL B542 183	A. Gordon *et al.*	(BELLE Collab.)	REFID=48781
LU	02	PRL 89 191801	R.-S. Lu *et al.*	(BELLE Collab.)	REFID=48994
MAHAPATRA	02	PRL 88 101803	R. Mahapatra *et al.*	(CLEO Collab.)	REFID=48599
NISHIDA	02	PRL 89 231801	S. Nishida *et al.*	(BELLE Collab.)	REFID=49078
ABE	01H	PRL 87 101801	K. Abe *et al.*	(BELLE Collab.)	REFID=48247
ABE	01I	PRL 87 111801	K. Abe *et al.*	(BELLE Collab.)	REFID=48248
ABE	01K	PR D64 071101	K. Abe *et al.*	(BELLE Collab.)	REFID=48367
ABE	01L	PRL 87 161601	K. Abe *et al.*	(BELLE Collab.)	REFID=48379
ABE	01M	PL B517 309	K. Abe *et al.*	(BELLE Collab.)	REFID=48382
ALEXANDER	01B	PR D64 092001	J.P. Alexander *et al.*	(CLEO Collab.)	REFID=48391
AMMAR	01B	PRL 87 271801	R. Ammar *et al.*	(CLEO Collab.)	REFID=48534
ANDERSON	01B	PRL 87 181803	S. Anderson *et al.*	(CLEO Collab.)	REFID=48389
AUBERT	01D	PRL 87 151801	B. Aubert *et al.*	(BABAR Collab.)	REFID=48377
AUBERT	01E	PRL 87 151802	B. Aubert *et al.*	(BABAR Collab.)	REFID=48378
AUBERT	01F	PRL 87 201803	B. Aubert *et al.*	(BABAR Collab.)	REFID=48432
AUBERT	01G	PRL 87 221802	B. Aubert *et al.*	(BABAR Collab.)	REFID=48434
BARATE	01E	EPJ C19 213	R. Barate *et al.*	(ALEPH Collab.)	REFID=48135
BRIERE	01	PRL 86 3718	R.A. Biere *et al.*	(CLEO Collab.)	REFID=48119
BROWDER	01	PRL 86 2950	T.E. Browder *et al.*	(CLEO Collab.)	REFID=48107
EDWARDS	01	PRL 86 30	K.W. Edwards *et al.*	(CLEO Collab.)	REFID=47903
GRITSAN	01	PR D64 077501	A. Gritsan *et al.*	(CLEO Collab.)	REFID=48373
RICHICHI	01	PR D63 031103	S.J. Richichi *et al.*	(CLEO Collab.)	REFID=48226
ABBIENDI	00B	PL B476 233	G. Abbiendi *et al.*	(OPAL Collab.)	REFID=47437
ABE	00C	PR D62 071101	K. Abe *et al.*	(SLD Collab.)	REFID=47762
AHMED	00B	PR D62 112003	S. Ahmed *et al.*	(CLEO Collab.)	REFID=47822
ANASTASSOV	00	PRL 84 1393	A. Anastassov *et al.*	(CLEO Collab.)	REFID=47574
BARATE	00R	PL B492 275	R. Barate *et al.*	(ALEPH Collab.)	REFID=47827
BEHRENS	00	PR D61 052001	B.H. Behrens *et al.*	(CLEO Collab.)	REFID=47558
BONVICINI	00	PRL 84 5940	G. Bonvicini *et al.*	(CLEO Collab.)	REFID=47650
CHEN	00	PRL 85 525	S. Chen *et al.*	(CLEO Collab.)	REFID=47669
COAN	00	PRL 84 5283	T.E. Coan *et al.*	(CLEO Collab.)	REFID=47633
CRONIN-HEN...	00	PRL 85 515	D. Cronin-Hennessy *et al.*	(CLEO Collab.)	REFID=47659
CSORNA	00	PR D61 111101	S.E. Csorna *et al.*	(CLEO Collab.)	REFID=47435
JESSOP	00	PRL 85 2881	C.P. Jessop *et al.*	(CLEO Collab.)	REFID=47771
RICHICHI	00	PRL 85 520	S.J. Richichi *et al.*	(CLEO Collab.)	REFID=47660
ABBIENDI	99J	EPJ C12 609	G. Abbiendi *et al.*	(OPAL Collab.)	REFID=46738
AFFOLDER	99B	PRL 83 3378	T. Affolder *et al.*	(CDF Collab.)	REFID=47213
BARTELT	99	PRL 82 3746	J. Bartelt *et al.*	(CLEO Collab.)	REFID=47004
COAN	99	PR D59 111101	T.E. Coan *et al.*	(CLEO Collab.)	REFID=47019
ABE	98B	PR D57 5382	F. Abe *et al.*	(CDF Collab.)	REFID=45880
ABE	98O	PR D58 072001	F. Abe *et al.*	(CDF Collab.)	REFID=46156
ABE	98Q	PR D58 092002	F. Abe *et al.*	(CDF Collab.)	REFID=46475
ACCIARRI	98S	PL B438 417	M. Acciarri *et al.*	(L3 Collab.)	REFID=46503
ANASTASSOV	98	PRL 80 4127	A. Anastassov *et al.*	(CLEO Collab.)	REFID=46015
ATHANAS	98	PRL 80 5493	M. Athanas *et al.*	(CLEO Collab.)	REFID=46113
BARATE	98Q	EPJ C4 387	R. Barate *et al.*	(ALEPH Collab.)	REFID=46146
BEHRENS	98	PRL 80 3710	B.H. Behrens *et al.*	(CLEO Collab.)	REFID=45936
BERGFELD	98	PRL 81 272	T. Bergfeld *et al.*	(CLEO Collab.)	REFID=46091
BRANDENB...	98	PRL 80 2762	G. Brandenbrug *et al.*	(CLEO Collab.)	REFID=45874
CAPRINI	98	NP B530 153	I. Caprini, L. Lellouch, M. Neubert	(BCIP, CERN)	REFID=52699
GODANG	98	PRL 80 3456	R. Godang *et al.*	(CLEO Collab.)	REFID=45935
ABE	97J	PRL 79 590	K. Abe *et al.*	(SLD Collab.)	REFID=45413
ACCIARRI	97F	PL B396 327	M. Acciarri *et al.*	(L3 Collab.)	REFID=45317
ARTUSO	97	PL B399 321	M. Artuso *et al.*	(CLEO Collab.)	REFID=45327
ATHANAS	97	PRL 79 2208	M. Athanas *et al.*	(CLEO Collab.)	REFID=45598
BROWDER	97	PR D56 11	T. Browder *et al.*	(CLEO Collab.)	REFID=45431
FU	97	PRL 79 3125	X. Fu *et al.*	(CLEO Collab.)	REFID=45625
JESSOP	97	PRL 79 4533	C.P. Jessop *et al.*	(CLEO Collab.)	REFID=45744
ABE	96B	PR D53 3496	F. Abe *et al.*	(CDF Collab.)	REFID=44688
ABE	96C	PRL 76 4462	F. Abe *et al.*	(CDF Collab.)	REFID=44700
ABE	96H	PRL 76 2015	F. Abe *et al.*	(CDF Collab.)	REFID=44798
ABE	96L	PRL 76 4675	F. Abe *et al.*	(CDF Collab.)	REFID=44807
ABE	96Q	PR D54 6596	F. Abe *et al.*	(CDF Collab.)	REFID=44974
ABE	96R	PRL 77 5176	F. Abe *et al.*	(CDF Collab.)	REFID=45159
ADAM	96D	ZPHY C72 207	W. Adam *et al.*	(DELPHI Collab.)	REFID=45276
ALEXANDER	96T	PRL 77 5000	J.P. Alexander *et al.*	(CLEO Collab.)	REFID=44972
ASNER	96	PR D53 1039	D.M. Asner *et al.*	(CLEO Collab.)	REFID=44734
BARISH	96B	PRL 76 1570	B.C. Barish *et al.*	(CLEO Collab.)	REFID=44693
BERGFELD	96B	PRL 77 4503	T. Bergfeld *et al.*	(CLEO Collab.)	REFID=44956
BISHAI	96	PL B369 186	M. Bishai *et al.*	(CLEO Collab.)	REFID=44832
BUSKULIC	96J	ZPHY C71 31	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=44824
GIBAUT	96	PR D53 4734	D. Gibaut *et al.*	(CLEO Collab.)	REFID=44784
PDG	96	PR D54 1	R. M. Barnett *et al.*	(PDG Collab.)	REFID=44495
ABREU	95N	PL B357 255	P. Abreu *et al.*	(DELPHI Collab.)	REFID=44417
ABREU	95Q	ZPHY C68 13	P. Abreu *et al.*	(DELPHI Collab.)	REFID=44460
ADAM	95	ZPHY C68 363	W. Adam *et al.*	(DELPHI Collab.)	REFID=44465
AKERS	95T	ZPHY C67 379	R. Akers *et al.*	(OPAL Collab.)	REFID=44379
ALBRECHT	95D	PL B353 554	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=44352
ALEXANDER	95	PL B341 435	J. Alexander *et al.*	(CLEO Collab.)	REFID=44113
Also		PL B347 469 (errat.)	J. Alexander *et al.*	(CLEO Collab.)	REFID=44211
ARTUSO	95	PRL 75 785	M. Artuso *et al.*	(CLEO Collab.)	REFID=44347
BARISH	95	PR D51 1014	B.C. Barish *et al.*	(CLEO Collab.)	REFID=44139

BUSKULIC	95	PL B343 444	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=44119
ABE	94D	PRL 72 3456	F. Abe *et al.*	(CDF Collab.)	REFID=43761
ALAM	94	PR D50 43	M.S. Alam *et al.*	(CLEO Collab.)	REFID=43738
ALBRECHT	94D	PL B335 526	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=43962
ATHANAS	94	PRL 73 3503	M. Athanas *et al.*	(CLEO Collab.)	REFID=44064
Also		PRL 74 3090 (errat.)	M. Athanas *et al.*	(CLEO Collab.)	REFID=44196
PDG	94	PR D50 1173	L. Montanet *et al.*	(CERN, LBL, BOST+)	REFID=43653
STONE	94	HEPSY 93-11	S. Stone		REFID=43737
Published in B Decays, 2nd Edition, World Scientific, Singapore					
ABREU	93D	ZPHY C57 181	P. Abreu *et al.*	(DELPHI Collab.)	REFID=43267
ABREU	93G	PL B312 253	P. Abreu *et al.*	(DELPHI Collab.)	REFID=43443
ACTON	93C	PL B307 247	P.D. Acton *et al.*	(OPAL Collab.)	REFID=43352
ALBRECHT	93E	ZPHY C60 11	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=43514
ALEXANDER	93B	PL B319 365	J. Alexander *et al.*	(CLEO Collab.)	REFID=43725
AMMAR	93	PRL 71 674	R. Ammar *et al.*	(CLEO Collab.)	REFID=43452
BEAN	93B	PRL 70 2681	A. Bean *et al.*	(CLEO Collab.)	REFID=43356
BUSKULIC	93D	PL B307 194	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=43349
Also		PL B325 537 (errat.)	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=43945
SANGHERA	93	PR D47 791	S. Sanghera *et al.*	(CLEO Collab.)	REFID=43098
ALBRECHT	92C	PL B275 195	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41928
ALBRECHT	92E	PL B277 209	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41985
ALBRECHT	92G	ZPHY C54 1	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=42037
BORTOLETTO	92	PR D45 21	D. Bortoletto *et al.*	(CLEO Collab.)	REFID=41920
BUSKULIC	92G	PL B295 396	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=43142
ALBRECHT	91B	PL B254 288	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41451
ALBRECHT	91C	PL B255 297	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41454
ALBRECHT	91E	PL B262 148	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41549
BERKELMAN	91	ARNPS 41 1	K. Berkelman, S. Stone	(CORN, SYRA)	REFID=41929
"Decays of B Mesons"					
FULTON	91	PR D43 651	R. Fulton *et al.*	(CLEO Collab.)	REFID=41391
ALBRECHT	90B	PL B241 278	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41216
ALBRECHT	90J	ZPHY C48 543	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41437
ANTREASYAN	90B	ZPHY C48 553	D. Antreasyan *et al.*	(Crystal Ball Collab.)	REFID=41438
BORTOLETTO	90	PRL 64 2117	D. Bortoletto *et al.*	(CLEO Collab.)	REFID=41178
Also		PR D45 21	D. Bortoletto *et al.*	(CLEO Collab.)	REFID=41920
WEIR	90B	PR D41 1384	A.J. Weir *et al.*	(Mark II Collab.)	REFID=41242
ALBRECHT	89G	PL B229 304	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40942
AVERY	89B	PL B223 470	P. Avery *et al.*	(CLEO Collab.)	REFID=40820
BEBEK	89	PRL 62 8	C. Bebek *et al.*	(CLEO Collab.)	REFID=40626
BORTOLETTO	89	PRL 62 2436	D. Bortoletto *et al.*	(CLEO Collab.)	REFID=40787
ALBRECHT	88F	PL B209 119	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40649
ALBRECHT	88K	PL B215 424	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40662
ALBRECHT	87C	PL B185 218	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40323
ALBRECHT	87D	PL B199 451	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40325
AVERY	87	PL B183 429	P. Avery *et al.*	(CLEO Collab.)	REFID=40387
BEBEK	87	PR D36 1289	C. Bebek *et al.*	(CLEO Collab.)	REFID=40270
ALAM	86	PR D34 3279	M.S. Alam *et al.*	(CLEO Collab.)	REFID=40324
PDG	86	PL 170B 1	M. Aguilar-Benitez *et al.*	(CERN, CIT+)	REFID=40122
GILES	84	PR D30 2279	R. Giles *et al.*	(CLEO Collab.)	REFID=11570

NODE=S042

B^0

$I(J^P) = \frac{1}{2}(0^-)$

NODE=S042

Quantum numbers not measured. Values shown are quark-model predictions.

See also the $B^{\pm}/B^0$ ADMIXTURE and $B^{\pm}/B^0/B^0_s/b$-baryon ADMIXTURE sections.

See the Note "Production and Decay of b-flavored Hadrons" at the beginning of the $B^{\pm}$ Particle Listings and the Note on "B^0-$\overline{B}^0$ Mixing" near the end of the B^0 Particle Listings.

B^0 MASS

NODE=S042M

The fit uses m_{B^+}, $(m_{B^0} - m_{B^+})$, and m_{B^0} to determine m_{B^+}, m_{B^0}, and the mass difference.

NODE=S042M

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*	
5279.72±0.08 OUR FIT						NODE=S042M
5279.63±0.20 OUR AVERAGE						
5279.74±0.30±0.10		[1] AAIJ	19U	LHCB	pp at 7, 8, 13 TeV	
5279.6 ±0.2 ±1.0		[2] AAD	13U	ATLS	pp at 7 TeV	
5279.58±0.15±0.28		[3] AAIJ	12E	LHCB	pp at 7 TeV	
5279.63±0.53±0.33		[4] ACOSTA	06	CDF	$p\overline{p}$ at 1.96 TeV	
5279.1 ±0.7 ±0.3	135	[5] CSORNA	00	CLE2	$e^+e^- \to \Upsilon(4S)$	
5281.3 ±2.2 ±1.4	51	ABE	96B	CDF	$p\overline{p}$ at 1.8 TeV	
• • • We do not use the following data for averages, fits, limits, etc. • • •						
5279.2 ±0.54±2.0	340	ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$	SYCLP=A
5278.0 ±0.4 ±2.0		BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$	SYCLP=A
5279.6 ±0.7 ±2.0	40	[6] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$	SYCLP=A
5278.2 ±1.0 ±3.0	40	ALBRECHT	87C	ARG	$e^+e^- \to \Upsilon(4S)$	
5279.5 ±1.6 ±3.0	7	[7] ALBRECHT	87D	ARG	$e^+e^- \to \Upsilon(4S)$	
5280.6 ±0.8 ±2.0		BEBEK	87	CLEO	$e^+e^- \to \Upsilon(4S)$	SYCLP=A

[1] Uses $B^0 \to J/\psi p\overline{p}$ decays. NODE=S042M;LINKAGE=G

[2] Measured with $B^0_d \to J/\psi(\mu^+\mu^-) K^0_S(\pi^+\pi^-)$ decays. NODE=S042M;LINKAGE=AD

[3] Uses $B^0 \to J/\psi K^0$ fully reconstructed decays. NODE=S042M;LINKAGE=AA

[4] Uses exclusively reconstructed final states containing a $J/\psi \to \mu^+\mu^-$ decays. NODE=S042M;LINKAGE=AT

[5] CSORNA 00 uses fully reconstructed 135 $B^0 \to J/\psi^{(\prime)} K^0_S$ events and invariant masses without beam constraint. NODE=S042M;LINKAGE=N1

[6] ALBRECHT 90J assumes 10580 for $\Upsilon(4S)$ mass. Supersedes ALBRECHT 87C and ALBRECHT 87D. NODE=S042M;LINKAGE=E

[7] Found using fully reconstructed decays with J/ψ. ALBRECHT 87D assume $m_{\Upsilon(4S)}$ = 10577 MeV. NODE=S042M;LINKAGE=D

$m_{B^0} - m_{B^+}$

NODE=S042DM

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
0.31±0.05 OUR FIT				
0.33±0.05 OUR AVERAGE				
0.57±0.49±0.10	[1] SIRUNYAN	18DF	CMS	pp at 8 TeV
0.20±0.17±0.11	[1] AAIJ	12E	LHCB	pp at 7 TeV
0.33±0.05±0.03	[2] AUBERT	08AF	BABR	$e^+e^- \to \Upsilon(4S)$
0.53±0.67±0.14	[1] ACOSTA	06	CDF	$p\overline{p}$ at 1.96 TeV
0.41±0.25±0.19	ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$
−0.4 ±0.6 ±0.5	BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$
−0.9 ±1.2 ±0.5	ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$
2.0 ±1.1 ±0.3	[3] BEBEK	87	CLEO	$e^+e^- \to \Upsilon(4S)$

NODE=S042DM

[1] Uses exclusively reconstructed final states containing a $J/\psi \to \mu^+\mu^-$ decay. NODE=S042DM;LINKAGE=AA

[2] Uses the B-momentum distributions in the e^+e^- rest frame. NODE=S042DM;LINKAGE=AU

[3] BEBEK 87 actually measure the difference between half of E_{cm} and the $B^{\pm}$ or B^0 mass, so the $m_{B^0} - m_{B^{\pm}}$ is more accurate. Assume $m_{\Upsilon(4S)}$ = 10580 MeV. NODE=S042DM;LINKAGE=B

$m_{B^0_H} - m_{B^0_L}$

NODE=S042214

See the B^0-$\overline{B}^0$ MIXING PARAMETERS section near the end of these B^0 Listings.

NODE=S042214

B^0 MEAN LIFE

NODE=S042T

See $B^{\pm}/B^0/B^0_s/b$-baryon ADMIXTURE section for data on B-hadron mean life averaged over species of bottom particles.

NODE=S042T

NODE=S042T

VALUE (10^{-12} s)	EVTS	DOCUMENT ID		TECN	COMMENT	
1.517±0.004 OUR EVALUATION		(Produced by HFLAV)				→ UNCHECKED ←
1.499±0.013±0.008		[1] ABUDINEN	23D	BELL	$e^+e^- \rightarrow \Upsilon(4S)$	
1.515±0.005±0.006		[2] SIRUNYAN	18BY	CMS	pp at 8 TeV	
1.534±0.019±0.021		[3] ABAZOV	15A	D0	$p\overline{p}$ at 1.96 TeV	
1.499±0.013±0.005		[4] AAIJ	14E	LHCB	pp at 7 TeV	
1.524±0.006±0.004		[5] AAIJ	14E	LHCB	pp at 7 TeV	OCCUR=2
1.524±0.011±0.004		[6] AAIJ	14R	LHCB	pp at 7 TeV	
1.509±0.012±0.018		[7] AAD	13U	ATLS	pp at 7 TeV	
1.508±0.025±0.043		[4] ABAZOV	12U	D0	$p\overline{p}$ at 1.96 TeV	
1.507±0.010±0.008		[8] AALTONEN	11	CDF	$p\overline{p}$ at 1.96 TeV	
1.414±0.018±0.034		[9] ABAZOV	09E	D0	$p\overline{p}$ at 1.96 TeV	
$1.504\pm0.013^{+0.018}_{-0.013}$		[10] AUBERT	06G	BABR	$e^+e^- \rightarrow \Upsilon(4S)$	
1.534±0.008±0.010		[11] ABE	05B	BELL	$e^+e^- \rightarrow \Upsilon(4S)$	
1.531±0.021±0.031		[12] ABDALLAH	04E	DLPH	$e^+e^- \rightarrow Z$	
$1.523^{+0.024}_{-0.023}\pm0.022$		[13] AUBERT	03C	BABR	$e^+e^- \rightarrow \Upsilon(4S)$	
1.533±0.034±0.038		[14] AUBERT	03H	BABR	$e^+e^- \rightarrow \Upsilon(4S)$	
1.497±0.073±0.032		[15] ACOSTA	02C	CDF	$p\overline{p}$ at 1.8 TeV	
1.529±0.012±0.029		[16] AUBERT	02H	BABR	$e^+e^- \rightarrow \Upsilon(4S)$	
1.546±0.032±0.022		[17] AUBERT	01F	BABR	$e^+e^- \rightarrow \Upsilon(4S)$	
1.541±0.028±0.023		[16] ABBIENDI,G	00B	OPAL	$e^+e^- \rightarrow Z$	
1.518±0.053±0.034		[18] BARATE	00R	ALEP	$e^+e^- \rightarrow Z$	
1.523±0.057±0.053		[19] ABBIENDI	99J	OPAL	$e^+e^- \rightarrow Z$	
$1.474\pm0.039^{+0.052}_{-0.051}$		[18] ABE	98Q	CDF	$p\overline{p}$ at 1.8 TeV	
1.52 ±0.06 ±0.04		[19] ACCIARRI	98S	L3	$e^+e^- \rightarrow Z$	
1.64 ±0.08 ±0.08		[19] ABE	97J	SLD	$e^+e^- \rightarrow Z$	
1.532±0.041±0.040		[20] ABREU	97F	DLPH	$e^+e^- \rightarrow Z$	
$1.25\ ^{+0.15}_{-0.13}\pm0.05$	121	[15] BUSKULIC	96J	ALEP	$e^+e^- \rightarrow Z$	OCCUR=3
$1.49\ ^{+0.17}_{-0.15}\ ^{+0.08}_{-0.06}$		[21] BUSKULIC	96J	ALEP	$e^+e^- \rightarrow Z$	OCCUR=4
$1.61\ ^{+0.14}_{-0.13}\pm0.08$		[18,22] ABREU	95Q	DLPH	$e^+e^- \rightarrow Z$	
1.63 ±0.14 ±0.13		[23] ADAM	95	DLPH	$e^+e^- \rightarrow Z$	
1.53 ±0.12 ±0.08		[18,24] AKERS	95T	OPAL	$e^+e^- \rightarrow Z$	
• • • We do not use the following data for averages, fits, limits, etc. • • •						
$1.501^{+0.078}_{-0.074}\pm0.050$		[4] ABAZOV	07S	D0	Repl. by ABAZOV 12U	
1.524±0.030±0.016		[4] ABULENCIA	07A	CDF	Repl. by AALTONEN 11	
$1.473^{+0.052}_{-0.050}\pm0.023$		[9] ABAZOV	05B	D0	Repl. by ABAZOV 05W	
$1.40\ ^{+0.11}_{-0.10}\pm0.03$		[4] ABAZOV	05C	D0	Repl. by ABAZOV 07S	
1.530±0.043±0.023		[9] ABAZOV	05W	D0	Repl. by ABAZOV 09E	
1.54 ±0.05 ±0.02		[25] ACOSTA	05	CDF	Repl. by AALTONEN 11	
1.554±0.030±0.019		[17] ABE	02H	BELL	Repl. by ABE 05B	
1.58 ±0.09 ±0.02		[15] ABE	98B	CDF	Repl. by ACOSTA 02C	
1.54 ±0.08 ±0.06		[18] ABE	96C	CDF	Repl. by ABE 98Q	
1.55 ±0.06 ±0.03		[26] BUSKULIC	96J	ALEP	$e^+e^- \rightarrow Z$	
1.61 ±0.07 ±0.04		[18] BUSKULIC	96J	ALEP	Repl. by BARATE 00R	OCCUR=2
1.62 ±0.12		[27] ADAM	95	DLPH	$e^+e^- \rightarrow Z$	OCCUR=2
1.57 ±0.18 ±0.08	121	[15] ABE	94D	CDF	Repl. by ABE 98B	
$1.17\ ^{+0.29}_{-0.23}\pm0.16$	96	[18] ABREU	93D	DLPH	Sup. by ABREU 95Q	
1.55 ±0.25 ±0.18	76	[23] ABREU	93G	DLPH	Sup. by ADAM 95	
$1.51\ ^{+0.24}_{-0.23}\ ^{+0.12}_{-0.14}$	78	[18] ACTON	93C	OPAL	Sup. by AKERS 95T	

$1.52\ ^{+0.20}_{-0.18}\ ^{+0.07}_{-0.13}$	77	[18] BUSKULIC	93D	ALEP	Sup. by BUSKULIC 96J
$1.20\ ^{+0.52}_{-0.36}\ ^{+0.16}_{-0.14}$	15	[28] WAGNER	90	MRK2	E^{ee}_{cm}= 29 GeV
$0.82\ ^{+0.57}_{-0.37}\ \pm 0.27$		[29] AVERILL	89	HRS	E^{ee}_{cm}= 29 GeV

[1] Measured using $B^0 \to D^{(*)-}\pi^+$ decays. NODE=S042T;LINKAGE=N

[2] Measured using $B^0 \to J/\psi K^*(892)^0$ and $B^0 \to J/\psi K^0_S$ decays. NODE=S042T;LINKAGE=G

[3] Measured using $B^0 \to D^-\mu^+\nu X$ decays. NODE=S042T;LINKAGE=AV

[4] Measured mean life using $B^0 \to J/\psi K^0_S$ decays. NODE=S042T;LINKAGE=AO

[5] Measured using $B^0 \to J/\psi K^{*0}$ decays. NODE=S042T;LINKAGE=B

[6] Measured using $B^0 \to K^+\pi^-$ decays. NODE=S042T;LINKAGE=D

[7] Measured with $B^0_d \to J/\psi(\mu^+\mu^-)\ K^0_S(\pi^+\pi^-)$ decays. NODE=S042T;LINKAGE=AD

[8] Measured mean life using fully reconstructed decays ($J/\psi K^{(*)}$). NODE=S042T;LINKAGE=AA

[9] Measured mean life using $B^0 \to J/\psi K^{*0}$ decays. NODE=S042T;LINKAGE=AZ

[10] Measured using a simultaneous fit of the B^0 lifetime and $\overline{B}^0 B^0$ oscillation frequency Δm_d in the partially reconstructed $B^0 \to D^{*-}\ell\nu$ decays. NODE=S042T;LINKAGE=AU

[11] Measurement performed using a combined fit of *CP*-violation, mixing and lifetimes. NODE=S042T;LINKAGE=AE

[12] Measurement performed using an inclusive reconstruction and B flavor identification technique. NODE=S042T;LINKAGE=AB

[13] AUBERT 03C uses a sample of approximately 14,000 exclusively reconstructed $B^0 \to D^*(2010)^-\ell\nu$ and simultaneously measures the lifetime and oscillation frequency. NODE=S042T;LINKAGE=C3

[14] Measurement performed with decays $B^0 \to D^{*-}\pi^+$ and $B^0 \to D^{*-}\rho^+$ using a partial reconstruction technique. NODE=S042T;LINKAGE=BH

[15] Measured mean life using fully reconstructed decays. NODE=S042T;LINKAGE=CD

[16] Data analyzed using partially reconstructed $\overline{B}^0 \to D^{*+}\ell^-\overline{\nu}$ decays. NODE=S042T;LINKAGE=C2

[17] Events are selected in which one B meson is fully reconstructed while the second B meson is reconstructed inclusively. NODE=S042T;LINKAGE=FT

[18] Data analyzed using $D/D^*\ell$X event vertices. NODE=S042T;LINKAGE=C

[19] Data analyzed using charge of secondary vertex. NODE=S042T;LINKAGE=M

[20] Data analyzed using inclusive $D/D^*\ell X$. NODE=S042T;LINKAGE=L

[21] Measured mean life using partially reconstructed $D^{*-}\pi^+$X vertices. NODE=S042T;LINKAGE=I

[22] ABREU 95Q assumes B($B^0 \to D^{**-}\ell^+\nu_\ell$) = 3.2 ± 1.7%. NODE=S042T;LINKAGE=CQ

[23] Data analyzed using vertex-charge technique to tag B charge. NODE=S042T;LINKAGE=F

[24] AKERS 95T assumes B($B^0 \to D_s{}^{(*)} D^{0\,(*)}$) = 5.0 ± 0.9% to find B^+/B^0 yield. NODE=S042T;LINKAGE=H

[25] Measured using the time-dependent angular analysis of $B^0_d \to J/\psi K^{*0}$ decays. NODE=S042T;LINKAGE=AC

[26] Combined result of $D/D^*\ell$x analysis, fully reconstructed B analysis, and partially reconstructed $D^{*-}\pi^+$X analysis. NODE=S042T;LINKAGE=J

[27] Combined ABREU 95Q and ADAM 95 result. NODE=S042T;LINKAGE=K

[28] WAGNER 90 tagged B^0 mesons by their decays into $D^{*-}e^+\nu$ and $D^{*-}\mu^+\nu$ where the D^{*-} is tagged by its decay into $\pi^-\overline{D}^0$. NODE=S042T;LINKAGE=BB

[29] AVERILL 89 is an estimate of the B^0 mean lifetime assuming that $B^0 \to D^{*+}$ + X always. NODE=S042T;LINKAGE=A

$\tau_{B^0}/\tau_{\overline{B}^0}$

NODE=S042DT3
NODE=S042DT3

VALUE	DOCUMENT ID		TECN	COMMENT
1.000±0.008±0.009	[1] AAIJ	14E	LHCB	pp at 7 TeV

[1] Measured using $B^0 \to J/\psi K^{*0}$ decays. NODE=S042DT3;LINKAGE=A

MEAN LIFE RATIO τ_{B^+}/τ_{B^0}

NODE=S042212

τ_{B^+}/τ_{B^0} (direct measurements)

NODE=S042DT1
NODE=S042DT1

→ UNCHECKED ←

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
1.076±0.004 OUR EVALUATION		(Produced by HFLAV)			
1.074±0.005±0.003		[1] AAIJ	14E	LHCB	pp at 7 TeV
1.088±0.009±0.004		[2] AALTONEN	11	CDF	$p\overline{p}$ at 1.96 TeV
1.080±0.016±0.014		[3] ABAZOV	05D	D0	$p\overline{p}$ at 1.96 TeV
1.066±0.008±0.008		[4] ABE	05B	BELL	$e^+e^- \to \Upsilon(4S)$
1.060±0.021±0.024		[5] ABDALLAH	04E	DLPH	$e^+e^- \to Z$
1.093±0.066±0.028		[6] ACOSTA	02C	CDF	$p\overline{p}$ at 1.8 TeV
1.082±0.026±0.012		[7] AUBERT	01F	BABR	$e^+e^- \to \Upsilon(4S)$
1.085±0.059±0.018		[3] BARATE	00R	ALEP	$e^+e^- \to Z$
1.079±0.064±0.041		[8] ABBIENDI	99J	OPAL	$e^+e^- \to Z$
$1.110\pm0.056\ ^{+0.033}_{-0.030}$		[3] ABE	98Q	CDF	$p\overline{p}$ at 1.8 TeV
1.09 ±0.07 ±0.03		[8] ACCIARRI	98S	L3	$e^+e^- \to Z$
1.01 ±0.07 ±0.06		[8] ABE	97J	SLD	$e^+e^- \to Z$

1.27	$^{+0.23}_{-0.19}$	$^{+0.03}_{-0.02}$		[6] BUSKULIC	96J	ALEP	$e^+e^- \rightarrow Z$
1.00	$^{+0.17}_{-0.15}$	±0.10		[3,9] ABREU	95Q	DLPH	$e^+e^- \rightarrow Z$
1.06	$^{+0.13}_{-0.11}$	±0.10		[10] ADAM	95	DLPH	$e^+e^- \rightarrow Z$
0.99	±0.14	$^{+0.05}_{-0.04}$		[3,11] AKERS	95T	OPAL	$e^+e^- \rightarrow Z$

OCCUR=3

• • • We do not use the following data for averages, fits, limits, etc. • • •

1.091	±0.023	±0.014		[7] ABE	02H	BELL	Repl. by ABE 05B
1.06	±0.07	±0.02		[6] ABE	98B	CDF	Repl. by ACOSTA 02C
1.01	±0.11	±0.02		[3] ABE	96C	CDF	Repl. by ABE 98Q
1.03	±0.08	±0.02		[12] BUSKULIC	96J	ALEP	$e^+e^- \rightarrow Z$
0.98	±0.08	±0.03		[3] BUSKULIC	96J	ALEP	Repl. by BARATE 00R
1.02	±0.16	±0.05	269	[6] ABE	94D	CDF	Repl. by ABE 98B
1.11	$^{+0.51}_{-0.39}$	±0.11	188	[3] ABREU	93D	DLPH	Sup. by ABREU 95Q
1.01	$^{+0.29}_{-0.22}$	±0.12	253	[10] ABREU	93G	DLPH	Sup. by ADAM 95
1.0	$^{+0.33}_{-0.25}$	±0.08	130	ACTON	93C	OPAL	Sup. by AKERS 95T
0.96	$^{+0.19}_{-0.15}$	$^{+0.18}_{-0.12}$	154	[3] BUSKULIC	93D	ALEP	Sup. by BUSKULIC 96J

OCCUR=2

[1] Measured using $B \rightarrow J/\psi K^{(*)}$ decays. NODE=S042DT1;LINKAGE=A

[2] Measured mean life using fully reconstructed decays ($J/\psi K^{(*)}$). NODE=S042DT1;LINKAGE=AA

[3] Data analyzed using $D/D^* \mu X$ vertices. NODE=S042DT1;LINKAGE=G

[4] Measurement performed using a combined fit of CP-violation, mixing and lifetimes. NODE=S042DT1;LINKAGE=AE

[5] Measurement performed using an inclusive reconstruction and B flavor identification technique. NODE=S042DT1;LINKAGE=AB

[6] Measured using fully reconstructed decays. NODE=S042DT1;LINKAGE=CD

[7] Events are selected in which one B meson is fully reconstructed while the second B meson is reconstructed inclusively. NODE=S042DT1;LINKAGE=FT

[8] Data analyzed using charge of secondary vertex. NODE=S042DT1;LINKAGE=M

[9] ABREU 95Q assumes B($B^0 \rightarrow D^{**-} \ell^+ \nu_\ell$) = 3.2 ± 1.7%. NODE=S042DT1;LINKAGE=CQ

[10] Data analyzed using vertex-charge technique to tag B charge. NODE=S042DT1;LINKAGE=F

[11] AKERS 95T assumes B($B^0 \rightarrow D_s^{(*)} D^{0(*)}$) = 5.0 ± 0.9% to find B^+/B^0 yield. NODE=S042DT1;LINKAGE=H

[12] Combined result of $D/D^* \ell X$ analysis and fully reconstructed B analysis. NODE=S042DT1;LINKAGE=GC

τ_{B^+}/τ_{B^0} (inferred from branching fractions)

NODE=S042DT2

These measurements are inferred from the branching fractions for semileptonic decay or other spectator-dominated decays by assuming that the rates for such decays are equal for B^0 and B^+. We do not use measurements which assume equal production of B^0 and B^+ because of the large uncertainty in the production ratio.

NODE=S042DT2

NODE=S042DT2

VALUE			*CL%*	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
1.07	**±0.04**	**OUR AVERAGE**						
1.07	±0.04	±0.03			URQUIJO	07	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
1.067	±0.041	±0.033			AUBERT,B	06Y	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.95	$^{+0.117}_{-0.080}$	±0.091			[1] ARTUSO	97	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
1.15	±0.17	±0.06			[2] JESSOP	97	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
0.93	±0.18	±0.12			[3] ATHANAS	94	CLE2	Sup. by ARTUSO 97
0.91	±0.27	±0.21			[4] ALBRECHT	92C	ARG	$e^+e^- \rightarrow \Upsilon(4S)$
1.0	±0.4			29	[4,5] ALBRECHT	92G	ARG	$e^+e^- \rightarrow \Upsilon(4S)$
0.89	±0.19	±0.13			[4] FULTON	91	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$
1.00	±0.23	±0.14			[4] ALBRECHT	89L	ARG	$e^+e^- \rightarrow \Upsilon(4S)$
0.49	to 2.3		90		[6] BEAN	87B	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$

[1] ARTUSO 97 uses partial reconstruction of $B \rightarrow D^* \ell \nu_\ell$ and independent of B^0 and B^+ production fraction. NODE=S042DT2;LINKAGE=B

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042DT2;LINKAGE=JJ

[3] ATHANAS 94 uses events tagged by fully reconstructed B^- decays and partially or fully reconstructed B^0 decays. NODE=S042DT2;LINKAGE=E

[4] Assumes equal production of B^0 and B^+. NODE=S042DT2;LINKAGE=A

[5] ALBRECHT 92G data analyzed using $B \rightarrow D_s \overline{D}$, $D_s \overline{D}^*$, $D_s^* \overline{D}$, $D_s^* \overline{D}^*$ events. NODE=S042DT2;LINKAGE=D

[6] BEAN 87B assume the fraction of $B^0 \overline{B}^0$ events at the $\Upsilon(4S)$ is 0.41. NODE=S042DT2;LINKAGE=F

$\Delta\Gamma_{B^0_d} / \Gamma_{B^0_d}$

NODE=S042DGS

$\Gamma_{B^0_d}$ and $\Delta\Gamma_{B^0_d}$ are the decay rate average and difference between two B^0_d *CP* eigenstates (light − heavy). The λ_{CP} characterizes B^0 and $\overline{B}^0$ decays to states of charmonium plus K^0_L, see the review on "*CP* Violation" in the reviews section. NODE=S042DGS

NODE=S042DGS

→ UNCHECKED ←

VALUE (units 10^{-2})	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
0.1 ±1.0 OUR EVALUATION (Produced by HFLAV)					
0.1 ±1.0 OUR AVERAGE					
3.4 ±2.3 ±2.4		[1] SIRUNYAN	18BY	CMS	pp at 8 TeV
− 0.1 ±1.1 ±0.9		[2] AABOUD	16G	ATLS	pp at 7, 8 TeV
− 4.4 ±2.5 ±1.1		[3] AAIJ	14E	LHCB	pp at 7 TeV
1.7 ±1.8 ±1.1		[4] HIGUCHI	12	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
0.8 ±3.7 ±1.8		[5] AUBERT,B	04C	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
0 ±9		[6] ABDALLAH	03B	DLPH	$e^+e^- \rightarrow Z$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.50±1.38		ABAZOV	14	D0	$p\overline{p}$ at 1.96 TeV
< 80	95	[7] BEHRENS	00B	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Measured using $B^0 \rightarrow J/\psi K^*(892)^0$ and $B^0 \rightarrow J/\psi K^0_S$ decays, and assuming β = 21.9 ± 0.7 degrees. NODE=S042DGS;LINKAGE=C

[2] Measured from the ratio of decay time distributions of $B^0 \rightarrow J/\psi K^0_S$ and $B^0 \rightarrow J/\psi K^{*0}$ decays. NODE=S042DGS;LINKAGE=B

[3] Measured using the effective lifetimes of $B^0 \rightarrow J/\psi K^0_S$ and $B^0 \rightarrow J/\psi K^{*0}$ decays. NODE=S042DGS;LINKAGE=A

[4] Reports $-\Delta\Gamma_d/\Gamma_d$ using $B^0 \rightarrow J/\psi K^0_S$, $J/\psi K^0_L$, $D^-\pi^+$, $D^{*-}\pi^+$, $D^{*-}\rho^+$, and $D^{*-}\ell^+\nu$ decays. NODE=S042DGS;LINKAGE=HI

[5] Corresponds to 90% confidence range [−0.084, 0.068]. NODE=S042DGS;LINKAGE=AB

[6] Used the measured τ_{B^0} = 1.55 ± 0.03 ps. Corresponds to an upper limit of < 0.18 at 95% C.L. NODE=S042DGS;LINKAGE=BL

[7] BEHRENS 00B uses high-momentum lepton tags and partially reconstructed $\overline{B}^0 \rightarrow D^{*+}\pi^-$, ρ^- decays to determine the flavor of the B meson. Assumes Δ_{md}=0.478 ± 0.018 ps^{-1} and τ_{B^0}=1.548 ± 0.032 ps. NODE=S042DGS;LINKAGE=KS

B^0 DECAY MODES

NODE=S042215;NODE=S042

$\overline{B}^0$ modes are charge conjugates of the modes below. Reactions indicate the weak decay vertex and do not include mixing. Modes which do not identify the charge state of the B are listed in the $B^\pm/B^0$ ADMIXTURE section. NODE=S042

The branching fractions listed below assume 50% $B^0\overline{B}^0$ and 50% B^+B^- production at the $\Upsilon(4S)$. We have attempted to bring older measurements up to date by rescaling their assumed $\Upsilon(4S)$ production ratio to 50:50 and their assumed D, D_s, D^*, and ψ branching ratios to current values whenever this would affect our averages and best limits significantly.

Indentation is used to indicate a subchannel of a previous reaction. All resonant subchannels have been corrected for resonance branching fractions to the final state so the sum of the subchannel branching fractions can exceed that of the final state.

For inclusive branching fractions, *e.g.*, $B \rightarrow D^\pm X$, the values usually are multiplicities, not branching fractions. They can be greater than one.

	Mode		Fraction (Γ_i/Γ)	Scale factor/ Confidence level	
Γ_1	$\ell^+\nu_\ell X$	[a]	(10.33± 0.28) %		CLUMP=A;DESIG=94
Γ_2	$e^+\nu_e X_c$		(10.1 ± 0.4) %		DESIG=375
Γ_3	$\ell^+\nu_\ell X_u$	[a]	(1.51± 0.19) × 10^{-3}		DESIG=612
Γ_4	$D\ell^+\nu_\ell X$	[a]	(9.1 ± 0.8) %		DESIG=396
Γ_5	$D^-\ell^+\nu_\ell$	[a]	(2.12± 0.06) %		DESIG=37
Γ_6	$D^-\tau^+\nu_\tau$		(9.9 ± 2.1) × 10^{-3}		DESIG=416
Γ_7	$D^*(2010)^-\ell^+\nu_\ell$	[a]	(4.90± 0.12) %		DESIG=181
Γ_8	$D^*(2010)^-e^+\nu_e$				DESIG=625
Γ_9	$D^*(2010)^-\mu^+\nu_\mu$				DESIG=626
Γ_{10}	$D^*(2010)^-\tau^+\nu_\tau$		(1.48± 0.09) %	S=1.2	DESIG=390
Γ_{11}	$\overline{D}^{(*)}n\pi\ell^+\nu_\ell(n \geq 1)$	[a]	(2.3 ± 0.5) %		DESIG=423

Γ_{12}	$\overline{D}^0 \pi^- \ell^+ \nu_\ell$	[a]	$(3.64 \pm 0.20) \times 10^{-3}$		DESIG=311
Γ_{13}	$D_0^*(2300)^- \ell^+ \nu_\ell$, $D_0^{*-} \to \overline{D}^0 \pi^-$	[a]	$< 4.4 \times 10^{-4}$	CL=90%	DESIG=418
Γ_{14}	$D_2^*(2460)^- \ell^+ \nu_\ell$, $D_2^{*-} \to \overline{D}^0 \pi^-$	[a]	$(1.41 \pm 0.20) \times 10^{-3}$	S=1.7	DESIG=419
Γ_{15}	$\overline{D}^{*0} \pi^- \ell^+ \nu_\ell$	[a]	$(5.44 \pm 0.28) \times 10^{-3}$		DESIG=312
Γ_{16}	$D_1(2420)^- \ell^+ \nu_\ell$, $D_1^- \to \overline{D}^{*0} \pi^-$	[a]	$(2.85 \pm 0.25) \times 10^{-3}$		DESIG=420
Γ_{17}	$D_1(2420)^- \ell^+ \nu_\ell$, $D_1^- \to D^- \pi^+ \pi^-$	[a]	$(1.02 \pm 0.16) \times 10^{-3}$		DESIG=623
Γ_{18}	$D_1'(2430)^- \ell^+ \nu_\ell$, $D_1'^- \to \overline{D}^{*0} \pi^-$	[a]	$(2.5 \pm 0.6) \times 10^{-3}$		DESIG=421
Γ_{19}	$D_2^*(2460)^- \ell^+ \nu_\ell$, $D_2^{*-} \to \overline{D}^{*0} \pi^-$	[a]	$(6.6 \pm 1.1) \times 10^{-4}$		DESIG=422
Γ_{20}	$D^- \pi^+ \pi^- \ell^+ \nu_\ell$	[a]	$(1.45 \pm 0.22) \times 10^{-3}$		DESIG=556
Γ_{21}	$D^{*-} \pi^+ \pi^- \ell^+ \nu_\ell$	[a]	$(5.1 \pm 2.3) \times 10^{-4}$		DESIG=557
Γ_{22}	$\rho^- \ell^+ \nu_\ell$	[a]	$(2.94 \pm 0.21) \times 10^{-4}$		DESIG=95
Γ_{23}	$\pi^- \ell^+ \nu_\ell$	[a]	$(1.50 \pm 0.05) \times 10^{-4}$		DESIG=150
Γ_{24}	$\pi^- \mu^+ \nu_\mu$				DESIG=83
Γ_{25}	$\pi^- \tau^+ \nu_\tau$		$< 2.5 \times 10^{-4}$	CL=90%	DESIG=548

Inclusive modes NODE=S042;CLUMP=I

Γ_{26}	$K^\pm X$	(78 ± 8) %		DESIG=151
Γ_{27}	$D^0 X$	(8.1 ± 1.5) %		DESIG=290
Γ_{28}	$\overline{D}^0 X$	(47.4 ± 2.8) %		DESIG=291
Γ_{29}	$D^+ X$	< 3.9 %	CL=90%	DESIG=292
Γ_{30}	$D^- X$	(36.9 ± 3.3) %		DESIG=293
Γ_{31}	$D_s^+ X$	$(10.3 {}^{+2.1}_{-1.8})$ %		DESIG=294
Γ_{32}	$D_s^- X$	< 2.6 %	CL=90%	DESIG=295
Γ_{33}	$\Lambda_c^+ X$	< 3.1 %	CL=90%	DESIG=296
Γ_{34}	$\overline{\Lambda}_c^- X$	$(5.0 {}^{+2.1}_{-1.5})$ %		DESIG=297
Γ_{35}	$\overline{c} X$	(95 ± 5) %		DESIG=298
Γ_{36}	$c X$	(24.6 ± 3.1) %		DESIG=299
Γ_{37}	$\overline{c}/c X$	(119 ± 6) %		DESIG=300

***D*, *D**, or *D_s* modes** NODE=S042;CLUMP=B

Γ_{38}	$D^- \pi^+$	$(2.51 \pm 0.08) \times 10^{-3}$	DESIG=30
Γ_{39}	$D^- \rho^+$	$(7.6 \pm 1.2) \times 10^{-3}$	DESIG=34
Γ_{40}	$D^- K^0 \pi^+$	$(4.9 \pm 0.9) \times 10^{-4}$	DESIG=313
Γ_{41}	$D^- K^*(892)^+$	$(4.5 \pm 0.7) \times 10^{-4}$	DESIG=209
Γ_{42}	$D^- \omega \pi^+$	$(2.8 \pm 0.6) \times 10^{-3}$	DESIG=205
Γ_{43}	$D^- K^+$	$(2.05 \pm 0.08) \times 10^{-4}$	DESIG=201
Γ_{44}	$D^- K^+ \pi^+ \pi^-$	$(3.5 \pm 0.8) \times 10^{-4}$	DESIG=508
Γ_{45}	$D^- K^+ \overline{K}^0$	$(1.64 \pm 0.26) \times 10^{-4}$	DESIG=216
Γ_{46}	$D^- K^+ \overline{K}^*(892)^0$	$(7.7 \pm 0.6) \times 10^{-4}$	DESIG=218
Γ_{47}	$\overline{D}^0 \pi^+ \pi^-$	$(8.8 \pm 0.5) \times 10^{-4}$	DESIG=1
Γ_{48}	$D^*(2010)^- \pi^+$	$(2.66 \pm 0.07) \times 10^{-3}$	DESIG=2
Γ_{49}	$\overline{D}^0 K^+ K^-$	$(6.1 \pm 0.5) \times 10^{-5}$	DESIG=507
Γ_{50}	$D^- \pi^+ \pi^+ \pi^-$	$(6.0 \pm 0.6) \times 10^{-3}$	DESIG=88
Γ_{51}	$(D^- \pi^+ \pi^+ \pi^-)$ nonresonant	$(3.9 \pm 1.9) \times 10^{-3}$	DESIG=89
Γ_{52}	$D^- \pi^+ \rho^0$	$(1.1 \pm 1.0) \times 10^{-3}$	DESIG=91
Γ_{53}	$D^- a_1(1260)^+$	$(6.0 \pm 3.3) \times 10^{-3}$	DESIG=93
Γ_{54}	$D^*(2010)^- \pi^+ \pi^0$	(1.5 ± 0.5) %	DESIG=19
Γ_{55}	$D^*(2010)^- \rho^+$	$(6.8 \pm 0.9) \times 10^{-3}$	DESIG=3
Γ_{56}	$D^*(2010)^- K^+$	$(2.16 \pm 0.08) \times 10^{-4}$	DESIG=202
Γ_{57}	$D^*(2010)^- K^0 \pi^+$	$(3.0 \pm 0.8) \times 10^{-4}$	DESIG=314
Γ_{58}	$D^*(2010)^- K^*(892)^+$	$(3.3 \pm 0.6) \times 10^{-4}$	DESIG=210
Γ_{59}	$D^*(2010)^- K^+ \overline{K}^0$	$(1.8 \pm 0.4) \times 10^{-4}$	DESIG=217
Γ_{60}	$D^*(2010)^- K^+ \overline{K}^*(892)^0$	$(1.31 \pm 0.13) \times 10^{-3}$	DESIG=219

Γ_{61}	$D^*(2010)^- \pi^+ \pi^+ \pi^-$	(7.21± 0.29) $\times 10^{-3}$		DESIG=20
Γ_{62}	($D^*(2010)^- \pi^+ \pi^+ \pi^-$) non-resonant	(0.0 ± 2.5) $\times 10^{-3}$		DESIG=90
Γ_{63}	$D^*(2010)^- \pi^+ \rho^0$	(5.7 ± 3.2) $\times 10^{-3}$		DESIG=92
Γ_{64}	$D^*(2010)^- a_1(1260)^+$	(1.30± 0.27) %		DESIG=87
Γ_{65}	$\overline{D}_1(2420)^0 \pi^- \pi^+$, $\overline{D}{}_1^0 \rightarrow D^{*-} \pi^+$	(1.47± 0.35) $\times 10^{-4}$		DESIG=523
Γ_{66}	$D^*(2010)^- K^+ \pi^- \pi^+$	(4.7 ± 0.4) $\times 10^{-4}$		DESIG=524
Γ_{67}	$D^*(2010)^- \pi^+ \pi^+ \pi^- \pi^0$	(1.76± 0.27) %		DESIG=67
Γ_{68}	$D^{*-} 3\pi^+ 2\pi^-$	(4.7 ± 0.9) $\times 10^{-3}$		DESIG=289
Γ_{69}	$D^*(2010)^- \omega \pi^+$	(2.46± 0.18) $\times 10^{-3}$	S=1.2	DESIG=204
Γ_{70}	$\overline{D}_1(2430)^0 \omega$, $\overline{D}{}_1^0 \rightarrow D^{*-} \pi^+$	(2.7 $^{+0.8}_{-0.4}$) $\times 10^{-4}$		DESIG=361
Γ_{71}	$D^{*-} \rho(1450)^+$, $\rho^+ \rightarrow \omega \pi^+$	(1.07 $^{+0.40}_{-0.34}$) $\times 10^{-3}$		DESIG=558
Γ_{72}	$\overline{D}_1(2420)^0 \omega$, $\overline{D}{}_1^0 \rightarrow D^{*-} \pi^+$	(7.0 ± 2.2) $\times 10^{-5}$		DESIG=559
Γ_{73}	$\overline{D}{}_2^*(2460)^0 \omega$, $\overline{D}{}_2^0 \rightarrow D^{*-} \pi^+$	(4.0 ± 1.4) $\times 10^{-5}$		DESIG=560
Γ_{74}	$D^{*-} b_1(1235)^+$, $b_1^+ \rightarrow \omega \pi^+$	< 7 $\times 10^{-5}$	CL=90%	DESIG=561
Γ_{75}	$\overline{D}{}^{**-} \pi^+$ [b]	(1.9 ± 0.9) $\times 10^{-3}$		DESIG=357
Γ_{76}	$D_1(2420)^- \pi^+$, $D_1^- \rightarrow D^- \pi^+ \pi^-$	(9.9 $^{+2.0}_{-2.5}$) $\times 10^{-5}$		DESIG=331
Γ_{77}	$D_1(2420)^- \pi^+$, $D_1^- \rightarrow D^{*-} \pi^+ \pi^-$	< 3.3 $\times 10^{-5}$	CL=90%	DESIG=332
Γ_{78}	$\overline{D}{}_2^*(2460)^- \pi^+$, $D_2^{*-} \rightarrow D^0 \pi^-$	(2.38± 0.16) $\times 10^{-4}$		DESIG=124
Γ_{79}	$\overline{D}{}_0^*(2400)^- \pi^+$, $D_0^{*-} \rightarrow D^0 \pi^-$	(7.6 ± 0.8) $\times 10^{-5}$		DESIG=385
Γ_{80}	$D_2^*(2460)^- \pi^+$, $D_2^{*-} \rightarrow D^{*-} \pi^+ \pi^-$	< 2.4 $\times 10^{-5}$	CL=90%	DESIG=333
Γ_{81}	$\overline{D}{}_2^*(2460)^- \rho^+$	< 4.9 $\times 10^{-3}$	CL=90%	DESIG=125
Γ_{82}	$D^0 \overline{D}{}^0$	(1.4 ± 0.7) $\times 10^{-5}$		DESIG=350
Γ_{83}	$D^{*0} \overline{D}{}^0$	< 2.9 $\times 10^{-4}$	CL=90%	DESIG=351
Γ_{84}	$D^- D^+$	(2.11± 0.18) $\times 10^{-4}$		DESIG=184
Γ_{85}	$D^\pm D^{*\mp}$ (CP-averaged)	(6.1 ± 0.6) $\times 10^{-4}$		DESIG=511
Γ_{86}	$D^- D_s^+$	(8.1 ± 0.6) $\times 10^{-3}$	S=1.1	DESIG=50
Γ_{87}	$\overline{D}{}^0 D_s^+ \pi^-$, m($\overline{D}{}^0 \pi^-$)>2.05 GeV			DESIG=630
Γ_{88}	$D^*(2010)^- D_s^+$	(8.2 ± 0.8) $\times 10^{-3}$		DESIG=49
Γ_{89}	$D^*(2010)^- D_s^+$, $D^{*-} \rightarrow \overline{D}{}^0 \pi^-$, m($\overline{D}{}^0 \pi^-$)>2.05 GeV			DESIG=642
Γ_{90}	$D_2^*(2460)^- D_s^+$, $D_2^{*-} \rightarrow \overline{D}{}^0 \pi^-$			DESIG=631
Γ_{91}	$D_1^*(2600)^- D_s^+$, $D_1^{*-} \rightarrow \overline{D}{}^0 \pi^-$			DESIG=632
Γ_{92}	$D_3^*(2750)^- D_s^+$, $D_3^{*-} \rightarrow \overline{D}{}^0 \pi^-$			DESIG=633
Γ_{93}	$D_1^*(2760)^- D_s^+$, $D_1^{*-} \rightarrow \overline{D}{}^0 \pi^-$			DESIG=634
Γ_{94}	$D_J^*(3000)^- D_s^+$, $D_J^{*-} \rightarrow \overline{D}{}^0 \pi^-$			DESIG=635
Γ_{95}	$T_{cs0}^*(2870)^0 \overline{D}{}^0$, $T_{cs0}^{*0} \rightarrow D_s^+ \pi^-$			DESIG=636
Γ_{96}	$D^- D_s^{*+}$	(7.4 ± 1.6) $\times 10^{-3}$		DESIG=103
Γ_{97}	$D^*(2010)^- D_s^{*+}$	(1.77± 0.14) %		DESIG=66
Γ_{98}	$D_{s0}(2317)^- K^+$, $D_{s0}^- \rightarrow D_s^- \pi^0$	(4.2 ± 1.4) $\times 10^{-5}$		DESIG=323
Γ_{99}	$D_{s0}(2317)^- \pi^+$, $D_{s0}^- \rightarrow D_s^- \pi^0$	< 2.5 $\times 10^{-5}$	CL=90%	DESIG=324
Γ_{100}	$D_{sJ}(2457)^- K^+$, $D_{sJ}^- \rightarrow D_s^- \pi^0$	< 9.4 $\times 10^{-6}$	CL=90%	DESIG=325
Γ_{101}	$D_{sJ}(2457)^- \pi^+$, $D_{sJ}^- \rightarrow D_s^- \pi^0$	< 4.0 $\times 10^{-6}$	CL=90%	DESIG=326
Γ_{102}	$D_s^- D_s^+$	< 3.6 $\times 10^{-5}$	CL=90%	DESIG=316
Γ_{103}	$D_s^{*-} D_s^+$	< 1.3 $\times 10^{-4}$	CL=90%	DESIG=317
Γ_{104}	$D_s^{*-} D_s^{*+}$	< 2.4 $\times 10^{-4}$	CL=90%	DESIG=318

Γ_{105}	$D^*_{s0}(2317)^+ D^-$, $D^{*+}_{s0} \to D^+_s \pi^0$	$(1.05 \pm 0.16) \times 10^{-3}$	S=1.1	DESIG=253
Γ_{106}	$D_{s0}(2317)^+ D^-$, $D^+_{s0} \to D^{*+}_s \gamma$	$< 9.5 \times 10^{-4}$	CL=90%	DESIG=304
Γ_{107}	$D_{s0}(2317)^+ D^*(2010)^-$, $D^+_{s0} \to D^+_s \pi^0$	$(1.5 \pm 0.6) \times 10^{-3}$		DESIG=97
Γ_{108}	$D_{sJ}(2457)^+ D^-$	$(3.5 \pm 1.1) \times 10^{-3}$		DESIG=254
Γ_{109}	$D_{sJ}(2457)^+ D^-$, $D^+_{sJ} \to D^+_s \gamma$	$(6.5 {}^{+1.7}_{-1.4}) \times 10^{-4}$		DESIG=99
Γ_{110}	$D_{sJ}(2457)^+ D^-$, $D^+_{sJ} \to D^{*+}_s \gamma$	$< 6.0 \times 10^{-4}$	CL=90%	DESIG=301
Γ_{111}	$D_{sJ}(2457)^+ D^-$, $D^+_{sJ} \to D^+_s \pi^+ \pi^-$	$< 2.0 \times 10^{-4}$	CL=90%	DESIG=302
Γ_{112}	$D_{sJ}(2457)^+ D^-$, $D^+_{sJ} \to D^+_s \pi^0$	$< 3.6 \times 10^{-4}$	CL=90%	DESIG=303
Γ_{113}	$D^*(2010)^- D_{sJ}(2457)^+$	$(9.3 \pm 2.2) \times 10^{-3}$		DESIG=98
Γ_{114}	$D_{sJ}(2457)^+ D^*(2010)$, $D^+_{sJ} \to D^+_s \gamma$	$(2.3 {}^{+0.9}_{-0.7}) \times 10^{-3}$		DESIG=100
Γ_{115}	$D^- D_{s1}(2536)^+$, $D^+_{s1} \to D^{*0} K^+ + D^{*+} K^0$	$(2.8 \pm 0.7) \times 10^{-4}$		DESIG=489
Γ_{116}	$D^- D_{s1}(2536)^+$, $D^+_{s1} \to D^{*0} K^+$	$(1.7 \pm 0.6) \times 10^{-4}$		DESIG=271
Γ_{117}	$D^- D_{s1}(2536)^+$, $D^+_{s1} \to D^{*+} K^0$	$(2.6 \pm 1.1) \times 10^{-4}$		DESIG=391
Γ_{118}	$D^*(2010)^- D_{s1}(2536)^+$, $D^+_{s1} \to D^{*0} K^+ + D^{*+} K^0$	$(5.0 \pm 1.4) \times 10^{-4}$		DESIG=490
Γ_{119}	$D^*(2010)^- D_{s1}(2536)^+$, $D^+_{s1} \to D^{*0} K^+$	$(3.3 \pm 1.1) \times 10^{-4}$		DESIG=272
Γ_{120}	$D^{*-} D_{s1}(2536)^+$, $D^+_{s1} \to D^{*+} K^0$	$(5.0 \pm 1.7) \times 10^{-4}$		DESIG=392
Γ_{121}	$D^- D_{sJ}(2573)^+$, $D^+_{sJ} \to D^0 K^+$	$(3.4 \pm 1.8) \times 10^{-5}$		DESIG=273
Γ_{122}	$D^*(2010)^- D_{sJ}(2573)^+$, $D^+_{sJ} \to D^0 K^+$	$< 2 \times 10^{-4}$	CL=90%	DESIG=274
Γ_{123}	$D^- D_{sJ}(2700)^+$, $D^+_{sJ} \to D^0 K^+$	$(7.1 \pm 1.2) \times 10^{-4}$		DESIG=545
Γ_{124}	$D^+ \pi^-$	$(7.3 \pm 1.2) \times 10^{-7}$		DESIG=488
Γ_{125}	$D^+_s \pi^-$	$(2.03 \pm 0.18) \times 10^{-5}$		DESIG=51
Γ_{126}	$D^{*+}_s \pi^-$	$(2.1 \pm 0.4) \times 10^{-5}$	S=1.4	DESIG=108
Γ_{127}	$D^+_s \rho^-$	$< 2.4 \times 10^{-5}$	CL=90%	DESIG=110
Γ_{128}	$D^{*+}_s \rho^-$	$(4.1 \pm 1.3) \times 10^{-5}$		DESIG=111
Γ_{129}	$D^+_s a^-_0$	$< 1.9 \times 10^{-5}$	CL=90%	DESIG=352
Γ_{130}	$D^{*+}_s a^-_0$	$< 3.6 \times 10^{-5}$	CL=90%	DESIG=353
Γ_{131}	$D^+_s a_1(1260)^-$	$< 2.1 \times 10^{-3}$	CL=90%	DESIG=112
Γ_{132}	$D^{*+}_s a_1(1260)^-$	$< 1.7 \times 10^{-3}$	CL=90%	DESIG=113
Γ_{133}	$D^+_s a^-_2$	$< 1.9 \times 10^{-4}$	CL=90%	DESIG=354
Γ_{134}	$D^{*+}_s a^-_2$	$< 2.0 \times 10^{-4}$	CL=90%	DESIG=355
Γ_{135}	$D^-_s K^+$	$(2.7 \pm 0.5) \times 10^{-5}$	S=2.7	DESIG=52
Γ_{136}	$D^{*-}_s K^+$	$(2.19 \pm 0.30) \times 10^{-5}$		DESIG=120
Γ_{137}	$D_{s1}(2536)^\mp K^\pm$, $D^-_{s1} \to \overline{D}^*(2007)^0 K^-$	$(5.1 \pm 0.6) \times 10^{-6}$		DESIG=637
Γ_{138}	$D^-_s K^*(892)^+$	$(3.5 \pm 1.0) \times 10^{-5}$		DESIG=114
Γ_{139}	$D^{*-}_s K^*(892)^+$	$(3.2 {}^{+1.5}_{-1.3}) \times 10^{-5}$		DESIG=115
Γ_{140}	$D^-_s \pi^+ K^0$	$(9.7 \pm 1.4) \times 10^{-5}$		DESIG=116
Γ_{141}	$D^{*-}_s \pi^+ K^0$	$< 1.10 \times 10^{-4}$	CL=90%	DESIG=117

Γ_{142}	$D_s^- K^+ \pi^+ \pi^-$	$(1.7 \pm 0.5) \times 10^{-4}$		DESIG=512
Γ_{143}	$D_s^- \pi^+ K^*(892)^0$	$< 3.0 \times 10^{-3}$	CL=90%	DESIG=118
Γ_{144}	$D_s^{*-} \pi^+ K^*(892)^0$	$< 1.6 \times 10^{-3}$	CL=90%	DESIG=119
Γ_{145}	$\overline{D}^0 K^0$	$(5.5 \pm 0.4) \times 10^{-5}$		DESIG=242
Γ_{146}	$\overline{D}^0 K^+ \pi^-$	$(8.8 \pm 1.7) \times 10^{-5}$		DESIG=319
Γ_{147}	$\overline{D}^0 K^*(892)^0$	$(4.5 \pm 0.6) \times 10^{-5}$		DESIG=243
Γ_{148}	$\overline{D}^0 K^*(1410)^0$	$< 6.7 \times 10^{-5}$	CL=90%	DESIG=551
Γ_{149}	$\overline{D}^0 K_0^*(1430)^0$	$(7 \pm 7) \times 10^{-6}$		DESIG=552
Γ_{150}	$\overline{D}^0 K_2^*(1430)^0$	$(2.1 \pm 0.9) \times 10^{-5}$		DESIG=553
Γ_{151}	$D_0^*(2300)^- K^+$, $D_0^{*-} \to \overline{D}^0 \pi^-$	$(1.9 \pm 0.9) \times 10^{-5}$		DESIG=554
Γ_{152}	$D_2^*(2460)^- K^+$, $D_2^{*-} \to \overline{D}^0 \pi^-$	$(2.03 \pm 0.35) \times 10^{-5}$		DESIG=320
Γ_{153}	$D_3^*(2760)^- K^+$, $D_3^{*-} \to \overline{D}^0 \pi^-$	$< 1.0 \times 10^{-6}$	CL=90%	DESIG=555
Γ_{154}	$\overline{D}^0 K^+ \pi^-$ nonresonant	$< 3.7 \times 10^{-5}$	CL=90%	DESIG=321
Γ_{155}	$[K^+ K^-]_D K^*(892)^0$	$(3.7 \pm 0.5) \times 10^{-5}$		DESIG=516
Γ_{156}	$[\pi^+ \pi^-]_D K^*(892)^0$	$(5.0 \pm 0.8) \times 10^{-5}$		DESIG=537
Γ_{157}	$[\pi^+ K^-]_D K^*(892)^0$			DESIG=597
Γ_{158}	$[K^+ \pi^-]_D K^*(892)^0$			DESIG=598
Γ_{159}	$[\pi^+ \pi^- \pi^+ \pi^-]_D K^{*0}$	$(4.0 \pm 0.6) \times 10^{-5}$		DESIG=596
Γ_{160}	$[\pi^+ K^- \pi^+ \pi^-]_D K^{*0}$			DESIG=599
Γ_{161}	$[K^+ \pi^- \pi^+ \pi^-]_D K^{*0}$			DESIG=600
Γ_{162}	$\overline{D}^0 \pi^0$	$(2.67 \pm 0.09) \times 10^{-4}$		DESIG=128
Γ_{163}	$\overline{D}^0 \rho^0$	$(3.21 \pm 0.21) \times 10^{-4}$		DESIG=35
Γ_{164}	$\overline{D}^0 f_2$	$(1.56 \pm 0.21) \times 10^{-4}$		DESIG=386
Γ_{165}	$\overline{D}^0 \eta$	$(2.56 \pm 0.12) \times 10^{-4}$		DESIG=129
Γ_{166}	$\overline{D}^0 \eta'$	$(1.38 \pm 0.16) \times 10^{-4}$	S=1.3	DESIG=130
Γ_{167}	$\overline{D}^0 \omega$	$(2.54 \pm 0.16) \times 10^{-4}$		DESIG=131
Γ_{168}	$\overline{D}^0 \phi$	$(7.7 \pm 2.3) \times 10^{-7}$		DESIG=638
Γ_{169}	$D^0 K^+ \pi^-$	$(5.3 \pm 3.2) \times 10^{-6}$		DESIG=322
Γ_{170}	$D^0 K^*(892)^0$	$(3.0 \pm 0.6) \times 10^{-6}$		DESIG=246
Γ_{171}	$\overline{D}^{*0} \gamma$	$< 2.5 \times 10^{-5}$	CL=90%	DESIG=187
Γ_{172}	$\overline{D}^*(2007)^0 \pi^0$	$(2.2 \pm 0.6) \times 10^{-4}$	S=2.6	DESIG=132
Γ_{173}	$\overline{D}^*(2007)^0 \rho^0$	$< 5.1 \times 10^{-4}$	CL=90%	DESIG=133
Γ_{174}	$\overline{D}^*(2007)^0 \eta$	$(2.3 \pm 0.6) \times 10^{-4}$	S=2.8	DESIG=134
Γ_{175}	$\overline{D}^*(2007)^0 \eta'$	$(1.40 \pm 0.22) \times 10^{-4}$		DESIG=135
Γ_{176}	$\overline{D}^*(2007)^0 \pi^+ \pi^-$	$(6.2 \pm 2.2) \times 10^{-4}$		DESIG=239
Γ_{177}	$\overline{D}^*(2007)^0 K^+ \pi^-$	$(5.2 \pm 1.9) \times 10^{-5}$		DESIG=613
Γ_{178}	$\overline{D}^*(2007)^0 K^0$	$(3.6 \pm 1.2) \times 10^{-5}$		DESIG=244
Γ_{179}	$\overline{D}^*(2007)^0 K^*(892)^0$	$< 6.9 \times 10^{-5}$	CL=90%	DESIG=245
Γ_{180}	$\overline{D}^*(2007)^0 \phi$	$(2.2 \pm 0.6) \times 10^{-6}$		DESIG=641
Γ_{181}	$D^*(2007)^0 K^*(892)^0$	$< 4.0 \times 10^{-5}$	CL=90%	DESIG=247
Γ_{182}	$D^*(2007)^0 \pi^+ \pi^+ \pi^- \pi^-$	$(2.7 \pm 0.5) \times 10^{-3}$		DESIG=195
Γ_{183}	$D^*(2010)^+ D^*(2010)^-$	$(8.0 \pm 0.6) \times 10^{-4}$		DESIG=154
Γ_{184}	$\overline{D}^*(2007)^0 \omega$	$(3.6 \pm 1.1) \times 10^{-4}$	S=3.1	DESIG=136
Γ_{185}	$D^*(2010)^+ D^-$	$(6.1 \pm 1.5) \times 10^{-4}$	S=1.6	DESIG=155
Γ_{186}	$D^*(2007)^0 \overline{D}^*(2007)^0$	$< 9 \times 10^{-5}$	CL=90%	DESIG=185
Γ_{187}	$D^- D^0 K^+$	$(1.07 \pm 0.11) \times 10^{-3}$		DESIG=260
Γ_{188}	$D^- D^*(2007)^0 K^+$	$(3.5 \pm 0.4) \times 10^{-3}$		DESIG=261
Γ_{189}	$D^*(2010)^- D^0 K^+$	$(2.47 \pm 0.21) \times 10^{-3}$		DESIG=262
Γ_{190}	$D^*(2010)^- D^*(2007)^0 K^+$	(1.06 ± 0.09) %		DESIG=263
Γ_{191}	$D^- D^+ K^0$	$(7.5 \pm 1.7) \times 10^{-4}$		DESIG=264
Γ_{192}	$D^*(2010)^- D^+ K^0 + D^- D^*(2010)^+ K^0$	$(6.4 \pm 0.5) \times 10^{-3}$		DESIG=265
Γ_{193}	$D^*(2010)^- D^*(2010)^+ K^0$	$(8.1 \pm 0.7) \times 10^{-3}$		DESIG=266
Γ_{194}	$D^{*-} D_{s1}(2536)^+$, $D_{s1}^+ \to D^{*+} K^0$	$(8.0 \pm 2.4) \times 10^{-4}$		DESIG=366
Γ_{195}	$\overline{D}^0 D^0 K^0$	$(2.7 \pm 1.1) \times 10^{-4}$		DESIG=267
Γ_{196}	$D^0 \overline{D}^0 K^+ \pi^-$	$(3.5 \pm 0.5) \times 10^{-4}$		DESIG=609
Γ_{197}	$\overline{D}^0 D^*(2007)^0 K^0 + \overline{D}^*(2007)^0 D^0 K^0$	$(1.1 \pm 0.5) \times 10^{-3}$		DESIG=268
Γ_{198}	$\overline{D}^*(2007)^0 D^*(2007)^0 K^0$	$(2.4 \pm 0.9) \times 10^{-3}$		DESIG=269
Γ_{199}	$(\overline{D} + \overline{D}^*)(D + D^*) K$	(3.68 ± 0.26) %		DESIG=270

Charmonium modes

NODE=S042;CLUMP=C

Γ_{200}	$\eta_c K^0$	$(9.0 \pm 1.1) \times 10^{-4}$		DESIG=189
Γ_{201}	$\eta_c(1S) K^+ \pi^-$	$(6.5 \pm 0.7) \times 10^{-4}$		DESIG=574
Γ_{202}	$\eta_c(1S) K^+ \pi^-$ (NR)	$(6.7 \pm 1.4) \times 10^{-5}$		DESIG=579
Γ_{203}	$T_{c\overline{c}}(4100)^- K^+$, $T^-_{c\overline{c}} \to \eta_c \pi^-$	$(2.2 \pm 1.1) \times 10^{-5}$		DESIG=585
Γ_{204}	$\eta_c(1S) K^*(1410)^0$	$(2.1 \pm 1.6) \times 10^{-4}$		DESIG=578
Γ_{205}	$\eta_c(1S) K_0^*(1430)^0$	$(1.8 \pm 0.4) \times 10^{-4}$		DESIG=580
Γ_{206}	$\eta_c(1S) K_2^*(1430)^0$	$(5.4 ^{+2.4}_{-2.9}) \times 10^{-5}$		DESIG=581
Γ_{207}	$\eta_c(1S) K^*(1680)^0$	$(4 \pm 4) \times 10^{-5}$		DESIG=582
Γ_{208}	$\eta_c(1S) K_0^*(1950)^0$	$(4.8 ^{+3.2}_{-4.0}) \times 10^{-5}$		DESIG=583
Γ_{209}	$\eta_c K^*(892)^0$	$(5.3 ^{+0.8}_{-0.9}) \times 10^{-4}$	S=1.7	DESIG=240
Γ_{210}	$\eta_c(2S) K^0_S$, $\eta_c \to p\overline{p}\pi^+\pi^-$	$(4.2 ^{+1.4}_{-1.2}) \times 10^{-7}$		DESIG=593
Γ_{211}	$\eta_c(2S) K^{*0}$	$< 3.9 \times 10^{-4}$	CL=90%	DESIG=436
Γ_{212}	$h_c(1P) K^0_S$	$< 1.4 \times 10^{-5}$		DESIG=592
Γ_{213}	$h_c(1P) K^{*0}$	$< 4 \times 10^{-4}$	CL=90%	DESIG=437
Γ_{214}	$J/\psi(1S) K^0$	$(8.91 \pm 0.21) \times 10^{-4}$		DESIG=23
Γ_{215}	$J/\psi(1S) K^+ \pi^-$	$(1.15 \pm 0.05) \times 10^{-3}$		DESIG=4
Γ_{216}	$J/\psi(1S) K^*(892)^0$	$(1.27 \pm 0.05) \times 10^{-3}$		DESIG=22
Γ_{217}	$J/\psi(1S) \eta K^0_S$	$(5.4 \pm 0.9) \times 10^{-5}$		DESIG=278
Γ_{218}	$J/\psi(1S) \eta' K^0_S$	$< 2.5 \times 10^{-5}$	CL=90%	DESIG=384
Γ_{219}	$J/\psi(1S) \phi K^0$	$(4.9 \pm 1.0) \times 10^{-5}$	S=1.3	DESIG=194
Γ_{220}	$J/\psi(1S) \omega K^0$	$(2.3 \pm 0.4) \times 10^{-4}$		DESIG=440
Γ_{221}	$\chi_{c0}(3915)$, $\chi_{c0} \to J/\psi\omega$	$(2.1 \pm 0.9) \times 10^{-5}$		DESIG=485
Γ_{222}	$J/\psi(1S) K(1270)^0$	$(1.3 \pm 0.5) \times 10^{-3}$		DESIG=203
Γ_{223}	$J/\psi(1S) \pi^0$	$(1.65 \pm 0.08) \times 10^{-5}$		DESIG=140
Γ_{224}	$J/\psi(1S) \eta$	$(1.08 \pm 0.23) \times 10^{-5}$	S=1.5	DESIG=153
Γ_{225}	$J/\psi(1S) \pi^+ \pi^-$	$(3.99 \pm 0.15) \times 10^{-5}$		DESIG=241
Γ_{226}	$J/\psi(1S) \pi^+ \pi^-$ nonresonant	$< 1.2 \times 10^{-5}$	CL=90%	DESIG=387
Γ_{227}	$J/\psi(1S) f_0(500)$, $f_0 \to \pi\pi$	$(8.8 ^{+1.2}_{-1.6}) \times 10^{-6}$		DESIG=513
Γ_{228}	$J/\psi(1S) f_2$	$(3.3 ^{+0.5}_{-0.6}) \times 10^{-6}$	S=1.5	DESIG=388
Γ_{229}	$J/\psi(1S) \rho^0$	$(2.55 ^{+0.18}_{-0.16}) \times 10^{-5}$		DESIG=148
Γ_{230}	$J/\psi(1S) f_0(980)$, $f_0 \to \pi^+\pi^-$	$< 1.1 \times 10^{-6}$	CL=90%	DESIG=514
Γ_{231}	$J/\psi(1S) \rho(1450)^0$, $\rho^0 \to \pi\pi$	$(2.9 ^{+1.6}_{-0.7}) \times 10^{-6}$		DESIG=515
Γ_{232}	$J/\psi \rho(1700)^0$, $\rho^0 \to \pi^+\pi^-$	$(2.0 \pm 1.3) \times 10^{-6}$		DESIG=539
Γ_{233}	$J/\psi(1S) \omega$	$(1.8 ^{+0.7}_{-0.5}) \times 10^{-5}$		DESIG=149
Γ_{234}	$J/\psi(1S) K^+ K^-$	$(2.53 \pm 0.35) \times 10^{-6}$		DESIG=525
Γ_{235}	$J/\psi(1S) a_0(980)$, $a_0 \to K^+K^-$	$(4.7 \pm 3.4) \times 10^{-7}$		DESIG=526
Γ_{236}	$J/\psi(1S) \phi$	$< 1.1 \times 10^{-7}$	CL=90%	DESIG=249
Γ_{237}	$J/\psi(1S) \eta'(958)$	$(7.6 \pm 2.4) \times 10^{-6}$		DESIG=250
Γ_{238}	$J/\psi(1S) K^0 \pi^+ \pi^-$	$(4.5 \pm 0.4) \times 10^{-4}$		DESIG=211
Γ_{239}	$J/\psi(1S) K^0 K^- \pi^+ +$ c.c.	$< 2.1 \times 10^{-5}$	CL=90%	DESIG=535
Γ_{240}	$J/\psi(1S) K^0 K^+ K^-$	$(2.5 \pm 0.7) \times 10^{-5}$	S=1.8	DESIG=532
Γ_{241}	$J/\psi(1S) K^0 K^\pm \pi^\mp$			DESIG=533
Γ_{242}	$J/\psi(1S) K^0 \rho^0$	$(5.4 \pm 3.0) \times 10^{-4}$		DESIG=212
Γ_{243}	$J/\psi(1S) K^*(892)^+ \pi^-$	$(8 \pm 4) \times 10^{-4}$		DESIG=213
Γ_{244}	$J/\psi(1S) \pi^+ \pi^- \pi^+ \pi^-$	$(1.44 \pm 0.12) \times 10^{-5}$		DESIG=530
Γ_{245}	$J/\psi(1S) f_1(1285)$	$(8.4 \pm 2.1) \times 10^{-6}$		DESIG=531
Γ_{246}	$J/\psi(1S) K^*(892)^0 \pi^+ \pi^-$	$(6.6 \pm 2.2) \times 10^{-4}$		DESIG=214
Γ_{247}	$\eta_{c2}(1D) K^0_S$, $\eta_{c2} \to h_c \gamma$	$< 3.5 \times 10^{-5}$	CL=90%	DESIG=603
Γ_{248}	$\eta_{c2}(1D) \pi^- K^+$, $\eta_{c2} \to h_c \gamma$	$< 1.0 \times 10^{-4}$	CL=90%	DESIG=604

Γ_{249}	$\chi_{c1}(3872)^- K^+$	$<$ 5 $\times 10^{-4}$		CL=90%	DESIG=330
Γ_{250}	$\chi_{c1}(3872)^- K^+$, $\chi_{c1}(3872)^- \to J/\psi(1S)\pi^-\pi^0$	[c] $<$ 4.2 $\times 10^{-6}$		CL=90%	DESIG=308
Γ_{251}	$\chi_{c1}(3872) K^0$	$(1.1 \pm 0.4) \times 10^{-4}$			DESIG=605
Γ_{252}	$\chi_{c1}(3872) K^*(892)^0$	$(9 \pm 5) \times 10^{-5}$			DESIG=606
Γ_{253}	$\chi_{c1}(3872) K^+\pi^-$	$(1.8 \pm 0.7) \times 10^{-4}$			DESIG=607
Γ_{254}	$\chi_{c1}(3872)\gamma$	$<$ 1.2 $\times 10^{-5}$		CL=90%	DESIG=608
Γ_{255}	$T_{c\overline{c}1}(4430)^\pm K^\mp$, $T^\pm_{c\overline{c}1} \to \psi(2S)\pi^\pm$	$(6.0 {}^{+3.0}_{-2.4}) \times 10^{-5}$			DESIG=438
Γ_{256}	$T_{c\overline{c}1}(4430)^\pm K^\mp$, $T^\pm_{c\overline{c}1} \to J/\psi\pi^\pm$	$(5.4 {}^{+4.0}_{-1.2}) \times 10^{-6}$			DESIG=450
Γ_{257}	$T_{c\overline{c}1}(3900)^\pm K^\mp$, $T^\pm_{c\overline{c}1} \to J/\psi\pi^\pm$	$<$ 9 $\times 10^{-7}$			DESIG=563
Γ_{258}	$T_{c\overline{c}1}(4200)^\pm K^\mp$, $T^\pm_{c\overline{c}1} \to J/\psi\pi^\pm$	$(2.2 {}^{+1.3}_{-0.8}) \times 10^{-5}$			DESIG=564
Γ_{259}	$J/\psi(1S) p\overline{p}$	$(4.5 \pm 0.6) \times 10^{-7}$			DESIG=248
Γ_{260}	$J/\psi(1S)\gamma$	$<$ 1.5 $\times 10^{-6}$		CL=90%	DESIG=279
Γ_{261}	$J/\psi\mu^+\mu^-$, $J/\psi \to \mu^+\mu^-$	$<$ 1.0 $\times 10^{-9}$		CL=95%	DESIG=620
Γ_{262}	$J/\psi(1S)\overline{D}^0$	$<$ 9.6 $\times 10^{-7}$		CL=90%	DESIG=306
Γ_{263}	$\psi(2S)\pi^0$	$(1.17 \pm 0.19) \times 10^{-5}$			DESIG=549
Γ_{264}	$\psi(2S) K^0$	$(5.8 \pm 0.5) \times 10^{-4}$			DESIG=68
Γ_{265}	$\psi(2S) K^0\pi^+\pi^-$	$(2.81 \pm 0.30) \times 10^{-4}$			DESIG=615
Γ_{266}	$\psi(3770) K^0$, $\psi \to \overline{D}^0 D^0$	$<$ 1.23 $\times 10^{-4}$		CL=90%	DESIG=393
Γ_{267}	$\psi(3770) K^0$, $\psi \to D^- D^+$	$<$ 1.88 $\times 10^{-4}$		CL=90%	DESIG=394
Γ_{268}	$\psi(2S)\pi^+\pi^-$	$(2.24 \pm 0.35) \times 10^{-5}$			DESIG=527
Γ_{269}	$\psi(2S) K^+\pi^-$	$(5.8 \pm 0.4) \times 10^{-4}$			DESIG=70
Γ_{270}	$\psi(2S) K^*(892)^0$	$(5.9 \pm 0.4) \times 10^{-4}$			DESIG=69
Γ_{271}	$\chi_{c0} K^0$	$(1.9 \pm 0.4) \times 10^{-4}$			DESIG=190
Γ_{272}	$\chi_{c0} K^*(892)^0$	$(1.7 \pm 0.4) \times 10^{-4}$			DESIG=327
Γ_{273}	$\chi_{c1}\pi^0$	$(1.12 \pm 0.28) \times 10^{-5}$			DESIG=444
Γ_{274}	$\chi_{c1} K^0$	$(3.95 \pm 0.27) \times 10^{-4}$			DESIG=126
Γ_{275}	$\chi_{c1}\pi^- K^+$	$(4.97 \pm 0.30) \times 10^{-4}$			DESIG=441
Γ_{276}	$\chi_{c1} K^*(892)^0$	$(2.38 \pm 0.19) \times 10^{-4}$	S=1.2		DESIG=127
Γ_{277}	$T_{c\overline{c}}(4050)^- K^+$, $T^-_{c\overline{c}} \to \chi_{c1}\pi^-$	$(3.0 {}^{+4.0}_{-1.8}) \times 10^{-5}$			DESIG=442
Γ_{278}	$T_{c\overline{c}}(4250)^- K^+$, $T^-_{c\overline{c}} \to \chi_{c1}\pi^-$	$(4.0 {}^{+20.0}_{-1.0}) \times 10^{-5}$			DESIG=443
Γ_{279}	$\chi_{c1}\pi^+\pi^- K^0$	$(3.2 \pm 0.5) \times 10^{-4}$			DESIG=565
Γ_{280}	$\chi_{c1}\pi^-\pi^0 K^+$	$(3.5 \pm 0.6) \times 10^{-4}$			DESIG=566
Γ_{281}	$\chi_{c2} K^0$	$<$ 1.5 $\times 10^{-5}$		CL=90%	DESIG=328
Γ_{282}	$\chi_{c2} K^*(892)^0$	$(4.9 \pm 1.2) \times 10^{-5}$	S=1.1		DESIG=329
Γ_{283}	$\chi_{c2}\pi^- K^+$	$(7.2 \pm 1.0) \times 10^{-5}$			DESIG=568
Γ_{284}	$\chi_{c2}\pi^+\pi^- K^0$	$<$ 1.70 $\times 10^{-4}$		CL=90%	DESIG=569
Γ_{285}	$\chi_{c2}\pi^-\pi^0 K^+$	$<$ 7.4 $\times 10^{-5}$		CL=90%	DESIG=567
Γ_{286}	$\psi(4660) K^0$, $\psi \to \Lambda_c^+\Lambda_c^-$	$<$ 2.3 $\times 10^{-4}$		CL=90%	DESIG=576
Γ_{287}	$\psi(4230)^0 K^0$, $\psi^0 \to J/\psi\pi^+\pi^-$	$<$ 1.7 $\times 10^{-5}$		CL=90%	DESIG=590

K or *K** modes

NODE=S042;CLUMP=D

Γ_{288}	$K^+\pi^-$		$(2.00\pm 0.04)\times 10^{-5}$		DESIG=10
Γ_{289}	$K^0\pi^0$		$(1.01\pm 0.04)\times 10^{-5}$		DESIG=144
Γ_{290}	$\eta' K^0$		$(6.6\pm 0.4)\times 10^{-5}$	S=1.4	DESIG=163
Γ_{291}	$\eta' K^*(892)^0$		$(2.8\pm 0.6)\times 10^{-6}$		DESIG=164
Γ_{292}	$\eta' K_0^*(1430)^0$		$(6.3\pm 1.6)\times 10^{-6}$		DESIG=474
Γ_{293}	$\eta' K_2^*(1430)^0$		$(1.37\pm 0.32)\times 10^{-5}$		DESIG=475
Γ_{294}	ηK^0		$(1.23^{+0.27}_{-0.24})\times 10^{-6}$		DESIG=166
Γ_{295}	$\eta K^*(892)^0$		$(1.59\pm 0.10)\times 10^{-5}$		DESIG=165
Γ_{296}	$\eta K_0^*(1430)^0$		$(1.10\pm 0.22)\times 10^{-5}$		DESIG=343
Γ_{297}	$\eta K_2^*(1430)^0$		$(9.6\pm 2.1)\times 10^{-6}$		DESIG=344
Γ_{298}	ωK^0		$(4.8\pm 0.4)\times 10^{-6}$		DESIG=172
Γ_{299}	$a_0(980)^0 K^0,\ a_0^0\to\ \eta\pi^0$		$< 7.8\times 10^{-6}$	CL=90%	DESIG=288
Γ_{300}	$b_1^0 K^0,\ b_1^0\to\ \omega\pi^0$		$< 7.8\times 10^{-6}$	CL=90%	DESIG=430
Γ_{301}	$a_0(980)^\pm K^\mp,\ a_0^\pm\to\ \eta\pi^\pm$		$< 1.9\times 10^{-6}$	CL=90%	DESIG=287
Γ_{302}	$b_1^- K^+,\ b_1^-\to\ \omega\pi^-$		$(7.4\pm 1.4)\times 10^{-6}$		DESIG=410
Γ_{303}	$b_1^0 K^{*0},\ b_1^0\to\ \omega\pi^0$		$< 8.0\times 10^{-6}$	CL=90%	DESIG=465
Γ_{304}	$b_1^- K^{*+},\ b_1^-\to\ \omega\pi^-$		$< 5.0\times 10^{-6}$	CL=90%	DESIG=466
Γ_{305}	$a_0(1450)^\pm K^\mp,\ a_0^\pm\to\ \eta\pi^\pm$		$< 3.1\times 10^{-6}$	CL=90%	DESIG=378
Γ_{306}	$K_S^0 X^0$ (Familon)		$< 5.3\times 10^{-5}$	CL=90%	DESIG=208
Γ_{307}	$\omega K^*(892)^0$		$(2.0\pm 0.5)\times 10^{-6}$		DESIG=173
Γ_{308}	$\omega (K\pi)_0^{*0}$		$(1.84\pm 0.25)\times 10^{-5}$		DESIG=447
Γ_{309}	$\omega K_0^*(1430)^0$		$(1.60\pm 0.34)\times 10^{-5}$		DESIG=448
Γ_{310}	$\omega K_2^*(1430)^0$		$(1.01\pm 0.23)\times 10^{-5}$		DESIG=449
Γ_{311}	$\omega K^+\pi^-$ nonresonant		$(5.1\pm 1.0)\times 10^{-6}$		DESIG=446
Γ_{312}	$K^+\pi^-\pi^0$		$(3.78\pm 0.32)\times 10^{-5}$		DESIG=229
Γ_{313}	$K^+\rho^-$		$(7.0\pm 0.9)\times 10^{-6}$		DESIG=145
Γ_{314}	$K^+\rho(1450)^-$		$(2.4\pm 1.2)\times 10^{-6}$		DESIG=424
Γ_{315}	$K^+\rho(1700)^-$		$(6\pm 7)\times 10^{-7}$		DESIG=425
Γ_{316}	$(K^+\pi^-\pi^0)$ nonresonant		$(2.8\pm 0.6)\times 10^{-6}$		DESIG=282
Γ_{317}	$(K\pi)_0^{*+}\pi^-,\ (K\pi)_0^{*+}\to K^+\pi^0$		$(3.4\pm 0.5)\times 10^{-5}$		DESIG=426
Γ_{318}	$(K\pi)_0^{*0}\pi^0,\ (K\pi)_0^{*0}\to K^+\pi^-$		$(8.6\pm 1.7)\times 10^{-6}$		DESIG=427
Γ_{319}	$K_2^*(1430)^0\pi^0$		$< 4.0\times 10^{-6}$	CL=90%	DESIG=428
Γ_{320}	$K^*(1680)^0\pi^0$		$< 7.5\times 10^{-6}$	CL=90%	DESIG=429
Γ_{321}	$K_x^{*0}\pi^0$	[d]	$(6.1\pm 1.6)\times 10^{-6}$		DESIG=280
Γ_{322}	$K^0\pi^+\pi^-$		$(4.97\pm 0.18)\times 10^{-5}$		DESIG=80
Γ_{323}	$K^0\pi^+\pi^-$ nonresonant		$(1.39^{+0.26}_{-0.18})\times 10^{-5}$	S=1.6	DESIG=367
Γ_{324}	$K^0\rho^0$		$(3.4\pm 1.1)\times 10^{-6}$	S=2.3	DESIG=12
Γ_{325}	$K^*(892)^+\pi^-$		$(7.5\pm 0.4)\times 10^{-6}$		DESIG=11
Γ_{326}	$K_0^*(1430)^+\pi^-$		$(3.3\pm 0.7)\times 10^{-5}$	S=2.0	DESIG=368
Γ_{327}	$K_x^{*+}\pi^-$	[d]	$(5.1\pm 1.6)\times 10^{-6}$		DESIG=281
Γ_{328}	$K^*(1410)^+\pi^-,\ K^{*+}\to K^0\pi^+$		$< 3.8\times 10^{-6}$	CL=90%	DESIG=369
Γ_{329}	$(K\pi)_0^{*+}\pi^-,\ (K\pi)_0^{*+}\to K^0\pi^+$		$(1.62\pm 0.13)\times 10^{-5}$		DESIG=589
Γ_{330}	$f_0(980)K^0,\ f_0\to\ \pi^+\pi^-$		$(8.1\pm 0.8)\times 10^{-6}$	S=1.3	DESIG=372
Γ_{331}	$K^0 f_0(500)$		$(1.6^{+2.5}_{-1.6})\times 10^{-7}$		DESIG=587
Γ_{332}	$K^0 f_0(1500)$		$(1.3\pm 0.8)\times 10^{-6}$		DESIG=586
Γ_{333}	$f_2(1270)K^0$		$(2.7^{+1.3}_{-1.2})\times 10^{-6}$		DESIG=373
Γ_{334}	$f_x(1300)K0, f_x\to\ \pi^+\pi^-$		$(1.8\pm 0.7)\times 10^{-6}$		DESIG=473
Γ_{335}	$K^*(892)^0\pi^0$		$(3.3\pm 0.6)\times 10^{-6}$		DESIG=146
Γ_{336}	$K_2^*(1430)^+\pi^-$		$(3.65\pm 0.34)\times 10^{-6}$		DESIG=72
Γ_{337}	$K^*(1680)^+\pi^-$		$(1.41\pm 0.10)\times 10^{-5}$		DESIG=370
Γ_{338}	$K^+\pi^-\pi^+\pi^-$	[e]	$< 2.3\times 10^{-4}$	CL=90%	DESIG=143
Γ_{339}	$\rho^0 K^+\pi^-$		$(2.8\pm 0.7)\times 10^{-6}$		DESIG=461

Γ_{340}	$f_0(980)K^+\pi^-$, $f_0 \to \pi\pi$		$(1.4\ ^{+\ 0.5}_{-\ 0.6}) \times 10^{-6}$		DESIG=462
Γ_{341}	$K^+\pi^-\pi^+\pi^-$ nonresonant		$< 2.1 \times 10^{-6}$	CL=90%	DESIG=464
Γ_{342}	$K^*(892)^0\pi^+\pi^-$		$(5.5 \pm 0.5) \times 10^{-5}$		DESIG=84
Γ_{343}	$K^*(892)^0\rho^0$		$(3.9 \pm 1.3) \times 10^{-6}$	S=1.9	DESIG=15
Γ_{344}	$K^*(892)^0 f_0(980)$, $f_0 \to \pi\pi$		$(3.9\ ^{+\ 2.1}_{-\ 1.8}) \times 10^{-6}$	S=3.9	DESIG=45
Γ_{345}	$K_1(1270)^+\pi^-$		$< 3.0 \times 10^{-5}$	CL=90%	DESIG=472
Γ_{346}	$K_1(1400)^+\pi^-$		$< 2.7 \times 10^{-5}$	CL=90%	DESIG=86
Γ_{347}	$a_1(1260)^- K^+$	[e]	$(1.6 \pm 0.4) \times 10^{-5}$		DESIG=142
Γ_{348}	$K^*(892)^+\rho^-$		$(1.03 \pm 0.26) \times 10^{-5}$		DESIG=342
Γ_{349}	$K_0^*(1430)^+\rho^-$		$(2.8 \pm 1.2) \times 10^{-5}$		DESIG=501
Γ_{350}	$K_1(1400)^0\rho^0$		$< 3.0 \times 10^{-3}$	CL=90%	DESIG=73
Γ_{351}	$K_0^*(1430)^0\rho^0$		$(2.7 \pm 0.6) \times 10^{-5}$		DESIG=498
Γ_{352}	$K_0^*(1430)^0 f_0(980)$, $f_0 \to \pi\pi$		$(2.7 \pm 0.9) \times 10^{-6}$		DESIG=499
Γ_{353}	$K_2^*(1430)^0 f_0(980)$, $f_0 \to \pi\pi$		$(8.6 \pm 2.0) \times 10^{-6}$		DESIG=500
Γ_{354}	K^+K^-		$(7.8 \pm 1.5) \times 10^{-8}$		DESIG=106
Γ_{355}	$K^0\overline{K}^0$		$(1.21 \pm 0.16) \times 10^{-6}$		DESIG=162
Γ_{356}	$K^0K^-\pi^+$		$(6.7 \pm 0.5) \times 10^{-6}$		DESIG=228
Γ_{357}	$K^*(892)^\pm K^\mp$		$< 4 \times 10^{-7}$	CL=90%	DESIG=538
Γ_{358}	$\overline{K}^{*0}K^0 + K^{*0}\overline{K}^0$		$< 9.6 \times 10^{-7}$	CL=90%	DESIG=341
Γ_{359}	$K^+K^-\pi^0$		$(2.2 \pm 0.6) \times 10^{-6}$		DESIG=230
Γ_{360}	$K_S^0K_S^0\pi^0$		$< 9 \times 10^{-7}$	CL=90%	DESIG=458
Γ_{361}	$K_S^0K_S^0\eta$		$< 1.0 \times 10^{-6}$	CL=90%	DESIG=459
Γ_{362}	$K_S^0K_S^0\eta'$		$< 2.0 \times 10^{-6}$	CL=90%	DESIG=460
Γ_{363}	$K^0K^+K^-$		$(2.68 \pm 0.11) \times 10^{-5}$		DESIG=81
Γ_{364}	$K^0\phi$		$(7.3 \pm 0.7) \times 10^{-6}$		DESIG=13
Γ_{365}	$f_0(980)K^0$, $f_0 \to K^+K^-$		$(7.0\ ^{+\ 3.5}_{-\ 3.0}) \times 10^{-6}$		DESIG=502
Γ_{366}	$f_0(1500)K^0$		$(1.3\ ^{+\ 0.7}_{-\ 0.5}) \times 10^{-5}$		DESIG=503
Γ_{367}	$f_2'(1525)^0K^0$		$(3\ ^{+\ 5}_{-\ 4}) \times 10^{-7}$		DESIG=504
Γ_{368}	$f_0(1710)K^0$, $f_0 \to K^+K^-$		$(4.4 \pm 0.9) \times 10^{-6}$		DESIG=505
Γ_{369}	$K^0K^+K^-$ nonresonant		$(3.3 \pm 1.0) \times 10^{-5}$		DESIG=506
Γ_{370}	$K_S^0K_S^0K_S^0$		$(6.0 \pm 0.5) \times 10^{-6}$	S=1.1	DESIG=255
Γ_{371}	$f_0(980)K^0$, $f_0 \to K_S^0K_S^0$		$(2.7 \pm 1.8) \times 10^{-6}$		DESIG=494
Γ_{372}	$f_0(1710)K^0$, $f_0 \to K_S^0K_S^0$		$(5.0\ ^{+\ 5.0}_{-\ 2.6}) \times 10^{-7}$		DESIG=495
Γ_{373}	$f_2(2010)K^0$, $f_2 \to K_S^0K_S^0$		$(5 \pm 6) \times 10^{-7}$		DESIG=496
Γ_{374}	$K_S^0K_S^0K_S^0$ nonresonant		$(1.33 \pm 0.31) \times 10^{-5}$		DESIG=497
Γ_{375}	$K_S^0K_S^0K_L^0$		$< 1.6 \times 10^{-5}$	CL=90%	DESIG=339
Γ_{376}	$K^*(892)^0K^+K^-$		$(2.75 \pm 0.26) \times 10^{-5}$		DESIG=85
Γ_{377}	$K^*(892)^0\phi$		$(1.00 \pm 0.05) \times 10^{-5}$		DESIG=14
Γ_{378}	$K^+K^-\pi^+\pi^-$ nonresonant		$< 7.17 \times 10^{-5}$	CL=90%	DESIG=476
Γ_{379}	$K^*(892)^0K^-\pi^+$		$(4.5 \pm 1.3) \times 10^{-6}$		DESIG=402
Γ_{380}	$K^*(892)^0\overline{K}^*(892)^0$		$(8.3 \pm 2.4) \times 10^{-7}$	S=1.5	DESIG=188
Γ_{381}	$K^+K^+\pi^-\pi^-$ nonresonant		$< 6.0 \times 10^{-6}$	CL=90%	DESIG=480
Γ_{382}	$K^*(892)^0K^+\pi^-$		$< 2.2 \times 10^{-6}$	CL=90%	DESIG=403
Γ_{383}	$K^*(892)^0K^*(892)^0$		$< 2 \times 10^{-7}$	CL=90%	DESIG=206
Γ_{384}	$K^*(892)^+K^*(892)^-$		$< 2.0 \times 10^{-6}$	CL=90%	DESIG=207
Γ_{385}	$K_1(1400)^0\phi$		$< 5.0 \times 10^{-3}$	CL=90%	DESIG=75
Γ_{386}	$\phi(K\pi)_0^{*0}$		$(4.3 \pm 0.4) \times 10^{-6}$		DESIG=346
Γ_{387}	$\phi(K\pi)_0^{*0}$ $(1.60<m_{K\pi}<2.15)$	[f]	$< 1.7 \times 10^{-6}$	CL=90%	DESIG=397
Γ_{388}	$K_0^*(1430)^0K^-\pi^+$		$< 3.18 \times 10^{-5}$	CL=90%	DESIG=477
Γ_{389}	$K_0^*(1430)^0\overline{K}^*(892)^0$		$< 3.3 \times 10^{-6}$	CL=90%	DESIG=478
Γ_{390}	$K_0^*(1430)^0\overline{K}_0^*(1430)^0$		$< 8.4 \times 10^{-6}$	CL=90%	DESIG=479
Γ_{391}	$K_0^*(1430)^0\phi$		$(3.9 \pm 0.8) \times 10^{-6}$		DESIG=305
Γ_{392}	$K_0^*(1430)^0K^*(892)^0$		$< 1.7 \times 10^{-6}$	CL=90%	DESIG=481

Γ_{393}	$K_0^*(1430)^0 K_0^*(1430)^0$		< 4.7	$\times 10^{-6}$	CL=90%	DESIG=482
Γ_{394}	$K^*(1680)^0 \phi$		< 3.5	$\times 10^{-6}$	CL=90%	DESIG=398
Γ_{395}	$K^*(1780)^0 \phi$		< 2.7	$\times 10^{-6}$	CL=90%	DESIG=399
Γ_{396}	$K^*(2045)^0 \phi$		< 1.53	$\times 10^{-5}$	CL=90%	DESIG=400
Γ_{397}	$K_2^*(1430)^0 \rho^0$		< 1.1	$\times 10^{-3}$	CL=90%	DESIG=74
Γ_{398}	$K_2^*(1430)^0 \phi$		(6.8 ± 0.9)	$\times 10^{-6}$	S=1.2	DESIG=76
Γ_{399}	$K^0 \phi \phi$		(3.7 ± 0.7)	$\times 10^{-6}$	S=1.3	DESIG=345
Γ_{400}	$\eta' \eta' K^0$		< 3.1	$\times 10^{-5}$	CL=90%	DESIG=338
Γ_{401}	$\eta K^0 \gamma$		(7.6 ± 1.8)	$\times 10^{-6}$		DESIG=309
Γ_{402}	$\eta' K^0 \gamma$		< 6.4	$\times 10^{-6}$	CL=90%	DESIG=337
Γ_{403}	$K^0 \phi \gamma$		(2.7 ± 0.7)	$\times 10^{-6}$		DESIG=283
Γ_{404}	$K^+ \pi^- \gamma$		(4.6 ± 1.4)	$\times 10^{-6}$		DESIG=231
Γ_{405}	$K^*(892)^0 \gamma$		(4.18 ± 0.25)	$\times 10^{-5}$	S=2.1	DESIG=16
Γ_{406}	$K^*(1410) \gamma$		< 1.3	$\times 10^{-4}$	CL=90%	DESIG=233
Γ_{407}	$K^+ \pi^- \gamma$ nonresonant		< 2.6	$\times 10^{-6}$	CL=90%	DESIG=234
Γ_{408}	$K^*(892)^0 X(214)$, $X \to \mu^+ \mu^-$	[g]	< 2.26	$\times 10^{-8}$	CL=90%	DESIG=483
Γ_{409}	$K^0 \pi^+ \pi^- \gamma$		(1.99 ± 0.18)	$\times 10^{-5}$		DESIG=310
Γ_{410}	$K^+ \pi^- \pi^0 \gamma$		(4.1 ± 0.4)	$\times 10^{-5}$		DESIG=376
Γ_{411}	$K_1(1270)^0 \gamma$		< 5.8	$\times 10^{-5}$	CL=90%	DESIG=38
Γ_{412}	$K_1(1400)^0 \gamma$		< 1.2	$\times 10^{-5}$	CL=90%	DESIG=39
Γ_{413}	$K_2^*(1430)^0 \gamma$		(1.24 ± 0.24)	$\times 10^{-5}$		DESIG=40
Γ_{414}	$K^*(1680)^0 \gamma$		< 2.0	$\times 10^{-3}$	CL=90%	DESIG=41
Γ_{415}	$K_3^*(1780)^0 \gamma$		< 8.3	$\times 10^{-5}$	CL=90%	DESIG=42
Γ_{416}	$K_4^*(2045)^0 \gamma$		< 4.3	$\times 10^{-3}$	CL=90%	DESIG=43

Light unflavored meson modes

NODE=S042;CLUMP=E

Γ_{417}	$\rho^0 \gamma$		(8.6 ± 1.5)	$\times 10^{-7}$		DESIG=191
Γ_{418}	$\rho^0 X(214)$, $X \to \mu^+ \mu^-$	[g]	< 1.73	$\times 10^{-8}$	CL=90%	DESIG=484
Γ_{419}	$\omega \gamma$		($4.4 ^{+1.8}_{-1.6}$)	$\times 10^{-7}$		DESIG=192
Γ_{420}	$\phi \gamma$		< 1.0	$\times 10^{-7}$	CL=90%	DESIG=193
Γ_{421}	$f_2(1270) \gamma$, $f_2 \to (KS)^0 (KS)^0$		< 3.1	$\times 10^{-7}$		DESIG=616
Γ_{422}	$f_2'(1525) \gamma$, $f_2' \to (KS)^0 (KS)^0$		< 2.1	$\times 10^{-7}$		DESIG=617
Γ_{423}	$\pi^+ \pi^-$		(5.37 ± 0.20)	$\times 10^{-6}$	S=1.3	DESIG=5
Γ_{424}	$\pi^0 \pi^0$		(1.55 ± 0.17)	$\times 10^{-6}$	S=1.1	DESIG=137
Γ_{425}	$\eta \pi^0$		(4.1 ± 1.7)	$\times 10^{-7}$		DESIG=60
Γ_{426}	$\eta \eta$		< 1.0	$\times 10^{-6}$	CL=90%	DESIG=139
Γ_{427}	$\eta' \pi^0$		(1.2 ± 0.6)	$\times 10^{-6}$	S=1.7	DESIG=167
Γ_{428}	$\eta' \eta'$		< 1.7	$\times 10^{-6}$	CL=90%	DESIG=168
Γ_{429}	$\eta' \eta$		< 1.2	$\times 10^{-6}$	CL=90%	DESIG=169
Γ_{430}	$\eta' \rho^0$		< 1.3	$\times 10^{-6}$	CL=90%	DESIG=170
Γ_{431}	$\eta' f_0(980)$, $f_0 \to \pi^+ \pi^-$		< 9	$\times 10^{-7}$	CL=90%	DESIG=347
Γ_{432}	$\eta \rho^0$		< 1.5	$\times 10^{-6}$	CL=90%	DESIG=171
Γ_{433}	$\eta f_0(980)$, $f_0 \to \pi^+ \pi^-$		< 4	$\times 10^{-7}$	CL=90%	DESIG=379
Γ_{434}	$\omega \eta$		($9.4 ^{+4.0}_{-3.1}$)	$\times 10^{-7}$		DESIG=174
Γ_{435}	$\omega \eta'$		($1.0 ^{+0.5}_{-0.4}$)	$\times 10^{-6}$		DESIG=175
Γ_{436}	$\omega \rho^0$		< 1.6	$\times 10^{-6}$	CL=90%	DESIG=176
Γ_{437}	$\omega f_0(980)$, $f_0 \to \pi^+ \pi^-$		< 1.5	$\times 10^{-6}$	CL=90%	DESIG=340
Γ_{438}	$\omega \omega$		(1.40 ± 0.25)	$\times 10^{-6}$		DESIG=177
Γ_{439}	$\phi \pi^0$		< 1.5	$\times 10^{-7}$	CL=90%	DESIG=178
Γ_{440}	$\phi \eta$		< 5	$\times 10^{-7}$	CL=90%	DESIG=179
Γ_{441}	$\phi \eta'$		< 5	$\times 10^{-7}$	CL=90%	DESIG=180
Γ_{442}	$\phi \pi^+ \pi^-$		(1.8 ± 0.5)	$\times 10^{-7}$		DESIG=570
Γ_{443}	$\phi \rho^0$		< 3.3	$\times 10^{-7}$	CL=90%	DESIG=182
Γ_{444}	$\phi f_0(980)$, $f_0 \to \pi^+ \pi^-$		< 3.8	$\times 10^{-7}$	CL=90%	DESIG=434
Γ_{445}	$\phi \omega$		< 7	$\times 10^{-7}$	CL=90%	DESIG=183

Γ_{446}	$\phi\phi$		< 2.7	$\times 10^{-8}$	CL=90%	DESIG=147
Γ_{447}	$a_0(980)^{\pm}\pi^{\mp}$, $a_0^{\pm} \to \eta\pi^{\pm}$		< 3.1	$\times 10^{-6}$	CL=90%	DESIG=286
Γ_{448}	$a_0(1450)^{\pm}\pi^{\mp}$, $a_0^{\pm} \to \eta\pi^{\pm}$		< 2.3	$\times 10^{-6}$	CL=90%	DESIG=377
Γ_{449}	$\pi^+\pi^-\pi^0$		< 7.2	$\times 10^{-4}$	CL=90%	DESIG=53
Γ_{450}	$\rho^0\pi^0$		(2.0 ± 0.5)	$\times 10^{-6}$		DESIG=54
Γ_{451}	$\rho^{\mp}\pi^{\pm}$	[h]	(2.30± 0.23)	$\times 10^{-5}$		DESIG=24
Γ_{452}	$\pi^+\pi^-\pi^+\pi^-$		< 1.12	$\times 10^{-5}$	CL=90%	DESIG=55
Γ_{453}	$\rho^0\pi^+\pi^-$		< 8.8	$\times 10^{-6}$	CL=90%	DESIG=432
Γ_{454}	$\rho^0\rho^0$		(9.6 ± 1.5)	$\times 10^{-7}$		DESIG=26
Γ_{455}	$f_0(980)\pi^+\pi^-$, $f_0 \to \pi^+\pi^-$		< 3.0	$\times 10^{-6}$	CL=90%	DESIG=536
Γ_{456}	$\rho^0 f_0(980)$, $f_0 \to \pi^+\pi^-$		(7.8 ± 2.5)	$\times 10^{-7}$		DESIG=348
Γ_{457}	$f_0(980) f_0(980)$, $f_0 \to \pi^+\pi^-$, $f_0 \to \pi^+\pi^-$		< 1.9	$\times 10^{-7}$	CL=90%	DESIG=349
Γ_{458}	$f_0(980) f_0(980)$, $f_0 \to \pi^+\pi^-$, $f_0 \to K^+K^-$		< 2.3	$\times 10^{-7}$	CL=90%	DESIG=435
Γ_{459}	$a_1(1260)^{\mp}\pi^{\pm}$	[h]	(2.6 ± 0.5)	$\times 10^{-5}$	S=1.9	DESIG=27
Γ_{460}	$a_2(1320)^{\mp}\pi^{\pm}$	[h]	< 6.3	$\times 10^{-6}$	CL=90%	DESIG=28
Γ_{461}	$\pi^+\pi^-\pi^0\pi^0$		< 3.1	$\times 10^{-3}$	CL=90%	DESIG=56
Γ_{462}	$\rho^+\rho^-$		(2.77± 0.19)	$\times 10^{-5}$		DESIG=57
Γ_{463}	$a_1(1260)^0\pi^0$		< 1.1	$\times 10^{-3}$	CL=90%	DESIG=58
Γ_{464}	$\omega\pi^0$		< 5	$\times 10^{-7}$	CL=90%	DESIG=59
Γ_{465}	$\pi^+\pi^+\pi^-\pi^-\pi^0$		< 9.0	$\times 10^{-3}$	CL=90%	DESIG=61
Γ_{466}	$a_1(1260)^+\rho^-$		< 6.1	$\times 10^{-5}$	CL=90%	DESIG=62
Γ_{467}	$a_1(1260)^0\rho^0$		< 2.4	$\times 10^{-3}$	CL=90%	DESIG=63
Γ_{468}	$b_1^{\mp}\pi^{\pm}$, $b_1^{\mp} \to \omega\pi^{\mp}$		(1.09± 0.15)	$\times 10^{-5}$		DESIG=411
Γ_{469}	$b_1^0\pi^0$, $b_1^0 \to \omega\pi^0$		< 1.9	$\times 10^{-6}$	CL=90%	DESIG=431
Γ_{470}	$b_1^-\rho^+$, $b_1^- \to \omega\pi^-$		< 1.4	$\times 10^{-6}$	CL=90%	DESIG=467
Γ_{471}	$b_1^0\rho^0$, $b_1^0 \to \omega\pi^0$		< 3.4	$\times 10^{-6}$	CL=90%	DESIG=468
Γ_{472}	$\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-$		< 3.0	$\times 10^{-3}$	CL=90%	DESIG=64
Γ_{473}	$a_1(1260)^+ a_1(1260)^-$, $a_1^+ \to 2\pi^+\pi^-$, $a_1^- \to 2\pi^-\pi^+$		(1.18± 0.31)	$\times 10^{-5}$		DESIG=46
Γ_{474}	$\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^0$		< 1.1	%	CL=90%	DESIG=65

Baryon modes

NODE=S042;CLUMP=F

Γ_{475}	$p\overline{p}$		(1.27± 0.14)	$\times 10^{-8}$		DESIG=29
Γ_{476}	$p\overline{p}\pi^+\pi^-$		(2.87± 0.19)	$\times 10^{-6}$		DESIG=32
Γ_{477}	$p\overline{p}K^+\pi^-$		(6.3 ± 0.5)	$\times 10^{-6}$		DESIG=571
Γ_{478}	$p\overline{p}K^0$		(2.66± 0.32)	$\times 10^{-6}$		DESIG=220
Γ_{479}	$\Theta(1540)^+\overline{p}$, $\Theta^+ \to pK_S^0$	[i]	< 5	$\times 10^{-8}$	CL=90%	DESIG=307
Γ_{480}	$f_J(2220)K^0$, $f_J \to p\overline{p}$		< 4.5	$\times 10^{-7}$	CL=90%	DESIG=414
Γ_{481}	$p\overline{p}K^*(892)^0$		($1.24^{+0.28}_{-0.25}$)	$\times 10^{-6}$		DESIG=277
Γ_{482}	$f_J(2220)K_0^*$, $f_J \to p\overline{p}$		< 1.5	$\times 10^{-7}$	CL=90%	DESIG=415
Γ_{483}	$p\overline{p}K^+K^-$		(1.21± 0.32)	$\times 10^{-7}$		DESIG=572
Γ_{484}	$p\overline{p}\pi^0$		(5.0 ± 1.9)	$\times 10^{-7}$		DESIG=594
Γ_{485}	$p\overline{p}p\overline{p}$		(2.2 ± 0.4)	$\times 10^{-8}$		DESIG=573
Γ_{486}	$p\overline{\Lambda}\pi^-$		(3.16± 0.24)	$\times 10^{-6}$		DESIG=33
Γ_{487}	$p\overline{\Lambda}\pi^-\gamma$		< 6.5	$\times 10^{-7}$	CL=90%	DESIG=540
Γ_{488}	$p\overline{\Sigma}(1385)^-$		< 2.6	$\times 10^{-7}$	CL=90%	DESIG=412
Γ_{489}	$\Delta(1232)^+\overline{p} + \Delta(1232)^- p$		< 1.6	$\times 10^{-6}$		DESIG=595
Γ_{490}	$\Delta^0\overline{\Lambda}$		< 9.3	$\times 10^{-7}$	CL=90%	DESIG=413
Γ_{491}	$p\overline{\Lambda}K^-$		< 8.2	$\times 10^{-7}$	CL=90%	DESIG=251
Γ_{492}	$p\overline{\Lambda}D^-$		(2.5 ± 0.4)	$\times 10^{-5}$		DESIG=546
Γ_{493}	$p\overline{\Lambda}D^{*-}$		(3.4 ± 0.8)	$\times 10^{-5}$		DESIG=547
Γ_{494}	$p\overline{\Sigma}^0\pi^-$		(1.2 ± 0.4)	$\times 10^{-6}$		DESIG=252
Γ_{495}	$\overline{\Lambda}\Lambda$		< 3.2	$\times 10^{-7}$	CL=90%	DESIG=186
Γ_{496}	$\overline{\Lambda}\Lambda K^0$		($4.8^{+1.0}_{-0.9}$)	$\times 10^{-6}$		DESIG=455
Γ_{497}	$\overline{\Lambda}\Lambda K^{*0}$		($2.5^{+0.9}_{-0.8}$)	$\times 10^{-6}$		DESIG=456

Γ_{498}	$\overline{\Lambda}\Lambda D^0$	$(1.00^{+0.30}_{-0.26}) \times 10^{-5}$		DESIG=457
Γ_{499}	$D^0 \Sigma^0 \overline{\Lambda}$+ c.c.	$< 3.1 \times 10^{-5}$	CL=90%	DESIG=534
Γ_{500}	$\Delta^0 \overline{\Delta}^0$	$< 1.5 \times 10^{-3}$	CL=90%	DESIG=47
Γ_{501}	$\Delta^{++} \overline{\Delta}^{--}$	$< 1.1 \times 10^{-4}$	CL=90%	DESIG=48
Γ_{502}	$\overline{D}^0 p \overline{p}$	$(1.04 \pm 0.07) \times 10^{-4}$		DESIG=226
Γ_{503}	$D_s^- \overline{\Lambda} p$	$(2.8 \pm 0.9) \times 10^{-5}$		DESIG=389
Γ_{504}	$\overline{D}^*(2007)^0 p \overline{p}$	$(9.9 \pm 1.1) \times 10^{-5}$		DESIG=227
Γ_{505}	$D^*(2010)^- p \overline{n}$	$(1.4 \pm 0.4) \times 10^{-3}$		DESIG=198
Γ_{506}	$D^- p \overline{p} \pi^+$	$(3.32 \pm 0.31) \times 10^{-4}$		DESIG=362
Γ_{507}	$D^*(2010)^- p \overline{p} \pi^+$	$(4.7 \pm 0.5) \times 10^{-4}$	S=1.2	DESIG=197
Γ_{508}	$\overline{D}^0 p \overline{p} \pi^+ \pi^-$	$(3.0 \pm 0.5) \times 10^{-4}$		DESIG=509
Γ_{509}	$\overline{D}^{*0} p \overline{p} \pi^+ \pi^-$	$(1.9 \pm 0.5) \times 10^{-4}$		DESIG=510
Γ_{510}	$\Theta_c \overline{p} \pi^+$, $\Theta_c \to D^- p$	$< 9 \times 10^{-6}$	CL=90%	DESIG=364
Γ_{511}	$\Theta_c \overline{p} \pi^+$, $\Theta_c \to D^{*-} p$	$< 1.4 \times 10^{-5}$	CL=90%	DESIG=365
Γ_{512}	$\overline{\Sigma}_c^{--} \Delta^{++}$	$< 8 \times 10^{-4}$	CL=90%	DESIG=123
Γ_{513}	$\overline{\Lambda}_c^- p \pi^+ \pi^-$	$(1.01 \pm 0.14) \times 10^{-3}$	S=1.4	DESIG=161
Γ_{514}	$\overline{\Lambda}_c^- p$	$(1.52 \pm 0.17) \times 10^{-5}$		DESIG=157
Γ_{515}	$\overline{\Lambda}_c^- p \pi^0$	$(1.53 \pm 0.18) \times 10^{-4}$		DESIG=158
Γ_{516}	$\Sigma_c(2455)^- p$	$< 2.4 \times 10^{-5}$		DESIG=487
Γ_{517}	$\overline{\Lambda}_c^- p \pi^+ \pi^- \pi^0$	$< 5.07 \times 10^{-3}$	CL=90%	DESIG=159
Γ_{518}	$\overline{\Lambda}_c^- p \pi^+ \pi^- \pi^+ \pi^-$	$< 2.74 \times 10^{-3}$	CL=90%	DESIG=160
Γ_{519}	$\overline{\Lambda}_c^- p \pi^+ \pi^-$ (nonresonant)	$(5.4 \pm 1.0) \times 10^{-4}$	S=1.3	DESIG=360
Γ_{520}	$\overline{\Sigma}_c(2520)^{--} p \pi^+$	$(1.01 \pm 0.18) \times 10^{-4}$		DESIG=236
Γ_{521}	$\overline{\Sigma}_c(2520)^0 p \pi^-$	$< 3.1 \times 10^{-5}$	CL=90%	DESIG=238
Γ_{522}	$\overline{\Sigma}_c(2455)^0 p \pi^-$	$(1.08 \pm 0.09) \times 10^{-4}$		DESIG=223
Γ_{523}	$\overline{\Sigma}_c(2455)^0 N^0$, $N^0 \to p \pi^-$	$(6.3 \pm 1.6) \times 10^{-5}$		DESIG=445
Γ_{524}	$\overline{\Sigma}_c(2455)^{--} p \pi^+$	$(1.89 \pm 0.15) \times 10^{-4}$		DESIG=224
Γ_{525}	$\Lambda_c^- p K^+ \pi^-$	$(3.4 \pm 0.7) \times 10^{-5}$		DESIG=469
Γ_{526}	$\overline{\Sigma}_c(2455)^{--} p K^+$, $\overline{\Sigma}_c^{--} \to \overline{\Lambda}_c^- \pi^-$	$(8.7 \pm 2.5) \times 10^{-6}$		DESIG=470
Γ_{527}	$\Lambda_c^- p K^*(892)^0$	$< 2.42 \times 10^{-5}$	CL=90%	DESIG=471
Γ_{528}	$\Lambda_c^- p K^+ K^-$	$(2.0 \pm 0.4) \times 10^{-5}$		DESIG=543
Γ_{529}	$\Lambda_c^- p \phi$	$< 9 \times 10^{-6}$	CL=90%	DESIG=544
Γ_{530}	$\Lambda_c^- p \overline{p} p$	$< 2.8 \times 10^{-6}$		DESIG=529
Γ_{531}	$\overline{\Lambda}_c^- \Lambda K^+$	$(4.8 \pm 1.1) \times 10^{-5}$		DESIG=493
Γ_{532}	$\overline{\Lambda}_c^- \Lambda_c^+$	$< 1.6 \times 10^{-5}$	CL=95%	DESIG=417
Γ_{533}	$\overline{\Lambda}_c(2593)^-$ / $\overline{\Lambda}_c(2625)^- p$	$< 1.1 \times 10^{-4}$	CL=90%	DESIG=225
Γ_{534}	$\overline{\Xi}_c^- \Lambda_c^+$	$(1.1 \pm 0.8) \times 10^{-3}$		DESIG=601
Γ_{535}	$\overline{\Xi}_c^- \Lambda_c^+$, $\overline{\Xi}_c^- \to \overline{\Xi}^+ \pi^- \pi^-$	$(2.3 \pm 1.0) \times 10^{-5}$	S=1.8	DESIG=358
Γ_{536}	$\overline{\Xi}_c^- \Lambda_c^+$, $\overline{\Xi}_c^- \to \overline{p} K^+ \pi^-$	$(5.2 \pm 1.6) \times 10^{-6}$		DESIG=602
Γ_{537}	$\Lambda_c^+ \Lambda_c^- K^0$	$(4.0 \pm 0.9) \times 10^{-4}$		DESIG=356
Γ_{538}	$\overline{\Lambda}_c(2910)^- p$, $\overline{\Lambda}_c^- \to \overline{\Sigma}_c(2455)^{--} \pi^+$	$(1.2 \pm 0.4) \times 10^{-5}$		DESIG=621
Γ_{539}	$\overline{\Lambda}_c(2910)^- p$, $\overline{\Lambda}_c^- \to \overline{\Sigma}_c(2455)^0 \pi^-$	$(10 \pm 4) \times 10^{-6}$		DESIG=622
Γ_{540}	$\overline{\Xi}_c(2930)^- \Lambda_c^+$, $\overline{\Xi}_c^- \to \Lambda_c^- K^0$	$(2.4 \pm 0.6) \times 10^{-4}$		DESIG=575
Γ_{541}	$\Omega_c^0 \overline{\Lambda}$, $\Omega_c^0 \to \Omega^- \pi^+$	$< 9.7 \times 10^{-8}$	CL=95%	DESIG=643
Γ_{542}	$\Omega_c(2770)^0 \overline{\Lambda}$, $\Omega_c^0 \to \Omega^- \pi^+$	$< 3.12 \times 10^{-7}$	CL=95%	DESIG=644
Γ_{543}	$\Omega_c^0 \Lambda$, $\Omega_c^0 \to \Omega^- \pi^+$	$< 9.5 \times 10^{-8}$	CL=95%	DESIG=645
Γ_{544}	$\Omega_c(2770)^0 \Lambda$, $\Omega_c^0 \to \Omega^- \pi^+$	$< 1.00 \times 10^{-7}$	CL=95%	DESIG=646
Γ_{545}	$\Lambda \psi_{DS}$	[j] $<$ 0.13–5.2 $\times 10^{-5}$		DESIG=619;OUR EVAL;→ UNCHECKED ←

Lepton Family number (LF) or Lepton number (L) or Baryon number (B) violating modes, or/and $\Delta B = 1$ weak neutral current ($B1$) modes

NODE=S042;CLUMP=G

Γ_{546}	$\gamma\gamma$	$B1$		< 6.4	$\times 10^{-8}$	CL=90%	DESIG=141
Γ_{547}	$e^+ e^-$	$B1$		< 2.5	$\times 10^{-9}$	CL=90%	DESIG=6
Γ_{548}	$e^+ e^- \gamma$	$B1$		< 1.2	$\times 10^{-7}$	CL=90%	DESIG=404
Γ_{549}	$\mu^+ \mu^-$	$B1$		< 1.5	$\times 10^{-10}$	CL=90%	DESIG=7
Γ_{550}	$\mu^+ \mu^- \gamma$	$B1$					DESIG=405
Γ_{551}	$\mu^+ \mu^- \mu^+ \mu^-$	$B1$		< 1.8	$\times 10^{-10}$	CL=95%	DESIG=521
Γ_{552}	SP, $S \to \mu^+ \mu^-$, $P \to \mu^+ \mu^-$	$B1$	[k]	< 6.0	$\times 10^{-10}$	CL=95%	DESIG=522
Γ_{553}	aa, $a \to \mu^+ \mu^-$	$B1$		< 2.3	$\times 10^{-10}$	CL=95%	DESIG=618
Γ_{554}	$\tau^+ \tau^-$	$B1$		< 2.1	$\times 10^{-3}$	CL=95%	DESIG=336
Γ_{555}	$\pi^0 \ell^+ \ell^-$	$B1$	[a]	< 3.8	$\times 10^{-8}$	CL=90%	DESIG=382
Γ_{556}	$\pi^0 e^+ e^-$	$B1$		< 7.9	$\times 10^{-8}$	CL=90%	DESIG=380
Γ_{557}	$\pi^0 \mu^+ \mu^-$	$B1$		< 5.9	$\times 10^{-8}$	CL=90%	DESIG=381
Γ_{558}	$\eta \ell^+ \ell^-$	$B1$	[a]	< 4.8	$\times 10^{-8}$	CL=90%	DESIG=518
Γ_{559}	$\eta e^+ e^-$	$B1$		< 1.05	$\times 10^{-7}$	CL=90%	DESIG=519
Γ_{560}	$\eta \mu^+ \mu^-$	$B1$		< 9.4	$\times 10^{-8}$	CL=90%	DESIG=520
Γ_{561}	$\rho(770)^0 e^+ e^-$	$B1$		< 4.55	$\times 10^{-7}$	CL=90%	DESIG=648
Γ_{562}	$\omega e^+ e^-$	$B1$		< 3.07	$\times 10^{-7}$	CL=90%	DESIG=649
Γ_{563}	$\omega \mu^+ \mu^-$	$B1$		< 2.49	$\times 10^{-7}$	CL=90%	DESIG=650
Γ_{564}	$\omega \ell^+ \ell^-$	$B1$		< 2.20	$\times 10^{-7}$	CL=90%	DESIG=651
Γ_{565}	$\pi^0 \nu \overline{\nu}$	$B1$		< 9	$\times 10^{-6}$	CL=90%	DESIG=406
Γ_{566}	$K^0 \ell^+ \ell^-$	$B1$	[a]	(3.3 ± 0.6)	$\times 10^{-7}$		DESIG=275
Γ_{567}	$K^0 e^+ e^-$	$B1$		($2.5^{+1.1}_{-0.9}$)	$\times 10^{-7}$	S=1.3	DESIG=18
Γ_{568}	$K^0 \mu^+ \mu^-$	$B1$		(3.39 ± 0.35)	$\times 10^{-7}$	S=1.1	DESIG=17
Γ_{569}	$K^0 \nu \overline{\nu}$	$B1$		< 2.6	$\times 10^{-5}$	CL=90%	DESIG=407
Γ_{570}	$\rho^0 \nu \overline{\nu}$	$B1$		< 4.0	$\times 10^{-5}$	CL=90%	DESIG=408
Γ_{571}	$K^*(892)^0 \ell^+ \ell^-$	$B1$	[a]	($9.9^{+1.2}_{-1.1}$)	$\times 10^{-7}$		DESIG=276
Γ_{572}	$K^*(892)^0 e^+ e^-$	$B1$		($1.03^{+0.19}_{-0.17}$)	$\times 10^{-6}$		DESIG=82
Γ_{573}	$K^*(892)^0 \mu^+ \mu^-$	$B1$		(9.4 ± 0.5)	$\times 10^{-7}$		DESIG=71
Γ_{574}	$K^*(892)^0 \chi$, $\chi \to \mu^+ \mu^-$	$B1$					DESIG=562
Γ_{575}	$K^*(892)^0 \tau^+ \tau^-$	$B1$		< 3.1	$\times 10^{-3}$	CL=90%	DESIG=629
Γ_{576}	$\overline{D}^0 \mu^+ \mu^-$	$B1$		< 4.0	$\times 10^{-8}$	CL=90%	DESIG=647
Γ_{577}	$\pi^+ \pi^- \mu^+ \mu^-$	$B1$		(2.1 ± 0.5)	$\times 10^{-8}$		DESIG=550
Γ_{578}	$K^*(892)^0 \nu \overline{\nu}$	$B1$		< 1.8	$\times 10^{-5}$	CL=90%	DESIG=152
Γ_{579}	invisible	$B1$		< 2.4	$\times 10^{-5}$	CL=90%	DESIG=284
Γ_{580}	$\nu \overline{\nu} \gamma$	$B1$		< 1.6	$\times 10^{-5}$	CL=90%	DESIG=285
Γ_{581}	$\phi \mu^+ \mu^-$	$B1$		< 3.2	$\times 10^{-9}$	CL=90%	DESIG=614
Γ_{582}	$\phi \nu \overline{\nu}$	$B1$		< 1.27	$\times 10^{-4}$	CL=90%	DESIG=409
Γ_{583}	$e^\pm \mu^\mp$	LF	[h]	< 1.0	$\times 10^{-9}$	CL=90%	DESIG=8
Γ_{584}	$\pi^0 e^\pm \mu^\mp$	LF		< 1.4	$\times 10^{-7}$	CL=90%	DESIG=383
Γ_{585}	$K^0 e^\pm \mu^\mp$	LF		< 3.8	$\times 10^{-8}$	CL=90%	DESIG=221
Γ_{586}	$K^*(892)^0 e^+ \mu^-$	LF		< 6.8	$\times 10^{-9}$	CL=90%	DESIG=334
Γ_{587}	$K^*(892)^0 e^- \mu^+$	LF		< 5.7	$\times 10^{-9}$	CL=90%	DESIG=335
Γ_{588}	$K^*(892)^0 e^\pm \mu^\mp$	LF		< 1.01	$\times 10^{-8}$	CL=90%	DESIG=222
Γ_{589}	$K^*(892)^0 \tau^+ \mu^-$	LF		< 1.0	$\times 10^{-5}$	CL=90%	DESIG=627
Γ_{590}	$K^*(892)^0 \tau^- \mu^+$	LF		< 8.2	$\times 10^{-6}$	CL=90%	DESIG=628
Γ_{591}	$e^\pm \tau^\mp$	LF	[h]	< 1.6	$\times 10^{-5}$	CL=90%	DESIG=121
Γ_{592}	$\mu^\pm \tau^\mp$	LF	[h]	< 1.4	$\times 10^{-5}$	CL=95%	DESIG=122
Γ_{593}	$p \mu^-$	L,B		< 2.6	$\times 10^{-9}$	CL=90%	DESIG=624
Γ_{594}	$\Lambda_c^+ \mu^-$	L,B		< 1.4	$\times 10^{-6}$	CL=90%	DESIG=491
Γ_{595}	$\Lambda_c^+ e^-$	L,B		< 4	$\times 10^{-6}$	CL=90%	DESIG=492

[a] An ℓ indicates an e or a μ mode, not a sum over these modes. LINKAGE=DX

[b] $\overline{D}^{**}$ represents an excited state with mass $2.2 < \mathrm{M} < 2.8$ GeV/c^2. LINKAGE=DSZ

[c] $\chi_{c1}(3872)^+$ is a hypothetical charged partner of the $\chi_{c1}(3872)$. LINKAGE=RX

[d] Stands for the possible candidates of $K^*(1410)$, $K_0^*(1430)$ and $K_2^*(1430)$. LINKAGE=KS

[e] B^0 and B_s^0 contributions not separated. Limit is on weighted average of the two decay rates. LINKAGE=BBS

[f] This decay refers to the coherent sum of resonant and nonresonant $J^P = 0^+$ $K\pi$ components with $1.60 < m_{K\pi} < 2.15$ GeV/c^2. LINKAGE=MKP

[g] $X(214)$ is a hypothetical particle of mass 214 MeV/c^2 reported by the HyperCP experiment, Physical Review Letters **94** 021801 (2005) LINKAGE=HCP

[h] The value is for the sum of the charge states or particle/antiparticle states indicated. LINKAGE=SG

[i] $\Theta(1540)^+$ denotes a possible narrow pentaquark state. LINKAGE=PQ

[j] ψ_{DS} is a GeV-scale dark sector antibaryon (mass range 1–4 GeV/c^2). LINKAGE=MLG

[k] Here S and P are the hypothetical scalar and pseudoscalar particles with masses of 2.5 GeV/c^2 and 214.3 MeV/c^2, respectively. LINKAGE=BSP

FIT INFORMATION

An overall fit to 36 branching ratios uses 95 measurements to determine 22 parameters. The overall fit has a $\chi^2 = 70.9$ for 73 degrees of freedom.

The following *off-diagonal* array elements are the correlation coefficients $\left\langle\delta x_i \delta x_j\right\rangle/(\delta x_i \cdot \delta x_j)$, in percent, from the fit to the branching fractions, $x_i \equiv \Gamma_i/\Gamma_{\text{total}}$.

	x_7	x_{10}	x_{38}	x_{50}	x_{76}	x_{125}	x_{135}	x_{214}	x_{216}	x_{264}
x_{10}	31									
x_{38}	0	0								
x_{50}	0	0	28							
x_{76}	0	0	4	13						
x_{125}	0	0	19	6	1					
x_{135}	0	0	7	2	0	1				
x_{214}	0	0	0	0	0	0	0			
x_{216}	0	0	0	0	0	0	0	0		
x_{264}	0	0	0	0	0	0	0	0	0	
x_{270}	0	0	0	0	0	0	0	0	0	19
x_{276}	0	0	0	0	0	0	0	0	29	0
x_{282}	0	0	0	0	0	0	0	0	6	0
x_{288}	0	0	0	0	0	0	0	0	0	0
x_{322}	0	0	0	0	0	0	0	0	0	0
x_{356}	0	0	0	0	0	0	0	0	0	0
x_{363}	0	0	0	0	0	0	0	0	0	0
x_{377}	0	0	0	0	0	0	0	0	0	0
x_{423}	0	0	0	0	0	0	0	0	0	0
x_{454}	0	0	0	0	0	0	0	0	0	0
x_{568}	0	0	0	0	0	0	0	0	0	0
x_{573}	0	0	0	0	0	0	0	0	15	0

x_{276}	0									
x_{282}	0	22								
x_{288}	0	0	0							
x_{322}	0	0	0	0						
x_{356}	0	0	0	0	16					
x_{363}	0	0	0	0	27	4				
x_{377}	0	0	0	0	0	0	0			
x_{423}	0	0	0	24	0	0	0	0		
x_{454}	0	0	0	0	0	0	0	20	0	
x_{568}	0	0	0	0	0	0	0	0	0	0
x_{573}	0	4	1	0	0	0	0	0	0	0
	x_{270}	x_{276}	x_{282}	x_{288}	x_{322}	x_{356}	x_{363}	x_{377}	x_{423}	x_{454}

x_{573}	0
	x_{568}

B^0 BRANCHING RATIOS

NODE=S042220

For branching ratios in which the charge of the decaying B is not determined, see the $B^{\pm}$ section.

NODE=S042220

$\Gamma(\ell^+\nu_\ell X)/\Gamma_{total}$ — Γ_1/Γ

NODE=S042R94
NODE=S042R94

VALUE (units 10^{-2})	*DOCUMENT ID*		*TECN*	*COMMENT*
10.33±0.28 OUR EVALUATION	(Produced by HFLAV)			
10.14±0.30 OUR AVERAGE	Error includes scale factor of 1.1.			
10.46±0.30±0.23	[1] URQUIJO	07	BELL	$e^+e^- \to \Upsilon(4S)$
9.64±0.27±0.33	[2] AUBERT,B	06Y	BABR	$e^+e^- \to \Upsilon(4S)$
10.78±0.60±0.69	[3] ARTUSO	97	CLE2	$e^+e^- \to \Upsilon(4S)$
9.3 ±1.1 ±1.5	ALBRECHT	94	ARG	$e^+e^- \to \Upsilon(4S)$
9.9 ±3.0 ±0.9	HENDERSON	92	CLEO	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
10.32±0.36±0.35	[4] OKABE	05	BELL	Repl. by URQUIJO 07
10.9 ±0.7 ±1.1	ATHANAS	94	CLE2	Sup. by ARTUSO 97

→ UNCHECKED ←

[1] URQUIJO 07 report a measurement of (9.80 ± 0.29 ± 0.21)% for the partial branching fraction of $B \to e\nu_e X_c$ decay with electron energy above 0.6 GeV. We converted the result to $B \to e\nu_e X$ branching fraction.

NODE=S042R94;LINKAGE=UR

[2] The measurements are obtained for charged and neutral B mesons partial rates of semileptonic decay to electrons with momentum above 0.6 GeV/c in the B rest frame. The best precision on the ratio is achieved for a momentum threshold of 1.0 GeV: $B(B^+ \to e^+\nu_e X)$ / $B(B^0 \to e^+\nu_e X) = 1.074 \pm 0.041 \pm 0.026$.

NODE=S042R94;LINKAGE=AE

[3] ARTUSO 97 uses partial reconstruction of $B \to D^*\ell\nu_\ell$ and inclusive semileptonic branching ratio from BARISH 96B (0.1049 ± 0.0017 ± 0.0043).

NODE=S042R94;LINKAGE=B

[4] The measurements are obtained for charged and neutral B mesons partial rates of semileptonic decay to electrons with momentum above 0.6 GeV/c in the B rest frame, and their ratio of $B(B^+ \to e^+\nu_e X)/B(B^0 \to e^+\nu_e X) = 1.08 \pm 0.05 \pm 0.02$.

NODE=S042R94;LINKAGE=OK

$\Gamma(e^+\nu_e X_c)/\Gamma_{total}$ — Γ_2/Γ

NODE=S042S00
NODE=S042S00

VALUE (units 10^{-2})	*DOCUMENT ID*		*TECN*	*COMMENT*
10.08±0.30±0.22	[1] URQUIJO	07	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Measure the independent B^+ and B^0 partial branching fractions with electron threshold energies of 0.4 GeV.

NODE=S042S00;LINKAGE=UR

$\Gamma(\ell^+\nu_\ell X_u)/\Gamma_{total}$ — Γ_3/Γ

NODE=S042P68

Requires $E^*_\ell > 1$ GeV, where E^*_ℓ is letpon energy in B rest frame.

NODE=S042P68
NODE=S042P68

VALUE (units 10^{-3})	*DOCUMENT ID*		*TECN*	*COMMENT*
1.51±0.10±0.16	[1] CAO	21A	BELL	$e^+e^- \to \Upsilon(4S)$

[1] The correlation of 50% with $B(B^+ \to \ell^+\nu_\ell X_u)$(letpon energy in B rest frame $E^*_\ell >$ 1 GeV) was reported.

NODE=S042P68;LINKAGE=A

$\Gamma(D^- \ell^+ \nu_\ell)/\Gamma_{total}$ — Γ_5/Γ

NODE=S042R35

ℓ denotes e or μ, not the sum.

VALUE (%)	DOCUMENT ID		TECN	COMMENT
2.12±0.06 OUR EVALUATION	(Produced by HFLAV)			
2.25±0.08 OUR AVERAGE				
2.31±0.03±0.11	[1] GLATTAUER	16	BELL	$e^+ e^- \to \Upsilon(4S)$
2.21±0.11±0.11	[2] AUBERT	10	BABR	$e^+ e^- \to \Upsilon(4S)$
2.09±0.13±0.18	[3] BARTELT	99	CLE2	$e^+ e^- \to \Upsilon(4S)$
2.35±0.20±0.44	[4] BUSKULIC	97	ALEP	$e^+ e^- \to Z$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2.21±0.11±0.12	[2] AUBERT	08Q	BABR	Repl. by AUBERT 10
2.13±0.12±0.39	ABE	02E	BELL	Repl. by GLATTAUER 16
1.87±0.15±0.32	[5] ATHANAS	97	CLE2	Repl. by BARTELT 99
1.8 ±0.6 ±0.3	[6] FULTON	91	CLEO	$e^+ e^- \to \Upsilon(4S)$
2.0 ±0.7 ±0.6	[7] ALBRECHT	89J	ARG	$e^+ e^- \to \Upsilon(4S)$

NODE=S042R35
NODE=S042R35
→ UNCHECKED ←

[1] Uses a fully reconstructed B meson as a tag on the recoil side while the other, on the signal side, is partially reconstructed from $B \to D \ell \nu$. NODE=S042R35;LINKAGE=D

[2] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S042R35;LINKAGE=BE

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R35;LINKAGE=L9

[4] BUSKULIC 97 assumes fraction (B^+) = fraction (B^0) = (37.8 ± 2.2)% and PDG 96 values for B lifetime and branching ratio of D^* and D decays. NODE=S042R35;LINKAGE=I

[5] ATHANAS 97 uses missing energy and missing momentum to reconstruct neutrino. NODE=S042R35;LINKAGE=C

[6] FULTON 91 assumes assuming equal production of B^0 and B^+ at the $\Upsilon(4S)$ and uses Mark III D and D^* branching ratios. NODE=S042R35;LINKAGE=B

[7] ALBRECHT 89J reports 0.018 ± 0.006 ± 0.005. We rescale using the method described in STONE 94 but with the updated PDG 94 B($D^0 \to K^- \pi^+$). NODE=S042R35;LINKAGE=A

$\Gamma(D^- \ell^+ \nu_\ell)/\Gamma(\ell^+ \nu_\ell X)$ — Γ_5/Γ_1

NODE=S042C02
NODE=S042C02

VALUE	DOCUMENT ID		TECN	COMMENT
0.230±0.011±0.011	[1] AUBERT	10	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Uses a fully reconstructed B meson on the recoil side. NODE=S042C02;LINKAGE=AU

$\Gamma(D^- \ell^+ \nu_\ell)/\Gamma(D \ell^+ \nu_\ell X)$ — Γ_5/Γ_4

NODE=S042B84
NODE=S042B84

VALUE	DOCUMENT ID		TECN	COMMENT
0.215±0.016±0.013	[1] AUBERT	07AN	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Uses a fully reconstructed B meson on the recoil side. NODE=S042B84;LINKAGE=AU

$\Gamma(D^- \tau^+ \nu_\tau)/\Gamma_{total}$ — Γ_6/Γ

NODE=S042S01
NODE=S042S01

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.04±0.35±0.18	[1] AUBERT	08N	BABR	Repl. by AUBERT 09S

[1] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S042S01;LINKAGE=AU

$\Gamma(D^- \tau^+ \nu_\tau)/\Gamma(D^- \ell^+ \nu_\ell)$ — Γ_6/Γ_5

NODE=S042B94
NODE=S042B94

VALUE	DOCUMENT ID		TECN	COMMENT
0.469±0.084±0.053	[1,2] LEES	12D	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.489±0.165±0.069	[1] AUBERT	09S	BABR	Repl. by LEES 12D

[1] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S042B94;LINKAGE=AU

[2] Uses $\tau^+ \to e^+ \nu_e \overline{\nu}_\tau$ and $\tau^+ \to \mu^+ \nu_\mu \overline{\nu}_\tau$ and e^+ or μ^+ as ℓ^+. NODE=S042B94;LINKAGE=LE

$\Gamma(D^*(2010)^- \ell^+ \nu_\ell)/\Gamma_{total}$ — Γ_7/Γ

NODE=S042R21
NODE=S042R21

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT	
4.90 ±0.12 OUR EVALUATION		(Produced by HFLAV) This value assumes isospin symmetry.				→ UNCHECKED ←
5.11 ±0.14 OUR FIT		Error includes scale factor of 1.4.				
5.11 ±0.15 OUR AVERAGE		Error includes scale factor of 1.4. See the ideogram below.				
4.922±0.023±0.220		[1] ADACHI	23J	BELL	$e^+ e^- \to \Upsilon(4S)$	
5.02 ±0.02 ±0.16		[2] WAHEED	21	BELL	$e^+ e^- \to \Upsilon(4S)$	
5.49 ±0.16 ±0.25		[3] AUBERT	08Q	BABR	$e^+ e^- \to \Upsilon(4S)$	
4.69 ±0.04 ±0.34		[4] AUBERT	08R	BABR	$e^+ e^- \to \Upsilon(4S)$	
5.90 ±0.22 ±0.50		[5] ABDALLAH	04D	DLPH	$e^+ e^- \to Z^0$	
6.09 ±0.19 ±0.40		[6] ADAM	03	CLE2	$e^+ e^- \to \Upsilon(4S)$	
4.70 ±0.13 $^{+0.36}_{-0.31}$		[7] ABREU	01H	DLPH	$e^+ e^- \to Z$	SYCLP=A
5.26 ±0.20 ±0.46		[8] ABBIENDI	00Q	OPAL	$e^+ e^- \to Z$	SYCLP=A
5.53 ±0.26 ±0.52		[9] BUSKULIC	97	ALEP	$e^+ e^- \to Z$	SYCLP=A

• • • We do not use the following data for averages, fits, limits, etc. • • •

$4.917 \pm 0.032 \pm 0.216$		[10] ADACHI	23J	BELL	$e^+e^- \to \Upsilon(4S)$	OCCUR=2
$4.926 \pm 0.032 \pm 0.231$		[11] ADACHI	23J	BELL	$e^+e^- \to \Upsilon(4S)$	OCCUR=3
$4.90 \pm 0.02 \pm 0.16$		[2] WAHEED	19	BELL	Repl. by WAHEED 21	
$4.58 \pm 0.03 \pm 0.26$		[2] DUNGEL	10	BELL	Repl. by WAHEED 19	
$4.90 \pm 0.07 \ ^{+0.36}_{-0.35}$		[5] AUBERT	05E	BABR	Repl. by AUBERT 08R	
$5.39 \pm 0.11 \pm 0.34$		[12] ABDALLAH	04D	DLPH	$e^+e^- \to Z^0$	OCCUR=2
$4.59 \pm 0.23 \pm 0.40$		[13] ABE	02F	BELL	Repl. by DUNGEL 10	
$6.09 \pm 0.19 \pm 0.40$		[14] BRIERE	02	CLE2	$e^+e^- \to \Upsilon(4S)$	
$5.08 \pm 0.21 \pm 0.66$		[15] ACKERSTAFF	97G	OPAL	Repl. by ABBIENDI 00Q	SYCLP=A
$5.52 \pm 0.17 \pm 0.68$		[16] ABREU	96P	DLPH	Repl. by ABREU 01H	SYCLP=A
$4.49 \pm 0.32 \pm 0.39$	376	[17] BARISH	95	CLE2	Repl. by ADAM 03	
$5.18 \pm 0.30 \pm 0.62$	410	[18] BUSKULIC	95N	ALEP	Sup. by BUSKULIC 97	
$4.5 \pm 0.3 \pm 0.4$		[19] ALBRECHT	94	ARG	$e^+e^- \to \Upsilon(4S)$	
$4.7 \pm 0.5 \pm 0.5$	235	[20] ALBRECHT	93	ARG	$e^+e^- \to \Upsilon(4S)$	
seen	398	[21] SANGHERA	93	CLE2	$e^+e^- \to \Upsilon(4S)$	
$7.0 \pm 1.8 \pm 1.4$		[22] ANTREASYAN	90B	CBAL	$e^+e^- \to \Upsilon(4S)$	
		[23] ALBRECHT	89C	ARG	$e^+e^- \to \Upsilon(4S)$	
$6.0 \pm 1.0 \pm 1.4$		[24] ALBRECHT	89J	ARG	$e^+e^- \to \Upsilon(4S)$	
$4.0 \pm 0.4 \pm 0.6$		[25] BORTOLETTO	89B	CLEO	$e^+e^- \to \Upsilon(4S)$	
$7.0 \pm 1.2 \pm 1.9$	47	[26] ALBRECHT	87J	ARG	$e^+e^- \to \Upsilon(4S)$	

[1] Uses fully reconstructed $D^{*-}\ell^+\nu$ events with $\ell = e$ or μ. NODE=S042R21;LINKAGE=K

[2] WAHEED 21 uses fully reconstructed $D^{*-}\ell^+\nu$ events ($\ell = e$ or μ). NODE=S042R21;LINKAGE=DU

[3] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S042R21;LINKAGE=BE

[4] Measured using fully reconstructed D^* sample and a simultaneous fit to the Caprini-Lellouch-Neubert form factor parameters: $\rho^2 = 1.191 \pm 0.048 \pm 0.028$, $R_1(1) = 1.429 \pm 0.061 \pm 0.044$, and $R_2(1) = 0.827 \pm 0.038 \pm 0.022$. NODE=S042R21;LINKAGE=UB

[5] Measured using fully reconstructed D^* sample. NODE=S042R21;LINKAGE=AB

[6] Uses the combined fit of both $B^0 \to D^*(2010)^-\ell\nu$ and $B^+ \to \overline{D}(2007)^0\ell\nu$ samples. NODE=S042R21;LINKAGE=DM

[7] ABREU 01H measured using about 5000 partial reconstructed D^* sample. NODE=S042R21;LINKAGE=BU

[8] ABBIENDI 00Q assumes the fraction B($b \to B^0$)= $(39.7^{+1.8}_{-2.2})$%. This result is an average of two methods using exclusive and partial D^* reconstruction. NODE=S042R21;LINKAGE=Q0

[9] BUSKULIC 97 assumes fraction (B^+) = fraction (B^0) = (37.8 ± 2.2)% and PDG 96 values for B lifetime and D^* and D branching fractions. NODE=S042R21;LINKAGE=I

[10] Uses fully reconstructed $D^{*-}e^+\nu$ events. NODE=S042R21;LINKAGE=L

[11] Uses fully reconstructed $D^{*-}\mu^+\nu$ events. NODE=S042R21;LINKAGE=M

[12] Combines with previous partial reconstructed D^* measurement. NODE=S042R21;LINKAGE=AD

[13] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R21;LINKAGE=EP

[14] The results are based on the same analysis and data sample reported in ADAM 03. NODE=S042R21;LINKAGE=R6

[15] ACKERSTAFF 97G assumes fraction (B^+) = fraction (B^0) = (37.8 ± 2.2)% and PDG 96 values for B lifetime and branching ratio of D^* and D decays. NODE=S042R21;LINKAGE=IF

[16] ABREU 96P result is the average of two methods using exclusive and partial D^* reconstruction. NODE=S042R21;LINKAGE=H

[17] BARISH 95 use B($D^0 \to K^-\pi^+$) = (3.91 ± 0.08 ± 0.17)% and B($D^{*+} \to D^0\pi^+$) = (68.1 ± 1.0 ± 1.3)%. NODE=S042R21;LINKAGE=A1

[18] BUSKULIC 95N assumes fraction (B^+) = fraction (B^0) = 38.2 ± 1.3 ± 2.2% and τ_{B^0} = 1.58 ± 0.06 ps. $\Gamma(D^{*-}\ell^+\nu_\ell)$/total = [5.18 − 0.13(fraction(B^0)−38.2)−1.5(τ_{B^0} − 1.58)]%. NODE=S042R21;LINKAGE=G

[19] ALBRECHT 94 assumes B($D^{*+} \to D^0\pi^+$) = 68.1 ± 1.0 ± 1.3%. Uses partial reconstruction of D^{*+} and is independent of D^0 branching ratios. NODE=S042R21;LINKAGE=F

[20] ALBRECHT 93 reports 0.052 ± 0.005 ± 0.006. We rescale using the method described in STONE 94 but with the updated PDG 94 B($D^0 \to K^-\pi^+$). We have taken their average e and μ value. They also obtain $\alpha = 2*\Gamma^0/(\Gamma^- + \Gamma^+) - 1$ = 1.1 ± 0.4 ± 0.2, $A_{AF} = 3/4*(\Gamma^- - \Gamma^+)/\Gamma$ = 0.2 ± 0.08 ± 0.06 and a value of $|V_{cb}|$ = 0.036–0.045 depending on model assumptions. NODE=S042R21;LINKAGE=E

[21] Combining $\overline{D}^{*0}\ell^+\nu_\ell$ and $\overline{D}^{*-}\ell^+\nu_\ell$ SANGHERA 93 test $V-A$ structure and fit the decay angular distributions to obtain $A_{FB} = 3/4*(\Gamma^- - \Gamma^+)/\Gamma$ = 0.14 ± 0.06 ± 0.03. Assuming a value of V_{cb}, they measure V, A_1, and A_2, the three form factors for the $D^*\ell\nu_\ell$ decay, where results are slightly dependent on model assumptions. NODE=S042R21;LINKAGE=D

[22] ANTREASYAN 90B is average over B and $\overline{D}^*(2010)$ charge states. NODE=S042R21;LINKAGE=62

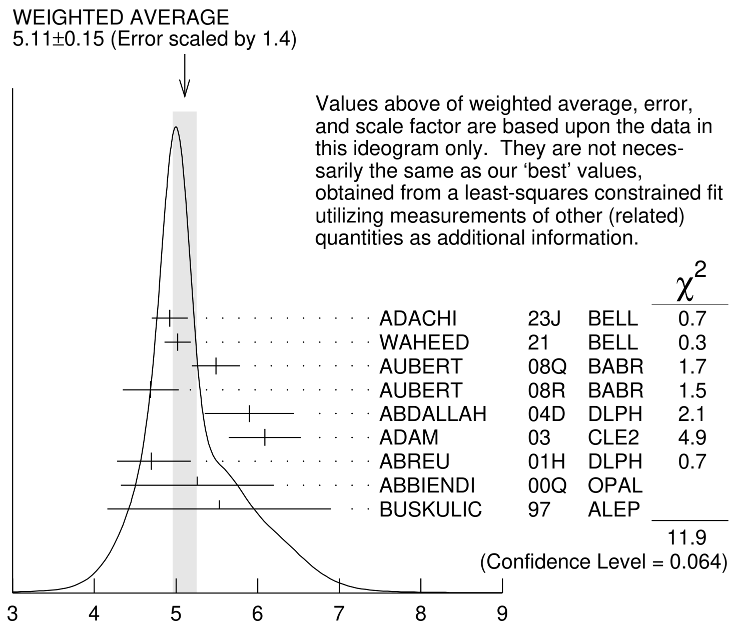
[23] The measurement of ALBRECHT 89C suggests a D^* polarization γ_L/γ_T of 0.85 ± 0.45. or α = 0.7 ± 0.9. NODE=S042R21;LINKAGE=B

[24] ALBRECHT 89J is ALBRECHT 87J value rescaled using B($D^*(2010)^- \to D^0\pi^-$) = 0.57 ± 0.04 ± 0.04. Superseded by ALBRECHT 93. NODE=S042R21;LINKAGE=AA

[25] We have taken average of the the BORTOLETTO 89B values for electrons and muons, 0.046 ± 0.005 ± 0.007. We rescale using the method described in STONE 94 but with NODE=S042R21;LINKAGE=C

the updated PDG 94 B($D^0 \to K^- \pi^+$). The measurement suggests a D^* polarization parameter value $\alpha = 0.65 \pm 0.66 \pm 0.25$.

[26] ALBRECHT 87J assume μ-e universality, the B($\Upsilon(4S) \to B^0 \overline{B}^0$) = 0.45, the B($D^0 \to K^- \pi^+$) = ($0.042 \pm 0.004 \pm 0.004$), and the B($D^*(2010)^- \to D^0 \pi^-$) = 0.49 ± 0.08. Superseded by ALBRECHT 89J. NODE=S042R21;LINKAGE=A



$\Gamma\left(D^*(2010)^- \ell^+ \nu_\ell\right)/\Gamma_{total}$ (%)

$\Gamma\left(D^*(2010)^- \ell^+ \nu_\ell\right)/\Gamma\left(D \ell^+ \nu_\ell X\right)$ Γ_7/Γ_4

NODE=S042B85
NODE=S042B85

VALUE	DOCUMENT ID		TECN	COMMENT
0.537±0.031±0.036	[1] AUBERT	07AN	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Uses a fully reconstructed B meson on the recoil side. NODE=S042B85;LINKAGE=AU

$\Gamma\left(D^*(2010)^- e^+ \nu_e\right)/\Gamma\left(D^*(2010)^- \mu^+ \nu_\mu\right)$ Γ_8/Γ_9

NODE=S042P85
NODE=S042P85

VALUE	DOCUMENT ID		TECN	COMMENT
1.001±0.019 OUR AVERAGE				
0.998±0.009±0.020	ADACHI	23J	BELL	$e^+ e^- \to \Upsilon(4S)$
1.011±0.035±0.024	PRIM	23	BELL	$e^+ e^- \to \Upsilon(4S)$

$\Gamma\left(D^*(2010)^- \tau^+ \nu_\tau\right)/\Gamma_{total}$ Γ_{10}/Γ

NODE=S042B09
NODE=S042B09

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
1.48±0.09 OUR FIT Error includes scale factor of 1.2. [(1.45 ± 0.10) × 10^{-2} OUR 2024 FIT Scale factor = 1.3]				
1.48±0.18 OUR AVERAGE Error includes scale factor of 1.1.				
1.42±0.094±0.140	[1] AAIJ	18D	LHCB	pp at 7, 8 TeV
$2.02^{+0.40}_{-0.37}$ ±0.37	[2] MATYJA	07	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.11±0.51 ±0.06	[3] AUBERT	08N	BABR	Repl. by AUBERT 09S

NEW

[1] Noramlizes to B($B^0 \to D^*(2010)^- \pi^+ \pi^- \pi^+$) = ($7.214 \pm 0.28$) × 10^{-3}. NODE=S042B09;LINKAGE=A

[2] Observed in the recoil of the accompanying B meson. NODE=S042B09;LINKAGE=MA

[3] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S042B09;LINKAGE=AU

$\Gamma\left(D^*(2010)^- \tau^+ \nu_\tau\right)/\Gamma\left(D^*(2010)^- \ell^+ \nu_\ell\right)$ Γ_{10}/Γ_7

NODE=S042B95
NODE=S042B95

VALUE	DOCUMENT ID		TECN	COMMENT
0.290±0.018 OUR FIT Error includes scale factor of 1.2. [0.284 ± 0.019 OUR 2024 FIT Scale factor = 1.3]				
0.291±0.022 OUR AVERAGE Error includes scale factor of 1.3. See the ideogram below. [0.283 ± 0.025 OUR 2024 AVERAGE Scale factor = 1.5]				
0.267±0.012±0.020	[1,2] AAIJ	23W	LHCB	pp at 13 TeV
0.302±0.030±0.011	[3] SATO	16B	BELL	$e^+ e^- \to \Upsilon(4S)$
0.355±0.039±0.021	[4,5] LEES	12D	BABR	$e^+ e^- \to \Upsilon(4S)$

NEW
NEW
OCCUR=2

• • • We do not use the following data for averages, fits, limits, etc. • • •

$0.260 \pm 0.015 \pm 0.019$	[1] AAIJ	23W	LHCB	pp at 13 TeV
$0.291 \pm 0.019 \pm 0.029$	[1] AAIJ	18D	LHCB	Repl. by AAIJ 23W
$0.336 \pm 0.027 \pm 0.030$	[6] AAIJ	15Q	LHCB	Repl. by AAIJ 23AR
$0.207 \pm 0.095 \pm 0.008$	[4] AUBERT	09S	BABR	Repl. by LEES 12D

[1] Uses $\tau^+ \to \pi^+\pi^-\pi^+\overline{\nu}_\tau$ and $\tau^+ \to \pi^+\pi^-\pi^+\pi^0\overline{\nu}_\tau$, and μ^+ as ℓ^+. NODE=S042B95;LINKAGE=C

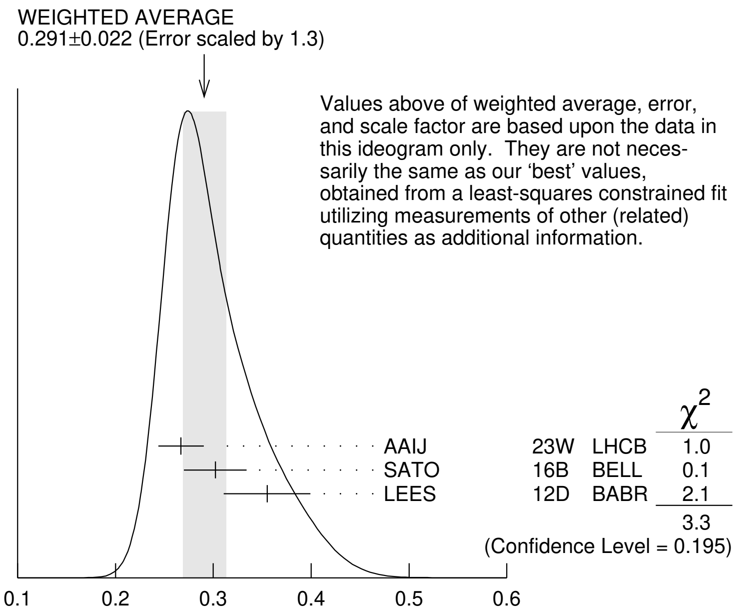
[2] Combination with measurement from AAIJ 18D. NODE=S042B95;LINKAGE=D

[3] Uses semileptonic B decay events for tagging and $\tau^+ \to \ell^+\nu_\ell\overline{\nu}_\tau$ mode. NODE=S042B95;LINKAGE=B

[4] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S042B95;LINKAGE=AU

[5] Uses $\tau^+ \to e^+\nu_e\overline{\nu}_\tau$ and $\tau^+ \to \mu^+\nu_\mu\overline{\nu}_\tau$ and e^+ or μ^+ as ℓ^+. NODE=S042B95;LINKAGE=LE

[6] Uses $\tau^+ \to \mu^+\nu_\mu\overline{\nu}_\tau$ and μ^+ as ℓ^+. NODE=S042B95;LINKAGE=A



$\Gamma\big(D^*(2010)^-\tau^+\nu_\tau\big)/\Gamma\big(D^*(2010)^-\ell^+\nu_\ell\big)$

$\Gamma\big(D^*(2010)^-\tau^+\nu_\tau\big)/\Gamma\big(D^*(2010)^-\pi^+\pi^+\pi^-\big)$ — Γ_{10}/Γ_{61}

NODE=S042P26

VALUE	DOCUMENT ID		TECN	COMMENT
1.84±0.13 OUR AVERAGE [1.77 ± 0.13 OUR 2024 AVERAGE]				
1.84±0.08±0.10	[1,2] AAIJ	23W	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1.79 \pm 0.11 \pm 0.11$	[1] AAIJ	23W	LHCB	pp at 13 TeV
$1.97 \pm 0.13 \pm 0.18$	[1] AAIJ	18D	LHCB	Repl. by AAIJ 23W

NODE=S042P26 NEW OCCUR=2

[1] Uses $\tau^+ \to \pi^+\pi^-\pi^+\overline{\nu}_\tau$ and $\tau^+ \to \pi^+\pi^-\pi^+\pi^0\overline{\nu}_\tau$ modes. NODE=S042P26;LINKAGE=A

[2] Combination with result from AAIJ 18D. NODE=S042P26;LINKAGE=B

$\Gamma\big(\overline{D}^{(*)} n\pi\ell^+\nu_\ell (n \geq 1)\big)/\Gamma\big(D\ell^+\nu_\ell X\big)$ — Γ_{11}/Γ_4

NODE=S042B86

VALUE	DOCUMENT ID		TECN	COMMENT
0.248±0.032±0.030	[1] AUBERT	07AN	BABR	$e^+e^- \to \Upsilon(4S)$

NODE=S042B86

[1] Uses a fully reconstructed B meson on the recoil side. NODE=S042B86;LINKAGE=AU

$\Gamma\big(\overline{D}^0\pi^-\ell^+\nu_\ell\big)/\Gamma_{total}$ — Γ_{12}/Γ

NODE=S042Q36

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
3.64±0.20 OUR AVERAGE				
$3.60 \pm 0.18 \pm 0.11$	MEIER	23	BELL	$e^+e^- \to \Upsilon(4S)$
$4.3 \pm 0.8 \pm 0.3$	[1] AUBERT	08Q	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$4.05 \pm 0.36 \pm 0.41$	VOSSEN	18	BELL	Repl. by MEIER 23
$4.2 \pm 0.8 \pm 0.1$	[1,2] LIVENTSEV	08	BELL	Repl. by VOSSEN 18
$3.3 \pm 0.9 \pm 0.1$	[3] LIVENTSEV	05	BELL	Repl. by LIVENTSEV 08

NODE=S042Q36

[1] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S042Q36;LINKAGE=BE

[2] LIVENTSEV 08 reports $(4.2 \pm 0.7 \pm 0.6) \times 10^{-3}$ from a measurement of $[\Gamma(B^0 \rightarrow \overline{D}^0 \pi^- \ell^+ \nu_\ell)/\Gamma_{total}]$ / $[B(B^0 \rightarrow D^- \ell^+ \nu_\ell)]$ assuming $B(B^0 \rightarrow D^- \ell^+ \nu_\ell) = (2.12 \pm 0.20) \times 10^{-2}$, which we rescale to our best value $B(B^0 \rightarrow D^- \ell^+ \nu_\ell) = (2.12 \pm 0.06) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042Q36;LINKAGE=LV

[3] LIVENTSEV 05 reports $[\Gamma(B^0 \rightarrow \overline{D}^0 \pi^- \ell^+ \nu_\ell)/\Gamma_{total}]$ / $[B(B^+ \rightarrow \overline{D}^0 \ell^+ \nu_\ell)] = 0.15 \pm 0.03 \pm 0.03$ which we multiply by our best value $B(B^+ \rightarrow \overline{D}^0 \ell^+ \nu_\ell) = (2.21 \pm 0.06) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042Q36;LINKAGE=LI

$\Gamma(D_0^*(2300)^- \ell^+ \nu_\ell,\ D_0^{*-} \rightarrow \overline{D}^0 \pi^-)/\Gamma_{total}$ Γ_{13}/Γ

NODE=S042S03
NODE=S042S03

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
< 4.4	90	MEIER	23	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
44 ±8±6		[1] AUBERT	08BL	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
20 ±7±5		[1] LIVENTSEV	08	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S042S03;LINKAGE=BE

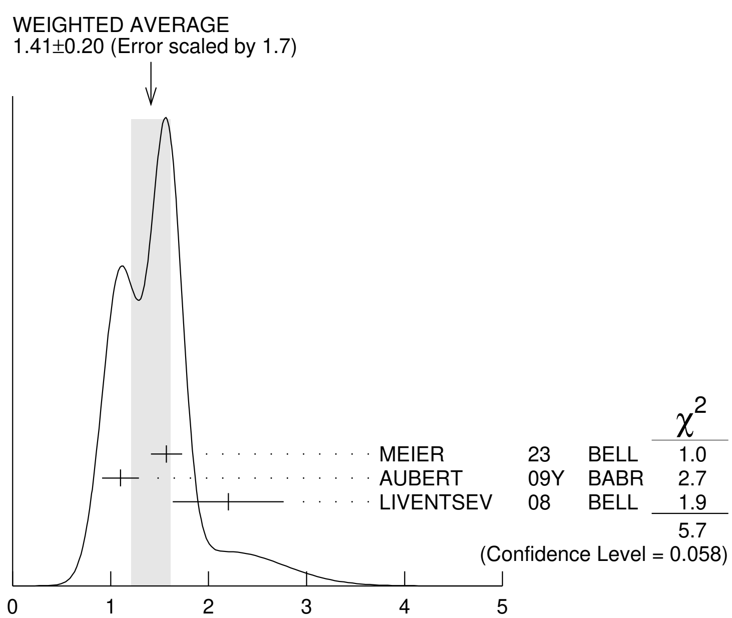
$\Gamma(D_2^*(2460)^- \ell^+ \nu_\ell,\ D_2^{*-} \rightarrow \overline{D}^0 \pi^-)/\Gamma_{total}$ Γ_{14}/Γ

NODE=S042S04
NODE=S042S04

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
1.41±0.20 OUR AVERAGE Error includes scale factor of 1.7. See the ideogram below.				
1.57±0.15±0.05	MEIER	23	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
1.10±0.17±0.08	[1] AUBERT	09Y	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
2.2 ±0.4 ±0.4	[2] LIVENTSEV	08	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Uses a simultaneous fit of all B semileptonic decays without full reconstruction of events. AUBERT 09Y reports $B(B^0 \rightarrow \overline{D}_2^*(2460)^- \ell^+ \nu_\ell) \cdot B(\overline{D}_2^*(2460)^- \rightarrow \overline{D}^{(*)0} \pi^-) = (1.77 \pm 0.26 \pm 0.11) \times 10^{-3}$ and the authors have provided us the individual measurement. NODE=S042S04;LINKAGE=AU

[2] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S042S04;LINKAGE=BE



$\Gamma(\overline{D}^{*0} \pi^- \ell^+ \nu_\ell)/\Gamma_{total}$ Γ_{15}/Γ

NODE=S042Q37
NODE=S042Q37

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
5.44±0.28 OUR AVERAGE				
5.51±0.24±0.17	MEIER	23	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
4.8 ±0.8 ±0.4	[1] AUBERT	08Q	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
6.46±0.53±0.52	VOSSEN	18	BELL	Repl. by MEIER 23
5.6 ±2.2 ±0.2	[1,2] LIVENTSEV	08	BELL	Repl. by VOSSEN 18
5.5 ±1.2 ±0.2	[3,4] LIVENTSEV	05	BELL	Repl. by LIVENTSEV 08

[1] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S042Q37;LINKAGE=BE

[2] LIVENTSEV 08 reports $(5.6 \pm 2.1 \pm 0.8) \times 10^{-3}$ from a measurement of $[\Gamma(B^0 \to \overline{D}^{*0} \pi^- \ell^+ \nu_\ell)/\Gamma_{total}]$ / $[B(B^0 \to D^- \ell^+ \nu_\ell)]$ assuming $B(B^0 \to D^- \ell^+ \nu_\ell) = (2.12 \pm 0.20) \times 10^{-2}$, which we rescale to our best value $B(B^0 \to D^- \ell^+ \nu_\ell) = (2.12 \pm 0.06) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042Q37;LINKAGE=LV

[3] Excludes D^{*+} contribution to $D\pi$ modes. NODE=S042Q37;LINKAGE=EC

[4] LIVENTSEV 05 reports $[\Gamma(B^0 \to \overline{D}^{*0} \pi^- \ell^+ \nu_\ell)/\Gamma_{total}]$ / $[B(B^+ \to \overline{D}^*(2007)^0 \ell^+ \nu_\ell)] = 0.10 \pm 0.02 \pm 0.01$ which we multiply by our best value $B(B^+ \to \overline{D}^*(2007)^0 \ell^+ \nu_\ell) = (5.53 \pm 0.22) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042Q37;LINKAGE=LI

$\Gamma(D_1(2420)^- \ell^+ \nu_\ell,\ D_1^- \to \overline{D}^{*0} \pi^-)/\Gamma_{total}$ — Γ_{16}/Γ

NODE=S042S05
NODE=S042S05

VALUE (units 10^{-3})		DOCUMENT ID		TECN	COMMENT
2.85±0.25 OUR AVERAGE					
3.06±0.50±0.28		MEIER	23	BELL	$e^+ e^- \to \Upsilon(4S)$
2.78±0.24±0.25	1	AUBERT	09Y	BABR	$e^+ e^- \to \Upsilon(4S)$
2.7 ±0.4 ±0.3	2	AUBERT	08BL	BABR	$e^+ e^- \to \Upsilon(4S)$
5.4 ±1.9 ±0.9	2	LIVENTSEV	08	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Uses a simultaneous measurement of all B semileptonic decays without full reconstruction of events. NODE=S042S05;LINKAGE=AU

[2] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S042S05;LINKAGE=BE

$\Gamma(D_1(2420)^- \ell^+ \nu_\ell,\ D_1^- \to D^- \pi^+ \pi^-)/\Gamma_{total}$ — Γ_{17}/Γ

NODE=S042P83
NODE=S042P83

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
1.02±0.13±0.09	MEIER	23	BELL	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(D_1'(2430)^- \ell^+ \nu_\ell,\ D_1'^- \to \overline{D}^{*0} \pi^-)/\Gamma_{total}$ — Γ_{18}/Γ

NODE=S042S06
NODE=S042S06

VALUE (units 10^{-3})	CL%		DOCUMENT ID		TECN	COMMENT
2.5 ±0.6 OUR AVERAGE						
2.06±0.68±0.25			MEIER	23	BELL	$e^+ e^- \to \Upsilon(4S)$
3.1 ±0.7 ±0.5		1	AUBERT	08BL	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<5.0	90	1	LIVENTSEV	08	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S042S06;LINKAGE=BE

$\Gamma(D_2^*(2460)^- \ell^+ \nu_\ell,\ D_2^{*-} \to \overline{D}^{*0} \pi^-)/\Gamma_{total}$ — Γ_{19}/Γ

NODE=S042S07
NODE=S042S07

VALUE (units 10^{-4})	CL%		DOCUMENT ID		TECN	COMMENT
6.6±1.1 OUR AVERAGE						
5.1±4.0±1.0			MEIER	23	BELL	$e^+ e^- \to \Upsilon(4S)$
6.7±1.2±0.5		1	AUBERT	09Y	BABR	$e^+ e^- \to \Upsilon(4S)$
7 ±2 ±2		2	AUBERT	08BL	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<30	90	2	LIVENTSEV	08	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Uses a simultaneous fit of all B semileptonic decays without full reconstruction of events. AUBERT 09Y reports $B(B^0 \to \overline{D}_2^*(2460)^- \ell^+ \nu_\ell) \cdot B(\overline{D}_2^*(2460)^- \to \overline{D}^{(*)0} \pi^-) = (1.77 \pm 0.26 \pm 0.11) \times 10^{-3}$ and the authors have provided us the individual measurement. NODE=S042S07;LINKAGE=AU

[2] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S042S07;LINKAGE=BE

$\Gamma(D^- \pi^+ \pi^- \ell^+ \nu_\ell)/\Gamma_{total}$ — Γ_{20}/Γ

NODE=S042P81
NODE=S042P81

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
1.45±0.18±0.13	MEIER	23	BELL	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(D^- \pi^+ \pi^- \ell^+ \nu_\ell)/\Gamma(D^- \ell^+ \nu_\ell)$ — Γ_{20}/Γ_5

NODE=S042C42
NODE=S042C42

VALUE (units 10^{-2})		DOCUMENT ID		TECN	COMMENT
5.8±1.8±1.2	1	LEES	16	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Measurement used electrons and muons as leptons. NODE=S042C42;LINKAGE=A

$\Gamma(D^{*-} \pi^+ \pi^- \ell^+ \nu_\ell)/\Gamma_{total}$ — Γ_{21}/Γ

NODE=S042P82
NODE=S042P82

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
5.1±2.1±0.9	MEIER	23	BELL	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(D^{*-}\pi^+\pi^-\ell^+\nu_\ell)/\Gamma(D^*(2010)^-\ell^+\nu_\ell)$ — Γ_{21}/Γ_7

NODE=S042C43
NODE=S042C43

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
2.8±0.8±0.6	[1] LEES	16	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Measurement used electrons and muons as leptons.

NODE=S042C43;LINKAGE=A

$\Gamma(\rho^-\ell^+\nu_\ell)/\Gamma_{total}$ — Γ_{22}/Γ

NODE=S042R95

$\ell = e$ or μ, not sum over e and μ modes.

NODE=S042R95

"OUR EVALUATION" includes both B^0 and B^+ decays. The average assumes equality of the semileptonic decay width for these isospin conjugate states.

NODE=S042R95

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
2.94±0.11±0.18 OUR EVALUATION		(Produced by HFLAV)			
2.45±0.32 OUR AVERAGE		Error includes scale factor of 1.6. See the ideogram below.			
$3.22\pm0.27\pm0.24$		[1] SIBIDANOV	13	BELL	$e^+e^- \to \Upsilon(4S)$
$1.75\pm0.15\pm0.27$		[2] DEL-AMO-SA...	11C	BABR	$e^+e^- \to \Upsilon(4S)$
$2.93\pm0.37\pm0.37$		[3] ADAM	07	CLE2	$e^+e^- \to \Upsilon(4S)$
$2.17\pm0.54\pm0.32$		[4] HOKUUE	07	BELL	$e^+e^- \to \Upsilon(4S)$
$2.57\pm0.29^{+0.53}_{-0.62}$		[5] BEHRENS	00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$2.14\pm0.21\pm0.56$		[2] AUBERT,B	05O	BABR	Repl. by DEL-AMO-SANCHEZ 11C
$2.17\pm0.34^{+0.62}_{-0.68}$		[6] ATHAR	03	CLE2	Repl. by ADAM 07
$3.29\pm0.42\pm0.72$		[7] AUBERT	03E	BABR	Repl. by AUBERT,B 05O
$2.69\pm0.41^{+0.61}_{-0.64}$		[8] BEHRENS	00	CLE2	$e^+e^- \to \Upsilon(4S)$
$2.5\ \pm0.4\ ^{+0.7}_{-0.9}$		[9] ALEXANDER	96T	CLE2	Repl. by BEHRENS 00
<4.1	90	[10] BEAN	93B	CLE2	$e^+e^- \to \Upsilon(4S)$

→ UNCHECKED ←

SYCLP=A

SYCLP=A

SYCLP=A
OCCUR=2

[1] The signal events are tagged by a second B meson reconstructed in the fully hadronic decays.

NODE=S042R95;LINKAGE=C

[2] B^+ and B^0 decays combined assuming isospin symmetry. Systematic errors include both experimental and form-factor uncertainties.

NODE=S042R95;LINKAGE=IS

[3] The B^0 and B^+ results are combined assuming the isospin, B lifetimes, and relative charged/neutral B production at the $\Upsilon(4S)$.

NODE=S042R95;LINKAGE=AD

[4] The signal events are tagged by a second B meson reconstructed in the semileptonic mode $B \to D^{(*)}\ell\nu_\ell$.

NODE=S042R95;LINKAGE=HO

[5] Averaging with ALEXANDER 96T results including experimental and theoretical correlations considered, BEHRENS 00 reports systematic errors $^{+0.33}_{-0.46} \pm 0.41$, where the second error is theoretical model dependence. We combine these in quadrature.

NODE=S042R95;LINKAGE=BH

[6] ATHAR 03 reports systematic errors $^{+0.47}_{-0.50} \pm 0.41 \pm 0.01$, which are experimental systematic, systematic due to residual form-factor uncertainties in the signal, and systematic due to residual form-factor uncertainties in the cross-feed modes, respectively. We combine these in quadrature.

NODE=S042R95;LINKAGE=AT

[7] Uses isospin constraints and extrapolation to all electron energies according to five different form-factor calculations. The second error combines the systematic and theoretical uncertainties in quadrature.

NODE=S042R95;LINKAGE=IC

[8] BEHRENS 00 reports $^{+0.35}_{-0.40} \pm 0.50$, where the second error is the theoretical model dependence. We combine these in quadrature. B^+ and B^0 decays combined using isospin symmetry: $\Gamma(B^0 \to \rho^-\ell^+\nu)=2\Gamma(B^+ \to \rho^0\ell^+\nu)\approx 2\Gamma(B^+ \to \omega\ell^+\nu)$. No evidence for $\omega\ell\nu$ is reported.

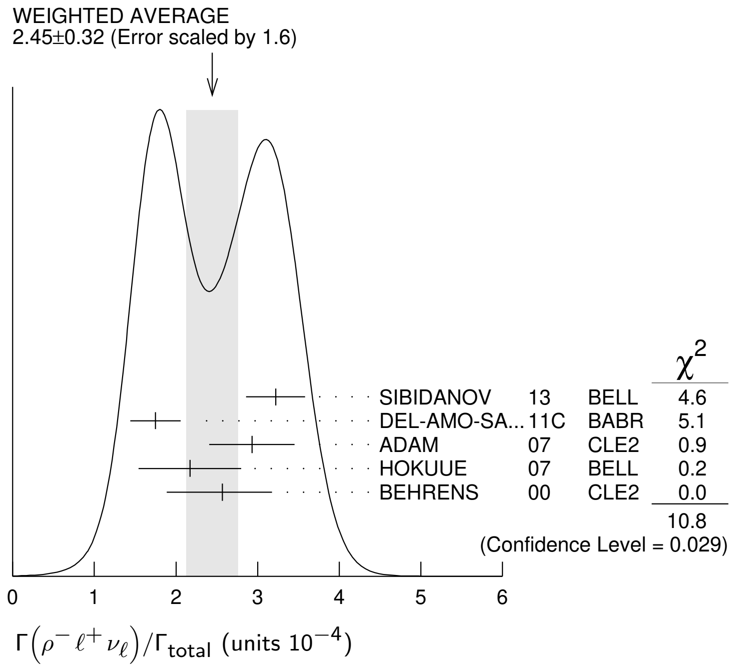
NODE=S042R95;LINKAGE=HI

[9] ALEXANDER 96T reports $^{+0.5}_{-0.7} \pm 0.5$ where the second error is the theoretical model dependence. We combine these in quadrature. B^+ and B^0 decays combined using isospin symmetry: $\Gamma(B^0 \to \rho^-\ell^+\nu) = 2\Gamma(B^+ \to \rho^0\ell^+\nu) \approx 2\Gamma(B^+ \to \omega\ell^+\nu)$. No evidence for $\omega\ell\nu$ is reported.

NODE=S042R95;LINKAGE=B

[10] BEAN 93B limit set using ISGW Model. Using isospin and the quark model to combine $\Gamma(\rho^0\ell^+\nu_\ell)$ and $\Gamma(\omega\ell^+\nu_\ell)$ with this result, they obtain a limit $<(1.6\text{–}2.7)\times10^{-4}$ at 90% CL for $B^+ \to (\omega \text{ or } \rho^0)\ell^+\nu_\ell$. The range corresponds to the ISGW, WSB, and KS models. An upper limit on $|V_{ub}/V_{cb}| < 0.08\text{–}0.13$ at 90% CL is derived as well.

NODE=S042R95;LINKAGE=A



$\Gamma(\pi^- \ell^+ \nu_\ell)/\Gamma_{total}$ Γ_{23}/Γ

NODE=S042S48
NODE=S042S48

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
1.50±0.05 OUR EVALUATION	(Produced by HFLAV)		
1.46±0.04 OUR AVERAGE			
1.49±0.09±0.07	[1] SIBIDANOV 13	BELL	$e^+ e^- \to \Upsilon(4S)$
1.47±0.05±0.06	[2,3] LEES 12AA	BABR	$e^+ e^- \to \Upsilon(4S)$
1.41±0.05±0.07	[4] DEL-AMO-SA...11C	BABR	$e^+ e^- \to \Upsilon(4S)$
1.49±0.04±0.07	[2] HA 11	BELL	$e^+ e^- \to \Upsilon(4S)$
1.54±0.17±0.09	[4] AUBERT 08AV	BABR	$e^+ e^- \to \Upsilon(4S)$
1.37±0.15±0.11	[5,6] ADAM 07	CLE2	$e^+ e^- \to \Upsilon(4S)$
1.38±0.19±0.14	[7] HOKUUE 07	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
1.53±0.18±0.12	[1,8] CAO 23	BELL	$e^+ e^- \to \Upsilon(4S)$
1.42±0.05±0.08	[2] DEL-AMO-SA...11F	BABR	Repl. by LEES 12AA
1.46±0.07±0.08	[9] AUBERT 07J	BABR	Repl. by DEL-AMO-SANCHEZ 11F
1.33±0.17±0.11	[10] AUBERT,B 06K	BABR	Repl. by AUBERT 08AV
1.38±0.10±0.18	[11] AUBERT,B 05O	BABR	Repl. by DEL-AMO-SANCHEZ 11C
1.33±0.18±0.13	[12] ATHAR 03	CLE2	Repl. by ADAM 07
1.8 ±0.4 ±0.4	[13] ALEXANDER 96T	CLE2	Repl. by ATHAR 03

→ UNCHECKED ←

[1] The signal events are tagged by a second B meson reconstructed in the fully hadronic decays. NODE=S042S48;LINKAGE=A

[2] Uses loose neutrino reconstruction technique. Assumes B($\Upsilon(4S) \to B^+ B^-$) = (51.6 ± 0.6)% and B($\Upsilon(4S) \to B^0 \overline{B}^0$) = (48.4 ± 0.6)%. NODE=S042S48;LINKAGE=DE

[3] Reports also a branching fraction value B($B^0 \to \pi^- \ell^+ \nu$) = $(1.45 \pm 0.04 \pm 0.06) \times 10^{-4}$ from the decays of B^+ and B^0 that are combined using the isospin symmetry relation. NODE=S042S48;LINKAGE=LE

[4] Using the isospin symmetry relation, B^+ and B^0 branching fractions are combined. NODE=S042S48;LINKAGE=AB

[5] The B^0 and B^+ results are combined assuming the isospin, B lifetimes, and relative charged/neutral B production at the $\Upsilon(4S)$. NODE=S042S48;LINKAGE=AD

[6] Also report the rate for $q^2 > 16$ GeV^2 of $(0.41 \pm 0.08 \pm 0.04) \times 10^{-4}$ from which they obtain $|V_{ub}| = 3.6 \pm 0.4 \pm 0.2^{+0.6}_{-0.4}$ (last error is from theory). NODE=S042S48;LINKAGE=AM

[7] The signal events are tagged by a second B meson reconstructed in the semileptonic mode $B \to D^{(*)} \ell \nu_\ell$. NODE=S042S48;LINKAGE=HO

[8] This analysis provides the inclusive and exclusive measurement of $|V_{ub}|$. NODE=S042S48;LINKAGE=C

[9] The analysis uses events in which the signal B decays are reconstructed with an innovative loose neutrino reconstruction technique. NODE=S042S48;LINKAGE=AU

[10] The signals are tagged by a second B meson reconstructed in a semileptonic or hadronic decay. The B^0 and B^+ results are combined assuming the isospin symmetry. NODE=S042S48;LINKAGE=RT

[11] B^+ and B^0 decays combined assuming isospin symmetry. Systematic errors include both experimental and form-factor uncertainties. NODE=S042S48;LINKAGE=IS

[12] ATHAR 03 reports systematic errors $0.11 \pm 0.01 \pm 0.07$, which are experimental systematic, systematic due to residual form-factor uncertainties in the signal, and systematic due NODE=S042S48;LINKAGE=AT

to residual form-factor uncertainties in the cross-feed modes, respectively. We combine these in quadrature.

[13] ALEXANDER 96T gives systematic errors $\pm0.3 \pm 0.2$ where the second error reflects the estimated model dependence. We combine these in quadrature. Assumes isospin symmetry: $\Gamma(B^0 \to \pi^- \ell^+ \nu) = 2 \times \Gamma(B^+ \to \pi^0 \ell^+ \nu)$. NODE=S042S48;LINKAGE=B

$\Gamma(\pi^- \mu^+ \nu_\mu)/\Gamma_{total}$ — Γ_{24}/Γ

NODE=S042R70
NODE=S042R70

VALUE	DOCUMENT ID	TECN
• • • We do not use the following data for averages, fits, limits, etc. • • •		
seen	[1] ALBRECHT 91C	ARG

[1] In ALBRECHT 91C, one event is fully reconstructed providing evidence for the $b \to u$ transition. NODE=S042R70;LINKAGE=A

$\Gamma(\pi^- \tau^+ \nu_\tau)/\Gamma_{total}$ — Γ_{25}/Γ

NODE=S042R86
NODE=S042R86

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<2.5 × 10⁻⁴	90	[1] HAMER 16	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R86;LINKAGE=EP

$\Gamma(K^\pm X)/\Gamma_{total}$ — Γ_{26}/Γ

NODE=S042S49
NODE=S042S49

VALUE	DOCUMENT ID	TECN	COMMENT
0.78±0.08	[1] ALBRECHT 96D	ARG	$e^+ e^- \to \Upsilon(4S)$

[1] Average multiplicity. NODE=S042S49;LINKAGE=A

$\Gamma(D^0 X)/\Gamma_{total}$ — Γ_{27}/Γ

NODE=S042Q13
NODE=S042Q13

VALUE	DOCUMENT ID	TECN	COMMENT
0.081±0.014±0.005	[1] AUBERT 07N	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.063±0.019±0.005	[1] AUBERT,BE 04B	BABR	Repl. by AUBERT 07N

[1] Events are selected by completely reconstructing one B and searching for a reconstructed charmed particle in the rest of the event. The last error includes systematic and charm branching ratio uncertainties. NODE=S042Q13;LINKAGE=AU

$\Gamma(\overline{D}^0 X)/\Gamma_{total}$ — Γ_{28}/Γ

NODE=S042Q14
NODE=S042Q14

VALUE	DOCUMENT ID	TECN	COMMENT
$0.474\pm0.020^{+0.020}_{-0.019}$	[1] AUBERT 07N	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.511±0.031±0.028	[1] AUBERT,BE 04B	BABR	Repl. by AUBERT 07N

[1] Events are selected by completely reconstructing one B and searching for a reconstructed charmed particle in the rest of the event. The last error includes systematic and charm branching ratio uncertainties. NODE=S042Q14;LINKAGE=AU

$\Gamma(D^0 X)/[\Gamma(D^0 X)+\Gamma(\overline{D}^0 X)]$ — $\Gamma_{27}/(\Gamma_{27}+\Gamma_{28})$

NODE=S042Q15
NODE=S042Q15

VALUE	DOCUMENT ID	TECN	COMMENT
0.146±0.022±0.006	AUBERT 07N	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.110±0.031±0.008	AUBERT,BE 04B	BABR	Repl. by AUBERT 07N

$\Gamma(D^+ X)/\Gamma_{total}$ — Γ_{29}/Γ

NODE=S042Q16
NODE=S042Q16

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.039	90	[1] AUBERT 07N	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<0.051	90	[1] AUBERT,BE 04B	BABR	Repl. by AUBERT 07N

[1] Events are selected by completely reconstructing one B and searching for a reconstructed charmed particle in the rest of the event. The last error includes systematic and charm branching ratio uncertainties. NODE=S042Q16;LINKAGE=AU

$\Gamma(D^- X)/\Gamma_{total}$ — Γ_{30}/Γ

NODE=S042Q17
NODE=S042Q17

VALUE	DOCUMENT ID	TECN	COMMENT
$0.369\pm0.016^{+0.030}_{-0.027}$	[1] AUBERT 07N	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.397\pm0.030^{+0.040}_{-0.038}$	[1] AUBERT,BE 04B	BABR	Repl. by AUBERT 07N

[1] Events are selected by completely reconstructing one B and searching for a reconstructed charmed particle in the rest of the event. The last error includes systematic and charm branching ratio uncertainties. NODE=S042Q17;LINKAGE=AU

$\Gamma(D^+ X)/[\Gamma(D^+ X)+\Gamma(D^- X)]$ — $\Gamma_{29}/(\Gamma_{29}+\Gamma_{30})$

NODE=S042Q18

VALUE	DOCUMENT ID	TECN	COMMENT
0.058±0.028±0.006	AUBERT 07N	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.055±0.040±0.006	AUBERT,BE 04B	BABR	Repl. by AUBERT 07N

$\Gamma(D_s^+ X)/\Gamma_{total}$ — Γ_{31}/Γ

NODE=S042Q19

VALUE	DOCUMENT ID	TECN	COMMENT
$0.103\pm0.012^{+0.017}_{-0.014}$	[1] AUBERT 07N	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.109\pm0.021^{+0.039}_{-0.024}$	[1] AUBERT,BE 04B	BABR	Repl. by AUBERT 07N

[1] Events are selected by completely reconstructing one B and searching for a reconstructed charmed particle in the rest of the event. The last error includes systematic and charm branching ratio uncertainties.

NODE=S042Q19;LINKAGE=AU

$\Gamma(D_s^- X)/\Gamma_{total}$ — Γ_{32}/Γ

NODE=S042Q20

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.026	90	[1] AUBERT 07N	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<0.087	90	[1] AUBERT,BE 04B	BABR	Repl. by AUBERT 07N

[1] Events are selected by completely reconstructing one B and searching for a reconstructed charmed particle in the rest of the event. The last error includes systematic and charm branching ratio uncertainties.

NODE=S042Q20;LINKAGE=AU

$\Gamma(D_s^+ X)/[\Gamma(D_s^+ X)+\Gamma(D_s^- X)]$ — $\Gamma_{31}/(\Gamma_{31}+\Gamma_{32})$

NODE=S042Q21

VALUE	DOCUMENT ID	TECN	COMMENT
0.879±0.066±0.005	AUBERT 07N	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.733±0.092±0.010	AUBERT,BE 04B	BABR	Repl. by AUBERT 07N

$\Gamma(\Lambda_c^+ X)/\Gamma_{total}$ — Γ_{33}/Γ

NODE=S042Q22

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.031	90	[1] AUBERT 07N	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<0.038	90	[1] AUBERT,BE 04B	BABR	Repl. by AUBERT 07N

[1] Events are selected by completely reconstructing one B and searching for a reconstructed charmed particle in the rest of the event. The last error includes systematic and charm branching ratio uncertainties.

NODE=S042Q22;LINKAGE=AU

$\Gamma(\overline{\Lambda}_c^- X)/\Gamma_{total}$ — Γ_{34}/Γ

NODE=S042Q23

VALUE	DOCUMENT ID	TECN	COMMENT
$0.05\ \pm0.010^{+0.019}_{-0.011}$	[1] AUBERT 07N	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.049\pm0.017^{+0.018}_{-0.011}$	[1] AUBERT,BE 04B	BABR	Repl. by AUBERT 07N

[1] Events are selected by completely reconstructing one B and searching for a reconstructed charmed particle in the rest of the event. The last error includes systematic and charm branching ratio uncertainties.

NODE=S042Q23;LINKAGE=AU

$\Gamma(\Lambda_c^+ X)/[\Gamma(\Lambda_c^+ X)+\Gamma(\overline{\Lambda}_c^- X)]$ — $\Gamma_{33}/(\Gamma_{33}+\Gamma_{34})$

NODE=S042Q24

VALUE	DOCUMENT ID	TECN	COMMENT
$0.243^{+0.119}_{-0.121}\pm0.003$	AUBERT 07N	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.286±0.142±0.007	AUBERT,BE 04B	BABR	Repl. by AUBERT 07N

$\Gamma(\overline{c} X)/\Gamma_{total}$ — Γ_{35}/Γ

NODE=S042Q25

VALUE	DOCUMENT ID	TECN	COMMENT
$0.947\pm0.030^{+0.045}_{-0.040}$	[1] AUBERT 07N	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$1.039\pm0.051^{+0.063}_{-0.058}$	[1] AUBERT,BE 04B	BABR	Repl. by AUBERT 07N

[1] Events are selected by completely reconstructing one B and searching for a reconstructed charmed particle in the rest of the event. The last error includes systematic and charm branching ratio uncertainties.

NODE=S042Q25;LINKAGE=AU

$\Gamma(cX)/\Gamma_{total}$ Γ_{36}/Γ

NODE=S042Q26

VALUE	DOCUMENT ID		TECN	COMMENT
$0.246\pm0.024^{+0.021}_{-0.017}$	[1] AUBERT	07N	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.237\pm0.036^{+0.041}_{-0.027}$	[1] AUBERT,BE	04B	BABR	Repl. by AUBERT 07N

[1] Events are selected by completely reconstructing one B and searching for a reconstructed charmed particle in the rest of the event. The last error includes systematic and charm branching ratio uncertainties. NODE=S042Q26;LINKAGE=AU

$\Gamma(\overline{c}/cX)/\Gamma_{total}$ Γ_{37}/Γ

NODE=S042Q27

VALUE	DOCUMENT ID		TECN	COMMENT
$1.193\pm0.030^{+0.053}_{-0.049}$	[1] AUBERT	07N	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1.276\pm0.062^{+0.088}_{-0.074}$	[1] AUBERT,BE	04B	BABR	Repl. by AUBERT 07N

[1] Events are selected by completely reconstructing one B and searching for a reconstructed charmed particle in the rest of the event. The last error includes systematic and charm branching ratio uncertainties. NODE=S042Q27;LINKAGE=AU

$\Gamma(D^-\pi^+)/\Gamma_{total}$ Γ_{38}/Γ

NODE=S042R30

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
2.51±0.08 OUR FIT					
2.56±0.08 OUR AVERAGE					
$2.48\pm0.01\pm0.10$		WAHEED	22	BELL	$e^+e^- \to \Upsilon(4S)$
$2.55\pm0.05\pm0.16$		[1] AUBERT	07H	BABR	$e^+e^- \to \Upsilon(4S)$
$3.03\pm0.23\pm0.23$		[2] AUBERT,BE	06J	BABR	$e^+e^- \to \Upsilon(4S)$
$2.68\pm0.12\pm0.24$		[1,3] AHMED	02B	CLE2	$e^+e^- \to \Upsilon(4S)$
$2.7\pm0.6\pm0.5$		[4] BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$
$4.8\pm1.1\pm1.1$	22	[5] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$
$5.1\ ^{+2.8}_{-2.5}\ ^{+1.3}_{-1.2}$	4	[6] BEBEK	87	CLEO	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$2.73\pm0.19\pm0.05$		[1,7] AUBERT,B	04O	BABR	Repl. by AUBERT 07H
$2.83\pm0.42\pm0.05$	81	[8] ALAM	94	CLE2	Repl. by AHMED 02B
$3.1\pm1.3\pm1.0$	7	[5] ALBRECHT	88K	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R30;LINKAGE=EP

[2] Uses a missing-mass method. Does not depend on D branching fractions or B^+/B^0 production rates. NODE=S042R30;LINKAGE=RT

[3] AHMED 02B reports an additional uncertainty on the branching ratios to account for 4.5% uncertainty on relative production of B^0 and B^+, which is not included here. NODE=S042R30;LINKAGE=H3

[4] BORTOLETTO 92 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D. NODE=S042R30;LINKAGE=B9

[5] ALBRECHT 88K assumes $B^0\overline{B}^0$:B^+B^- production ratio is 45:55. Superseded by ALBRECHT 90J which assumes 50:50. NODE=S042R30;LINKAGE=B

[6] BEBEK 87 value has been updated in BERKELMAN 91 to use same assumptions as noted for BORTOLETTO 92. NODE=S042R30;LINKAGE=A

[7] AUBERT,B 04O reports $[\Gamma(B^0 \to D^-\pi^+)/\Gamma_{total}] \times [B(D^+ \to K^0_S\pi^+)] = (42.7 \pm 2.1 \pm 2.2) \times 10^{-6}$ which we divide by our best value $B(D^+ \to K^0_S\pi^+) = (1.561 \pm 0.031) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R30;LINKAGE=AE

[8] ALAM 94 reports $[\Gamma(B^0 \to D^-\pi^+)/\Gamma_{total}] \times [B(D^+ \to K^-2\pi^+)] = (0.265 \pm 0.032 \pm 0.023) \times 10^{-3}$ which we divide by our best value $B(D^+ \to K^-2\pi^+) = (9.38 \pm 0.16) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R30;LINKAGE=AB

$\Gamma(D^-\ell^+\nu_\ell)/\Gamma(D^-\pi^+)$ Γ_5/Γ_{38}

NODE=S042S08

VALUE	DOCUMENT ID		TECN	COMMENT
9.9±1.0±0.9	AALTONEN	09E	CDF	$p\overline{p}$ at 1.96 TeV

$\Gamma(D^- \rho^+)/\Gamma_{total}$ — Γ_{39}/Γ

NODE=S042R33

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.0076±0.0012 OUR AVERAGE					
0.0075±0.0013±0.0001	79	[1] ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$
0.009 ±0.005 ±0.003	9	[2] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.022 ±0.012 ±0.009	6	[2] ALBRECHT	88K	ARG	$e^+e^- \to \Upsilon(4S)$

[1] ALAM 94 reports $[\Gamma(B^0 \to D^- \rho^+)/\Gamma_{total}] \times [B(D^+ \to K^- 2\pi^+)] = 0.000704 \pm 0.000096 \pm 0.000070$ which we divide by our best value $B(D^+ \to K^- 2\pi^+) = (9.38 \pm 0.16) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R33;LINKAGE=AB

[2] ALBRECHT 88K assumes $B^0 \overline{B}^0 : B^+ B^-$ production ratio is 45:55. Superseded by ALBRECHT 90J which assumes 50:50. NODE=S042R33;LINKAGE=A

$\Gamma(D^- K^0 \pi^+)/\Gamma_{total}$ — Γ_{40}/Γ

NODE=S042Q38

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
4.9±0.7±0.5	[1] AUBERT,BE	05B	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q38;LINKAGE=EP

$\Gamma(D^- K^*(892)^+)/\Gamma_{total}$ — Γ_{41}/Γ

NODE=S042B12

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
4.5±0.7 OUR AVERAGE				
4.6±0.6±0.5	[1] AUBERT,BE	05B	BABR	$e^+e^- \to \Upsilon(4S)$
3.7±1.5±1.0	[1] MAHAPATRA	02	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B12;LINKAGE=EP

$\Gamma(D^- \omega \pi^+)/\Gamma_{total}$ — Γ_{42}/Γ

NODE=S042B8

VALUE	DOCUMENT ID		TECN	COMMENT
0.0028±0.0005±0.0004	[1] ALEXANDER	01B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. The signal is consistent with all observed $\omega\pi^+$ having proceeded through the ρ'^+ resonance at mass $1349 \pm 25^{+10}_{-5}$ MeV and width $547 \pm 86^{+46}_{-45}$ MeV. NODE=S042B8;LINKAGE=AK

$\Gamma(D^- K^+)/\Gamma(D^- \pi^+)$ — Γ_{43}/Γ_{38}

NODE=S042C17

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
8.19±0.20 OUR AVERAGE				
8.19±0.20±0.23	WAHEED	22	BELL	$e^+e^- \to \Upsilon(4S)$
8.22±0.11±0.25	AAIJ	13P	LHCB	pp at 7 TeV
6.8 ±1.5 ±0.7	ABE	01I	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(D^- K^+ \pi^+ \pi^-)/\Gamma(D^- \pi^+ \pi^+ \pi^-)$ — Γ_{44}/Γ_{50}

NODE=S042T98

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
5.9±1.1±0.5	AAIJ	12T	LHCB	pp at 7 TeV

$\Gamma(D^- K^+ \overline{K}^0)/\Gamma_{total}$ — Γ_{45}/Γ

NODE=S042B19

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
1.64±0.24±0.10		[1] ADACHI	24L	BEL2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<3.1	90	[2] DRUTSKOY	02	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Used 362 fb^{-1} Belle II data and $B(\Upsilon(4S) \to B^0 \overline{B}^0)$=0.484 ± 0.012. NODE=S042B19;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B19;LINKAGE=EP

$\Gamma(D^- K^+ \overline{K}^*(892)^0)/\Gamma_{total}$ — Γ_{46}/Γ

NODE=S042B21

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
7.7 ±0.6 OUR AVERAGE				
[(8.8 ± 1.9) × 10^{-4} OUR 2024 AVERAGE]				
7.56±0.45±0.38	[1] ADACHI	24L	BEL2	$e^+e^- \to \Upsilon(4S)$
8.8 ±1.1 ±1.5	[2] DRUTSKOY	02	BELL	$e^+e^- \to \Upsilon(4S)$

NEW

[1] Used 362 fb^{-1} Belle II data and $B(\Upsilon(4S) \to B^0 \overline{B}^0)$=0.484 ± 0.012. NODE=S042B21;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B21;LINKAGE=EP

$\Gamma(\overline{D}^0\pi^+\pi^-)/\Gamma_{total}$ Γ_{47}/Γ

NODE=S042R1
NODE=S042R1

VALUE (units 10^{-4})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
8.8 ±0.5 OUR AVERAGE						
8.95±0.15±0.52			[1] AAIJ	15Y	LHCB	pp at 7, 8 TeV
8.4 ±0.4 ±0.8			[2] KUZMIN	07	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
8.0 ±0.6 ±1.5			[2,3] SATPATHY	03	BELL	Repl. by KUZMIN 07
< 16	90		[2] ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$
< 70	90		[4] BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$
<340	90		[5] BEBEK	87	CLEO	$e^+e^- \to \Upsilon(4S)$
700 ± 500		5	[6] BEHRENDS	83	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] The second uncertainty combines in quadrature all systematic uncertainties quoted in the paper. AAIJ 15Y reports B($B^0 \to \overline{D}^0\pi^+\pi^-$) = $(8.46 \pm 0.14 \pm 0.49) \times 10^{-4}$ in the kinematic region m($\overline{D}^0\pi^\pm$) > 2.1 GeV which we corrected to the full phase-space dividing by 0.945 from Belle. NODE=S042R1;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R1;LINKAGE=EP

[3] No assumption about the intermediate mechanism is made in the analysis. NODE=S042R1;LINKAGE=SP

[4] BORTOLETTO 92 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D. The product branching fraction into $D_0^*(2340)\pi$ followed by $D_0^*(2340) \to D^0\pi$ is < 0.0001 at 90% CL and into $D_2^*(2460)$ followed by $D_2^*(2460) \to D^0\pi$ is < 0.0004 at 90% CL. NODE=S042R1;LINKAGE=B9

[5] BEBEK 87 assume the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. B($D^0 \to K^-\pi^+$) = (4.2 ± 0.4 ± 0.4)% and B($D^0 \to K^-\pi^+\pi^+\pi^-$) = (9.1 ± 0.8 ± 0.8)% were used. NODE=S042R1;LINKAGE=C

[6] Corrected by us using assumptions: B($D^0 \to K^-\pi^+$) = (0.042 ± 0.006) and B($\Upsilon(4S) \to B^0\overline{B}^0$) = 50%. The product branching ratio is B($B^0 \to \overline{D}^0\pi^+\pi^-$)B($\overline{D}^0 \to K^+\pi^-$) = $(0.39 \pm 0.26) \times 10^{-2}$. NODE=S042R1;LINKAGE=G

$\Gamma(D^*(2010)^-\pi^+)/\Gamma_{total}$ Γ_{48}/Γ

NODE=S042R2
NODE=S042R2

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
2.66±0.07 OUR AVERAGE					
2.62±0.02±0.09		[1] KROHN	23	BELL	$e^+e^- \to \Upsilon(4S)$
2.79±0.08±0.17		[2] AUBERT	07H	BABR	$e^+e^- \to \Upsilon(4S)$
2.48±0.34±0.08		[3,4] AUBERT,BE	06J	BABR	$e^+e^- \to \Upsilon(4S)$
2.81±0.24±0.05		[5] BRANDENB...	98	CLE2	$e^+e^- \to \Upsilon(4S)$
2.6 ±0.3 ±0.4	82	[6] ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$
3.37±0.96±0.02		[7] BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$
2.36±0.88±0.02	12	[8] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$
$2.36^{+1.50}_{-1.10}$±0.02	5	[9] BEBEK	87	CLEO	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
10 ±4 ±1	8	[10] AKERS	94J	OPAL	$e^+e^- \to Z$
2.7 ±1.4 ±1.0	5	[11] ALBRECHT	87C	ARG	$e^+e^- \to \Upsilon(4S)$
3.5 ±2 ±2		[12] ALBRECHT	86F	ARG	$e^+e^- \to \Upsilon(4S)$
17 ±5 ±5	41	[13] GILES	84	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] KROHN 23 reports $(2.623 \pm 0.016 \pm 0.086) \times 10^{-3}$ from a measurement of [$\Gamma(B^0 \to D^*(2010)^-\pi^+)/\Gamma_{total}$] / [B($\Upsilon(4S) \to B^0\overline{B}^0$)] assuming B($\Upsilon(4S) \to B^0\overline{B}^0$) = 0.486 ± 0.006. NODE=S042R2;LINKAGE=E

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R2;LINKAGE=EP

[3] AUBERT,BE 06J reports [$\Gamma(B^0 \to D^*(2010)^-\pi^+)/\Gamma_{total}$] / [B($B^0 \to D^-\pi^+$)] = 0.99 ± 0.11 ± 0.08 which we multiply by our best value B($B^0 \to D^-\pi^+$) = $(2.51 \pm 0.08) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R2;LINKAGE=AR

[4] Uses a missing-mass method. Does not depend on D branching fractions or B^+/B^0 production rates. NODE=S042R2;LINKAGE=RT

[5] BRANDENBURG 98 assume equal production of B^+ and B^0 at $\Upsilon(4S)$ and use the D^* reconstruction technique. The first error is their experiment's error and the second error is the systematic error from the PDG 96 value of B($D^* \to D\pi$). NODE=S042R2;LINKAGE=BG

[6] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II B($D^*(2010)^+ \to D^0\pi^+$) and absolute B($D^0 \to K^-\pi^+$) and the PDG 1992 B($D^0 \to K^-\pi^+\pi^0$)/B($D^0 \to K^-\pi^+$) and B($D^0 \to K^-2\pi^+\pi^-$)/B($D^0 \to K^-\pi^+$). NODE=S042R2;LINKAGE=EF

[7] BORTOLETTO 92 reports $(4.0 \pm 1.0 \pm 0.7) \times 10^{-3}$ from a measurement of [$\Gamma(B^0 \to D^*(2010)^-\pi^+)/\Gamma_{total}$] × [B($D^*(2010)^+ \to D^0\pi^+$)] assuming B($D^*(2010)^+ \to D^0\pi^+$) = 0.57 ± 0.06, which we rescale to our best value B($D^*(2010)^+ \to D^0\pi^+$) = $(67.7 \pm 0.5) \times 10^{-2}$. Our first error is their experiment's error and our second error NODE=S042R2;LINKAGE=Q1

is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D.

[8] ALBRECHT 90J reports $(2.8 \pm 0.9 \pm 0.6) \times 10^{-3}$ from a measurement of $[\Gamma(B^0 \to D^*(2010)^- \pi^+)/\Gamma_{total}] \times [B(D^*(2010)^+ \to D^0 \pi^+)]$ assuming $B(D^*(2010)^+ \to D^0 \pi^+) = 0.57 \pm 0.06$, which we rescale to our best value $B(D^*(2010)^+ \to D^0 \pi^+) = (67.7 \pm 0.5) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D. NODE=S042R2;LINKAGE=Q2

[9] BEBEK 87 reports $(2.8^{+1.5}_{-1.2}{}^{+1.0}_{-0.6}) \times 10^{-3}$ from a measurement of $[\Gamma(B^0 \to D^*(2010)^- \pi^+)/\Gamma_{total}] \times [B(D^*(2010)^+ \to D^0 \pi^+)]$ assuming $B(D^*(2010)^+ \to D^0 \pi^+) = 0.57 \pm 0.06$, which we rescale to our best value $B(D^*(2010)^+ \to D^0 \pi^+) = (67.7 \pm 0.5) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Updated in BERKELMAN 91 to use same assumptions as noted for BORTOLETTO 92 and ALBRECHT 90J. NODE=S042R2;LINKAGE=D

[10] Assumes $B(Z \to b\overline{b}) = 0.217$ and 38% B_d production fraction. NODE=S042R2;LINKAGE=C

[11] ALBRECHT 87C use PDG 86 branching ratios for D and $D^*(2010)$ and assume $B(\Upsilon(4S) \to B^+ B^-) = 55\%$ and $B(\Upsilon(4S) \to B^0 \overline{B}^0) = 45\%$. Superseded by ALBRECHT 90J. NODE=S042R2;LINKAGE=A

[12] ALBRECHT 86F uses pseudomass that is independent of D^0 and D^+ branching ratios. NODE=S042R2;LINKAGE=H

[13] Assumes $B(D^*(2010)^+ \to D^0 \pi^+) = 0.60^{+0.08}_{-0.15}$. Assumes $B(\Upsilon(4S) \to B^0 \overline{B}^0) = 0.40 \pm 0.02$ Does not depend on D branching ratios. NODE=S042R2;LINKAGE=G

$\Gamma(D^*(2010)^- \ell^+ \nu_\ell)/\Gamma(D^*(2010)^- \pi^+)$ — Γ_7/Γ_{48}

NODE=S042S09

VALUE	DOCUMENT ID		TECN	COMMENT
16.5±2.3±1.1	AALTONEN	09E	CDF	$p\overline{p}$ at 1.96 TeV

$\Gamma(\overline{D}^0 K^+ K^-)/\Gamma(\overline{D}^0 \pi^+ \pi^-)$ — Γ_{49}/Γ_{47}

NODE=S042T96

VALUE	DOCUMENT ID		TECN	COMMENT
0.069±0.004±0.003	AAIJ	18AZ	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.056±0.011±0.007	[1] AAIJ	12AM	LHCB	pp at 7 TeV

[1] Superseded by AAIJ 21Q. NODE=S042T96;LINKAGE=A

$\Gamma(D^- \pi^+ \pi^+ \pi^-)/\Gamma_{total}$ — Γ_{50}/Γ

NODE=S042R88

VALUE	DOCUMENT ID	TECN	COMMENT
0.0060±0.0006 OUR FIT			
0.0080±0.0021±0.0014	[1] BORTOLETTO92	CLEO	$e^+ e^- \to \Upsilon(4S)$

[1] BORTOLETTO 92 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D. NODE=S042R88;LINKAGE=B9

$\Gamma(D^- \pi^+ \pi^+ \pi^-)/\Gamma(D^- \pi^+)$ — Γ_{50}/Γ_{38}

NODE=S042Q97

VALUE	DOCUMENT ID		TECN	COMMENT
2.39±0.23 OUR FIT				
2.38±0.11±0.21	AAIJ	11E	LHCB	pp at 7 TeV

$\Gamma((D^- \pi^+ \pi^+ \pi^-)\text{ nonresonant})/\Gamma_{total}$ — Γ_{51}/Γ

NODE=S042R89

VALUE	DOCUMENT ID	TECN	COMMENT
0.0039±0.0014±0.0013	[1] BORTOLETTO92	CLEO	$e^+ e^- \to \Upsilon(4S)$

[1] BORTOLETTO 92 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D. NODE=S042R89;LINKAGE=B9

$\Gamma(D^- \pi^+ \rho^0)/\Gamma_{total}$ — Γ_{52}/Γ

NODE=S042R91

VALUE	DOCUMENT ID	TECN	COMMENT
0.0011±0.0009±0.0004	[1] BORTOLETTO92	CLEO	$e^+ e^- \to \Upsilon(4S)$

[1] BORTOLETTO 92 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D. NODE=S042R91;LINKAGE=B9

$\Gamma(D^- a_1(1260)^+)/\Gamma_{total}$ — Γ_{53}/Γ

NODE=S042R93

VALUE	DOCUMENT ID	TECN	COMMENT
0.0060±0.0022±0.0024	[1] BORTOLETTO92	CLEO	$e^+ e^- \to \Upsilon(4S)$

[1] BORTOLETTO 92 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D. NODE=S042R93;LINKAGE=B9

$\Gamma(D^*(2010)^- \pi^+ \pi^0)/\Gamma_{total}$ Γ_{54}/Γ

NODE=S042R19

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.0152±0.0052±0.0001	51	[1] ALBRECHT	90J	ARG	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.015 ±0.008 ±0.008	8	[2] ALBRECHT	87C	ARG	$e^+ e^- \to \Upsilon(4S)$

[1] ALBRECHT 90J reports 0.018 ± 0.004 ± 0.005 from a measurement of $[\Gamma(B^0 \to D^*(2010)^- \pi^+ \pi^0)/\Gamma_{total}] \times [B(D^*(2010)^+ \to D^0 \pi^+)]$ assuming $B(D^*(2010)^+ \to D^0 \pi^+) = 0.57 \pm 0.06$, which we rescale to our best value $B(D^*(2010)^+ \to D^0 \pi^+) = (67.7 \pm 0.5) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D. NODE=S042R19;LINKAGE=B9

[2] ALBRECHT 87C use PDG 86 branching ratios for D and $D^*(2010)$ and assume $B(\Upsilon(4S) \to B^+ B^-) = 55\%$ and $B(\Upsilon(4S) \to B^0 \overline{B}^0) = 45\%$. Superseded by ALBRECHT 90J. NODE=S042R19;LINKAGE=A

$\Gamma(D^*(2010)^- \rho^+)/\Gamma_{total}$ Γ_{55}/Γ

NODE=S042R3

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
6.8 ± 0.9 OUR AVERAGE					
6.8 ± 0.3 ± 0.9		[1,2] CSORNA	03	CLE2	$e^+ e^- \to \Upsilon(4S)$
16.0 ±11.3 ± 0.1		[3] BORTOLETTO	92	CLEO	$e^+ e^- \to \Upsilon(4S)$
5.89± 3.52± 0.04	19	[4] ALBRECHT	90J	ARG	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
		[2,5] MATVIENKO	15	BELL	$e^+ e^- \to \Upsilon(4S)$
7.4 ± 1.0 ± 1.4	76	[6,7] ALAM	94	CLE2	$e^+ e^- \to \Upsilon(4S)$
81 ±29 $^{+59}_{-24}$	19	[8] CHEN	85	CLEO	$e^+ e^- \to \Upsilon(4S)$

[1] The second error combines the systematic and theoretical uncertainties in quadrature. CSORNA 03 includes data used in ALAM 94. A full angular fit to three complex helicity amplitudes is performed. NODE=S042R3;LINKAGE=CS

[2] Assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$ resonance. NODE=S042R3;LINKAGE=EP

[3] BORTOLETTO 92 reports 0.019 ± 0.008 ± 0.011 from a measurement of $[\Gamma(B^0 \to D^*(2010)^- \rho^+)/\Gamma_{total}] \times [B(D^*(2010)^+ \to D^0 \pi^+)]$ assuming $B(D^*(2010)^+ \to D^0 \pi^+) = 0.57 \pm 0.06$, which we rescale to our best value $B(D^*(2010)^+ \to D^0 \pi^+) = (67.7 \pm 0.5) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D. NODE=S042R3;LINKAGE=B9

[4] ALBRECHT 90J reports 0.007 ± 0.003 ± 0.003 from a measurement of $[\Gamma(B^0 \to D^*(2010)^- \rho^+)/\Gamma_{total}] \times [B(D^*(2010)^+ \to D^0 \pi^+)]$ assuming $B(D^*(2010)^+ \to D^0 \pi^+) = 0.57 \pm 0.06$, which we rescale to our best value $B(D^*(2010)^+ \to D^0 \pi^+) = (67.7 \pm 0.5) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D. NODE=S042R3;LINKAGE=9B

[5] MATVIENKO 15 reports $B(B^0 \to D^*(2010)^- \rho^+, \rho^+ \to \omega \pi^+) = (1.48 \pm 0.27^{+0.15}_{-0.09}{}^{+0.21}_{-0.56}) \times 10^{-3}$. The last uncertainty is a model one. NODE=S042R3;LINKAGE=MA

[6] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II $B(D^*(2010)^+ \to D^0 \pi^+)$ and absolute $B(D^0 \to K^- \pi^+)$ and the PDG 1992 $B(D^0 \to K^- \pi^+ \pi^0)/B(D^0 \to K^- \pi^+)$ and $B(D^0 \to K^- 2\pi^+ \pi^-)/B(D^0 \to K^- \pi^+)$. NODE=S042R3;LINKAGE=EF

[7] This decay is nearly completely longitudinally polarized, $\Gamma_L/\Gamma = (93 \pm 5 \pm 5)\%$, as expected from the factorization hypothesis (ROSNER 90). The nonresonant $\pi^+ \pi^0$ contribution under the ρ^+ is less than 9% at 90% CL. NODE=S042R3;LINKAGE=N

[8] Uses $B(D^* \to D^0 \pi^+) = 0.6 \pm 0.15$ and $B(\Upsilon(4S) \to B^0 \overline{B}^0) = 0.4$. Does not depend on D branching ratios. NODE=S042R3;LINKAGE=C

$\Gamma(D^*(2010)^- K^+)/\Gamma_{total}$ Γ_{56}/Γ

NODE=S042B5

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
2.16±0.08 OUR AVERAGE				
2.22±0.06±0.08	[1] KROHN	23	BELL	$e^+ e^- \to \Upsilon(4S)$
2.06±0.12±0.06	[2] AUBERT	06A	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2.0 ±0.4 ±0.1	[3] ABE	01I	BELL	Repl. by KROHN 23

[1] KROHN 23 reports $(2.221 \pm 0.063 \pm 0.077) \times 10^{-4}$ from a measurement of $[\Gamma(B^0 \to D^*(2010)^- K^+)/\Gamma_{total}]$ / $[B(\Upsilon(4S) \to B^0 \overline{B}{}^0)]$ assuming $B(\Upsilon(4S) \to B^0 \overline{B}{}^0) = 0.486 \pm 0.006$. NODE=S042B5;LINKAGE=A

[2] AUBERT 06A reports $[\Gamma(B^0 \to D^*(2010)^- K^+)/\Gamma_{total}]$ / $[B(B^0 \to D^*(2010)^- \pi^+)] = 0.0776 \pm 0.0034 \pm 0.0029$ which we multiply by our best value $B(B^0 \to D^*(2010)^- \pi^+) = (2.66 \pm 0.07) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042B5;LINKAGE=AU

[3] ABE 01I reports $[\Gamma(B^0 \to D^*(2010)^- K^+)/\Gamma_{total}]$ / $[B(B^0 \to D^*(2010)^- \pi^+)] = 0.074 \pm 0.015 \pm 0.006$ which we multiply by our best value $B(B^0 \to D^*(2010)^- \pi^+) = (2.66 \pm 0.07) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042B5;LINKAGE=AB

$\Gamma(D^*(2010)^- K^+)/\Gamma(D^*(2010)^- \pi^+)$ Γ_{56}/Γ_{48}

NODE=S042RB0
NODE=S042RB0

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
8.22±0.29 OUR AVERAGE	Error includes scale factor of 1.3.			
8.41±0.24±0.13	KROHN	23	BELL	$e^+ e^- \to \Upsilon(4S)$
7.76±0.34±0.26	AAIJ	13AO	LHCB	pp at 7 TeV

$\Gamma(D^*(2010)^- K^0 \pi^+)/\Gamma_{total}$ Γ_{57}/Γ

NODE=S042Q39
NODE=S042Q39

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
3.0±0.7±0.3	[1] AUBERT,BE	05B	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q39;LINKAGE=EP

$\Gamma(D^*(2010)^- K^*(892)^+)/\Gamma_{total}$ Γ_{58}/Γ

NODE=S042B13
NODE=S042B13

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
3.3±0.6 OUR AVERAGE				
3.2±0.6±0.3	[1] AUBERT,BE	05B	BABR	$e^+ e^- \to \Upsilon(4S)$
3.8±1.3±0.8	[2] MAHAPATRA	02	CLE2	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B13;LINKAGE=EP

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and an unpolarized final state. NODE=S042B13;LINKAGE=PE

$\Gamma(D^*(2010)^- K^+ \overline{K}{}^0)/\Gamma_{total}$ Γ_{59}/Γ

NODE=S042B20
NODE=S042B20

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
1.82±0.38±0.10		[1] ADACHI	24L	BEL2	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<4.7	90	[2] DRUTSKOY	02	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Used 362 fb^{-1} Belle II data and $B(\Upsilon(4S) \to B^0 \overline{B}{}^0) = 0.484 \pm 0.012$. NODE=S042B20;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B20;LINKAGE=EP

$\Gamma(D^*(2010)^- K^+ \overline{K}^*(892)^0)/\Gamma_{total}$ Γ_{60}/Γ

NODE=S042B22
NODE=S042B22

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
13.1 ±1.3 OUR AVERAGE				
[$(12.9 \pm 3.3) \times 10^{-4}$ OUR 2024 AVERAGE]				
13.12±1.21±0.71	[1] ADACHI	24L	BEL2	$e^+ e^- \to \Upsilon(4S)$
12.9 ±2.2 ±2.5	[2] DRUTSKOY	02	BELL	$e^+ e^- \to \Upsilon(4S)$

NEW

[1] Used 362 fb^{-1} Belle II data and $B(\Upsilon(4S) \to B^0 \overline{B}{}^0) = 0.484 \pm 0.012$. NODE=S042B22;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B22;LINKAGE=EP

$\Gamma(D^*(2010)^- \pi^+ \pi^+ \pi^-)/\Gamma_{total}$ Γ_{61}/Γ

NODE=S042R20
NODE=S042R20

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
7.21±0.29 OUR AVERAGE					
7.26±0.11± 0.31		[1] LEES	16H	BABR	$e^+ e^- \to \Upsilon(4S)$
6.81±0.23± 0.72		[2] MAJUMDER	04	BELL	$e^+ e^- \to \Upsilon(4S)$
6.3 ±1.0 ± 1.1		[3,4] ALAM	94	CLE2	$e^+ e^- \to \Upsilon(4S)$
13.4 ±3.6 ± 0.1		[5] BORTOLETTO	92	CLEO	$e^+ e^- \to \Upsilon(4S)$
10.1 ±4.1 ± 0.1		[6] ALBRECHT	90J	ARG	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
33 ±9 ±16		[7] ALBRECHT	87C	ARG	$e^+ e^- \to \Upsilon(4S)$
<42	90	[8] BEBEK	87	CLEO	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes B($\Upsilon(4S) \to B^0 \overline{B}^0$) = 0.486 ± 0.006.
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[3] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II B($D^*(2010)^+ \to D^0\pi^+$) and absolute B($D^0 \to K^-\pi^+$) and the PDG 1992 B($D^0 \to K^-\pi^+\pi^0$)/B($D^0 \to K^-\pi^+$) and B($D^0 \to K^-2\pi^+\pi^-$)/B($D^0 \to K^-\pi^+$).
[4] The three pion mass is required to be between 1.0 and 1.6 GeV consistent with an a_1 meson. (If this channel is dominated by a_1^+, the branching ratio for $\overline{D}^{*-} a_1^+$ is twice that for $\overline{D}^{*-}\pi^+\pi^+\pi^-$.)
[5] BORTOLETTO 92 reports 0.0159 ± 0.0028 ± 0.0037 from a measurement of [$\Gamma(B^0 \to D^*(2010)^-\pi^+\pi^+\pi^-)/\Gamma_{total}$] × [B($D^*(2010)^+ \to D^0\pi^+$)] assuming B($D^*(2010)^+ \to D^0\pi^+$) = 0.57 ± 0.06, which we rescale to our best value B($D^*(2010)^+ \to D^0\pi^+$) = (67.7 ± 0.5) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D.
[6] ALBRECHT 90J reports 0.012 ± 0.003 ± 0.004 from a measurement of [$\Gamma(B^0 \to D^*(2010)^-\pi^+\pi^+\pi^-)/\Gamma_{total}$] × [B($D^*(2010)^+ \to D^0\pi^+$)] assuming B($D^*(2010)^+ \to D^0\pi^+$) = 0.57 ± 0.06, which we rescale to our best value B($D^*(2010)^+ \to D^0\pi^+$) = (67.7 ± 0.5) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D.
[7] ALBRECHT 87C use PDG 86 branching ratios for D and $D^*(2010)$ and assume B($\Upsilon(4S) \to B^+B^-$) = 55% and B($\Upsilon(4S) \to B^0\overline{B}^0$) = 45%. Superseded by ALBRECHT 90J.
[8] BEBEK 87 value has been updated in BERKELMAN 91 to use same assumptions as noted for BORTOLETTO 92.

NODE=S042R20;LINKAGE=C
NODE=S042R20;LINKAGE=EP
NODE=S042R20;LINKAGE=EF
NODE=S042R20;LINKAGE=M
NODE=S042R20;LINKAGE=B9
NODE=S042R20;LINKAGE=9B
NODE=S042R20;LINKAGE=A
NODE=S042R20;LINKAGE=B

$\Gamma((D^*(2010)^-\pi^+\pi^+\pi^-)\text{ nonresonant})/\Gamma_{total}$ Γ_{62}/Γ

NODE=S042R90
NODE=S042R90

VALUE	DOCUMENT ID	TECN	COMMENT
0.0000±0.0019±0.0016	[1] BORTOLETTO92	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] BORTOLETTO 92 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D and $D^*(2010)$.

NODE=S042R90;LINKAGE=B9

$\Gamma(D^*(2010)^-\pi^+\rho^0)/\Gamma_{total}$ Γ_{63}/Γ

NODE=S042R92
NODE=S042R92

VALUE	DOCUMENT ID	TECN	COMMENT
0.00573±0.00317±0.00004	[1] BORTOLETTO92	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] BORTOLETTO 92 reports 0.0068 ± 0.0032 ± 0.0021 from a measurement of [$\Gamma(B^0 \to D^*(2010)^-\pi^+\rho^0)/\Gamma_{total}$] × [B($D^*(2010)^+ \to D^0\pi^+$)] assuming B($D^*(2010)^+ \to D^0\pi^+$) = 0.57 ± 0.06, which we rescale to our best value B($D^*(2010)^+ \to D^0\pi^+$) = (67.7 ± 0.5) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D.

NODE=S042R92;LINKAGE=B9

$\Gamma(D^*(2010)^-a_1(1260)^+)/\Gamma_{total}$ Γ_{64}/Γ

NODE=S042R87
NODE=S042R87

VALUE	DOCUMENT ID		TECN	COMMENT
0.0130±0.0027 OUR AVERAGE				
0.0126±0.0020±0.0022	[1,2] ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$
0.0152±0.0070±0.0001	[3] BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] ALAM 94 value is twice their $\Gamma(D^*(2010)^-\pi^+\pi^+\pi^-)/\Gamma_{total}$ value based on their observation that the three pions are dominantly in the $a_1(1260)$ mass range 1.0 to 1.6 GeV.
[2] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II B($D^*(2010)^+ \to D^0\pi^+$) and absolute B($D^0 \to K^-\pi^+$) and the PDG 1992 B($D^0 \to K^-\pi^+\pi^0$)/B($D^0 \to K^-\pi^+$) and B($D^0 \to K^-2\pi^+\pi^-$)/B($D^0 \to K^-\pi^+$).
[3] BORTOLETTO 92 reports 0.018 ± 0.006 ± 0.006 from a measurement of [$\Gamma(B^0 \to D^*(2010)^-a_1(1260)^+)/\Gamma_{total}$] × [B($D^*(2010)^+ \to D^0\pi^+$)] assuming B($D^*(2010)^+ \to D^0\pi^+$) = 0.57 ± 0.06, which we rescale to our best value B($D^*(2010)^+ \to D^0\pi^+$) = (67.7 ± 0.5) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D.

NODE=S042R87;LINKAGE=A9
NODE=S042R87;LINKAGE=EF
NODE=S042R87;LINKAGE=B9

$\Gamma(\overline{D}_1(2420)^0\pi^-\pi^+,\ \overline{D}_1^0 \to D^{*-}\pi^+)/\Gamma(D^*(2010)^-\pi^+\pi^+\pi^-)$ Γ_{65}/Γ_{61}

NODE=S042RA7
NODE=S042RA7

VALUE	DOCUMENT ID		TECN	COMMENT
(2.04±0.42±0.22) × 10^{-2}	AAIJ	13AO	LHCB	pp at 7 TeV

$\Gamma\big(D^*(2010)^- K^+ \pi^- \pi^+\big)/\Gamma\big(D^*(2010)^- \pi^+ \pi^+ \pi^-\big)$ — Γ_{66}/Γ_{61}

NODE=S042RA8
NODE=S042RA8

VALUE	DOCUMENT ID	TECN	COMMENT
$(6.47\pm0.37\pm0.35)\times10^{-2}$	AAIJ 13AO	LHCB	pp at 7 TeV

$\Gamma\big(D^*(2010)^- \pi^+ \pi^+ \pi^- \pi^0\big)/\Gamma_{total}$ — Γ_{67}/Γ

NODE=S042R65
NODE=S042R65

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.0176±0.0027 OUR AVERAGE				
0.0172±0.0014±0.0024		[1] ALEXANDER 01B	CLE2	$e^+e^- \to \Upsilon(4S)$
0.0345±0.0181±0.0003	28	[2] ALBRECHT 90J	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. The signal is consistent with all observed $\omega\pi^+$ having proceeded through the ρ'^+ resonance at mass $1349 \pm 25^{+10}_{-5}$ MeV and width $547 \pm 86^{+46}_{-45}$ MeV.

NODE=S042R65;LINKAGE=AK

[2] ALBRECHT 90J reports $0.041 \pm 0.015 \pm 0.016$ from a measurement of $[\Gamma(B^0 \to D^*(2010)^- \pi^+\pi^+\pi^-\pi^0)/\Gamma_{total}] \times [B(D^*(2010)^+ \to D^0\pi^+)]$ assuming $B(D^*(2010)^+ \to D^0\pi^+) = 0.57 \pm 0.06$, which we rescale to our best value $B(D^*(2010)^+ \to D^0\pi^+) = (67.7 \pm 0.5)\times10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D.

NODE=S042R65;LINKAGE=B9

$\Gamma\big(D^{*-} 3\pi^+ 2\pi^-\big)/\Gamma_{total}$ — Γ_{68}/Γ

NODE=S042Q12
NODE=S042Q12

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
4.72±0.59±0.71	[1] MAJUMDER 04	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042Q12;LINKAGE=EP

$\Gamma\big(D^*(2010)^- \omega\pi^+\big)/\Gamma_{total}$ — Γ_{69}/Γ

NODE=S042B7
NODE=S042B7

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
2.46±0.18 OUR AVERAGE Error includes scale factor of 1.2.			
2.31±0.11±0.14	[1] MATVIENKO 15	BELL	$e^+e^- \to \Upsilon(4S)$
2.88±0.21±0.31	[1] AUBERT 06L	BABR	$e^+e^- \to \Upsilon(4S)$
2.9 ±0.3 ±0.4	[1,2] ALEXANDER 01B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B7;LINKAGE=EP

[2] The signal is consistent with all observed $\omega\pi^+$ having proceeded through the ρ'^+ resonance at mass $1349 \pm 25^{+10}_{-5}$ MeV and width $547 \pm 86^{+46}_{-45}$ MeV.

NODE=S042B7;LINKAGE=AK

$\Gamma\big(\overline{D}_1(2430)^0 \omega,\ \overline{D}{}_1^0 \to D^{*-}\pi^+\big)/\Gamma_{total}$ — Γ_{70}/Γ

NODE=S042B75
NODE=S042B75

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
$2.7^{+0.8}_{-0.4}$ OUR AVERAGE			
$2.5\pm0.4^{+0.8}_{-0.2}$	[1,2] MATVIENKO 15	BELL	$e^+e^- \to \Upsilon(4S)$
4.1±1.2±1.1	[3] AUBERT 06L	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0.

NODE=S042B75;LINKAGE=EP

[2] The measurement is obtained by amplitude analysis of $B^0 \to D^{*-}\omega\pi^+$. The second uncertainty combines in quadrature experimental systematic and model uncertainties.

NODE=S042B75;LINKAGE=MA

[3] Obtained by fitting the events with $\cos\theta_{D^*} < 0.5$ and scaling up the result by a factor of 4/3. No interference effects between $B^0 \to D'_1\omega$ and $D^*\omega\pi$ are assumed.

NODE=S042B75;LINKAGE=AU

$\Gamma\big(D^{*-} \rho(1450)^+,\ \rho^+ \to \omega\pi^+\big)/\Gamma_{total}$ — Γ_{71}/Γ

NODE=S042C45
NODE=S042C45

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
$1.07^{+0.15}_{-0.31}{}^{+0.40}_{-0.13}$	[1,2] MATVIENKO 15	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Obtained by amplitude analysis of $\overline{B}{}^0 \to D^{*-}\omega\pi^+$. The second uncertainty combines in qudrature experimental systematic and model uncertainties.

NODE=S042C45;LINKAGE=A

[2] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$.

NODE=S042C45;LINKAGE=EP

$\Gamma\big(\overline{D}_1(2420)^0 \omega,\ \overline{D}{}_1^0 \to D^{*-}\pi^+\big)/\Gamma_{total}$ — Γ_{72}/Γ

NODE=S042C46
NODE=S042C46

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
0.7±0.2±0.1	[1,2] MATVIENKO 15	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Obtained by amplitude analysis of $\overline{B}{}^0 \to D^{*-}\omega\pi^+$. The second uncertainty combines in qudrature experimental systematic and model uncertainties.

NODE=S042C46;LINKAGE=A

[2] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$.

NODE=S042C46;LINKAGE=EP

$\Gamma(\overline{D}{}_2^*(2460)^0\omega,\ \overline{D}{}_2^0 \to D^{*-}\pi^+)/\Gamma_{total}$ — Γ_{73}/Γ

NODE=S042C47

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
0.4±0.1±0.1	[1,2] MATVIENKO 15	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Obtained by amplitude analysis of $\overline{B}{}^0 \to D^{*-}\omega\pi^+$. The second uncertainty combines in qudrature experimental systematic and model uncertainties. NODE=S042C47;LINKAGE=A

[2] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. NODE=S042C47;LINKAGE=EP

$\Gamma(D^{*-}b_1(1235)^+,\ b_1^+ \to \omega\pi^+)/\Gamma_{total}$ — Γ_{74}/Γ

NODE=S042C48

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.7 × 10^{-4}	90	[1] MATVIENKO 15	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. NODE=S042C48;LINKAGE=EP

$\Gamma(\overline{D}{}^{**-}\pi^+)/\Gamma_{total}$ — Γ_{75}/Γ

NODE=S042R77

D^{**-} represents an excited state with mass 2.2 < M < 2.8 GeV/c^2. NODE=S042R77

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
1.9±0.9±0.1	[1,2] AUBERT,BE 06J	BABR	$e^+e^- \to \Upsilon(4S)$

[1] AUBERT,BE 06J reports $[\Gamma(B^0 \to \overline{D}{}^{**-}\pi^+)/\Gamma_{total}]$ / $[B(B^0 \to D^-\pi^+)] = 0.77 \pm 0.22 \pm 0.29$ which we multiply by our best value $B(B^0 \to D^-\pi^+) = (2.51 \pm 0.08) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R77;LINKAGE=AR

[2] Uses a missing-mass method. Does not depend on D branching fractions or B^+/B^0 production rates. NODE=S042R77;LINKAGE=RT

$\Gamma(D_1(2420)^-\pi^+,\ D_1^- \to D^-\pi^+\pi^-)/\Gamma_{total}$ — Γ_{76}/Γ

NODE=S042Q64

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
$0.99^{+0.20}_{-0.25}$ OUR FIT			
$0.89\pm0.15^{+0.17}_{-0.32}$	[1] ABE 05A	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q64;LINKAGE=EP

$\Gamma(D_1(2420)^-\pi^+,\ D_1^- \to D^-\pi^+\pi^-)/\Gamma(D^-\pi^+\pi^+\pi^-)$ — Γ_{76}/Γ_{50}

NODE=S042Q98

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
1.7±0.4 OUR FIT			
$2.1\pm0.5^{+0.3}_{-0.5}$	AAIJ 11E	LHCB	pp at 7 TeV

$\Gamma(D_1(2420)^-\pi^+,\ D_1^- \to D^{*-}\pi^+\pi^-)/\Gamma_{total}$ — Γ_{77}/Γ

NODE=S042Q65

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
<0.33	90	[1] ABE 05A	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q65;LINKAGE=EP

$\Gamma(D^*(2010)^-\pi^+\pi^+\pi^-)/\Gamma(D^*(2010)^-\pi^+)$ — Γ_{61}/Γ_{48}

NODE=S042RA9

VALUE	DOCUMENT ID	TECN	COMMENT
2.64±0.04±0.13	AAIJ 13AO	LHCB	pp at 7 TeV

$\Gamma(\overline{D}{}_2^*(2460)^-\pi^+,\ D_2^{*-} \to D^0\pi^-)/\Gamma_{total}$ — Γ_{78}/Γ

NODE=S042S22

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
2.38±0.16 OUR AVERAGE				
2.44±0.07±0.16		[1] AAIJ 15Y	LHCB	pp at 7, 8 TeV
2.15±0.17±0.31		[2,3] KUZMIN 07	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<14.7	90	[2] ALAM 94	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Result obtained using the isobar formalism. The second uncertainty combines in quadrature all systematic uncertainties quoted in the paper. NODE=S042S22;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S22;LINKAGE=EP

[3] Our second uncertainty combines systematics and model errors quoted in the paper. NODE=S042S22;LINKAGE=KU

$\Gamma(\overline{D}{}_0^*(2400)^-\pi^+,\ D_0^{*-} \to D^0\pi^-)/\Gamma_{total}$ — Γ_{79}/Γ

NODE=S042Q72

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
0.76±0.08 OUR AVERAGE			
0.77±0.05±0.06	[1] AAIJ 15Y	LHCB	pp at 7, 8 TeV
0.60±0.13±0.27	[2,3] KUZMIN 07	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Result obtained using the isobar formalism. The second uncertainty combines in quadrature all systematic uncertainties quoted in the paper. NODE=S042Q72;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q72;LINKAGE=EP

[3] Our second uncertainty combines systematics and model errors quoted in the paper. NODE=S042Q72;LINKAGE=KU

$\Gamma(D_2^*(2460)^- \pi^+,\ D_2^{*-} \to D^{*-}\pi^+\pi^-)/\Gamma_{total}$ — Γ_{80}/Γ

NODE=S042Q66

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
<0.24	90	[1] ABE	05A	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042Q66;LINKAGE=EP

$\Gamma(\overline{D}_2^*(2460)^- \rho^+)/\Gamma_{total}$ — Γ_{81}/Γ

NODE=S042S23

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0049	90	[1] ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] ALAM 94 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II absolute B($D^0 \to K^-\pi^+$) and B($D_2^*(2460)^+ \to D^0\pi^+$) = 30%.

NODE=S042S23;LINKAGE=A

$\Gamma(D^0 \overline{D}^0)/\Gamma_{total}$ — Γ_{82}/Γ

NODE=S042R03

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
0.14±0.06±0.03		[1] AAIJ	13AP	LHCB	pp at 7 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.43	90	[2] ADACHI	08	BELL	$e^+e^- \to \Upsilon(4S)$
<0.6	90	[2] AUBERT,B	06A	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses B($B^0 \to D^- D^+$) = $(2.11 \pm 0.31) \times 10^{-4}$ and B($B^+ \to \overline{D}^0 D_s^+$) = $(10.1 \pm 1.7) \times 10^{-3}$.

NODE=S042R03;LINKAGE=AI

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042R03;LINKAGE=EP

$\Gamma(D^{*0} \overline{D}^0)/\Gamma_{total}$ — Γ_{83}/Γ

NODE=S042R04

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
<2.9	90	[1] AUBERT,B	06A	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042R04;LINKAGE=EP

$\Gamma(D^- D^+)/\Gamma_{total}$ — Γ_{84}/Γ

NODE=S042S83

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
2.11±0.18 OUR AVERAGE					
2.12±0.16±0.18		[1] ROHRKEN	12	BELL	$e^+e^- \to \Upsilon(4S)$
1.97±0.20±0.20		[1] FRATINA	07	BELL	$e^+e^- \to \Upsilon(4S)$
2.8 ±0.4 ±0.5		[1] AUBERT,B	06A	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.91±0.51±0.30		[1] MAJUMDER	05	BELL	Repl. by FRATINA 07
< 9.4	90	[1] LIPELES	00	CLE2	$e^+e^- \to \Upsilon(4S)$
<59	90	BARATE	98Q	ALEP	$e^+e^- \to Z$
<12	90	ASNER	97	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S83;LINKAGE=EP

$\Gamma(D^\pm D^{*\mp}$ (*CP*-averaged)$)/\Gamma_{total}$ — Γ_{85}/Γ

NODE=S042C09

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
6.14±0.29±0.50	[1] ROHRKEN	12	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042C09;LINKAGE=EP

$\Gamma(D^- D_s^+)/\Gamma_{total}$ — Γ_{86}/Γ

NODE=S042R48

8.1±0.6 OUR AVERAGE Error includes scale factor of 1.1. [0.0072 ± 0.0008 OUR 2024 AVERAGE]

NEW

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
8.9±0.5±0.5		[1] ADACHI	24L	BEL2	$e^+e^- \to \Upsilon(4S)$
7.3±0.4±0.7		[2] ZUPANC	07	BELL	$e^+e^- \to \Upsilon(4S)$
6.6±1.4±0.6		[3] AUBERT	06N	BABR	$e^+e^- \to \Upsilon(4S)$
6.8±2.4±0.6		[4] GIBAUT	96	CLE2	$e^+e^- \to \Upsilon(4S)$
10 ±9 ±1		[5] ALBRECHT	92G	ARG	$e^+e^- \to \Upsilon(4S)$
5.3±3.0±0.5		[6] BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
12 ±7	3	[7] BORTOLETTO	90	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Used 362 fb^{-1} Belle II data and B($\Upsilon(4S) \to B^0 \overline{B}^0$)=0.484 ± 0.012. NODE=S042R48;LINKAGE=B

[2] ZUPANC 07 reports $(7.5 \pm 0.2 \pm 1.1) \times 10^{-3}$ from a measurement of [$\Gamma(B^0 \to D^- D_s^+)/\Gamma_{total}$] × [B($D_s^+ \to \phi\pi^+$)] assuming B($D_s^+ \to \phi\pi^+$) = $(4.4 \pm 0.6) \times 10^{-2}$, which we rescale to our best value B($D_s^+ \to \phi\pi^+$) = $(4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R48;LINKAGE=ZU

[3] AUBERT 06N reports $(0.64 \pm 0.13 \pm 0.10) \times 10^{-2}$ from a measurement of [$\Gamma(B^0 \to D^- D_s^+)/\Gamma_{total}$] × [B($D_s^+ \to \phi\pi^+$)] assuming B($D_s^+ \to \phi\pi^+$) = 0.0462 ± 0.0062, which we rescale to our best value B($D_s^+ \to \phi\pi^+$) = $(4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R48;LINKAGE=AN

[4] GIBAUT 96 reports 0.0087 ± 0.0024 ± 0.0020 from a measurement of [$\Gamma(B^0 \to D^- D_s^+)/\Gamma_{total}$] × [B($D_s^+ \to \phi\pi^+$)] assuming B($D_s^+ \to \phi\pi^+$) = 0.035, which we rescale to our best value B($D_s^+ \to \phi\pi^+$) = $(4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R48;LINKAGE=Z9

[5] ALBRECHT 92G reports 0.017 ± 0.013 ± 0.006 from a measurement of [$\Gamma(B^0 \to D^- D_s^+)/\Gamma_{total}$] × [B($D_s^+ \to \phi\pi^+$)] assuming B($D_s^+ \to \phi\pi^+$) = 0.027, which we rescale to our best value B($D_s^+ \to \phi\pi^+$) = $(4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes PDG 1990 D^+ branching ratios, e.g., B($D^+ \to K^- 2\pi^+$) = 7.7 ± 1.0%. NODE=S042R48;LINKAGE=CA

[6] BORTOLETTO 92 reports 0.0080 ± 0.0045 ± 0.0030 from a measurement of [$\Gamma(B^0 \to D^- D_s^+)/\Gamma_{total}$] × [B($D_s^+ \to \phi\pi^+$)] assuming B($D_s^+ \to \phi\pi^+$) = 0.030 ± 0.011, which we rescale to our best value B($D_s^+ \to \phi\pi^+$) = $(4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D. NODE=S042R48;LINKAGE=B9

[7] BORTOLETTO 90 assume B($D_s \to \phi\pi^+$) = 2%. Superseded by BORTOLETTO 92. NODE=S042R48;LINKAGE=A

$\Gamma(D^*(2010)^- D_s^+)/\Gamma_{total}$ Γ_{88}/Γ

NODE=S042R47
NODE=S042R47

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
8.2± 0.8 OUR AVERAGE					
[0.0080 ± 0.0011 OUR 2024 AVERAGE]					
8.3± 1.0±0.6		[1] ADACHI	24L	BEL2	$e^+ e^- \to \Upsilon(4S)$
7.3± 1.3±0.7		[2] AUBERT	06N	BABR	$e^+ e^- \to \Upsilon(4S)$
8.3± 1.5±0.7		[3] AUBERT	03I	BABR	$e^+ e^- \to \Upsilon(4S)$
8.8± 1.7±0.8		[4] AHMED	00B	CLE2	$e^+ e^- \to \Upsilon(4S)$
8 ± 6 ±1		[5] ALBRECHT	92G	ARG	$e^+ e^- \to \Upsilon(4S)$
11 ± 6 ±1		[6] BORTOLETTO	92	CLEO	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
7.2± 2.2±0.6		[7] GIBAUT	96	CLE2	Repl. by AHMED 00B
24 ±14	3	[8] BORTOLETTO	90	CLEO	$e^+ e^- \to \Upsilon(4S)$

NEW

[1] Used 362 fb^{-1} Belle II data and B($\Upsilon(4S) \to B^0 \overline{B}^0$)=0.484 ± 0.012. NODE=S042R47;LINKAGE=B

[2] AUBERT 06N reports $(0.71 \pm 0.13 \pm 0.09) \times 10^{-2}$ from a measurement of [$\Gamma(B^0 \to D^*(2010)^- D_s^+)/\Gamma_{total}$] × [B($D_s^+ \to \phi\pi^+$)] assuming B($D_s^+ \to \phi\pi^+$) = 0.0462 ± 0.0062, which we rescale to our best value B($D_s^+ \to \phi\pi^+$) = $(4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R47;LINKAGE=AN

[3] AUBERT 03I reports 0.0103 ± 0.0014 ± 0.0013 from a measurement of [$\Gamma(B^0 \to D^*(2010)^- D_s^+)/\Gamma_{total}$] × [B($D_s^+ \to \phi\pi^+$)] assuming B($D_s^+ \to \phi\pi^+$) = 0.036, which we rescale to our best value B($D_s^+ \to \phi\pi^+$) = $(4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R47;LINKAGE=AI

[4] AHMED 00B reports 0.0110 ± 0.0018 ± 0.0011 from a measurement of [$\Gamma(B^0 \to D^*(2010)^- D_s^+)/\Gamma_{total}$] × [B($D_s^+ \to \phi\pi^+$)] assuming B($D_s^+ \to \phi\pi^+$) = 0.036, which we rescale to our best value B($D_s^+ \to \phi\pi^+$) = $(4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R47;LINKAGE=AH

[5] ALBRECHT 92G reports 0.014 ± 0.010 ± 0.003 from a measurement of [$\Gamma(B^0 \to D^*(2010)^- D_s^+)/\Gamma_{total}$] × [B($D_s^+ \to \phi\pi^+$)] assuming B($D_s^+ \to \phi\pi^+$) = 0.027, which we rescale to our best value B($D_s^+ \to \phi\pi^+$) = $(4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes PDG 1990 D^+ and $D^*(2010)^+$ branching ratios, e.g., B($D^0 \to$ NODE=S042R47;LINKAGE=CA

$K^-\pi^+$) = 3.71 ± 0.25%, B($D^+ \to K^- 2\pi^+$) = 7.1 ± 1.0%, and B($D^*(2010)^+ \to D^0\pi^+$) = 55 ± 4%.

[6] BORTOLETTO 92 reports 0.016 ± 0.009 ± 0.006 from a measurement of [$\Gamma(B^0 \to D^*(2010)^- D_s^+)/\Gamma_{total}$] × [B($D_s^+ \to \phi\pi^+$)] assuming B($D_s^+ \to \phi\pi^+$) = 0.030 ± 0.011, which we rescale to our best value B($D_s^+ \to \phi\pi^+$) = (4.5 ± 0.4) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D and $D^*(2010)$. NODE=S042R47;LINKAGE=B9

[7] GIBAUT 96 reports 0.0093 ± 0.0023 ± 0.0016 from a measurement of [$\Gamma(B^0 \to D^*(2010)^- D_s^+)/\Gamma_{total}$] × [B($D_s^+ \to \phi\pi^+$)] assuming B($D_s^+ \to \phi\pi^+$) = 0.035, which we rescale to our best value B($D_s^+ \to \phi\pi^+$) = (4.5 ± 0.4) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R47;LINKAGE=Z9

[8] BORTOLETTO 90 assume B($D_s \to \phi\pi^+$) = 2%. Superseded by BORTOLETTO 92. NODE=S042R47;LINKAGE=A

$\Gamma(D^*(2010)^- D_s^+,\ D^{*-} \to \overline{D}^0\pi^-, m(\overline{D}^0\pi^-)>2.05\text{ GeV})/\Gamma(\overline{D}^0 D_s^+\pi^-, m(\overline{D}^0\pi^-)>2.05\text{ GeV})$ Γ_{89}/Γ_{87}

NODE=S042P91
NODE=S042P91

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
15.8±1.3±2.4	[1] AAIJ	23B	LHCB	pp at 7, 8, 13 TeV

[1] Uses simultaneous fits of $\overline{B}^0 \to \overline{D}^0 D_s^+\pi^-$ and $B^+ \to D^- D_s^+\pi^+$ amplitudes assuming isospin symmetry. NODE=S042P91;LINKAGE=A

$\Gamma(D_2^*(2460)^- D_s^+,\ D_2^{*-} \to \overline{D}^0\pi^-)/\Gamma(\overline{D}^0 D_s^+\pi^-, m(\overline{D}^0\pi^-)>2.05\text{ GeV})$ Γ_{90}/Γ_{87}

NODE=S042P92
NODE=S042P92

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
22.38±0.88±0.60	[1] AAIJ	23B	LHCB	pp at 7, 8, 13 TeV

[1] Uses simultaneous fits of $\overline{B}^0 \to \overline{D}^0 D_s^+\pi^-$ and $B^+ \to D^- D_s^+\pi^+$ amplitudes assuming isospin symmetry. NODE=S042P92;LINKAGE=A

$\Gamma(D_1^*(2600)^- D_s^+,\ D_1^{*-} \to \overline{D}^0\pi^-)/\Gamma(\overline{D}^0 D_s^+\pi^-, m(\overline{D}^0\pi^-)>2.05\text{ GeV})$ Γ_{91}/Γ_{87}

NODE=S042P93
NODE=S042P93

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
1.35±0.40±0.59	[1] AAIJ	23B	LHCB	pp at 7, 8, 13 TeV

[1] Uses simultaneous fits of $\overline{B}^0 \to \overline{D}^0 D_s^+\pi^-$ and $B^+ \to D^- D_s^+\pi^+$ amplitudes assuming isospin symmetry. NODE=S042P93;LINKAGE=A

$\Gamma(D_3^*(2750)^- D_s^+,\ D_3^{*-} \to \overline{D}^0\pi^-)/\Gamma(\overline{D}^0 D_s^+\pi^-, m(\overline{D}^0\pi^-)>2.05\text{ GeV})$ Γ_{92}/Γ_{87}

NODE=S042P94
NODE=S042P94

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
0.31±0.14±0.17	[1] AAIJ	23B	LHCB	pp at 7, 8, 13 TeV

[1] Uses simultaneous fits of $\overline{B}^0 \to \overline{D}^0 D_s^+\pi^-$ and $B^+ \to D^- D_s^+\pi^+$ amplitudes assuming isospin symmetry. NODE=S042P94;LINKAGE=A

$\Gamma(D_1^*(2760)^- D_s^+,\ D_1^{*-} \to \overline{D}^0\pi^-)/\Gamma(\overline{D}^0 D_s^+\pi^-, m(\overline{D}^0\pi^-)>2.05\text{ GeV})$ Γ_{93}/Γ_{87}

NODE=S042P95
NODE=S042P95

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
0.28±0.25±1.48	[1] AAIJ	23B	LHCB	pp at 7, 8, 13 TeV

[1] Uses simultaneous fits of $\overline{B}^0 \to \overline{D}^0 D_s^+\pi^-$ and $B^+ \to D^- D_s^+\pi^+$ amplitudes assuming isospin symmetry. NODE=S042P95;LINKAGE=A

$\Gamma(D_J^*(3000)^- D_s^+,\ D_J^{*-} \to \overline{D}^0\pi^-)/\Gamma(\overline{D}^0 D_s^+\pi^-, m(\overline{D}^0\pi^-)>2.05\text{ GeV})$ Γ_{94}/Γ_{87}

NODE=S042P96
NODE=S042P96

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
0.45±0.16±0.38	[1] AAIJ	23B	LHCB	pp at 7, 8, 13 TeV

[1] Uses simultaneous fits of $\overline{B}^0 \to \overline{D}^0 D_s^+\pi^-$ and $B^+ \to D^- D_s^+\pi^+$ amplitudes assuming isospin symmetry. NODE=S042P96;LINKAGE=A

$\Gamma(T_{cs0}^*(2870)^0 \overline{D}^0,\ T_{cs0}^{*0} \to D_s^+\pi^-)/\Gamma(\overline{D}^0 D_s^+\pi^-, m(\overline{D}^0\pi^-)>2.05\text{ GeV})$ Γ_{95}/Γ_{87}

NODE=S042P97
NODE=S042P97

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
2.48±0.67±0.77	[1] AAIJ	23B	LHCB	pp at 7, 8, 13 TeV

[1] Uses simultaneous fits of $\overline{B}^0 \to \overline{D}^0 D_s^+\pi^-$ and $B^+ \to D^- D_s^+\pi^+$ amplitudes assuming isospin symmetry. NODE=S042P97;LINKAGE=A

$\Gamma\left(D^- D_s^{*+}\right)/\Gamma_{total}$ Γ_{96}/Γ

NODE=S042R98
NODE=S042R98

VALUE	DOCUMENT ID		TECN	COMMENT
0.0074±0.0016 OUR AVERAGE				
0.0071±0.0016±0.0006	[1] AUBERT	06N	BABR	$e^+ e^- \to \Upsilon(4S)$
0.0078±0.0032±0.0007	[2] GIBAUT	96	CLE2	$e^+ e^- \to \Upsilon(4S)$
0.016 ±0.012 ±0.001	[3] ALBRECHT	92G	ARG	$e^+ e^- \to \Upsilon(4S)$

[1] AUBERT 06N reports $(0.69 \pm 0.16 \pm 0.09) \times 10^{-2}$ from a measurement of $[\Gamma(B^0 \to D^- D_s^{*+})/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.0462 \pm 0.0062$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R98;LINKAGE=AN

[2] GIBAUT 96 reports $0.0100 \pm 0.0035 \pm 0.0022$ from a measurement of $[\Gamma(B^0 \to D^- D_s^{*+})/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.035$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R98;LINKAGE=Z9

[3] ALBRECHT 92G reports $0.027 \pm 0.017 \pm 0.009$ from a measurement of $[\Gamma(B^0 \to D^- D_s^{*+})/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes PDG 1990 D^+ branching ratios, e.g., $B(D^+ \to K^- 2\pi^+) = 7.7 \pm 1.0\%$. NODE=S042R98;LINKAGE=CA

$\Gamma\left(D^*(2010)^- D_s^{*+}\right)/\Gamma_{total}$ Γ_{97}/Γ

NODE=S042R00
NODE=S042R00

VALUE	DOCUMENT ID		TECN	COMMENT
0.0177±0.0014 OUR AVERAGE				
0.0173±0.0018±0.0015	[1] AUBERT	06N	BABR	$e^+ e^- \to \Upsilon(4S)$
0.0188±0.0009±0.0017	[2] AUBERT	05V	BABR	$e^+ e^- \to \Upsilon(4S)$
0.0158±0.0027±0.0014	[3] AUBERT	03I	BABR	$e^+ e^- \to \Upsilon(4S)$
0.015 ±0.004 ±0.001	[4] AHMED	00B	CLE2	$e^+ e^- \to \Upsilon(4S)$
0.016 ±0.009 ±0.001	[5] ALBRECHT	92G	ARG	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.016 ±0.005 ±0.001	[6] GIBAUT	96	CLE2	Repl. by AHMED 00B

[1] AUBERT 06N reports $(1.68 \pm 0.21 \pm 0.19) \times 10^{-2}$ from a measurement of $[\Gamma(B^0 \to D^*(2010)^- D_s^{*+})/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.0462 \pm 0.0062$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R00;LINKAGE=AN

[2] A partial reconstruction technique is used and the result is independent of the particle decay rate of D_S^+ meson. It also provides a model-independent determination of $B(D_S^+ \to \phi\pi^+) = (4.81 \pm 0.52 \pm 0.38)\%$. NODE=S042R00;LINKAGE=AU

[3] AUBERT 03I reports $0.0197 \pm 0.0015 \pm 0.0030$ from a measurement of $[\Gamma(B^0 \to D^*(2010)^- D_s^{*+})/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.036$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R00;LINKAGE=AI

[4] AHMED 00B reports $0.0182 \pm 0.0037 \pm 0.0025$ from a measurement of $[\Gamma(B^0 \to D^*(2010)^- D_s^{*+})/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.036$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R00;LINKAGE=AH

[5] ALBRECHT 92G reports $0.026 \pm 0.014 \pm 0.006$ from a measurement of $[\Gamma(B^0 \to D^*(2010)^- D_s^{*+})/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes PDG 1990 D^+ and $D^*(2010)^+$ branching ratios, e.g., $B(D^0 \to K^- \pi^+) = 3.71 \pm 0.25\%$, $B(D^+ \to K^- 2\pi^+) = 7.1 \pm 1.0\%$, and $B(D^*(2010)^+ \to D^0 \pi^+) = 55 \pm 4\%$. NODE=S042R00;LINKAGE=CA

[6] GIBAUT 96 reports $0.0203 \pm 0.0050 \pm 0.0036$ from a measurement of $[\Gamma(B^0 \to D^*(2010)^- D_s^{*+})/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.035$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R00;LINKAGE=Z9

$\Gamma(D^*(2010)^- D_s^{*+})/\Gamma(D^*(2010)^- D_s^+)$ — Γ_{97}/Γ_{88}

NODE=S042P66
NODE=S042P66

VALUE	DOCUMENT ID		TECN	COMMENT
2.19±0.08±0.01	[1] AAIJ	21S	LHCB	pp at 13 TeV

[1] AAIJ 21S reports $[\Gamma(B^0 \to D^*(2010)^- D_s^{*+})/\Gamma(B^0 \to D^*(2010)^- D_s^+)] \times [B(D_s^{*+} \to D_s^+ \gamma)] = 2.045 \pm 0.022 \pm 0.071$ which we divide by our best value $B(D_s^{*+} \to D_s^+ \gamma) = (93.6 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042P66;LINKAGE=A

$[\Gamma(D^*(2010)^- D_s^+) + \Gamma(D^*(2010)^- D_s^{*+})]/\Gamma_{total}$ — $(\Gamma_{88}+\Gamma_{97})/\Gamma$

NODE=S042R64
NODE=S042R64

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
2.5 ±0.4 OUR AVERAGE					
2.40±0.35±0.22		[1] AUBERT	03I	BABR	$e^+ e^- \to \Upsilon(4S)$
3.3 ±0.9 ±0.3	22	[2] BORTOLETTO	90	CLEO	$e^+ e^- \to \Upsilon(4S)$

[1] AUBERT 03I reports $(3.00 \pm 0.19 \pm 0.39) \times 10^{-2}$ from a measurement of $[[\Gamma(B^0 \to D^*(2010)^- D_s^+) + \Gamma(B^0 \to D^*(2010)^- D_s^{*+})]/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.036$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R64;LINKAGE=AI

[2] BORTOLETTO 90 reports $(7.5 \pm 2.0) \times 10^{-2}$ from a measurement of $[[\Gamma(B^0 \to D^*(2010)^- D_s^+) + \Gamma(B^0 \to D^*(2010)^- D_s^{*+})]/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.02$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R64;LINKAGE=A

$\Gamma(D_{s0}(2317)^- K^+,\ D_{s0}^- \to D_s^- \pi^0)/\Gamma_{total}$ — Γ_{98}/Γ

NODE=S042Q55
NODE=S042Q55

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
$4.2^{+1.4}_{-1.3}\pm0.4$	[1] DRUTSKOY	05	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] DRUTSKOY 05 reports $(5.3^{+1.5}_{-1.3} \pm 1.6) \times 10^{-5}$ from a measurement of $[\Gamma(B^0 \to D_{s0}(2317)^- K^+,\ D_{s0}^- \to D_s^- \pi^0)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.036 \pm 0.009$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042Q55;LINKAGE=DR

$\Gamma(D_{s0}(2317)^- \pi^+,\ D_{s0}^- \to D_s^- \pi^0)/\Gamma_{total}$ — Γ_{99}/Γ

NODE=S042Q56
NODE=S042Q56

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
<2.5	90	[1] DRUTSKOY	05	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q56;LINKAGE=EP

$\Gamma(D_{sJ}(2457)^- K^+,\ D_{sJ}^- \to D_s^- \pi^0)/\Gamma_{total}$ — Γ_{100}/Γ

NODE=S042Q57
NODE=S042Q57

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
<0.94	90	[1] DRUTSKOY	05	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q57;LINKAGE=EP

$\Gamma(D_{sJ}(2457)^- \pi^+,\ D_{sJ}^- \to D_s^- \pi^0)/\Gamma_{total}$ — Γ_{101}/Γ

NODE=S042Q58
NODE=S042Q58

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
<0.40	90	[1] DRUTSKOY	05	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q58;LINKAGE=EP

$\Gamma(D_s^- D_s^+)/\Gamma_{total}$ — Γ_{102}/Γ

NODE=S042Q48
NODE=S042Q48

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
< 3.6 × 10⁻⁵	90	[1] ZUPANC	07	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<10 × 10⁻⁵	90	[1] AUBERT,BE	05F	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q48;LINKAGE=EP

$\Gamma(D_s^{*-} D_s^+)/\Gamma_{total}$ — Γ_{103}/Γ

NODE=S042Q49
NODE=S042Q49

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.3 × 10⁻⁴	90	[1] AUBERT,BE	05F	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q49;LINKAGE=EP

$\Gamma(D_s^{*-} D_s^{*+})/\Gamma_{\text{total}}$ Γ_{104}/Γ

NODE=S042Q50
NODE=S042Q50

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<2.4 × 10^{-4}	90	[1] AUBERT,BE	05F	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q50;LINKAGE=EP

$\Gamma(D_{s0}^*(2317)^+ D^-,\ D_{s0}^{*+} \to D_s^+ \pi^0)/\Gamma_{\text{total}}$ Γ_{105}/Γ

NODE=S042B57
NODE=S042B57

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
1.05±0.16 OUR AVERAGE Error includes scale factor of 1.1. [(1.06 ± 0.16) × 10^{-3} OUR 2024 AVERAGE Scale factor = 1.1]				
$0.98^{+0.16}_{-0.15}\pm0.02$	[1,2] CHOI	15A	BELL	$e^+ e^- \to \Upsilon(4S)$
$1.4\ ^{+0.5}_{-0.4}\ \pm0.1$	[2,3] AUBERT,B	04S	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.69^{+0.29}_{-0.24}\pm0.06$	[2,4] KROKOVNY	03B	BELL	Repl. by CHOI 15A

NEW

[1] CHOI 15A reports $(10.2^{+1.3}_{-1.2} \pm 1.0 \pm 0.4) \times 10^{-4}$ from a measurement of $[\Gamma(B^0 \to D_{s0}^*(2317)^+ D^-,\ D_{s0}^{*+} \to D_s^+ \pi^0)/\Gamma_{\text{total}}] \times [B(D_s^+ \to K^+ K^- \pi^+)] \times [B(D^+ \to K^- 2\pi^+)]$ assuming $B(D_s^+ \to K^+ K^- \pi^+) = (5.39 \pm 0.21) \times 10^{-2}$,$B(D^+ \to K^- 2\pi^+) = (9.13 \pm 0.19) \times 10^{-2}$, which we rescale to our best values $B(D_s^+ \to K^+ K^- \pi^+) = (5.45 \pm 0.08) \times 10^{-2}$, $B(D^+ \to K^- 2\pi^+) = (9.38 \pm 0.16) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best values. NODE=S042B57;LINKAGE=C

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B57;LINKAGE=EP

[3] AUBERT,B 04S reports $(1.8 \pm 0.4^{+0.7}_{-0.5}) \times 10^{-3}$ from a measurement of $[\Gamma(B^0 \to D_{s0}^*(2317)^+ D^-,\ D_{s0}^{*+} \to D_s^+ \pi^0)/\Gamma_{\text{total}}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.036 \pm 0.009$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042B57;LINKAGE=RE

[4] KROKOVNY 03B reports $(0.86^{+0.33}_{-0.26} \pm 0.26) \times 10^{-3}$ from a measurement of $[\Gamma(B^0 \to D_{s0}^*(2317)^+ D^-,\ D_{s0}^{*+} \to D_s^+ \pi^0)/\Gamma_{\text{total}}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.036 \pm 0.009$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042B57;LINKAGE=RP

$\Gamma(D_{s0}(2317)^+ D^-,\ D_{s0}^+ \to D_s^{*+} \gamma)/\Gamma_{\text{total}}$ Γ_{106}/Γ

NODE=S042Q31
NODE=S042Q31

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
<0.95	90	[1] KROKOVNY	03B	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q31;LINKAGE=EP

$\Gamma(D_{s0}(2317)^+ D^*(2010)^-,\ D_{s0}^+ \to D_s^+ \pi^0)/\Gamma_{\text{total}}$ Γ_{107}/Γ

NODE=S042Q08
NODE=S042Q08

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
$\mathbf{1.5\pm0.4^{+0.5}_{-0.4}}$	[1] AUBERT,B	04S	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q08;LINKAGE=AU

$\Gamma(D_{sJ}(2457)^+ D^-)/\Gamma_{\text{total}}$ Γ_{108}/Γ

NODE=S042B58
NODE=S042B58

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
3.5±1.1 OUR AVERAGE				
$2.6\pm1.5\pm0.7$	[1] AUBERT	06N	BABR	$e^+ e^- \to \Upsilon(4S)$
$4.8^{+2.2}_{-1.6}\pm1.1$	[2,3] AUBERT,B	04S	BABR	$e^+ e^- \to \Upsilon(4S)$
$3.9^{+1.5}_{-1.3}\pm0.9$	[2,4] KROKOVNY	03B	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Uses a missing-mass method in the events that one of the B mesons is fully reconstructed. NODE=S042B58;LINKAGE=AN

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B58;LINKAGE=EP

[3] AUBERT,B 04S reports $[\Gamma(B^0 \to D_{sJ}(2457)^+ D^-)/\Gamma_{\text{total}}] \times [B(D_{s1}(2460)^+ \to D_s^{*+} \pi^0)] = (2.3^{+1.0}_{-0.7} \pm 0.3) \times 10^{-3}$ which we divide by our best value $B(D_{s1}(2460)^+ \to D_s^{*+} \pi^0) = (48 \pm 11) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042B58;LINKAGE=RE

[4] KROKOVNY 03B reports $[\Gamma(B^0 \to D_{sJ}(2457)^+ D^-)/\Gamma_{\text{total}}] \times [B(D_{s1}(2460)^+ \to D_s^{*+} \pi^0)] = (1.9^{+0.7}_{-0.6} \pm 0.2) \times 10^{-3}$ which we divide by our best value $B(D_{s1}(2460)^+ \to D_s^{*+} \pi^0) = (48 \pm 11) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042B58;LINKAGE=RP

$\Gamma(D_{sJ}(2457)^+ D^-,\ D_{sJ}^+ \to D_s^+ \gamma)/\Gamma_{\text{total}}$ — Γ_{109}/Γ

NODE=S042Q10
NODE=S042Q10

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
$0.65^{+0.17}_{-0.14}$ **OUR AVERAGE**			
$0.64^{+0.24}_{-0.16} \pm 0.06$	[1,2] AUBERT,B 04S	BABR	$e^+e^- \to \Upsilon(4S)$
$0.66^{+0.21}_{-0.19} \pm 0.06$	[1,3] KROKOVNY 03B	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
NODE=S042Q10;LINKAGE=AU

[2] AUBERT,B 04S reports $(0.8 \pm 0.2^{+0.3}_{-0.2}) \times 10^{-3}$ from a measurement of $[\Gamma(B^0 \to D_{sJ}(2457)^+ D^-,\ D_{sJ}^+ \to D_s^+ \gamma)/\Gamma_{\text{total}}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.036 \pm 0.009$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.
NODE=S042Q10;LINKAGE=BR

[3] KROKOVNY 03B reports $(0.82^{+0.22}_{-0.19} \pm 0.25) \times 10^{-3}$ from a measurement of $[\Gamma(B^0 \to D_{sJ}(2457)^+ D^-,\ D_{sJ}^+ \to D_s^+ \gamma)/\Gamma_{\text{total}}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.036 \pm 0.009$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.
NODE=S042Q10;LINKAGE=BS

$\Gamma(D_{sJ}(2457)^+ D^-,\ D_{sJ}^+ \to D_s^{*+} \gamma)/\Gamma_{\text{total}}$ — Γ_{110}/Γ

NODE=S042Q28
NODE=S042Q28

VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT
<0.60	90	[1] KROKOVNY 03B	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
NODE=S042Q28;LINKAGE=EP

$\Gamma(D_{sJ}(2457)^+ D^-,\ D_{sJ}^+ \to D_s^+ \pi^+\pi^-)/\Gamma_{\text{total}}$ — Γ_{111}/Γ

NODE=S042Q29
NODE=S042Q29

VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT
<0.20	90	[1] KROKOVNY 03B	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
NODE=S042Q29;LINKAGE=EP

$\Gamma(D_{sJ}(2457)^+ D^-,\ D_{sJ}^+ \to D_s^+ \pi^0)/\Gamma_{\text{total}}$ — Γ_{112}/Γ

NODE=S042Q30
NODE=S042Q30

VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT
<0.36	90	[1] KROKOVNY 03B	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
NODE=S042Q30;LINKAGE=EP

$\Gamma(D^*(2010)^- D_{sJ}(2457)^+)/\Gamma_{\text{total}}$ — Γ_{113}/Γ

NODE=S042Q09
NODE=S042Q09

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
9.3±2.2 OUR AVERAGE			
8.8±2.0±1.4	[1] AUBERT 06N	BABR	$e^+e^- \to \Upsilon(4S)$
$11\ ^{+5}_{-4}\ \pm 3$	[2,3] AUBERT,B 04S	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses a missing-mass method in the events that one of the B mesons is fully reconstructed.
NODE=S042Q09;LINKAGE=AN

[2] AUBERT,B 04S reports $[\Gamma(B^0 \to D^*(2010)^- D_{sJ}(2457)^+)/\Gamma_{\text{total}}] \times [B(D_{s1}(2460)^+ \to D_s^{*+}\pi^0)] = (5.5 \pm 1.2^{+2.2}_{-1.6}) \times 10^{-3}$ which we divide by our best value $B(D_{s1}(2460)^+ \to D_s^{*+}\pi^0) = (48 \pm 11) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.
NODE=S042Q09;LINKAGE=AB

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
NODE=S042Q09;LINKAGE=AU

$\Gamma(D_{sJ}(2457)^+ D^*(2010),\ D_{sJ}^+ \to D_s^+ \gamma)/\Gamma_{\text{total}}$ — Γ_{114}/Γ

NODE=S042Q11
NODE=S042Q11

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
$\mathbf{2.3 \pm 0.3^{+0.9}_{-0.6}}$	[1] AUBERT,B 04S	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
NODE=S042Q11;LINKAGE=EP

$[\Gamma(D^- D_{s1}(2536)^+,\ D_{s1}^+ \to D^{*0} K^+) + \Gamma(D^{*+} K^0)]/\Gamma_{\text{total}}$ — $\Gamma_{115}/\Gamma = (\Gamma_{116}+\Gamma_{117})/\Gamma$

NODE=S042DB1
NODE=S042DB1

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
2.75±0.62±0.36	[1,2] AUSHEV 11	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Uses $\Gamma(D^*(2007)^0 \to D^0\pi^0)\ /\ \Gamma(D^*(2007)^0 \to D^0\gamma) = 1.74 \pm 0.13$ and $\Gamma(D_{s1}(2536)^+ \to D^*(2007)^0 K^+)\ /\ \Gamma(D_{s1}(2536)^+ \to D^*(2010)^+ K^0) = 1.36 \pm 0.2$.
NODE=S042DB1;LINKAGE=AU

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
NODE=S042DB1;LINKAGE=EP

$\Gamma(D^- D_{s1}(2536)^+,\ D_{s1}^+ \to D^{*0} K^+)/\Gamma_{total}$ Γ_{116}/Γ

NODE=S042B71

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
1.71±0.48±0.32		[1] AUBERT	08B	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<5	90	AUBERT	03X	BABR	Repl. by AUBERT 08B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B71;LINKAGE=EP

$\Gamma(D^- D_{s1}(2536)^+,\ D_{s1}^+ \to D^{*+} K^0)/\Gamma_{total}$ Γ_{117}/Γ

NODE=S042B79

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
2.61±1.03±0.31	[1] AUBERT	08B	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B79;LINKAGE=EP

$\left[\Gamma(D^*(2010)^- D_{s1}(2536)^+,\ D_{s1}^+ \to D^{*0} K^+) + \Gamma(D^{*+} K^0)\right]/\Gamma_{total}$ $\Gamma_{118}/\Gamma = (\Gamma_{119}+\Gamma_{120})/\Gamma$

NODE=S042DB2

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
5.01±1.21±0.70	[1,2] AUSHEV	11	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Uses $\Gamma(D^*(2007)^0 \to D^0\pi^0)$ / $\Gamma(D^*(2007)^0 \to D^0\gamma) = 1.74 \pm 0.13$ and $\Gamma(D_{s1}(2536)^+ \to D^*(2007)^0 K^+)$ / $\Gamma(D_{s1}(2536)^+ \to D^*(2010)^+ K^0) = 1.36 \pm 0.2$.

NODE=S042DB2;LINKAGE=AU

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042DB2;LINKAGE=EP

$\Gamma(D^*(2010)^- D_{s1}(2536)^+,\ D_{s1}^+ \to D^{*0} K^+)/\Gamma_{total}$ Γ_{119}/Γ

NODE=S042B72

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
3.32±0.88±0.66		[1] AUBERT	08B	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<7	90	AUBERT	03X	BABR	Repl. by AUBERT 08B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B72;LINKAGE=EP

$\Gamma(D^{*-} D_{s1}(2536)^+,\ D_{s1}^+ \to D^{*+} K^0)/\Gamma_{total}$ Γ_{120}/Γ

NODE=S042B80

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
5.00±1.51±0.67	[1] AUBERT	08B	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B80;LINKAGE=EP

$\Gamma(D^- D_{sJ}(2573)^+,\ D_{sJ}^+ \to D^0 K^+)/\Gamma_{total}$ Γ_{121}/Γ

NODE=S042B73

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
3.4±1.7±0.5		[1] LEES	15C	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<10	90	AUBERT	03X	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B73;LINKAGE=EP

$\Gamma(D^*(2010)^- D_{sJ}(2573)^+,\ D_{sJ}^+ \to D^0 K^+)/\Gamma_{total}$ Γ_{122}/Γ

NODE=S042B74

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
<2	90	AUBERT	03X	BABR	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(D^- D_{sJ}(2700)^+,\ D_{sJ}^+ \to D^0 K^+)/\Gamma_{total}$ Γ_{123}/Γ

NODE=S042C33

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
7.14±0.96±0.69	[1] LEES	15C	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042C33;LINKAGE=EP

$\Gamma(D^+ \pi^-)/\Gamma_{total}$ Γ_{124}/Γ

NODE=S042C05

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
7.3±1.2±0.2	[1,2] DAS	10	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] DAS 10 reports $[\Gamma(B^0 \to D^+\pi^-)/\Gamma_{total}]$ / $[B(B^0 \to D^-\pi^+)] = (2.92 \pm 0.38 \pm 0.31) \times 10^{-4}$ which we multiply by our best value $B(B^0 \to D^-\pi^+) = (2.51 \pm 0.08) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042C05;LINKAGE=DA

[2] Derived using $\tan(\theta_C)\, f_D/f_{D_s} \sqrt{B(B^0 \to D_s^+\pi^-)/B(B^0 \to D^-\pi^+)}$ by assuming the flavor SU(3) symmetry, where θ_C is the Cabibbo angle, f_D (f_{D_s}) is the D (D_s) meson decay constant.

NODE=S042C05;LINKAGE=DS

$\Gamma(D_s^+ \pi^-)/\Gamma_{total}$ Γ_{125}/Γ

NODE=S042R49

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
20.3±1.8 OUR FIT					
21.6±2.6 OUR AVERAGE					
19.9±2.6±1.8		[1] DAS	10	BELL	$e^+ e^- \to \Upsilon(4S)$
25 ±4 ±2		[1] AUBERT	08AJ	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
14.0±3.5±1.3		[2] AUBERT	07K	BABR	Repl. by AUBERT 08AJ
25 ±9 ±2		[3] AUBERT	03D	BABR	Repl. by AUBERT 07K
19 $^{+9}_{-7}$ ±2		[4] KROKOVNY	02	BELL	Repl. by DAS 10
< 220	90	[5] ALEXANDER	93B	CLE2	$e^+ e^- \to \Upsilon(4S)$
<1300	90	[6] BORTOLETTO	90	CLEO	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R49;LINKAGE=EP

[2] AUBERT 07K reports $[\Gamma(B^0 \to D_s^+ \pi^-)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)] = (0.63 \pm 0.15 \pm 0.05) \times 10^{-6}$ which we divide by our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R49;LINKAGE=UB

[3] AUBERT 03D reports $[\Gamma(B^0 \to D_s^+ \pi^-)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)] = (1.13 \pm 0.33 \pm 0.21) \times 10^{-6}$ which we divide by our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R49;LINKAGE=TX

[4] KROKOVNY 02 reports $[\Gamma(B^0 \to D_s^+ \pi^-)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)] = (0.86^{+0.37}_{-0.30} \pm 0.11) \times 10^{-6}$ which we divide by our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R49;LINKAGE=K1

[5] ALEXANDER 93B reports $< 270 \times 10^{-6}$ from a measurement of $[\Gamma(B^0 \to D_s^+ \pi^-)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5 \times 10^{-2}$. NODE=S042R49;LINKAGE=XB

[6] BORTOLETTO 90 assume $B(D_s \to \phi\pi^+) = 2\%$. NODE=S042R49;LINKAGE=A

$[\Gamma(D_s^+ \pi^-) + \Gamma(D_s^- K^+)]/\Gamma_{total}$ $(\Gamma_{125}+\Gamma_{135})/\Gamma$

NODE=S042S4

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.0 × 10^{-3}	90	[1] ALBRECHT	93E	ARG	$e^+ e^- \to \Upsilon(4S)$

[1] ALBRECHT 93E reports $< 1.7 \times 10^{-3}$ from a measurement of $[[\Gamma(B^0 \to D_s^+ \pi^-) + \Gamma(B^0 \to D_s^- K^+)]/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5 \times 10^{-2}$. NODE=S042S4;LINKAGE=CA

$\Gamma(D_s^+ \pi^-)/\Gamma(D^- \pi^+)$ Γ_{125}/Γ_{38}

NODE=S042P67

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
8.1±0.7 OUR FIT				
7.7±0.7±0.6	AAIJ	21W	LHCB	pp at 7, 8, 13 TeV

$\Gamma(D_s^{*+} \pi^-)/\Gamma_{total}$ Γ_{126}/Γ

NODE=S042S17

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
2.1 ±0.4 OUR AVERAGE		Error includes scale factor of 1.4.			
1.75±0.34±0.20		[1] JOSHI	10	BELL	$e^+ e^- \to \Upsilon(4S)$
2.6 $^{+0.5}_{-0.4}$ ±0.2		[1] AUBERT	08AJ	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2.9 ±0.7 ±0.3		[2] AUBERT	07K	BABR	Repl. by AUBERT 08AJ
< 4.1	90	AUBERT	03D	BABR	Repl. by AUBERT 07K
<40	90	[3] ALEXANDER	93B	CLE2	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S17;LINKAGE=EP

[2] AUBERT 07K reports $[\Gamma(B^0 \to D_s^{*+} \pi^-)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)] = (1.32 \pm 0.27 \pm 0.15) \times 10^{-6}$ which we divide by our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042S17;LINKAGE=UB

[3] ALEXANDER 93B reports $< 44 \times 10^{-5}$ from a measurement of $[\Gamma(B^0 \to D_s^{*+} \pi^-)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5 \times 10^{-2}$. NODE=S042S17;LINKAGE=XB

$\left[\Gamma(D_s^{*+}\pi^-)+\Gamma(D_s^{*-}K^+)\right]/\Gamma_{total}$ $(\Gamma_{126}+\Gamma_{136})/\Gamma$

NODE=S042S6

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<7 × 10⁻⁴	90	[1] ALBRECHT	93E	ARG	$e^+e^- \to \Upsilon(4S)$

[1] ALBRECHT 93E reports $< 1.2\times10^{-3}$ from a measurement of $[\left[\Gamma(B^0 \to D_s^{*+}\pi^-) + \Gamma(B^0 \to D_s^{*-}K^+)\right]/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5\times10^{-2}$.

NODE=S042S6;LINKAGE=CA

$\Gamma(D_s^+\rho^-)/\Gamma_{total}$ Γ_{127}/Γ

NODE=S042S7

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
< 2.4	90	[1] AUBERT	08AJ	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<130	90	[2] ALBRECHT	93E	ARG	$e^+e^- \to \Upsilon(4S)$
< 50	90	[3] ALEXANDER	93B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S7;LINKAGE=EP

[2] ALBRECHT 93E reports $< 2.2\times10^{-3}$ from a measurement of $[\Gamma(B^0 \to D_s^+\rho^-)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5\times10^{-2}$.

NODE=S042S7;LINKAGE=CA

[3] ALEXANDER 93B reports $< 6.6\times10^{-4}$ from a measurement of $[\Gamma(B^0 \to D_s^+\rho^-)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5\times10^{-2}$.

NODE=S042S7;LINKAGE=XB

$\Gamma(D_s^{*+}\rho^-)/\Gamma_{total}$ Γ_{128}/Γ

NODE=S042S8

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{4.1^{+1.3}_{-1.2}\pm0.4}$		[1] AUBERT	08AJ	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<150	90	[2] ALBRECHT	93E	ARG	$e^+e^- \to \Upsilon(4S)$
< 60	90	[3] ALEXANDER	93B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S8;LINKAGE=EP

[2] ALBRECHT 93E reports $< 2.5\times10^{-3}$ from a measurement of $[\Gamma(B^0 \to D_s^{*+}\rho^-)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5\times10^{-2}$.

NODE=S042S8;LINKAGE=CA

[3] ALEXANDER 93B reports $< 7.4\times10^{-4}$ from a measurement of $[\Gamma(B^0 \to D_s^{*+}\rho^-)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5\times10^{-2}$.

NODE=S042S8;LINKAGE=XB

$\Gamma(D_s^+a_0^-)/\Gamma_{total}$ Γ_{129}/Γ

NODE=S042R05

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
<1.9	90	[1] AUBERT	06X	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042R05;LINKAGE=EP

$\Gamma(D_s^{*+}a_0^-)/\Gamma_{total}$ Γ_{130}/Γ

NODE=S042R06

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
<3.6	90	[1] AUBERT	06X	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042R06;LINKAGE=EP

$\Gamma(D_s^+a_1(1260)^-)/\Gamma_{total}$ Γ_{131}/Γ

NODE=S042S9

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<2.1 × 10⁻³	90	[1] ALBRECHT	93E	ARG	$e^+e^- \to \Upsilon(4S)$

[1] ALBRECHT 93E reports $< 3.5\times10^{-3}$ from a measurement of $[\Gamma(B^0 \to D_s^+a_1(1260)^-)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5\times10^{-2}$.

NODE=S042S9;LINKAGE=CA

$\Gamma(D_s^{*+}a_1(1260)^-)/\Gamma_{total}$ Γ_{132}/Γ

NODE=S042S10

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.7 × 10⁻³	90	[1] ALBRECHT	93E	ARG	$e^+e^- \to \Upsilon(4S)$

[1] ALBRECHT 93E reports $< 2.9\times10^{-3}$ from a measurement of $[\Gamma(B^0 \to D_s^{*+}a_1(1260)^-)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5\times10^{-2}$.

NODE=S042S10;LINKAGE=CA

$\Gamma(D_s^+ a_2^-)/\Gamma_{total}$ — Γ_{133}/Γ

NODE=S042R07
NODE=S042R07

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
<19	90	[1] AUBERT	06X	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042R07;LINKAGE=EP

$\Gamma(D_s^{*+} a_2^-)/\Gamma_{total}$ — Γ_{134}/Γ

NODE=S042R08
NODE=S042R08

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
<20	90	[1] AUBERT	06X	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042R08;LINKAGE=EP

$\Gamma(D_s^- K^+)/\Gamma_{total}$ — Γ_{135}/Γ

NODE=S042R50
NODE=S042R50

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
27 ± 5 OUR FIT Error includes scale factor of 2.7.					
22 ± 5 OUR AVERAGE Error includes scale factor of 1.8.					
19.1± 2.4±1.7		[1] DAS	10	BELL	$e^+e^- \to \Upsilon(4S)$
29 ± 4 ±2		[1] AUBERT	08AJ	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
27 ± 5 ±2		[2] AUBERT	07K	BABR	Repl. by AUBERT 08AJ
26 ±10 ±2		[3] AUBERT	03D	BABR	Repl. by AUBERT 07K
36 $^{+11}_{-10}$ ±3		[4] KROKOVNY	02	BELL	Repl. by DAS 10
< 190	90	[5] ALEXANDER	93B	CLE2	$e^+e^- \to \Upsilon(4S)$
<1300	90	[6] BORTOLETTO	90	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042R50;LINKAGE=EP

[2] AUBERT 07K reports $[\Gamma(B^0 \to D_s^- K^+)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)] = (1.21 \pm 0.17 \pm 0.11) \times 10^{-6}$ which we divide by our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042R50;LINKAGE=UB

[3] AUBERT 03D reports $[\Gamma(B^0 \to D_s^- K^+)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)] = (1.16 \pm 0.36 \pm 0.24) \times 10^{-6}$ which we divide by our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042R50;LINKAGE=TX

[4] KROKOVNY 02 reports $[\Gamma(B^0 \to D_s^- K^+)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)] = (1.61^{+0.45}_{-0.38} \pm 0.21) \times 10^{-6}$ which we divide by our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042R50;LINKAGE=K1

[5] ALEXANDER 93B reports $< 230 \times 10^{-6}$ from a measurement of $[\Gamma(B^0 \to D_s^- K^+)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5 \times 10^{-2}$.

NODE=S042R50;LINKAGE=XB

[6] BORTOLETTO 90 assume $B(D_s \to \phi\pi^+) = 2\%$.

NODE=S042R50;LINKAGE=A

$\Gamma(D_s^- K^+)/\Gamma(D^- \pi^+)$ — Γ_{135}/Γ_{38}

NODE=S042C44
NODE=S042C44

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
1.09±0.19 OUR FIT Error includes scale factor of 2.7.				
1.29±0.05±0.08	AAIJ	15AC	LHCB	pp at 7, 8 TeV

$\Gamma(D_s^{*-} K^+)/\Gamma_{total}$ — Γ_{136}/Γ

NODE=S042S18
NODE=S042S18

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
2.19±0.30 OUR AVERAGE					
2.02±0.33±0.22		[1] JOSHI	10	BELL	$e^+e^- \to \Upsilon(4S)$
2.4 ±0.4 ±0.2		[1] AUBERT	08AJ	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2.2 ±0.6 ±0.2		[2] AUBERT	07K	BABR	Repl. by AUBERT 08AJ
< 2.5	90	AUBERT	03D	BABR	Repl. by AUBERT 07K
<14	90	[3] ALEXANDER	93B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S18;LINKAGE=EP

[2] AUBERT 07K reports $[\Gamma(B^0 \to D_s^{*-} K^+)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)] = (0.97 \pm 0.24 \pm 0.12) \times 10^{-6}$ which we divide by our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042S18;LINKAGE=UB

[3] ALEXANDER 93B reports $< 17 \times 10^{-5}$ from a measurement of $[\Gamma(B^0 \to D_s^{*-} K^+)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5 \times 10^{-2}$.

NODE=S042S18;LINKAGE=XB

$\Gamma(D_{s1}(2536)^{\mp} K^{\pm},\ D_{s1}^{-} \to \overline{D}^{*}(2007)^{0} K^{-})/\Gamma(\overline{D}^{0} K^{+} K^{-})$ Γ_{137}/Γ_{49}

NODE=S042P98

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
8.4±0.3±0.6	AAIJ 23AY	LHCB	pp at 7, 8, 13 TeV

$\Gamma(D_s^{-} K^{*}(892)^{+})/\Gamma_{total}$ Γ_{138}/Γ

NODE=S042S11

VALUE (units 10^{-5})	CL%	DOCUMENT ID	TECN	COMMENT
$\mathbf{3.5^{+1.0}_{-0.9}\pm0.4}$		[1] AUBERT 08AJ	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<280	90	[2] ALBRECHT 93E	ARG	$e^+e^- \to \Upsilon(4S)$
< 80	90	[3] ALEXANDER 93B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S11;LINKAGE=EP

[2] ALBRECHT 93E reports $< 4.6 \times 10^{-3}$ from a measurement of $[\Gamma(B^0 \to D_s^- K^*(892)^+)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5 \times 10^{-2}$.

NODE=S042S11;LINKAGE=CA

[3] ALEXANDER 93B reports $< 9.7 \times 10^{-4}$ from a measurement of $[\Gamma(B^0 \to D_s^- K^*(892)^+)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5 \times 10^{-2}$.

NODE=S042S11;LINKAGE=XB

$\Gamma(D_s^{*-} K^{*}(892)^{+})/\Gamma_{total}$ Γ_{139}/Γ

NODE=S042S12

VALUE (units 10^{-5})	CL%	DOCUMENT ID	TECN	COMMENT
$\mathbf{3.2^{+1.4}_{-1.2}\pm0.4}$		[1] AUBERT 08AJ	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<350	90	[2] ALBRECHT 93E	ARG	$e^+e^- \to \Upsilon(4S)$
< 90	90	[3] ALEXANDER 93B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S12;LINKAGE=EP

[2] ALBRECHT 93E reports $< 5.8 \times 10^{-3}$ from a measurement of $[\Gamma(B^0 \to D_s^{*-} K^*(892)^+)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5 \times 10^{-2}$.

NODE=S042S12;LINKAGE=CA

[3] ALEXANDER 93B reports $< 11.0 \times 10^{-4}$ from a measurement of $[\Gamma(B^0 \to D_s^{*-} K^*(892)^+)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5 \times 10^{-2}$.

NODE=S042S12;LINKAGE=XB

$\Gamma(D_s^{-} \pi^{+} K^{0})/\Gamma_{total}$ Γ_{140}/Γ

NODE=S042S13

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
0.97±0.14 OUR AVERAGE				
0.94±0.12±0.10		[1] WIECHCZYN...15	BELL	$e^+e^- \to \Upsilon(4S)$
1.10±0.26±0.20		[1] AUBERT 08G	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<40	90	[2] ALBRECHT 93E	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S13;LINKAGE=EP

[2] ALBRECHT 93E reports $< 7.3 \times 10^{-3}$ from a measurement of $[\Gamma(B^0 \to D_s^- \pi^+ K^0)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5 \times 10^{-2}$.

NODE=S042S13;LINKAGE=CA

$\Gamma(D_s^{*-} \pi^{+} K^{0})/\Gamma_{total}$ Γ_{141}/Γ

NODE=S042S14

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
< 1.10	90	[1] AUBERT 08G	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<25	90	[2] ALBRECHT 93E	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S14;LINKAGE=EP

[2] ALBRECHT 93E reports $< 4.2 \times 10^{-3}$ from a measurement of $[\Gamma(B^0 \to D_s^{*-} \pi^+ K^0)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5 \times 10^{-2}$.

NODE=S042S14;LINKAGE=CA

$\Gamma(D_s^- K^+ \pi^+ \pi^-)/\Gamma_{total}$ — Γ_{142}/Γ

NODE=S042C10
NODE=S042C10

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
1.71±0.31±0.34	[1] AAIJ	12AX	LHCB	pp at 7 TeV

[1] AAIJ 12AX reports $[\Gamma(B^0 \to D_s^- K^+ \pi^+ \pi^-)/\Gamma_{total}] / [B(B_s^0 \to D_s^- K^+ \pi^+ \pi^-)] = 0.54 \pm 0.07 \pm 0.07$ which we multiply by our best value $B(B_s^0 \to D_s^- K^+ \pi^+ \pi^-) = (3.2 \pm 0.6) \times 10^{-4}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042C10;LINKAGE=AI

$\Gamma(D_s^- \pi^+ K^*(892)^0)/\Gamma_{total}$ — Γ_{143}/Γ

NODE=S042S15
NODE=S042S15

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.0 \times 10^{-3}$	90	[1] ALBRECHT	93E	ARG	$e^+ e^- \to \Upsilon(4S)$

[1] ALBRECHT 93E reports $< 5.0 \times 10^{-3}$ from a measurement of $[\Gamma(B^0 \to D_s^- \pi^+ K^*(892)^0)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5 \times 10^{-2}$. NODE=S042S15;LINKAGE=CA

$\Gamma(D_s^{*-} \pi^+ K^*(892)^0)/\Gamma_{total}$ — Γ_{144}/Γ

NODE=S042S16
NODE=S042S16

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.6 \times 10^{-3}$	90	[1] ALBRECHT	93E	ARG	$e^+ e^- \to \Upsilon(4S)$

[1] ALBRECHT 93E reports $< 2.7 \times 10^{-3}$ from a measurement of $[\Gamma(B^0 \to D_s^{*-} \pi^+ K^*(892)^0)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.027$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5 \times 10^{-2}$. NODE=S042S16;LINKAGE=CA

$\Gamma(\overline{D}^0 K^0)/\Gamma_{total}$ — Γ_{145}/Γ

NODE=S042B46
NODE=S042B46

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
5.5±0.4 OUR AVERAGE				
5.6±0.5±0.2	KUMAR	23	BELL	$e^+ e^- \to \Upsilon(4S)$
5.3±0.7±0.3	[1] AUBERT,B	06L	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$5.0^{+1.3}_{-1.2}\pm0.6$	[1] KROKOVNY	03	BELL	Repl. by KUMAR 23

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B46;LINKAGE=EP

$\Gamma(\overline{D}^0 K^+ \pi^-)/\Gamma_{total}$ — Γ_{146}/Γ

NODE=S042Q51
NODE=S042Q51

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
88±15±9	[1] AUBERT	06A	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q51;LINKAGE=EP

$\Gamma(\overline{D}^0 K^+ \pi^-)/\Gamma(\overline{D}^0 \pi^+ \pi^-)$ — Γ_{146}/Γ_{47}

NODE=S042RB1
NODE=S042RB1

VALUE	DOCUMENT ID		TECN	COMMENT
0.106±0.007±0.008	AAIJ	13AQ	LHCB	pp at 7 TeV

$\Gamma(\overline{D}^0 K^*(892)^0)/\Gamma_{total}$ — Γ_{147}/Γ

NODE=S042B47
NODE=S042B47

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
4.5±0.6 OUR AVERAGE				
5.4±0.3±1.1	[1,2] AAIJ	15X	LHCB	pp at 7, 8 TeV
4.0±0.7±0.3	[3] AUBERT,B	06L	BABR	$e^+ e^- \to \Upsilon(4S)$
$4.8^{+1.1}_{-1.0}\pm0.5$	[3] KROKOVNY	03	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
5.7±0.9±0.6	[3] AUBERT	06A	BABR	Repl. by AUBERT,B 06L

[1] AAIJ 15X reports $(5.13 \pm 0.20 \pm 0.15 \pm 0.24 \pm 0.60) \times 10^{-5}$ from a measurement of $[\Gamma(B^0 \to \overline{D}^0 K^*(892)^0)/\Gamma_{total}] \times [B(B^0 \to \overline{D}^0 K^+ \pi^-)]$ assuming $B(B^0 \to \overline{D}^0 K^+ \pi^-) = (9.2 \pm 0.6 \pm 0.7 \pm 0.6) \times 10^{-5}$, which we rescale to our best value $B(B^0 \to \overline{D}^0 K^+ \pi^-) = (8.8 \pm 1.7) \times 10^{-5}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042B47;LINKAGE=A

[2] Measured via amplitude analysis of $B^0 \to \overline{D}^0 K^+ \pi^-$, which excludes contribution from decay via $D^*(2010)^-$ resonance. NODE=S042B47;LINKAGE=B

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B47;LINKAGE=EP

$\Gamma(\overline{D}^0 K^*(1410)^0)/\Gamma_{total}$ — Γ_{148}/Γ

NODE=S042C37

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<6.7 × 10^−5	90	[1] AAIJ 15X	LHCB	pp at 7, 8 TeV

[1] Measured via amplitude analysis of $B^0 \to \overline{D}^0 K^+ \pi^-$, which excludes contribution from decay via $D^*(2010)^-$ resonance. NODE=S042C37;LINKAGE=A

$\Gamma(\overline{D}^0 K_0^*(1430)^0)/\Gamma_{total}$ — Γ_{149}/Γ

NODE=S042C38

VALUE (units 10^{-5})	DOCUMENT ID	TECN	COMMENT
0.7±0.7±0.1	[1,2] AAIJ 15X	LHCB	pp at 7, 8 TeV

[1] AAIJ 15X reports $(0.71 \pm 0.27 \pm 0.33 \pm 0.47 \pm 0.08) \times 10^{-5}$ from a measurement of $[\Gamma(B^0 \to \overline{D}^0 K_0^*(1430)^0)/\Gamma_{total}] \times [B(B^0 \to \overline{D}^0 K^+ \pi^-)]$ assuming $B(B^0 \to \overline{D}^0 K^+ \pi^-) = (9.2 \pm 0.6 \pm 0.7 \pm 0.6) \times 10^{-5}$, which we rescale to our best value $B(B^0 \to \overline{D}^0 K^+ \pi^-) = (8.8 \pm 1.7) \times 10^{-5}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042C38;LINKAGE=A

[2] Measured via amplitude analysis of $B^0 \to \overline{D}^0 K^+ \pi^-$, which excludes contribution from decay via $D^*(2010)^-$ resonance. NODE=S042C38;LINKAGE=B

$\Gamma(\overline{D}^0 K_2^*(1430)^0)/\Gamma_{total}$ — Γ_{150}/Γ

NODE=S042C39

VALUE (units 10^{-5})	DOCUMENT ID	TECN	COMMENT
2.1±0.8±0.4	[1,2] AAIJ 15X	LHCB	pp at 7, 8 TeV

[1] AAIJ 15X reports $(2.04 \pm 0.45 \pm 0.30 \pm 0.54 \pm 0.25) \times 10^{-5}$ from a measurement of $[\Gamma(B^0 \to \overline{D}^0 K_2^*(1430)^0)/\Gamma_{total}] \times [B(B^0 \to \overline{D}^0 K^+ \pi^-)]$ assuming $B(B^0 \to \overline{D}^0 K^+ \pi^-) = (9.2 \pm 0.6 \pm 0.7 \pm 0.6) \times 10^{-5}$, which we rescale to our best value $B(B^0 \to \overline{D}^0 K^+ \pi^-) = (8.8 \pm 1.7) \times 10^{-5}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042C39;LINKAGE=A

[2] Measured via amplitude analysis of $B^0 \to \overline{D}^0 K^+ \pi^-$, which excludes contribution from decay via $D^*(2010)^-$ resonance. NODE=S042C39;LINKAGE=B

$\Gamma(D_0^*(2300)^- K^+,\ D_0^{*-} \to \overline{D}^0 \pi^-)/\Gamma_{total}$ — Γ_{151}/Γ

NODE=S042C40

VALUE (units 10^{-5})	DOCUMENT ID	TECN	COMMENT
1.9±0.8±0.4	[1,2] AAIJ 15X	LHCB	pp at 7, 8 TeV

[1] AAIJ 15X reports $(1.77 \pm 0.26 \pm 0.19 \pm 0.67 \pm 0.20) \times 10^{-5}$ from a measurement of $[\Gamma(B^0 \to D_0^*(2300)^- K^+,\ D_0^{*-} \to \overline{D}^0 \pi^-)/\Gamma_{total}] \times [B(B^0 \to \overline{D}^0 K^+ \pi^-)]$ assuming $B(B^0 \to \overline{D}^0 K^+ \pi^-) = (9.2 \pm 0.6 \pm 0.7 \pm 0.6) \times 10^{-5}$, which we rescale to our best value $B(B^0 \to \overline{D}^0 K^+ \pi^-) = (8.8 \pm 1.7) \times 10^{-5}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042C40;LINKAGE=A

[2] Measured via amplitude analysis of $B^0 \to \overline{D}^0 K^+ \pi^-$, which excludes contribution from decay via $D^*(2010)^-$ resonance. NODE=S042C40;LINKAGE=B

$\Gamma(D_2^*(2460)^- K^+,\ D_2^{*-} \to \overline{D}^0 \pi^-)/\Gamma_{total}$ — Γ_{152}/Γ

NODE=S042Q52

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
20.3±3.5 OUR AVERAGE			
22 ±2 ±4	[1,2] AAIJ 15X	LHCB	pp at 7, 8 TeV
18.3±4.0±3.1	[3] AUBERT 06A	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] AAIJ 15X reports $(2.12 \pm 0.10 \pm 0.11 \pm 0.11 \pm 0.25) \times 10^{-5}$ from a measurement of $[\Gamma(B^0 \to D_2^*(2460)^- K^+,\ D_2^{*-} \to \overline{D}^0 \pi^-)/\Gamma_{total}] \times [B(B^0 \to \overline{D}^0 K^+ \pi^-)]$ assuming $B(B^0 \to \overline{D}^0 K^+ \pi^-) = (9.2 \pm 0.6 \pm 0.7 \pm 0.6) \times 10^{-5}$, which we rescale to our best value $B(B^0 \to \overline{D}^0 K^+ \pi^-) = (8.8 \pm 1.7) \times 10^{-5}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042Q52;LINKAGE=A

[2] Measured via amplitude analysis of $B^0 \to \overline{D}^0 K^+ \pi^-$, which excludes contribution from decay via $D^*(2010)^-$ resonance. NODE=S042Q52;LINKAGE=B

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q52;LINKAGE=EP

$\Gamma(D_3^*(2760)^- K^+,\ D_3^{*-} \to \overline{D}^0 \pi^-)/\Gamma_{total}$ — Γ_{153}/Γ

NODE=S042C41

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.10 × 10^−5	90	[1] AAIJ 15X	LHCB	pp at 7, 8 TeV

[1] Measured via amplitude analysis of $B^0 \to \overline{D}^0 K^+ \pi^-$, which excludes contribution from decay via $D^*(2010)^-$ resonance. NODE=S042C41;LINKAGE=A

$\Gamma(\overline{D}^0 K^+ \pi^-$ nonresonant$)/\Gamma_{total}$ — Γ_{154}/Γ

NODE=S042Q53

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<37	90	[1] AUBERT 06A	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q53;LINKAGE=EP

$\Gamma([K^+K^-]_D K^*(892)^0)/\Gamma(\overline{D}^0 K^*(892)^0)$ $\Gamma_{155}/\Gamma_{147}$

NODE=S042C15

VALUE	DOCUMENT ID	TECN	COMMENT
0.81 ±0.06 OUR AVERAGE [0.92 ± 0.10 OUR 2024 AVERAGE]			
0.811±0.057±0.017	AAIJ 24M	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.92 ±0.10 ±0.02	AAIJ 19N	LHCB	Repl. by AAIJ 24M
1.05 $^{+0.17}_{-0.15}$ ±0.04	AAIJ 14BN	LHCB	Repl. by AAIJ 16S
1.36 $^{+0.37}_{-0.32}$ ±0.07	AAIJ 13L	LHCB	Repl. by AAIJ 14BN

$\Gamma([\pi^+\pi^-]_D K^*(892)^0)/\Gamma(\overline{D}^0 K^*(892)^0)$ $\Gamma_{156}/\Gamma_{147}$

NODE=S042C24

VALUE	DOCUMENT ID	TECN	COMMENT
1.10 ±0.11 OUR AVERAGE [1.32 ± 0.19 OUR 2024 AVERAGE]			
1.104±0.111±0.026	AAIJ 24M	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
1.32 ±0.19 ±0.03	AAIJ 19N	LHCB	Repl. by AAIJ 24M
1.21 $^{+0.28}_{-0.25}$ ±0.05	AAIJ 14BN	LHCB	Repl. by AAIJ 16S

$\Gamma([\pi^+K^-]_D K^*(892)^0)/\Gamma([K^+\pi^-]_D K^*(892)^0)$ $\Gamma_{157}/\Gamma_{158}$

NODE=S042P52

VALUE	DOCUMENT ID	TECN	COMMENT
0.080±0.015±0.002	AAIJ 19N	LHCB	pp at 7, 8, 13 TeV

$\Gamma([\pi^+\pi^-\pi^+\pi^-]_D K^{*0})/\Gamma(\overline{D}^0 K^*(892)^0)$ $\Gamma_{159}/\Gamma_{147}$

NODE=S042P51

VALUE	DOCUMENT ID	TECN	COMMENT
0.88 ±0.09 OUR AVERAGE [1.01 ± 0.16 OUR 2024 AVERAGE]			
0.882±0.086±0.033	AAIJ 24M	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
1.01 ±0.16 ±0.04	AAIJ 19N	LHCB	Repl. by AAIJ 24M

$\Gamma([\pi^+K^-\pi^+\pi^-]_D K^{*0})/\Gamma([K^+\pi^-\pi^+\pi^-]_D K^{*0})$ $\Gamma_{160}/\Gamma_{161}$

NODE=S042P53

VALUE	DOCUMENT ID	TECN	COMMENT
0.073±0.018±0.002	AAIJ 19N	LHCB	pp at 7, 8, 13 TeV

$\Gamma(\overline{D}^0\pi^0)/\Gamma_{total}$ Γ_{162}/Γ

NODE=S042S26

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
2.67±0.09 OUR AVERAGE				
2.70±0.06±0.10		BLOOMFIELD 22	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
2.69±0.09±0.13		[1] LEES 11M	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
2.25±0.14±0.35		[1] BLYTH 06	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
2.74$^{+0.36}_{-0.32}$±0.55		[1] COAN 02	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2.9 ±0.2 ±0.3		[1] AUBERT 04B	BABR	Repl. by LEES 11M
3.1 ±0.4 ±0.5		[1] ABE 02J	BELL	Repl. by BLYTH 06
<1.2	90	[2] NEMATI 98	CLE2	Repl. by COAN 02
<4.8	90	[3] ALAM 94	CLE2	Repl. by NEMATI 98

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S26;LINKAGE=EP

[2] NEMATI 98 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the PDG 96 values for D^0, D^{*0}, η, η', and ω branching fractions. NODE=S042S26;LINKAGE=NM

[3] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II absolute B($D^0 \rightarrow K^-\pi^+$) and the PDG 1992 B($D^0 \rightarrow K^-\pi^+\pi^0$)/B($D^0 \rightarrow K^-\pi^+$) and B($D^0 \rightarrow K^-2\pi^+\pi^-$)/B($D^0 \rightarrow K^-\pi^+$). NODE=S042S26;LINKAGE=E

$\Gamma(\overline{D}^0\rho^0)/\Gamma_{total}$ Γ_{163}/Γ

NODE=S042R34

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
3.21±0.21 OUR AVERAGE				
3.21±0.10±0.21		[1] AAIJ 15Y	LHCB	pp at 7, 8 TeV
3.19±0.20±0.45		[2,3] KUZMIN 07	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2.9 ±1.0 ±0.4		[2] SATPATHY 03	BELL	Repl. by KUZMIN 07
< 3.9	90	[4] NEMATI 98	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
< 5.5	90	[5] ALAM 94	CLE2	Repl. by NEMATI 98
< 6.0	90	[6] BORTOLETTO 92	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$
<27.0	90	[7] ALBRECHT 88K	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Measured using isobar formalism in the decay chain $B^0 \to \overline{D}^0 \rho(770)$, $\rho \to \pi^+\pi^-$ assuming B($\rho(770) \to \pi^+\pi^-$) = 1. The second uncertainty combines in quadrature all systematic uncertainties quoted in the paper. NODE=S042R34;LINKAGE=B
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R34;LINKAGE=EP
[3] Our second uncertainty combines systematics and model errors quoted in the paper. NODE=S042R34;LINKAGE=KU
[4] NEMATI 98 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the PDG 96 values for D^0, D^{*0}, η, η', and ω branching fractions. NODE=S042R34;LINKAGE=NM
[5] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II absolute B($D^0 \to K^-\pi^+$) and the PDG 1992 B($D^0 \to K^-\pi^+\pi^0$)/B($D^0 \to K^-\pi^+$) and B($D^0 \to K^-2\pi^+\pi^-$)/B($D^0 \to K^-\pi^+$). NODE=S042R34;LINKAGE=E
[6] BORTOLETTO 92 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses Mark III branching fractions for the D. NODE=S042R34;LINKAGE=B9
[7] ALBRECHT 88K reports < 0.003 assuming $B^0\overline{B}^0$:B^+B^- production ratio is 45:55. We rescale to 50%. NODE=S042R34;LINKAGE=A

$\Gamma(\overline{D}^0 f_2)/\Gamma_{total}$ Γ_{164}/Γ

NODE=S042Q73
NODE=S042Q73

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
1.56±0.21 OUR AVERAGE				
1.68±0.11±0.21	[1] AAIJ	15Y	LHCB	pp at 7, 8 TeV
1.20±0.18±0.38	[2,3] KUZMIN	07	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Result obtained using the isobar formalism. The second uncertainty combines in quadrature all systematic uncertainties quoted in the paper. Measured in the decay chain $B^0 \to \overline{D}^0 f_2(1270)$, $f_2 \to \pi^+\pi^-$. NODE=S042Q73;LINKAGE=A
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q73;LINKAGE=EP
[3] Our second uncertainty combines systematics and model errors quoted in the paper. NODE=S042Q73;LINKAGE=KU

$\Gamma(\overline{D}^0 \eta)/\Gamma_{total}$ Γ_{165}/Γ

NODE=S042S27
NODE=S042S27

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
2.56±0.12 OUR AVERAGE					
2.66±0.12±0.21		KUMAR	23	BELL	$e^+e^- \to \Upsilon(4S)$
2.53±0.09±0.11		[1] LEES	11M	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.77±0.16±0.21		[1] BLYTH	06	BELL	Repl. by KUMAR 23
2.5 ±0.2 ±0.3		[1] AUBERT	04B	BABR	Repl. by LEES 11M
1.4 $^{+0.5}_{-0.4}$ ±0.3		[1] ABE	02J	BELL	Repl. by BLYTH 06
<1.3	90	[2] NEMATI	98	CLE2	$e^+e^- \to \Upsilon(4S)$
<6.8	90	[3] ALAM	94	CLE2	Repl. by NEMATI 98

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S27;LINKAGE=EP
[2] NEMATI 98 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the PDG 96 values for D^0, D^{*0}, η, η', and ω branching fractions. NODE=S042S27;LINKAGE=NM
[3] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II absolute B($D^0 \to K^-\pi^+$) and the PDG 1992 B($D^0 \to K^-\pi^+\pi^0$)/B($D^0 \to K^-\pi^+$) and B($D^0 \to K^-2\pi^+\pi^-$)/B($D^0 \to K^-\pi^+$). NODE=S042S27;LINKAGE=E

$\Gamma(\overline{D}^0 \eta')/\Gamma_{total}$ Γ_{166}/Γ

NODE=S042S28
NODE=S042S28

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
1.38±0.16 OUR AVERAGE		Error includes scale factor of 1.3.			
1.48±0.13±0.07		[1] LEES	11M	BABR	$e^+e^- \to \Upsilon(4S)$
1.14±0.20$^{+0.10}_{-0.13}$		[1] SCHUMANN	05	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.7 ±0.4 ±0.2		[1] AUBERT	04B	BABR	Repl. by LEES 11M
<9.4	90	[2] NEMATI	98	CLE2	$e^+e^- \to \Upsilon(4S)$
<8.6	90	[3] ALAM	94	CLE2	Repl. by NEMATI 98

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S28;LINKAGE=EP
[2] NEMATI 98 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the PDG 96 values for D^0, D^{*0}, η, η', and ω branching fractions. NODE=S042S28;LINKAGE=NM
[3] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II absolute B($D^0 \to K^-\pi^+$) and the PDG 1992 B($D^0 \to K^-\pi^+\pi^0$)/B($D^0 \to K^-\pi^+$) and B($D^0 \to K^-2\pi^+\pi^-$)/B($D^0 \to K^-\pi^+$). NODE=S042S28;LINKAGE=E

$\Gamma(\overline{D}^0 \eta')/\Gamma(\overline{D}^0 \eta)$ $\Gamma_{166}/\Gamma_{165}$

NODE=S042SA5
NODE=S042SA5

VALUE	DOCUMENT ID		TECN	COMMENT
0.54±0.07±0.01	LEES	11M	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.7 ±0.2 ±0.1	AUBERT	04B	BABR	Repl. by LEES 11M

$\Gamma(\overline{D}^0 \omega)/\Gamma_{total}$ Γ_{167}/Γ

NODE=S042S29
NODE=S042S29

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
2.54±0.16 OUR AVERAGE					
2.75±0.72±0.35		[1] AAIJ	15Y	LHCB	pp at 7, 8 TeV
2.57±0.11±0.14		[2] LEES	11M	BABR	$e^+e^- \to \Upsilon(4S)$
2.37±0.23±0.28		[2] BLYTH	06	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
3.0 ±0.3 ±0.4		[2] AUBERT	04B	BABR	Repl. by LEES 11M
1.8 ±0.5 $^{+0.4}_{-0.3}$		[2] ABE	02J	BELL	Repl. by BLYTH 06
<5.1	90	[3] NEMATI	98	CLE2	$e^+e^- \to \Upsilon(4S)$
<6.3	90	[4] ALAM	94	CLE2	Repl. by NEMATI 98

[1] Result obtained using the isobar model. The second uncertainty combines in quadrature all systematic uncertainties quoted in the paper. NODE=S042S29;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S29;LINKAGE=EP

[3] NEMATI 98 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the PDG 96 values for D^0, D^{*0}, η, η', and ω branching fractions. NODE=S042S29;LINKAGE=NM

[4] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II absolute B($D^0 \to K^-\pi^+$) and the PDG 1992 B($D^0 \to K^-\pi^+\pi^0$)/B($D^0 \to K^-\pi^+$) and B($D^0 \to K^-2\pi^+\pi^-$)/B($D^0 \to K^-\pi^+$). NODE=S042S29;LINKAGE=E

$\Gamma(\overline{D}^0 \phi)/\Gamma_{total}$ Γ_{168}/Γ

NODE=S042P99
NODE=S042P99

VALUE (units 10^{-7})	CL%	DOCUMENT ID		TECN	COMMENT
7.7±2.1±1.0		[1] AAIJ	23AZ	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 23	95	AAIJ	18AY	LHCB	Repl. by AAIJ 23AZ
<116	90	[2] AUBERT	07AO	BABR	$e^+e^- \to \Upsilon(4S)$

[1] The last uncertainty includes the uncertainties of the branching fractions B($B^0 \to \overline{D}^0 K^+K^-$) and B($\phi \to K^+K^-$). NODE=S042P99;LINKAGE=B

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042P99;LINKAGE=EP

$\Gamma(D^0 K^+\pi^-)/\Gamma_{total}$ Γ_{169}/Γ

NODE=S042Q54
NODE=S042Q54

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<19	90	[1] AUBERT	06A	BABR	Repl. by AUBERT 09AE

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q54;LINKAGE=EP

$\Gamma(D^0 K^+\pi^-)/\Gamma(\overline{D}^0 K^+\pi^-)$ $\Gamma_{169}/\Gamma_{146}$

NODE=S042B97
NODE=S042B97

VALUE	DOCUMENT ID		TECN	COMMENT
0.060±0.034 OUR AVERAGE				
$0.045^{+0.056}_{-0.050}{}^{+0.028}_{-0.018}$	[1,2] NEGISHI	12	BELL	$e^+e^- \to \Upsilon(4S)$
0.068±0.042	[3] AUBERT	09AE	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. NODE=S042B97;LINKAGE=EP

[2] Uses $D^0 \to K^-\pi^+$mode. Restricts $K^+\pi^-$ mass within ±50 MeV of the nominal K^{*0} mass. Corresponds to the upper limit, < 0.16 at 95% CL. NODE=S042B97;LINKAGE=NE

[3] Reports a signal at the level of 2.5 standard deviations after combining results from $D^0 \to K^+\pi^-$, $K^+\pi^-\pi^0$, and $K^+\pi^-\pi^+\pi^-$. NODE=S042B97;LINKAGE=AU

$\Gamma(D^0 K^*(892)^0)/\Gamma_{total}$ Γ_{170}/Γ

NODE=S042B50
NODE=S042B50

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<1.1	90	[1] AUBERT,B	06L	BABR	$e^+e^- \to \Upsilon(4S)$
<1.8	90	[1] KROKOVNY	03	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B50;LINKAGE=EP

$\Gamma(D^0 K^*(892)^0)/\Gamma(\overline{D}^0 K^*(892)^0)$ $\Gamma_{170}/\Gamma_{147}$

NODE=S042P44

"OUR EVALUATION" is derived from $r_{B^0}(B^0 \to DK^{*0})$ data block listed in "*CP* violation parameters" section.

NODE=S042P44

VALUE (units 10^{-2})	DOCUMENT ID
$6.6^{+1.1}_{-1.2}$ OUR EVALUATION	(Produced by HFLAV)

NODE=S042P44

→ UNCHECKED ←

$\Gamma(\overline{D}^{*0}\gamma)/\Gamma_{total}$ Γ_{171}/Γ

NODE=S042S86
NODE=S042S86

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.5\times10^{-5}$	90	[1] AUBERT,B	05Q	BABR	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<5.0\times10^{-5}$	90	[1] ARTUSO	00	CLE2	$e^+e^-\to\Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S86;LINKAGE=EP

$\Gamma(\overline{D}^{*}(2007)^0\pi^0)/\Gamma_{total}$ Γ_{172}/Γ

NODE=S042S30
NODE=S042S30

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
2.2 ±0.6 OUR AVERAGE	Error includes scale factor of 2.6. See the ideogram below.				
$3.05\pm0.14\pm0.28$		[1] LEES	11M	BABR	$e^+e^-\to\Upsilon(4S)$
$1.39\pm0.18\pm0.26$		[1] BLYTH	06	BELL	$e^+e^-\to\Upsilon(4S)$
$2.20^{+0.59}_{-0.52}\pm0.79$		[1] COAN	02	CLE2	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$2.9\pm0.4\pm0.5$		[1] AUBERT	04B	BABR	Repl. by LEES 11M
$2.7^{+0.8}_{-0.7}{}^{+0.5}_{-0.6}$		[1] ABE	02J	BELL	Repl. by BLYTH 06
<4.4	90	[2] NEMATI	98	CLE2	Repl. by COAN 02
<9.7	90	[3] ALAM	94	CLE2	Repl. by NEMATI 98

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

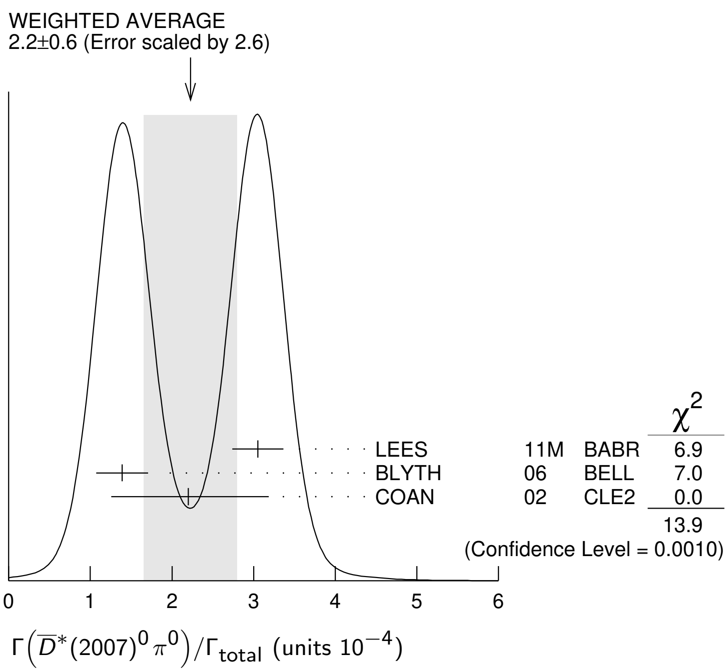
NODE=S042S30;LINKAGE=EP

[2] NEMATI 98 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the PDG 96 values for D^0, D^{*0}, η, η', and ω branching fractions.

NODE=S042S30;LINKAGE=NM

[3] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II B($D^*(2007)^0\to D^0\pi^0$) and absolute B($D^0\to K^-\pi^+$) and the PDG 1992 B($D^0\to K^-\pi^+\pi^0$)/B($D^0\to K^-\pi^+$) and B($D^0\to K^-2\pi^+\pi^-$)/B($D^0\to K^-\pi^+$).

NODE=S042S30;LINKAGE=EB



$\Gamma(\overline{D}^0\pi^0)/\Gamma(\overline{D}^{*}(2007)^0\pi^0)$ $\Gamma_{162}/\Gamma_{172}$

NODE=S042SA1
NODE=S042SA1

VALUE	DOCUMENT ID		TECN	COMMENT
0.90±0.08 OUR AVERAGE				
$0.88\pm0.05\pm0.06$	LEES	11M	BABR	$e^+e^-\to\Upsilon(4S)$
$1.62\pm0.23\pm0.35$	BLYTH	06	BELL	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1.0\pm0.1\pm0.2$	AUBERT	04B	BABR	Repl. by LEES 11M

$\Gamma(\overline{D}^{*}(2007)^0\rho^0)/\Gamma_{total}$ Γ_{173}/Γ

NODE=S042S31
NODE=S042S31

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5.1\times10^{-4}$	90	[1] SATPATHY	03	BELL	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.00056	90	[2] NEMATI	98	CLE2	$e^+e^-\to\Upsilon(4S)$
<0.00117	90	[3] ALAM	94	CLE2	Repl. by NEMATI 98

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S31;LINKAGE=EP

[2] NEMATI 98 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the PDG 96 values for D^0, D^{*0}, η, η', and ω branching fractions. NODE=S042S31;LINKAGE=NM

[3] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II B($D^*(2007)^0 \to D^0\pi^0$) and absolute B($D^0 \to K^-\pi^+$) and the PDG 1992 B($D^0 \to K^-\pi^+\pi^0$)/B($D^0 \to K^-\pi^+$) and B($D^0 \to K^-2\pi^+\pi^-$)/B($D^0 \to K^-\pi^+$). NODE=S042S31;LINKAGE=EB

$\Gamma(\overline{D}^*(2007)^0\eta)/\Gamma_{total}$ — Γ_{174}/Γ

NODE=S042S32
NODE=S042S32

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
2.3 ±0.6 OUR AVERAGE		Error includes scale factor of 2.8.		
2.69±0.14±0.23		[1] LEES 11M	BABR	$e^+e^- \to \Upsilon(4S)$
1.40±0.28±0.26		[1] BLYTH 06	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2.6 ±0.4 ±0.4		[1] AUBERT 04B	BABR	Repl. by LEES 11M
<4.6	90	[1] ABE 02J	BELL	$e^+e^- \to \Upsilon(4S)$
<2.6	90	[2] NEMATI 98	CLE2	$e^+e^- \to \Upsilon(4S)$
<6.9	90	[3] ALAM 94	CLE2	Repl. by NEMATI 98

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S32;LINKAGE=EP

[2] NEMATI 98 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the PDG 96 values for D^0, D^{*0}, η, η', and ω branching fractions. NODE=S042S32;LINKAGE=NM

[3] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II B($D^*(2007)^0 \to D^0\pi^0$) and absolute B($D^0 \to K^-\pi^+$) and the PDG 1992 B($D^0 \to K^-\pi^+\pi^0$)/B($D^0 \to K^-\pi^+$) and B($D^0 \to K^-2\pi^+\pi^-$)/B($D^0 \to K^-\pi^+$). NODE=S042S32;LINKAGE=EB

$\Gamma(\overline{D}^0\eta)/\Gamma(\overline{D}^*(2007)^0\eta)$ — $\Gamma_{165}/\Gamma_{174}$

NODE=S042SA2
NODE=S042SA2

VALUE	DOCUMENT ID	TECN	COMMENT
0.99±0.10 OUR AVERAGE			
0.97±0.07±0.07	LEES 11M	BABR	$e^+e^- \to \Upsilon(4S)$
1.27±0.29±0.25	BLYTH 06	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.9 ±0.2 ±0.1	AUBERT 04B	BABR	Repl. by LEES 11M

$\Gamma(\overline{D}^*(2007)^0\eta')/\Gamma(\overline{D}^*(2007)^0\eta)$ — $\Gamma_{175}/\Gamma_{174}$

NODE=S042SA6
NODE=S042SA6

VALUE	DOCUMENT ID	TECN	COMMENT
0.61±0.14±0.02	LEES 11M	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.5 ±0.3 ±0.1	AUBERT 04B	BABR	Repl. by LEES 11M

$\Gamma(\overline{D}^*(2007)^0\eta')/\Gamma_{total}$ — Γ_{175}/Γ

NODE=S042S33
NODE=S042S33

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
1.40±0.22 OUR AVERAGE				
1.48±0.22±0.13		[1] LEES 11M	BABR	$e^+e^- \to \Upsilon(4S)$
1.21±0.34±0.22		[1] SCHUMANN 05	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.3 ±0.7 ±0.2		[1,2] AUBERT 04B	BABR	Repl. by LEES 11M
<14	90	BRANDENB... 98	CLE2	$e^+e^- \to \Upsilon(4S)$
<19	90	[3] NEMATI 98	CLE2	$e^+e^- \to \Upsilon(4S)$
<27	90	[4] ALAM 94	CLE2	Repl. by NEMATI 98

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S33;LINKAGE=EP

[2] Reports an upper limit $< 2.6 \times 10^{-4}$ at 90% CL. NODE=S042S33;LINKAGE=EU

[3] NEMATI 98 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the PDG 96 values for D^0, D^{*0}, η, η', and ω branching fractions. NODE=S042S33;LINKAGE=NM

[4] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II B($D^*(2007)^0 \to D^0\pi^0$) and absolute B($D^0 \to K^-\pi^+$) and the PDG 1992 B($D^0 \to K^-\pi^+\pi^0$)/B($D^0 \to K^-\pi^+$) and B($D^0 \to K^-2\pi^+\pi^-$)/B($D^0 \to K^-\pi^+$). NODE=S042S33;LINKAGE=EB

$\Gamma(\overline{D}^0\eta')/\Gamma(\overline{D}^*(2007)^0\eta')$ — $\Gamma_{166}/\Gamma_{175}$

NODE=S042SA4
NODE=S042SA4

VALUE	DOCUMENT ID	TECN	COMMENT
0.96±0.18±0.06	LEES 11M	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
1.3 ±0.8 ±0.2	AUBERT 04B	BABR	Repl. by LEES 11M

$\Gamma(\overline{D}^*(2007)^0 \pi^+ \pi^-)/\Gamma_{total}$ — Γ_{176}/Γ

NODE=S042B42

VALUE	DOCUMENT ID		TECN	COMMENT
(6.2±1.2±1.8) × 10^{-4}	[1,2] SATPATHY	03	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B42;LINKAGE=EP

[2] No assumption about the intermediate mechanism is made in the analysis. NODE=S042B42;LINKAGE=SP

$\Gamma(\overline{D}^*(2007)^0 K^+ \pi^-)/\Gamma(\overline{D}^*(2007)^0 \pi^+ \pi^-)$ — $\Gamma_{177}/\Gamma_{176}$

NODE=S042P69

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
8.36±0.43±0.61	AAIJ	22N	LHCB	pp at 13 TeV

$\Gamma(\overline{D}^*(2007)^0 K^0)/\Gamma_{total}$ — Γ_{178}/Γ

NODE=S042B48

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
3.6±1.2±0.3		[1] AUBERT,B	06L	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<6.6	90	[1] KROKOVNY	03	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B48;LINKAGE=EP

$\Gamma(\overline{D}^*(2007)^0 K^*(892)^0)/\Gamma_{total}$ — Γ_{179}/Γ

NODE=S042B49

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<6.9 × 10^{-5}	90	[1] KROKOVNY	03	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B49;LINKAGE=EP

$\Gamma(\overline{D}^*(2007)^0 \phi)/\Gamma_{total}$ — Γ_{180}/Γ

NODE=S042S70

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
2.2±0.5±0.3	[1] AAIJ	23AZ	LHCB	pp at 7, 8, 13 TeV

[1] The last uncertainty includes the uncertainties of the branching fraction B($B^0 \rightarrow \overline{D}^0 K^+ K^-$) and B($\phi \rightarrow K^+ K^-$). NODE=S042S70;LINKAGE=A

$\Gamma(D^*(2007)^0 K^*(892)^0)/\Gamma_{total}$ — Γ_{181}/Γ

NODE=S042B51

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<4.0 × 10^{-5}	90	[1] KROKOVNY	03	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B51;LINKAGE=EP

$\Gamma(D^*(2007)^0 \pi^+ \pi^+ \pi^- \pi^-)/\Gamma_{total}$ — Γ_{182}/Γ

NODE=S042S96

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
2.7 ±0.5 OUR AVERAGE				
2.60±0.47±0.37	[1] MAJUMDER	04	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
3.0 ±0.7 ±0.6	[1] EDWARDS	02	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S96;LINKAGE=EP

$\Gamma(D^*(2007)^0 \pi^+ \pi^+ \pi^- \pi^-)/\Gamma(D^*(2010)^- \pi^+ \pi^+ \pi^- \pi^0)$ — Γ_{182}/Γ_{67}

NODE=S042S97

VALUE	DOCUMENT ID		TECN	COMMENT
0.17±0.04±0.02	[1] EDWARDS	02	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S97;LINKAGE=EP

$\Gamma(D^*(2010)^+ D^*(2010)^-)/\Gamma_{total}$ — Γ_{183}/Γ

NODE=S042S52

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
8.0 ±0.6 OUR AVERAGE					
7.82±0.38±0.63		[1] KRONENBIT...	12	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
8.1 ±0.6 ±1.0		[1] AUBERT,B	06A	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
9.9 $^{+4.2}_{-3.3}$ ±1.2		[1] LIPELES	00	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
8.1 ±0.8 ±1.1		[1] MIYAKE	05	BELL	Repl. by KRONENBITTER 12
8.3 ±1.6 ±1.2		[1,2] AUBERT	02M	BABR	Repl. by AUBERT,B 06B
6.2 $^{+4.0}_{-2.9}$ ±1.0		[3] ARTUSO	99	CLE2	Repl. by LIPELES 00
<61	90	[4] BARATE	98Q	ALEP	$e^+e^- \rightarrow Z$
<22	90	[5] ASNER	97	CLE2	Repl. by ARTUSO 99

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S52;LINKAGE=EP
[2] AUBERT 02M also assumes the measured *CP*-odd fraction of the final states is 0.22 ± 0.18 ± 0.03. NODE=S042S52;LINKAGE=SM
[3] ARTUSO 99 uses B($\Upsilon(4S) \to B^0 \overline{B}^0$)=(48 ± 4)%. NODE=S042S52;LINKAGE=L9
[4] BARATE 98Q (ALEPH) observes 2 events with an expected background of 0.10 ± 0.03 which corresponds to a branching ratio of $(2.3^{+1.9}_{-1.2} \pm 0.4) \times 10^{-3}$. NODE=S042S52;LINKAGE=AB
[5] ASNER 97 at CLEO observes 1 event with an expected background of 0.022 ± 0.011. This corresponds to a branching ratio of $(5.3^{+7.1}_{-3.7} \pm 1.0) \times 10^{-4}$. NODE=S042S52;LINKAGE=A

$\Gamma(\overline{D}^*(2007)^0 \omega)/\Gamma_{total}$ Γ_{184}/Γ

NODE=S042S34

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
3.6 ±1.1 OUR AVERAGE		Error includes scale factor of 3.1.			
4.55±0.24±0.39		[1] LEES	11M	BABR	$e^+e^- \to \Upsilon(4S)$
2.29±0.39±0.40		[1] BLYTH	06	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
4.2 ±0.7 ±0.9	90	[1] AUBERT	04B	BABR	Repl. by LEES 11M
< 7.9	90	[1] ABE	02J	BELL	$e^+e^- \to \Upsilon(4S)$
< 7.4	90	[2] NEMATI	98	CLE2	$e^+e^- \to \Upsilon(4S)$
<21	90	[3] ALAM	94	CLE2	Repl. by NEMATI 98

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S34;LINKAGE=EP
[2] NEMATI 98 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the PDG 96 values for D^0, D^{*0}, η, η', and ω branching fractions. NODE=S042S34;LINKAGE=NM
[3] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the CLEO II B($D^*(2007)^0 \to D^0\pi^0$) and absolute B($D^0 \to K^-\pi^+$) and the PDG 1992 B($D^0 \to K^-\pi^+\pi^0$)/B($D^0 \to K^-\pi^+$) and B($D^0 \to K^-2\pi^+\pi^-$)/B($D^0 \to K^-\pi^+$). NODE=S042S34;LINKAGE=EB

$\Gamma(\overline{D}^0 \omega)/\Gamma(\overline{D}^*(2007)^0 \omega)$ $\Gamma_{167}/\Gamma_{184}$

NODE=S042SA3

VALUE	DOCUMENT ID		TECN	COMMENT
0.58±0.06 OUR AVERAGE				
0.56±0.04±0.04	LEES	11M	BABR	$e^+e^- \to \Upsilon(4S)$
1.04±0.20±0.17	BLYTH	06	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.7 ±0.1 ±0.1	AUBERT	04B	BABR	Repl. by LEES 11M

$\Gamma(D^*(2010)^+ D^-)/\Gamma_{total}$ Γ_{185}/Γ

NODE=S042S82

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
6.1±1.5 OUR AVERAGE		Error includes scale factor of 1.6.			
5.7±0.7±0.7		[1] AUBERT,B	06A	BABR	$e^+e^- \to \Upsilon(4S)$
$11.7 \pm 2.6^{+2.2}_{-2.5}$		[1,2] ABE	02Q	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
8.8±1.0±1.3		[1] AUBERT	03J	BABR	Repl. by AUBERT,B 06B
$14.8 \pm 3.8^{+2.8}_{-3.1}$		[1,3] ABE	02Q	BELL	$e^+e^- \to \Upsilon(4S)$ OCCUR=2
< 6.3	90	[1] LIPELES	00	CLE2	$e^+e^- \to \Upsilon(4S)$
<56	90	BARATE	98Q	ALEP	$e^+e^- \to Z$
<18	90	ASNER	97	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S82;LINKAGE=EP
[2] The measurement is performed using fully reconstructed D^* and D^+ decays. NODE=S042S82;LINKAGE=H1
[3] The measurement is performed using a partial reconstruction technique for the D^* and fully reconstructed D^+ decays as a cross check. NODE=S042S82;LINKAGE=H2

$\Gamma(D^*(2007)^0 \overline{D}^*(2007)^0)/\Gamma_{total}$ Γ_{186}/Γ

NODE=S042S84

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
< 0.9	90	[1] AUBERT,B	06A	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<270	90	BARATE	98Q	ALEP	$e^+e^- \to Z$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S84;LINKAGE=EP

$\Gamma(D^- D^0 K^+)/\Gamma_{total}$ Γ_{187}/Γ

NODE=S042B60

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
1.07±0.07±0.09	[1] DEL-AMO-SA..	11B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.7 ±0.3 ±0.3	[1] AUBERT	03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B60;LINKAGE=EP

$\Gamma(D^- D^*(2007)^0 K^+)/\Gamma_{total}$ — Γ_{188}/Γ

NODE=S042B61

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
3.46±0.18±0.37	[1] DEL-AMO-SA...11B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
4.6 ±0.7 ±0.7	[1] AUBERT 03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B61;LINKAGE=EP

$\Gamma(D^*(2010)^- D^0 K^+)/\Gamma_{total}$ — Γ_{189}/Γ

NODE=S042B62

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
2.47±0.10±0.18	[1] DEL-AMO-SA...11B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$3.1\ ^{+0.4}_{-0.3}\ \pm0.4$	[1] AUBERT 03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B62;LINKAGE=EP

$\Gamma(D^*(2010)^- D^0 K^+)/\Gamma(D^- D^0 K^+)$ — $\Gamma_{189}/\Gamma_{187}$

NODE=S042P65

VALUE	DOCUMENT ID	TECN	COMMENT
1.754±0.028±0.038	[1] AAIJ 20AN	LHCB	pp at 7, 8, 13 TeV

[1] Uses $D^+ \to K^-\pi^+\pi^+$, $D^0 \to K^-\pi^+$ and $D^0 \to K^-\pi^+\pi^+\pi^-$ decays.

NODE=S042P65;LINKAGE=A

$\Gamma(D^*(2010)^- D^*(2007)^0 K^+)/\Gamma_{total}$ — Γ_{190}/Γ

NODE=S042B63

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
10.6±0.33±0.86	[1] DEL-AMO-SA...11B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
11.8±1.0 ±1.7	[1] AUBERT 03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B63;LINKAGE=EP

$\Gamma(D^- D^+ K^0)/\Gamma_{total}$ — Γ_{191}/Γ

NODE=S042B64

VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT
0.75±0.12±0.12		[1] DEL-AMO-SA...11B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<1.7	90	[1] AUBERT 03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B64;LINKAGE=EP

$[\Gamma(D^*(2010)^- D^+ K^0) + \Gamma(D^- D^*(2010)^+ K^0)]/\Gamma_{total}$ — Γ_{192}/Γ

NODE=S042B65

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
6.41±0.36±0.39	[1] DEL-AMO-SA...11B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
6.5 ±1.2 ±1.0	[1] AUBERT 03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B65;LINKAGE=EP

$\Gamma(D^*(2010)^- D^*(2010)^+ K^0)/\Gamma_{total}$ — Γ_{193}/Γ

NODE=S042B66

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
8.1 ±0.7 OUR AVERAGE			
8.26±0.43±0.67	[1] DEL-AMO-SA...11B	BABR	$e^+e^- \to \Upsilon(4S)$
6.8 ±0.8 ±1.4	[1,2] DALSENO 07	BELL	$e^+e^- \to \Upsilon(4S)$
8.8 ±0.8 ±1.4	[1,2] AUBERT,B 06Q	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$8.8\ ^{+1.5}_{-1.4}\ \pm1.3$	[1] AUBERT 03X	BABR	Repl. by AUBERT,B 06Q

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] The result is rescaled by a factor of 2 to convert from K^0_S to K^0.

NODE=S042B66;LINKAGE=EP
NODE=S042B66;LINKAGE=RE

$\Gamma(D^{*-} D_{s1}(2536)^+,\ D^+_{s1} \to D^{*+} K^0)/\Gamma_{total}$ — Γ_{194}/Γ

NODE=S042B78

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
8.0±2.4 OUR AVERAGE			
$7.6^{+4.8+1.6}_{-4.2-1.4}$	[1,2] DALSENO 07	BELL	$e^+e^- \to \Upsilon(4S)$
8.2±2.6±1.2	[1,2] AUBERT,B 06Q	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] The result is rescaled by a factor of 2 to convert from K^0_S to K^0.

NODE=S042B78;LINKAGE=EP
NODE=S042B78;LINKAGE=RE

$\Gamma(\overline{D}^0 D^0 K^0)/\Gamma_{total}$ — Γ_{195}/Γ

NODE=S042B67

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
0.27±0.10±0.05		[1] DEL-AMO-SA...11B		BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<1.4	90	[1] AUBERT	03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B67;LINKAGE=EP

$\Gamma(D^0\overline{D}^0K^+\pi^-)/\Gamma(D^*(2010)^- D^0 K^+)$ — $\Gamma_{196}/\Gamma_{189}$

NODE=S042P63

VALUE (%)	DOCUMENT ID		TECN	COMMENT
14.2±1.1±1.0	[1] AAIJ	20AG	LHCB	pp at 7, 8, and 13 TeV

[1] AAIJ 20AG excluded contributions from $B^0 \to D^{*-} D^0 K^+$ transitions with $D^{*-} \to \overline{D}^0\pi^-$.

NODE=S042P63;LINKAGE=A

$[\Gamma(\overline{D}^0 D^*(2007)^0 K^0) + \Gamma(\overline{D}^*(2007)^0 D^0 K^0)]/\Gamma_{total}$ — Γ_{197}/Γ

NODE=S042B68

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
1.08±0.32±0.36		[1] DEL-AMO-SA...11B		BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<3.7	90	[1] AUBERT	03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B68;LINKAGE=EP

$\Gamma(\overline{D}^*(2007)^0 D^*(2007)^0 K^0)/\Gamma_{total}$ — Γ_{198}/Γ

NODE=S042B69

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
2.40±0.55±0.67		[1] DEL-AMO-SA...11B		BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<6.6	90	[1] AUBERT	03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B69;LINKAGE=EP

$\Gamma((\overline{D}+\overline{D}^*)(D+D^*)K)/\Gamma_{total}$ — Γ_{199}/Γ

NODE=S042B70

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
3.68±0.10±0.24	[1] DEL-AMO-SA...11B		BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
4.3 ±0.3 ±0.6	[1] AUBERT	03X	BABR	Repl. by DEL-AMO-SANCHEZ 11B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B70;LINKAGE=EP

$\Gamma(\eta_c K^0)/\Gamma_{total}$ — Γ_{200}/Γ

NODE=S042S88

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
0.90±0.11 OUR AVERAGE				
$1.04^{+0.18}_{-0.15}\pm0.13$	[1] CHILIKIN	19	BELL	$e^+e^- \to \Upsilon(4S)$
$0.62^{+0.21}_{-0.20}\pm0.05$	[2,3] AUBERT	07AV	BABR	$e^+e^- \to \Upsilon(4S)$
$0.91\pm0.16\pm0.05$	[2,4] AUBERT,B	04B	BABR	$e^+e^- \to \Upsilon(4S)$
$1.23\pm0.23^{+0.40}_{-0.41}$	[2] FANG	03	BELL	$e^+e^- \to \Upsilon(4S)$
$1.09^{+0.55}_{-0.42}\pm0.33$	[5] EDWARDS	01	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] CHILIKIN 19 reports $[\Gamma(B^0 \to \eta_c K^0)/\Gamma_{total}] \times [B(\eta_c(1S) \to p\overline{p}\pi^+\pi^-)] = (38.0^{+6.4}_{-2.9}{}^{+1.3}_{-4.7}) \times 10^{-7}$ which we divide by our best value $B(\eta_c(1S) \to p\overline{p}\pi^+\pi^-) = (3.7 \pm 0.5) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042S88;LINKAGE=B

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S88;LINKAGE=EP

[3] AUBERT 07AV reports $[\Gamma(B^0 \to \eta_c K^0)/\Gamma_{total}] \times [B(\eta_c(1S) \to p\overline{p})] = (0.83^{+0.28}_{-0.26} \pm 0.05)\times10^{-6}$ which we divide by our best value $B(\eta_c(1S) \to p\overline{p}) = (1.33\pm0.11)\times10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042S88;LINKAGE=UB

[4] AUBERT,B 04B reports $[\Gamma(B^0 \to \eta_c K^0)/\Gamma_{total}] \times [B(\eta_c(1S) \to K\overline{K}\pi)] = (0.0648 \pm 0.0085 \pm 0.0071) \times 10^{-3}$ which we divide by our best value $B(\eta_c(1S) \to K\overline{K}\pi) = (7.1 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042S88;LINKAGE=AU

[5] EDWARDS 01 assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$. The correlated uncertainties (28.3)% from $B(J/\psi(1S) \to \gamma\eta_c)$ in those modes have been accounted for.

NODE=S042S88;LINKAGE=A

$\Gamma(\eta_c K^0)/\Gamma(J/\psi(1S)K^0)$ — $\Gamma_{200}/\Gamma_{214}$

NODE=S042Q01

VALUE	DOCUMENT ID		TECN	COMMENT
1.39±0.20±0.45	[1] AUBERT,B	04B	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses BABAR measurement of $B(B^0 \to J/\psi K^0) = (8.5 \pm 0.5 \pm 0.6) \times 10^{-4}$. NODE=S042Q01;LINKAGE=AU

$\Gamma(\eta_c(1S)K^+\pi^-)/\Gamma(J/\psi(1S)K^+\pi^-)$ — $\Gamma_{201}/\Gamma_{215}$

NODE=S042P28

VALUE	DOCUMENT ID		TECN	COMMENT
0.57±0.03±0.05	[1] AAIJ	18AN	LHCB	pp at 7, 8, 13 TeV

[1] AAIJ 18AN reports $[\Gamma(B^0 \to \eta_c(1S)K^+\pi^-)/\Gamma(B^0 \to J/\psi(1S)K^+\pi^-)] \times [B(\eta_c(1S) \to p\overline{p})] / [B(J/\psi(1S) \to p\overline{p})] = 0.357 \pm 0.015 \pm 0.008$ which we multiply or divide by our best values $B(\eta_c(1S) \to p\overline{p}) = (1.33 \pm 0.11) \times 10^{-3}$, $B(J/\psi(1S) \to p\overline{p}) = (2.120 \pm 0.029) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best values. NODE=S042P28;LINKAGE=B

$\Gamma(\eta_c(1S)K^*(1410)^0)/\Gamma(\eta_c(1S)K^+\pi^-)$ — $\Gamma_{204}/\Gamma_{201}$

NODE=S042P32

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
32±24±6	[1] AAIJ	18AN	LHCB	pp at 7, 8, 13 TeV

[1] AAIJ 18AN reports $[\Gamma(B^0 \to \eta_c(1S)K^*(1410)^0)/\Gamma(B^0 \to \eta_c(1S)K^+\pi^-)] \times [B(K^*(1410) \to K\pi)] = 0.021 \pm 0.011 \pm 0.011$ which we divide by our best value $B(K^*(1410) \to K\pi) = (6.6 \pm 1.3) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042P32;LINKAGE=A

$\Gamma(\eta_c(1S)K^+\pi^-(\text{NR}))/\Gamma(\eta_c(1S)K^+\pi^-)$ — $\Gamma_{202}/\Gamma_{201}$

NODE=S042P33

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
$10.3 \pm 1.4^{+1.0}_{-1.2}$	AAIJ	18AN	LHCB	pp at 7, 8, 13 TeV

$\Gamma(\eta_c(1S)K_0^*(1430)^0)/\Gamma(\eta_c(1S)K^+\pi^-)$ — $\Gamma_{205}/\Gamma_{201}$

NODE=S042P34

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
27±5±3	[1] AAIJ	18AN	LHCB	pp at 7, 8, 13 TeV

[1] AAIJ 18AN reports $[\Gamma(B^0 \to \eta_c(1S)K_0^*(1430)^0)/\Gamma(B^0 \to \eta_c(1S)K^+\pi^-)] \times [B(K_0^*(1430) \to K\pi)] = 0.253 \pm 0.035^{+0.035}_{-0.028}$ which we divide by our best value $B(K_0^*(1430) \to K\pi) = (93 \pm 10) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042P34;LINKAGE=A

$\Gamma(\eta_c(1S)K_2^*(1430)^0)/\Gamma(\eta_c(1S)K^+\pi^-)$ — $\Gamma_{206}/\Gamma_{201}$

NODE=S042P35

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
$8.2^{+3.6}_{-4.4} \pm 0.2$	[1] AAIJ	18AN	LHCB	pp at 7, 8, 13 TeV

[1] AAIJ 18AN reports $[\Gamma(B^0 \to \eta_c(1S)K_2^*(1430)^0)/\Gamma(B^0 \to \eta_c(1S)K^+\pi^-)] \times [B(K_2^*(1430) \to K\pi)] = 0.041 \pm 0.015^{+0.010}_{-0.016}$ which we divide by our best value $B(K_2^*(1430) \to K\pi) = (49.9 \pm 1.2) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042P35;LINKAGE=A

$\Gamma(\eta_c(1S)K^*(1680)^0)/\Gamma(\eta_c(1S)K^+\pi^-)$ — $\Gamma_{207}/\Gamma_{201}$

NODE=S042P36

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
$5.7^{+6.5}_{-6.8} \pm 0.4$	[1] AAIJ	18AN	LHCB	pp at 7, 8, 13 TeV

[1] AAIJ 18AN reports $[\Gamma(B^0 \to \eta_c(1S)K^*(1680)^0)/\Gamma(B^0 \to \eta_c(1S)K^+\pi^-)] \times [B(K^*(1680) \to K\pi)] = 0.022 \pm 0.020^{+0.015}_{-0.017}$ which we divide by our best value $B(K^*(1680) \to K\pi) = (38.7 \pm 2.5) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042P36;LINKAGE=A

$\Gamma(\eta_c(1S)K_0^*(1950)^0)/\Gamma(\eta_c(1S)K^+\pi^-)$ — $\Gamma_{208}/\Gamma_{201}$

NODE=S042P37

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
$7^{+4}_{-6} \pm 2$	[1] AAIJ	18AN	LHCB	pp at 7, 8, 13 TeV

[1] AAIJ 18AN reports $[\Gamma(B^0 \to \eta_c(1S)K_0^*(1950)^0)/\Gamma(B^0 \to \eta_c(1S)K^+\pi^-)] \times [B(K_0^*(1950) \to K^-\pi^+)] = 0.038 \pm 0.018^{+0.014}_{-0.025}$ which we divide by our best value $B(K_0^*(1950) \to K^-\pi^+) = (52 \pm 14) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042P37;LINKAGE=A

$\Gamma\big(T_{c\overline{c}}(4100)^- K^+,\ T^-_{c\overline{c}} \to \eta_c \pi^-\big)/\Gamma\big(\eta_c(1S) K^+ \pi^-\big)$ $\Gamma_{203}/\Gamma_{201}$

NODE=S042P38

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
$3.3\pm1.1^{+1.2}_{-1.1}$	AAIJ	18AN	LHCB	pp at 7, 8, 13 TeV

$\Gamma\big(\eta_c K^*(892)^0\big)/\Gamma_{total}$ Γ_{209}/Γ

NODE=S042B43

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
$5.3\ ^{+0.8}_{-0.9}$ OUR AVERAGE	Error includes scale factor of 1.7. See the ideogram below.			
$4.42\pm0.24^{+0.54}_{-0.66}$	[1] AAIJ	18AN	LHCB	pp at 7, 8, 13 TeV
$6.8\ \pm0.9\ \pm0.4$	[2,3] AUBERT	08AB	BABR	$e^+e^- \to \Upsilon(4S)$
$7.7\ ^{+2.4}_{-2.2}\ \pm0.7$	[4,5] AUBERT	07AV	BABR	$e^+e^- \to \Upsilon(4S)$
$16.2\ \pm3.2\ ^{+5.5}_{-6.0}$	[5] FANG	03	BELL	$e^+e^- \to \Upsilon(4S)$

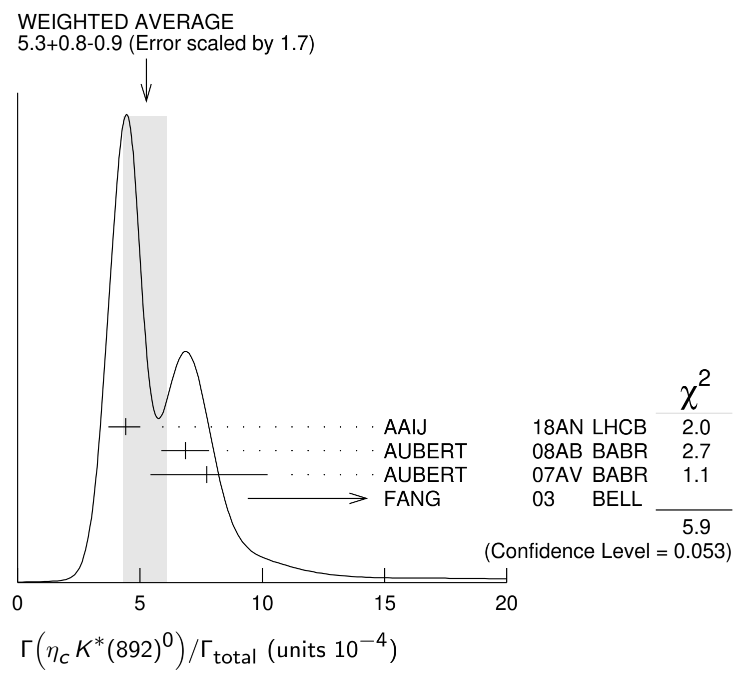
[1] AAIJ 18AN reports $B(B^0 \to \eta_c K^*(892)^0,\ K^*(892)^0 \to K^+\pi^-) = (2.95 \pm 0.16^{+0.36}_{-0.44}) \times 10^{-4}$ using the fitted fraction of $0.514 \pm 0.019^{+0.017}_{-0.048}$ from Dalitz decay of $B(B^0 \to \eta_c K^+\pi^-) = (5.73 \pm 0.24 \pm 0.67) \times 10^{-4}$ and corrected for $B(K^*(892)^0 \to K^+\pi^-) = 2/3$. NODE=S042B43;LINKAGE=A

[2] AUBERT 08AB reports $[\Gamma(B^0 \to \eta_c K^*(892)^0)/\Gamma_{total}]$ / $[B(B^+ \to \eta_c K^+)] = 0.62 \pm 0.06 \pm 0.05$ which we multiply by our best value $B(B^+ \to \eta_c K^+) = (1.10 \pm 0.07) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042B43;LINKAGE=AB

[3] Uses the production ratio of $(B^+B^-)/(B^0\overline{B}^0) = 1.026 \pm 0.032$ at $\Upsilon(4S)$. NODE=S042B43;LINKAGE=PR

[4] AUBERT 07AV reports $[\Gamma(B^0 \to \eta_c K^*(892)^0)/\Gamma_{total}] \times [B(\eta_c(1S) \to p\overline{p})] = (1.03^{+0.27}_{-0.24} \pm 0.17) \times 10^{-6}$ which we divide by our best value $B(\eta_c(1S) \to p\overline{p}) = (1.33 \pm 0.11) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042B43;LINKAGE=AU

[5] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B43;LINKAGE=EP



$\Gamma\big(\eta_c(2S) K^0_S,\ \eta_c \to p\overline{p}\pi^+\pi^-\big)/\Gamma_{total}$ Γ_{210}/Γ

NODE=S042P48

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
$4.2^{+1.4+0.3}_{-1.2-0.3}$	CHILIKIN	19	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma\big(\eta_c(2S) K^{*0}\big)/\Gamma_{total}$ Γ_{211}/Γ

NODE=S042B35

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
<3.9	90	[1] AUBERT	08AB	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses the production ratio of $(B^+B^-)/(B^0\overline{B}^0) = 1.026 \pm 0.032$ at $\Upsilon(4S)$. NODE=S042B35;LINKAGE=PR

$\Gamma(h_c(1P) K^0_S)/\Gamma_{total}$ Γ_{212}/Γ

NODE=S042P47
NODE=S042P47

VALUE	DOCUMENT ID		TECN	COMMENT
$<1.4\times10^{-5}$	CHILIKIN	19	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(B^0 \to h_c(1P) K^{*0})/\Gamma_{total} \times \Gamma(h_c(1P) \to \gamma\eta_c(1S))/\Gamma_{total}$ $\Gamma_{213}/\Gamma \times \Gamma^{h_c(1P)}_{30}/\Gamma^{h_c(1P)}$

NODE=S042B87
NODE=S042B87

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
<2.2	90	[1] AUBERT	08AB	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses the production ratio of $(B^+B^-)/(B^0\overline{B}^0) = 1.026 \pm 0.032$ at $\Upsilon(4S)$.

NODE=S042B87;LINKAGE=PR

$\Gamma(\eta_c K^*(892)^0)/\Gamma(\eta_c K^0)$ $\Gamma_{209}/\Gamma_{200}$

NODE=S042B44
NODE=S042B44

VALUE	DOCUMENT ID		TECN	COMMENT
$1.33\pm0.36^{+0.24}_{-0.33}$	FANG	03	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(J/\psi(1S) K^0)/\Gamma_{total}$ Γ_{214}/Γ

NODE=S042R23
NODE=S042R23

VALUE (units 10^{-4})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
8.91±0.21 OUR FIT						
8.91±0.21 OUR AVERAGE						
9.02±0.10±0.26			[1] CHOUDHURY	21	BELL	$e^+e^- \to \Upsilon(4S)$
8.1 ±0.9 ±0.6			[2] CHILIKIN	19	BELL	$e^+e^- \to \Upsilon(4S)$
$8.8\ ^{+1.4}_{-1.3}\ \pm0.1$			[3,4] AUBERT	07AV	BABR	$e^+e^- \to \Upsilon(4S)$
8.69±0.22±0.30			[4] AUBERT	05J	BABR	$e^+e^- \to \Upsilon(4S)$
9.5 ±0.8 ±0.6			[4] AVERY	00	CLE2	$e^+e^- \to \Upsilon(4S)$
11.5 ±2.3 ±1.7			[5] ABE	96H	CDF	$p\overline{p}$ at 1.8 TeV
6.93±4.07±0.04			[6] BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$
9.24±7.21±0.05		2	[7] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
7.9 ±0.4 ±0.9			[4] ABE	03B	BELL	Repl. by CHOUDHURY 21
8.3 ±0.4 ±0.5			[4] AUBERT	02	BABR	Repl. by AUBERT 05J
$8.5\ ^{+1.4}_{-1.2}\ \pm0.6$			[4] JESSOP	97	CLE2	Repl. by AVERY 00
7.5 ±2.4 ±0.8		10	[6] ALAM	94	CLE2	Sup. by JESSOP 97
<50	90		ALAM	86	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] CHOUDHURY 21 uses the relative production fraction of charged (f^{+-}) to neutral (f^{00}) B mesons at $\Upsilon(4S)$ value of $f^{+-}/f^{00} = 1.058 \pm 0.024$.

NODE=S042R23;LINKAGE=B

[2] CHILIKIN 19 reports $[\Gamma(B^0 \to J/\psi(1S) K^0)/\Gamma_{total}] \times [B(J/\psi(1S) \to p\overline{p}\pi^+\pi^-)] = (48.6^{+4.6}_{-4.4}{}^{+2.4}_{-2.6}) \times 10^{-7}$ which we divide by our best value $B(J/\psi(1S) \to p\overline{p}\pi^+\pi^-) = (6.0 \pm 0.5) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042R23;LINKAGE=A

[3] AUBERT 07AV reports $[\Gamma(B^0 \to J/\psi(1S) K^0)/\Gamma_{total}] \times [B(J/\psi(1S) \to p\overline{p})] = (1.87^{+0.28}_{-0.26} \pm 0.07) \times 10^{-6}$ which we divide by our best value $B(J/\psi(1S) \to p\overline{p}) = (2.120 \pm 0.029) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042R23;LINKAGE=AU

[4] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042R23;LINKAGE=EP

[5] ABE 96H assumes that $B(B^+ \to J/\psi K^+) = (1.02 \pm 0.14) \times 10^{-3}$.

NODE=S042R23;LINKAGE=AH

[6] BORTOLETTO 92 reports $(6 \pm 3 \pm 2) \times 10^{-4}$ from a measurement of $[\Gamma(B^0 \to J/\psi(1S) K^0)/\Gamma_{total}] \times [B(J/\psi(1S) \to e^+e^-)]$ assuming $B(J/\psi(1S) \to e^+e^-) = 0.069 \pm 0.009$, which we rescale to our best value $B(J/\psi(1S) \to e^+e^-) = (5.971 \pm 0.032) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042R23;LINKAGE=B9

[7] ALBRECHT 90J reports $(8 \pm 6 \pm 2) \times 10^{-4}$ from a measurement of $[\Gamma(B^0 \to J/\psi(1S) K^0)/\Gamma_{total}] \times [B(J/\psi(1S) \to e^+e^-)]$ assuming $B(J/\psi(1S) \to e^+e^-) = 0.069 \pm 0.009$, which we rescale to our best value $B(J/\psi(1S) \to e^+e^-) = (5.971 \pm 0.032) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042R23;LINKAGE=9B

$\Gamma(J/\psi(1S)K^+\pi^-)/\Gamma_{total}$ Γ_{215}/Γ

NODE=S042R4

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
1.15 ±0.05 OUR AVERAGE					
1.15 ±0.01 ±0.05		CHILIKIN	14	BELL	$\overline{B}^0 \to J/\psi K^- \pi^+$
1.16 ±0.56 ±0.01		[1] BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.079±0.011		[2] AUBERT	09AA	BABR	$e^+e^- \to \Upsilon(4S)$
<1.3	90	[3] ALBRECHT	87D	ARG	$e^+e^- \to \Upsilon(4S)$
<6.3	90	GILES	84	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] BORTOLETTO 92 reports $(1.0 \pm 0.4 \pm 0.3) \times 10^{-3}$ from a measurement of $[\Gamma(B^0 \to J/\psi(1S)K^+\pi^-)/\Gamma_{total}] \times [B(J/\psi(1S) \to e^+e^-)]$ assuming $B(J/\psi(1S) \to e^+e^-) = 0.069 \pm 0.009$, which we rescale to our best value $B(J/\psi(1S) \to e^+e^-) = (5.971 \pm 0.032) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R4;LINKAGE=B9

[2] Does not report systematic uncertainties. NODE=S042R4;LINKAGE=AU

[3] ALBRECHT 87D assume $B^+B^-/B^0\overline{B}^0$ ratio is 55/45. $K\pi$ system is specifically selected as nonresonant. NODE=S042R4;LINKAGE=C

$\Gamma(J/\psi(1S)K^*(892)^0)/\Gamma_{total}$ Γ_{216}/Γ

NODE=S042R22

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
1.27 ±0.05 OUR FIT					
1.28 ±0.05 OUR AVERAGE					
1.19 ±0.01 ±0.08		CHILIKIN	14	BELL	$\overline{B}^0 \to J/\psi K^- \pi^+$
$1.33\ ^{+0.22}_{-0.21}$ ±0.02		[1,2] AUBERT	07AV	BABR	$e^+e^- \to \Upsilon(4S)$
1.309±0.026±0.077		[2] AUBERT	05J	BABR	$e^+e^- \to \Upsilon(4S)$
1.29 ±0.05 ±0.13		[2] ABE	02N	BELL	$e^+e^- \to \Upsilon(4S)$
1.74 ±0.20 ±0.18		[3] ABE	98O	CDF	$p\overline{p}$ 1.8 TeV
1.32 ±0.17 ±0.17		[4] JESSOP	97	CLE2	$e^+e^- \to \Upsilon(4S)$
1.27 ±0.65 ±0.01		[5] BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$
1.27 ±0.60 ±0.01	6	[6] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$
4.04 ±1.81 ±0.02	5	[7] BEBEK	87	CLEO	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.24 ±0.05 ±0.09		[2] AUBERT	02	BABR	Repl. by AUBERT 05J
1.36 ±0.27 ±0.22		[8] ABE	96H	CDF	Sup. by ABE 98O
1.69 ±0.31 ±0.18	29	[9] ALAM	94	CLE2	Sup. by JESSOP 97
		[10] ALBRECHT	94G	ARG	$e^+e^- \to \Upsilon(4S)$
4.0 ±0.30		[11] ALBAJAR	91E	UA1	$E^{p\overline{p}}_{cm}$= 630 GeV
3.3 ±0.18	5	[12] ALBRECHT	87D	ARG	$e^+e^- \to \Upsilon(4S)$
4.1 ±0.18	5	[13] ALAM	86	CLEO	Repl. by BEBEK 87

[1] AUBERT 07AV reports $[\Gamma(B^0 \to J/\psi(1S)K^*(892)^0)/\Gamma_{total}] \times [B(J/\psi(1S) \to p\overline{p})] = (2.82^{+0.30}_{-0.28}{}^{+0.36}_{-0.35}) \times 10^{-6}$ which we divide by our best value $B(J/\psi(1S) \to p\overline{p}) = (2.120 \pm 0.029) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R22;LINKAGE=AU

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R22;LINKAGE=EP

[3] ABE 98O reports $[B(B^0 \to J/\psi(1S)K^*(892)^0)]/[B(B^+ \to J/\psi(1S)K^+)] = 1.76 \pm 0.14 \pm 0.15$. We multiply by our best value $B(B^+ \to J/\psi(1S)K^+) = (9.9 \pm 1.0) \times 10^{-4}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R22;LINKAGE=ME

[4] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R22;LINKAGE=JJ

[5] BORTOLETTO 92 reports $(1.1 \pm 0.5 \pm 0.3) \times 10^{-3}$ from a measurement of $[\Gamma(B^0 \to J/\psi(1S)K^*(892)^0)/\Gamma_{total}] \times [B(J/\psi(1S) \to e^+e^-)]$ assuming $B(J/\psi(1S) \to e^+e^-) = 0.069 \pm 0.009$, which we rescale to our best value $B(J/\psi(1S) \to e^+e^-) = (5.971 \pm 0.032) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R22;LINKAGE=B9

[6] ALBRECHT 90J reports $(1.1 \pm 0.5 \pm 0.2) \times 10^{-3}$ from a measurement of $[\Gamma(B^0 \to J/\psi(1S)K^*(892)^0)/\Gamma_{total}] \times [B(J/\psi(1S) \to e^+e^-)]$ assuming $B(J/\psi(1S) \to e^+e^-) = 0.069 \pm 0.009$, which we rescale to our best value $B(J/\psi(1S) \to e^+e^-) = (5.971 \pm 0.032) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R22;LINKAGE=9B

[7] BEBEK 87 reports $(3.5 \pm 1.6 \pm 0.3) \times 10^{-3}$ from a measurement of $[\Gamma(B^0 \to J/\psi(1S)K^*(892)^0)/\Gamma_{total}] \times [B(J/\psi(1S) \to e^+e^-)]$ assuming $B(J/\psi(1S) \to$ NODE=S042R22;LINKAGE=B

e^+e^-) = 0.069 ± 0.009, which we rescale to our best value B($J/\psi(1S) \to e^+e^-$) = (5.971 ± 0.032) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best value. Updated in BORTOLETTO 92 to use the same assumptions.

[8] ABE 96H assumes that B($B^+ \to J/\psi K^+$) = (1.02 ± 0.14) × 10^{-3}. NODE=S042R22;LINKAGE=AH

[9] The neutral and charged B events together are predominantly longitudinally polarized, Γ_L/Γ =0.080 ± 0.08 ± 0.05. This can be compared with a prediction using HQET, 0.73 (KRAMER 92). This polarization indicates that the $B \to \psi K^*$ decay is dominated by the $CP = -1$ CP eigenstate. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R22;LINKAGE=I

[10] ALBRECHT 94G measures the polarization in the vector-vector decay to be predominantly longitudinal, Γ_T/Γ = 0.03 ± 0.16 ± 0.15 making the neutral decay a CP eigenstate when the K^{*0} decays through $K^0_S\pi^0$. NODE=S042R22;LINKAGE=AA

[11] ALBAJAR 91E assumes B^0_d production fraction of 36%. NODE=S042R22;LINKAGE=D

[12] ALBRECHT 87D assume $B^+B^-/B^0\overline{B}^0$ ratio is 55/45. Superseded by ALBRECHT 90J. NODE=S042R22;LINKAGE=C

[13] ALAM 86 assumes $B^\pm/B^0$ ratio is 60/40. The observation of the decay $B^+ \to J/\psi K^*(892)^+$ (HAAS 85) has been retracted in this paper. NODE=S042R22;LINKAGE=A

$\Gamma(J/\psi(1S)K^*(892)^0)/\Gamma(J/\psi(1S)K^0)$ — $\Gamma_{216}/\Gamma_{214}$

NODE=S042S45
NODE=S042S45

VALUE	DOCUMENT ID		TECN	COMMENT
1.50±0.09 OUR AVERAGE				
1.51±0.05±0.08	AUBERT	05J	BABR	$e^+e^- \to \Upsilon(4S)$
1.39±0.36±0.10	ABE	96Q	CDF	$p\overline{p}$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.49±0.10±0.08	[1] AUBERT	02	BABR	Repl. by AUBERT 05J

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S45;LINKAGE=EP

$\Gamma(J/\psi(1S)\eta K^0_S)/\Gamma_{total}$ — Γ_{217}/Γ

NODE=S042Q03
NODE=S042Q03

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
5.4 ±0.9 OUR AVERAGE				
5.22±0.78±0.49	[1] IWASHITA	14	BELL	$e^+e^- \to \Upsilon(4S)$
8.4 ±2.6 ±2.7	[1] AUBERT	04Y	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q03;LINKAGE=EP

$\Gamma(J/\psi(1S)\eta' K^0_S)/\Gamma_{total}$ — Γ_{218}/Γ

NODE=S042Q71
NODE=S042Q71

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
<2.5	90	[1] XIE	07	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q71;LINKAGE=EP

$\Gamma(J/\psi(1S)\omega K^0)/\Gamma_{total}$ — Γ_{220}/Γ

NODE=S042B90
NODE=S042B90

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
2.3±0.3±0.3	[1] DEL-AMO-SA..	10B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3.1±0.6±0.3	[1] AUBERT	08W	BABR	Repl. by DEL-AMO-SANCHEZ 10B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B90;LINKAGE=EP

$\Gamma(\chi_{c0}(3915),\ \chi_{c0} \to J/\psi\omega)/\Gamma_{total}$ — Γ_{221}/Γ

NODE=S042C03
NODE=S042C03

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
2.1±0.9±0.3	[1] DEL-AMO-SA..	10B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1.3^{+1.3}_{-1.1}$±0.2	[1,2] AUBERT	08W	BABR	Repl. by DEL-AMO-SANCHEZ 10B

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042C03;LINKAGE=EP

[2] Corresponds to upper limit of 3.9 × 10^{-5} at 90% CL. NODE=S042C03;LINKAGE=AU

$\Gamma(J/\psi(1S)\phi K^0)/\Gamma_{total}$ — Γ_{219}/Γ

NODE=S042S93
NODE=S042S93

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
4.9 ±1.0 OUR AVERAGE	Error includes scale factor of 1.3.			
4.43±0.76±0.19	LEES	15	BABR	$e^+e^- \to \Upsilon(4S)$
10.2 ±3.8 ±1.0	[1] AUBERT	03O	BABR	$e^+e^- \to \Upsilon(4S)$
8.8 $^{+3.5}_{-3.0}$ ±1.3	[2] ANASTASSOV	00	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S93;LINKAGE=EP

[2] ANASTASSOV 00 finds 10 events on a background of 0.5 ± 0.2. Assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$, a uniform Dalitz plot distribution, isotropic $J/\psi(1S)$ and ϕ decays, and B($B^+ \to J/\psi(1S)\phi K^+$)= B($B^0 \to J/\psi(1S)\phi K^0$). NODE=S042S93;LINKAGE=AV

$\Gamma(J/\psi(1S)K(1270)^0)/\Gamma_{total}$ Γ_{222}/Γ

NODE=S042B6
NODE=S042B6

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
1.30±0.34±0.32	[1] ABE	01L	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and uses the PDG value of $B(B^+ \rightarrow J/\psi(1S)K^+) = (1.00 \pm 0.10) \times 10^{-3}$.

NODE=S042B6;LINKAGE=A1

$\Gamma(J/\psi(1S)\pi^0)/\Gamma_{total}$ Γ_{223}/Γ

NODE=S042S35
NODE=S042S35

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
1.65±0.08 OUR AVERAGE					
[(1.66 ± 0.10) × 10^{-5} OUR 2024 AVERAGE]					
1.65±0.10±0.09		[1] AAIJ	24N	LHCB	pp at 7, 8, 13 TeV
1.62±0.11±0.06		[2] PAL	18	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
1.69±0.14±0.07		[2] AUBERT	08AU	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$2.5\ ^{+1.1}_{-0.9}\ \pm0.2$		[2] AVERY	00	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.94±0.22±0.17		[2] AUBERT,B	06B	BABR	Repl. by AUBERT 08AU
2.3 ±0.5 ±0.2		[2] ABE	03B	BELL	Repl. by PAL 18
2.0 ±0.6 ±0.2		[2] AUBERT	02	BABR	Repl. by AUBERT,B 06B
< 32	90	[3] ACCIARRI	97C	L3	
< 5.8	90	BISHAI	96	CLE2	Sup. by AVERY 00
<690	90	[2] ALEXANDER	95	CLE2	Sup. by BISHAI 96

NEW

OCCUR=2

[1] AAIJ 24N reports $[\Gamma(B^0 \rightarrow J/\psi(1S)\pi^0)/\Gamma_{total}] / [B(B^+ \rightarrow J/\psi(1S)K^*(892)^+)] = (1.153 \pm 0.053 \pm 0.048) \times 10^{-2}$ which we multiply by our best value $B(B^+ \rightarrow J/\psi(1S)K^*(892)^+) = (1.43 \pm 0.08) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042S35;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S35;LINKAGE=EP

[3] ACCIARRI 97C assumes B^0 production fraction (39.5 ± 4.0)% and B_s (12.0 ± 3.0)%.

NODE=S042S35;LINKAGE=CQ

$\Gamma(J/\psi(1S)\eta)/\Gamma_{total}$ Γ_{224}/Γ

NODE=S042S51
NODE=S042S51

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
10.8±2.3 OUR AVERAGE		Error includes scale factor of 1.5.			
7.3±2.5±1.3		[1] AAIJ	15D	LHCB	pp at 7, 8 TeV
$12.3^{+1.8}_{-1.7}\pm0.7$		[2,3] CHANG	12	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
9.5±1.7±0.8		[3] CHANG	07A	BELL	Repl. by CHANG 12
< 27	90	[3] AUBERT	03O	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
<1200	90	[4] ACCIARRI	97C	L3	

[1] AAIJ 15D reports $[\Gamma(B^0 \rightarrow J/\psi(1S)\eta)/\Gamma_{total}] / [B(B^0_s \rightarrow J/\psi(1S)\eta)] = (1.85 \pm 0.61 \pm 0.14) \times 10^{-2}$ which we multiply by our best value $B(B^0_s \rightarrow J/\psi(1S)\eta) = (4.0 \pm 0.7) \times 10^{-4}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042S51;LINKAGE=AA

[2] Reconstructs η in $\gamma\gamma$ and $\pi^+\pi^-\pi^0$ decays.

NODE=S042S51;LINKAGE=CH

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S51;LINKAGE=EP

[4] ACCIARRI 97C assumes B^0 production fraction (39.5 ± 4.0%) and B_s (12.0 ± 3.0%).

NODE=S042S51;LINKAGE=CQ

$\Gamma(J/\psi(1S)\pi^+\pi^-)/\Gamma_{total}$ Γ_{225}/Γ

NODE=S042B45
NODE=S042B45

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
3.99±0.15 OUR AVERAGE				
3.98±0.14±0.07	[1,2] AAIJ	13M	LHCB	pp at 7 TeV
4.6 ±0.7 ±0.6	[3] AUBERT	03B	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

[1] AAIJ 13M reports $(3.97 \pm 0.09 \pm 0.11 \pm 0.16) \times 10^{-5}$ from a measurement of $[\Gamma(B^0 \rightarrow J/\psi(1S)\pi^+\pi^-)/\Gamma_{total}] / [B(B^+ \rightarrow J/\psi(1S)K^+)]$ assuming $B(B^+ \rightarrow J/\psi(1S)K^+) = (1.018 \pm 0.042) \times 10^{-3}$, which we rescale to our best value $B(B^+ \rightarrow J/\psi(1S)K^+) = (1.020 \pm 0.019) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042B45;LINKAGE=AI

[2] AAIJ 13M does not report correlations between various measurements of the $J/\psi\pi\pi$ final state.

NODE=S042B45;LINKAGE=NC

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B45;LINKAGE=EP

$\Gamma(J/\psi(1S)\pi^+\pi^-\text{ nonresonant})/\Gamma_{total}$ Γ_{226}/Γ

NODE=S042Q74
NODE=S042Q74

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
<1.2	90	[1] AUBERT	07AC	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042Q74;LINKAGE=EP

$\Gamma(J/\psi(1S) f_0(500),\ f_0 \to \pi\pi)/\Gamma_{total}$ — Γ_{227}/Γ

NODE=S042C11

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$8.8 \pm 0.5^{+1.1}_{-1.5}$	[1] AAIJ	14X	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$6.4^{+2.5}_{-1.1} \pm 0.2$	[2,3] AAIJ	13M	LHCB	Repl. by AAIJ 14X

[1] AAIJ 14X uses Dalitz plot analysis of $B^0 \to J/\psi\pi^+\pi^-$. NODE=S042C11;LINKAGE=AA

[2] AAIJ 13M reports $(6.4 \pm 0.8^{+2.4}_{-0.8}) \times 10^{-6}$ from a measurement of $[\Gamma(B^0 \to J/\psi(1S) f_0(500),\ f_0 \to \pi\pi)/\Gamma_{total}]$ / $[B(B^0 \to J/\psi(1S)\pi^+\pi^-)]$ assuming $B(B^0 \to J/\psi(1S)\pi^+\pi^-) = (3.97 \pm 0.09 \pm 0.11 \pm 0.16) \times 10^{-5}$, which we rescale to our best value $B(B^0 \to J/\psi(1S)\pi^+\pi^-) = (3.99 \pm 0.15) \times 10^{-5}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042C11;LINKAGE=AI

[3] AAIJ 13M does not report correlations between various measurements of the $J/\psi\pi\pi$ final state. Measured in Dalitz plot like analysis of $B^0 \to J/\psi\pi^+\pi^-$. NODE=S042C11;LINKAGE=NC

$\Gamma(J/\psi(1S) f_2)/\Gamma_{total}$ — Γ_{228}/Γ

NODE=S042Q75

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
$0.33^{+0.05}_{-0.06}$ OUR AVERAGE		Error includes scale factor of 1.5.			
$0.30 \pm 0.03^{+0.02}_{-0.03}$		[1] AAIJ	14X	LHCB	pp at 7, 8 TeV
$0.42 \pm 0.06 \pm 0.02$		[2,3] AAIJ	13M	LHCB	pp at 7 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.5	90	[4,5] AUBERT	07AC	BABR	$e^+e^- \to \Upsilon(4S)$

[1] AAIJ 14X uses Dalitz plot analysis of $B^0 \to J/\psi\pi^+\pi^-$. NODE=S042Q75;LINKAGE=AA

[2] AAIJ 13M reports $[\Gamma(B^0 \to J/\psi(1S) f_2)/\Gamma_{total}] \times [B(f_2(1270) \to \pi\pi)] = (3.5 \pm 0.4 \pm 0.4) \times 10^{-6}$ from a measurement of $[\Gamma(B^0 \to J/\psi(1S) f_2)/\Gamma_{total}] \times [B(f_2(1270) \to \pi\pi)]$ / $[B(B^0 \to J/\psi(1S)\pi^+\pi^-)]$ assuming $B(B^0 \to J/\psi(1S)\pi^+\pi^-) = (3.97 \pm 0.09 \pm 0.11 \pm 0.16) \times 10^{-5}$, which we rescale to our best values $B(f_2(1270) \to \pi\pi) = (84.3^{+2.8}_{-1.0}) \times 10^{-2}$, $B(B^0 \to J/\psi(1S)\pi^+\pi^-) = (3.99 \pm 0.15) \times 10^{-5}$. Our first error is their experiment's error and our second error is the systematic error from using our best values. NODE=S042Q75;LINKAGE=AI

[3] AAIJ 13M does not report correlations between various measurements of the $J/\psi\pi\pi$ final state. Measured in Dalitz plot like analysis of $B^0 \to J/\psi\pi^+\pi^-$. NODE=S042Q75;LINKAGE=NC

[4] AUBERT 07AC reports $[\Gamma(B^0 \to J/\psi(1S) f_2)/\Gamma_{total}] \times [B(f_2(1270) \to \pi\pi)] < 0.46 \times 10^{-5}$ which we divide by our best value $B(f_2(1270) \to \pi\pi) = 84.3 \times 10^{-2}$. NODE=S042Q75;LINKAGE=AU

[5] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q75;LINKAGE=EP

$\Gamma(J/\psi(1S)\rho^0)/\Gamma_{total}$ — Γ_{229}/Γ

NODE=S042S46

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
$2.55^{+0.18}_{-0.16}$ OUR AVERAGE					
$2.50 \pm 0.10^{+0.18}_{-0.15}$		[1] AAIJ	14X	LHCB	pp at 7, 8 TeV
$2.7 \pm 0.3 \pm 0.2$		[2] AUBERT	07AC	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$2.51^{+0.22}_{-0.23} \pm 0.10$		[3,4] AAIJ	13M	LHCB	Repl. by AAIJ 14X
$1.6 \pm 0.6 \pm 0.4$		[2] AUBERT	03B	BABR	Repl. by AUBERT 07AC
<25	90	BISHAI	96	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] AAIJ 14X uses Dalitz plot analysis of $B^0 \to J/\psi\pi^+\pi^-$. We assume $B(\rho(770)^0 \to \pi^+\pi^-) = 100\%$. NODE=S042S46;LINKAGE=AA

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S46;LINKAGE=EP

[3] AAIJ 13M reports $(2.49^{+0.20}_{-0.13}{}^{+0.16}_{-0.23}) \times 10^{-5}$ from a measurement of $[\Gamma(B^0 \to J/\psi(1S)\rho^0)/\Gamma_{total}]$ / $[B(B^0 \to J/\psi(1S)\pi^+\pi^-)]$ assuming $B(B^0 \to J/\psi(1S)\pi^+\pi^-) = (3.97 \pm 0.09 \pm 0.11 \pm 0.16) \times 10^{-5}$, which we rescale to our best value $B(B^0 \to J/\psi(1S)\pi^+\pi^-) = (3.99 \pm 0.15) \times 10^{-5}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042S46;LINKAGE=AI

[4] AAIJ 13M does not report correlations between various measurements of the $J/\psi\pi\pi$ final state. Measured in Dalitz plot like analysis of $B^0 \to J/\psi\pi^+\pi^-$. Assumes $B(\rho(770)^0 \to \pi\pi) = 100\%$. NODE=S042S46;LINKAGE=NC

$\Gamma(J/\psi(1S) f_0(980),\ f_0 \to \pi^+\pi^-)/\Gamma_{total}$ — Γ_{230}/Γ

NODE=S042C12

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.1 × 10^{-6}	90	[1] AAIJ	13M	LHCB	pp at 7 TeV

[1] AAIJ 13M does not provide correlations between various measurements of the $J/\psi\pi^+\pi^-$ final state. The measurements were obtained from a Dalitz plot like analysis of $B^0 \to J/\psi\pi^+\pi^-$. Also reports $\Gamma(J/\psi(1S) f_0(980),\ f_0 \to \pi^+\pi^-)/\Gamma_{total} = (6.1^{+3.1}_{-2.0}{}^{+1.7}_{-1.4}) \times 10^{-6}$.

NODE=S042C12;LINKAGE=NC

$\Gamma(J/\psi(1S)\rho(1450)^0,\ \rho^0 \to \pi\pi)/\Gamma_{total}$ — Γ_{231}/Γ

NODE=S042C13

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$2.9^{+1.6}_{-0.7}$ OUR AVERAGE				
$4.6 \pm 1.1 \pm 1.9$	[1] AAIJ	14X	LHCB	pp at 7, 8 TeV
$2.1^{+2.4}_{-0.7} \pm 0.1$	[2,3] AAIJ	13M	LHCB	pp at 7 TeV

[1] AAIJ 14X uses Dalitz plot analysis of $B^0 \to J/\psi\pi^+\pi^-$.

NODE=S042C13;LINKAGE=AA

[2] AAIJ 13M reports $(2.1^{+1.0}_{-0.6}{}^{+2.2}_{-0.4}) \times 10^{-6}$ from a measurement of $[\Gamma(B^0 \to J/\psi(1S)\rho(1450)^0,\ \rho^0 \to \pi\pi)/\Gamma_{total}]$ / $[B(B^0 \to J/\psi(1S)\pi^+\pi^-)]$ assuming $B(B^0 \to J/\psi(1S)\pi^+\pi^-) = (3.97 \pm 0.09 \pm 0.11 \pm 0.16) \times 10^{-5}$, which we rescale to our best value $B(B^0 \to J/\psi(1S)\pi^+\pi^-) = (3.99 \pm 0.15) \times 10^{-5}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042C13;LINKAGE=AI

[3] AAIJ 13M does not report correlations between various measurements of the $J/\psi\pi\pi$ final state. Measured in Dalitz plot like analysis of $B^0 \to J/\psi\pi^+\pi^-$.

NODE=S042C13;LINKAGE=NC

$\Gamma(J/\psi\rho(1700)^0,\ \rho^0 \to \pi^+\pi^-)/\Gamma_{total}$ — Γ_{232}/Γ

NODE=S042C28

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$2.0 \pm 0.5 \pm 1.2$	[1] AAIJ	14X	LHCB	pp at 7, 8 TeV

[1] AAIJ 14X uses Dalitz plot analysis of $B^0 \to J/\psi\pi^+\pi^-$.

NODE=S042C28;LINKAGE=AA

$\Gamma(J/\psi(1S)\omega)/\Gamma_{total}$ — Γ_{233}/Γ

NODE=S042S47

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
$1.8^{+0.7}_{-0.5} \pm 0.1$		[1] AAIJ	14X	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<27	90	BISHAI	96	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] AAIJ 14X reports $[\Gamma(B^0 \to J/\psi(1S)\omega)/\Gamma_{total}] \times [B(\omega(782) \to \pi^+\pi^-)] = (2.7^{+0.8}_{-0.6}{}^{+0.7}_{-0.5}) \times 10^{-7}$ which we divide by our best value $B(\omega(782) \to \pi^+\pi^-) = (1.53 \pm 0.12) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042S47;LINKAGE=AA

$\Gamma(J/\psi(1S)\omega)/\Gamma(J/\psi(1S)\rho^0)$ — $\Gamma_{233}/\Gamma_{229}$

NODE=S042C14

VALUE	DOCUMENT ID		TECN	COMMENT
$0.61^{+0.39}_{-0.21} \pm 0.05$	[1,2] AAIJ	13M	LHCB	pp at 7 TeV

[1] AAIJ 13M reports $0.61^{+0.24}_{-0.14}{}^{+0.31}_{-0.16}$ from a measurement of $[\Gamma(B^0 \to J/\psi(1S)\omega)/\Gamma(B^0 \to J/\psi(1S)\rho^0)] \times [B(\omega(782) \to \pi^+\pi^-)]$ assuming $B(\omega(782) \to \pi^+\pi^-) = (1.53^{+0.11}_{-0.13}) \times 10^{-2}$, which we rescale to our best value $B(\omega(782) \to \pi^+\pi^-) = (1.53 \pm 0.12) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042C14;LINKAGE=AI

[2] AAIJ 13M does not report correlations between various measurements of the $J/\psi\pi\pi$ final state. Measured in Dalitz plot like analysis of $B^0 \to J/\psi\pi^+\pi^-$. Assumes $B(\rho(770)^0 \to \pi\pi) = 100\%$.

NODE=S042C14;LINKAGE=NC

$\Gamma(J/\psi(1S)\omega)/\Gamma(J/\psi(1S)\rho^0)$ — $\Gamma_{233}/\Gamma_{229}$

NODE=S042C06

VALUE	DOCUMENT ID		TECN	COMMENT
$0.89 \pm 0.19^{+0.07}_{-0.13}$	AAIJ	13A	LHCB	pp at 7 TeV

$\Gamma(J/\psi(1S) K^+K^-)/\Gamma_{total}$ — Γ_{234}/Γ

NODE=S042BA1

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$2.53 \pm 0.35 \pm 0.05$	[1] AAIJ	13BT	LHCB	pp at 7 TeV

[1] AAIJ 13BT reports $(2.53 \pm 0.31 \pm 0.19) \times 10^{-6}$ from a measurement of $[\Gamma(B^0 \to J/\psi(1S) K^+ K^-)/\Gamma_{total}]$ / $[B(B^+ \to J/\psi(1S) K^+)]$ assuming $B(B^+ \to J/\psi(1S) K^+) = (1.018 \pm 0.042) \times 10^{-3}$, which we rescale to our best value $B(B^+ \to J/\psi(1S) K^+) = (1.020 \pm 0.019) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042BA1;LINKAGE=AA

$\Gamma(J/\psi(1S) a_0(980),\ a_0 \to K^+ K^-)/\Gamma_{total}$ — Γ_{235}/Γ

NODE=S042BA2
NODE=S042BA2

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
0.470±0.331±0.072	[1] AAIJ	13BT	LHCB	pp at 7 TeV

[1] AAIJ 13BT uses $B(\overline{B}^0 \to J/\psi K^+ K^-) = (2.53 \pm 0.31 \pm 0.19) \times 10^{-6}$ to derive this result. It also reports the equivalent upper limit of $< 9.0 \times 10^{-7}$ at 90% CL. NODE=S042BA2;LINKAGE=AA

$\Gamma(J/\psi(1S)\phi)/\Gamma_{total}$ — Γ_{236}/Γ

NODE=S042B53
NODE=S042B53

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$< 1.1 \times 10^{-7}$	90	AAIJ	21K	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<10.1 \times 10^{-7}$	90	LEES	15	BABR	$e^+e^- \to \Upsilon(4S)$
$< 1.9 \times 10^{-7}$	90	[1] AAIJ	13BT	LHCB	pp at 7 TeV
$< 9.4 \times 10^{-7}$	90	[2] LIU	08I	BELL	$e^+e^- \to \Upsilon(4S)$
$< 9.2 \times 10^{-6}$	90	[2] AUBERT	03O	BABR	$e^+e^- \to \Upsilon(4S)$

[1] AAIJ 13BT uses $B(B^0 \to J/\psi(1S) K^+ K^-) = (2.53 \pm 0.31 \pm 0.19) \times 10^{-6}$ and $B(\phi \to K^+ K^-) = (48.9 \pm 0.5)\%$ to obtain this result. NODE=S042B53;LINKAGE=AA

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B53;LINKAGE=EP

$\Gamma(J/\psi(1S)\eta'(958))/\Gamma_{total}$ — Γ_{237}/Γ

NODE=S042B54
NODE=S042B54

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
7.6±2.2±1.0		[1] AAIJ	15D	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 7.4	90	[2,3] CHANG	12	BELL	$e^+e^- \to \Upsilon(4S)$
<63	90	[3] AUBERT	03O	BABR	$e^+e^- \to \Upsilon(4S)$

[1] AAIJ 15D reports $[\Gamma(B^0 \to J/\psi(1S)\eta'(958))/\Gamma_{total}]$ / $[B(B^0_s \to J/\psi(1S)\eta')] = (2.28 \pm 0.65 \pm 0.16) \times 10^{-2}$ which we multiply by our best value $B(B^0_s \to J/\psi(1S)\eta') = (3.3 \pm 0.4) \times 10^{-4}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042B54;LINKAGE=AA

[2] Reconstructs $\eta'(985)$ in $(etapi + pi)^-$ and $\rho(770)$ decays. NODE=S042B54;LINKAGE=CH

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B54;LINKAGE=EP

$\Gamma(J/\psi(1S)\eta)/\Gamma(J/\psi(1S)\eta'(958))$ — $\Gamma_{224}/\Gamma_{237}$

NODE=S042RB4
NODE=S042RB4

VALUE	DOCUMENT ID		TECN	COMMENT
1.111±0.475±0.062	[1] AAIJ	15D	LHCB	pp at 7, 8 TeV

[1] Uses $J/\psi \to \mu^+\mu^-$, $\eta' \to \rho^0\gamma$, and $\eta' \to \eta\pi^+\pi^-$ decays. NODE=S042RB4;LINKAGE=AA

$\Gamma(J/\psi(1S) K^0 \pi^+\pi^-)/\Gamma(J/\psi(1S) K^0)$ — $\Gamma_{238}/\Gamma_{214}$

NODE=S042B14
NODE=S042B14

VALUE	DOCUMENT ID		TECN	COMMENT
0.50 ±0.04 OUR AVERAGE				
0.493±0.034±0.027	AAIJ	14L	LHCB	pp at 7 TeV
1.24 ±0.40 ±0.15	AFFOLDER	02B	CDF	$p\overline{p}$ 1.8 TeV

$\Gamma(J/\psi(1S) K^0 K^+ K^-)/\Gamma_{total}$ — Γ_{240}/Γ

NODE=S042C23
NODE=S042C23

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
25 ±7 OUR AVERAGE Error includes scale factor of 1.8.				
34.9±6.7±1.5	LEES	15	BABR	$e^+e^- \to \Upsilon(4S)$
20.2±4.3±1.9	[1] AAIJ	14L	LHCB	pp at 7 TeV

[1] Measured with $B(B^0 \to J/\psi K^0_S K^+ K^-)$ / $B(B^0 \to J/\psi K^0_S)$ using PDG 12 for the involved branching fractions. NODE=S042C23;LINKAGE=A

$\Gamma(J/\psi(1S) K^0 K^-\pi^+ + \text{c.c.})/\Gamma_{total}$ — Γ_{239}/Γ

NODE=S042RB3
NODE=S042RB3

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<21 \times 10^{-6}$	90	[1] AAIJ	14L	LHCB	pp at 7 TeV

[1] Measured with $B(B^0 \to J/\psi K^0_S K^\pm \pi^\mp)$ / $B(B^0 \to J/\psi K^0_S \pi^+\pi^-)$ using PDG 12 values for the involved branching fractions. NODE=S042RB3;LINKAGE=A

$\Gamma(J/\psi(1S) K^0 \rho^0)/\Gamma_{total}$ Γ_{242}/Γ

NODE=S042B15

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
5.4±2.9±0.9	[1] AFFOLDER	02B	CDF	$p\overline{p}$ 1.8 TeV

[1] Uses $B^0 \to J/\psi(1S) K^0_S$ decay as a reference and $B(B^0 \to J/\psi(1S) K^0) = 8.3 \times 10^{-4}$.

NODE=S042B15;LINKAGE=A

$\Gamma(J/\psi(1S) K^*(892)^+ \pi^-)/\Gamma_{total}$ Γ_{243}/Γ

NODE=S042B16

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
7.7±4.1±1.3	[1] AFFOLDER	02B	CDF	$p\overline{p}$ 1.8 TeV

[1] Uses $B^0 \to J/\psi(1S) K^0_S$ decay as a reference and $B(B^0 \to J/\psi(1S) K^0) = 8.3 \times 10^{-4}$.

NODE=S042B16;LINKAGE=A

$\Gamma(J/\psi(1S)\pi^+\pi^-\pi^+\pi^-)/\Gamma(J/\psi(1S)\pi^+\pi^-)$ $\Gamma_{244}/\Gamma_{225}$

NODE=S042C21

VALUE	DOCUMENT ID		TECN	COMMENT
0.361±0.017±0.021	[1] AAIJ	14Y	LHCB	pp at 7, 8 TeV

[1] Excludes contributions from $\psi(2S)$ and $\chi_{c1}(3872)$ decaying to $J/\psi(1S)\pi^+\pi^-$.

NODE=S042C21;LINKAGE=A

$\Gamma(J/\psi(1S) f_1(1285))/\Gamma_{total}$ Γ_{245}/Γ

NODE=S042C22

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$8.4^{+2.1}_{-2.0}\pm0.5$	[1] AAIJ	14Y	LHCB	pp at 7, 8 TeV

[1] AAIJ 14Y reports $(8.37 \pm 1.95^{+0.71}_{-0.66} \pm 0.35) \times 10^{-6}$ from a measurement of $[\Gamma(B^0 \to J/\psi(1S) f_1(1285))/\Gamma_{total}] \times [B(f_1(1285) \to 2\pi^+2\pi^-)]$ assuming $B(f_1(1285) \to 2\pi^+2\pi^-) = 0.11^{+0.007}_{-0.006}$, which we rescale to our best value $B(f_1(1285) \to 2\pi^+2\pi^-) = (10.9 \pm 0.6) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042C22;LINKAGE=A

$\Gamma(J/\psi(1S) K^*(892)^0 \pi^+\pi^-)/\Gamma_{total}$ Γ_{246}/Γ

NODE=S042B17

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
6.6±1.9±1.1	[1] AFFOLDER	02B	CDF	$p\overline{p}$ 1.8 TeV

[1] Uses $B^0 \to J/\psi(1S) K^*(892)^0$ decay as a reference and $B(B^0 \to J/\psi(1S) K^0) = 12.4 \times 10^{-4}$.

NODE=S042B17;LINKAGE=A

$\Gamma(\eta_{c2}(1D) K^0_S,\ \eta_{c2} \to h_c\gamma)/\Gamma_{total}$ Γ_{247}/Γ

NODE=S042P56

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.5 \times 10^{-5}$	90	CHILIKIN	20	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\eta_{c2}(1D)\pi^- K^+,\ \eta_{c2} \to h_c\gamma)/\Gamma_{total}$ Γ_{248}/Γ

NODE=S042P57

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.0 \times 10^{-4}$	90	CHILIKIN	20	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\chi_{c1}(3872) K^0)/\Gamma_{total}$ Γ_{251}/Γ

NODE=S042P59

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
1.1 ±0.4 OUR AVERAGE					
[$(1.4 \pm 0.4) \times 10^{-4}$ OUR 2024 AVERAGE Scale factor = 1.1]					
$2.5\ ^{+0.9}_{-0.8}\ \pm0.8$		[1] HIRATA	23	BELL	$e^+e^- \to \Upsilon(4S)$
0.93±0.27±0.29		[2] CHOI	11	BELL	$e^+e^- \to \Upsilon(4S)$
$1.2\ \pm0.6\ ^{+0.4}_{-0.5}$		[3] DEL-AMO-SA...	10B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<2.5	90	[4,5] BHARDWAJ	11	BELL	$e^+e^- \to \Upsilon(4S)$
2.1 ±1.0 ±0.7		[5,6] AUSHEV	10	BELL	$e^+e^- \to \Upsilon(4S)$
<5	90	[7,8] AUBERT	09B	BABR	$e^+e^- \to \Upsilon(4S)$
4.8 ±2.4 ±1.7		[5,7,9] AUBERT	08B	BABR	$e^+e^- \to \Upsilon(4S)$
<1.4	90	[10] AUBERT	08Y	BABR	$e^+e^- \to \Upsilon(4S)$
<2.4	90	[11] AUBERT	06	BABR	Repl. by AUBERT 08Y
$3.0\ \pm1.4\ ^{+1.6}_{-1.5}$		[12,13] GOKHROO	06	BELL	$e^+e^- \to \Upsilon(4S)$

NEW

SYCLP=A

SYCLP=A

[1] HIRATA 23 reports $[\Gamma(B^0 \to \chi_{c1}(3872) K^0)/\Gamma_{total}]$ / $[B(B^+ \to \chi_{c1}(3872) K^+)] = 1.34^{+0.47}_{-0.40}{}^{+0.10}_{-0.12}$ which we multiply by our best value $B(B^+ \to \chi_{c1}(3872) K^+) = (1.9 \pm 0.6) \times 10^{-4}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042P59;LINKAGE=J

[2] CHOI 11 reports $[\Gamma(B^0 \to \chi_{c1}(3872) K^0)/\Gamma_{total}]$ / $[B(B^+ \to \chi_{c1}(3872) K^+)] = 0.50 \pm 0.14 \pm 0.04$ which we multiply by our best value $B(B^+ \to \chi_{c1}(3872) K^+) =$

NODE=S042P59;LINKAGE=B

$(1.9 \pm 0.6) \times 10^{-4}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

[3] DEL-AMO-SANCHEZ 10B reports $[\Gamma(B^0 \to \chi_{c1}(3872) K^0)/\Gamma_{total}] \times [B(\chi_{c1}(3872) \to \omega J/\psi(1S))] = (6 \pm 3 \pm 1) \times 10^{-6}$ which we divide by our best value $B(\chi_{c1}(3872) \to \omega J/\psi(1S)) = (5.0 \pm 1.9) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042P59;LINKAGE=A

[4] BHARDWAJ 11 reports $[\Gamma(B^0 \to \chi_{c1}(3872) K^0)/\Gamma_{total}] \times [B(\chi_{c1}(3872) \to \gamma J/\psi)] < 2.4 \times 10^{-6}$ which we divide by our best value $B(\chi_{c1}(3872) \to \gamma J/\psi) = 10 \times 10^{-3}$. NODE=S042P59;LINKAGE=E

[5] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042P59;LINKAGE=EP

[6] AUSHEV 10 reports $[\Gamma(B^0 \to \chi_{c1}(3872) K^0)/\Gamma_{total}] \times [B(\chi_{c1}(3872) \to \overline{D}^{*0} D^0)] = (0.97 \pm 0.46 \pm 0.13) \times 10^{-4}$ which we divide by our best value $B(\chi_{c1}(3872) \to \overline{D}^{*0} D^0) = (46 \pm 16) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042P59;LINKAGE=H

[7] Uses $B(\Upsilon(4S) \to B^+ B^-) = (51.6 \pm 0.6)\%$ and $B(\Upsilon(4S) \to B^0 \overline{B}^0) = (48.4 \pm 0.6)\%$. NODE=S042P59;LINKAGE=AU

[8] AUBERT 09B reports $[\Gamma(B^0 \to \chi_{c1}(3872) K^0)/\Gamma_{total}] \times [B(\chi_{c1}(3872) \to \gamma J/\psi)] < 4.9 \times 10^{-6}$ which we divide by our best value $B(\chi_{c1}(3872) \to \gamma J/\psi) = 10 \times 10^{-3}$. NODE=S042P59;LINKAGE=F

[9] AUBERT 08B reports $[\Gamma(B^0 \to \chi_{c1}(3872) K^0)/\Gamma_{total}] \times [B(\chi_{c1}(3872) \to \overline{D}^{*0} D^0)] = (2.22 \pm 1.05 \pm 0.42) \times 10^{-4}$ which we divide by our best value $B(\chi_{c1}(3872) \to \overline{D}^{*0} D^0) = (46 \pm 16) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042P59;LINKAGE=I

[10] AUBERT 08Y reports $[\Gamma(B^0 \to \chi_{c1}(3872) K^0)/\Gamma_{total}] \times [B(\chi_{c1}(3872) \to \pi^+ \pi^- J/\psi(1S))] < 6.0 \times 10^{-6}$ which we divide by our best value $B(\chi_{c1}(3872) \to \pi^+ \pi^- J/\psi(1S)) = 4.3 \times 10^{-2}$. NODE=S042P59;LINKAGE=C

[11] AUBERT 06 reports $[\Gamma(B^0 \to \chi_{c1}(3872) K^0)/\Gamma_{total}] \times [B(\chi_{c1}(3872) \to \pi^+ \pi^- J/\psi(1S))] < 10.3 \times 10^{-6}$ which we divide by our best value $B(\chi_{c1}(3872) \to \pi^+ \pi^- J/\psi(1S)) = 4.3 \times 10^{-2}$. NODE=S042P59;LINKAGE=D

[12] GOKHROO 06 reports $[\Gamma(B^0 \to \chi_{c1}(3872) K^0)/\Gamma_{total}] \times [B(\chi_{c1}(3872) \to D^0 \overline{D}^0 \pi^0)] = (1.66 \pm 0.70^{+0.32}_{-0.37}) \times 10^{-4}$ which we divide by our best value $B(\chi_{c1}(3872) \to D^0 \overline{D}^0 \pi^0) = (55 \pm 28) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042P59;LINKAGE=G

[13] Measure the near-threshold enhancements in the $(D^0 \overline{D}^0 \pi^0)$ system at a mass $3875.2 \pm 0.7^{+0.3}_{-1.6} \pm 0.8$ MeV/c^2. NODE=S042P59;LINKAGE=GO

$\Gamma(\chi_{c1}(3872)^- K^+)/\Gamma_{total}$ — Γ_{249}/Γ

NODE=S042Q63

NODE=S042Q63

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<5 × 10^{-4}	90	[1] AUBERT	06E	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Perform measurements of absolute branching fractions using a missing mass technique. NODE=S042Q63;LINKAGE=AT

$\Gamma(\chi_{c1}(3872)^- K^+,\ \chi_{c1}(3872)^- \to J/\psi(1S)\pi^- \pi^0)/\Gamma_{total}$ — Γ_{250}/Γ

NODE=S042Q35

NODE=S042Q35

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<4.2	90	[1,2] CHOI	11	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<5.4	90	[2,3] AUBERT	05B	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes $\pi^+ \pi^0$ originates from ρ^+. NODE=S042Q35;LINKAGE=CH

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q35;LINKAGE=EP

[3] The isovector-X hypothesis is excluded with a likelihood test at 1×10^{-4} level. NODE=S042Q35;LINKAGE=AU

$\Gamma(\chi_{c1}(3872) K^*(892)^0)/\Gamma_{total}$ — Γ_{252}/Γ

NODE=S042P60

NODE=S042P60

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
0.9 ±0.5 OUR AVERAGE [$(1.1 \pm 0.5) \times 10^{-4}$ OUR 2024 AVERAGE] NEW					
0.92±0.35±0.29		[1] BALA	15	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<2.9	90	[2,3] AUBERT	09B	BABR	$e^+ e^- \to \Upsilon(4S)$
		[3,4] AUBERT	09B	BABR	$e^+ e^- \to \Upsilon(4S)$ OCCUR=2

[1] BALA 15 reports $[\Gamma(B^0 \to \chi_{c1}(3872) K^*(892)^0)/\Gamma_{total}] \times [B(\chi_{c1}(3872) \to \pi^+ \pi^- J/\psi(1S))] = (4.0 \pm 1.5 \pm 0.3) \times 10^{-6}$ which we divide by our best value $B(\chi_{c1}(3872) \to \pi^+ \pi^- J/\psi(1S)) = (4.3 \pm 1.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042P60;LINKAGE=C

[2] AUBERT 09B reports $[\Gamma(B^0 \to \chi_{c1}(3872) K^*(892)^0)/\Gamma_{total}] \times [B(\chi_{c1}(3872) \to \gamma J/\psi)] < 2.8 \times 10^{-6}$ which we divide by our best value $B(\chi_{c1}(3872) \to \gamma J/\psi) = 10 \times 10^{-3}$. NODE=S042P60;LINKAGE=A

[3] Uses $B(\Upsilon(4S) \to B^+ B^-) = (51.6 \pm 0.6)\%$ and $B(\Upsilon(4S) \to B^0 \overline{B}^0) = (48.4 \pm 0.6)\%$. NODE=S042P60;LINKAGE=AU

[4] AUBERT 09B reports $[\Gamma(B^0 \to \chi_{c1}(3872) K^*(892)^0)/\Gamma_{total}] \times [B(\chi_{c1}(3872) \to \gamma \psi(2S))] < 4.4 \times 10^{-6}$ at 90% CL. NODE=S042P60;LINKAGE=D

$\Gamma(\chi_{c1}(3872) K^+ \pi^-)/\Gamma_{total}$ Γ_{253}/Γ

NODE=S042P61

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
1.8±0.7 OUR AVERAGE [$(2.2 \pm 0.7) \times 10^{-4}$ OUR 2024 AVERAGE]			
1.8±0.3±0.6	[1,2] BALA 15	BELL	$e^+ e^- \to \Upsilon(4S)$

NEW

[1] BALA 15 reports $[\Gamma(B^0 \to \chi_{c1}(3872) K^+ \pi^-)/\Gamma_{total}] \times [B(\chi_{c1}(3872) \to \pi^+ \pi^- J/\psi(1S))] = (7.9 \pm 1.3 \pm 0.4) \times 10^{-6}$ which we divide by our best value $B(\chi_{c1}(3872) \to \pi^+ \pi^- J/\psi(1S)) = (4.3 \pm 1.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042P61;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042P61;LINKAGE=EP

$\Gamma(\chi_{c1}(3872)\gamma)/\Gamma_{total}$ Γ_{254}/Γ

NODE=S042P62

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<1.2 × 10⁻⁵ (CL = 90%) [$<1.5 \times 10^{-5}$ (CL = 90%) OUR 2024 BEST LIMIT]				
$<1.2 \times 10^{-5}$	90	[1,2] CHOU 19	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at $\Upsilon(4S)$. NODE=S042P62;LINKAGE=A

[2] CHOU 19 reports $[\Gamma(B^0 \to \chi_{c1}(3872)\gamma)/\Gamma_{total}] \times [B(\chi_{c1}(3872) \to \pi^+ \pi^- J/\psi(1S))] < 5.1 \times 10^{-7}$ which we divide by our best value $B(\chi_{c1}(3872) \to \pi^+ \pi^- J/\psi(1S)) = 4.3 \times 10^{-2}$. NODE=S042P62;LINKAGE=B

$\Gamma(T_{c\bar{c}1}(4430)^\pm K^\mp,\ T^\pm_{c\bar{c}1} \to \psi(2S)\pi^\pm)/\Gamma_{total}$ Γ_{255}/Γ

NODE=S042B88

VALUE (units 10^{-5})	CL%	DOCUMENT ID	TECN	COMMENT
$6.0^{+1.7+2.5}_{-2.0-1.4}$		CHILIKIN 13	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<3.1	95	[1] AUBERT 09AA	BABR	$e^+ e^- \to \Upsilon(4S)$
$3.2^{+1.8+5.3}_{-0.9-1.6}$		[1] MIZUK 09	BELL	$e^+ e^- \to \Upsilon(4S)$
4.1±1.0±1.4		[1,2] CHOI 08	BELL	Repl. by MIZUK 09

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B88;LINKAGE=EP

[2] Establishes the $(Z_C4430)^+$ with a significance of 6.5 sigma. Needs confirmation. NODE=S042B88;LINKAGE=CH

$\Gamma(T_{c\bar{c}1}(4430)^\pm K^\mp,\ T^\pm_{c\bar{c}1} \to J/\psi\pi^\pm)/\Gamma_{total}$ Γ_{256}/Γ

NODE=S042B96

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
$5.4^{+4.0+1.1}_{-1.0-0.6}$		CHILIKIN 14	BELL	$\overline{B}^0 \to J/\psi K^- \pi^+$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<4	95	[1] AUBERT 09AA	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B96;LINKAGE=EP

$\Gamma(T_{c\bar{c}1}(3900)^\pm K^\mp,\ T^\pm_{c\bar{c}1} \to J/\psi\pi^\pm)/\Gamma_{total}$ Γ_{257}/Γ

NODE=S042C50

VALUE	DOCUMENT ID	TECN	COMMENT
$<9 \times 10^{-7}$	CHILIKIN 14	BELL	$\overline{B}^0 \to J/\psi K^- \pi^+$

$\Gamma(T_{c\bar{c}1}(4200)^\pm K^\mp,\ T^\pm_{c\bar{c}1} \to J/\psi\pi^\pm)/\Gamma_{total}$ Γ_{258}/Γ

NODE=S042C51

VALUE (units 10^{-5})	DOCUMENT ID	TECN	COMMENT
$2.2^{+0.7+1.1}_{-0.5-0.6}$	CHILIKIN 14	BELL	$\overline{B}^0 \to J/\psi K^- \pi^+$

$\Gamma(T_{c\bar{c}1}(3900)^\pm K^\mp,\ T^\pm_{c\bar{c}1} \to J/\psi\pi^\pm)/\Gamma(J/\psi(1S) K^*(892)^0)$ $\Gamma_{257}/\Gamma_{216}$

NODE=S042P29

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<1.5 \times 10^{-2}$	90	ABAZOV 18B	D0	$p\overline{p}$ at 1.96 TeV

$\Gamma(J/\psi(1S) p\overline{p})/\Gamma_{total}$ Γ_{259}/Γ

NODE=S042B52

VALUE (units 10^{-7})	CL%	DOCUMENT ID	TECN	COMMENT
4.51±0.40±0.44		[1] AAIJ 19U	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
< 5.2	90	[2] AAIJ 13Z	LHCB	Repl. by AAIJ 19U
< 8.3	90	[3] XIE 05	BELL	$e^+ e^- \to \Upsilon(4S)$
<19	90	[3] AUBERT 03K	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Measured relative to $B^0_s \to J/\psi\phi$ assuming $B(B^0_s \to J/\psi\phi) = (10.5 \pm 0.13 \pm 0.64) \times 10^{-4}$ and taking into account small $K^+ K^-$ S-wave contribution. Measurement assumes $f_s/f_d = 0.259 \pm 0.015$ for 7, 8 TeV data and f_s/f_d multiplied by 1.068 ± 0.046 for 13 TeV data. NODE=S042B52;LINKAGE=C

[2] Uses $B(B^0_s \to J/\psi(1S)\pi^+\pi^-) = (1.98 \pm 0.20) \times 10^{-4}$. NODE=S042B52;LINKAGE=A

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B52;LINKAGE=EP

$\Gamma(J/\psi(1S)\gamma)/\Gamma_{total}$ Γ_{260}/Γ

NODE=S042Q04
NODE=S042Q04

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<1.5	90	[1] AAIJ	15BB	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<1.6	90	[2] AUBERT,B	04T	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Branching fractions of normalization modes $B^0 \to J/\psi\gamma X$ taken from PDG 14. Uses $f_s/f_d = 0.259 \pm 0.015$.

NODE=S042Q04;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042Q04;LINKAGE=AU

$\Gamma(J/\psi\mu^+\mu^-,\ J/\psi\to\mu^+\mu^-)/\Gamma_{total}$ Γ_{261}/Γ

NODE=S042P78
NODE=S042P78

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.0\times10^{-9}$	95	AAIJ	22Q	LHCB	pp at 7, 8, 13 TeV

$\Gamma(J/\psi(1S)\overline{D}^0)/\Gamma_{total}$ Γ_{262}/Γ

NODE=S042Q33
NODE=S042Q33

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<9.6\times10^{-7}$ (CL = 90%) [$<1.3\times10^{-5}$ (CL = 90%) OUR 2024 BEST LIMIT]					
$<9.6\times10^{-7}$	90	AAIJ	24F	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.3\times10^{-5}$	90	[1] AUBERT	05U	BABR	$e^+e^- \to \Upsilon(4S)$
$<2.0\times10^{-5}$	90	[1] ZHANG	05B	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042Q33;LINKAGE=EP

$\Gamma(\psi(2S)\pi^0)/\Gamma_{total}$ Γ_{263}/Γ

NODE=S042P00
NODE=S042P00

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
1.17±0.17±0.08	[1] CHOBANOVA	16	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042P00;LINKAGE=B

$\Gamma(\psi(2S)K^0)/\Gamma_{total}$ Γ_{264}/Γ

NODE=S042R66
NODE=S042R66

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
5.8 ±0.5 OUR FIT					
5.8 ±0.5 OUR AVERAGE					
4.7 ±0.7 ±0.7		[1] AAIJ	14L	LHCB	pp at 7 TeV
6.46±0.65±0.51		[2] AUBERT	05J	BABR	$e^+e^- \to \Upsilon(4S)$
6.7 ±1.1		[2] ABE	03B	BELL	$e^+e^- \to \Upsilon(4S)$
5.0 ±1.1 ±0.6		[2] RICHICHI	01	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
6.9 ±1.1 ±1.1		[2] AUBERT	02	BABR	Repl. by AUBERT 05J
< 8	90	[2] ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$
<15	90	[2] BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$
<28	90	[2] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Measured with $B(B^0 \to \psi(2S)K^0_S) \times B(\psi(2S) \to J/\psi\pi^+\pi^-)$ / $B(B^0 \to J/\psi K^0_S)$ using PDG 12 values for the involved branching fractions.

NODE=S042R66;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042R66;LINKAGE=EP

$\Gamma(\psi(2S)K^0\pi^+\pi^-)/\Gamma(\psi(2S)K^0)$ $\Gamma_{265}/\Gamma_{264}$

NODE=S042P73
NODE=S042P73

VALUE	DOCUMENT ID		TECN	COMMENT
0.480±0.013±0.032	TUMASYAN	22AI	CMS	pp at 13 TeV

$\Gamma(\psi(2S)K^0)/\Gamma(J/\psi(1S)K^0)$ $\Gamma_{264}/\Gamma_{214}$

NODE=S042B2
NODE=S042B2

VALUE	DOCUMENT ID		TECN	COMMENT
0.82±0.13±0.12	[1] AUBERT	02	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B2;LINKAGE=EP

$\Gamma(\psi(3770)K^0,\ \psi\to\overline{D}^0D^0)/\Gamma_{total}$ Γ_{266}/Γ

NODE=S042B81
NODE=S042B81

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
<1.23	90	[1] AUBERT	08B	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B81;LINKAGE=EP

$\Gamma(\psi(3770)K^0,\ \psi\to D^-D^+)/\Gamma_{total}$ Γ_{267}/Γ

NODE=S042B82
NODE=S042B82

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
<1.88	90	[1] AUBERT	08B	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B82;LINKAGE=EP

$\Gamma(\psi(2S)\pi^+\pi^-)/\Gamma(J/\psi(1S)\pi^+\pi^-)$ $\Gamma_{268}/\Gamma_{225}$

NODE=S042QA1

VALUE	DOCUMENT ID		TECN	COMMENT
0.56±0.07±0.05	[1] AAIJ	13AA	LHCB	pp at 7 TeV

[1] Assuming lepton universality for dimuon decay modes of J/ψ and $\psi(2S)$ mesons, the ratio $B(J/\psi \to \mu^+\mu^-)/B(\psi(2S) \to \mu^+\mu^-) = B(J/\psi \to e^+e^-)/B(\psi(2S) \to e^+e^-) = 7.69 \pm 0.19$ was used.

NODE=S042QA1;LINKAGE=AA

$\Gamma(\psi(2S)K^+\pi^-)/\Gamma_{total}$ Γ_{269}/Γ

NODE=S042R68

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
5.80±0.39		[1,2] CHILIKIN	13	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
5.57±0.16		[3] AUBERT	09AA	BABR	$e^+e^- \to \Upsilon(4S)$
5.68±0.13±0.42		[2] MIZUK	09	BELL	$e^+e^- \to \Upsilon(4S)$
<10	90	[2] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Combines measurements with $\psi(2S) \to \ell^+\ell^-$ with measurement from MIZUK 09 which uses $\psi(2S) \to J/\psi\pi^+\pi^-$.

NODE=S042R68;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042R68;LINKAGE=EP

[3] Does not report systematic uncertainties.

NODE=S042R68;LINKAGE=AU

$\Gamma(\psi(2S)K^*(892)^0)/\Gamma_{total}$ Γ_{270}/Γ

NODE=S042R67

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
5.9 ±0.4 OUR FIT					
$6.0^{+0.5}_{-0.7}$ OUR AVERAGE Error includes scale factor of 1.1.					
$5.55^{+0.22}_{-0.23}{}^{+0.41}_{-0.84}$		[1] CHILIKIN	13	BELL	$e^+e^- \to \Upsilon(4S)$
6.49±0.59±0.97		[1] AUBERT	05J	BABR	$e^+e^- \to \Upsilon(4S)$
7.6 ±1.1 ±1.0		[1] RICHICHI	01	CLE2	$e^+e^- \to \Upsilon(4S)$
9.0 ±2.2 ±0.9		[2] ABE	98O	CDF	$p\overline{p}$ 1.8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$5.52^{+0.35}_{-0.32}{}^{+0.53}_{-0.58}$		[1] MIZUK	09	BELL	$e^+e^- \to \Upsilon(4S)$
<19	90	[1] ALAM	94	CLE2	Repl. by RICHICHI 01
14 ±8 ±4		[1] BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$
<23	90	[1] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042R67;LINKAGE=EP

[2] ABE 98O reports $[B(B^0 \to \psi(2S)K^*(892)^0)]/[B(B^+ \to J/\psi(1S)K^+)] = 0.908 \pm 0.194 \pm 0.10$. We multiply by our best value $B(B^+ \to J/\psi(1S)K^+) = (9.9 \pm 1.0) \times 10^{-4}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042R67;LINKAGE=ME

$\Gamma(\psi(2S)K^*(892)^0)/\Gamma(J/\psi(1S)K^*(892)^0)$ $\Gamma_{270}/\Gamma_{216}$

NODE=S042T97

VALUE	DOCUMENT ID		TECN	COMMENT
0.487±0.018±0.014	[1,2] AAIJ	12L	LHCB	pp at 7 TeV

[1] AAIJ 12L reports $0.476 \pm 0.014 \pm 0.010 \pm 0.012$ from a measurement of $[\Gamma(B^0 \to \psi(2S)K^*(892)^0)/\Gamma(B^0 \to J/\psi(1S)K^*(892)^0)] \times [B(J/\psi(1S) \to e^+e^-)] / [B(\psi(2S) \to e^+e^-)]$ assuming $B(J/\psi(1S) \to e^+e^-) = (5.94 \pm 0.06) \times 10^{-2}$, $B(\psi(2S) \to e^+e^-) = (7.72 \pm 0.17) \times 10^{-3}$, which we rescale to our best values $B(J/\psi(1S) \to e^+e^-) = (5.971 \pm 0.032) \times 10^{-2}$, $B(\psi(2S) \to e^+e^-) = (7.94 \pm 0.22) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best values.

NODE=S042T97;LINKAGE=AA

[2] Assumes $B(J/\psi \to \mu^+\mu^-) / B(\psi(2S) \to \mu^+\mu^-) = B(J/\psi \to e^+e^-) / B(\psi(2S) \to e^+e^-) = 7.69 \pm 0.19$.

NODE=S042T97;LINKAGE=AI

$\Gamma(\psi(2S)K^*(892)^0)/\Gamma(\psi(2S)K^0)$ $\Gamma_{270}/\Gamma_{264}$

NODE=S042Q62

VALUE	DOCUMENT ID		TECN	COMMENT
1.02±0.10 OUR FIT				
1.00±0.14±0.09	AUBERT	05J	BABR	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\chi_{c0}K^0)/\Gamma_{total}$ Γ_{271}/Γ

NODE=S042S89

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$195^{+42}_{-36}\pm11$		[1] AAIJ	18F	LHCB	pp at 7, 8 TeV

• • • We do not use the following data for averages, fits, limits, etc. • • •

$145^{+103}_{-85}\pm 8$		[2,3] LEES	12I	BABR	$e^+e^- \to \Upsilon(4S)$
$148\pm 30\pm 13$		[2,4] LEES	12O	BABR	$e^+e^- \to \Upsilon(4S)$
$142^{+55}_{-44}\pm 22$		[2,5] AUBERT	09AU	BABR	$e^+e^- \to \Upsilon(4S)$
<113	90	[5] GARMASH	07	BELL	$e^+e^- \to \Upsilon(4S)$
<1240	90	[2] AUBERT	05K	BABR	$e^+e^- \to \Upsilon(4S)$
<500	90	[6] EDWARDS	01	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] AAIJ 18F uses Dalitz plot analysis of the $B^0 \to K^0_S\pi^+\pi^-$ final state decays. For the branching fraction of the reference mode, the PDG 18 average B($B^0 \to K^0_S\pi^+\pi^-$) = $(4.96 \pm 0.20) \times 10^{-5}$ is used. We compute B($B^0 \to \chi_{c0}K^0$) using the PDG value B($\chi_{c0} \to \pi\pi$) = $(8.51 \pm 0.33) \times 10^{-3}$ and 2/3 for the $\pi^+\pi^-$ fraction. Our first error is their experiment's error and the second error is systematic error from using our best value. NODE=S042S89;LINKAGE=B

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S89;LINKAGE=EP

[3] LEES 12I reports $[\Gamma(B^0 \to \chi_{c0}K^0)/\Gamma_{total}] \times [B(\chi_{c0}(1P) \to K^0_S K^0_S)] = (0.46^{+0.25}_{-0.17} \pm 0.21) \times 10^{-6}$ which we divide by our best value B($\chi_{c0}(1P) \to K^0_S K^0_S$) = $(3.18 \pm 0.19) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042S89;LINKAGE=LE

[4] Measured in the $B^0 \to K^0_S K^+K^-$ decay. NODE=S042S89;LINKAGE=LA

[5] Uses Dalitz plot analysis of the $B^0 \to K^0\pi^+\pi^-$ final state decays. NODE=S042S89;LINKAGE=GM

[6] EDWARDS 01 assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$. The correlated uncertainties (28.3)% from B($J/\psi(1S) \to \gamma\eta_c$) in those modes have been accounted for. NODE=S042S89;LINKAGE=A

$\Gamma(\chi_{c0}K^*(892)^0)/\Gamma_{total}$ Γ_{272}/Γ

NODE=S042Q59
NODE=S042Q59

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
1.7±0.3±0.2		[1] AUBERT	08BD	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<7.7	90	[1] AUBERT	05K	BABR	Repl. by AUBERT 08BD

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q59;LINKAGE=EP

$\Gamma(\chi_{c1}\pi^0)/\Gamma_{total}$ Γ_{273}/Γ

NODE=S042Q83
NODE=S042Q83

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
1.12±0.25±0.12	[1] KUMAR	08	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q83;LINKAGE=EP

$\Gamma(\chi_{c1}K^0)/\Gamma_{total}$ Γ_{274}/Γ

NODE=S042S24
NODE=S042S24

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
3.95±0.27 OUR AVERAGE					
$15\ ^{+5}_{-4}\ \pm 6$		[1] CHILIKIN	19	BELL	$e^+e^- \to \Upsilon(4S)$
$3.78^{+0.17}_{-0.16}\pm 0.33$		[2] BHARDWAJ	11	BELL	$e^+e^- \to \Upsilon(4S)$
$4.2\ \pm 0.3\ \pm 0.3$		[3] AUBERT	09B	BABR	$e^+e^- \to \Upsilon(4S)$
$3.1\ ^{+1.5}_{-1.1}\ \pm 0.1$		[4] AVERY	00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$3.51\pm 0.33\pm 0.45$		[2] SONI	06	BELL	Repl. by BHARDWAJ 11
$4.53\pm 0.41\pm 0.51$		[2] AUBERT	05J	BABR	Repl. by AUBERT 09B
$4.3\ \pm 1.4\ \pm 0.2$		[5] AUBERT	02	BABR	Repl. by AUBERT 05J
<27	90	[2] ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] CHILIKIN 19 reports $[\Gamma(B^0 \to \chi_{c1}K^0)/\Gamma_{total}] \times [B(\chi_{c1}(1P) \to p\overline{p}\pi^+\pi^-)] = (7.4^{+2.4}_{-2.0}{}^{+0.6}_{-0.4}) \times 10^{-7}$ which we divide by our best value B($\chi_{c1}(1P) \to p\overline{p}\pi^+\pi^-$) = $(5.0 \pm 1.9) \times 10^{-4}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042S24;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S24;LINKAGE=EP

[3] Uses $\chi_{c1,2} \to J/\psi\gamma$. Assumes B($\Upsilon(4S) \to B^+B^-$) = (51.6 ± 0.6)% and B($\Upsilon(4S) \to B^0\overline{B}^0$) = (48.4 ± 0.6)%. NODE=S042S24;LINKAGE=AU

[4] AVERY 00 reports $(3.9^{+1.9}_{-1.3} \pm 0.4) \times 10^{-4}$ from a measurement of $[\Gamma(B^0 \to \chi_{c1}K^0)/\Gamma_{total}] \times [B(\chi_{c1}(1P) \to \gamma J/\psi(1S))]$ assuming B($\chi_{c1}(1P) \to \gamma J/\psi(1S)$) = 0.273 ± 0.016, which we rescale to our best value B($\chi_{c1}(1P) \to \gamma J/\psi(1S)$) = $(34.3 \pm 1.3) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S24;LINKAGE=J4

[5] AUBERT 02 reports $(5.4\pm1.4\pm1.1)\times10^{-4}$ from a measurement of $[\Gamma(B^0 \to \chi_{c1} K^0)/\Gamma_{total}] \times [B(\chi_{c1}(1P) \to \gamma J/\psi(1S))]$ assuming $B(\chi_{c1}(1P) \to \gamma J/\psi(1S)) = 0.273 \pm 0.016$, which we rescale to our best value $B(\chi_{c1}(1P) \to \gamma J/\psi(1S)) = (34.3 \pm 1.3) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S24;LINKAGE=J3

$\Gamma(\chi_{c1} K^0)/\Gamma(J/\psi(1S) K^0)$ $\Gamma_{274}/\Gamma_{214}$

NODE=S042B3
NODE=S042B3

VALUE	DOCUMENT ID		TECN	COMMENT
0.53±0.16±0.02	[1] AUBERT	02	BABR	$e^+e^- \to \Upsilon(4S)$

[1] AUBERT 02 reports $0.66 \pm 0.11 \pm 0.17$ from a measurement of $[\Gamma(B^0 \to \chi_{c1} K^0)/\Gamma(B^0 \to J/\psi(1S) K^0)] \times [B(\chi_{c1}(1P) \to \gamma J/\psi(1S))]$ assuming $B(\chi_{c1}(1P) \to \gamma J/\psi(1S)) = 0.273 \pm 0.016$, which we rescale to our best value $B(\chi_{c1}(1P) \to \gamma J/\psi(1S)) = (34.3 \pm 1.3) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B3;LINKAGE=J3

$\Gamma(\chi_{c1} \pi^- K^+)/\Gamma_{total}$ Γ_{275}/Γ

NODE=S042B91
NODE=S042B91

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
4.97±0.12±0.28	[1] BHARDWAJ	16	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3.83±0.10±0.39	[1] MIZUK	08	BELL	Repl. by BHARDWAJ 16

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B91;LINKAGE=EP

$\Gamma(\chi_{c1} \pi^- K^+)/\Gamma(J/\psi(1S) K^+ \pi^-)$ $\Gamma_{275}/\Gamma_{215}$

NODE=S042C16
NODE=S042C16

VALUE	DOCUMENT ID		TECN
0.476±0.021±0.018	[1] LEES	12B	BABR

[1] LEES 12B reports $0.474 \pm 0.013 \pm 0.026$ from a measurement of $[\Gamma(B^0 \to \chi_{c1} \pi^- K^+)/\Gamma(B^0 \to J/\psi(1S) K^+ \pi^-)] \times [B(\chi_{c1}(1P) \to \gamma J/\psi(1S))]$ assuming $B(\chi_{c1}(1P) \to \gamma J/\psi(1S)) = (34.4 \pm 1.5) \times 10^{-2}$, which we rescale to our best value $B(\chi_{c1}(1P) \to \gamma J/\psi(1S)) = (34.3 \pm 1.3) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042C16;LINKAGE=LE

$\Gamma(\chi_{c1} K^*(892)^0)/\Gamma_{total}$ Γ_{276}/Γ

NODE=S042S25
NODE=S042S25

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
2.38±0.19 OUR FIT Error includes scale factor of 1.2.					
$2.22^{+0.40}_{-0.31}$ OUR AVERAGE Error includes scale factor of 1.6.					
2.5 ±0.2 ±0.2		[1] AUBERT	09B	BABR	$e^+e^- \to \Upsilon(4S)$
$1.73^{+0.15}_{-0.12}{}^{+0.34}_{-0.22}$		[2] MIZUK	08	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
3.14±0.34±0.72		[2] SONI	06	BELL	Repl. by MIZUK 08
3.27±0.42±0.64		[2] AUBERT	05J	BABR	Repl. by AUBERT 09B
3.8 ±1.3 ±0.1		[3] AUBERT	02	BABR	Repl. by AUBERT 05J
<21	90	[4] ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Uses $\chi_{c1,2} \to J/\psi\gamma$. Assumes $B(\Upsilon(4S) \to B^+B^-) = (51.6\pm0.6)\%$ and $B(\Upsilon(4S) \to B^0\overline{B}^0) = (48.4 \pm 0.6)\%$. NODE=S042S25;LINKAGE=AU

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S25;LINKAGE=EP

[3] AUBERT 02 reports $(4.8 \pm 1.4 \pm 0.9) \times 10^{-4}$ from a measurement of $[\Gamma(B^0 \to \chi_{c1} K^*(892)^0)/\Gamma_{total}] \times [B(\chi_{c1}(1P) \to \gamma J/\psi(1S))]$ assuming $B(\chi_{c1}(1P) \to \gamma J/\psi(1S)) = 0.273 \pm 0.016$, which we rescale to our best value $B(\chi_{c1}(1P) \to \gamma J/\psi(1S)) = (34.3 \pm 1.3) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S25;LINKAGE=J3

[4] BORTOLETTO 92 assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S25;LINKAGE=B9

$\Gamma(\chi_{c1} K^*(892)^0)/\Gamma(J/\psi(1S) K^*(892)^0)$ $\Gamma_{276}/\Gamma_{216}$

NODE=S042QA2
NODE=S042QA2

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
18.8±1.5 OUR FIT Error includes scale factor of 1.1.				
19.8±1.1±1.5	[1] AAIJ	13AC	LHCB	pp at 7 TeV

[1] Uses $B(\chi_{c1} \to J/\psi\gamma) = (34.4 \pm 1.5)\%$. NODE=S042QA2;LINKAGE=AA

$\Gamma(\chi_{c1} K^*(892)^0)/\Gamma(\chi_{c1} K^0)$ $\Gamma_{276}/\Gamma_{274}$

NODE=S042B1
NODE=S042B1

VALUE	DOCUMENT ID		TECN	COMMENT
0.72±0.11±0.12	AUBERT	05J	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.89±0.34±0.17	[1] AUBERT	02	BABR	Repl. by AUBERT 05J

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B1;LINKAGE=EP

$\Gamma(T_{c\overline{c}}(4050)^- K^+,\ T^-_{c\overline{c}} \to \chi_{c1} \pi^-)/\Gamma_{total}$ Γ_{277}/Γ

NODE=S042B92
NODE=S042B92

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{3.0^{+1.5+3.7}_{-0.8-1.6}}$		[1] MIZUK	08	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<1.8	90	[1,2] LEES	12B	BABR	

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B92;LINKAGE=EP

[2] Uses $\chi_{c1} \to J/\psi\gamma$ mode. Uses $\chi_{c1} \to J/\psi\gamma$ mode. Finds a good description of the data without this $B^0 \to X(4051)^+ K^-$ decay mode in a fit.

NODE=S042B92;LINKAGE=LE

$\Gamma(T_{c\overline{c}}(4250)^- K^+,\ T^-_{c\overline{c}} \to \chi_{c1} \pi^-)/\Gamma_{total}$ Γ_{278}/Γ

NODE=S042B93
NODE=S042B93

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{4.0^{+2.3+19.7}_{-0.9-\ 0.5}}$		[1] MIZUK	08	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<4.0	90	[1,2] LEES	12B	BABR	

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B93;LINKAGE=EP

[2] Uses $\chi_{c1} \to J/\psi\gamma$ mode. Finds a good description of the data without this $B^0 \to X(4248)^+ K^-$ decay mode in a fit.

NODE=S042B93;LINKAGE=LE

$\Gamma(\chi_{c1} \pi^+ \pi^- K^0)/\Gamma_{total}$ Γ_{279}/Γ

NODE=S042P16
NODE=S042P16

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
3.16±0.35±0.32	[1] BHARDWAJ	16	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042P16;LINKAGE=A

$\Gamma(\chi_{c1} \pi^- \pi^0 K^+)/\Gamma_{total}$ Γ_{280}/Γ

NODE=S042P20
NODE=S042P20

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
3.52±0.52±0.24	[1] BHARDWAJ	16	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042P20;LINKAGE=A

$\Gamma(\chi_{c2} K^0)/\Gamma_{total}$ Γ_{281}/Γ

NODE=S042Q60
NODE=S042Q60

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{<1.5 \times 10^{-5}}$	90	[1] BHARDWAJ	11	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<2.8 \times 10^{-5}$	90	[2] AUBERT	09B	BABR	$e^+ e^- \to \Upsilon(4S)$
$<2.6 \times 10^{-5}$	90	[1] SONI	06	BELL	Repl. by BHARDWAJ 11
$<4.1 \times 10^{-5}$	90	[1] AUBERT	05K	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042Q60;LINKAGE=EP

[2] Uses $\chi_{c1,2} \to J/\psi\gamma$. Assumes B($\Upsilon(4S) \to B^+ B^-$) = (51.6 ± 0.6)% and B($\Upsilon(4S) \to B^0 \overline{B}^0$) = (48.4 ± 0.6)%.

NODE=S042Q60;LINKAGE=AU

$\Gamma(\chi_{c2} K^*(892)^0)/\Gamma_{total}$ Γ_{282}/Γ

NODE=S042Q61
NODE=S042Q61

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
4.9±1.2 OUR FIT Error includes scale factor of 1.1.					
6.6±1.8±0.5		[1] AUBERT	09B	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<7.1	90	[2] SONI	06	BELL	$e^+ e^- \to \Upsilon(4S)$
<3.6	90	[2] AUBERT	05K	BABR	Repl. by AUBERT 09B

[1] Uses $\chi_{c1,2} \to J/\psi\gamma$. Assumes B($\Upsilon(4S) \to B^+ B^-$) = (51.6 ± 0.6)% and B($\Upsilon(4S) \to B^0 \overline{B}^0$) = (48.4 ± 0.6)%.

NODE=S042Q61;LINKAGE=AU

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042Q61;LINKAGE=EP

$\Gamma(\chi_{c2} K^*(892)^0)/\Gamma(\chi_{c1} K^*(892)^0)$ — $\Gamma_{282}/\Gamma_{276}$

NODE=S042QA3

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
20 ±5 OUR FIT Error includes scale factor of 1.1.				
17.1±5.0±2.0	[1] AAIJ	13AC	LHCB	pp at 7 TeV

[1] Uses $B(\chi_{c1} \to J/\psi\gamma)/B(\chi_{c2} \to J/\psi\gamma) = 1.76 \pm 0.11$.

NODE=S042QA3;LINKAGE=AA

$\Gamma(\chi_{c2} \pi^- K^+)/\Gamma_{total}$ — Γ_{283}/Γ

NODE=S042P18

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
0.72±0.09±0.05	[1] BHARDWAJ	16	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042P18;LINKAGE=A

$\Gamma(\chi_{c2} \pi^+\pi^- K^0)/\Gamma_{total}$ — Γ_{284}/Γ

NODE=S042P19

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.70 × 10^{-4}	90	[1] BHARDWAJ	16	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042P19;LINKAGE=A

$\Gamma(\chi_{c2} \pi^-\pi^0 K^+)/\Gamma_{total}$ — Γ_{285}/Γ

NODE=S042P21

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.74 × 10^{-4}	90	[1] BHARDWAJ	16	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042P21;LINKAGE=A

$\Gamma(\psi(4660) K^0,\ \psi \to \Lambda_c^+ \Lambda_c^-)/\Gamma_{total}$ — Γ_{286}/Γ

NODE=S042P30

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<2.3 × 10^{-4}	90	[1] LI	18D	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes $B(\Upsilon(4S) \to B^0\overline{B}^0) = 48.6 \pm 0.6\%$ and $B(\Lambda_c^+ \to pK^-\pi^+) = 6.23 \pm 0.33\%$.

NODE=S042P30;LINKAGE=A

$\Gamma(\psi(4230)^0 K^0,\ \psi^0 \to J/\psi\pi^+\pi^-)/\Gamma_{total}$ — Γ_{287}/Γ

NODE=S042P45

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<17 × 10^{-6}	90	[1] GARG	19	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$.

NODE=S042P45;LINKAGE=A

$\Gamma(K^+\pi^-)/\Gamma_{total}$ — Γ_{288}/Γ

NODE=S042R10

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
20.0 ± 0.4 OUR FIT					
20.0 ± 0.4 OUR AVERAGE					
20.67± 0.37±0.62		ADACHI	24	BELL	$e^+e^- \to \Upsilon(4S)$
20.00± 0.34±0.60		[1] DUH	13	BELL	$e^+e^- \to \Upsilon(4S)$
19.1 ± 0.6 ±0.6		[1] AUBERT	07B	BABR	$e^+e^- \to \Upsilon(4S)$
$18.0^{+2.3}_{-2.1}{}^{+1.2}_{-0.9}$		[1] BORNHEIM	03	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
19.9 ± 0.4 ±0.8		[1] LIN	07A	BELL	Repl. by DUH 13
18.5 ± 1.0 ±0.7		[1] CHAO	04	BELL	Repl. by LIN 07A
17.9 ± 0.9 ±0.7		[1] AUBERT	02Q	BABR	Repl. by AUBERT 07B
22.5 ± 1.9 ±1.8		[1] CASEY	02	BELL	Repl. by CHAO 04
$19.3^{+3.4}_{-3.2}{}^{+1.5}_{-0.6}$		[1] ABE	01H	BELL	Repl. by CASEY 02
16.7 ± 1.6 ±1.3		[1] AUBERT	01E	BABR	Repl. by AUBERT 02Q
< 66	90	[2] ABE	00C	SLD	$e^+e^- \to Z$
$17.2^{+2.5}_{-2.4}$ ±1.2		[1] CRONIN-HEN...	00	CLE2	Repl. by BORNHEIM 03
$15^{+5.}_{-4}$ ±1.4		GODANG	98	CLE2	Repl. by CRONIN-HENNESSY 00
24^{+17}_{-11} ±2		[3] ADAM	96D	DLPH	$e^+e^- \to Z$
< 17	90	ASNER	96	CLE2	Sup. by ADAM 96D
< 30	90	[4] BUSKULIC	96V	ALEP	$e^+e^- \to Z$
< 90	90	[5] ABREU	95N	DLPH	Sup. by ADAM 96D
< 81	90	[6] AKERS	94L	OPAL	$e^+e^- \to Z$
< 26	90	[7] BATTLE	93	CLE2	$e^+e^- \to \Upsilon(4S)$
<180	90	ALBRECHT	91B	ARG	$e^+e^- \to \Upsilon(4S)$
< 90	90	[8] AVERY	89B	CLEO	$e^+e^- \to \Upsilon(4S)$
<320	90	AVERY	87	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R10;LINKAGE=EP

[2] ABE 00C assumes $B(Z \to b\overline{b})$=(21.7 ± 0.1)% and the B fractions $f_{B^0}=f_{B^+}=(39.7^{+1.8}_{-2.2})$% and $f_{B_s}=(10.5^{+1.8}_{-2.2})$%. NODE=S042R10;LINKAGE=KQ

[3] ADAM 96D assumes $f_{B^0} = f_{B^-} = 0.39$ and $f_{B_s} = 0.12$. Contributions from B^0 and B_s decays cannot be separated. Limits are given for the weighted average of the decay rates for the two neutral B mesons. NODE=S042R10;LINKAGE=DQ

[4] BUSKULIC 96V assumes PDG 96 production fractions for B^0, B^+, B_s, b baryons. NODE=S042R10;LINKAGE=BV

[5] Assumes a B^0, B^- production fraction of 0.39 and a B_s production fraction of 0.12. Contributions from B^0 and B^0_s decays cannot be separated. Limits are given for the weighted average of the decay rates for the two neutral B mesons. NODE=S042R10;LINKAGE=SR

[6] Assumes $B(Z \to b\overline{b}) = 0.217$ and B^0_d (B^0_s) fraction 39.5% (12%). NODE=S042R10;LINKAGE=C

[7] BATTLE 93 assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$. NODE=S042R10;LINKAGE=B

[8] Assumes the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. NODE=S042R10;LINKAGE=A1

$\Gamma(K^+\pi^-)/\Gamma(K^0\pi^0)$ $\Gamma_{288}/\Gamma_{289}$

NODE=S042S95

VALUE	DOCUMENT ID		TECN	COMMENT
2.16±0.16±0.16	LIN	07A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1.20^{+0.50}_{-0.58}{}^{+0.22}_{-0.32}$	[1] ABE	01H	BELL	Repl. by LIN 07A

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S95;LINKAGE=EP

$[\Gamma(K^+\pi^-)+\Gamma(\pi^+\pi^-)]/\Gamma_{total}$ $(\Gamma_{288}+\Gamma_{423})/\Gamma$

NODE=S042S2

VALUE (units 10^{-6})	EVTS	DOCUMENT ID		TECN	COMMENT
19± 6 OUR AVERAGE					
$28^{+15}_{-10}\pm20$		[1] ADAM	96D	DLPH	$e^+e^- \to Z$
$18^{+6}_{-5}{}^{+3}_{-4}$	17.2	ASNER	96	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$24^{+8}_{-7}\pm2$		[2] BATTLE	93	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] ADAM 96D assumes $f_{B^0} = f_{B^-} = 0.39$ and $f_{B_s} = 0.12$. Contributions from B^0 and B_s decays cannot be separated. Limits are given for the weighted average of the decay rates for the two neutral B mesons. NODE=S042S2;LINKAGE=DQ

[2] BATTLE 93 assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$. NODE=S042S2;LINKAGE=B

$\Gamma(K^0\pi^0)/\Gamma_{total}$ Γ_{289}/Γ

NODE=S042S41

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
10.1 ±0.4 OUR AVERAGE					
10.73±0.63±0.62		[1] ADACHI	24	BELL	$e^+e^- \to \Upsilon(4S)$
9.68±0.46±0.50		[2] DUH	13	BELL	$e^+e^- \to \Upsilon(4S)$
10.1 ±0.6 ±0.4		[2] LEES	13D	BABR	$e^+e^- \to \Upsilon(4S)$
$12.8^{+4.0}_{-3.3}{}^{+1.7}_{-1.4}$		[2] BORNHEIM	03	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
8.7 ±0.5 ±0.6		[2] FUJIKAWA	10A	BELL	Repl. by DUH 13
10.3 ±0.7 ±0.6		[2] AUBERT	08E	BABR	Repl. by LEES 13D
9.2 ±0.7 ±0.6		[2] LIN	07A	BELL	Repl. by FUJIKAWA 10A
11.4 ±0.9 ±0.6		[2] AUBERT	05Y	BABR	Repl. by AUBERT 08E
11.4 ±1.7 ±0.8		[2] AUBERT	04M	BABR	Repl. by AUBERT 05Y
$11.7 \pm2.3 {}^{+1.2}_{-1.3}$		[2] CHAO	04	BELL	Repl. by LIN 07A
$8.0^{+3.3}_{-3.1}\pm1.6$		[2] CASEY	02	BELL	Repl. by CHAO 04
$16.0^{+7.2}_{-5.9}{}^{+2.5}_{-2.7}$		[2] ABE	01H	BELL	Repl. by CASEY 02
$8.2^{+3.1}_{-2.7}\pm1.2$		[2] AUBERT	01E	BABR	Repl. by AUBERT 04M
$14.6^{+5.9}_{-5.1}{}^{+2.4}_{-3.3}$		[2] CRONIN-HEN...	00	CLE2	Repl. by BORNHEIM 03
<41	90	GODANG	98	CLE2	Repl. by CRONIN-HENNESSY 00
<40	90	ASNER	96	CLE2	Rep. by GODANG 98

[1] This is the combined result of this analysis (ADACHI 24) and the updated analysis of ADACHI 23E. The individual results are $(10.40 \pm 0.66 \pm 0.60) \times 10^{-6}$ and $(11.15 \pm 0.68 \pm 0.62) \times 10^{-6}$, respectively. NODE=S042S41;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S41;LINKAGE=EP

$\Gamma(\eta' K^0)/\Gamma_{total}$ Γ_{290}/Γ

NODE=S042S61
NODE=S042S61

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
66 ± 4 OUR AVERAGE	Error includes scale factor of 1.4.		
$68.5 \pm 2.2 \pm 3.1$	[1] AUBERT 09AV	BABR	$e^+e^- \to \Upsilon(4S)$
$58.9^{+3.6}_{-3.5} \pm 4.3$	[1] SCHUEMANN 06	BELL	$e^+e^- \to \Upsilon(4S)$
$89^{+18}_{-16} \pm 9$	[1] RICHICHI 00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$66.6 \pm 2.6 \pm 2.8$	[1] AUBERT 07AE	BABR	Repl. by AUBERT 09AV
$67.4 \pm 3.3 \pm 3.2$	[1] AUBERT 05M	BABR	AUBERT 07AE
$60.6 \pm 5.6 \pm 4.6$	[1] AUBERT 03W	BABR	Repl. by AUBERT 05M
$55^{+19}_{-16} \pm 8$	[1] ABE 01M	BELL	Repl. by SCHUEMANN 06
$42^{+13}_{-11} \pm 4$	[1] AUBERT 01G	BABR	Repl. by AUBERT 03W
$47^{+27}_{-20} \pm 9$	BEHRENS 98	CLE2	Repl. by RICHICHI 00

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S61;LINKAGE=EP

$\Gamma(\eta' K^*(892)^0)/\Gamma_{total}$ Γ_{291}/Γ

NODE=S042S62
NODE=S042S62

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
2.8±0.6 OUR AVERAGE				
$2.6 \pm 0.7 \pm 0.2$		[1] SATO 14	BELL	$e^+e^- \to \Upsilon(4S)$
$3.1^{+0.9}_{-0.8} \pm 0.3$		[1] DEL-AMO-SA...10A	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$3.8 \pm 1.1 \pm 0.5$		[1] AUBERT 07E	BABR	Repl. by DEL-AMO-SANCHEZ 10A
< 2.6	90	[1] SCHUEMANN 07	BELL	$e^+e^- \to \Upsilon(4S)$
< 7.6	90	[1] AUBERT,B 04D	BABR	Repl. by AUBERT 07E
<24	90	[1] RICHICHI 00	CLE2	$e^+e^- \to \Upsilon(4S)$
<39	90	BEHRENS 98	CLE2	Repl. by RICHICHI 00

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S62;LINKAGE=EP

$\Gamma(\eta' K_0^*(1430)^0)/\Gamma_{total}$ Γ_{292}/Γ

NODE=S042T72
NODE=S042T72

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
6.3±1.3±0.9	[1] DEL-AMO-SA...10A	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T72;LINKAGE=EP

$\Gamma(\eta' K_2^*(1430)^0)/\Gamma_{total}$ Γ_{293}/Γ

NODE=S042T73
NODE=S042T73

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
$\mathbf{13.7^{+3.0}_{-2.9} \pm 1.2}$	[1] DEL-AMO-SA...10A	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T73;LINKAGE=EP

$\Gamma(\eta K^0)/\Gamma_{total}$ Γ_{294}/Γ

NODE=S042S64
NODE=S042S64

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
$\mathbf{1.23^{+0.27}_{-0.24}}$ **OUR AVERAGE**				
$1.27^{+0.33}_{-0.29} \pm 0.08$		[1] HOI 12	BELL	$e^+e^- \to \Upsilon(4S)$
$1.15^{+0.43}_{-0.38} \pm 0.09$		[1] AUBERT 09AV	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
< 1.9	90	[1] CHANG 07B	BELL	Repl. by HOI 12
< 2.9	90	[1] AUBERT,B 06V	BABR	$e^+e^- \to \Upsilon(4S)$
< 2.5	90	[1] AUBERT,B 05K	BABR	$e^+e^- \to \Upsilon(4S)$
< 2.0	90	[1] CHANG 05A	BELL	Repl. by CHANG 07B
< 5.2	90	[1] AUBERT 04H	BABR	Repl. by AUBERT,B 05K
< 9.3	90	[1] RICHICHI 00	CLE2	$e^+e^- \to \Upsilon(4S)$
<33	90	BEHRENS 98	CLE2	Repl. by RICHICHI 00

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S64;LINKAGE=EP

$\Gamma(\eta K^*(892)^0)/\Gamma_{total}$ Γ_{295}/Γ

NODE=S042S63
NODE=S042S63

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
15.9±1.0 OUR AVERAGE					
15.2±1.2±1.0		[1] WANG	07B	BELL	$e^+e^- \to \Upsilon(4S)$
16.5±1.1±0.8		[1] AUBERT,B	06H	BABR	$e^+e^- \to \Upsilon(4S)$
$13.8^{+5.5}_{-4.6}\pm1.6$		[1] RICHICHI	00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
18.6±2.3±1.2		[1] AUBERT,B	04D	BABR	Repl. by AUBERT,B 06H
<30	90	BEHRENS	98	CLE2	Repl. by RICHICHI 00

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S63;LINKAGE=EP

$\Gamma(\eta K_0^*(1430)^0)/\Gamma_{total}$ Γ_{296}/Γ

NODE=S042T12
NODE=S042T12

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
11.0±1.6±1.5	[1] AUBERT,B	06H	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T12;LINKAGE=EP

$\Gamma(\eta K_2^*(1430)^0)/\Gamma_{total}$ Γ_{297}/Γ

NODE=S042T13
NODE=S042T13

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
9.6±1.8±1.1	[1] AUBERT,B	06H	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T13;LINKAGE=EP

$\Gamma(\omega K^0)/\Gamma_{total}$ Γ_{298}/Γ

NODE=S042S71
NODE=S042S71

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
4.8±0.4 OUR AVERAGE					
4.5±0.4±0.3		[1] CHOBANOVA	14	BELL	$e^+e^- \to \Upsilon(4S)$
5.4±0.8±0.3		[1] AUBERT	07AE	BABR	$e^+e^- \to \Upsilon(4S)$
$10.0^{+5.4}_{-4.2}\pm1.4$		[1] JESSOP	00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
6.2±1.0±0.4		[1] AUBERT,B	06E	BABR	Repl. by AUBERT 07AE
$4.4^{+0.8}_{-0.7}\pm0.4$		[1] JEN	06	BELL	Repl. by CHOBANOVA 14
$5.9^{+1.6}_{-1.3}\pm0.5$		[1] AUBERT	04H	BABR	Repl. by AUBERT,B 06E
$4.0^{+1.9}_{-1.6}\pm0.5$		[1] WANG	04A	BELL	Repl. by JEN 06
<13	90	[1] AUBERT	01G	BABR	Repl. by AUBERT 04H
<57	90	[1] BERGFELD	98	CLE2	Repl. by JESSOP 00

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S71;LINKAGE=EP

$\Gamma(a_0(980)^0 K^0,\ a_0^0 \to \eta\pi^0)/\Gamma_{total}$ Γ_{299}/Γ

NODE=S042RA6
NODE=S042RA6

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<7.8	90	[1] AUBERT,BE	04	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of charged and neutral B mesons at $\Upsilon(4S)$.

NODE=S042RA6;LINKAGE=EP

$\Gamma(b_1^0 K^0,\ b_1^0 \to \omega\pi^0)/\Gamma_{total}$ Γ_{300}/Γ

NODE=S042T50
NODE=S042T50

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<7.8	90	[1] AUBERT	08AG	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T50;LINKAGE=EP

$\Gamma(a_0(980)^\pm K^\mp,\ a_0^\pm \to \eta\pi^\pm)/\Gamma_{total}$ Γ_{301}/Γ

NODE=S042RA5
NODE=S042RA5

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<1.9	90	[1] AUBERT	07Y	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<2.1	90	[1] AUBERT,BE	04	BABR	Repl. by AUBERT 07Y

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042RA5;LINKAGE=EP

$\Gamma(b_1^- K^+,\ b_1^- \to \omega\pi^-)/\Gamma_{total}$ Γ_{302}/Γ

NODE=S042T34
NODE=S042T34

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
7.4±1.0±1.0	[1] AUBERT	07BI	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T34;LINKAGE=EP

$\Gamma(b_1^0 K^{*0},\ b_1^0 \to \omega\pi^0)/\Gamma_{total}$ — Γ_{303}/Γ

NODE=S042T67

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<8.0 × 10^{-6}	90	[1] AUBERT 09AF	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T67;LINKAGE=EP

$\Gamma(b_1^- K^{*+},\ b_1^- \to \omega\pi^-)/\Gamma_{total}$ — Γ_{304}/Γ

NODE=S042T68

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<5.0 × 10^{-6}	90	[1] AUBERT 09AF	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T68;LINKAGE=EP

$\Gamma(a_0(1450)^\pm K^\mp,\ a_0^\pm \to \eta\pi^\pm)/\Gamma_{total}$ — Γ_{305}/Γ

NODE=S042T19

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<3.1	90	[1] AUBERT 07Y	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T19;LINKAGE=EP

$\Gamma(K_S^0 X^0\,(\text{Familon}))/\Gamma_{total}$ — Γ_{306}/Γ

NODE=S042B11

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<53	90	[1] AMMAR 01B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] AMMAR 01B searched for the two-body decay of the B meson to a massless neutral feebly-interacting particle X^0 such as the familon, the Nambu-Goldstone boson associated with a spontaneously broken global family symmetry.

NODE=S042B11;LINKAGE=A

$\Gamma(\omega K^*(892)^0)/\Gamma_{total}$ — Γ_{307}/Γ

NODE=S042S72

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
2.0±0.5 OUR AVERAGE				
2.2±0.6±0.2		[1] AUBERT 09H	BABR	$e^+e^- \to \Upsilon(4S)$
1.8±0.7±0.3		[1] GOLDENZWE..08	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
< 4.2	90	[1] AUBERT,B 06T	BABR	Repl. by AUBERT 09H
< 6.0	90	[1] AUBERT 05O	BABR	Repl. by AUBERT,B 06T
<23	90	[1] BERGFELD 98	CLE2	

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S72;LINKAGE=EP

$\Gamma(\omega(K\pi)_0^{*0})/\Gamma_{total}$ — Γ_{308}/Γ

NODE=S042T57

$(K\pi)_0^{*0}$ is the total S-wave composed of $K_0^*(1430)$ and nonresonant that are described using LASS shape.

NODE=S042T57

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
18.4±1.8±1.7	[1] AUBERT 09H	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T57;LINKAGE=EP

$\Gamma(\omega K_0^*(1430)^0)/\Gamma_{total}$ — Γ_{309}/Γ

NODE=S042T58

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
16.0±1.6±3.0	[1] AUBERT 09H	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T58;LINKAGE=EP

$\Gamma(\omega K_2^*(1430)^0)/\Gamma_{total}$ — Γ_{310}/Γ

NODE=S042T59

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
10.1±2.0±1.1	[1] AUBERT 09H	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T59;LINKAGE=EP

$\Gamma(\omega K^+\pi^-\ \text{nonresonant})/\Gamma_{total}$ — Γ_{311}/Γ

NODE=S042T56

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
5.1±0.7±0.7	[1,2] GOLDENZWE..08	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T56;LINKAGE=EP

[2] For the $K\pi$ mass range 0.755–1.250 GeV/c^2, excluding $K^*(892)$.

NODE=S042T56;LINKAGE=GO

$\Gamma(K^+\pi^-\pi^0)/\Gamma_{total}$ Γ_{312}/Γ

NODE=S042B32

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
37.8±3.2 OUR AVERAGE					
38.5±1.0±3.9		[1,2] LEES	11	BABR	$e^+e^- \to \Upsilon(4S)$
$36.6^{+4.2}_{-4.3}\pm3.0$		[1] CHANG	04	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$35.7^{+2.6}_{-1.5}\pm2.2$		[1] AUBERT	08AQ	BABR	Repl. by LEES 11
<40	90	[1] ECKHART	02	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] Uses Dalitz plot analysis of $B^0 \to K^+\pi^-\pi^0$ decays.

NODE=S042B32;LINKAGE=EP
NODE=S042B32;LINKAGE=LE

$\Gamma(K^+\rho^-)/\Gamma_{total}$ Γ_{313}/Γ

NODE=S042S42

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
7.0±0.9 OUR AVERAGE					
6.6±0.5±0.8		[1,2] LEES	11	BABR	$e^+e^- \to \Upsilon(4S)$
$15.1^{+3.4}_{-3.3}{}^{+2.4}_{-2.6}$		[1] CHANG	04	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$8.0^{+0.8}_{-1.3}\pm0.6$		[1] AUBERT	08AQ	BABR	Repl. by LEES 11
$7.3^{+1.3}_{-1.2}\pm1.3$		[1] AUBERT	03T	BABR	Repl. by AUBERT 08AQ
<32	90	[1] JESSOP	00	CLE2	$e^+e^- \to \Upsilon(4S)$
<35	90	ASNER	96	CLE2	Repl. by JESSOP 00

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] Uses Dalitz plot analysis of $B^0 \to K^+\pi^-\pi^0$ decays.

NODE=S042S42;LINKAGE=EP
NODE=S042S42;LINKAGE=LE

$\Gamma(K^+\rho(1450)^-)/\Gamma_{total}$ Γ_{314}/Γ

NODE=S042T45

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
2.4±1.0±0.6		[1,2] LEES	11	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<2.1	90	[1] AUBERT	08AQ	BABR	Repl. by LEES 11

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] Uses Dalitz plot analysis of $B^0 \to K^+\pi^-\pi^0$ decays.

NODE=S042T45;LINKAGE=EP
NODE=S042T45;LINKAGE=LE

$\Gamma(K^+\rho(1700)^-)/\Gamma_{total}$ Γ_{315}/Γ

NODE=S042T44

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
0.6±0.6±0.4		[1,2] LEES	11	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<1.1	90	[1] AUBERT	08AQ	BABR	Repl. by LEES 11

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] Uses Dalitz plot analysis of $B^0 \to K^+\pi^-\pi^0$ decays.

NODE=S042T44;LINKAGE=EP
NODE=S042T44;LINKAGE=LE

$\Gamma((K^+\pi^-\pi^0)\text{ nonresonant})/\Gamma_{total}$ Γ_{316}/Γ

NODE=S042Q07

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
2.8±0.5±0.4		[1,2] LEES	11	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
4.4±0.9±0.5		[1] AUBERT	08AQ	BABR	Repl. by LEES 11
<9.4	90	[1] CHANG	04	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] Uses Dalitz plot analysis of $B^0 \to K^+\pi^-\pi^0$ decays. The quoted value is only for the flat part of the non-resonant component.

NODE=S042Q07;LINKAGE=EP
NODE=S042Q07;LINKAGE=LE

$\Gamma((K\pi)^{*+}_0\pi^-,\ (K\pi)^{*+}_0 \to K^+\pi^0)/\Gamma_{total}$ Γ_{317}/Γ

NODE=S042T46

$(K\pi)^{*+}_0$ is the total S-wave composed of $K^*_0(1430)$ and nonresonant that are described using LASS shape.

NODE=S042T46
NODE=S042T46

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
34.2±2.4±4.1	[1,2] LEES	11	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$9.4^{+1.1}_{-1.3}{}^{+2.3}_{-2.1}$	[1] AUBERT	08AQ	BABR	Repl. by LEES 11

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] Uses Dalitz plot analysis of $B^0 \to K^+\pi^-\pi^0$ decays.

NODE=S042T46;LINKAGE=EP
NODE=S042T46;LINKAGE=LE

$\Gamma\big((K\pi)^{*0}_0\pi^0,\ (K\pi)^{*0}_0 \to K^+\pi^-\big)/\Gamma_{total}$ Γ_{318}/Γ

NODE=S042T47

$(K\pi)^{*0}_0$ is the total S-wave composed of $K^*_0(1430)$ and nonresonant that are described using LASS shape.

NODE=S042T47

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
8.6±1.1±1.3	[1,2] LEES 11	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$8.7^{+1.1}_{-0.9}{}^{+2.8}_{-2.6}$	[1] AUBERT 08AQ	BABR	Repl. by LEES 11

NODE=S042T47

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T47;LINKAGE=EP

[2] Uses Dalitz plot analysis of $B^0 \to K^+\pi^-\pi^0$ decays. NODE=S042T47;LINKAGE=LE

$\Gamma\big(K^*_2(1430)^0\pi^0\big)/\Gamma_{total}$ Γ_{319}/Γ

NODE=S042T49
NODE=S042T49

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<4.0	90	[1] AUBERT 08AQ	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T49;LINKAGE=EP

$\Gamma\big(K^*(1680)^0\pi^0\big)/\Gamma_{total}$ Γ_{320}/Γ

NODE=S042T48
NODE=S042T48

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<7.5	90	[1] AUBERT 08AQ	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T48;LINKAGE=EP

$\Gamma\big(K^{*0}_x\pi^0\big)/\Gamma_{total}$ Γ_{321}/Γ

NODE=S042Q05

K^{*0}_x stands for the possible candidates of $K^*(1410)$, $K^*_0(1430)$ and $K^*_2(1430)$.

NODE=S042Q05
NODE=S042Q05

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
$\mathbf{6.1^{+1.6}_{-1.5}{}^{+0.5}_{-0.6}}$	[1] CHANG 04	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q05;LINKAGE=CH

$\Gamma\big(K^0\pi^+\pi^-\big)/\Gamma_{total}$ Γ_{322}/Γ

NODE=S042R80
NODE=S042R80

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
49.7± 1.8 OUR FIT				
49.6± 2.0 OUR AVERAGE				
50.2± 1.5±1.8		[1] AUBERT 09AU	BABR	$e^+e^- \to \Upsilon(4S)$
47.5± 2.4±3.7		[2] GARMASH 07	BELL	$e^+e^- \to \Upsilon(4S)$
$50\ ^{+10}_{-\ 9}\ \pm 7$		[1] ECKHART 02	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
43.0± 2.3±2.3		[1] AUBERT 06I	BABR	Repl. by AUBERT 09AU
43.7± 3.8±3.4		[1] AUBERT,B 04O	BABR	Repl. by AUBERT 06I
45.4± 5.2±5.9		[1] GARMASH 04	BELL	Repl. by GARMASH 07
<440	90	ALBRECHT 91E	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R80;LINKAGE=EP

[2] Uses Dalitz plot analysis of the $B^0 \to K^0\pi^+\pi^-$ final state decays. NODE=S042R80;LINKAGE=GM

$\Gamma\big(K^0\pi^+\pi^-\ \text{nonresonant}\big)/\Gamma_{total}$ Γ_{323}/Γ

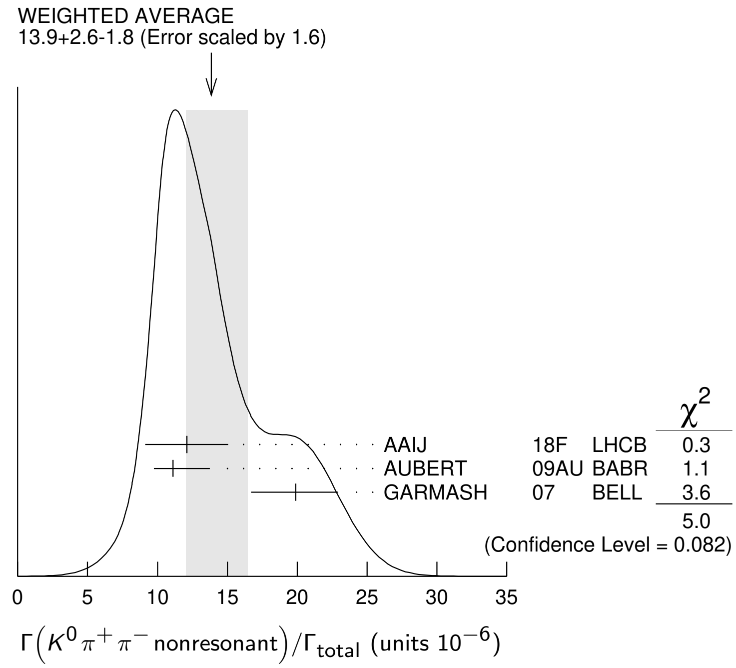
NODE=S042B00
NODE=S042B00

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
$\mathbf{13.9^{+2.6}_{-1.8}}$ **OUR AVERAGE** Error includes scale factor of 1.6. See the ideogram below.			
12.1±0.6±2.9	[1] AAIJ 18F	LHCB	pp at 7, 8 TeV
$11.1^{+2.5}_{-1.0}\pm0.9$	[2] AUBERT 09AU	BABR	$e^+e^- \to \Upsilon(4S)$
$19.9\pm2.5^{+1.7}_{-2.0}$	[3] GARMASH 07	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Uses Dalitz plot analysis of the $B^0 \to K^0_S\pi^+\pi^-$ final state decays. For the branching fraction of the reference mode, the PDG 18 average B($B^0 \to K^0_S\pi^+\pi^-$) = (4.96 ± 0.20) × 10^{-5} is used. NODE=S042B00;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B00;LINKAGE=EP

[3] Uses Dalitz plot analysis of the $B^0 \to K^0\pi^+\pi^-$ final state decays. NODE=S042B00;LINKAGE=GM



$\Gamma(K^0\rho^0)/\Gamma_{total}$ — Γ_{324}/Γ

NODE=S042R12
NODE=S042R12

VALUE (units 10^{-6})	*CL%*	*DOCUMENT ID*	*TECN*	*COMMENT*
3.4 ±1.1 OUR AVERAGE Error includes scale factor of 2.3. See the ideogram below.				
$1.89^{+0.55}_{-0.79}\pm0.40$		[1] AAIJ	18F	LHCB pp at 7, 8 TeV
$4.4\ ^{+0.7}_{-0.6}\ \pm0.3$		[2] AUBERT	09AU	BABR $e^+e^- \to \Upsilon(4S)$
$6.1\ \pm1.0\ ^{+1.1}_{-1.2}$		[3] GARMASH	07	BELL $e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$4.9\ \pm0.8\ \pm0.9$		[2] AUBERT	07F	BABR Repl. by AUBERT 09AU
$<\ 39$	90	ASNER	96	CLEO $e^+e^- \to \Upsilon(4S)$
<320	90	ALBRECHT	91B	ARG $e^+e^- \to \Upsilon(4S)$
<500	90	[4] AVERY	89B	CLEO $e^+e^- \to \Upsilon(4S)$

[1] Uses Dalitz plot analysis of the $B^0 \to K^0_S\pi^+\pi^-$ final state decays. For the branching fraction of the reference mode, the PDG 18 average B($B^0 \to K^0_S\pi^+\pi^-$) = $(4.96 \pm 0.20) \times 10^{-5}$ is used.

NODE=S042R12;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

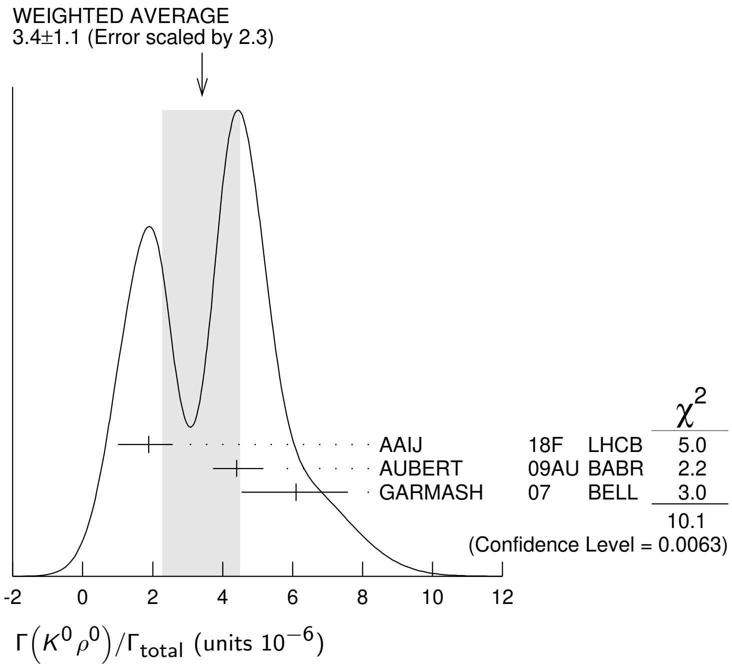
NODE=S042R12;LINKAGE=EP

[3] Uses Dalitz plot analysis of the $B^0 \to K^0\pi^+\pi^-$ final state decays.

NODE=S042R12;LINKAGE=GM

[4] AVERY 89B reports $< 5.8 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.

NODE=S042R12;LINKAGE=A1



$\Gamma(K^*(892)^+\pi^-)/\Gamma_{total}$ Γ_{325}/Γ

NODE=S042R11
NODE=S042R11

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
7.5 ±0.4 OUR AVERAGE					
$7.02\pm0.30\pm0.45$		[1] AAIJ	18F	LHCB	pp at 7, 8 TeV
$8.0\ \pm1.1\ \pm0.8$		[2,3] LEES	11	BABR	$e^+e^- \to \Upsilon(4S)$
$8.3\ ^{+0.9}_{-0.8}\ \pm0.8$		[3,4] AUBERT	09AU	BABR	$e^+e^- \to \Upsilon(4S)$
$8.4\ \pm1.1\ ^{+1.0}_{-0.9}$		[4] GARMASH	07	BELL	$e^+e^- \to \Upsilon(4S)$
$16\ ^{+6}_{-5}\ \pm2$		[3] ECKHART	02	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$12.6\ ^{+2.7}_{-1.6}\ \pm0.9$		[2,3] AUBERT	08AQ	BABR	Repl. by LEES 11
$11.0\ \pm1.5\ \pm0.71$		[3] AUBERT	06I	BABR	Repl. by AUBERT 09AU
$12.9\ \pm2.4\ \pm1.4$		[3] AUBERT,B	04O	BABR	Repl. by AUBERT 06I
$14.8\ ^{+4.6}_{-4.4}\ ^{+2.8}_{-1.3}$		[3] CHANG	04	BELL	Repl. by GARMASH 07
$<\ 72$	90	ASNER	96	CLE2	$e^+e^- \to \Upsilon(4S)$
<620	90	ALBRECHT	91B	ARG	$e^+e^- \to \Upsilon(4S)$
<380	90	[5] AVERY	89B	CLEO	$e^+e^- \to \Upsilon(4S)$
<560	90	[6] AVERY	87	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Uses Dalitz plot analysis of the $B^0 \to K^0_S\pi^+\pi^-$ final state decays. For the branching fraction of the reference mode, the PDG 18 average B($B^0 \to K^0_S\pi^+\pi^-$) = $(4.96 \pm 0.20) \times 10^{-5}$ is used. NODE=S042R11;LINKAGE=A

[2] Uses Dalitz plot analysis of $B^0 \to K^+\pi^-\pi^0$ decays. NODE=S042R11;LINKAGE=DA

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R11;LINKAGE=EP

[4] Uses Dalitz plot analysis of the $B^0 \to K^0\pi^+\pi^-$ final state decays. NODE=S042R11;LINKAGE=GM

[5] AVERY 89B reports $< 4.4 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R11;LINKAGE=A1

[6] AVERY 87 reports $< 7 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 40% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R11;LINKAGE=AV

$\Gamma(K^*_0(1430)^+\pi^-)/\Gamma_{total}$ Γ_{326}/Γ

NODE=S042B01
NODE=S042B01

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
33 ±7 OUR AVERAGE Error includes scale factor of 2.0.				
$29.9^{+2.3}_{-1.7}\pm3.6$	[1,2] AUBERT	09AU	BABR	$e^+e^- \to \Upsilon(4S)$
$49.7\pm3.8^{+6.8}_{-8.2}$	[2] GARMASH	07	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B01;LINKAGE=EP

[2] Uses Dalitz plot analysis of the $B^0 \to K^0\pi^+\pi^-$ final state decays. NODE=S042B01;LINKAGE=GM

$\Gamma(K_x^{*+}\pi^-)/\Gamma_{total}$ Γ_{327}/Γ

NODE=S042Q06

K_x^{*+} stands for the possible candidates of $K^*(1410)$, $K_0^*(1430)$ and $K_2^*(1430)$.

NODE=S042Q06
NODE=S042Q06

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$5.1\pm1.5^{+0.6}_{-0.7}$	[1] CHANG	04	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042Q06;LINKAGE=CH

$\Gamma(K^*(1410)^+\pi^-,\ K^{*+}\to K^0\pi^+)/\Gamma_{total}$ Γ_{328}/Γ

NODE=S042B02
NODE=S042B02

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<3.8	90	[1] GARMASH	07	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Uses Dalitz plot analysis of the $B^0 \to K^0\pi^+\pi^-$ final state decays.

NODE=S042B02;LINKAGE=GM

$\Gamma((K\pi)_0^{*+}\pi^-,\ (K\pi)_0^{*+}\to K^0\pi^+)/\Gamma_{total}$ Γ_{329}/Γ

NODE=S042P43
NODE=S042P43

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$16.2\pm0.69\pm1.15$	[1] AAIJ	18F	LHCB	pp at 7, 8 TeV

[1] Uses Dalitz plot analysis of the $B^0 \to K_S^0\pi^+\pi^-$ final state decays. $(K\pi)_0^{*+}$ is the S-wave component of $K^0\pi^+$. For the branching fraction of the reference mode, the PDG 18 average $B(B^0 \to K_S^0\pi^+\pi^-) = (4.96 \pm 0.20) \times 10^{-5}$ is used.

NODE=S042P43;LINKAGE=A

$\Gamma(f_0(980)K^0,\ f_0\to\pi^+\pi^-)/\Gamma_{total}$ Γ_{330}/Γ

NODE=S042B05
NODE=S042B05

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
8.1 ±0.8 OUR AVERAGE		Error includes scale factor of 1.3. See the ideogram below.			
$9.23\pm0.40\pm0.79$		[1] AAIJ	18F	LHCB	pp at 7, 8 TeV
$6.9\pm0.8\pm0.6$		[2] AUBERT	09AU	BABR	$e^+e^- \to \Upsilon(4S)$
$7.6\pm1.7^{+0.9}_{-1.3}$		[3] GARMASH	07	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$5.5\pm0.7\pm0.6$		[2] AUBERT	06I	BABR	Repl. by AUBERT 09AU
<360	90	[4] AVERY	89B	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Uses Dalitz plot analysis of the $B^0 \to K_S^0\pi^+\pi^-$ final state decays. For the branching fraction of the reference mode, the PDG 18 average $B(B^0 \to K_S^0\pi^+\pi^-) = (4.96 \pm 0.20) \times 10^{-5}$ is used.

NODE=S042B05;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

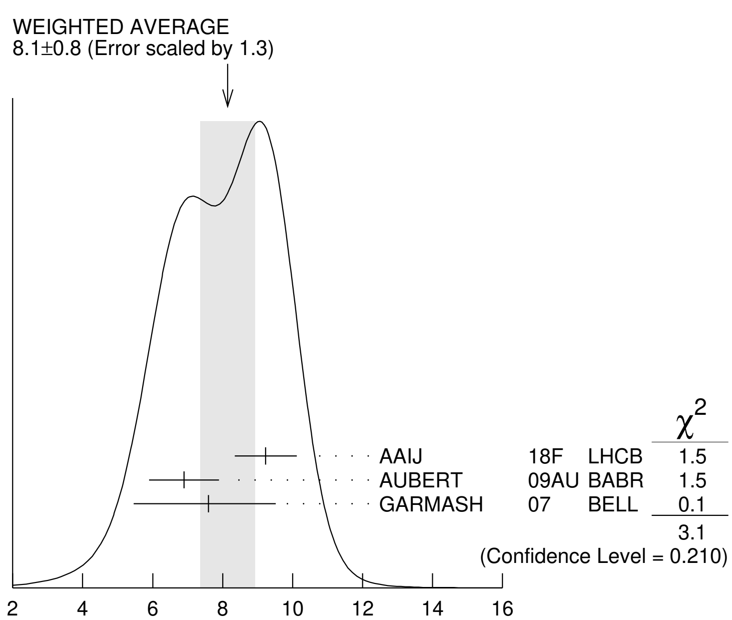
NODE=S042B05;LINKAGE=EP

[3] Uses Dalitz plot analysis of the $B^0 \to K^0\pi^+\pi^-$ final state decays.

NODE=S042B05;LINKAGE=GM

[4] AVERY 89B reports $< 4.2 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.

NODE=S042B05;LINKAGE=A1



$\Gamma(f_0(980)K^0,\ f_0 \to \pi^+\pi^-)/\Gamma_{total}$ (units 10^{-6})

$\Gamma(K^0 f_0(500))/\Gamma_{total}$ — Γ_{331}/Γ

NODE=S042P40
NODE=S042P40

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$0.16^{+0.20}_{-0.04}\pm0.15$	[1] AAIJ	18F	LHCB	pp at 7, 8 TeV

[1] Uses Dalitz plot analysis of the $B^0 \to K^0_S\pi^+\pi^-$ final state decays. For the branching fraction of the reference mode, the PDG 18 average B($B^0 \to K^0_S\pi^+\pi^-$) = $(4.96 \pm 0.20)\times10^{-5}$ is used.

NODE=S042P40;LINKAGE=A

$\Gamma(K^0 f_0(1500))/\Gamma_{total}$ — Γ_{332}/Γ

NODE=S042P42
NODE=S042P42

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$1.29\pm0.27\pm0.70$	[1] AAIJ	18F	LHCB	pp at 7, 8 TeV

[1] Uses Dalitz plot analysis of the $B^0 \to K^0_S\pi^+\pi^-$ final state decays. For the branching fraction of the reference mode, the PDG 18 average B($B^0 \to K^0_S\pi^+\pi^-$) = $(4.96 \pm 0.20)\times10^{-5}$ is used.

NODE=S042P42;LINKAGE=A

$\Gamma(f_2(1270)K^0)/\Gamma_{total}$ — Γ_{333}/Γ

NODE=S042B06
NODE=S042B06

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$2.7^{+1.0}_{-0.8}\pm0.9$		[1] AUBERT	09AU	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<2.5	90	[2] GARMASH	07	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B06;LINKAGE=EP

[2] GARMASH 07 reports B($B^0 \to f_2(1270)K^0$)×B($f_2(1270) \to \pi^+\pi^-$) $< 1.4\times10^{-6}$ using Dalitz plot analysis. We compute B($B^0 \to f_2(1270)K^0$) using the PDG value B($f_2(1270) \to \pi\pi$) = 84.3×10^{-2} and 2/3 for the $\pi^+\pi^-$ fraction.

NODE=S042B06;LINKAGE=GM

$\Gamma(f_x(1300)K0, f_x \to \pi^+\pi^-)/\Gamma_{total}$ — Γ_{334}/Γ

NODE=S042P05
NODE=S042P05

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$1.81^{+0.55}_{-0.45}\pm0.48$	[1] AUBERT	09AU	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042P05;LINKAGE=EP

$\Gamma(K^*(892)^0\pi^0)/\Gamma_{total}$ — Γ_{335}/Γ

NODE=S042S43
NODE=S042S43

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$3.3\pm0.5\pm0.4$		[1,2] LEES	11	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$3.6\pm0.7\pm0.4$		[1,2] AUBERT	08AQ	BABR	Repl. by LEES 11
< 3.5	90	[2] CHANG	04	BELL	$e^+e^- \to \Upsilon(4S)$
< 3.6	90	JESSOP	00	CLE2	$e^+e^- \to \Upsilon(4S)$
<28	90	ASNER	96	CLE2	Repl. by JESSOP 00

[1] Uses Dalitz plot analysis of $B^0 \to K^+\pi^-\pi^0$ decays.

NODE=S042S43;LINKAGE=DA

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S43;LINKAGE=EP

$\Gamma(K_2^*(1430)^+\pi^-)/\Gamma_{total}$ — Γ_{336}/Γ

NODE=S042R72
NODE=S042R72

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$3.65^{+0.15}_{-0.12}\pm0.31$		[1] AAIJ	18F	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<$ 16.2	90	[2,3] AUBERT	08AQ	BABR	$e^+e^- \to \Upsilon(4S)$
$<$ 6	90	[4] GARMASH	07	BELL	$e^+e^- \to \Upsilon(4S)$
$<$ 18	90	[3] GARMASH	04	BELL	Repl. by GARMASH 07
<2600	90	ALBRECHT	91B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Uses Dalitz plot analysis of the $B^0 \to K^0_S\pi^+\pi^-$ final state decays. We compute B($B^0 \to K_2^*(1430)^+\pi^-$) using the PDG 18 value B($K_2^*(1430) \to K\pi$) = 49.9×10^{-2} and 2/3 for the $K^0\pi^+$ fraction. For the branching fraction of the reference mode, the PDG 18 average B($B^0 \to K^0_S\pi^+\pi^-$) = $(4.96 \pm 0.20)\times10^{-5}$ is used.

NODE=S042R72;LINKAGE=A

[2] Uses Dalitz plot analysis of $B^0 \to K^+\pi^-\pi^0$ decays.

NODE=S042R72;LINKAGE=DA

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042R72;LINKAGE=EP

[4] GARMASH 07 reports B($B^0 \to K_2^*(1430)^+\pi^-$)×B($K_2^{*+} \to K^0\pi^+$) $< 2.1\times10^{-6}$ using Dalitz plot analysis. We compute B($B^0 \to K_2^*(1430)^+\pi^-$) using the PDG value B($K_2^*(1430) \to K\pi$) = 49.9×10^{-2} and 2/3 for the $K^0\pi^+$ fraction.

NODE=S042R72;LINKAGE=GM

$\Gamma(K^*(1680)^+\pi^-)/\Gamma_{total}$ — Γ_{337}/Γ

NODE=S042B03

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
14.1±0.58±0.84		[1] AAIJ	18F	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<25	90	[2,3] AUBERT	08AQ	BABR	$e^+e^- \to \Upsilon(4S)$
<10	90	[4] GARMASH	07	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Uses Dalitz plot analysis of the $B^0 \to K^0_S\pi^+\pi^-$ final state decays. We compute B($B^0 \to K^*_2(1430)^+\pi^-$) using the PDG 18 value B($K^*_2(1430) \to K\pi$) = $(49.9 \pm 1.2) \times 10^{-2}$ and 2/3 for the $K^0\pi^+$ fraction. For the branching fraction of the reference mode, the PDG 18 average B($B^0 \to K^0_S\pi^+\pi^-$) = $(4.96 \pm 0.20) \times 10^{-5}$ is used. NODE=S042B03;LINKAGE=A

[2] Uses Dalitz plot analysis of $B^0 \to K^+\pi^-\pi^0$ decays. NODE=S042B03;LINKAGE=DA

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B03;LINKAGE=EP

[4] GARMASH 07 reports B($B^0 \to K^*(1680)^+\pi^-$)×B($K^{*+} \to K^0\pi^+$) < 2.6×10^{-6} using Dalitz plot analysis. We compute B($B^0 \to K^*(1680)^+\pi^-$) using the PDG value B($K^*(1680) \to K\pi$)=38.7×10^{-2} and 2/3 for the $K^0\pi^+$ fraction. NODE=S042B03;LINKAGE=GM

$\Gamma(K^+\pi^-\pi^+\pi^-)/\Gamma_{total}$ — Γ_{338}/Γ

NODE=S042S40

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<2.3 × 10⁻⁴	90	[1] ADAM	96D	DLPH	$e^+e^- \to Z$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<2.1 \times 10^{-4}$	90	[2] ABREU	95N	DLPH	Sup. by ADAM 96D

[1] ADAM 96D assumes $f_{B^0} = f_{B^-} = 0.39$ and $f_{B_s} = 0.12$. Contributions from B^0 and B_s decays cannot be separated. Limits are given for the weighted average of the decay rates for the two neutral B mesons. NODE=S042S40;LINKAGE=DQ

[2] Assumes a B^0, B^- production fraction of 0.39 and a B_s production fraction of 0.12. Contributions from B^0 and B^0_s decays cannot be separated. Limits are given for the weighted average of the decay rates for the two neutral B mesons. NODE=S042S40;LINKAGE=SR

$\Gamma(\rho^0 K^+\pi^-)/\Gamma_{total}$ — Γ_{339}/Γ

NODE=S042T63

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
2.8±0.5±0.5	[1,2] KYEONG	09	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T63;LINKAGE=EP

[2] Required $0.75 < m_{K^+\pi^-} < 1.20$ GeV/c^2. NODE=S042T63;LINKAGE=KY

$\Gamma(f_0(980)K^+\pi^-,\ f_0 \to \pi\pi)/\Gamma_{total}$ — Γ_{340}/Γ

NODE=S042T64

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$\mathbf{1.4 \pm 0.4^{+0.3}_{-0.4}}$	[1,2] KYEONG	09	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T64;LINKAGE=EP

[2] Required $0.75 < m_{K^+K^-} < 1.2$ GeV/c^2. NODE=S042T64;LINKAGE=KY

$\Gamma(K^+\pi^-\pi^+\pi^-\ \text{nonresonant})/\Gamma_{total}$ — Γ_{341}/Γ

NODE=S042T66

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<2.1 × 10⁻⁶	90	[1,2] KYEONG	09	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T66;LINKAGE=EP

[2] Required $0.55 < m_{\pi^+\pi^-} < 1.42$ and $0.75 < m_{K^+\pi^-} < 1.20$ GeV/c^2. NODE=S042T66;LINKAGE=KY

$\Gamma(K^*(892)^0\pi^+\pi^-)/\Gamma_{total}$ — Γ_{342}/Γ

NODE=S042R84

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
54.5±2.9±4.3		[1] AUBERT	07AS	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$4.5^{+1.1}_{-1.0}{}^{+0.9}_{-1.6}$		[1,2] KYEONG	09	BELL	$e^+e^- \to \Upsilon(4S)$
<1400	90	ALBRECHT	91E	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R84;LINKAGE=EP

[2] Required $0.55 < m_{\pi^+\pi^-} < 1.42$ GeV/c^2. NODE=S042R84;LINKAGE=KY

$\Gamma(K^*(892)^0 \rho^0)/\Gamma_{total}$ Γ_{343}/Γ

NODE=S042R15

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
3.9±1.3 OUR AVERAGE		Error includes scale factor of 1.9.			
$5.1\pm0.6^{+0.6}_{-0.8}$		[1] LEES	12K	BABR	$e^+e^- \to \Upsilon(4S)$
$2.1^{+0.8+0.9}_{-0.7-0.5}$		[1] KYEONG	09	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$5.6\pm0.9\pm1.3$		[1] AUBERT,B	06G	BABR	Repl. by LEES 12K
$<$ 34	90	[2] GODANG	02	CLE2	$e^+e^- \to \Upsilon(4S)$
$<$286	90	[3] ABE	00C	SLD	$e^+e^- \to Z$
$<$460	90	ALBRECHT	91B	ARG	$e^+e^- \to \Upsilon(4S)$
$<$580	90	[4] AVERY	89B	CLEO	$e^+e^- \to \Upsilon(4S)$
$<$960	90	[5] AVERY	87	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R15;LINKAGE=EP

[2] Assumes a helicity 00 configuration. For a helicity 11 configuration, the limit decreases to 2.4×10^{-5}. NODE=S042R15;LINKAGE=Z1

[3] ABE 00C assumes B($Z \to b\overline{b}$)=(21.7 ± 0.1)% and the B fractions $f_{B^0}=f_{B^+}=(39.7^{+1.8}_{-2.2})$% and $f_{B_s}=(10.5^{+1.8}_{-2.2})$%. NODE=S042R15;LINKAGE=KQ

[4] AVERY 89B reports $< 6.7 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R15;LINKAGE=A1

[5] AVERY 87 reports $< 1.2 \times 10^{-3}$ assuming the $\Upsilon(4S)$ decays 40% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R15;LINKAGE=AV

$\Gamma(K^*(892)^0 f_0(980),\ f_0 \to \pi\pi)/\Gamma_{total}$ Γ_{344}/Γ

NODE=S042R43

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$3.9^{+2.1}_{-1.8}$ OUR AVERAGE		Error includes scale factor of 3.9.			
$5.7\pm0.6\pm0.4$		[1] LEES	12K	BABR	$e^+e^- \to \Upsilon(4S)$
$1.4^{+0.6+0.6}_{-0.5-0.4}$		[1,2] KYEONG	09	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<$ 4.3	90	[1] AUBERT,B	06G	BABR	$e^+e^- \to \Upsilon(4S)$
$<$170	90	[3] AVERY	89B	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R43;LINKAGE=EP

[2] The upper limit is 2.2×10^{-6} at 90% CL. NODE=S042R43;LINKAGE=LE

[3] AVERY 89B reports $< 2.0 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R43;LINKAGE=A1

$\Gamma(K_1(1270)^+ \pi^-)/\Gamma_{total}$ Γ_{345}/Γ

NODE=S042T71

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.0 \times 10^{-5}$	90	[1] AUBERT	10D	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T71;LINKAGE=EP

$\Gamma(K_1(1400)^+ \pi^-)/\Gamma_{total}$ Γ_{346}/Γ

NODE=S042R71

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.7 \times 10^{-5}$	90	[1] AUBERT	10D	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.1 \times 10^{-3}$	90	ALBRECHT	91B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R71;LINKAGE=EP

$\Gamma(a_1(1260)^- K^+)/\Gamma_{total}$ Γ_{347}/Γ

NODE=S042S39

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
16.3±2.9±2.3		[1,2] AUBERT	08F	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<$230	90	[3] ADAM	96D	DLPH	$e^+e^- \to Z$
$<$390	90	[4] ABREU	95N	DLPH	Sup. by ADAM 96D

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S39;LINKAGE=EP

[2] Assumes $a_1^\pm$ decays only to 3π and B($a_1^\pm \to \pi^\pm\pi^\mp\pi^\pm$) = 0.5. NODE=S042S39;LINKAGE=UB

[3] ADAM 96D assumes $f_{B^0} = f_{B^-} = 0.39$ and $f_{B_s} = 0.12$. Contributions from B^0 and B_s decays cannot be separated. Limits are given for the weighted average of the decay rates for the two neutral B mesons. NODE=S042S39;LINKAGE=DQ

[4] Assumes a B^0, B^- production fraction of 0.39 and a B_s production fraction of 0.12. Contributions from B^0 and B_s^0 decays cannot be separated. Limits are given for the weighted average of the decay rates for the two neutral B mesons. NODE=S042S39;LINKAGE=SR

$\Gamma(K^*(892)^+ \rho^-)/\Gamma_{total}$ — Γ_{348}/Γ

NODE=S042T11

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
10.3±2.3±1.3		[1] LEES	12K	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<12.0	90	[1] AUBERT,B	06G	BABR	Repl. by LEES 12K

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T11;LINKAGE=EP

$\Gamma(K_0^*(1430)^+ \rho^-)/\Gamma_{total}$ — Γ_{349}/Γ

NODE=S042T86

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
28±10±6	[1] LEES	12K	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T86;LINKAGE=EP

$\Gamma(K_1(1400)^0 \rho^0)/\Gamma_{total}$ — Γ_{350}/Γ

NODE=S042R73

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<3.0 × 10^{-3}	90	ALBRECHT	91B	ARG	$e^+e^- \to \Upsilon(4S)$

$\Gamma(K_0^*(1430)^0 \rho^0)/\Gamma_{total}$ — Γ_{351}/Γ

NODE=S042T83

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
27±4±4	[1] LEES	12K	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T83;LINKAGE=EP

$\Gamma(K_0^*(1430)^0 f_0(980),\ f_0 \to \pi\pi)/\Gamma_{total}$ — Γ_{352}/Γ

NODE=S042T84

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
2.7±0.7±0.6	[1] LEES	12K	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T84;LINKAGE=EP

$\Gamma(K_2^*(1430)^0 f_0(980),\ f_0 \to \pi\pi)/\Gamma_{total}$ — Γ_{353}/Γ

NODE=S042T85

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
8.6±1.7±1.0	[1] LEES	12K	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T85;LINKAGE=EP

$\Gamma(K^+ K^-)/\Gamma_{total}$ — Γ_{354}/Γ

NODE=S042S1

VALUE (units 10^{-8})	CL%	DOCUMENT ID		TECN	COMMENT
7.80± 1.27± 0.84		[1] AAIJ	17G	LHCB	pp at 7 and 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
10 ± 8 ± 4		[2,3] DUH	13	BELL	$e^+e^- \to \Upsilon(4S)$
12 ± 8 ± 2		[4] AAIJ	12AR	LHCB	Repl. by AAIJ 17G
23 ±10 ±10		[5] AALTONEN	12L	CDF	$p\overline{p}$ at 1.96 TeV
< 70	90	[6] AALTONEN	09C	CDF	Repl. by AALTONEN 12L
< 50	90	[3] AUBERT	07B	BABR	$e^+e^- \to \Upsilon(4S)$
< 41	90	[3] LIN	07	BELL	Repl. by DUH 13
< 180	90	[7] ABULENCIA,A	06D	CDF	Repl. by AALTONEN 09C
< 37	90	ABE	05G	BELL	Repl. by LIN 07
< 70	90	CHAO	04	BELL	$e^+e^- \to \Upsilon(4S)$
< 80	90	[3] BORNHEIM	03	CLE2	$e^+e^- \to \Upsilon(4S)$
< 60	90	[3] AUBERT	02Q	BABR	$e^+e^- \to \Upsilon(4S)$
< 90	90	[3] CASEY	02	BELL	$e^+e^- \to \Upsilon(4S)$
< 270	90	[3] ABE	01H	BELL	$e^+e^- \to \Upsilon(4S)$
< 250	90	[3] AUBERT	01E	BABR	$e^+e^- \to \Upsilon(4S)$
< 6600	90	[8] ABE	00C	SLD	$e^+e^- \to Z$
< 190	90	[3] CRONIN-HEN...	00	CLE2	$e^+e^- \to \Upsilon(4S)$
< 430	90	GODANG	98	CLE2	Repl. by CRONIN-HENNESSY 00
< 4600		[9] ADAM	96D	DLPH	$e^+e^- \to Z$
< 400	90	ASNER	96	CLE2	Repl. by GODANG 98
< 1800	90	[10] BUSKULIC	96V	ALEP	$e^+e^- \to Z$
<12000	90	[11] ABREU	95N	DLPH	Sup. by ADAM 96D
< 700	90	[3] BATTLE	93	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Supercedes results of AAIJ 12AR. NODE=S042S1;LINKAGE=A
[2] DUH 13 reports also for the same data B($B^0 \to K^+ K^-$) < 0.20×10^{-6} at 90% CL. NODE=S042S1;LINKAGE=B
[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S1;LINKAGE=EP
[4] AAIJ 12AR reports [$\Gamma(B^0 \to K^+ K^-)/\Gamma_{total}$] / [B($B_s^0 \to K^+ K^-$)] / [$\Gamma(\overline{b} \to B_s^0)/\Gamma(\overline{b} \to B^0)$] = $0.018^{+0.008}_{-0.007} \pm 0.009$ which we multiply by our best values B($B_s^0 \to K^+ K^-$) = $(2.72 \pm 0.23) \times 10^{-5}$, $\Gamma(\overline{b} \to B_s^0)/\Gamma(\overline{b} \to B^0) = 0.246 \pm 0.023$. Our first error is their experiment's error and our second error is the systematic error from using our best values. NODE=S042S1;LINKAGE=AI
[5] Reported a central value of $(0.23 \pm 0.10 \pm 0.10) \times 10^{-6}$ using B($B^0 \to K^+ \pi^-$) = $(19.4 \pm 0.6) \times 10^{-6}$. NODE=S042S1;LINKAGE=AL
[6] Obtains this result from B($K^+ K^-$)/B($K^+ \pi^-$) = $0.020 \pm 0.008 \pm 0.006$, assuming B($B^0 \to K^+ \pi^-$) = $(19.4 \pm 0.6) \times 10^{-6}$. NODE=S042S1;LINKAGE=AA
[7] ABULENCIA,A 06D obtains this from $\Gamma(K^+ K^-)/\Gamma(K^+ \pi^-) < 0.10$ at 90% CL, assuming B($B^0 \to K^+ \pi^-$) = $(18.9 \pm 0.7) \times 10^{-6}$. NODE=S042S1;LINKAGE=AB
[8] ABE 00C assumes B($Z \to b\overline{b}$)=(21.7 ± 0.1)% and the B fractions f_{B^0}=f_{B^+}=$(39.7^{+1.8}_{-2.2})$% and f_{B_s}=$(10.5^{+1.8}_{-2.2})$%. NODE=S042S1;LINKAGE=KQ
[9] ADAM 96D assumes $f_{B^0} = f_{B^-} = 0.39$ and $f_{B_s} = 0.12$. Contributions from B^0 and B_s decays cannot be separated. Limits are given for the weighted average of the decay rates for the two neutral B mesons. NODE=S042S1;LINKAGE=DQ
[10] BUSKULIC 96V assumes PDG 96 production fractions for B^0, B^+, B_s, b baryons. NODE=S042S1;LINKAGE=BV
[11] Assumes a B^0, B^- production fraction of 0.39 and a B_s production fraction of 0.12. Contributions from B^0 and B_s^0 decays cannot be separated. Limits are given for the weighted average of the decay rates for the two neutral B mesons. NODE=S042S1;LINKAGE=SR

$\Gamma(K^0 \overline{K}^0)/\Gamma_{total}$ Γ_{355}/Γ

NODE=S042S60
NODE=S042S60

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
1.21±0.16 OUR AVERAGE					
1.26±0.19±0.05		[1] DUH	13	BELL	$e^+ e^- \to \Upsilon(4S)$
1.08±0.28±0.11		[1] AUBERT,BE	06C	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$0.87^{+0.25}_{-0.20}\pm0.09$		[1] LIN	07	BELL	Repl. by DUH 13
0.8 ±0.3 ±0.9		[1] ABE	05G	BELL	Repl. by LIN 07
$1.19^{+0.40}_{-0.35}\pm0.13$		[1] AUBERT,BE	05E	BABR	Repl. by AUBERT,BE 06C
< 1.8	90	[1] AUBERT	04M	BABR	$e^+ e^- \to \Upsilon(4S)$
< 1.5	90	[1] CHAO	04	BELL	Repl. by ABE 05G
< 3.3	90	[1] BORNHEIM	03	CLE2	$e^+ e^- \to \Upsilon(4S)$
< 4.1	90	[1] CASEY	02	BELL	$e^+ e^- \to \Upsilon(4S)$
<17	90	GODANG	98	CLE2	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S60;LINKAGE=EP

$\Gamma(K^0 \overline{K}^0)/\Gamma(K^0 \phi)$ $\Gamma_{355}/\Gamma_{364}$

NODE=S042P58
NODE=S042P58

VALUE	DOCUMENT ID		TECN	COMMENT
0.17±0.08±0.02	[1] AAIJ	20F	LHCB	pp at 7, 8, 13 TeV

[1] Observed signal with a significance of 3.5 σ. NODE=S042P58;LINKAGE=A

$\Gamma(K^0 K^- \pi^+)/\Gamma_{total}$ Γ_{356}/Γ

NODE=S042B31
NODE=S042B31

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
6.7±0.5 OUR FIT					
7.0±0.6 OUR AVERAGE					
7.2±0.7±0.3		[1] LAI	19	BELL	$e^+ e^- \to \Upsilon(4S)$
6.4±1.0±0.6		[1] DEL-AMO-SA...	10E	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<18	90	[1] GARMASH	04	BELL	$e^+ e^- \to \Upsilon(4S)$
<21	90	[1] ECKHART	02	CLE2	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B31;LINKAGE=EP

$\Gamma(K^*(892)^\pm K^\mp)/\Gamma_{total}$ Γ_{357}/Γ

NODE=S042C27
NODE=S042C27

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.4 × 10^{-6}	90	AAIJ	14BM	LHCB	pp at 7 TeV

$\Gamma(K^0 K^- \pi^+)/\Gamma(K^0 \pi^+ \pi^-)$ — $\Gamma_{356}/\Gamma_{322}$

NODE=S042C18

VALUE	DOCUMENT ID	TECN	COMMENT
0.134±0.011 OUR FIT			
0.123±0.009±0.015	AAIJ 17BP	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.128±0.017±0.009	AAIJ 13BP	LHCB	Repl. by AAIJ 17BP

$[\Gamma(\overline{K}^{*0} K^0) + \Gamma(K^{*0} \overline{K}^0)]/\Gamma_{total}$ — Γ_{358}/Γ

NODE=S042T10

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<0.96	90	[1] AAIJ 16	LHCB	pp at 7 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<1.9	90	[2] AUBERT,BE 06N	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes $B(B^0 \to K^0 \pi^+ \pi^-) = (4.96 \pm 0.20) \times 10^{-5}$. NODE=S042T10;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T10;LINKAGE=EP

$\Gamma(K^+ K^- \pi^0)/\Gamma_{total}$ — Γ_{359}/Γ

NODE=S042B33

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
2.17±0.60±0.24		[1] GAUR 13	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<19	90	[1] ECKHART 02	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B33;LINKAGE=EP

$\Gamma(K^0_S K^0_S \pi^0)/\Gamma_{total}$ — Γ_{360}/Γ

NODE=S042T60

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<0.9 \times 10^{-6}$	90	[1] AUBERT 09AD	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T60;LINKAGE=EP

$\Gamma(K^0_S K^0_S \eta)/\Gamma_{total}$ — Γ_{361}/Γ

NODE=S042T61

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<1.0 \times 10^{-6}$	90	[1] AUBERT 09AD	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T61;LINKAGE=EP

$\Gamma(K^0_S K^0_S \eta')/\Gamma_{total}$ — Γ_{362}/Γ

NODE=S042T62

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<2.0 \times 10^{-6}$	90	[1] AUBERT 09AD	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T62;LINKAGE=EP

$\Gamma(K^0 K^+ K^-)/\Gamma_{total}$ — Γ_{363}/Γ

NODE=S042R81

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
26.8±1.1 OUR FIT				
26.6±1.2 OUR AVERAGE				
26.5±0.9±0.8		[1,2] LEES 12O	BABR	$e^+e^- \to \Upsilon(4S)$
28.3±3.3±4.0		[1] GARMASH 04	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
23.8±2.0±1.6		[1] AUBERT,B 04V	BABR	Repl. by LEES 12O
<1300	90	ALBRECHT 91E	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R81;LINKAGE=EP

[2] All intermediate charmonium and charm resonances are removed, except of χ_{c0}. NODE=S042R81;LINKAGE=LE

$\Gamma(K^0 K^+ K^-)/\Gamma(K^0 \pi^+ \pi^-)$ — $\Gamma_{363}/\Gamma_{322}$

NODE=S042C19

VALUE	DOCUMENT ID	TECN	COMMENT
0.539±0.025 OUR FIT			
0.549±0.018±0.033	AAIJ 17BP	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.385±0.031±0.023	AAIJ 13BP	LHCB	Repl. by AAIJ 17BP

$\Gamma(K^0\phi)/\Gamma_{total}$ Γ_{364}/Γ

NODE=S042R13

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
7.3±0.7 OUR AVERAGE					
$7.1\pm0.6^{+0.4}_{-0.3}$		[1] LEES	12O	BABR	$e^+e^- \to \Upsilon(4S)$
$9.0^{+2.2}_{-1.8}\pm0.7$		[1] CHEN	03B	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$8.4^{+1.5}_{-1.3}\pm0.5$		[1] AUBERT	04A	BABR	Repl. by LEES 12O
$8.1^{+3.1}_{-2.5}\pm0.8$		[1] AUBERT	01D	BABR	$e^+e^- \to \Upsilon(4S)$
$<$ 12.3	90	[1] BRIERE	01	CLE2	$e^+e^- \to \Upsilon(4S)$
$<$ 31	90	[1] BERGFELD	98	CLE2	
$<$ 88	90	ASNER	96	CLE2	$e^+e^- \to \Upsilon(4S)$
$<$ 720	90	ALBRECHT	91B	ARG	$e^+e^- \to \Upsilon(4S)$
$<$ 420	90	[2] AVERY	89B	CLEO	$e^+e^- \to \Upsilon(4S)$
$<$1000	90	[3] AVERY	87	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R13;LINKAGE=EP

[2] AVERY 89B reports $< 4.9\times10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R13;LINKAGE=A1

[3] AVERY 87 reports $< 1.3\times10^{-3}$ assuming the $\Upsilon(4S)$ decays 40% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R13;LINKAGE=AV

$\Gamma(f_0(980)K^0,\ f_0 \to K^+K^-)/\Gamma_{total}$ Γ_{365}/Γ

NODE=S042T87

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$\mathbf{7.0^{+2.6}_{-1.8}\pm2.4}$	[1] LEES	12O	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T87;LINKAGE=EP

$\Gamma(f_0(1500)K^0)/\Gamma_{total}$ Γ_{366}/Γ

NODE=S042T88

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$\mathbf{13.3^{+5.8}_{-4.4}\pm3.2}$	[1] LEES	12O	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T88;LINKAGE=EP

$\Gamma(f'_2(1525)^0K^0)/\Gamma_{total}$ Γ_{367}/Γ

NODE=S042T89

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.29^{+0.27}_{-0.18}\pm0.36}$	[1] LEES	12O	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T89;LINKAGE=EP

$\Gamma(f_0(1710)K^0,\ f_0 \to K^+K^-)/\Gamma_{total}$ Γ_{368}/Γ

NODE=S042T90

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
4.4±0.7±0.5	[1] LEES	12O	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T90;LINKAGE=EP

$\Gamma(K^0K^+K^-$ nonresonant$)/\Gamma_{total}$ Γ_{369}/Γ

NODE=S042T95

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
33±5±9	[1] LEES	12O	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T95;LINKAGE=EP

$\Gamma(K^0_SK^0_SK^0_S)/\Gamma_{total}$ Γ_{370}/Γ

NODE=S042B59

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
6.0 ±0.5 OUR AVERAGE Error includes scale factor of 1.1.				
6.19±0.48±0.19	[1] LEES	12I	BABR	$e^+e^- \to \Upsilon(4S)$
$4.2\ ^{+1.6}_{-1.3}\ \pm0.8$	[1] GARMASH	04	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$6.9\ ^{+0.9}_{-0.8}\ \pm0.6$	[1] AUBERT,B	05	BABR	Repl. by LEES 12I

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B59;LINKAGE=EP

$\Gamma(f_0(980)K^0,\ f_0 \to K^0_S K^0_S)/\Gamma_{total}$ — Γ_{371}/Γ

NODE=S042T91

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$2.7^{+1.3}_{-1.2}\pm1.3$	[1,2] LEES	12I	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T91;LINKAGE=EP
[2] Uses Dalitz plot analysis of the $B^0 \to K^0_S K^0_S K^0_S$ decay. NODE=S042T91;LINKAGE=LE

$\Gamma(f_0(1710)K^0,\ f_0 \to K^0_S K^0_S)/\Gamma_{total}$ — Γ_{372}/Γ

NODE=S042T92

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$0.50^{+0.46}_{-0.24}\pm0.11$	[1,2] LEES	12I	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T92;LINKAGE=EP
[2] Uses Dalitz plot analysis of the $B^0 \to K^0_S K^0_S K^0_S$ decay. NODE=S042T92;LINKAGE=LE

$\Gamma(f_2(2010)K^0,\ f_2 \to K^0_S K^0_S)/\Gamma_{total}$ — Γ_{373}/Γ

NODE=S042T93

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$0.54^{+0.21}_{-0.20}\pm0.52$	[1,2] LEES	12I	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T93;LINKAGE=EP
[2] Uses Dalitz plot analysis of the $B^0 \to K^0_S K^0_S K^0_S$ decay. NODE=S042T93;LINKAGE=LE

$\Gamma(K^0_S K^0_S K^0_S \text{ nonresonant})/\Gamma_{total}$ — Γ_{374}/Γ

NODE=S042T94

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$13.3^{+2.2}_{-2.3}\pm2.2$	[1,2] LEES	12I	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T94;LINKAGE=EP
[2] Uses Dalitz plot analysis of the $B^0 \to K^0_S K^0_S K^0_S$ decay. NODE=S042T94;LINKAGE=LE

$\Gamma(K^0_S K^0_S K^0_L)/\Gamma_{total}$ — Γ_{375}/Γ

NODE=S042T08

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<16	90	[1] AUBERT,B	06R	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T08;LINKAGE=EP

$\Gamma(K^*(892)^0 K^+ K^-)/\Gamma_{total}$ — Γ_{376}/Γ

NODE=S042R85

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
27.5±1.3±2.2		[1] AUBERT	07AS	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<610	90	ALBRECHT	91E	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R85;LINKAGE=EP

$\Gamma(K^*(892)^0 \phi)/\Gamma_{total}$ — Γ_{377}/Γ

NODE=S042R14

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
10.0±0.5 OUR FIT					
10.0±0.5 OUR AVERAGE					
10.4±0.5±0.6		[1] PRIM	13	BELL	$e^+e^- \to \Upsilon(4S)$
9.7±0.5±0.5		[1] AUBERT	08BG	BABR	$e^+e^- \to \Upsilon(4S)$
$11.5^{+4.5}_{-3.7}{}^{+1.8}_{-1.7}$		[1] BRIERE	01	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
9.2±0.7±0.6		[1] AUBERT	07D	BABR	Repl. by AUBERT 08BG
9.2±0.9±0.5		[1] AUBERT,B	04W	BABR	Repl. by AUBERT 07D
11.2±1.3±0.8		[1] AUBERT	03V	BABR	Repl. by AUBERT,B 04W
$10.0^{+1.6}_{-1.5}{}^{+0.7}_{-0.8}$		[1] CHEN	03B	BELL	Repl. by PRIM 13
$8.7^{+2.5}_{-2.1}\pm1.1$		[1] AUBERT	01D	BABR	Repl. by AUBERT 03V
<384	90	[2] ABE	00C	SLD	$e^+e^- \to Z$
< 21	90	[1] BERGFELD	98	CLE2	
< 43	90	ASNER	96	CLE2	$e^+e^- \to \Upsilon(4S)$
<320	90	ALBRECHT	91B	ARG	$e^+e^- \to \Upsilon(4S)$
<380	90	[3] AVERY	89B	CLEO	$e^+e^- \to \Upsilon(4S)$
<380	90	[4] AVERY	87	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R14;LINKAGE=EP

[2] ABE 00C assumes B($Z \to b\overline{b}$)=(21.7 ± 0.1)% and the B fractions $f_{B^0}=f_{B^+}=(39.7^{+1.8}_{-2.2})$% and $f_{B_s}=(10.5^{+1.8}_{-2.2})$%. NODE=S042R14;LINKAGE=KQ

[3] AVERY 89B reports $< 4.4 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R14;LINKAGE=A1

[4] AVERY 87 reports $< 4.7 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 40% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R14;LINKAGE=AV

$\Gamma(K^+K^-\pi^+\pi^-$ nonresonant$)/\Gamma_{total}$ — Γ_{378}/Γ

NODE=S042T74
NODE=S042T74

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<71.7	90	[1,2] CHIANG 10	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Measured in the range 0.7< $m_{K\pi}$ < 1.7 and corrected using PS assumption for the full $K\pi$ mass range. NODE=S042T74;LINKAGE=CH

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T74;LINKAGE=EP

$\Gamma(K^*(892)^0K^-\pi^+)/\Gamma_{total}$ — Γ_{379}/Γ

NODE=S042T30
NODE=S042T30

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
4.5 ±1.3 OUR AVERAGE			
$2.11^{+5.63}_{-5.26}{}^{+4.85}_{-4.75}$	[1,2] CHIANG 10	BELL	$e^+e^- \to \Upsilon(4S)$
4.6 ±1.1 ±0.8	[2] AUBERT 07AS	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Measured in the range 0.7< $m_{K\pi}$ < 1.7 and corrected using PS assumption for the full $K\pi$ mass range. The quoted result is equivalent to the upper limit of $< 13.9 \times 10^{-6}$ at 90% CL. NODE=S042T30;LINKAGE=CH

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T30;LINKAGE=EP

$\Gamma(K^*(892)^0\overline{K}^*(892)^0)/\Gamma_{total}$ — Γ_{380}/Γ

NODE=S042S87
NODE=S042S87

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
0.83±0.24 OUR AVERAGE Error includes scale factor of 1.5. See the ideogram below.				
0.85±0.07±0.20		[1] AAIJ 19L	LHCB	pp at 7 and 8 TeV
$0.26^{+0.33}_{-0.29}{}^{+0.10}_{-0.08}$		[2,3] CHIANG 10	BELL	$e^+e^- \to \Upsilon(4S)$
$1.28^{+0.35}_{-0.30}$±0.11		[3] AUBERT 08I	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
< 22	90	[4] GODANG 02	CLE2	$e^+e^- \to \Upsilon(4S)$
<469	90	[5] ABE 00C	SLD	$e^+e^- \to Z$

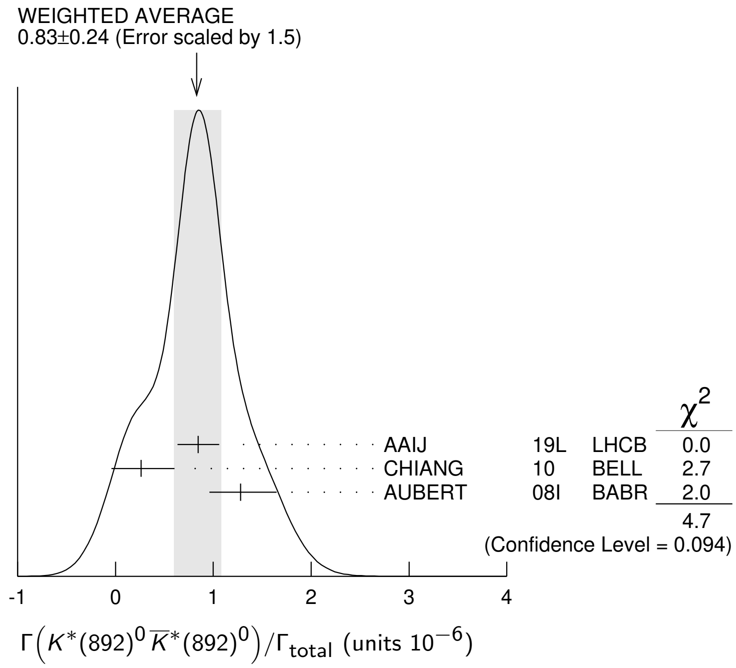
[1] AAIJ 19L reports $[\Gamma(B^0 \to K^*(892)^0\overline{K}^*(892)^0)/\Gamma_{total}]$ / $[B(B^0_s \to \overline{K}^*(892)^0K^*(892)^0)] = 0.0758 \pm 0.0057 \pm 0.0030$ which we multiply by our best value $B(B^0_s \to \overline{K}^*(892)^0K^*(892)^0) = (1.11 \pm 0.27) \times 10^{-5}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042S87;LINKAGE=C

[2] Measured in the range 0.7< $m_{K\pi}$ < 1.7 and corrected using PS assumption for the full $K\pi$ mass range. The quoted result is equivalent to the upper limit of $< 0.8 \times 10^{-6}$ at 90% CL. NODE=S042S87;LINKAGE=CH

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S87;LINKAGE=EP

[4] Assumes a helicity 00 configuration. For a helicity 11 configuration, the limit decreases to 1.9×10^{-5}. NODE=S042S87;LINKAGE=Z1

[5] ABE 00C assumes B($Z \to b\overline{b}$)=(21.7 ± 0.1)% and the B fractions $f_{B^0}=f_{B^+}=(39.7^{+1.8}_{-2.2})$% and $f_{B_s}=(10.5^{+1.8}_{-2.2})$%. NODE=S042S87;LINKAGE=KQ



$\Gamma\left(K^+ K^+ \pi^- \pi^- \text{nonresonant}\right)/\Gamma_{\text{total}}$ Γ_{381}/Γ

NODE=S042T78
NODE=S042T78

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<6.0	90	[1] CHIANG	10	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T78;LINKAGE=EP

$\Gamma\left(K^*(892)^0 K^+ \pi^-\right)/\Gamma_{\text{total}}$ Γ_{382}/Γ

NODE=S042T31
NODE=S042T31

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<2.2	90	[1] AUBERT	07AS	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<7.6	90	[1] CHIANG	10	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T31;LINKAGE=EP

$\Gamma\left(K^*(892)^0 K^*(892)^0\right)/\Gamma_{\text{total}}$ Γ_{383}/Γ

NODE=S042B9
NODE=S042B9

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
< 0.2	90	[1] CHIANG	10	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 0.41	90	[1] AUBERT	08I	BABR	$e^+ e^- \to \Upsilon(4S)$
<37	90	[2] GODANG	02	CLE2	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B9;LINKAGE=EP

[2] Assumes a helicity 00 configuration. For a helicity 11 configuration, the limit decreases to 2.9×10^{-5}.

NODE=S042B9;LINKAGE=Z1

$\Gamma\left(K^*(892)^+ K^*(892)^-\right)/\Gamma_{\text{total}}$ Γ_{384}/Γ

NODE=S042B10
NODE=S042B10

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
< 2.0	90	[1] AUBERT	08AP	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<141	90	[2] GODANG	02	CLE2	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B10;LINKAGE=EP

[2] Assumes a helicity 00 configuration. For a helicity 11 configuration, the limit decreases to 8.9×10^{-5}.

NODE=S042B10;LINKAGE=Z1

$\Gamma\left(K_1(1400)^0 \phi\right)/\Gamma_{\text{total}}$ Γ_{385}/Γ

NODE=S042R75
NODE=S042R75

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5.0 \times 10^{-3}$	90	ALBRECHT	91B	ARG	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(\phi(K\pi)^{*0}_0)/\Gamma_{total}$ Γ_{386}/Γ NODE=S042T15

This decay refers to the coherent sum of resonant and nonresonant $J^P = 0^+$ $K\pi$ components with $1.13 < m_{K\pi} < 1.53$ GeV/c^2. NODE=S042T15

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
4.3±0.4 OUR AVERAGE				
4.3±0.4±0.4	[1] PRIM	13	BELL	$e^+e^- \to \Upsilon(4S)$
4.3±0.6±0.4	[1] AUBERT	08BG	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
5.0±0.8±0.3	[1] AUBERT	07D	BABR	Repl. by AUBERT 08BG

NODE=S042T15

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T15;LINKAGE=EP

$\Gamma(\phi(K\pi)^{*0}_0\ (1.60<m_{K\pi}<2.15))/\Gamma_{total}$ Γ_{387}/Γ NODE=S042T25

This decay refers to the coherent sum of resonant and nonresonant $J^P = 0^+$ $K\pi$ components with $1.60 < m_{K\pi} < 2.15$ GeV/c^2. NODE=S042T25

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<1.7	90	[1] AUBERT	07AO	BABR	$e^+e^- \to \Upsilon(4S)$

NODE=S042T25

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T25;LINKAGE=EP

$\Gamma(K^*_0(1430)^0 K^-\pi^+)/\Gamma_{total}$ Γ_{388}/Γ NODE=S042T75

NODE=S042T75

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<31.8	90	[1,2] CHIANG	10	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Measured in the range $0.7< m_{K\pi} < 1.7$ and corrected using PS assumption for the full $K\pi$ mass range. NODE=S042T75;LINKAGE=CH

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T75;LINKAGE=EP

$\Gamma(K^*_0(1430)^0 \overline{K}^*(892)^0)/\Gamma_{total}$ Γ_{389}/Γ NODE=S042T76

NODE=S042T76

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<3.3	90	[1,2] CHIANG	10	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Measured in the range $0.7< m_{K\pi} < 1.7$ and corrected using PS assumption for the full $K\pi$ mass range. NODE=S042T76;LINKAGE=CH

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T76;LINKAGE=EP

$\Gamma(K^*_0(1430)^0 \overline{K}^*_0(1430)^0)/\Gamma_{total}$ Γ_{390}/Γ NODE=S042T77

NODE=S042T77

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<8.4	90	[1,2] CHIANG	10	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Measured in the range $0.7< m_{K\pi} < 1.7$ and corrected using PS assumption for the full $K\pi$ mass range. NODE=S042T77;LINKAGE=CH

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T77;LINKAGE=EP

$\Gamma(K^*_0(1430)^0\phi)/\Gamma_{total}$ Γ_{391}/Γ NODE=S042Q32

NODE=S042Q32

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
3.9±0.5±0.6	[1] AUBERT	08BG	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
4.6±0.7±0.6	[1] AUBERT	07D	BABR	Repl. by AUBERT 08BG
seen	[2] AUBERT,B	04W	BABR	Repl. by AUBERT 07D

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q32;LINKAGE=EP

[2] Observed 181 ± 17 events with statistical significance greater than 10 σ. NODE=S042Q32;LINKAGE=AU

$\Gamma(K^*_0(1430)^0 K^*(892)^0)/\Gamma_{total}$ Γ_{392}/Γ NODE=S042T79

NODE=S042T79

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<1.7	90	[1] CHIANG	10	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T79;LINKAGE=EP

$\Gamma(K^*_0(1430)^0 K^*_0(1430)^0)/\Gamma_{total}$ Γ_{393}/Γ NODE=S042T80

NODE=S042T80

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<4.7	90	[1] CHIANG	10	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T80;LINKAGE=EP

$\Gamma(K^*(1680)^0\phi)/\Gamma_{total}$ Γ_{394}/Γ NODE=S042T26

NODE=S042T26

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<3.5	90	[1] AUBERT	07AO	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T26;LINKAGE=EP

$\Gamma(K^*(1780)^0\phi)/\Gamma_{total}$ — Γ_{395}/Γ

NODE=S042T27
NODE=S042T27

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<2.7	90	[1] AUBERT 07AO	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T27;LINKAGE=EP

$\Gamma(K^*(2045)^0\phi)/\Gamma_{total}$ — Γ_{396}/Γ

NODE=S042T28
NODE=S042T28

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<15.3	90	[1] AUBERT 07AO	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T28;LINKAGE=EP

$\Gamma(K_2^*(1430)^0\rho^0)/\Gamma_{total}$ — Γ_{397}/Γ

NODE=S042R74
NODE=S042R74

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
$<1.1 \times 10^3$	90	ALBRECHT 91B	ARG	$e^+e^- \to \Upsilon(4S)$

$\Gamma(K_2^*(1430)^0\phi)/\Gamma_{total}$ — Γ_{398}/Γ

NODE=S042R76
NODE=S042R76

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
6.8±0.9 OUR AVERAGE		Error includes scale factor of 1.2.		
$5.5^{+0.9}_{-0.7}\pm1.0$		[1] PRIM 13	BELL	$e^+e^- \to \Upsilon(4S)$
$7.5\pm0.9\pm0.5$		[1] AUBERT 08BG	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$7.8\pm1.1\pm0.6$		[1] AUBERT 07D	BABR	Repl. by AUBERT 08BG
seen		[2] AUBERT,B 04W	BABR	Repl. by AUBERT 07D
<1400	90	ALBRECHT 91B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042R76;LINKAGE=EP

[2] The angular distribution of $B \to \phi K^*(1430)$ provides evidence with statistical significance of 3.2 σ.

NODE=S042R76;LINKAGE=AU

$\Gamma(K^0\phi\phi)/\Gamma_{total}$ — Γ_{399}/Γ

NODE=S042T14
NODE=S042T14

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
3.7 ±0.7 OUR AVERAGE	Error includes scale factor of 1.3.		
$3.02^{+0.75}_{-0.66}\pm0.20$	[1] MOHANTY 21	BELL	$e^+e^- \to \Upsilon(4S)$
$4.5\pm0.8\pm0.3$	[1] LEES 11A	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$4.1^{+1.7}_{-1.4}\pm0.4$	[1] AUBERT,BE 06H	BABR	Repl. by LEES 11A

[1] Assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$ and the $\phi\phi$ invariant mass below 2.85 GeV/c^2.

NODE=S042T14;LINKAGE=AU

$\Gamma(\eta'\eta' K^0)/\Gamma_{total}$ — Γ_{400}/Γ

NODE=S042T07
NODE=S042T07

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<31	90	[1] AUBERT,B 06P	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T07;LINKAGE=EP

$\Gamma(\eta K^0\gamma)/\Gamma_{total}$ — Γ_{401}/Γ

NODE=S042T01
NODE=S042T01

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
7.6±1.8 OUR AVERAGE			
$7.1^{+2.1}_{-2.0}\pm0.4$	[1,2] AUBERT 09	BABR	$e^+e^- \to \Upsilon(4S)$
$8.7^{+3.1}_{-2.7}{}^{+1.9}_{-1.6}$	[2,3] NISHIDA 05	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$11.3^{+2.8}_{-1.6}\pm0.6$	[1,2] AUBERT,B 06M	BABR	Repl. by AUBERT 09

[1] $m_{\eta K} < 3.25$ GeV/c^2.

NODE=S042T01;LINKAGE=AR

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T01;LINKAGE=EP

[3] $m_{\eta K} < 2.4$ GeV/c^2

NODE=S042T01;LINKAGE=NI

$\Gamma(\eta' K^0 \gamma)/\Gamma_{total}$ — Γ_{402}/Γ

NODE=S042T06

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<6.4	90	[1,2] WEDD 10	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<6.6	90	[1,3] AUBERT,B 06M	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T06;LINKAGE=EP
[2] $m_{\eta' K} < 3.4$ GeV/c^2. NODE=S042T06;LINKAGE=WE
[3] $m_{\eta' K} < 3.25$ GeV/c^2. NODE=S042T06;LINKAGE=AR

$\Gamma(K^0 \phi \gamma)/\Gamma_{total}$ — Γ_{403}/Γ

NODE=S042RA3

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
2.74±0.60±0.32		[1] SAHOO 11A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<2.7	90	[1] AUBERT 07Q	BABR	$e^+e^- \to \Upsilon(4S)$
<8.3	90	[1] DRUTSKOY 04	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at $\Upsilon(4S)$. NODE=S042RA3;LINKAGE=EP

$\Gamma(K^+ \pi^- \gamma)/\Gamma_{total}$ — Γ_{404}/Γ

NODE=S042B34

VALUE	DOCUMENT ID	TECN	COMMENT
$(4.6^{+1.3+0.5}_{-1.2-0.7}) \times 10^{-6}$	[1,2] NISHIDA 02	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B34;LINKAGE=EP
[2] 1.25 GeV/c^2 $< M_{K\pi} <$ 1.6 GeV/c^2 NODE=S042B34;LINKAGE=NA

$\Gamma(K^*(892)^0 \gamma)/\Gamma_{total}$ — Γ_{405}/Γ

NODE=S042R16

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
41.8± 2.5 OUR AVERAGE		Error includes scale factor of 2.1.		
39.6± 0.7±1.4		[1] HORIGUCHI 17	BELL	$e^+e^- \to \Upsilon(4S)$
44.7± 1.0±1.6		[2] AUBERT 09AO	BABR	$e^+e^- \to \Upsilon(4S)$
$45.5^{+7.2}_{-6.8}\pm3.4$		[3] COAN 00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
39.2± 2.0±2.4		[4] AUBERT,BE 04A	BABR	Repl. by AUBERT 09AO
40.1± 2.1±1.7		[5] NAKAO 04	BELL	Repl. by HORIGUCHI 17
< 110	90	ACOSTA 02G	CDF	$p\overline{p}$ at 1.8 TeV
42.3± 4.0±2.2		[5] AUBERT 02C	BABR	Repl. by AUBERT,BE 04A
< 210	90	[6] ADAM 96D	DLPH	$e^+e^- \to Z$
40 ±17 ±8		[7] AMMAR 93	CLE2	Repl. by COAN 00
< 420	90	ALBRECHT 89G	ARG	$e^+e^- \to \Upsilon(4S)$
< 240	90	[8] AVERY 89B	CLEO	$e^+e^- \to \Upsilon(4S)$
<2100	90	AVERY 87	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Uses B($\Upsilon(4S) \to B^+B^-$) = (51.4 ± 0.6)% and B($\Upsilon(4S) \to B^0\overline{B}^0$) = (48.6 ± 0.6)%. NODE=S042R16;LINKAGE=C
[2] Uses B($\Upsilon(4S) \to B^+B^-$) = (51.6 ± 0.6)% and B($\Upsilon(4S) \to B^0\overline{B}^0$) = (48.4 ± 0.6)%. NODE=S042R16;LINKAGE=AB
[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. No evidence for a nonresonant $K\pi\gamma$ contamination was seen; the central value assumes no contamination. NODE=S042R16;LINKAGE=AP
[4] Uses the production ratio of charged and neutral B from $\Upsilon(4S)$ decays $R^{+/0} = 1.006 \pm 0.048$. NODE=S042R16;LINKAGE=AU
[5] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R16;LINKAGE=EP
[6] ADAM 96D assumes $f_{B^0} = f_{B^-} = 0.39$ and $f_{B_s} = 0.12$. NODE=S042R16;LINKAGE=DQ
[7] AMMAR 93 observed 6.6 ± 2.8 events above background. NODE=S042R16;LINKAGE=B
[8] AVERY 89B reports $< 2.8 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R16;LINKAGE=A1

$\Gamma(K^*(1410)\gamma)/\Gamma_{total}$ — Γ_{406}/Γ

NODE=S042B36

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<1.3 \times 10^{-4}$	90	[1] NISHIDA 02	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B36;LINKAGE=EP

$\Gamma(K^+ \pi^- \gamma \text{ nonresonant})/\Gamma_{total}$ — Γ_{407}/Γ

NODE=S042B37

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<2.6 \times 10^{-6}$	90	[1,2] NISHIDA 02	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B37;LINKAGE=EP
[2] 1.25 GeV/c^2 $< M_{K\pi} <$ 1.6 GeV/c^2 NODE=S042B37;LINKAGE=NA

$\Gamma(K^*(892)^0 X(214),\ X \to \mu^+\mu^-)/\Gamma_{total}$ — Γ_{408}/Γ

NODE=S042T81

$X(214)$ is a hypothetical particle of mass 214 MeV/c^2 reported by the HyperCP experiment (PARK 05)

VALUE (units 10^{-8})	CL%	DOCUMENT ID		TECN	COMMENT
<2.26	90	[1,2] HYUN	10	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] Based on scalar nature of X particle. With a vector X assumption, the upper limit is 2.27×10^{-8}.

NODE=S042T81;LINKAGE=EP
NODE=S042T81;LINKAGE=HY

$\Gamma(K^0\pi^+\pi^-\gamma)/\Gamma_{total}$ — Γ_{409}/Γ

NODE=S042T02

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
1.99±0.18 OUR AVERAGE				
$2.05 \pm 0.20 ^{+0.26}_{-0.22}$	[1,2] DEL-AMO-SA...	16	BABR	$e^+e^- \to \Upsilon(4S)$
1.85±0.21±0.12	[1,3] AUBERT	07R	BABR	$e^+e^- \to \Upsilon(4S)$
2.40±0.4 ±0.3	[3,4] YANG	05	BELL	$e^+e^- \to \Upsilon(4S)$

[1] $M_{K\pi\pi} < 1.8$ GeV/c^2.
[2] Uses B($\Upsilon(4S) \to B^+B^-$) = 0.513 ± 0.006.
[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[4] $M_{K\pi\pi} < 2.0$ GeV/c^2.

NODE=S042T02;LINKAGE=AT
NODE=S042T02;LINKAGE=BP
NODE=S042T02;LINKAGE=EP
NODE=S042T02;LINKAGE=YA

$\Gamma(K^+\pi^-\pi^0\gamma)/\Gamma_{total}$ — Γ_{410}/Γ

NODE=S042T17

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
4.07±0.22±0.31	[1,2] AUBERT	07R	BABR	$e^+e^- \to \Upsilon(4S)$

[1] $M_{K\pi\pi} < 1.8$ GeV/c^2.
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T17;LINKAGE=AT
NODE=S042T17;LINKAGE=EP

$\Gamma(K_1(1270)^0\gamma)/\Gamma_{total}$ — Γ_{411}/Γ

NODE=S042R36

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
< 5.8	90	[1] YANG	05	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<700	90	[2] ALBRECHT	89G	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] ALBRECHT 89G reports < 0.0078 assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%.

NODE=S042R36;LINKAGE=EP
NODE=S042R36;LINKAGE=A2

$\Gamma(K_1(1400)^0\gamma)/\Gamma_{total}$ — Γ_{412}/Γ

NODE=S042R37

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
< 1.2	90	[1] YANG	05	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<430	90	[2] ALBRECHT	89G	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] ALBRECHT 89G reports < 0.0048 assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%.

NODE=S042R37;LINKAGE=EP
NODE=S042R37;LINKAGE=A2

$\Gamma(K_2^*(1430)^0\gamma)/\Gamma_{total}$ — Γ_{413}/Γ

NODE=S042R38

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
1.24±0.24 OUR AVERAGE					
1.22±0.25±0.10		[1] AUBERT,B	04U	BABR	$e^+e^- \to \Upsilon(4S)$
1.3 ±0.5 ±0.1		[1] NISHIDA	02	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<40	90	[2] ALBRECHT	89G	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] ALBRECHT 89G reports $< 4.4 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%.

NODE=S042R38;LINKAGE=EP
NODE=S042R38;LINKAGE=A2

$\Gamma(K^*(1680)^0\gamma)/\Gamma_{total}$ — Γ_{414}/Γ

NODE=S042R39

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0020	90	[1] ALBRECHT	89G	ARG	$e^+e^- \to \Upsilon(4S)$

[1] ALBRECHT 89G reports < 0.0022 assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%.

NODE=S042R39;LINKAGE=A2

$\Gamma(K_3^*(1780)^0\gamma)/\Gamma_{total}$ Γ_{415}/Γ

NODE=S042R40

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
< 83	90	[1,2] NISHIDA	05	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<10000	90	[3] ALBRECHT	89G	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R40;LINKAGE=EP

[2] Uses B($K_3^*(1780) \rightarrow \eta K$) = $0.11^{+0.05}_{-0.04}$. NODE=S042R40;LINKAGE=NS

[3] ALBRECHT 89G reports < 0.011 assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R40;LINKAGE=A2

$\Gamma(K_4^*(2045)^0\gamma)/\Gamma_{total}$ Γ_{416}/Γ

NODE=S042R41

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0043	90	[1] ALBRECHT	89G	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[1] ALBRECHT 89G reports < 0.0048 assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R41;LINKAGE=A2

$\Gamma(\rho^0\gamma)/\Gamma_{total}$ Γ_{417}/Γ

NODE=S042S90

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
0.86±0.15 OUR AVERAGE					
$0.97^{+0.24}_{-0.22}\pm0.06$		[1] AUBERT	08BH	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$0.78^{+0.17}_{-0.16}{}^{+0.09}_{-0.10}$		[1] TANIGUCHI	08	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$0.79^{+0.22}_{-0.20}\pm0.06$		[1] AUBERT	07L	BABR	Repl. by AUBERT 08BH
$1.25^{+0.37}_{-0.33}{}^{+0.07}_{-0.06}$		[1] MOHAPATRA	06	BELL	Repl. by TANIGUCHI 08
0.0 ±0.2 ±0.1	90	[1] AUBERT	05	BABR	Repl. by AUBERT 07L
< 0.8	90	[1] MOHAPATRA	05	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
< 1.2	90	[1] AUBERT	04C	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
<17	90	[1] COAN	00	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S90;LINKAGE=EP

$\Gamma(\rho^0 X(214),\ X \rightarrow \mu^+\mu^-)/\Gamma_{total}$ Γ_{418}/Γ

NODE=S042T82

$X(214)$ is a hypothetical particle of mass 214 MeV/c^2 reported by the HyperCP experiment (PARK 05) NODE=S042T82

NODE=S042T82

VALUE (units 10^{-8})	CL%	DOCUMENT ID		TECN	COMMENT
<1.73	90	[1,2] HYUN	10	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T82;LINKAGE=EP

[2] The result is the same for a scalar or vector X particle. NODE=S042T82;LINKAGE=HY

$\Gamma(\rho^0\gamma)/\Gamma(K^*(892)^0\gamma)$ $\Gamma_{417}/\Gamma_{405}$

NODE=S042RK1

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
$\mathbf{2.06^{+0.45}_{-0.43}{}^{+0.14}_{-0.16}}$	TANIGUCHI	08	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

$\Gamma(\omega\gamma)/\Gamma_{total}$ Γ_{419}/Γ

NODE=S042S91

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.44^{+0.18}_{-0.16}}$ **OUR AVERAGE**					
$0.50^{+0.27}_{-0.23}\pm0.09$		[1] AUBERT	08BH	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$0.40^{+0.19}_{-0.17}\pm0.13$		[1] TANIGUCHI	08	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$0.40^{+0.24}_{-0.20}\pm0.05$		[1] AUBERT	07L	BABR	Repl. by AUBERT 08BH
$0.56^{+0.34}_{-0.27}{}^{+0.05}_{-0.10}$		[1] MOHAPATRA	06	BELL	Repl. by TANIGUCHI 08
<1.0	90	[1] AUBERT	05	BABR	Repl. by AUBERT 07L
<0.8	90	[1] MOHAPATRA	05	BELL	Repl. by MOHAPATRA 06
<1.0	90	[1] AUBERT	04C	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
<9.2	90	[1] COAN	00	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S91;LINKAGE=EP

$\Gamma(\phi\gamma)/\Gamma_{total}$ — Γ_{420}/Γ

NODE=S042S92

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.0 × 10⁻⁷	90	[1] KING	16	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<8.5 \times 10^{-7}$	90	[1] AUBERT,BE	05C	BABR	$e^+e^- \to \Upsilon(4S)$
$<3.3 \times 10^{-6}$	90	[1] COAN	00	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S92;LINKAGE=EP

$\Gamma(f_2(1270)\gamma,\ f_2 \to (KS)^0(KS)^0)/\Gamma_{total}$ — Γ_{421}/Γ

NODE=S042P74

VALUE	DOCUMENT ID		TECN	COMMENT
$<3.1 \times 10^{-7}$	JEON	22	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(f'_2(1525)\gamma,\ f'_2 \to (KS)^0(KS)^0)/\Gamma_{total}$ — Γ_{422}/Γ

NODE=S042P75

VALUE	DOCUMENT ID		TECN	COMMENT
$<2.1 \times 10^{-7}$	JEON	22	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\pi^+\pi^-)/\Gamma_{total}$ — Γ_{423}/Γ

NODE=S042R5

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
5.37±0.20 OUR FIT Error includes scale factor of 1.3.					
5.43±0.26 OUR AVERAGE Error includes scale factor of 1.4. See the ideogram below.					
5.83±0.22±0.17		ADACHI	24	BELL	$e^+e^- \to \Upsilon(4S)$
5.04±0.21±0.18		[1] DUH	13	BELL	$e^+e^- \to \Upsilon(4S)$
5.5 ±0.4 ±0.3		[1] AUBERT	07B	BABR	$e^+e^- \to \Upsilon(4S)$
$4.5\ ^{+1.4}_{-1.2}\ ^{+0.5}_{-0.4}$		[1] BORNHEIM	03	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
5.1 ±0.2 ±0.2		[1] LIN	07A	BELL	Repl. by DUH 13
4.4 ±0.6 ±0.3		[1] CHAO	04	BELL	Repl. by LIN 07A
4.7 ±0.6 ±0.2		[1] AUBERT	02Q	BABR	Repl. by AUBERT 07B
5.4 ±1.2 ±0.5		[1] CASEY	02	BELL	Repl. by CHAO 04
$5.6\ ^{+2.3}_{-2.0}\ ^{+0.4}_{-0.5}$		[1] ABE	01H	BELL	Repl. by CASEY 02
4.1 ±1.0 ±0.7		[1] AUBERT	01E	BABR	Repl. by AUBERT 02Q
< 67	90	[2] ABE	00C	SLD	$e^+e^- \to Z$
$4.3\ ^{+1.6}_{-1.4}\ \pm0.5$		[1] CRONIN-HEN...	00	CLE2	Repl. by BORNHEIM 03
< 15	90	GODANG	98	CLE2	Repl. by CRONIN-HENNESSY 00
< 45	90	[3] ADAM	96D	DLPH	$e^+e^- \to Z$
< 20	90	ASNER	96	CLE2	Repl. by GODANG 98
< 41	90	[4] BUSKULIC	96V	ALEP	$e^+e^- \to Z$
< 55	90	[5] ABREU	95N	DLPH	Sup. by ADAM 96D
< 47	90	[6] AKERS	94L	OPAL	$e^+e^- \to Z$
< 29	90	[1] BATTLE	93	CLE2	$e^+e^- \to \Upsilon(4S)$
<130	90	[1] ALBRECHT	90B	ARG	$e^+e^- \to \Upsilon(4S)$
< 77	90	[7] BORTOLETTO	89	CLEO	$e^+e^- \to \Upsilon(4S)$
<260	90	[7] BEBEK	87	CLEO	$e^+e^- \to \Upsilon(4S)$
<500	90	GILES	84	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R5;LINKAGE=EP

[2] ABE 00C assumes B($Z \to b\overline{b}$)=(21.7 ± 0.1)% and the B fractions f_{B^0}=f_{B^+}=$(39.7^{+1.8}_{-2.2})$% and f_{B_s}=$(10.5^{+1.8}_{-2.2})$%. NODE=S042R5;LINKAGE=KQ

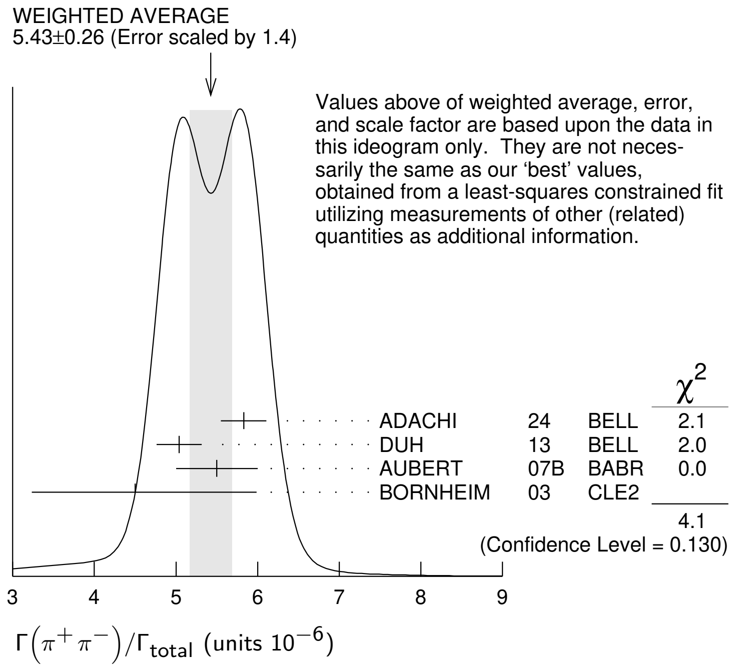
[3] ADAM 96D assumes $f_{B^0} = f_{B^-} = 0.39$ and $f_{B_s} = 0.12$. NODE=S042R5;LINKAGE=DQ

[4] BUSKULIC 96V assumes PDG 96 production fractions for B^0, B^+, B_s, b baryons. NODE=S042R5;LINKAGE=BV

[5] Assumes a B^0, B^- production fraction of 0.39 and a B_s production fraction of 0.12. NODE=S042R5;LINKAGE=SR

[6] Assumes B($Z \to b\overline{b}$) = 0.217 and B^0_d (B^0_s) fraction 39.5% (12%). NODE=S042R5;LINKAGE=C

[7] Paper assumes the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R5;LINKAGE=A



$\Gamma(\pi^+\pi^-)/\Gamma(K^+\pi^-)$ — $\Gamma_{423}/\Gamma_{288}$

NODE=S042Q94

VALUE	DOCUMENT ID		TECN	COMMENT
0.268±0.010 OUR FIT	Error includes scale factor of 1.2.			
0.261±0.015 OUR AVERAGE				
0.262±0.009±0.017	AAIJ	12AR	LHCB	pp at 7 TeV
0.259±0.017±0.016	AALTONEN	11N	CDF	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.21 ±0.05 ±0.03	ABULENCIA,A	06D	CDF	Repl. by AALTONEN 11N

$\Gamma(\pi^0\pi^0)/\Gamma_{total}$ — Γ_{424}/Γ

NODE=S042S37

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
1.55±0.17 OUR AVERAGE		Error includes scale factor of 1.1.			
1.38±0.27±0.22		ABUDINEN	23E	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
1.31±0.19±0.19		[1] JULIUS	17	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
1.83±0.21±0.13		[1] LEES	13D	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.47±0.25±0.12		[1] AUBERT	07BC	BABR	Repl. by LEES 13D
1.17±0.32±0.10		[1] AUBERT	05L	BABR	Repl. by AUBERT 07BC
$2.3\ ^{+0.4}_{-0.5}\ ^{+0.2}_{-0.3}$		[1] CHAO	05	BELL	Repl. by JULIUS 17
< 3.6	90	[1] AUBERT	03L	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
2.1 ±0.6 ±0.3		[1] AUBERT	03S	BABR	Repl. by AUBERT 05L
< 4.4	90	[1] BORNHEIM	03	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
1.7 ±0.6 ±0.2		[1] LEE	03	BELL	Repl. by CHAO 05
< 5.7	90	[1] ASNER	02	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
< 6.4	90	[1] CASEY	02	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
< 9.3	90	GODANG	98	CLE2	Repl. by ASNER 02
< 9.1	90	ASNER	96	CLE2	Repl. by GODANG 98
<60	90	[2] ACCIARRI	95H	L3	$e^+e^- \rightarrow Z$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S37;LINKAGE=EP

[2] ACCIARRI 95H assumes f_{B^0} = 39.5 ± 4.0 and f_{B_s} = 12.0 ± 3.0%. NODE=S042S37;LINKAGE=A

$\Gamma(\eta\pi^0)/\Gamma_{total}$ — Γ_{425}/Γ

NODE=S042R58

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.41^{+0.17+0.05}_{-0.15-0.07}}$		[1,2] PAL	15	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 1.5	90	[2] AUBERT	08AH	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
< 1.3	90	[2] AUBERT	06W	BABR	Repl. by AUBERT 08AH
< 2.5	90	[2] CHANG	05A	BELL	Repl. by PAL 15
< 2.5	90	[2] AUBERT,B	04D	BABR	Repl. by AUBERT 06W

< 2.9	90	[2] RICHICHI	00	CLE2	$e^+e^- \to \Upsilon(4S)$
< 8	90	BEHRENS	98	CLE2	Repl. by RICHICHI 00
< 250	90	[3] ACCIARRI	95H	L3	$e^+e^- \to Z$
<1800	90	[2] ALBRECHT	90B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] PAL 15 signal significance is 3.0 standard deviations. The measurement corresponds to 90% CL upper limit of $< 6.5 \times 10^{-7}$.
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[3] ACCIARRI 95H assumes $f_{B^0} = 39.5 \pm 4.0$ and $f_{B_s} = 12.0 \pm 3.0\%$.

NODE=S042R58;LINKAGE=B
NODE=S042R58;LINKAGE=EP
NODE=S042R58;LINKAGE=A

$\Gamma(\eta\eta)/\Gamma_{total}$ — Γ_{426}/Γ

NODE=S042S38
NODE=S042S38

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
< 1.0	90	[1] AUBERT	09AV	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 1.8	90	[1] AUBERT,B	06V	BABR	Repl. by AUBERT 09AV
< 2.0	90	[1] CHANG	05A	BELL	$e^+e^- \to \Upsilon(4S)$
< 2.8	90	[1] AUBERT,B	04X	BABR	$e^+e^- \to \Upsilon(4S)$
< 18	90	BEHRENS	98	CLE2	$e^+e^- \to \Upsilon(4S)$
<410	90	[2] ACCIARRI	95H	L3	$e^+e^- \to Z$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] ACCIARRI 95H assumes $f_{B^0} = 39.5 \pm 4.0$ and $f_{B_s} = 12.0 \pm 3.0\%$.

NODE=S042S38;LINKAGE=EP
NODE=S042S38;LINKAGE=A

$\Gamma(\eta'\pi^0)/\Gamma_{total}$ — Γ_{427}/Γ

NODE=S042S65
NODE=S042S65

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
1.2±0.6 OUR AVERAGE		Error includes scale factor of 1.7.			
0.9±0.4±0.1		[1] AUBERT	08AH	BABR	$e^+e^- \to \Upsilon(4S)$
2.8±1.0±0.3		[1] SCHUEMANN	06	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$0.8^{+0.8}_{-0.6}\pm0.1$		[1] AUBERT	06W	BABR	Repl. by AUBERT 08AH
$1.0^{+1.4}_{-1.0}\pm0.8$	90	[1] AUBERT,B	04D	BABR	Repl. by AUBERT 06W
< 5.7	90	[1] RICHICHI	00	CLE2	$e^+e^- \to \Upsilon(4S)$
<11	90	BEHRENS	98	CLE2	Repl. by RICHICHI 00

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S65;LINKAGE=EP

$\Gamma(\eta'\eta')/\Gamma_{total}$ — Γ_{428}/Γ

NODE=S042S66
NODE=S042S66

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
< 1.7	90	[1] AUBERT	09AV	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 6.5	90	[1] SCHUEMANN	07	BELL	$e^+e^- \to \Upsilon(4S)$
< 2.4	90	[1] AUBERT,B	06V	BABR	Repl. by AUBERT 09AV
<10	90	[1] AUBERT,B	04X	BABR	Repl. by AUBERT,B 06V
<47	90	BEHRENS	98	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S66;LINKAGE=EP

$\Gamma(\eta'\eta)/\Gamma_{total}$ — Γ_{429}/Γ

NODE=S042S67
NODE=S042S67

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
< 1.2	90	[1] AUBERT	08AH	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 4.5	90	[1] SCHUEMANN	07	BELL	$e^+e^- \to \Upsilon(4S)$
< 1.7	90	[1] AUBERT	06W	BABR	Repl. by AUBERT 08AH
< 4.6	90	[1] AUBERT,B	04X	BABR	$e^+e^- \to \Upsilon(4S)$
<27	90	BEHRENS	98	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S67;LINKAGE=EP

$\Gamma(\eta'\rho^0)/\Gamma_{total}$ — Γ_{430}/Γ

NODE=S042S68
NODE=S042S68

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
< 1.3	90	[1] SCHUEMANN	07	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 2.8	90	[1] DEL-AMO-SA...	10A	BABR	$e^+e^- \to \Upsilon(4S)$
< 3.7	90	AUBERT	07E	BABR	Repl. by DEL-AMO-SANCHEZ 10A
< 4.3	90	[1] AUBERT,B	04D	BABR	Repl. by AUBERT 07E
<12	90	[1] RICHICHI	00	CLE2	$e^+e^- \to \Upsilon(4S)$
<23	90	BEHRENS	98	CLE2	Repl. by RICHICHI 00

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S68;LINKAGE=EP

$\Gamma(\eta' f_0(980),\ f_0 \to \pi^+\pi^-)/\Gamma_{total}$ — Γ_{431}/Γ

NODE=S042T16
NODE=S042T16

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<0.9	90	[1] DEL-AMO-SA...10A	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<1.5	90	AUBERT 07E	BABR	Repl. by DEL-AMO-SANCHEZ 10A

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T16;LINKAGE=EP

$\Gamma(\eta\rho^0)/\Gamma_{total}$ — Γ_{432}/Γ

NODE=S042S69
NODE=S042S69

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
< 1.5	90	[1] AUBERT 07Y	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
< 1.9	90	[1] WANG 07B	BELL	$e^+e^- \to \Upsilon(4S)$
< 1.5	90	[1] AUBERT,B 04D	BABR	Repl. by AUBERT 07Y
<10	90	[1] RICHICHI 00	CLE2	$e^+e^- \to \Upsilon(4S)$
<13	90	BEHRENS 98	CLE2	Repl. by RICHICHI 00

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S69;LINKAGE=EP

$\Gamma(\eta f_0(980),\ f_0 \to \pi^+\pi^-)/\Gamma_{total}$ — Γ_{433}/Γ

NODE=S042T20
NODE=S042T20

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<0.4	90	[1] AUBERT 07Y	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T20;LINKAGE=EP

$\Gamma(\omega\eta)/\Gamma_{total}$ — Γ_{434}/Γ

NODE=S042S73
NODE=S042S73

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
$\mathbf{0.94^{+0.35}_{-0.30}\pm0.09}$		[1] AUBERT 09AV	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
< 1.9	90	[1] AUBERT,B 05K	BABR	Repl. by AUBERT 09AV
$4.0\ ^{+1.3}_{-1.2}\ \pm0.4$		[1] AUBERT,B 04X	BABR	Repl. by AUBERT,B 05K
<12	90	[1] BERGFELD 98	CLE2	

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S73;LINKAGE=EP

$\Gamma(\omega\eta')/\Gamma_{total}$ — Γ_{435}/Γ

NODE=S042S74
NODE=S042S74

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
$\mathbf{1.01^{+0.46}_{-0.38}\pm0.09}$		[1] AUBERT 09AV	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
< 2.2	90	[1] SCHUEMANN 07	BELL	$e^+e^- \to \Upsilon(4S)$
< 2.8	90	[1] AUBERT,B 04X	BABR	$e^+e^- \to \Upsilon(4S)$
<60	90	[1] BERGFELD 98	CLE2	

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S74;LINKAGE=EP

$\Gamma(\omega\rho^0)/\Gamma_{total}$ — Γ_{436}/Γ

NODE=S042S75
NODE=S042S75

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
< 1.6	90	[1] AUBERT 09H	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
< 1.5	90	[1] AUBERT,B 06T	BABR	Repl. by AUBERT 09H
< 3.3	90	[1] AUBERT 05O	BABR	Repl. by AUBERT,B 06T
<11	90	[1] BERGFELD 98	CLE2	

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S75;LINKAGE=EP

$\Gamma(\omega f_0(980),\ f_0 \to \pi^+\pi^-)/\Gamma_{total}$ — Γ_{437}/Γ

NODE=S042T09
NODE=S042T09

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<1.5	90	[1] AUBERT 09H	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<1.5	90	[1] AUBERT,B 06T	BABR	Repl. by AUBERT 09H

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T09;LINKAGE=EP

$\Gamma(\omega\omega)/\Gamma_{total}$ Γ_{438}/Γ

NODE=S042S76

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
1.40±0.25 OUR AVERAGE					
[(1.2 ± 0.4) × 10^{-6} OUR 2024 AVERAGE]					
1.54±0.34±0.02		[1] GUAN	24	BELL	$e^+e^- \to \Upsilon(4S)$
1.2 ±0.3 $^{+0.3}_{-0.2}$		[2] LEES	14	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 4.0	90	[2] AUBERT,B	06T	BABR	Repl. by LEES 14
<19	90	[2] BERGFELD	98	CLE2	

NEW

[1] GUAN 24 reports $(1.53 \pm 0.29 \pm 0.17) \times 10^{-6}$ from a measurement of $[\Gamma(B^0 \to \omega\omega)/\Gamma_{total}]$ / $[B(\Upsilon(4S) \to B^0\overline{B}^0)]$ assuming $B(\Upsilon(4S) \to B^0\overline{B}^0) = (48.4 \pm 1.2) \times 10^{-2}$, which we rescale to our best value $B(\Upsilon(4S) \to B^0\overline{B}^0) = (48.6 \pm 0.6) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042S76;LINKAGE=C

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S76;LINKAGE=EP

$\Gamma(\phi\pi^0)/\Gamma_{total}$ Γ_{439}/Γ

NODE=S042S77

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.15	90	[1] KIM	12A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.28	90	[1] AUBERT,B	06C	BABR	$e^+e^- \to \Upsilon(4S)$
<1.0	90	[1] AUBERT,B	04D	BABR	Repl. by AUBERT,B 06C
<5	90	[1] BERGFELD	98	CLE2	

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S77;LINKAGE=EP

$\Gamma(\phi\eta)/\Gamma_{total}$ Γ_{440}/Γ

NODE=S042S78

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.5	90	[1] AUBERT	09AV	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.6	90	[1] AUBERT,B	06V	BABR	Repl. by AUBERT 09AV
<1.0	90	[1] AUBERT,B	04X	BABR	Repl. by AUBERT,B 06V
<9	90	[1] BERGFELD	98	CLE2	

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S78;LINKAGE=EP

$\Gamma(\phi\eta')/\Gamma_{total}$ Γ_{441}/Γ

NODE=S042S79

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
< 0.5	90	[1] SCHUEMANN	07	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 1.1	90	[1] AUBERT	09AV	BABR	$e^+e^- \to \Upsilon(4S)$
< 1.0	90	[1] AUBERT,B	06V	BABR	Repl. by AUBERT 09AV
< 4.5	90	[1] AUBERT,B	04X	BABR	Repl. by AUBERT,B 06V
<31	90	[1] BERGFELD	98	CLE2	

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S79;LINKAGE=EP

$\Gamma(\phi\pi^+\pi^-)/\Gamma_{total}$ Γ_{442}/Γ

NODE=S042P17

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
1.82±0.25±0.43	[1] AAIJ	17A	LHCB	pp at 7, 8 TeV

[1] Signal evidence is 4.5 standard deviations. NODE=S042P17;LINKAGE=A

$\Gamma(\phi\rho^0)/\Gamma_{total}$ Γ_{443}/Γ

NODE=S042S80

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
< 0.33	90	[1] AUBERT	08BK	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<156	90	[2] ABE	00C	SLD	$e^+e^- \to Z$
< 13	90	[1] BERGFELD	98	CLE2	

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S80;LINKAGE=EP

[2] ABE 00C assumes $B(Z \to b\overline{b})$=(21.7 ± 0.1)% and the B fractions $f_{B^0}=f_{B^+}=(39.7^{+1.8}_{-2.2})$% and $f_{B_s}=(10.5^{+1.8}_{-2.2})$%. NODE=S042S80;LINKAGE=KQ

$\Gamma(\phi f_0(980),\ f_0 \to \pi^+\pi^-)/\Gamma_{total}$ — Γ_{444}/Γ

NODE=S042T54

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<0.38	90	[1] AUBERT 08BK	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T54;LINKAGE=EP

$\Gamma(\phi\omega)/\Gamma_{total}$ — Γ_{445}/Γ

NODE=S042S81

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
< 0.7	90	[1] LEES 14	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
< 1.2	90	[1] AUBERT,B 06T	BABR	Repl. by LEES 14
<21	90	[1] BERGFELD 98	CLE2	

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S81;LINKAGE=EP

$\Gamma(\phi\phi)/\Gamma_{total}$ — Γ_{446}/Γ

NODE=S042S44

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<2.7 \times 10^{-8}$	90	AAIJ 19AP	LHCB	pp at 7, 8 and 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<2.8 \times 10^{-8}$	90	AAIJ 15AS	LHCB	Repl. by AAIJ 19AP
$<2 \times 10^{-7}$	90	[1] AUBERT 08BK	BABR	$e^+e^- \to \Upsilon(4S)$
$<1.5 \times 10^{-6}$	90	[1] AUBERT,B 04X	BABR	Repl. by AUBERT 08BK
$<3.21 \times 10^{-4}$	90	[2] ABE 00C	SLD	$e^+e^- \to Z$
$<1.2 \times 10^{-5}$	90	[1] BERGFELD 98	CLE2	
$<3.9 \times 10^{-5}$	90	ASNER 96	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

[2] ABE 00C assumes B($Z \to b\overline{b}$)=(21.7 ± 0.1)% and the B fractions $f_{B^0}=f_{B^+}=(39.7^{+1.8}_{-2.2})$% and $f_{B_s}=(10.5^{+1.8}_{-2.2})$%.

NODE=S042S44;LINKAGE=EP
NODE=S042S44;LINKAGE=KQ

$\Gamma(a_0(980)^\pm\pi^\mp,\ a_0^\pm \to \eta\pi^\pm)/\Gamma_{total}$ — Γ_{447}/Γ

NODE=S042RA4

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<3.1	90	[1] AUBERT 07Y	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<5.1	90	[1] AUBERT,BE 04	BABR	Repl. by AUBERT 07Y

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042RA4;LINKAGE=EP

$\Gamma(a_0(1450)^\pm\pi^\mp,\ a_0^\pm \to \eta\pi^\pm)/\Gamma_{total}$ — Γ_{448}/Γ

NODE=S042T18

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<2.3	90	[1] AUBERT 07Y	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T18;LINKAGE=EP

$\Gamma(\pi^+\pi^-\pi^0)/\Gamma_{total}$ — Γ_{449}/Γ

NODE=S042R51

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<7.2 \times 10^{-4}$	90	[1] ALBRECHT 90B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$.

NODE=S042R51;LINKAGE=Q

$\Gamma(\rho^0\pi^0)/\Gamma_{total}$ — Γ_{450}/Γ

NODE=S042R52

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
2.0 ±0.5 OUR AVERAGE				
3.0 ±0.5 ±0.7		[1,2] KUSAKA 08	BELL	$e^+e^- \to \Upsilon(4S)$
1.4 ±0.6 ±0.3		[1] AUBERT 04Z	BABR	$e^+e^- \to \Upsilon(4S)$
$1.6\ ^{+2.0}_{-1.4}\ \pm0.8$		[1] JESSOP 00	CLEO	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$3.12\ ^{+0.88}_{-0.82}\ ^{+0.60}_{-0.76}$		[1] DRAGIC 06	BELL	Repl. by KUSAKA 08
5.1 ±1.6 ±0.9		DRAGIC 04	BELL	Repl. by DRAGIC 06
< 5.3	90	[1] GORDON 02	BELL	Repl. by DRAGIC 04
< 24	90	ASNER 96	CLEO	Repl. by JESSOP 00
<400	90	[1] ALBRECHT 90B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

[2] This is the first measurement that excludes contributions from $\rho(1450)$ and $\rho(1570)$ resonances.

NODE=S042R52;LINKAGE=EP
NODE=S042R52;LINKAGE=KU

$\Gamma(\rho^{\mp}\pi^{\pm})/\Gamma_{total}$ — Γ_{451}/Γ

NODE=S042R24

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
23.0±2.3 OUR AVERAGE				
22.6±1.1±4.4		[1,2] KUSAKA 08	BELL	$e^+e^- \to \Upsilon(4S)$
22.6±1.8±2.2		[1] AUBERT 03T	BABR	$e^+e^- \to \Upsilon(4S)$
$27.6^{+8.4}_{-7.4}\pm4.2$		[1] JESSOP 00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$20.8^{+6.0}_{-6.3}{}^{+2.8}_{-3.1}$		[1] GORDON 02	BELL	Repl. by KUSAKA 08
< 88	90	ASNER 96	CLE2	Repl. by JESSOP 00
< 520	90	[1] ALBRECHT 90B	ARG	$e^+e^- \to \Upsilon(4S)$
<5200	90	[3] BEBEK 87	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R24;LINKAGE=EP

[2] This is the first measurement that excludes contributions from $\rho(1450)$ and $\rho(1570)$ resonances. NODE=S042R24;LINKAGE=KU

[3] BEBEK 87 reports $< 6.1\times10^{-3}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R24;LINKAGE=A

$\Gamma(\pi^+\pi^-\pi^+\pi^-)/\Gamma_{total}$ — Γ_{452}/Γ

NODE=S042R53

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<11.2 × 10⁻⁶	90	[1] VANHOEFER 14	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<23.1\times10^{-6}$	90	[1] AUBERT 08BB	BABR	$e^+e^- \to \Upsilon(4S)$
$<19.3\times10^{-6}$	90	[1] CHIANG 08	BELL	Repl. by VANHOEFER 14
$< 2.3\times10^{-4}$	90	[2] ADAM 96D	DLPH	$e^+e^- \to Z$
$< 2.8\times10^{-4}$	90	[3] ABREU 95N	DLPH	Sup. by ADAM 96D
$< 6.7\times10^{-4}$	90	[1] ALBRECHT 90B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R53;LINKAGE=EP

[2] ADAM 96D assumes $f_{B^0} = f_{B^-} = 0.39$ and $f_{B_s} = 0.12$. NODE=S042R53;LINKAGE=DQ

[3] Assumes a B^0, B^- production fraction of 0.39 and a B_s production fraction of 0.12. NODE=S042R53;LINKAGE=SR

$\Gamma(\rho^0\pi^+\pi^-)/\Gamma_{total}$ — Γ_{453}/Γ

NODE=S042T52

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
< 8.8	90	[1] AUBERT 08BB	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<12.0	90	[1] VANHOEFER 14	BELL	$e^+e^- \to \Upsilon(4S)$
<12.0	90	[1] CHIANG 08	BELL	Repl. by VANHOEFER 14

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T52;LINKAGE=EP

$\Gamma(\rho^0\rho^0)/\Gamma_{total}$ — Γ_{454}/Γ

NODE=S042R26

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
0.96±0.15 OUR FIT				
0.97±0.24 OUR AVERAGE				
1.02±0.30±0.15		[1,2] VANHOEFER 14	BELL	$e^+e^- \to \Upsilon(4S)$
0.92±0.32±0.14		[2] AUBERT 08BB	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.4\pm0.4{}^{+0.2}_{-0.3}$		[2] CHIANG 08	BELL	Repl. by VANHOEFER 14
1.07±0.33±0.19		[2] AUBERT 07G	BABR	Repl. by AUBERT 08BB
< 1.1	90	[2] AUBERT 05I	BABR	Repl. by AUBERT 07G
< 2.1	90	[2] AUBERT 03V	BABR	Repl. by AUBERT 05I
< 18	90	[3] GODANG 02	CLE2	$e^+e^- \to \Upsilon(4S)$
<136	90	[4] ABE 00C	SLD	$e^+e^- \to Z$
<280	90	[2] ALBRECHT 90B	ARG	$e^+e^- \to \Upsilon(4S)$
<290	90	[5] BORTOLETTO 89	CLEO	$e^+e^- \to \Upsilon(4S)$
<430	90	[5] BEBEK 87	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Signal significance 3.4 standard deviations. NODE=S042R26;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R26;LINKAGE=EP

[3] Assumes a helicity 00 configuration. For a helicity 11 configuration, the limit decreases to 1.4×10^{-5}. NODE=S042R26;LINKAGE=Z1

[4] ABE 00C assumes $B(Z \to b\overline{b})$=(21.7 ± 0.1)% and the B fractions $f_{B^0}=f_{B^+}=(39.7^{+1.8}_{-2.2})$% and $f_{B_s}=(10.5^{+1.8}_{-2.2})$%. NODE=S042R26;LINKAGE=KQ

[5] Paper assumes the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R26;LINKAGE=A1

$\Gamma(\rho^0\rho^0)/\Gamma(K^*(892)^0\phi)$ — $\Gamma_{454}/\Gamma_{377}$

NODE=S042C52

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
9.5±1.5 OUR FIT				
9.4±1.7±0.9	AAIJ	15T	LHCB	pp at 7, 8 TeV

$\Gamma(f_0(980)\pi^+\pi^-,\ f_0\to\pi^+\pi^-)/\Gamma_{total}$ — Γ_{455}/Γ

NODE=S042T9B

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<3.0 × 10⁻⁶	90	[1] VANHOEFER	14	BELL	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<3.8\times10^{-6}$	90	[1] CHIANG	08	BELL	$e^+e^-\to\Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T9B;LINKAGE=EP

$\Gamma(\rho^0 f_0(980),\ f_0\to\pi^+\pi^-)/\Gamma_{total}$ — Γ_{456}/Γ

NODE=S042R01

VALUE (units 10^{-7})	CL%	DOCUMENT ID		TECN	COMMENT
7.8±2.2±1.1		[1,2] VANHOEFER	14	BELL	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<8.1	90	AAIJ	15T	LHCB	pp at 7, 8 TeV
<4.0	90	[2] AUBERT	08BB	BABR	$e^+e^-\to\Upsilon(4S)$
<3	90	[2] CHIANG	08	BELL	Repl. by VANHOEFER 14
<5.3	90	[2] AUBERT	07G	BABR	Repl. by AUBERT 08BB

[1] Signal significance of 3.1 standard deviations. NODE=S042R01;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R01;LINKAGE=EP

$\Gamma(f_0(980)f_0(980),\ f_0\to\pi^+\pi^-,\ f_0\to\pi^+\pi^-)/\Gamma_{total}$ — Γ_{457}/Γ

NODE=S042R02

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.19	90	[1] AUBERT	08BB	BABR	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.2	90	[1] VANHOEFER	14	BELL	$e^+e^-\to\Upsilon(4S)$
<0.1	90	[1] CHIANG	08	BELL	Repl. by VANHOEFER 14
<0.16	90	[1] AUBERT	07G	BABR	Repl. by AUBERT 08BB

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R02;LINKAGE=EP

$\Gamma(f_0(980)f_0(980),\ f_0\to\pi^+\pi^-,\ f_0\to K^+K^-)/\Gamma_{total}$ — Γ_{458}/Γ

NODE=S042T55

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.23	90	[1] AUBERT	08BK	BABR	$e^+e^-\to\Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T55;LINKAGE=EP

$\Gamma(a_1(1260)^\mp\pi^\pm)/\Gamma_{total}$ — Γ_{459}/Γ

NODE=S042R27

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
26 ±5 OUR AVERAGE	Error includes scale factor of 1.9.				
22.2±2.0±2.8		[1,2] DALSENO	12	BELL	$e^+e^-\to\Upsilon(4S)$
33.2±3.8±3.0		[2,3] AUBERT	06V	BABR	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 630	90	[2] ALBRECHT	90B	ARG	$e^+e^-\to\Upsilon(4S)$
< 490	90	[4] BORTOLETTO	89	CLEO	$e^+e^-\to\Upsilon(4S)$
<1000	90	[4] BEBEK	87	CLEO	$e^+e^-\to\Upsilon(4S)$

[1] DALSENO 12 reports $B(B^0\to a_1^\pm\pi^\mp)\ B(a_1^\pm\to\pi^\pm\pi^+\pi^-) = (11.1\pm1.0\pm1.4)\times10^{-6}$ which we rescaled assuming $a_1(1260)$ decays only to 3π and $B(a_1^\pm\to\pi^\pm\pi^+\pi^-) = 0.5$. NODE=S042R27;LINKAGE=DA

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R27;LINKAGE=EP

[3] Assumes $a_1(1260)$ decays only to 3π and $B(a_1^\pm\to\pi^\pm\pi^\mp\pi^\pm) = 0.5$. NODE=S042R27;LINKAGE=UA

[4] Paper assumes the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R27;LINKAGE=A1

$\Gamma(a_2(1320)^\mp\pi^\pm)/\Gamma_{total}$ — Γ_{460}/Γ

NODE=S042R28

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<6.3 × 10⁻⁶	90	[1] DALSENO	12	BELL	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<3.0\times10^{-4}$	90	[2] BORTOLETTO	89	CLEO	$e^+e^-\to\Upsilon(4S)$
$<1.4\times10^{-3}$	90	[2] BEBEK	87	CLEO	$e^+e^-\to\Upsilon(4S)$

[1] DALSENO 12 reports $B(B^0\to a_2^\pm\pi^\mp)\ B(a_2^\pm\to\pi^\pm\pi^+\pi^-) < 2.2\times10^{-6}$ which we rescaled using $B(a_2^\pm\to\pi^\pm\pi^+\pi^-) = 1/2\ B(a_2^\pm\to3\pi) = 0.35\pm0.013$. NODE=S042R28;LINKAGE=DA

[2] Paper assumes the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R28;LINKAGE=A1

$\Gamma(\pi^+\pi^-\pi^0\pi^0)/\Gamma_{total}$ — Γ_{461}/Γ

NODE=S042R54

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<3.1 × 10^{-3}	90	[1] ALBRECHT 90B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$. NODE=S042R54;LINKAGE=Q

$\Gamma(\rho^+\rho^-)/\Gamma_{total}$ — Γ_{462}/Γ

NODE=S042R55

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
27.7±1.9 OUR AVERAGE				
28.3±1.5±1.5		[1] VANHOEFER 16	BELL	$e^+e^- \to \Upsilon(4S)$
$25.5\pm2.1^{+3.6}_{-3.9}$		[1] AUBERT 07BF	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$22.8\pm3.8^{+2.3}_{-2.6}$		[1] SOMOV 06	BELL	Repl. by VANHOEFER 16
$25\ ^{+7}_{-6}\ ^{+5}_{-6}$		[1] AUBERT 04G	BABR	Repl. by AUBERT,B 04R
30 ±4 ±5		[1,2] AUBERT,B 04R	BABR	Repl. by AUBERT 07BF
<2200	90	[1] ALBRECHT 90B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R55;LINKAGE=EP

[2] The quoted result is obtained after combining with AUBERT 04G result by AUBERT 04R alone gives $(33 \pm 4 \pm 5) \times 10^{-6}$. NODE=S042R55;LINKAGE=AB

$\Gamma(a_1(1260)^0\pi^0)/\Gamma_{total}$ — Γ_{463}/Γ

NODE=S042R56

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<1.1 × 10^{-3}	90	[1] ALBRECHT 90B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$. NODE=S042R56;LINKAGE=Q

$\Gamma(\omega\pi^0)/\Gamma_{total}$ — Γ_{464}/Γ

NODE=S042R57

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
< 0.5	90	[1] AUBERT 08AH	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
< 2.0	90	[1] JEN 06	BELL	$e^+e^- \to \Upsilon(4S)$
< 1.2	90	[1] AUBERT,B 04D	BABR	Repl. by AUBERT 08AH
< 1.9	90	[1] WANG 04A	BELL	$e^+e^- \to \Upsilon(4S)$
< 3	90	[1] AUBERT 01G	BABR	$e^+e^- \to \Upsilon(4S)$
< 5.5	90	[1] JESSOP 00	CLE2	$e^+e^- \to \Upsilon(4S)$
< 14	90	[1] BERGFELD 98	CLE2	Repl. by JESSOP 00
<460	90	[2] ALBRECHT 90B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R57;LINKAGE=EP

[2] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$. NODE=S042R57;LINKAGE=Q

$\Gamma(\pi^+\pi^+\pi^-\pi^-\pi^0)/\Gamma_{total}$ — Γ_{465}/Γ

NODE=S042R59

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<9.0 × 10^{-3}	90	[1] ALBRECHT 90B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$. NODE=S042R59;LINKAGE=Q

$\Gamma(a_1(1260)^+\rho^-)/\Gamma_{total}$ — Γ_{466}/Γ

NODE=S042R60

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
< 61	90	[1,2] AUBERT,B 06O	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<3400	90	[1] ALBRECHT 90B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R60;LINKAGE=EP

[2] Assumes $a_1(1260)$ decays only to 3π and $B(a_1^\pm \to \pi^\pm\pi^\mp\pi^\pm) = 0.5$. NODE=S042R60;LINKAGE=UA

$\Gamma(a_1(1260)^0\rho^0)/\Gamma_{total}$ — Γ_{467}/Γ

NODE=S042R61

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<2.4 × 10^{-3}	90	[1] ALBRECHT 90B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$. NODE=S042R61;LINKAGE=Q

$\Gamma(b_1^\mp\pi^\pm,\ b_1^\mp \to \omega\pi^\mp)/\Gamma_{total}$ — Γ_{468}/Γ

NODE=S042T35

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
10.9±1.2±0.9	[1] AUBERT 07BI	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T35;LINKAGE=EP

$\Gamma(b_1^0\pi^0,\ b_1^0 \to \omega\pi^0)/\Gamma_{total}$ — Γ_{469}/Γ

NODE=S042T51
NODE=S042T51

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<1.9	90	[1] AUBERT	08AG	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T51;LINKAGE=EP

$\Gamma(b_1^-\rho^+,\ b_1^- \to \omega\pi^-)/\Gamma_{total}$ — Γ_{470}/Γ

NODE=S042T69
NODE=S042T69

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.4 \times 10^{-6}$	90	[1] AUBERT	09AF	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T69;LINKAGE=EP

$\Gamma(b_1^0\rho^0,\ b_1^0 \to \omega\pi^0)/\Gamma_{total}$ — Γ_{471}/Γ

NODE=S042T70
NODE=S042T70

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.4 \times 10^{-6}$	90	[1] AUBERT	09AF	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T70;LINKAGE=EP

$\Gamma(\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-)/\Gamma_{total}$ — Γ_{472}/Γ

NODE=S042R62
NODE=S042R62

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.0 \times 10^{-3}$	90	[1] ALBRECHT	90B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$.

NODE=S042R62;LINKAGE=Q

$\Gamma(a_1(1260)^+a_1(1260)^-,\ a_1^+ \to 2\pi^+\pi^-,\ a_1^- \to 2\pi^-\pi^+)/\Gamma_{total}$ — Γ_{473}/Γ

NODE=S042R44
NODE=S042R44

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
11.8±2.6±1.6		[1] AUBERT	09AL	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<6000	90	[1] ALBRECHT	90B	ARG	$e^+e^- \to \Upsilon(4S)$
<2800	90	[2] BORTOLETTO	89	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$.

NODE=S042R44;LINKAGE=EP

[2] BORTOLETTO 89 reports $< 3.2 \times 10^{-3}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.

NODE=S042R44;LINKAGE=A1

$\Gamma(\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^0)/\Gamma_{total}$ — Γ_{474}/Γ

NODE=S042R63
NODE=S042R63

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.1 \times 10^{-2}$	90	[1] ALBRECHT	90B	ARG	$e^+e^- \to \Upsilon(4S)$

[1] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$.

NODE=S042R63;LINKAGE=Q

$\Gamma(p\overline{p})/\Gamma_{total}$ — Γ_{475}/Γ

NODE=S042R29
NODE=S042R29

VALUE (units 10^{-8})	CL%	DOCUMENT ID		TECN	COMMENT
1.27±0.13±0.06		[1] AAIJ	23T	LHCB	pp at 7, 8 and 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.25±0.27±0.18		[1] AAIJ	17BJ	LHCB	Repl. by AAIJ 23T
$1.47^{+0.62+0.35}_{-0.51-0.14}$		[2] AAIJ	13BQ	LHCB	Repl. by AAIJ 17BJ
< 11	90	[3] TSAI	07	BELL	$e^+e^- \to \Upsilon(4S)$
< 41	90	[3] CHANG	05	BELL	$e^+e^- \to \Upsilon(4S)$
< 27	90	[3] AUBERT	04U	BABR	$e^+e^- \to \Upsilon(4S)$
< 140	90	[3] BORNHEIM	03	CLE2	$e^+e^- \to \Upsilon(4S)$
< 120	90	[3] ABE	02O	BELL	$e^+e^- \to \Upsilon(4S)$
< 700	90	[3] COAN	99	CLE2	$e^+e^- \to \Upsilon(4S)$
< 1800	90	[4] BUSKULIC	96V	ALEP	$e^+e^- \to Z$
<35000	90	[5] ABREU	95N	DLPH	Sup. by ADAM 96D
< 3400	90	[6] BORTOLETTO	89	CLEO	$e^+e^- \to \Upsilon(4S)$
<12000	90	[7] ALBRECHT	88F	ARG	$e^+e^- \to \Upsilon(4S)$
<17000	90	[6] BEBEK	87	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Uses normalization mode $B(B^0 \to K^+\pi^-) = (19.6 \pm 0.5) \times 10^{-6}$.

NODE=S042R29;LINKAGE=A

[2] Uses normalization mode $B(B^0 \to K^+\pi^-) = (19.55 \pm 0.54) \times 10^{-6}$.

NODE=S042R29;LINKAGE=AA

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042R29;LINKAGE=EP

[4] BUSKULIC 96V assumes PDG 96 production fractions for B^0, B^+, B_s, b baryons.

NODE=S042R29;LINKAGE=BV

[5] Assumes a B^0, B^- production fraction of 0.39 and a B_s production fraction of 0.12.

NODE=S042R29;LINKAGE=SR

[6] Paper assumes the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.

NODE=S042R29;LINKAGE=A1

[7] ALBRECHT 88F reports $< 1.3 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%.

NODE=S042R29;LINKAGE=B

$\Gamma(p\overline{p}\pi^+\pi^-)/\Gamma_{total}$ — Γ_{476}/Γ

NODE=S042R31

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
2.87± 0.15± 0.11		[1,2] AAIJ 17BD	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.83± 0.17± 0.17		[3] CHU 20	BELL	$e^+e^- \to \Upsilon(4S)$
<950	90	[4] ABREU 95N	DLPH	Sup. by ADAM 96D
<250	90	[5] BEBEK 89	CLEO	$e^+e^- \to \Upsilon(4S)$
540 ±180 ±200		[6] ALBRECHT 88F	ARG	$e^+e^- \to \Upsilon(4S)$

[1] AAIJ 17BD reports $[\Gamma(B^0 \to p\overline{p}\pi^+\pi^-)/\Gamma_{total}]$ / $[B(B^0 \to J/\psi(1S)K^*(892)^0)]$ / $[B(J/\psi(1S) \to p\overline{p})]$ / $[B(K^*(892) \to (K\pi)^\pm)] = 1.07 \pm 0.04 \pm 0.04$ which we multiply by our best values $B(B^0 \to J/\psi(1S)K^*(892)^0) = (1.27 \pm 0.05) \times 10^{-3}$, $B(J/\psi(1S) \to p\overline{p}) = (2.120 \pm 0.029) \times 10^{-3}$, $B(K^*(892) \to (K\pi)^\pm) = (99.902 \pm 0.009) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best values. NODE=S042R31;LINKAGE=C

[2] The branching ratio is given for $m_{p\overline{p}}$ <2.85 GeV. NODE=S042R31;LINKAGE=D

[3] Assumes equal production of B^0 and B^+ from $\Upsilon(4S)$ decays. This measurement is quoted for $M(\pi^+\pi^-) < 1.22$ GeV excluding the $0.46 < M(\pi^+\pi^-) < 0.53$ GeV region. NODE=S042R31;LINKAGE=E

[4] Assumes a B^0, B^- production fraction of 0.39 and a B_s production fraction of 0.12. NODE=S042R31;LINKAGE=SR

[5] BEBEK 89 reports $< 2.9 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R31;LINKAGE=A1

[6] ALBRECHT 88F reports $6.0 \pm 2.0 \pm 2.2$ assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R31;LINKAGE=B

$\Gamma(p\overline{p}\pi^+\pi^-)/\Gamma(p\overline{p}K^+\pi^-)$ — $\Gamma_{476}/\Gamma_{477}$

NODE=S042P24

VALUE	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.46±0.02±0.02	[1] AAIJ 17BD	LHCB	pp at 7, 8 TeV

[1] The ratio is given for $m_{p\overline{p}}$ <2.85 GeV. NODE=S042P24;LINKAGE=A

$\Gamma(p\overline{p}K^0)/\Gamma_{total}$ — Γ_{478}/Γ

NODE=S042B23

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
2.66±0.32 OUR AVERAGE				
$2.51^{+0.35}_{-0.29} \pm 0.21$		[1,2] CHEN 08C	BELL	$e^+e^- \to \Upsilon(4S)$
3.0 ±0.5 ±0.3		[2] AUBERT 07AV	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$2.40^{+0.64}_{-0.44} \pm 0.28$		[2,3,4] WANG 05A	BELL	Repl. by CHEN 08C
$1.88^{+0.77}_{-0.60} \pm 0.23$		[2,3,5] WANG 04	BELL	Repl. by WANG 05A
<7.2	90	[2,3] ABE 02K	BELL	Repl. by WANG 04

[1] Explicitly vetoes resonant production of $p\overline{p}$ from charmonium states. NODE=S042B23;LINKAGE=CH

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B23;LINKAGE=EP

[3] Explicitly vetoes resonant production of $p\overline{p}$ from charmonium states and pK^0 production from Λ_c. NODE=S042B23;LINKAGE=EZ

[4] Provides also results with $M_{p\overline{p}} < 2.85$ GeV/c^2 and angular asymmetry of $p\overline{p}$ system. NODE=S042B23;LINKAGE=WA

[5] The branching fraction for $M_{p\overline{p}} < 2.85$ is also reported. NODE=S042B23;LINKAGE=WN

$\Gamma(\Theta(1540)^+\overline{p},\ \Theta^+ \to pK^0_S)/\Gamma_{total}$ — Γ_{479}/Γ

NODE=S042Q34

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<0.05	90	[1] AUBERT 07AV	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<0.23	90	[1] WANG 05A	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q34;LINKAGE=EP

$\Gamma(f_J(2220)K^0,\ f_J \to p\overline{p})/\Gamma_{total}$ — Γ_{480}/Γ

NODE=S042T42

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<0.45	90	[1] AUBERT 07AV	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T42;LINKAGE=EP

$\Gamma(p\overline{p}K^+\pi^-)/\Gamma_{total}$ Γ_{477}/Γ

NODE=S042P22

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
6.3±0.5±0.2	[1,2] AAIJ	17BD	LHCB	pp at 7, 8 TeV

[1] AAIJ 17BD reports $[\Gamma(B^0 \to p\overline{p}K^+\pi^-)/\Gamma_{total}]$ / $[B(B^0 \to J/\psi(1S)K^*(892)^0)]$ / $[B(J/\psi(1S) \to p\overline{p})]$ / $[B(K^*(892) \to (K\pi)^\pm)] = 2.34 \pm 0.12 \pm 0.12$ which we multiply by our best values $B(B^0 \to J/\psi(1S)K^*(892)^0) = (1.27 \pm 0.05) \times 10^{-3}$, $B(J/\psi(1S) \to p\overline{p}) = (2.120 \pm 0.029) \times 10^{-3}$, $B(K^*(892) \to (K\pi)^\pm) = (99.902 \pm 0.009) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best values. NODE=S042P22;LINKAGE=B

[2] The branching ratio is given for $m_{p\overline{p}} < 2.85$ GeV. NODE=S042P22;LINKAGE=C

$\Gamma(p\overline{p}K^*(892)^0)/\Gamma_{total}$ Γ_{481}/Γ

NODE=S042Q02

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$1.24^{+0.28}_{-0.25}$ OUR AVERAGE					
$1.18^{+0.29}_{-0.25} \pm 0.11$		[1,2] CHEN	08C	BELL	$e^+e^- \to \Upsilon(4S)$
$1.47 \pm 0.45 \pm 0.40$		[2] AUBERT	07AV	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<7.6	90	[2] WANG	04	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Explicitly vetoes resonant production of $p\overline{p}$ from charmonium states. NODE=S042Q02;LINKAGE=CH

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q02;LINKAGE=EP

$\Gamma(p\overline{p}\pi^0)/\Gamma_{total}$ Γ_{484}/Γ

NODE=S042P49

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
5.0±1.8±0.6	PAL	19	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(f_J(2220)K^*_0,\ f_J \to p\overline{p})/\Gamma_{total}$ Γ_{482}/Γ

NODE=S042T43

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.15	90	[1] AUBERT	07AV	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T43;LINKAGE=EP

$\Gamma(p\overline{p}K^+K^-)/\Gamma_{total}$ Γ_{483}/Γ

NODE=S042P23

VALUE (units 10^{-8})	DOCUMENT ID		TECN	COMMENT
12.1±3.1±0.5	[1,2] AAIJ	17BD	LHCB	pp at 7, 8 TeV

[1] AAIJ 17BD reports $[\Gamma(B^0 \to p\overline{p}K^+K^-)/\Gamma_{total}]$ / $[B(B^0 \to J/\psi(1S)K^*(892)^0)]$ / $[B(J/\psi(1S) \to p\overline{p})]$ / $[B(K^*(892) \to (K\pi)^\pm)] = 0.045 \pm 0.011 \pm 0.004$ which we multiply by our best values $B(B^0 \to J/\psi(1S)K^*(892)^0) = (1.27 \pm 0.05) \times 10^{-3}$, $B(J/\psi(1S) \to p\overline{p}) = (2.120 \pm 0.029) \times 10^{-3}$, $B(K^*(892) \to (K\pi)^\pm) = (99.902 \pm 0.009) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best values. NODE=S042P23;LINKAGE=A

[2] The branching ratio is given for $m_{p\overline{p}} < 2.85$ GeV. NODE=S042P23;LINKAGE=B

$\Gamma(p\overline{p}K^+K^-)/\Gamma(p\overline{p}K^+\pi^-)$ $\Gamma_{483}/\Gamma_{477}$

NODE=S042P25

VALUE (%)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.9±0.5±0.2	[1] AAIJ	17BD	LHCB	pp at 7, 8 TeV

[1] The ratio is given for $m_{p\overline{p}} < 2.85$ GeV. NODE=S042P25;LINKAGE=A

$\Gamma(p\overline{p}p\overline{p})/\Gamma_{total}$ Γ_{485}/Γ

NODE=S042P27

VALUE (units 10^{-8})	CL%	DOCUMENT ID		TECN	COMMENT
2.2±0.4±0.1		[1] AAIJ	23AD	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<20	90	[2] LEES	18C	BABR	$e^+e^- \to \Upsilon(4S)$

[1] AAIJ 23AD reports $(2.2 \pm 0.4 \pm 0.1 \pm 0.1) \times 10^{-8}$ from a measurement of $[\Gamma(B^0 \to p\overline{p}p\overline{p})/\Gamma_{total}]$ / $[B(B^0 \to J/\psi(1S)K^*(892)^0)]$ / $[B(J/\psi(1S) \to p\overline{p})]$ assuming $B(B^0 \to J/\psi(1S)K^*(892)^0) = (1.27 \pm 0.05) \times 10^{-3}$, $B(J/\psi(1S) \to p\overline{p}) = (2.120 \pm 0.029) \times 10^{-3}$. It also includes $B(K^*(892)^0 \to K^+\pi^-) = 2/3$. NODE=S042P27;LINKAGE=C

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042P27;LINKAGE=A

$\Gamma(p\overline{\Lambda}\pi^-)/\Gamma_{total}$ Γ_{486}/Γ

NODE=S042R32

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
3.16±0.24 OUR AVERAGE					
$3.21^{+0.28}_{-0.25}\pm0.16$		[1] CHANG	23	BELL	$e^+e^- \to \Upsilon(4S)$
$3.07\pm0.31\pm0.23$		[1] AUBERT	09AC	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$3.23^{+0.33}_{-0.29}\pm0.29$		[1] WANG	07C	BELL	$e^+e^- \to \Upsilon(4S)$
$2.62^{+0.44}_{-0.40}\pm0.31$		[1,2] WANG	05A	BELL	Repl. by WANG 07C
$3.97^{+1.00}_{-0.80}\pm0.56$		[1] WANG	03	BELL	Repl. by WANG 05A
<13	90	[1] COAN	99	CLE2	$e^+e^- \to \Upsilon(4S)$
<180	90	[3] ALBRECHT	88F	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R32;LINKAGE=EP

[2] Provides also results with $M_{p\overline{p}} < 2.85$ GeV/c^2 and angular asymmetry of $p\overline{\Lambda}$ system. NODE=S042R32;LINKAGE=WA

[3] ALBRECHT 88F reports $< 2.0\times10^{-4}$ assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R32;LINKAGE=B

$\Gamma(p\overline{\Lambda}\pi^-\gamma)/\Gamma_{total}$ Γ_{487}/Γ

NODE=S042RB5

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<6.5\times10^{-7}$	90	[1] LAI	14	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042RB5;LINKAGE=EP

$\Gamma(p\overline{\Sigma}(1385)^-)/\Gamma_{total}$ Γ_{488}/Γ

NODE=S042T40

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.26	90	[1] WANG	07C	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T40;LINKAGE=EP

$\left[\Gamma(\Delta(1232)^+\overline{p})+\Gamma(\Delta(1232)^-p)\right]/\Gamma_{total}$ Γ_{489}/Γ

NODE=S042P50

VALUE	DOCUMENT ID		TECN	COMMENT
$<1.6\times10^{-6}$	PAL	19	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\Delta^0\overline{\Lambda})/\Gamma_{total}$ Γ_{490}/Γ

NODE=S042T41

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.93	90	[1] WANG	07C	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T41;LINKAGE=EP

$\Gamma(p\overline{\Lambda}K^-)/\Gamma_{total}$ Γ_{491}/Γ

NODE=S042B55

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.82	90	[1] WANG	03	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B55;LINKAGE=EP

$\Gamma(p\overline{\Lambda}D^-)/\Gamma_{total}$ Γ_{492}/Γ

NODE=S042C34

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
25.1±2.6±3.5	[1] CHANG	15	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042C34;LINKAGE=A

$\Gamma(p\overline{\Lambda}D^{*-})/\Gamma_{total}$ Γ_{493}/Γ

NODE=S042C35

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
33.6±6.3±4.4	[1] CHANG	15	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042C35;LINKAGE=A

$\Gamma(p\overline{\Sigma}^0\pi^-)/\Gamma_{total}$ Γ_{494}/Γ

NODE=S042B56

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$1.17^{+0.43}_{-0.40}\pm0.07$		[1] CHANG	23	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<3.8	90	[1] WANG	03	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B56;LINKAGE=EP

$\Gamma(\overline{\Lambda}\Lambda)/\Gamma_{total}$ — Γ_{495}/Γ

NODE=S042S85

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<0.32	90	[1] TSAI	07	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.69	90	[1] CHANG	05	BELL	Repl. by TSAI 07
<1.2	90	[1] BORNHEIM	03	CLE2	$e^+e^- \to \Upsilon(4S)$
<1.0	90	[1] ABE	02O	BELL	Repl. by CHANG 05
<3.9	90	[1] COAN	99	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S85;LINKAGE=EP

$\Gamma(\overline{\Lambda}\Lambda K^0)/\Gamma_{total}$ — Γ_{496}/Γ

NODE=S042Q85

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$4.76^{+0.84}_{-0.68}\pm0.61$	[1,2] CHANG	09	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Excluding charmonium events in $2.85 < m_{\Lambda\overline{\Lambda}} < 3.128$ GeV/c^2 and $3.315 < m_{\Lambda\overline{\Lambda}} <$ 3.735 GeV/c^2. Measurements in various $m_{\Lambda\overline{\Lambda}}$ bins are also reported. NODE=S042Q85;LINKAGE=CH

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q85;LINKAGE=EP

$\Gamma(\overline{\Lambda}\Lambda K^{*0})/\Gamma_{total}$ — Γ_{497}/Γ

NODE=S042Q86

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$2.46^{+0.87}_{-0.72}\pm0.34$	[1,2] CHANG	09	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Excluding charmonium events in $2.85 < m_{\Lambda\overline{\Lambda}} < 3.128$ GeV/c^2 and $3.315 < m_{\Lambda\overline{\Lambda}} <$ 3.735 GeV/c^2. Measurements in various $m_{\Lambda\overline{\Lambda}}$ bins are also reported. NODE=S042Q86;LINKAGE=CH

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q86;LINKAGE=EP

$\Gamma(\overline{\Lambda}\Lambda D^0)/\Gamma_{total}$ — Γ_{498}/Γ

NODE=S042Q87

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
$1.00^{+0.30}_{-0.26}$ OUR AVERAGE				
$0.98^{+0.29}_{-0.26}\pm0.19$	[1,2] LEES	14B	BABR	$e^+e^- \to \Upsilon(4S)$
$1.05^{+0.57}_{-0.44}\pm0.14$	[2] CHANG	09	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Evidence for 3.4 st. dev. signal significance. NODE=S042Q87;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q87;LINKAGE=EP

$\Gamma(D^0\Sigma^0\overline{\Lambda}+\text{c.c.})/\Gamma_{total}$ — Γ_{499}/Γ

NODE=S042RB2

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.1\times10^{-5}$	90	[1,2] LEES	14B	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Here $\Sigma^0 \to \Lambda\gamma$. NODE=S042RB2;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042RB2;LINKAGE=EP

$\Gamma(\Delta^0\overline{\Delta}^0)/\Gamma_{total}$ — Γ_{500}/Γ

NODE=S042R45

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0015	90	[1] BORTOLETTO	89	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] BORTOLETTO 89 reports < 0.0018 assuming $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R45;LINKAGE=A1

$\Gamma(\Delta^{++}\overline{\Delta}^{--})/\Gamma_{total}$ — Γ_{501}/Γ

NODE=S042R46

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.1\times10^{-4}$	90	[1] BORTOLETTO	89	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] BORTOLETTO 89 reports $< 1.3\times10^{-4}$ assuming $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R46;LINKAGE=A1

$\Gamma(\overline{D}^0 p\overline{p})/\Gamma_{total}$ — Γ_{502}/Γ

NODE=S042B29

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
1.04±0.07 OUR AVERAGE				
1.02±0.04±0.06	[1,2] DEL-AMO-SA...	12	BABR	$e^+e^- \to \Upsilon(4S)$
1.18±0.15±0.16	[2] ABE	02W	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.13±0.06±0.08	[2] AUBERT,B	06S	BABR	Repl. by DEL-AMO-SANCHEZ 12

[1] Uses the values of D and D^* branching fractions from PDG 08. NODE=S042B29;LINKAGE=DA

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B29;LINKAGE=EP

$\Gamma(D_s^- \overline{\Lambda} p)/\Gamma_{total}$ Γ_{503}/Γ

NODE=S042B08
NODE=S042B08

VALUE (units 10^{-5})	DOCUMENT ID	TECN	COMMENT
2.8±0.8±0.3	[1,2] MEDVEDEVA 07	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B08;LINKAGE=EP

[2] MEDVEDEVA 07 reports $(2.9 \pm 0.7 \pm 0.5 \pm 0.4) \times 10^{-5}$ from a measurement of $[\Gamma(B^0 \to D_s^- \overline{\Lambda} p)/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = (4.4 \pm 0.6) \times 10^{-2}$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042B08;LINKAGE=ME

$\Gamma(\overline{D}^*(2007)^0 p \overline{p})/\Gamma_{total}$ Γ_{504}/Γ

NODE=S042B30
NODE=S042B30

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
0.99±0.11 OUR AVERAGE			
0.97±0.07±0.09	[1,2] DEL-AMO-SA..12	BABR	$e^+ e^- \to \Upsilon(4S)$
$1.20^{+0.33}_{-0.29}\pm0.21$	[2] ABE 02W	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
1.01±0.10±0.09	[2] AUBERT,B 06S	BABR	Repl. by DEL-AMO-SANCHEZ 12

[1] Uses the values of D and D^* branching fractions from PDG 08.

NODE=S042B30;LINKAGE=DA

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B30;LINKAGE=EP

$\Gamma(D^*(2010)^- p \overline{n})/\Gamma_{total}$ Γ_{505}/Γ

NODE=S042S99
NODE=S042S99

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
$\mathbf{14.5^{+3.4}_{-3.0}\pm2.7}$	[1] ANDERSON 01	CLE2	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S99;LINKAGE=EP

$\Gamma(D^- p \overline{p} \pi^+)/\Gamma_{total}$ Γ_{506}/Γ

NODE=S042B76
NODE=S042B76

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
3.32±0.10±0.29	[1,2] DEL-AMO-SA..12	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
3.38±0.14±0.29	[2] AUBERT,B 06S	BABR	Repl. by DEL-AMO-SANCHEZ 12

[1] Uses the values of D and D^* branching fractions from PDG 08.

NODE=S042B76;LINKAGE=DA

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042B76;LINKAGE=EP

$\Gamma(D^*(2010)^- p \overline{p} \pi^+)/\Gamma_{total}$ Γ_{507}/Γ

NODE=S042S98
NODE=S042S98

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
4.7 ±0.5 OUR AVERAGE Error includes scale factor of 1.2.			
4.55±0.16±0.39	[1,2] DEL-AMO-SA..12	BABR	$e^+ e^- \to \Upsilon(4S)$
$6.5\ ^{+1.3}_{-1.2}\ \pm1.0$	[2] ANDERSON 01	CLE2	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
4.81±0.22±0.44	[2] AUBERT,B 06S	BABR	Repl. by DEL-AMO-SANCHEZ 12

[1] Uses the values of D and D^* branching fractions from PDG 08.

NODE=S042S98;LINKAGE=DA

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S98;LINKAGE=EP

$\Gamma(\overline{D}^0 p \overline{p} \pi^+ \pi^-)/\Gamma_{total}$ Γ_{508}/Γ

NODE=S042C07
NODE=S042C07

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
2.99±0.21±0.45	[1,2] DEL-AMO-SA..12	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Uses the values of D and D^* branching fractions from PDG 08.

NODE=S042C07;LINKAGE=DA

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042C07;LINKAGE=EP

$\Gamma(\overline{D}^{*0} p \overline{p} \pi^+ \pi^-)/\Gamma_{total}$ Γ_{509}/Γ

NODE=S042C08
NODE=S042C08

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
1.91±0.36±0.29	[1,2] DEL-AMO-SA..12	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Uses the values of D and D^* branching fractions from PDG 08.

NODE=S042C08;LINKAGE=DA

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042C08;LINKAGE=EP

$\Gamma(\Theta_c \overline{p} \pi^+, \Theta_c \to D^- p)/\Gamma_{total}$ Γ_{510}/Γ

NODE=S042BP1
NODE=S042BP1

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<9	90	[1] AUBERT,B 06S	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042BP1;LINKAGE=EP

$\Gamma(\Theta_c \overline{p}\pi^+,\ \Theta_c \to D^{*-} p)/\Gamma_{total}$ Γ_{511}/Γ

NODE=S042BP2
NODE=S042BP2

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<14	90	[1] AUBERT,B	06S	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042BP2;LINKAGE=EP

$\Gamma(\overline{\Sigma}_c^{--} \Delta^{++})/\Gamma_{total}$ Γ_{512}/Γ

NODE=S042S21
NODE=S042S21

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<8 \times 10^{-4}$	90	[1] PROCARIO	94	CLE2	$e^+ e^- \to \Upsilon(4S)$

[1] PROCARIO 94 reports < 0.0012 from a measurement of $[\Gamma(B^0 \to \overline{\Sigma}_c^{--} \Delta^{++})/\Gamma_{total}] \times [B(\Lambda_c^+ \to pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \to pK^-\pi^+) = 0.043$, which we rescale to our best value $B(\Lambda_c^+ \to pK^-\pi^+) = 6.35 \times 10^{-2}$.

NODE=S042S21;LINKAGE=A

$\Gamma(\overline{\Lambda}_c^- p\pi^+\pi^-)/\Gamma_{total}$ Γ_{513}/Γ

NODE=S042S59
NODE=S042S59

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
1.01±0.14 OUR AVERAGE Error includes scale factor of 1.4. See the ideogram below.				
[$(1.02 \pm 0.14) \times 10^{-3}$ OUR 2024 AVERAGE Scale factor = 1.3]				
$1.23 \pm 0.05 \pm 0.33$	[1,2] LEES	13H	BABR	$e^+ e^- \to \Upsilon(4S)$
$0.88 \pm 0.11 ^{+0.04}_{-0.03}$	[1,3] PARK	07	BELL	$e^+ e^- \to \Upsilon(4S)$
$1.32 ^{+0.21}_{-0.20} \pm 0.05$	[4] DYTMAN	02	CLE2	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.87 \pm 0.16 \pm 0.03$	[5] GABYSHEV	02	BELL	Repl. by PARK 07
$1.33 ^{+0.46}_{-0.42} \pm 0.37$	[6] FU	97	CLE2	Repl. by DYTMAN 02

NEW

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S59;LINKAGE=EP

[2] Uses $\Lambda_c^+ \to pK^-\pi^+$ mode. The second error includes the uncertainty of the branching fraction of the Λ_c decay, $B(\Lambda_c^+ \to pK^-\pi^+) = (5.0 \pm 1.3)\%$.

NODE=S042S59;LINKAGE=LE

[3] PARK 07 reports $(11.2 \pm 0.5 \pm 3.2) \times 10^{-4}$ from a measurement of $[\Gamma(B^0 \to \overline{\Lambda}_c^- p\pi^+\pi^-)/\Gamma_{total}] \times [B(\Lambda_c^+ \to pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \to pK^-\pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \to pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042S59;LINKAGE=PA

[4] DYTMAN 02 reports $(1.67^{+0.27}_{-0.25}) \times 10^{-3}$ from a measurement of $[\Gamma(B^0 \to \overline{\Lambda}_c^- p\pi^+\pi^-)/\Gamma_{total}] \times [B(\Lambda_c^+ \to pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \to pK^-\pi^+) = 0.05$, which we rescale to our best value $B(\Lambda_c^+ \to pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

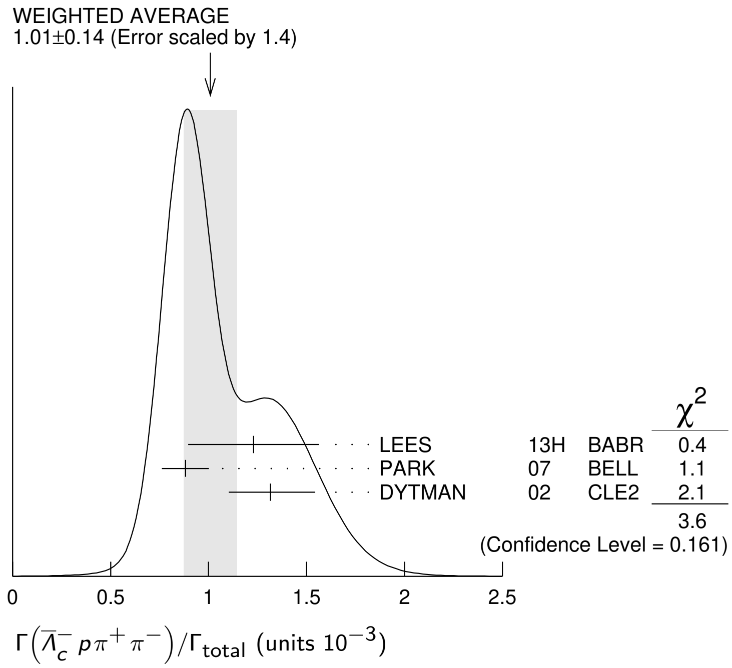
NODE=S042S59;LINKAGE=B9

[5] GABYSHEV 02 reports $(1.1 \pm 0.2) \times 10^{-3}$ from a measurement of $[\Gamma(B^0 \to \overline{\Lambda}_c^- p\pi^+\pi^-)/\Gamma_{total}] \times [B(\Lambda_c^+ \to pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \to pK^-\pi^+) = 0.05$, which we rescale to our best value $B(\Lambda_c^+ \to pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042S59;LINKAGE=G9

[6] FU 97 uses PDG 96 values of Λ_c branching fraction.

NODE=S042S59;LINKAGE=A



$\Gamma(\overline{\Lambda}_c^- p)/\Gamma_{total}$ Γ_{514}/Γ

NODE=S042S55
NODE=S042S55

VALUE (units 10^{-5})	CL%	DOCUMENT ID	TECN	COMMENT
1.52±0.17 OUR AVERAGE				
[$(1.55 \pm 0.17) \times 10^{-5}$ OUR 2024 AVERAGE]				
$1.49 \pm 0.16 \pm 0.06$		[1,2] AUBERT 08BN	BABR	$e^+ e^- \to \Upsilon(4S)$
$2.19^{+0.56}_{-0.49} \pm 0.65$		[1,3] GABYSHEV 03	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$2.10^{+0.67}_{-0.55}{}^{+0.77}_{-0.46}$		[1,4] AUBERT 07AV	BABR	Repl. by AUBERT 08BN
< 9	90	[1,5] DYTMAN 02	CLE2	$e^+ e^- \to \Upsilon(4S)$
< 3.1	90	[1,4] GABYSHEV 02	BELL	$e^+ e^- \to \Upsilon(4S)$
<21	90	[6] FU 97	CLE2	$e^+ e^- \to \Upsilon(4S)$

NEW

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S55;LINKAGE=EP

[2] AUBERT 08BN reports $(1.89 \pm 0.21 \pm 0.49) \times 10^{-5}$ from a measurement of $[\Gamma(B^0 \to \overline{\Lambda}_c^- p)/\Gamma_{total}] \times [B(\Lambda_c^+ \to pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \to pK^-\pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \to pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042S55;LINKAGE=UB

[3] The second error for GABYSHEV 03 includes the systematic and the error of $\Lambda_c \to \overline{p}K^+\pi^-$ decay branching fraction. NODE=S042S55;LINKAGE=GA

[4] Uses the value for $\Lambda_c \to pK^-\pi^+$ branching ratio $(5.0 \pm 1.3)\%$. NODE=S042S55;LINKAGE=GB

[5] DYTMAN 02 measurement uses $B(\Lambda_c^- \to \overline{p}K^+\pi^-) = 5.0 \pm 1.3\%$. The second error includes the systematic and the uncertainty of the branching ratio. NODE=S042S55;LINKAGE=FP

[6] FU 97 uses PDG 96 values of Λ_c branching ratio. NODE=S042S55;LINKAGE=A

$\Gamma(\overline{\Lambda}_c^- p\pi^0)/\Gamma_{total}$ Γ_{515}/Γ

NODE=S042S56
NODE=S042S56

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
1.53±0.18 OUR AVERAGE [$(1.55 \pm 0.18) \times 10^{-4}$ OUR 2024 AVERAGE]				
1.53±0.17±0.06		[1,2] AUBERT 10H	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<5.9	90	[3] FU 97	CLE2	$e^+ e^- \to \Upsilon(4S)$

NEW

[1] AUBERT 10H reports $(1.94 \pm 0.17 \pm 0.52) \times 10^{-4}$ from a measurement of $[\Gamma(B^0 \to \overline{\Lambda}_c^- p\pi^0)/\Gamma_{total}] \times [B(\Lambda_c^+ \to pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \to pK^-\pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \to pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042S56;LINKAGE=AU

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S56;LINKAGE=EP

[3] FU 97 uses PDG 96 values of Λ_c branching ratio. NODE=S042S56;LINKAGE=A

$\Gamma(\Lambda_c^- p K^+ K^-)/\Gamma_{total}$ — Γ_{528}/Γ

NODE=S042C31

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
1.97±0.35±0.08	[1,2] LEES	15B	BABR	$e^+e^- \to \Upsilon(4S)$

[1] LEES 15B reports $[\Gamma(B^0 \to \Lambda_c^- p K^+ K^-)/\Gamma_{total}] \times [B(\Lambda_c^+ \to pK^-\pi^+)] = (12.5 \pm 2.0 \pm 1.0) \times 10^{-7}$ which we divide by our best value $B(\Lambda_c^+ \to pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042C31;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042C31;LINKAGE=EP

$\Gamma(\Lambda_c^- p\phi)/\Gamma_{total}$ — Γ_{529}/Γ

NODE=S042C32

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<9 × 10^{-6} (CL = 90%) [<9.6 × 10^{-6} (CL = 90%) OUR 2024 BEST LIMIT]					
<9 × 10^{-6}	90	[1,2] LEES	15B	BABR	$e^+e^- \to \Upsilon(4S)$

[1] LEES 15B reports $< 1.2 \times 10^{-5}$ from a measurement of $[\Gamma(B^0 \to \Lambda_c^- p\phi)/\Gamma_{total}] \times [B(\Lambda_c^+ \to pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \to pK^-\pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \to pK^-\pi^+) = 6.35 \times 10^{-2}$. NODE=S042C32;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042C32;LINKAGE=EP

$\Gamma(\Sigma_c(2455)^- p)/\Gamma_{total}$ — Γ_{516}/Γ

NODE=S042Q91

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
<24	[1,2] AUBERT	10H	BABR	$e^+e^- \to \Upsilon(4S)$

[1] AUBERT 10H reports $[\Gamma(B^0 \to \Sigma_c(2455)^- p)/\Gamma_{total}] \times [B(\Lambda_c^+ \to pK^-\pi^+)] < 1.5 \times 10^{-6}$ which we divide by our best value $B(\Lambda_c^+ \to pK^-\pi^+) = 6.35 \times 10^{-2}$. NODE=S042Q91;LINKAGE=AU

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q91;LINKAGE=EP

$\Gamma(\overline{\Lambda}_c^- p\pi^+\pi^-\pi^0)/\Gamma_{total}$ — Γ_{517}/Γ

NODE=S042S57

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<5.07 × 10^{-3}	90	[1] FU	97	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] FU 97 uses PDG 96 values of Λ_c branching ratio. NODE=S042S57;LINKAGE=A

$\Gamma(\overline{\Lambda}_c^- p\pi^+\pi^-\pi^+\pi^-)/\Gamma_{total}$ — Γ_{518}/Γ

NODE=S042S58

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<2.74 × 10^{-3}	90	[1] FU	97	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] FU 97 uses PDG 96 values of Λ_c branching ratio. NODE=S042S58;LINKAGE=A

$\Gamma(\overline{\Lambda}_c^- p\pi^+\pi^-(\text{nonresonant}))/\Gamma_{total}$ — Γ_{519}/Γ

NODE=S042R83

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
5.4±1.0 OUR AVERAGE Error includes scale factor of 1.3. [(5.5 ± 1.0) × 10^{-4} OUR 2024 AVERAGE Scale factor = 1.3]				
7.9±0.4±2.0	[1,2] LEES	13H	BABR	$e^+e^- \to \Upsilon(4S)$
5.0±0.8±0.2	[1,3] PARK	07	BELL	$e^+e^- \to \Upsilon(4S)$

NEW

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R83;LINKAGE=EP

[2] Uses $\Lambda_c^+ \to pK^-\pi^+$ mode. The second error includes the uncertainty of the branching fraction of the Λ_c decay, $B(\Lambda_c^+ \to pK^-\pi^+) = (5.0 \pm 1.3)\%$. NODE=S042R83;LINKAGE=LE

[3] PARK 07 reports $(6.4 \pm 0.4 \pm 1.9) \times 10^{-4}$ from a measurement of $[\Gamma(B^0 \to \overline{\Lambda}_c^- p\pi^+\pi^-(\text{nonresonant}))/\Gamma_{total}] \times [B(\Lambda_c^+ \to pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \to pK^-\pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \to pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042R83;LINKAGE=PA

$\Gamma(\overline{\Sigma}_c(2520)^{--} p\pi^+)/\Gamma_{total}$ — Γ_{520}/Γ

NODE=S042B39

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
1.01±0.18 OUR AVERAGE [(1.02 ± 0.18) × 10^{-4} OUR 2024 AVERAGE]				
1.15±0.10±0.30	[1,2] LEES	13H	BABR	$e^+e^- \to \Upsilon(4S)$
0.95±0.21±0.04	[1,3] PARK	07	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1.28^{+0.50}_{-0.46}\pm0.05$	[4] GABYSHEV	02	BELL	Repl. by PARK 07

NEW

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B39;LINKAGE=EP

[2] Uses $\Lambda_c^+ \rightarrow pK^-\pi^+$ mode. The second error includes the uncertainty of the branching fraction of the Λ_c decay, $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (5.0 \pm 1.3)\%$. NODE=S042B39;LINKAGE=LE

[3] PARK 07 reports $(1.2 \pm 0.1 \pm 0.4) \times 10^{-4}$ from a measurement of $[\Gamma(B^0 \rightarrow \overline{\Sigma}_c(2520)^{--} p\pi^+)/\Gamma_{total}] \times [B(\Lambda_c^+ \rightarrow pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042B39;LINKAGE=PA

[4] GABYSHEV 02 reports $(1.63^{+0.64}_{-0.58}) \times 10^{-4}$ from a measurement of $[\Gamma(B^0 \rightarrow \overline{\Sigma}_c(2520)^{--} p\pi^+)/\Gamma_{total}] \times [B(\Lambda_c^+ \rightarrow pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = 0.05$, which we rescale to our best value $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042B39;LINKAGE=G9

$\Gamma(\overline{\Sigma}_c(2520)^0 p\pi^-)/\Gamma_{total}$ — Γ_{521}/Γ

NODE=S042B41
NODE=S042B41

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<0.31 \times 10^{-4}$	90	[1,2] LEES	13H	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<0.38 \times 10^{-4}$	90	[1] PARK	07	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
$<1.21 \times 10^{-4}$	90	[1,2] GABYSHEV	02	BELL	Repl. by PARK 07

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B41;LINKAGE=EP

[2] Uses the value for $\Lambda_c \rightarrow pK^-\pi^+$ branching ratio $(5.0 \pm 1.3)\%$. NODE=S042B41;LINKAGE=GB

$\Gamma(\overline{\Sigma}_c(2455)^0 N^0,\ N^0 \rightarrow p\pi^-)/\Gamma_{total}$ — Γ_{523}/Γ

NODE=S042Q84

N^0 is the $N(1440)\ P_{11}$ or $N(1535)\ S_{11}$ or an admixture of the two baryonic states. NODE=S042Q84

NODE=S042Q84

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
0.63±0.16 OUR AVERAGE	[(0.64 ± 0.17) × 10^{-4} OUR 2024 AVERAGE]			
$0.63 \pm 0.16^{+0.03}_{-0.02}$	[1,2] KIM	08	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

NEW

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q84;LINKAGE=EP

[2] KIM 08 reports $(0.80 \pm 0.15 \pm 0.25) \times 10^{-4}$ from a measurement of $[\Gamma(B^0 \rightarrow \overline{\Sigma}_c(2455)^0 N^0,\ N^0 \rightarrow p\pi^-)/\Gamma_{total}] \times [B(\Lambda_c^+ \rightarrow pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042Q84;LINKAGE=KI

$\Gamma(\overline{\Sigma}_c(2455)^0 p\pi^-)/\Gamma_{total}$ — Γ_{522}/Γ

NODE=S042B26
NODE=S042B26

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
1.08±0.09 OUR AVERAGE					
1.09±0.06±0.07		LI	23E	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
0.91±0.07±0.24		[1,2] LEES	13H	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
1.7 ±0.6 ±0.1		[3] DYTMAN	02	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.10±0.20±0.04		[1,4] PARK	07	BELL	Repl. by LI 23E.
$0.38^{+0.36}_{-0.32}{}^{+0.02}_{-0.01}$	90	[5] GABYSHEV	02	BELL	Repl. by PARK 07

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B26;LINKAGE=EP

[2] Uses $\Lambda_c^+ \rightarrow pK^-\pi^+$ mode. The second error includes the uncertainty of the branching fraction of the Λ_c decay, $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (5.0 \pm 1.3)\%$. NODE=S042B26;LINKAGE=LE

[3] DYTMAN 02 reports $(2.2 \pm 0.7) \times 10^{-4}$ from a measurement of $[\Gamma(B^0 \rightarrow \overline{\Sigma}_c(2455)^0 p\pi^-)/\Gamma_{total}] \times [B(\Lambda_c^+ \rightarrow pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = 0.05$, which we rescale to our best value $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042B26;LINKAGE=B9

[4] PARK 07 reports $(1.4 \pm 0.2 \pm 0.4) \times 10^{-4}$ from a measurement of $[\Gamma(B^0 \rightarrow \overline{\Sigma}_c(2455)^0 p\pi^-)/\Gamma_{total}] \times [B(\Lambda_c^+ \rightarrow pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042B26;LINKAGE=PA

[5] GABYSHEV 02 reports $(0.48^{+0.46}_{-0.41}) \times 10^{-4}$ from a measurement of $[\Gamma(B^0 \rightarrow \overline{\Sigma}_c(2455)^0 p\pi^-)/\Gamma_{total}] \times [B(\Lambda_c^+ \rightarrow pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = 0.05$, which we rescale to our best value $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042B26;LINKAGE=G9

$\Gamma(\overline{\Sigma}_c(2455)^{--} p \pi^+)/\Gamma_{total}$ Γ_{524}/Γ

NODE=S042B27

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
1.89±0.15 OUR AVERAGE				
1.84±0.11±0.12	LI	23E	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
2.13±0.10±0.56	[1,2] LEES	13H	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
2.9 ±0.9 ±0.1	[3] DYTMAN	02	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1.65\pm0.25^{+0.07}_{-0.06}$	[1,4] PARK	07	BELL	Repl. by LI 23E.
$1.9\ ^{+0.6}_{-0.5}\ \pm0.1$	[5] GABYSHEV	02	BELL	Repl. by PARK 07

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B27;LINKAGE=EP

[2] Uses $\Lambda_c^+ \rightarrow pK^-\pi^+$ mode. The second error includes the uncertainty of the branching fraction of the Λ_c decay, $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (5.0 \pm 1.3)\%$. NODE=S042B27;LINKAGE=LE

[3] DYTMAN 02 reports $(3.7 \pm 1.1) \times 10^{-4}$ from a measurement of $[\Gamma(B^0 \rightarrow \overline{\Sigma}_c(2455)^{--} p\pi^+)/\Gamma_{total}] \times [B(\Lambda_c^+ \rightarrow pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = 0.05$, which we rescale to our best value $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042B27;LINKAGE=B9

[4] PARK 07 reports $(2.1 \pm 0.2 \pm 0.6) \times 10^{-4}$ from a measurement of $[\Gamma(B^0 \rightarrow \overline{\Sigma}_c(2455)^{--} p\pi^+)/\Gamma_{total}] \times [B(\Lambda_c^+ \rightarrow pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042B27;LINKAGE=PA

[5] GABYSHEV 02 reports $(2.38^{+0.75}_{-0.69}) \times 10^{-4}$ from a measurement of $[\Gamma(B^0 \rightarrow \overline{\Sigma}_c(2455)^{--} p\pi^+)/\Gamma_{total}] \times [B(\Lambda_c^+ \rightarrow pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = 0.05$, which we rescale to our best value $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042B27;LINKAGE=G9

$\Gamma(\Lambda_c^- p K^+ \pi^-)/\Gamma_{total}$ Γ_{525}/Γ

NODE=S042Q88

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
3.4±0.7 OUR AVERAGE [$(3.5 \pm 0.7) \times 10^{-5}$ OUR 2024 AVERAGE]				
3.4±0.7±0.1	[1,2] AUBERT	09AG	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

NEW

[1] AUBERT 09AG reports $(4.33 \pm 0.82 \pm 0.33 \pm 1.13) \times 10^{-5}$ from a measurement of $[\Gamma(B^0 \rightarrow \Lambda_c^- pK^+\pi^-)/\Gamma_{total}] \times [B(\Lambda_c^+ \rightarrow pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042Q88;LINKAGE=AU

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q88;LINKAGE=EP

$\Gamma(\overline{\Sigma}_c(2455)^{--} p K^+,\ \overline{\Sigma}_c^{--} \rightarrow \overline{\Lambda}_c^- \pi^-)/\Gamma_{total}$ Γ_{526}/Γ

NODE=S042Q89

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
0.87±0.25 OUR AVERAGE [$(0.89 \pm 0.26) \times 10^{-5}$ OUR 2024 AVERAGE]				
0.87±0.25±0.03	[1,2] AUBERT	09AG	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

NEW

[1] AUBERT 09AG reports $(1.11 \pm 0.30 \pm 0.09 \pm 0.29) \times 10^{-5}$ from a measurement of $[\Gamma(B^0 \rightarrow \overline{\Sigma}_c(2455)^{--} pK^+,\ \overline{\Sigma}_c^{--} \rightarrow \overline{\Lambda}_c^- \pi^-)/\Gamma_{total}] \times [B(\Lambda_c^+ \rightarrow pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042Q89;LINKAGE=AU

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q89;LINKAGE=EP

$\Gamma(\Lambda_c^- p K^*(892)^0)/\Gamma_{total}$ Γ_{527}/Γ

NODE=S042Q90

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
<2.42	90	[1] AUBERT	09AG	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042Q90;LINKAGE=EP

$\Gamma(\Lambda_c^- p \overline{p} p)/\Gamma_{total}$ Γ_{530}/Γ

NODE=S042C20

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
<2.8	[1] LEES	14C	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = 0.050 \pm 0.013$. NODE=S042C20;LINKAGE=A

$\Gamma(\overline{\Lambda}_c^- \Lambda K^+)/\Gamma_{total}$ Γ_{531}/Γ

NODE=S042Q96

VALUE (units 10^{-5})	DOCUMENT ID	TECN	COMMENT
4.8±1.1±0.2	[1,2] LEES 11F	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^0 and B^+ from Upsilon(4S) decays.

[2] LEES 11F reports $(3.8 \pm 0.8 \pm 0.2 \pm 1.0) \times 10^{-5}$ from a measurement of $[\Gamma(B^0 \to \overline{\Lambda}_c^- \Lambda K^+)/\Gamma_{total}]$ / $[B(\Lambda_c^+ \to pK^-\pi^+)]$ / $[B(\Lambda \to p\pi^-)]$ assuming $B(\Lambda_c^+ \to pK^-\pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, $B(\Lambda \to p\pi^-) = (63.9 \pm 0.5) \times 10^{-2}$, which we rescale to our best values $B(\Lambda_c^+ \to pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$, $B(\Lambda \to p\pi^-) = (64.1 \pm 0.5) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best values. The reported uncertainties are statistical, systematic, and $\overline{\Lambda}_c^-$ branching fraction uncertainty.

NODE=S042Q96;LINKAGE=EP
NODE=S042Q96;LINKAGE=LE

$\Gamma(\overline{\Lambda}_c^- \Lambda_c^+)/\Gamma_{total}$ Γ_{532}/Γ

NODE=S042S02

VALUE (units 10^{-5})	CL%	DOCUMENT ID	TECN	COMMENT
<1.6	95	[1] AAIJ 14AA	LHCB	pp at 7 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<6.2	90	[2] UCHIDA 08	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Uses $B(\overline{B}^0 \to D^+ D_s^-) = (7.2 \pm 0.8) \times 10^{-3}$.

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042S02;LINKAGE=A
NODE=S042S02;LINKAGE=EP

$\Gamma(\overline{\Lambda}_c(2593)^- / \overline{\Lambda}_c(2625)^- p)/\Gamma_{total}$ Γ_{533}/Γ

NODE=S042B28

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<1.1 × 10^{-4}	90	[1,2] DYTMAN 02	CLE2	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

[2] DYTMAN 02 measurement uses $B(\Lambda_c^- \to \overline{p} K^+ \pi^-) = 5.0 \pm 1.3\%$. The second error includes the systematic and the uncertainty of the branching ratio.

NODE=S042B28;LINKAGE=EP
NODE=S042B28;LINKAGE=FP

$\Gamma(\overline{\Xi}_c^- \Lambda_c^+)/\Gamma_{total}$ Γ_{534}/Γ

NODE=S042P54

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
1.1 ±0.8 OUR AVERAGE [$(1.2 \pm 0.8) \times 10^{-3}$ OUR 2024 AVERAGE]			
1.15±0.80$^{+0.05}_{-0.04}$	[1,2] LI 19C	BELL	$e^+ e^- \to \Upsilon(4S)$

NEW

[1] Uses fully reconstructed B^0 on tag side with recoil against Λ_c^+.

[2] LI 19C reports $(1.16 \pm 0.74 \pm 0.33) \times 10^{-3}$ from a measurement of $[\Gamma(B^0 \to \overline{\Xi}_c^- \Lambda_c^+)/\Gamma_{total}] \times [B(\Lambda_c^+ \to pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \to pK^-\pi^+) = (6.28 \pm 0.32) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \to pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042P54;LINKAGE=A
NODE=S042P54;LINKAGE=B

$\Gamma(\overline{\Xi}_c^- \Lambda_c^+, \overline{\Xi}_c^- \to \overline{\Xi}^+ \pi^- \pi^-)/\Gamma_{total}$ Γ_{535}/Γ

NODE=S042R78

VALUE (units 10^{-5})	DOCUMENT ID	TECN	COMMENT
2.3 ±1.0 OUR AVERAGE Error includes scale factor of 1.8. [$(2.4 \pm 1.1) \times 10^{-5}$ OUR 2024 AVERAGE Scale factor = 1.8]			
3.3 ±0.8 ±0.1	[1] LI 19C	BELL	$e^+ e^- \to \Upsilon(4S)$
1.18±0.86±0.05	[2,3] AUBERT 08H	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
7.3 $^{+3.3}_{-2.7}$ ±0.3	[3,4] CHISTOV 06A	BELL	Repl. by LI 19C

NEW

[1] LI 19C reports $(3.32 \pm 0.74 \pm 0.33) \times 10^{-5}$ from a measurement of $[\Gamma(B^0 \to \overline{\Xi}_c^- \Lambda_c^+, \overline{\Xi}_c^- \to \overline{\Xi}^+ \pi^- \pi^-)/\Gamma_{total}] \times [B(\Lambda_c^+ \to pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \to pK^-\pi^+) = (6.28 \pm 0.32) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \to pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042R78;LINKAGE=A

[2] AUBERT 08H reports $(1.5 \pm 1.07 \pm 0.44) \times 10^{-5}$ from a measurement of $[\Gamma(B^0 \to \overline{\Xi}_c^- \Lambda_c^+, \overline{\Xi}_c^- \to \overline{\Xi}^+ \pi^- \pi^-)/\Gamma_{total}] \times [B(\Lambda_c^+ \to pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \to pK^-\pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \to pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042R78;LINKAGE=AU

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042R78;LINKAGE=EP

[4] CHISTOV 06A reports $(9.3^{+3.7}_{-2.8} \pm 3.1) \times 10^{-5}$ from a measurement of $[\Gamma(B^0 \to \overline{\Xi}_c^- \Lambda_c^+, \overline{\Xi}_c^- \to \overline{\Xi}^+ \pi^- \pi^-)/\Gamma_{total}] \times [B(\Lambda_c^+ \to pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \to pK^-\pi^+)$

NODE=S042R78;LINKAGE=CH

$= (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \to pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

$\Gamma(\overline{\Xi}_c^- \Lambda_c^+,\ \overline{\Xi}_c^- \to \overline{p}K^+\pi^-)/\Gamma_{total}$ — Γ_{536}/Γ

NODE=S042P55
NODE=S042P55

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
5.2±1.6 OUR AVERAGE [$(5.3 \pm 1.7) \times 10^{-6}$ OUR 2024 AVERAGE]				
5.2±1.6±0.2	[1] LI	19C	BELL	$e^+e^- \to \Upsilon(4S)$

NEW

[1] LI 19C reports $(5.27 \pm 1.51 \pm 0.69) \times 10^{-6}$ from a measurement of $[\Gamma(B^0 \to \overline{\Xi}_c^- \Lambda_c^+,\ \overline{\Xi}_c^- \to \overline{p}K^+\pi^-)/\Gamma_{total}] \times [B(\Lambda_c^+ \to pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \to pK^-\pi^+) = (6.28 \pm 0.32) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \to pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S042P55;LINKAGE=A

$\Gamma(\Lambda_c^+ \Lambda_c^- K^0)/\Gamma_{total}$ — Γ_{537}/Γ

NODE=S042R09
NODE=S042R09

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
4.0 ±0.9 OUR AVERAGE				
3.99±0.76±0.51	[1] LI	18D	BELL	$e^+e^- \to \Upsilon(4S)$
3.8 ±3.1 ±2.1	[2,3] AUBERT	08H	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
7.9 $^{+2.9}_{-2.3}$ ±4.3	[2,3] GABYSHEV	06	BELL	Repl. by LI 18D

[1] Assumes $B(\Upsilon(4S) \to B^0\overline{B}^0) = 48.6 \pm 0.6\%$ and $B(\Lambda_c^+ \to pK^-\pi^+) = 6.23 \pm 0.33\%$.
NODE=S042R09;LINKAGE=A

[2] Assumes $B(\Lambda_c^+ \to pK^-\pi^+) = 5.0 \pm 1.3\%$.
NODE=S042R09;LINKAGE=AG

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
NODE=S042R09;LINKAGE=EP

$\Gamma(\overline{\Lambda}_c(2910)^- p,\ \overline{\Lambda}_c^- \to \overline{\Sigma}_c(2455)^{--}\pi^+)/\Gamma_{total}$ — Γ_{538}/Γ

NODE=S042P79
NODE=S042P79

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
1.24±0.35±0.10	LI	23E	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\overline{\Lambda}_c(2910)^- p,\ \overline{\Lambda}_c^- \to \overline{\Sigma}_c(2455)^0\pi^-)/\Gamma_{total}$ — Γ_{539}/Γ

NODE=S042P80
NODE=S042P80

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
9.5±3.6±1.6	LI	23E	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\overline{\Xi}_c(2930)^- \Lambda_c^+,\ \overline{\Xi}_c^- \to \Lambda_c^- K^0)/\Gamma_{total}$ — Γ_{540}/Γ

NODE=S042P31
NODE=S042P31

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
2.37±0.51±0.31	[1] LI	18D	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes $B(\Upsilon(4S) \to B^0\overline{B}^0) = 48.6 \pm 0.6\%$ and $B(\Lambda_c^+ \to pK^-\pi^+) = 6.23 \pm 0.33\%$.
NODE=S042P31;LINKAGE=A

$\Gamma(\Omega_c^0 \overline{\Lambda},\ \Omega_c^0 \to \Omega^-\pi^+)/\Gamma_{total}$ — Γ_{541}/Γ

NODE=S042A55
NODE=S042A55

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<9.7 \times 10^{-8}$	95	[1] SAVINOV	24	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Uses $B(\Upsilon(4S) \to B^0\overline{B}^0)$ based on the CHOUDHURY 23 to estimate $N(B^0\overline{B}^0)$ pairs.
NODE=S042A55;LINKAGE=A

$\Gamma(\Omega_c(2770)^0 \overline{\Lambda},\ \Omega_c^0 \to \Omega^-\pi^+)/\Gamma_{total}$ — Γ_{542}/Γ

NODE=S042A56
NODE=S042A56

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.12 \times 10^{-7}$	95	[1] SAVINOV	24	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Uses $B(\Upsilon(4S) \to B^0\overline{B}^0)$ based on the CHOUDHURY 23 to estimate $N(B^0\overline{B}^0)$ pairs. $\Omega_c(2770)^0$ is partially reconstructed and assumed to exclusively decay to final states containing Ω_c^0.
NODE=S042A56;LINKAGE=A

$\Gamma(\Omega_c^0 \Lambda,\ \Omega_c^0 \to \Omega^-\pi^+)/\Gamma_{total}$ — Γ_{543}/Γ

NODE=S042A57
NODE=S042A57

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<9.5 \times 10^{-8}$	95	[1] SAVINOV	24	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Uses $B(\Upsilon(4S) \to B^0\overline{B}^0)$ based on the CHOUDHURY 23 to estimate $N(B^0\overline{B}^0)$ pairs.
NODE=S042A57;LINKAGE=A

$\Gamma(\Omega_c(2770)^0 \Lambda,\ \Omega_c^0 \to \Omega^-\pi^+)/\Gamma_{total}$ — Γ_{544}/Γ

NODE=S042A59
NODE=S042A59

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.00 \times 10^{-7}$	95	[1] SAVINOV	24	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Uses $B(\Upsilon(4S) \to B^0\overline{B}^0)$ based on the CHOUDHURY 23 to estimate $N(B^0\overline{B}^0)$ pairs. $\Omega_c(2770)^0$ is partially reconstructed and assumed to exclusively decay to final states containing Ω_c^0.
NODE=S042A59;LINKAGE=A

$\Gamma(\Lambda\psi_{DS})/\Gamma_{total}$ Γ_{545}/Γ

NODE=S042P77
NODE=S042P77

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
< 0.13–5.2 × 10^{-5}	90	[1] LEES 23B	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<2.1 \times 10^{-5}$	90	[2] HADJIVASILIOU 22	BELL	$e^+e^- \to \Upsilon(4S)$

[1] LEES 23B searched for ψ_{DS} in the recoil mass against Λ and the fully reconstructed accompanying B meson. The cited upper limit is for m(ψ_{DS}) between 1 and 4.1 GeV/c^2. NODE=S042P77;LINKAGE=B

[2] HADJIVASILIOU 22 searched for ψ_{DS}, in the mass range 1–3.9 GeV/c^2, in the recoil mass against Λ and the accompanying B meson. The cited upper limit is for m(ψ_{DS}) = 2.0 GeV/c^2 and is the most stringent. The least stringent limit is $< 3.8 \times 10^{-5}$ at m(ψ_{DS}) = 3.9 GeV/c^2. NODE=S042P77;LINKAGE=A

$\Gamma(\gamma\gamma)/\Gamma_{total}$ Γ_{546}/Γ

NODE=S042S36

Test for ΔB=1 weak neutral current. Allowed by higher-order electroweak interactions. NODE=S042S36
NODE=S042S36

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<6.4 × 10^{-8} (CL = 90%) [$<3.2 \times 10^{-7}$ (CL = 90%) OUR 2024 BEST LIMIT]				
<6.4 × 10^{-8}	90	[1] ADACHI 24J	BEL2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<3.2 \times 10^{-7}$	90	[2] DEL-AMO-SA...11A	BABR	$e^+e^- \to \Upsilon(4S)$
$<6.2 \times 10^{-7}$	90	[2] VILLA 06	BELL	Repl. by ADACHI 24J
$<1.7 \times 10^{-6}$	90	[2] AUBERT 01I	BABR	$e^+e^- \to \Upsilon(4S)$
$<3.9 \times 10^{-5}$	90	[3] ACCIARRI 95I	L3	$e^+e^- \to Z$

[1] Used combined Belle and Belle II data and B(Υ(4S) $\to B^0\overline{B}^0$) = (48.4 ± 1.2)%. A signal with 2.5σ significance, including systematic uncertainties, is observed, corresponding to a branching fraction $(3.7^{+2.2}_{-1.8} \pm 0.5) \times 10^{-8}$. NODE=S042S36;LINKAGE=B

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S36;LINKAGE=EP

[3] ACCIARRI 95I assumes f_{B^0} = 39.5 ± 4.0 and f_{B_s} = 12.0 ± 3.0%. NODE=S042S36;LINKAGE=A

$\Gamma(e^+e^-)/\Gamma_{total}$ Γ_{547}/Γ

NODE=S042R6

Test for ΔB=1 weak neutral current. Allowed by higher-order electroweak interactions. NODE=S042R6
NODE=S042R6

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
< 2.5 × 10^{-9}	90	[1] AAIJ 20W	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$< 8.3 \times 10^{-8}$	90	AALTONEN 09P	CDF	$p\overline{p}$ at 1.96 TeV
$<11.3 \times 10^{-8}$	90	[2] AUBERT 08P	BABR	$e^+e^- \to \Upsilon(4S)$
$< 6.1 \times 10^{-8}$	90	[2] AUBERT 05W	BABR	Repl. by AUBERT 08P
$< 1.9 \times 10^{-7}$	90	[2] CHANG 03	BELL	$e^+e^- \to \Upsilon(4S)$
$< 8.3 \times 10^{-7}$	90	[2] BERGFELD 00B	CLE2	$e^+e^- \to \Upsilon(4S)$
$< 1.4 \times 10^{-5}$	90	[3] ACCIARRI 97B	L3	$e^+e^- \to Z$
$< 5.9 \times 10^{-6}$	90	AMMAR 94	CLE2	Repl. by BERGFELD 00B
$< 2.6 \times 10^{-5}$	90	[4] AVERY 89B	CLEO	$e^+e^- \to \Upsilon(4S)$
$< 7.6 \times 10^{-5}$	90	[5] ALBRECHT 87D	ARG	$e^+e^- \to \Upsilon(4S)$
$< 6.4 \times 10^{-5}$	90	[6] AVERY 87	CLEO	$e^+e^- \to \Upsilon(4S)$
$< 3 \times 10^{-4}$	90	GILES 84	CLEO	Repl. by AVERY 87

[1] Assumes no contribution from $B^0_s \to e^+e^-$ decays. NODE=S042R6;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R6;LINKAGE=EP

[3] ACCIARRI 97B assume PDG 96 production fractions for B^+, B^0, B_s, and Λ_b. NODE=S042R6;LINKAGE=BQ

[4] AVERY 89B reports $< 3 \times 10^{-5}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R6;LINKAGE=A1

[5] ALBRECHT 87D reports $< 8.5 \times 10^{-5}$ assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R6;LINKAGE=W

[6] AVERY 87 reports $< 8 \times 10^{-5}$ assuming the $\Upsilon(4S)$ decays 40% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R6;LINKAGE=Y

$\Gamma(e^+e^-\gamma)/\Gamma_{total}$ Γ_{548}/Γ

NODE=S042T32

Test for ΔB=1 weak neutral current. Allowed by higher-order electroweak interactions. NODE=S042T32
NODE=S042T32

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<1.2 × 10^{-7}	90	AUBERT 08C	BABR	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\mu^+\mu^-)/\Gamma_{total}$ Γ_{549}/Γ

NODE=S042R7

Test for ΔB=1 weak neutral current. Allowed by higher-order electroweak interactions.

NODE=S042R7
NODE=S042R7

VALUE (units 10^{-10})	CL%	DOCUMENT ID	TECN	COMMENT
< 1.5	90	[1,2] TUMASYAN 23A	CMS	pp at 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1.2^{+0.8}_{-0.7}\pm0.1$		[3] AAIJ 22	LHCB	pp at 7, 8, 13 TeV
< 3.6	95	[4] SIRUNYAN 20AG		pp at 7, 8, 13 TeV
-1.9 ± 1.6		[5,6] AABOUD 19L	ATLS	pp at 7, 8, 13 TeV
$1.5^{+1.2}_{-1.0}{}^{+0.2}_{-0.1}$		[7] AAIJ 17AI	LHCB	Repl. by AAIJ 22
-2.5 ± 2.0		[8] AABOUD 16L	ATLS	Repl. by AABOUD 19L
$3.9^{+1.6}_{-1.4}$		[9] KHACHATRY... 15BE	LHC	pp at 7, 8 TeV
< 8.0	90	[10] AAIJ 13B	LHCB	Repl. by AAIJ 13BA
< 6.3	90	[11] AAIJ 13BA	LHCB	Repl. by KHACHATRYAN 15BE
< 38	90	[12] AALTONEN 13F	CDF	$p\overline{p}$ at 1.96 TeV
$3.5^{+2.1}_{-1.8}$		[13] CHATRCHYAN 13AW	CMS	Repl. by SIRUNYAN 20AG
< 26	90	[10] AAIJ 12A	LHCB	Repl. by AAIJ 12W
< 8.1	90	[14] AAIJ 12W	LHCB	Repl. by AAIJ 13B
< 14	90	[14] CHATRCHYAN 12A	CMS	pp at 7 TeV
< 120	90	[15] AAIJ 11B	LHCB	Repl. by AAIJ 12A
< 50	90	[14] AALTONEN 11AG	CDF	$p\overline{p}$ at 1.96 TeV
< 37	90	[14] CHATRCHYAN 11T	CMS	Repl. by CHATRCHYAN 12A

OCCUR=2

[1] Corresponds to a 95% CL upper limit of $< 1.9 \times 10^{-10}$. NODE=S042R7;LINKAGE=J

[2] Uses normalization mode B($B^+ \to J/\psi K^+$) = $(1.020 \pm 0.019) \times 10^{-3}$, B($J/\psi \to \mu^+\mu^-$) = $(5.961 \pm 0.033) \times 10^{-2}$. NODE=S042R7;LINKAGE=K

[3] Corresponds to a 95% CL upper limit of $< 2.6 \times 10^{-10}$. NODE=S042R7;LINKAGE=H

[4] Uses normalization mode B($B^+ \to J/\psi K^+$) = $(1.01 \pm 0.03) \times 10^{-3}$. NODE=S042R7;LINKAGE=G

[5] Corresponds to a 95% CL upper limit of $< 2.1 \times 10^{-10}$. NODE=S042R7;LINKAGE=F

[6] Uses normalization mode B($B^+ \to J/\psi K^+$) = $(1.010 \pm 0.029) \times 10^{-3}$ and B production ratio f($b \to B^0_s$)/f($b \to B^0$) = 0.256 ± 0.013. NODE=S042R7;LINKAGE=I

[7] Corresponds to a 95% CL upper limit of $< 3.4 \times 10^{-10}$. NODE=S042R7;LINKAGE=E

[8] This value is obtained from a profile-likelihood fit, see Fig. 9. It corresponds to an uppper limit of $< 0.42 \times 10^{-9}$ at 95% C.L. NODE=S042R7;LINKAGE=AB

[9] Derived from the combined fit to CMS and LHCb data. Uncertainty includes both statistical and systematic component. Also reports B($B^0 \to \mu^+\mu^-$)/B($B_s \to \mu^+\mu^-$) = $0.14^{+0.08}_{-0.06}$. NODE=S042R7;LINKAGE=D

[10] Uses B($B^+ \to J/\psi K^+ \to \mu^+\mu^- K^+$) = $(6.01\pm0.21)\times10^{-5}$ and B($B^0 \to K^+\pi^-$) = $(1.94 \pm 0.06) \times 10^{-5}$ for normalization. NODE=S042R7;LINKAGE=AJ

[11] Reports also a limit of $< 7.4 \times 10^{-10}$ at 95% CL. Uses normalization modes $B^+ \to J/\psi K^+ \to \mu^+\mu^- K^+$ and $B^0 \to K^+\pi^-$. NODE=S042R7;LINKAGE=IA

[12] Uses normalization mode B($B^+ \to J/\psi K^+$) = $(10.22 \pm 0.35) \times 10^{-4}$. NODE=S042R7;LINKAGE=AN

[13] Reports also a limit of $< 9.2 \times 10^{-10}$ at 90% CL. and uses B($B^+ \to J/\psi K^+ \to \mu^+\mu^- K^+$) = $(6.0 \pm 0.2) \times 10^{-5}$ for normalization. NODE=S042R7;LINKAGE=CT

[14] Uses B($B^+ \to J/\psi K^+ \to \mu^+\mu^- K^+$) = $(6.01 \pm 0.21) \times 10^{-5}$. NODE=S042R7;LINKAGE=AT

[15] Uses B production ratio f($\overline{b} \to B^+$)/f($\overline{b} \to B^0_s$) = 3.71 ± 0.47 and three normalization modes. NODE=S042R7;LINKAGE=AI

$\Gamma(\mu^+\mu^-\gamma)/\Gamma_{total}$ Γ_{550}/Γ

NODE=S042T33

Test for ΔB=1 weak neutral current. Allowed by higher-order electroweak interactions.

NODE=S042T33
NODE=S042T33

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<1.6 \times 10^{-7}$	90	AUBERT 08C	BABR	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\tau^+\tau^-)/\Gamma_{total}$ Γ_{554}/Γ

NODE=S042T05

Test for ΔB=1 weak neutral current. Allowed by higher-order electroweak interactions.

NODE=S042T05
NODE=S042T05

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$\mathbf{<2.1 \times 10^{-3}}$	95	[1] AAIJ 17AJ	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<4.1 \times 10^{-3}$	90	[2] AUBERT 06S	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assuming no contribution from $B^0_s \to \tau^+\tau^-$. NODE=S042T05;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T05;LINKAGE=EP

$\Gamma(\mu^+\mu^-\mu^+\mu^-)/\Gamma_{total}$ — Γ_{551}/Γ

NODE=S042T99

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.8 × 10^−10	95	AAIJ	22Q	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<6.9 \times 10^{-10}$	95	AAIJ	17N	LHCB	pp at 7, 8 TeV
$<6.6 \times 10^{-9}$	95	[1] AAIJ	13AW	LHCB	Repl. by AAIJ 17N

[1] Also reports a limit of $< 5.3 \times 10^{-9}$ at 90% CL.

NODE=S042T99;LINKAGE=AA

$\Gamma(SP,\ S \to \mu^+\mu^-,\ P \to \mu^+\mu^-)/\Gamma_{total}$ — Γ_{552}/Γ

NODE=S042T9A

Here S and P are the hypothetical scalar and pseudoscalar particles with masses of 2.5 GeV/c^2 and 214.3 MeV/c^2, respectively.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<6.0 × 10^−10	95	AAIJ	17N	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<5.1 \times 10^{-9}$	90	[1] AAIJ	13AW	LHCB	Repl. by AAIJ 17N

[1] Also reports a limit of $< 6.3 \times 10^{-9}$ at 95% CL.

NODE=S042T9A;LINKAGE=AA

$\Gamma(aa,\ a \to \mu^+\mu^-)/\Gamma_{total}$ — Γ_{553}/Γ

NODE=S042P76

Here particle a is a scalar with a mass of 1 GeV/c^2.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<2.3 × 10^−10	95	AAIJ	22Q	LHCB	pp at 7, 8, 13 TeV

$\Gamma(\pi^0\ell^+\ell^-)/\Gamma_{total}$ — Γ_{555}/Γ

NODE=S042T23

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<3.8 × 10^−8 (CL = 90%) [$<5.3 \times 10^{-8}$ (CL = 90%) OUR 2024 BEST LIMIT]					
<3.8 × 10^−8	90	[1] ADACHI	24N	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<5.3 \times 10^{-8}$	90	[2] LEES	13M	BABR	$e^+e^- \to \Upsilon(4S)$
$<1.5 \times 10^{-7}$	90	[2] WEI	08A	BELL	$e^+e^- \to \Upsilon(4S)$
$<1.2 \times 10^{-7}$	90	[2] AUBERT	07AG	BABR	Repl. by LEES 13M

[1] Where $\ell = e,\ \mu$.

NODE=S042T23;LINKAGE=A

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T23;LINKAGE=EP

$\Gamma(\pi^0\nu\overline{\nu})/\Gamma_{total}$ — Γ_{565}/Γ

NODE=S042T36

Test for $\Delta B = 1$ weak neutral current. Allowed by higher-order electroweak interaction.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.9 × 10^−5	90	[1] GRYGIER	17	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<6.9 \times 10^{-5}$	90	[1] LUTZ	13	BELL	$e^+e^- \to \Upsilon(4S)$
$<2.2 \times 10^{-4}$	90	[1] CHEN	07D	BELL	Repl. by LUTZ 13

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T36;LINKAGE=EP

$\Gamma(\pi^0 e^+e^-)/\Gamma_{total}$ — Γ_{556}/Γ

NODE=S042T21

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<7.9 × 10^−8 (CL = 90%) [$<8.4 \times 10^{-8}$ (CL = 90%) OUR 2024 BEST LIMIT]					
<7.9 × 10^−8	90	ADACHI	24N	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<8.4 \times 10^{-8}$	90	[1] LEES	13M	BABR	$e^+e^- \to \Upsilon(4S)$
$<2.3 \times 10^{-7}$	90	[1] WEI	08A	BELL	$e^+e^- \to \Upsilon(4S)$
$<1.4 \times 10^{-7}$	90	[1] AUBERT	07AG	BABR	Repl. by LEES 13M

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T21;LINKAGE=EP

$\Gamma(\pi^0\mu^+\mu^-)/\Gamma_{total}$ — Γ_{557}/Γ

NODE=S042T22

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<5.9 × 10^−8 (CL = 90%) [$<6.9 \times 10^{-8}$ (CL = 90%) OUR 2024 BEST LIMIT]					
<5.9 × 10^−8	90	ADACHI	24N	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<6.9 \times 10^{-8}$	90	[1] LEES	13M	BABR	$e^+e^- \to \Upsilon(4S)$
$<1.8 \times 10^{-7}$	90	[1] WEI	08A	BELL	$e^+e^- \to \Upsilon(4S)$
$<5.1 \times 10^{-7}$	90	[1] AUBERT	07AG	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042T22;LINKAGE=EP

$\Gamma(\eta\ell^+\ell^-)/\Gamma_{total}$ — Γ_{558}/Γ

NODE=S042U01

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<4.8\times10^{-8}$ (CL = 90%) [$<6.4\times10^{-8}$ (CL = 90%) OUR 2024 BEST LIMIT]				
$<4.8\times10^{-8}$	90	[1] ADACHI 24N	BELL	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<6.4\times10^{-8}$	90	[2] LEES 13M	BABR	$e^+e^-\to\Upsilon(4S)$

[1] Where $\ell = e, \mu$.
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042U01;LINKAGE=A
NODE=S042U01;LINKAGE=EP

$\Gamma(\eta e^+e^-)/\Gamma_{total}$ — Γ_{559}/Γ

NODE=S042U02

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<1.05\times10^{-7}$ (CL = 90%) [$<1.08\times10^{-7}$ (CL = 90%) OUR 2024 BEST LIMIT]				
$<10.5\times10^{-8}$	90	ADACHI 24N	BELL	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<10.8\times10^{-8}$	90	[1] LEES 13M	BABR	$e^+e^-\to\Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042U02;LINKAGE=EP

$\Gamma(\eta\mu^+\mu^-)/\Gamma_{total}$ — Γ_{560}/Γ

NODE=S042U03

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<9.4\times10^{-8}$ (CL = 90%) [$<1.12\times10^{-7}$ (CL = 90%) OUR 2024 BEST LIMIT]				
$<9.4\times10^{-8}$	90	ADACHI 24N	BELL	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<11.2\times10^{-8}$	90	[1] LEES 13M	BABR	$e^+e^-\to\Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042U03;LINKAGE=EP

$\Gamma(\rho(770)^0 e^+e^-)/\Gamma_{total}$ — Γ_{561}/Γ

NODE=S042A62

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<45.5\times10^{-8}$	90	ADACHI 24N	BELL	$e^+e^-\to\Upsilon(4S)$

$\Gamma(\omega e^+e^-)/\Gamma_{total}$ — Γ_{562}/Γ

NODE=S042A63

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<30.7\times10^{-8}$	90	ADACHI 24N	BELL	$e^+e^-\to\Upsilon(4S)$

$\Gamma(\omega\mu^+\mu^-)/\Gamma_{total}$ — Γ_{563}/Γ

NODE=S042A64

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<24.9\times10^{-8}$	90	ADACHI 24N	BELL	$e^+e^-\to\Upsilon(4S)$

$\Gamma(\omega\ell^+\ell^-)/\Gamma_{total}$ — Γ_{564}/Γ

NODE=S042A65

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<22.0\times10^{-8}$	90	[1] ADACHI 24N	BELL	$e^+e^-\to\Upsilon(4S)$

[1] Where $\ell = e, \mu$.

NODE=S042A65;LINKAGE=A

$\Gamma(K^0\ell^+\ell^-)/\Gamma_{total}$ — Γ_{566}/Γ

NODE=S042RA1

VALUE (units 10^{-7})	CL%	DOCUMENT ID	TECN	COMMENT
3.3 ±0.6 OUR AVERAGE				
$3.51^{+0.69}_{-0.60}\pm0.10$		CHOUDHURY 21	BELL	$e^+e^-\to\Upsilon(4S)$
$2.1^{+1.5}_{-1.3}\pm0.2$		[1] AUBERT 09T	BABR	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$3.4^{+0.9}_{-0.8}\pm0.2$		[1,2] WEI 09A	BELL	$e^+e^-\to\Upsilon(4S)$
$2.9^{+1.6}_{-1.3}\pm0.3$		[1] AUBERT,B 06J	BABR	Repl. by AUBERT 09T
<6.8	90	[1] ISHIKAWA 03	BELL	$e^+e^-\to\Upsilon(4S)$

[1] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$.
[2] Superseded by CHOUDHURY 21.

NODE=S042RA1;LINKAGE=EP
NODE=S042RA1;LINKAGE=A

$\Gamma(K^0 e^+ e^-)/\Gamma_{total}$ Γ_{567}/Γ

NODE=S042R18

Test for ΔB=1 weak neutral current. Allowed by higher-order electroweak interactions.

NODE=S042R18
NODE=S042R18

VALUE (units 10^{-7})	CL%	DOCUMENT ID		TECN	COMMENT
$2.5^{+1.1}_{-0.9}$ OUR AVERAGE		Error includes scale factor of 1.3.			
$3.1^{+1.0}_{-0.9}\pm0.08$		CHOUDHURY	21	BELL	$e^+e^- \to \Upsilon(4S)$
$0.8^{+1.5}_{-1.2}\pm0.1$		[1] AUBERT	09T	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$2.0^{+1.4}_{-1.0}\pm0.1$		[1,2] WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
$1.3^{+1.6}_{-1.1}\pm0.2$		[1] AUBERT,B	06J	BABR	Repl. by AUBERT 09T
$-\ 2.1^{+2.3}_{-1.6}\pm0.8$		[1] AUBERT	03U	BABR	$e^+e^- \to \Upsilon(4S)$
<5.4	90	[3] ISHIKAWA	03	BELL	$e^+e^- \to \Upsilon(4S)$
<27	90	[1] ABE	02	BELL	Repl. by ISHIKAWA 03
<38	90	[1] AUBERT	02L	BABR	$e^+e^- \to \Upsilon(4S)$
<84.5	90	[4] ANDERSON	01B	CLE2	$e^+e^- \to \Upsilon(4S)$
<3000	90	ALBRECHT	91E	ARG	$e^+e^- \to \Upsilon(4S)$
<5200	90	[5] AVERY	87	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R18;LINKAGE=EP
[2] Superseded by CHOUDHURY 21. NODE=S042R18;LINKAGE=A
[3] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. NODE=S042R18;LINKAGE=IS
[4] The result is for di-lepton masses above 0.5 GeV. NODE=S042R18;LINKAGE=DL
[5] AVERY 87 reports $< 6.5\times10^{-4}$ assuming the $\Upsilon(4S)$ decays 40% to $B^0\overline{B}^0$. We rescale to 50%. NODE=S042R18;LINKAGE=A3

$\Gamma(K^0\nu\overline{\nu})/\Gamma_{total}$ Γ_{569}/Γ

NODE=S042T37

Test for $\Delta B = 1$ weak neutral current. Allowed by higher-order electroweak interaction.

NODE=S042T37
NODE=S042T37

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$< 2.6\times10^{-5}$	90	[1] GRYGIER	17	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$< 4.9\times10^{-5}$	90	[1,2] LEES	13I	BABR	$e^+e^- \to \Upsilon(4S)$
$<19.4\times10^{-5}$	90	[1] LUTZ	13	BELL	$e^+e^- \to \Upsilon(4S)$
$< 5.6\times10^{-5}$	90	[1] DEL-AMO-SA...	10Q	BABR	Repl. by LEES 13I
$< 1.6\times10^{-4}$	90	[1] CHEN	07D	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T37;LINKAGE=EP
[2] Also reported a limit $< 8.1\times10^{-5}$ at 90% CL obtained using a fully reconstructed hadronic B-tag evnets. NODE=S042T37;LINKAGE=LE

$\Gamma(\rho^0\nu\overline{\nu})/\Gamma_{total}$ Γ_{570}/Γ

NODE=S042T38

Test for $\Delta B = 1$ weak neutral current. Allowed by higher-order electroweak interaction.

NODE=S042T38
NODE=S042T38

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<4.0\times10^{-5}$	90	[1] GRYGIER	17	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<2.08\times10^{-4}$	90	[1] LUTZ	13	BELL	$e^+e^- \to \Upsilon(4S)$
$<4.4\times10^{-4}$	90	[1] CHEN	07D	BELL	Repl. by LUTZ 13

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T38;LINKAGE=EP

$\Gamma(K^0\mu^+\mu^-)/\Gamma_{total}$ Γ_{568}/Γ

NODE=S042R17

Test for ΔB=1 weak neutral current. Allowed by higher-order electroweak interactions.

NODE=S042R17
NODE=S042R17

VALUE (units 10^{-7})	CL%	DOCUMENT ID		TECN	COMMENT
3.39±0.35 OUR FIT		Error includes scale factor of 1.1.			
3.39±0.35 OUR AVERAGE					
$3.9\ ^{+1.0}_{-0.8}\ \pm0.3$		CHOUDHURY	21	BELL	$e^+e^- \to \Upsilon(4S)$
$3.27\pm0.34\pm0.17$		[1] AAIJ	14M	LHCB	pp at 7, 8 TeV
$4.9\ ^{+2.9}_{-2.5}\ \pm0.3$		[2] AUBERT	09T	BABR	$e^+e^- \to \Upsilon(4S)$

• • • We do not use the following data for averages, fits, limits, etc. • • •

$3.1\ ^{+0.7}_{-0.6}$		AAIJ	12AH	LHCB	Repl. by AAIJ 14M
$4.4\ ^{+1.3}_{-1.1}\ \pm0.3$		[2,3] WEI	09A	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
$5.9\ ^{+3.3}_{-2.6}\ \pm0.7$		[2] AUBERT,B	06J	BABR	Repl. by AUBERT 09T
$1.63\ ^{+0.82}_{-0.63}\ \pm0.14$		[2] AUBERT	03U	BABR	Repl. by AUBERT,B 06J
$5.6\ ^{+2.9}_{-2.3}\ \pm0.5$		[4] ISHIKAWA	03	BELL	Repl. by WEI 09A
<33	90	[2] ABE	02	BELL	Repl. by ISHIKAWA 03
<36	90	AUBERT	02L	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
<66.4	90	[5] ANDERSON	01B	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
<5200	90	ALBRECHT	91E	ARG	$e^+e^- \rightarrow \Upsilon(4S)$
<3600	90	[6] AVERY	87	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Uses B($B^0 \rightarrow J/\psi(1S) K^0$) = (0.928 ± 0.013 ± 0.037) × 10^{-3} for normalization. NODE=S042R17;LINKAGE=A
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R17;LINKAGE=EP
[3] Superseded by CHOUDHURY 21. NODE=S042R17;LINKAGE=B
[4] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. The second error is a total of systematic uncertainties including model dependence. NODE=S042R17;LINKAGE=IS
[5] The result is for di-lepton masses above 0.5 GeV. NODE=S042R17;LINKAGE=DL
[6] AVERY 87 reports $< 4.5 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 40% to $B^0 \overline{B}^0$. We rescale to 50%. NODE=S042R17;LINKAGE=A3

$\Gamma(K^0\mu^+\mu^-)/\Gamma(J/\psi(1S)K^0)$ — $\Gamma_{568}/\Gamma_{214}$

NODE=S042Q99
NODE=S042Q99

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
0.38±0.04 OUR FIT Error includes scale factor of 1.1.				
0.37±0.12±0.02	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV

$\Gamma(K^*(892)^0\ell^+\ell^-)/\Gamma_{total}$ — Γ_{571}/Γ

NODE=S042RA2

Test for ΔB=1 weak neutral current. Allowed by higher-order electroweak interactions. NODE=S042RA2

NODE=S042RA2

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
$\mathbf{9.9^{+1.2}_{-1.1}}$ **OUR AVERAGE**				
$10.3^{+2.2}_{-2.1}\pm0.7$	[1] AUBERT	09T	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$9.7^{+1.3}_{-1.1}\pm0.7$	[1] WEI	09A	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$8.1^{+2.1}_{-1.9}\pm0.9$	[1] AUBERT,B	06J	BABR	Repl. by AUBERT 09T
$11.7^{+3.0}_{-2.7}\pm0.9$	[1] ISHIKAWA	03	BELL	Repl. by WEI 09A

[1] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. NODE=S042RA2;LINKAGE=EP

$\Gamma(K^*(892)^0e^+e^-)/\Gamma_{total}$ — Γ_{572}/Γ

NODE=S042R82

Test for ΔB=1 weak neutral current. Allowed by higher-order electroweak interactions. NODE=S042R82

NODE=S042R82

VALUE (units 10^{-7})	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{10.3^{+1.9}_{-1.7}}$ **OUR AVERAGE**					
$8.6^{+2.6}_{-2.4}\pm0.5$		[1] AUBERT	09T	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$11.8^{+2.7}_{-2.2}\pm0.9$		[1] WEI	09A	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$10.4^{+3.3}_{-2.9}\pm1.1$		[1] AUBERT,B	06J	BABR	Repl. by AUBERT 09T
$11.1^{+5.6}_{-4.7}\pm1.1$		[1] AUBERT	03U	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
< 24	90	[2] ISHIKAWA	03	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
< 64	90	[1] ABE	02	BELL	Repl. by ISHIKAWA 03
< 67	90	[1] AUBERT	02L	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
<2900	90	ALBRECHT	91E	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R82;LINKAGE=EP
[2] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. NODE=S042R82;LINKAGE=IS

$\Gamma(K^*(892)^0\mu^+\mu^-)/\Gamma_{total}$ — Γ_{573}/Γ

NODE=S042R69

Test for ΔB=1 weak neutral current. Allowed by higher-order electroweak interactions.

NODE=S042R69
NODE=S042R69

VALUE (units 10^{-7})	CL%	DOCUMENT ID		TECN	COMMENT
9.4 ±0.5 OUR FIT					
9.4 ±0.6 OUR AVERAGE					
$9.04^{+0.16}_{-0.15}\pm0.62$		[1] AAIJ	17Q	LHCB	pp at 7, 8 TeV
$13.5\ ^{+4.0}_{-3.7}\ \pm1.0$		[2] AUBERT	09T	BABR	$e^+e^- \to \Upsilon(4S)$
$10.6\ ^{+1.9}_{-1.4}\ \pm0.7$		[2] WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$10.36^{+0.18}_{-0.17}\pm0.71$		[1] AAIJ	16AO	LHCB	Repl. by AAIJ 17Q
$8.7\ ^{+3.8}_{-3.3}\ \pm1.2$		[2] AUBERT,B	06J	BABR	Repl. by AUBERT 09T
$8.6\ ^{+7.9}_{-5.8}\ \pm1.1$		[2] AUBERT	03U	BABR	Repl. by AUBERT,B 06J
$13.3\ ^{+4.2}_{-3.7}\ \pm1.1$		[3] ISHIKAWA	03	BELL	Repl. by WEI 09A
<42	90	[2] ABE	02	BELL	$e^+e^- \to \Upsilon(4S)$
<33	90	AUBERT	02L	BABR	$e^+e^- \to \Upsilon(4S)$
<40	90	[4] AFFOLDER	99B	CDF	$p\overline{p}$ at 1.8 TeV

OCCUR=2

[1] Uses B($B^0 \to J/\psi K^*(892)^0$) = $(1.19 \pm 0.01 \pm 0.08) \times 10^{-3}$. The second error is the total systematic uncertainty. NODE=S042R69;LINKAGE=C

[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R69;LINKAGE=EP

[3] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. The second error is a total of systematic uncertainties including model dependence. NODE=S042R69;LINKAGE=IS

[4] AFFOLDER 99B measured relative to $B^0 \to J/\psi(1S) K^*(892)^0$. NODE=S042R69;LINKAGE=N2

$\Gamma(K^*(892)^0\mu^+\mu^-)/\Gamma(J/\psi(1S)K^*(892)^0)$ — $\Gamma_{573}/\Gamma_{216}$

NODE=S042Q95
NODE=S042Q95

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
0.75±0.05 OUR FIT				
0.77±0.08±0.03	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.80±0.10±0.06	AALTONEN	11L	CDF	Repl. by AALTONEN 11AI
0.61±0.23±0.07	AALTONEN	09B	CDF	Repl. by AALTONEN 11L

$\Gamma(K^*(892)^0\chi,\ \chi\to\mu^+\mu^-)/\Gamma_{total}$ — Γ_{574}/Γ

NODE=S042C49
NODE=S042C49

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<\sim 10^{-9}$	95	[1] AAIJ	15AZ	LHCB	pp at 7, 8 TeV

[1] The limt is obtained as a function of di-muon mass. A normalizing mode branching fraction value of B($B^0 \to K^{*0}\mu^+\mu^-$) = $(1.6 \pm 0.3) \times 10^{-7}$ is used. NODE=S042C49;LINKAGE=A

$\Gamma(K^*(892)^0\tau^+\tau^-)/\Gamma_{total}$ — Γ_{575}/Γ

NODE=S042P89
NODE=S042P89

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.1 \times 10^{-3}$	90	[1] DONG	23	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Uses full reconstruction of companion neutral B. NODE=S042P89;LINKAGE=A

$\Gamma(\overline{D}^0\mu^+\mu^-)/\Gamma_{total}$ — Γ_{576}/Γ

NODE=S042A60
NODE=S042A60

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<4.0 \times 10^{-8}$	90	AAIJ	24F	LHCB	pp at 7, 8, 13 TeV

$\Gamma(\pi^+\pi^-\mu^+\mu^-)/\Gamma_{total}$ — Γ_{577}/Γ

NODE=S042C36
NODE=S042C36

VALUE (units 10^{-8})	DOCUMENT ID		TECN	COMMENT
2.1±0.5±0.1	[1] AAIJ	15S	LHCB	pp at 7, 8 TeV

[1] AAIJ 15S reports $(2.11 \pm 0.51 \pm 0.15 \pm 0.16) \times 10^{-8}$ from a measurement of [$\Gamma(B^0 \to \pi^+\pi^-\mu^+\mu^-)/\Gamma_{total}$] / [B($B^0 \to J/\psi(1S) K^*(892)^0$)] assuming B($B^0 \to J/\psi(1S) K^*(892)^0$) = $(1.3 \pm 0.1) \times 10^{-3}$, which we rescale to our best value B($B^0 \to J/\psi(1S) K^*(892)^0$) = $(1.27 \pm 0.05) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S042C36;LINKAGE=A

$\Gamma(K^*(892)^0 \nu\overline{\nu})/\Gamma_{total}$ Γ_{578}/Γ

NODE=S042S50

Test for ΔB=1 weak neutral current. Allowed by higher-order electroweak interactions.

NODE=S042S50
NODE=S042S50

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.8 × 10^{-5}	90	[1] GRYGIER	17	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<1.2 × 10^{-4}	90	[1,2] LEES	13I	BABR	$e^+e^- \to \Upsilon(4S)$
<5.5 × 10^{-5}	90	[1] LUTZ	13	BELL	$e^+e^- \to \Upsilon(4S)$
<1.2 × 10^{-4}	90	AUBERT	08BC	BABR	Repl. by LEES 13I
<3.4 × 10^{-4}	90	[1] CHEN	07D	BELL	$e^+e^- \to \Upsilon(4S)$
<1.0 × 10^{-3}	90	[3] ADAM	96D	DLPH	$e^+e^- \to Z$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S50;LINKAGE=EP

[2] Also reported a limit $< 9.3 \times 10^{-5}$ at 90% CL obtained using a fully reconstructed hadronic B-tag evnets. NODE=S042S50;LINKAGE=LE

[3] ADAM 96D assumes $f_{B^0} = f_{B^-} = 0.39$ and $f_{B_s} = 0.12$. NODE=S042S50;LINKAGE=DQ

$\Gamma(\text{invisible})/\Gamma_{total}$ Γ_{579}/Γ

NODE=S042SN1
NODE=S042SN1

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
< 2.4 × 10^{-5} (CL = 90%) [<2.4 × 10^{-5} (CL = 90%) OUR 2024 BEST LIMIT]					
< 2.4 × 10^{-5}	90	[1] LEES	12T	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 1.4 × 10^{-4}	90	[2] ALONSO-ALV..	24	THEO	$e^+e^- \to Z$
< 7.8 × 10^{-5}	90	[3] KU	20	BELL	$e^+e^- \to \Upsilon(4S)$
<13 × 10^{-5}	90	[4] HSU	12	BELL	$e^+e^- \to \Upsilon(4S)$
<22 × 10^{-5}	90	[1] AUBERT,B	04J	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses the fully reconstructed $B^0 \to D^{(*)-}\ell^+\nu_\ell$ events as a tag. NODE=S042SN1;LINKAGE=AU

[2] A reinterpretation of an old inclusive ALEPH search for b-hadron decays with large missing energy reported in BARATE 01E. NODE=S042SN1;LINKAGE=B

[3] Identified by fully reconstructing a hadronic decay of the accompanying B meson. NODE=S042SN1;LINKAGE=A

[4] Identified by fully reconstructing a hadronic decay of the accompanying B meson and requiring no other particles in the event. NODE=S042SN1;LINKAGE=HS

$\Gamma(\nu\overline{\nu}\gamma)/\Gamma_{total}$ Γ_{580}/Γ

NODE=S042SN2
NODE=S042SN2

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
<1.6	90	[1] KU	20	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<1.7	90	[2] LEES	12T	BABR	$e^+e^- \to \Upsilon(4S)$
<4.7	90	[2] AUBERT,B	04J	BABR	Repl. by LEES 12T

[1] Identified by fully reconstructing a hadronic decay of the accompanying B meson. NODE=S042SN2;LINKAGE=A

[2] Uses the fully reconstructed $B^0 \to D^{(*)-}\ell^+\nu_\ell$ events as a tag. NODE=S042SN2;LINKAGE=AU

$\Gamma(\phi\mu^+\mu^-)/\Gamma_{total}$ Γ_{581}/Γ

NODE=S042P71
NODE=S042P71

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<3.2 × 10^{-9}	90	[1] AAIJ	22S	LHCB	pp at 7, 8, 13 TeV

[1] Using B($B_s^0 \to \phi\mu^+\mu^-$) as normalization. The limit is set for the full q^2 phase space. NODE=S042P71;LINKAGE=A

$\Gamma(\phi\nu\overline{\nu})/\Gamma_{total}$ Γ_{582}/Γ

NODE=S042T39

Test for $\Delta B = 1$ weak neutral current. Allowed by higher-order electroweak interaction.

NODE=S042T39
NODE=S042T39

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.27 × 10^{-4}	90	[1] LUTZ	13	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<5.8 × 10^{-5}	90	[1] CHEN	07D	BELL	Repl. by LUTZ 13

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T39;LINKAGE=EP

$\Gamma(e^\pm\mu^\mp)/\Gamma_{total}$ Γ_{583}/Γ

NODE=S042R8

Test of lepton family number conservation. Allowed by higher-order electroweak interactions.

NODE=S042R8
NODE=S042R8

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
< 1.0 × 10^{-9}	90	[1] AAIJ	18T	LHCB	pp at 7, 8 TeV

• • • We do not use the following data for averages, fits, limits, etc. • • •

$< 2.8 \times 10^{-9}$	90	[2] AAIJ	13BM	LHCB	Repl. by AAIJ 18T
$< 6.4 \times 10^{-8}$	90	AALTONEN	09P	CDF	$p\overline{p}$ at 1.96 TeV
$< 9.2 \times 10^{-8}$	90	[3] AUBERT	08P	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
$< 1.8 \times 10^{-7}$	90	[3] AUBERT	05W	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
$< 1.7 \times 10^{-7}$	90	[3] CHANG	03	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
$<15 \times 10^{-7}$	90	[3] BERGFELD	00B	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
$< 3.5 \times 10^{-6}$	90	ABE	98V	CDF	$p\overline{p}$ at 1.8 TeV
$< 1.6 \times 10^{-5}$	90	[4] ACCIARRI	97B	L3	$e^+ e^- \rightarrow Z$
$< 5.9 \times 10^{-6}$	90	AMMAR	94	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
$< 3.4 \times 10^{-5}$	90	[5] AVERY	89B	CLEO	$e^+ e^- \rightarrow \Upsilon(4S)$
$< 4.5 \times 10^{-5}$	90	[6] ALBRECHT	87D	ARG	$e^+ e^- \rightarrow \Upsilon(4S)$
$< 7.7 \times 10^{-5}$	90	[7] AVERY	87	CLEO	$e^+ e^- \rightarrow \Upsilon(4S)$
$< 3 \times 10^{-4}$	90	GILES	84	CLEO	Repl. by AVERY 87

[1] AAIJ 18T uses normalization modes B($B^0 \rightarrow K^+ \pi^-$) = (19.6 ± 0.5) × 10^{-6} and B($B^+ \rightarrow J/\psi K^+$) = (1.026 ± 0.031) × 10^{-3}. NODE=S042R8;LINKAGE=A

[2] Uses normalization mode B($B^0 \rightarrow K^+ \pi^-$) = (19.4 ± 0.6) × 10^{-6}. NODE=S042R8;LINKAGE=AA

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042R8;LINKAGE=EP

[4] ACCIARRI 97B assume PDG 96 production fractions for B^+, B^0, B_s, and Λ_b. NODE=S042R8;LINKAGE=BQ

[5] Paper assumes the $\Upsilon(4S)$ decays 43% to $B^0 \overline{B}^0$. We rescale to 50%. NODE=S042R8;LINKAGE=A1

[6] ALBRECHT 87D reports $< 5 \times 10^{-5}$ assuming the $\Upsilon(4S)$ decays 45% to $B^0 \overline{B}^0$. We rescale to 50%. NODE=S042R8;LINKAGE=W

[7] AVERY 87 reports $< 9 \times 10^{-5}$ assuming the $\Upsilon(4S)$ decays 40% to $B^0 \overline{B}^0$. We rescale to 50%. NODE=S042R8;LINKAGE=Y

$\Gamma(\pi^0 e^\pm \mu^\mp)/\Gamma_{total}$ — Γ_{584}/Γ

NODE=S042T24
NODE=S042T24

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.4 \times 10^{-7}$	90	[1] AUBERT	07AG	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042T24;LINKAGE=EP

$\Gamma(K^0 e^\pm \mu^\mp)/\Gamma_{total}$ — Γ_{585}/Γ

NODE=S042B24

Test of lepton family number conservation. NODE=S042B24

NODE=S042B24

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$< 3.8 \times 10^{-8}$	90	CHOUDHURY	21	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$< 2.7 \times 10^{-7}$	90	[1] AUBERT,B	06J	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
$<40 \times 10^{-7}$	90	[1] AUBERT	02L	BABR	Repl. by AUBERT,B 06J

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B24;LINKAGE=EP

$\Gamma(K^*(892)^0 e^+ \mu^-)/\Gamma_{total}$ — Γ_{586}/Γ

NODE=S042T03
NODE=S042T03

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<6.8 \times 10^{-9}$	90	[1] AAIJ	23G	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.6 \times 10^{-7}$	90	[2] SANDILYA	18	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
$<5.3 \times 10^{-7}$	90	[3] AUBERT,B	06J	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Uses the uniform phase space model for the signal decays. NODE=S042T03;LINKAGE=C

[2] Uses B($\Upsilon(4S) \rightarrow B^0 \overline{B}^0$) = 0.486 ± 0.006. NODE=S042T03;LINKAGE=A

[3] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. NODE=S042T03;LINKAGE=EP

$\Gamma(K^*(892)^0 e^- \mu^+)/\Gamma_{total}$ — Γ_{587}/Γ

NODE=S042T04
NODE=S042T04

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5.7 \times 10^{-9}$	90	[1] AAIJ	23G	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.2 \times 10^{-7}$	90	[2] SANDILYA	18	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
$<3.4 \times 10^{-7}$	90	[3] AUBERT,B	06J	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Uses the uniform phase space model for the signal decays. NODE=S042T04;LINKAGE=C

[2] Uses B($\Upsilon(4S) \rightarrow B^0 \overline{B}^0$) = 0.486 ± 0.006. NODE=S042T04;LINKAGE=A

[3] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. NODE=S042T04;LINKAGE=EP

$\Gamma(K^*(892)^0 e^\pm \mu^\mp)/\Gamma_{total}$ — Γ_{588}/Γ

NODE=S042B25

Test of lepton family number conservation.

NODE=S042B25
NODE=S042B25

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
< 1.01 × 10^{-8}	90	[1] AAIJ	23G	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 1.8 × 10^{-7}	90	[2] SANDILYA	18	BELL	$e^+e^- \to \Upsilon(4S)$
< 5.8 × 10^{-7}	90	[3] AUBERT,B	06J	BABR	$e^+e^- \to \Upsilon(4S)$
<34 × 10^{-7}	90	[3] AUBERT	02L	BABR	Repl. by AUBERT,B 06J

[1] Uses the uniform phase space model for the signal decays. NODE=S042B25;LINKAGE=C
[2] Uses B($\Upsilon(4S) \to B^0\overline{B}^0$) = 0.486 ± 0.006. NODE=S042B25;LINKAGE=A
[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042B25;LINKAGE=EP

$\Gamma(K^*(892)^0 \tau^+ \mu^-)/\Gamma_{total}$ — Γ_{589}/Γ

NODE=S042P86
NODE=S042P86

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.0 × 10^{-5}	90	[1] AAIJ	23F	LHCB	pp at 7, 8, 13 TeV

[1] Using $B^0 \to D^- D_s^+$ as normalisation decay. NODE=S042P86;LINKAGE=A

$\Gamma(K^*(892)^0 \tau^- \mu^+)/\Gamma_{total}$ — Γ_{590}/Γ

NODE=S042P88
NODE=S042P88

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<8.2 × 10^{-6}	90	[1] AAIJ	23F	LHCB	pp at 7, 8, 13 TeV

[1] Using $B^0 \to D^- D_s^+$ as normalisation decay. NODE=S042P88;LINKAGE=A

$\Gamma(e^\pm \tau^\mp)/\Gamma_{total}$ — Γ_{591}/Γ

NODE=S042S19

Test of lepton family number conservation. Allowed by higher-order electroweak interactions.

NODE=S042S19
NODE=S042S19

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.6 × 10^{-5}	90	[1] ATMACAN	21	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<2.8 × 10^{-5}	90	[2] AUBERT	08AD	BABR	$e^+e^- \to \Upsilon(4S)$
<1.1 × 10^{-4}	90	BORNHEIM	04	CLE2	$e^+e^- \to \Upsilon(4S)$
<5.3 × 10^{-4}	90	AMMAR	94	CLE2	Repl. by BORNHEIM 04

[1] Uses events in which one B meson is fully reconstructed in a hadronic decay mode. NODE=S042S19;LINKAGE=A
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S19;LINKAGE=EP

$\Gamma(\mu^\pm \tau^\mp)/\Gamma_{total}$ — Γ_{592}/Γ

NODE=S042S20

Test of lepton family number conservation. Allowed by higher-order electroweak interactions.

NODE=S042S20
NODE=S042S20

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.4 × 10^{-5}	95	[1] AAIJ	19AK	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<1.5 × 10^{-5}	90	[2] ATMACAN	21	BELL	$e^+e^- \to \Upsilon(4S)$
<2.2 × 10^{-5}	90	[3] AUBERT	08AD	BABR	$e^+e^- \to \Upsilon(4S)$
<3.8 × 10^{-5}	90	BORNHEIM	04	CLE2	$e^+e^- \to \Upsilon(4S)$
<8.3 × 10^{-4}	90	AMMAR	94	CLE2	Repl. by BORNHEIM 04

[1] Assuming no contribution from $B_s^0 \to \mu^\pm\tau^\mp$. NODE=S042S20;LINKAGE=A
[2] Uses events in which one B meson is fully reconstructed in a hadronic decay mode. NODE=S042S20;LINKAGE=B
[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S042S20;LINKAGE=EP

$\Gamma(p\mu^-)/\Gamma_{total}$ — Γ_{593}/Γ

NODE=S042P84
NODE=S042P84

VALUE	CL%	DOCUMENT ID		COMMENT
<2.6 × 10^{-9}	90	[1] AAIJ	23Y	pp at 7, 8, 13 TeV

[1] Assumes that B^0 decay branching fractions to $p\mu^-$ and $\overline{p}\mu^+$ are the same. NODE=S042P84;LINKAGE=A

$\Gamma(\Lambda_c^+ \mu^-)/\Gamma_{total}$ — Γ_{594}/Γ

NODE=S042Q92
NODE=S042Q92

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.4 × 10^{-6}	90	[1,2] DEL-AMO-SA...	11K	BABR	$e^+e^- \to \Upsilon(4S)$

[1] DEL-AMO-SANCHEZ 11K reports < 180 × 10^{-8} from a measurement of [$\Gamma(B^0 \to \Lambda_c^+\mu^-)/\Gamma_{total}$] × [B($\Lambda_c^+ \to pK^-\pi^+$)] assuming B($\Lambda_c^+ \to pK^-\pi^+$) = (5.0 ± 1.3) × 10^{-2}, which we rescale to our best value B($\Lambda_c^+ \to pK^-\pi^+$) = 6.35 × 10^{-2}. NODE=S042Q92;LINKAGE=DE
[2] Uses B($\Upsilon(4S) \to B^0\overline{B}^0$) = (51.6 ± 0.6)% and B($\Upsilon(4S) \to B^+B^-$) = (48.4 ± 0.6)%. NODE=S042Q92;LINKAGE=NP

$\Gamma(\Lambda_c^+ e^-)/\Gamma_{total}$ Γ_{595}/Γ

NODE=S042Q93

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<4 × 10⁻⁶	90	[1,2] DEL-AMO-SA..11K	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] DEL-AMO-SANCHEZ 11K reports $< 520 \times 10^{-8}$ from a measurement of $[\Gamma(B^0 \rightarrow \Lambda_c^+ e^-)/\Gamma_{total}] \times [B(\Lambda_c^+ \rightarrow pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \rightarrow pK^-\pi^+) = 6.35 \times 10^{-2}$. NODE=S042Q93;LINKAGE=DE

[2] Uses $B(\Upsilon(4S) \rightarrow B^0\overline{B}^0) = (51.6 \pm 0.6)\%$ and $B(\Upsilon(4S) \rightarrow B^+B^-) = (48.4 \pm 0.6)\%$. NODE=S042Q93;LINKAGE=NP

B_s^0 CROSS-PARTICLE BRANCHING RATIOS

NODE=S042260

$\Gamma([K^+K^-]_D K^*(892)^0)/\Gamma_{total} \times B(B_s^0 \rightarrow [K^+K^-]_D K^*(892)^0)$ $\Gamma_{155}/\Gamma \times B$

NODE=S042C25

VALUE	DOCUMENT ID	TECN	COMMENT
0.10±0.02±0.01	AAIJ 14BN	LHCB	pp at 7, 8 TeV

$\Gamma([\pi^+\pi^-]_D K^*(892)^0)/\Gamma_{total} \times B(B_s^0 \rightarrow [\pi^+\pi^-]_D K^*(892)^0)$ $\Gamma_{156}/\Gamma \times B$

NODE=S042C26

VALUE	DOCUMENT ID	TECN	COMMENT
0.15±0.04±0.01	AAIJ 14BN	LHCB	pp at 7, 8 TeV

See the related review(s):

Polarization in B Decays

POLARIZATION IN B^0 DECAY

NODE=S042223

In decays involving two vector mesons, one can distinguish among the states in which meson polarizations are both longitudinal (L) or both are transverse and parallel ($\parallel$) or perpendicular ($\perp$) to each other with the parameters Γ_L/Γ, $\Gamma_\perp/\Gamma$, and the relative phases $\phi_\parallel$ and $\phi_\perp$. See the definitions in the note on "Polarization in B Decays" review in the B^0 Particle Listings.

NODE=S042223

Γ_L/Γ in $B^0 \rightarrow J/\psi(1S) K^*(892)^0$

NODE=S042P1

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.571±0.007 OUR AVERAGE				
0.572±0.006±0.014		[1] AAIJ 13AT	LHCB	pp at 7 TeV
0.587±0.011±0.013		[2] ABAZOV 09E	D0	$p\overline{p}$ at 1.96 TeV
0.556±0.009±0.010		[3] AUBERT 07AD	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
0.562±0.026±0.018		ACOSTA 05	CDF	$p\overline{p}$ at 1.96 TeV
0.574±0.012±0.009		ITOH 05	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
0.59 ±0.06 ±0.01		[4] AFFOLDER 00N	CDF	$p\overline{p}$ at 1.8 TeV
0.52 ±0.07 ±0.04		[5] JESSOP 97	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
0.65 ±0.10 ±0.04	65	ABE 95Z	CDF	$p\overline{p}$ at 1.8 TeV
0.97 ±0.16 ±0.15	13	[6] ALBRECHT 94G	ARG	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.566±0.012±0.005		[3] AUBERT 05P	BABR	Repl. by AUBERT 07AD
0.62 ±0.02 ±0.03		[7] ABE 02N	BELL	Repl. by ITOH 05
0.597±0.028±0.024		[8] AUBERT 01H	BABR	Repl. by AUBERT 07AD
0.80 ±0.08 ±0.05	42	[6] ALAM 94	CLE2	Sup. by JESSOP 97

[1] AAIJ 13AT obtains $\Gamma_\parallel/\Gamma = 0.227 \pm 0.004 \pm 0.011$. The relation $1 = (\Gamma_L + \Gamma_\perp + \Gamma_\parallel)/\Gamma$ is used to obtain Γ_L/Γ. NODE=S042P1;LINKAGE=B

[2] Measured the angular and lifetime parameters for the time-dependent angular untagged decays $B_d^0 \rightarrow J/\psi K^{*0}$ and $B_s^0 \rightarrow J/\psi \phi$. NODE=S042P1;LINKAGE=AB

[3] Obtained by combining the B^0 and B^+ modes. NODE=S042P1;LINKAGE=AU

[4] AFFOLDER 00N measurements are based on 190 B^0 candidates obtained from a data sample of 89 pb^{-1}. The P-wave fraction is found to be $0.13^{+0.12}_{-0.09} \pm 0.06$. NODE=S042P1;LINKAGE=P1

[5] JESSOP 97 is the average over a mixture of B^0 and B^+ decays. The P-wave fraction is found to be $0.16 \pm 0.08 \pm 0.04$. NODE=S042P1;LINKAGE=JJ

[6] Averaged over an admixture of B^0 and B^+ decays. NODE=S042P1;LINKAGE=A

[7] Averaged over an admixture of B^0 and B^+ decays and the P wave fraction is $(19 \pm 2 \pm 3)\%$. NODE=S042P1;LINKAGE=PE

[8] Averaged over an admixture of B^0 and B^- decays and the P wave fraction is $(16.0 \pm 3.2 \pm 1.4) \times 10^{-2}$. NODE=S042P1;LINKAGE=BZ

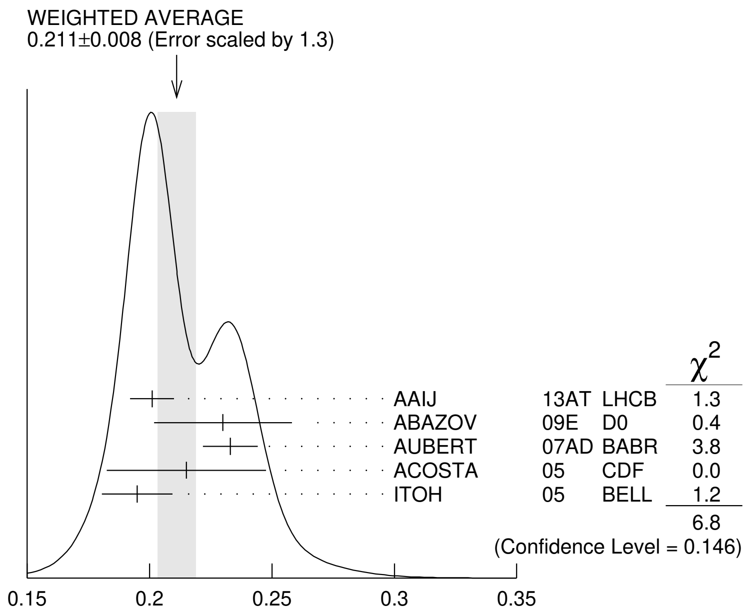
$\Gamma_\perp/\Gamma$ in $B^0 \to J/\psi K^{*0}$

NODE=S042PP0

VALUE	DOCUMENT ID	TECN	COMMENT
0.211±0.008 OUR AVERAGE	Error includes scale factor of 1.3. See the ideogram below.		
0.201±0.004±0.008	AAIJ 13AT	LHCB	pp at 7 TeV
0.230±0.013±0.025	[1] ABAZOV 09E	D0	$p\overline{p}$ at 1.96 TeV
0.233±0.010±0.005	[2] AUBERT 07AD	BABR	$e^+e^- \to \Upsilon(4S)$
0.215±0.032±0.006	ACOSTA 05	CDF	$p\overline{p}$ at 1.96 TeV
0.195±0.012±0.008	ITOH 05	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Measured the angular and lifetime parameters for the time-dependent angular untagged decays $B^0_d \to J/\psi K^{*0}$ and $B^0_s \to J/\psi \phi$. NODE=S042PP0;LINKAGE=AB

[2] Obtained by combining the B^0 and B^+ modes. NODE=S042PP0;LINKAGE=AU



$\Gamma_\perp/\Gamma$ in $B^0 \to J/\psi K^{*0}$

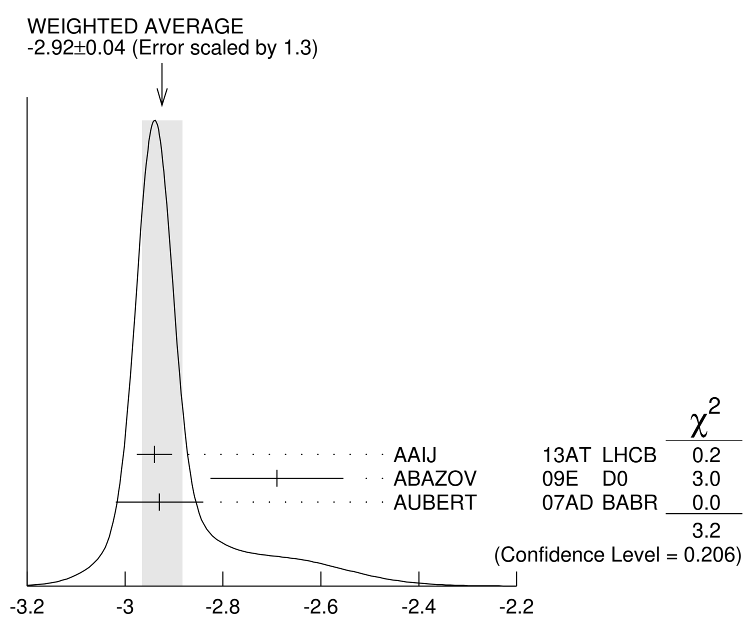
$\phi_\parallel$ in $B^0 \to J/\psi K^{*0}$

NODE=S042PP1

VALUE (rad)	DOCUMENT ID	TECN	COMMENT
−2.92±0.04 OUR AVERAGE	Error includes scale factor of 1.3. See the ideogram below.		
−2.94±0.02±0.03	AAIJ 13AT	LHCB	pp at 7 TeV
−2.69±0.08±0.11	[1] ABAZOV 09E	D0	$p\overline{p}$ at 1.96 TeV
−2.93±0.08±0.04	[2] AUBERT 07AD	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Obtained $\phi_\parallel$ as $\delta_2 - \delta_1$, assuming they are uncorrelated. NODE=S042PP1;LINKAGE=AB

[2] Obtained by combining the B^0 and B^+ modes. NODE=S042PP1;LINKAGE=AU



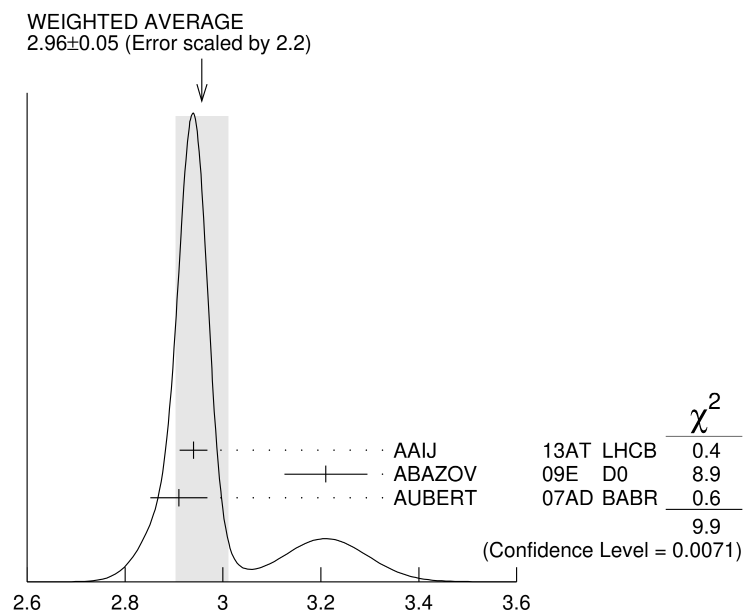
$\phi_\parallel$ in $B^0 \to J/\psi K^{*0}$ (rad)

$\phi_\perp$ in $B^0 \to J/\psi K^{*0}$

NODE=S042PP2

VALUE (rad)	DOCUMENT ID	TECN	COMMENT
2.96±0.05 OUR AVERAGE	Error includes scale factor of 2.2. See the ideogram below.		
2.94±0.02±0.02	AAIJ	13AT LHCB	pp at 7 TeV
3.21±0.06±0.06	ABAZOV	09E D0	$p\overline{p}$ at 1.96 TeV
2.91±0.05±0.03	[1] AUBERT	07AD BABR	$e^+e^- \to \Upsilon(4S)$

[1] Obtained by combining the B^0 and B^+ modes. NODE=S042PP2;LINKAGE=AU



$\phi_\perp$ in $B^0 \to J/\psi K^{*0}$ (rad)

Γ_L/Γ in $B^0 \to \psi(2S) K^*(892)^0$

NODE=S042P4

VALUE	DOCUMENT ID	TECN	COMMENT
$0.463^{+0.028}_{-0.040}$ OUR AVERAGE			
$0.455^{+0.031}_{-0.029}{}^{+0.014}_{-0.049}$	CHILIKIN	13 BELL	$e^+e^- \to \Upsilon(4S)$
0.48 ±0.05 ±0.02	[1] AUBERT	07AD BABR	$e^+e^- \to \Upsilon(4S)$
0.45 ±0.11 ±0.04	[2] RICHICHI	01 CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.448^{+0.040}_{-0.027}{}^{+0.040}_{-0.053}$	MIZUK	09 BELL	$e^+e^- \to \Upsilon(4S)$

[1] Obtained by combining the B^0 and B^+ modes. NODE=S042P4;LINKAGE=AU

[2] Averages between charged and neutral B mesons. NODE=S042P4;LINKAGE=AB

$\Gamma_\perp/\Gamma$ in $B^0 \to \psi(2S) K^{*0}$

NODE=S042GP0

VALUE	DOCUMENT ID	TECN	COMMENT
0.30±0.06±0.02	[1] AUBERT	07AD BABR	$e^+e^- \to \Upsilon(4S)$

[1] Obtained by combining the B^0 and B^+ modes. NODE=S042GP0;LINKAGE=AU

$\phi_\parallel$ in $B^0 \to \psi(2S) K^{*0}$

NODE=S042PP3

VALUE (rad)	DOCUMENT ID	TECN	COMMENT
−2.8±0.4±0.1	[1] AUBERT	07AD BABR	$e^+e^- \to \Upsilon(4S)$

[1] Obtained by combining the B^0 and B^+ modes. NODE=S042PP3;LINKAGE=AU

$\phi_\perp$ in $B^0 \to \psi(2S) K^{*0}$

NODE=S042PP4

VALUE (rad)	DOCUMENT ID	TECN	COMMENT
2.8±0.3±0.1	[1] AUBERT	07AD BABR	$e^+e^- \to \Upsilon(4S)$

[1] Obtained by combining the B^0 and B^+ modes. NODE=S042PP4;LINKAGE=AU

Γ_L/Γ in $B^0 \to \chi_{c1} K^*(892)^0$

NODE=S042GP1

VALUE	DOCUMENT ID	TECN	COMMENT
$0.83 {}^{+0.06}_{-0.08}$ OUR AVERAGE Error includes scale factor of 1.3.			
$0.947 {}^{+0.038}_{-0.048} {}^{+0.046}_{-0.099}$	MIZUK 08	BELL	$e^+ e^- \to \Upsilon(4S)$
$0.77 \pm 0.07 \pm 0.04$	[1] AUBERT 07AD	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Obtained by combining the B^0 and B^+ modes.

NODE=S042GP1;LINKAGE=AU

$\Gamma_\perp/\Gamma$ in $B^0 \to \chi_{c1} K^*(892)^0$

NODE=S042GP2

VALUE	DOCUMENT ID	TECN	COMMENT
$0.03 \pm 0.04 \pm 0.02$	[1] AUBERT 07AD	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Obtained by combining the B^0 and B^+ modes.

NODE=S042GP2;LINKAGE=AU

$\phi_\parallel$ in $B^0 \to \chi_{c1} K^*(892)^0$

NODE=S042PP5

VALUE (rad)	DOCUMENT ID	TECN	COMMENT
$0.0 \pm 0.3 \pm 0.1$	[1] AUBERT 07AD	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Obtained by combining the B^0 and B^+ modes.

NODE=S042PP5;LINKAGE=AU

Γ_L/Γ in $B^0 \to D^{*-} \ell^+ \nu_\ell$

NODE=S042A46

VALUE	DOCUMENT ID	TECN	COMMENT
$0.487 \pm 0.017 \pm 0.005$	PRIM 23	BELL	$e^+ e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^0 \to D^{*-} e^+ \nu_e$

NODE=S042A47

VALUE	DOCUMENT ID	TECN	COMMENT
0.516 ± 0.013 OUR AVERAGE Error includes scale factor of 1.9.			
$0.520 \pm 0.005 \pm 0.005$	ADACHI 23J	BELL	$e^+ e^- \to \Upsilon(4S)$
$0.471 \pm 0.024 \pm 0.007$	PRIM 23	BELL	$e^+ e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^0 \to D^{*-} \mu^+ \nu_\mu$

NODE=S042A48

VALUE	DOCUMENT ID	TECN	COMMENT
0.525 ± 0.007 OUR AVERAGE			
$0.527 \pm 0.005 \pm 0.005$	ADACHI 23J	BELL	$e^+ e^- \to \Upsilon(4S)$
$0.504 \pm 0.023 \pm 0.007$	PRIM 23	BELL	$e^+ e^- \to \Upsilon(4S)$

$\Delta(\Gamma_L/\Gamma)$ in $B^0 \to D^{*-} \ell^+ \nu_\ell$

NODE=S042A49

$\Delta(\Gamma_L/\Gamma) = (\Gamma_L/\Gamma)^\mu - (\Gamma_L/\Gamma)^e$

NODE=S042A49

VALUE	DOCUMENT ID	TECN	COMMENT
0.008 ± 0.008 OUR AVERAGE			
$0.006 \pm 0.007 \pm 0.005$	ADACHI 23J	BELL	$e^+ e^- \to \Upsilon(4S)$
$0.033 \pm 0.033 \pm 0.010$	PRIM 23	BELL	$e^+ e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^0 \to D^{*-} \tau^+ \nu_\tau$

NODE=S042A66

VALUE	DOCUMENT ID	TECN	COMMENT
$0.41 \pm 0.06 \pm 0.03$	AAIJ 24AN	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.52 \pm 0.07 \pm 0.04$	[1] AAIJ 24AN	LHCB	pp at 7, 8, 13 TeV (OCCUR=2)
$0.34 \pm 0.08 \pm 0.02$	[2] AAIJ 24AN	LHCB	pp at 7, 8, 13 TeV (OCCUR=3)

[1] AAIJ 24AN value restricted to $q^2 < 7.0$ GeV^2/c^4. Reports correlation of -0.18 with the measurement in the region $q^2 > 7.0$ GeV^2/c^4.

NODE=S042A66;LINKAGE=A

[2] AAIJ 24AN value restricted to $q^2 > 7.0$ GeV^2/c^4. Reports correlation of -0.18 with the measurement in the region $q^2 < 7.0$ GeV^2/c^4.

NODE=S042A66;LINKAGE=B

Γ_L/Γ in $B^0 \to D_s^{*+} D^{*-}$

NODE=S042P3

VALUE	DOCUMENT ID	TECN	COMMENT
0.574 ± 0.014 OUR AVERAGE			
$0.578 \pm 0.010 \pm 0.011$	[1] AAIJ 21S	LHCB	pp at 13 TeV
$0.519 \pm 0.050 \pm 0.028$	[2] AUBERT 03I	BABR	$e^+ e^- \to \Upsilon(4S)$
$0.506 \pm 0.139 \pm 0.036$	AHMED 00B	CLE2	$e^+ e^- \to \Upsilon(4S)$

[1] AAIJ 21S uses $D_s^{*+} \to D_s^+ \gamma$ decays.

NODE=S042P3;LINKAGE=A

[2] Measurement performed using partial reconstruction of D^{*-} decay.

NODE=S042P3;LINKAGE=AI

$|H_+|$ in $B^0 \to D_s^{*+} D^{*-}$

NODE=S042A39

H_+, H_- define parity-even (∥) and parity-odd (⊥) polarization transversity amplitudes $A_{\parallel,\perp} = (H_+ \pm H_-)/\sqrt{2}$.

NODE=S042A39

VALUE	DOCUMENT ID	TECN	COMMENT
0.195±0.022±0.032	[1] AAIJ 21S	BELL	pp at 13 TeV

NODE=S042A39

[1] AAIJ 21S uses $D_s^{*+} \to D_s^+ \gamma$ decays.

NODE=S042A39;LINKAGE=A

$|H_-|$ in $B^0 \to D_s^{*+} D^{*-}$

NODE=S042A40

H_+, H_- define parity-even (∥) and parity-odd (⊥) polarization transversity amplitudes $A_{\parallel,\perp} = (H_+ \pm H_-)/\sqrt{2}$.

NODE=S042A40

VALUE	DOCUMENT ID	TECN	COMMENT
0.620±0.011±0.013	[1] AAIJ 21S	LHCB	pp at 13 TeV

NODE=S042A40

[1] AAIJ 21S uses $D_s^{*+} \to D_s^+ \gamma$ decays.

NODE=S042A40;LINKAGE=A

ϕ_+ in $B^0 \to D_s^{*+} D^{*-}$

NODE=S042A37
NODE=S042A37

VALUE	DOCUMENT ID	TECN	COMMENT
−0.046±0.102±0.020	[1] AAIJ 21S	LHCB	pp at 13 TeV

[1] AAIJ 21S uses $D_s^{*+} \to D_s^+ \gamma$ decays.

NODE=S042A37;LINKAGE=A

ϕ_- in $B^0 \to D_s^{*+} D^{*-}$

NODE=S042A38
NODE=S042A38

VALUE	DOCUMENT ID	TECN	COMMENT
0.108±0.170±0.051	[1] AAIJ 21S	LHCB	pp at 13 TeV

[1] AAIJ 21S uses $D_s^{*+} \to D_s^+ \gamma$ decays.

NODE=S042A38;LINKAGE=A

Γ_L/Γ in $B^0 \to D^{*-} \rho^+$

NODE=S042P2
NODE=S042P2

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.885±0.016±0.012		CSORNA 03	CLE2	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.93 ±0.05 ±0.05	76	ALAM 94	CLE2	$e^+ e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^0 \to D_s^{*+} \rho^-$

NODE=S042P02
NODE=S042P02

VALUE	DOCUMENT ID	TECN	COMMENT
$0.84^{+0.26}_{-0.28}$±0.13	[1] AUBERT 08AJ	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042P02;LINKAGE=EP

Γ_L/Γ in $B^0 \to D_s^{*+} K^{*-}$

NODE=S042P03
NODE=S042P03

VALUE	DOCUMENT ID	TECN	COMMENT
$0.92^{+0.37}_{-0.31}$±0.07	[1] AUBERT 08AJ	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S042P03;LINKAGE=EP

Γ_L/Γ in $B^0 \to D^{*+} D^{*-}$

NODE=S042P7
NODE=S042P7

VALUE	DOCUMENT ID	TECN	COMMENT
0.624±0.029±0.011	KRONENBIT... 12	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.57 ±0.08 ±0.02	MIYAKE 05	BELL	Repl. by KRONENBITTER 12

$\Gamma_\perp/\Gamma$ in $B^0 \to D^{*+} D^{*-}$

NODE=S042DD
NODE=S042DD

VALUE	DOCUMENT ID	TECN	COMMENT
0.147±0.019 OUR AVERAGE			
0.138±0.024±0.006	KRONENBIT... 12	BELL	$e^+ e^- \to \Upsilon(4S)$
0.158±0.028±0.006	AUBERT 09C	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.125±0.043±0.023	VERVINK 09	BELL	Repl. by KRONENBITTER 12
0.143±0.034±0.008	AUBERT 07BO	BABR	Repl. by AUBERT 09C
0.125±0.044±0.007	AUBERT,BE 05A	BABR	Repl. by AUBERT 07BO
0.19 ±0.08 ±0.01	MIYAKE 05	BELL	Repl. by VERVINK 09
0.063±0.055±0.009	AUBERT 03Q	BABR	Repl. by AUBERT,BE 05A

Γ_L/Γ in $B^0 \to \overline{D}^{*0} \omega$

NODE=S042DE0
NODE=S042DE0

VALUE	DOCUMENT ID	TECN	COMMENT
0.665±0.047±0.015	LEES 11M	BABR	$e^+ e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^0 \to \overline{D}_1(2430)^0 \omega$

NODE=S042DE1

VALUE (%)		DOCUMENT ID		TECN	COMMENT
$63.0\pm9.1^{+6.5}_{-6.0}$	[1,2]	MATVIENKO	15	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Obtained by amplitude analysis of $\overline{B}^0 \to D^{*-}\omega\pi^+$. The second uncertainty combines in qudrature experimental systematic and model uncertainties. NODE=S042DE1;LINKAGE=A

[2] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. NODE=S042DE1;LINKAGE=EP

Γ_L/Γ in $B^0 \to \overline{D}_1(2420)^0 \omega$

NODE=S042DE2

VALUE (%)		DOCUMENT ID		TECN	COMMENT
$67.1\pm11.7^{+2.3}_{-5.0}$	[1,2]	MATVIENKO	15	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Obtained by amplitude analysis of $\overline{B}^0 \to D^{*-}\omega\pi^+$. The second uncertainty combines in qudrature experimental systematic and model uncertainties. NODE=S042DE2;LINKAGE=A

[2] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. NODE=S042DE2;LINKAGE=EP

Γ_L/Γ in $B^0 \to \overline{D}^*_2(2460)^0 \omega$

NODE=S042DE3

VALUE (%)		DOCUMENT ID		TECN	COMMENT
$76.0^{+18.3+3.5}_{-\ 8.5-2.8}$	[1,2]	MATVIENKO	15	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Obtained by amplitude analysis of $\overline{B}^0 \to D^{*-}\omega\pi^+$. The second uncertainty combines in qudrature experimental systematic and model uncertainties. NODE=S042DE3;LINKAGE=A

[2] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. NODE=S042DE3;LINKAGE=EP

Γ_L/Γ in $B^0 \to D^{*-}\omega\pi^+$

NODE=S042P9

VALUE		DOCUMENT ID		TECN	COMMENT
0.654±0.042±0.016	[1]	AUBERT	06L	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Invariant mass of the $[\omega\pi]$ system is restricted in the region 1.1 and 1.9 GeV. NODE=S042P9;LINKAGE=AU

Γ_L/Γ in $B^0 \to \omega K^{*0}$

NODE=S042P12

VALUE	DOCUMENT ID		TECN	COMMENT
0.69±0.11 OUR AVERAGE				
0.68±0.17±0.16	AAIJ	19J	LHCB	pp at 7, 8 TeV
0.72±0.14±0.02	AUBERT	09H	BABR	$e^+e^- \to \Upsilon(4S)$
$0.56\pm0.29^{+0.18}_{-0.08}$	GOLDENZWE..	08	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma_\perp/\Gamma$ in $B^0 \to \omega K^*(892)^0$

NODE=S042A15

VALUE	DOCUMENT ID		TECN	COMMENT
0.10±0.09±0.09	AAIJ	19J	LHCB	pp at 7, 8 TeV

A^0_{CP} in $B^0 \to \omega K^*(892)^0$

NODE=S042A16

VALUE	DOCUMENT ID		TECN	COMMENT
−0.13±0.27±0.13	AAIJ	19J	LHCB	pp at 7, 8 TeV

$A^\perp_{CP}$ in $B^0 \to \omega K^*(892)^0$

NODE=S042A17

VALUE	DOCUMENT ID		TECN	COMMENT
0.3±0.8±0.4	AAIJ	19J	LHCB	pp at 7, 8 TeV

$A^\parallel_{CP}$ in $B^0 \to \omega K^*(892)^0$

NODE=S042A18

VALUE	DOCUMENT ID		TECN	COMMENT
0.26±0.55±0.22	AAIJ	19J	LHCB	pp at 7, 8 TeV

ϕ_0 in $B^0 \to \omega K^*(892)^0$

NODE=S042A22

VALUE	DOCUMENT ID		TECN	COMMENT
−0.86±0.29±0.71	AAIJ	19J	LHCB	pp at 7, 8 TeV

$\phi_\perp$ in $B^0 \to \omega K^*(892)^0$

NODE=S042A23

VALUE	DOCUMENT ID		TECN	COMMENT
1.6±0.4±0.6	AAIJ	19J	LHCB	pp at 7, 8 TeV

$\phi_\parallel$ in $B^0 \to \omega K^*(892)^0$

NODE=S042A24

VALUE	DOCUMENT ID		TECN	COMMENT
−1.83±0.29±0.32	AAIJ	19J	LHCB	pp at 7, 8 TeV

Γ_L/Γ in $B^0 \to \omega K^*_2(1430)^0$

NODE=S042P13

VALUE	DOCUMENT ID		TECN	COMMENT
0.45±0.12±0.02	AUBERT	09H	BABR	$e^+e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^0 \rightarrow K^{*0}\overline{K}^{*0}$

NODE=S042PP6

VALUE	DOCUMENT ID		TECN	COMMENT
0.74 ±0.05 OUR AVERAGE				
0.724±0.051±0.016	[1] AAIJ	19L	LHCB	pp at 7 and 8 TeV
$0.80\ ^{+0.10}_{-0.12}\ \pm0.06$	AUBERT	08I	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Untagged and time-integrated analysis within 150 MeV of the K^{*0} mass. NODE=S042PP6;LINKAGE=A

Γ_L/Γ in $B^0 \rightarrow \phi K^*(892)^0$

NODE=S042P5

VALUE	DOCUMENT ID		TECN	COMMENT
0.497±0.017 OUR AVERAGE				
0.497±0.019±0.015	AAIJ	14AM	LHCB	pp at 7 TeV
0.499±0.030±0.018	PRIM	13	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
0.494±0.034±0.013	AUBERT	08BG	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.506±0.040±0.015	AUBERT	07D	BABR	Repl. by AUBERT 08BG
0.45 ±0.05 ±0.02	CHEN	05A	BELL	Repl. by PRIM 13
0.52 ±0.05 ±0.02	[1] AUBERT,B	04W	BABR	Repl. by AUBERT 07D
0.65 ±0.07 ±0.02	AUBERT	03V	BABR	Repl. by AUBERT,B 04W
0.41 ±0.10 ±0.04	CHEN	03B	BELL	Repl. by CHEN 05A

[1] AUBERT,B 04W also measures the fraction of parity-odd transverse contribution $f_\perp = 0.22 \pm 0.05 \pm 0.02$ and the phases of the parity-even and parity-odd transverse amplitudes relative to the longitudinal amplitude. NODE=S042P5;LINKAGE=AU

$\Gamma_\perp/\Gamma$ in $B^0 \rightarrow \phi K^*(892)^0$

NODE=S042Q41

VALUE	DOCUMENT ID		TECN	COMMENT
0.224±0.015 OUR AVERAGE				
0.221±0.016±0.013	AAIJ	14AM	LHCB	pp at 7 TeV
0.238±0.026±0.008	PRIM	13	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
0.212±0.032±0.013	AUBERT	08BG	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.227±0.038±0.013	AUBERT	07D	BABR	Repl. by AUBERT 08BG
$0.31\ ^{+0.06}_{-0.05}\ \pm0.02$	[1] CHEN	05A	BELL	Repl. by PRIM 13
0.22 ±0.05 ±0.02	AUBERT,B	04W	BABR	Repl. by AUBERT 07D

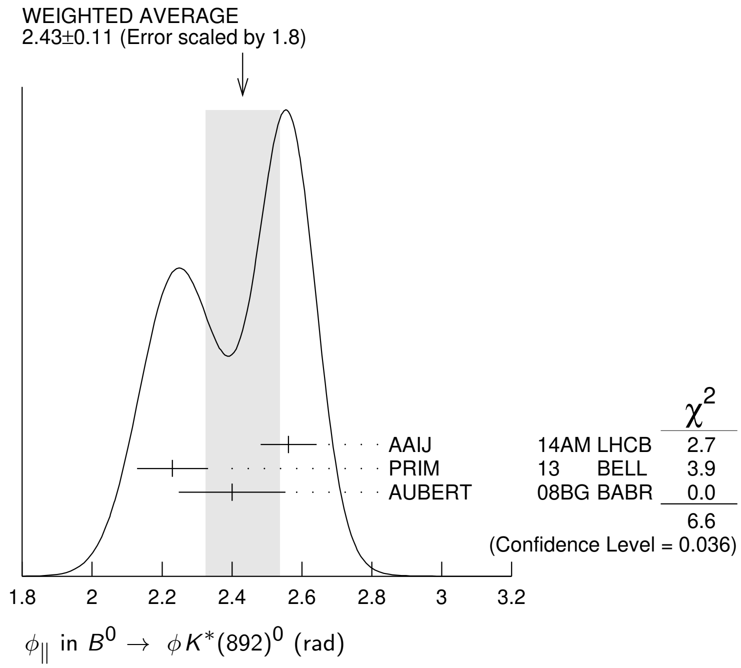
[1] This quantity was recalculated by the BELLE authors from numbers in the original paper. NODE=S042Q41;LINKAGE=CH

$\phi_\parallel$ in $B^0 \rightarrow \phi K^*(892)^0$

NODE=S042Q42

VALUE (rad)	DOCUMENT ID		TECN	COMMENT
2.43 ±0.11 OUR AVERAGE	Error includes scale factor of 1.8. See the ideogram below.			
2.562±0.069±0.040	AAIJ	14AM	LHCB	pp at 7 TeV
2.23 ±0.10 ±0.02	PRIM	13	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
2.40 ±0.13 ±0.08	AUBERT	08BG	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2.31 ±0.14 ±0.08	AUBERT	07D	BABR	Repl. by AUBERT 08BG
$2.40\ ^{+0.28}_{-0.24}\ \pm0.07$	[1] CHEN	05A	BELL	Repl. by PRIM 13
$2.34\ ^{+0.23}_{-0.20}\ \pm0.05$	AUBERT,B	04W	BABR	Repl. by AUBERT 07D

[1] This quantity was recalculated by the BELLE authors from numbers in the original paper. NODE=S042Q42;LINKAGE=CH

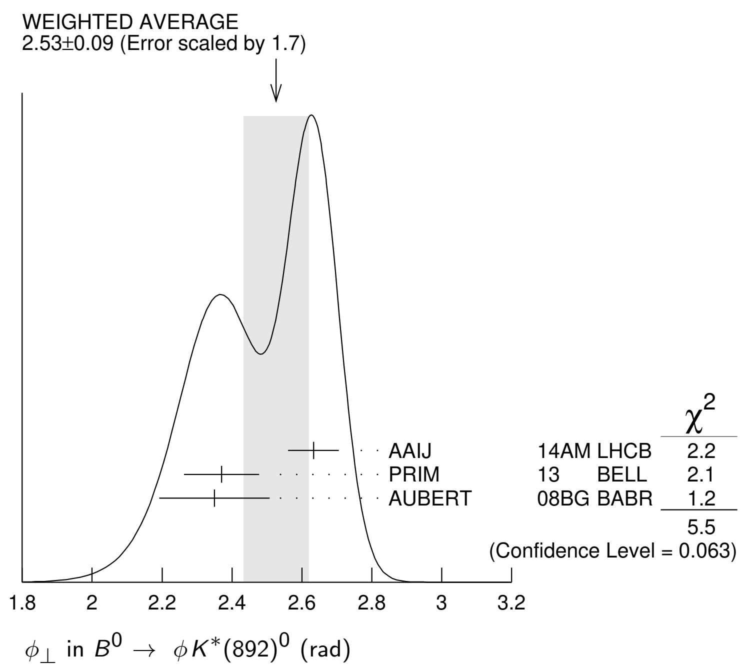


$\phi_\perp$ in $B^0 \rightarrow \phi K^*(892)^0$

NODE=S042Q43
NODE=S042Q43

VALUE (rad)	DOCUMENT ID		TECN	COMMENT
2.53 ±0.09 OUR AVERAGE	Error includes scale factor of 1.7. See the ideogram below.			
2.633±0.062±0.037	AAIJ	14AM	LHCB	$p p$ at 7 TeV
2.37 ±0.10 ±0.04	PRIM	13	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
2.35 ±0.13 ±0.09	AUBERT	08BG	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2.24 ±0.15 ±0.09	AUBERT	07D	BABR	Repl. by AUBERT 08BG
2.51 ±0.25 ±0.06	[1] CHEN	05A	BELL	Repl. by PRIM 13
2.47 ±0.25 ±0.05	AUBERT,B	04W	BABR	Repl. by AUBERT 07D

[1] This quantity was recalculated by the BELLE authors from numbers in the original paper. NODE=S042Q43;LINKAGE=CH



$\delta_0(B^0 \rightarrow \phi K^*(892)^0)$

NODE=S042Q76
NODE=S042Q76

VALUE (rad)	DOCUMENT ID		TECN	COMMENT
2.88±0.10 OUR AVERAGE				
2.91±0.10±0.08	PRIM	13	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
2.82±0.15±0.09	AUBERT	08BG	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2.78±0.17±0.09	AUBERT	07D	BABR	Repl. by AUBERT 08BG

A^0_{CP} in $B^0 \to \phi K^*(892)^0$

NODE=S042Q44

VALUE	DOCUMENT ID		TECN	COMMENT
−0.007±0.030 OUR AVERAGE				
−0.003±0.038±0.005	AAIJ	14AM	LHCB	pp at 7 TeV
−0.030±0.061±0.007	PRIM	13	BELL	$e^+e^- \to \Upsilon(4S)$
0.01 ±0.07 ±0.02	AUBERT	08BG	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.03 ±0.08 ±0.02	AUBERT	07D	BABR	Repl. by AUBERT 08BG
0.13 ±0.12 ±0.04	[1] CHEN	05A	BELL	Repl. by PRIM 13
−0.06 ±0.10 ±0.01	AUBERT,B	04W	BABR	Repl. by AUBERT 07D

[1] This quantity was recalculated by the BELLE authors from numbers in the original paper.

NODE=S042Q44;LINKAGE=CH

$A^{\perp}_{CP}$ in $B^0 \to \phi K^*(892)^0$

NODE=S042Q45

VALUE	DOCUMENT ID		TECN	COMMENT
−0.02 ±0.06 OUR AVERAGE				
0.047±0.074±0.009	AAIJ	14AM	LHCB	pp at 7 TeV
−0.14 ±0.11 ±0.01	PRIM	13	BELL	$e^+e^- \to \Upsilon(4S)$
−0.04 ±0.15 ±0.06	AUBERT	08BG	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.03 ±0.16 ±0.05	AUBERT	07D	BABR	Repl. by AUBERT 08BG
−0.20 ±0.18 ±0.04	[1] CHEN	05A	BELL	Repl. by PRIM 13
−0.10 ±0.24 ±0.05	AUBERT,B	04W	BABR	Repl. by AUBERT 07D

[1] This quantity was recalculated by the BELLE authors from numbers in the original paper.

NODE=S042Q45;LINKAGE=CH

$\Delta\phi_{\parallel}$ in $B^0 \to \phi K^*(892)^0$

NODE=S042Q46

VALUE (rad)	DOCUMENT ID		TECN	COMMENT
0.05 ±0.05 OUR AVERAGE				
0.045±0.069±0.015	AAIJ	14AM	LHCB	pp at 7 TeV
−0.02 ±0.10 ±0.01	PRIM	13	BELL	$e^+e^- \to \Upsilon(4S)$
0.22 ±0.12 ±0.08	AUBERT	08BG	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.24 ±0.14 ±0.08	AUBERT	07D	BABR	Repl. by AUBERT 08BG
−0.32 ±0.27 ±0.07	[1] CHEN	05A	BELL	Repl. by PRIM 13
0.27 $^{+0.20}_{-0.23}$ ±0.05	AUBERT,B	04W	BABR	Repl. by AUBERT 07D

[1] This quantity was recalculated by the BELLE authors from numbers in the original paper.

NODE=S042Q46;LINKAGE=CH

$\Delta\phi_{\perp}$ in $B^0 \to \phi K^*(892)^0$

NODE=S042Q47

VALUE (rad)	DOCUMENT ID		TECN	COMMENT
0.08 ±0.05 OUR AVERAGE				
0.062±0.062±0.005	AAIJ	14AM	LHCB	pp at 7 TeV
0.05 ±0.10 ±0.02	PRIM	13	BELL	$e^+e^- \to \Upsilon(4S)$
0.21 ±0.13 ±0.08	AUBERT	08BG	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.19 ±0.15 ±0.08	AUBERT	07D	BABR	Repl. by AUBERT 08BG
−0.30 ±0.25 ±0.06	[1] CHEN	05A	BELL	Repl. by PRIM 13
0.36 ±0.25 ±0.05	AUBERT,B	04W	BABR	Repl. by AUBERT 07D

[1] This quantity was recalculated by the BELLE authors from numbers in the original paper.

NODE=S042Q47;LINKAGE=CH

$\Delta\delta_0(B^0 \to \phi K^*(892)^0)$

NODE=S042Q77

VALUE (rad)	DOCUMENT ID		TECN	COMMENT
0.13±0.09 OUR AVERAGE				
0.08±0.10±0.01	PRIM	13	BELL	$e^+e^- \to \Upsilon(4S)$
0.27±0.14±0.08	AUBERT	08BG	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.21±0.17±0.08	AUBERT	07D	BABR	Repl. by AUBERT 08BG

$\Delta\phi_{00}(B^0 \to \phi K^*_0(1430)^0)$

NODE=S042Q79

VALUE (rad)	DOCUMENT ID		TECN	COMMENT
0.28±0.42±0.04	AUBERT	08BG	BABR	$e^+e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^0 \to \phi K_2^*(1430)^0$

NODE=S042Q67

VALUE	DOCUMENT ID		TECN	COMMENT
$0.913^{+0.028}_{-0.050}$ OUR AVERAGE				
$0.918^{+0.029}_{-0.060}\pm0.012$	PRIM	13	BELL	$e^+e^- \to \Upsilon(4S)$
$0.901^{+0.046}_{-0.058}\pm0.037$	AUBERT	08BG	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.853^{+0.061}_{-0.069}\pm0.036$	AUBERT	07D	BABR	Repl. by AUBERT 08BG

$\Gamma_\perp/\Gamma$ in $B^0 \to \phi K_2^*(1430)^0$

NODE=S042Q68

VALUE	DOCUMENT ID		TECN	COMMENT
$0.027^{+0.031}_{-0.025}$ OUR AVERAGE Error includes scale factor of 1.1.				
$0.056^{+0.050}_{-0.035}\pm0.009$	PRIM	13	BELL	$e^+e^- \to \Upsilon(4S)$
$0.002^{+0.018}_{-0.002}\pm0.031$	AUBERT	08BG	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.045^{+0.049}_{-0.040}\pm0.013$	AUBERT	07D	BABR	Repl. by AUBERT 08BG

$\phi_\parallel$ in $B^0 \to \phi K_2^*(1430)^0$

NODE=S042Q69

VALUE (rad)	DOCUMENT ID		TECN	COMMENT
4.0 ±0.4 OUR AVERAGE				
$3.76\pm2.88\pm1.32$	PRIM	13	BELL	$e^+e^- \to \Upsilon(4S)$
$3.96\pm0.38\pm0.06$	AUBERT	08BG	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$2.90\pm0.39\pm0.06$	AUBERT	07D	BABR	Repl. by AUBERT 08BG

$\phi_\perp$ in $B^0 \to \phi K_2^*(1430)^0$

NODE=S042Q70

VALUE (rad)	DOCUMENT ID		TECN	COMMENT
$4.45^{+0.43}_{-0.38}\pm0.13$	PRIM	13	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$5.72^{+0.55}_{-0.87}\pm0.11$	AUBERT	07D	BABR	Repl. by AUBERT 08BG

$\delta_0(B^0 \to \phi K_2^*(1430)^0)$

NODE=S042Q78

VALUE (rad)	DOCUMENT ID		TECN	COMMENT
3.46±0.14 OUR AVERAGE				
$3.53\pm0.11\pm0.19$	PRIM	13	BELL	$e^+e^- \to \Upsilon(4S)$
$3.41\pm0.13\pm0.13$	AUBERT	08BG	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$3.54^{+0.12}_{-0.14}\pm0.06$	AUBERT	07D	BABR	Repl. by AUBERT 08BG

A^0_{CP} in $B^0 \to \phi K_2^*(1430)^0$

NODE=S042Q80

VALUE	DOCUMENT ID		TECN	COMMENT
−0.03 ±0.04 OUR AVERAGE				
$-0.016^{+0.066}_{-0.051}\pm0.008$	PRIM	13	BELL	$e^+e^- \to \Upsilon(4S)$
$-0.05\ \pm0.06\ \pm0.01$	AUBERT	08BG	BABR	$e^+e^- \to \Upsilon(4S)$

$A^\perp_{CP}$ in $B^0 \to \phi K_2^*(1430)^0$

NODE=S042Q8A

VALUE	DOCUMENT ID		TECN	COMMENT
$-0.01^{+0.85}_{-0.67}\pm0.09$	PRIM	13	BELL	$e^+e^- \to \Upsilon(4S)$

$\Delta\phi_\parallel(B^0 \to \phi K_2^*(1430)^0)$

NODE=S042Q81

VALUE (rad)	DOCUMENT ID		TECN	COMMENT
−0.9 ±0.4 OUR AVERAGE				
$-0.02\pm1.08\pm1.01$	PRIM	13	BELL	$e^+e^- \to \Upsilon(4S)$
$-1.00\pm0.38\pm0.09$	AUBERT	08BG	BABR	$e^+e^- \to \Upsilon(4S)$

$\Delta\phi_\perp(B^0 \to \phi K_2^*(1430)^0)$

NODE=S042Q8B

VALUE	DOCUMENT ID		TECN	COMMENT
$-0.19\pm0.42\pm0.11$	PRIM	13	BELL	$e^+e^- \to \Upsilon(4S)$

$\Delta\delta_0$ in $B^0 \to \phi K_2^*(1430)^0$

NODE=S042Q82

VALUE (rad)	DOCUMENT ID		TECN	COMMENT
0.08±0.09 OUR AVERAGE				
0.06±0.11±0.02	PRIM	13	BELL	$e^+e^- \to \Upsilon(4S)$
0.11±0.13±0.06	AUBERT	08BG	BABR	$e^+e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^0 \to K^*(892)^0\rho^0$

NODE=S042P8

VALUE	DOCUMENT ID		TECN	COMMENT
0.173±0.026 OUR AVERAGE				
0.164±0.015±0.022	AAIJ	19J	LHCB	pp at 7, 8 TeV
0.40 ±0.08 ±0.11	LEES	12K	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.57 ±0.09 ±0.08	AUBERT,B	06G	BABR	Repl. by LEES 12K

$\Gamma_\perp/\Gamma$ in $B^0 \to K^*(892)^0\rho^0$

NODE=S042A14

VALUE	DOCUMENT ID		TECN	COMMENT
0.401±0.016±0.037	AAIJ	19J	LHCB	pp at 7, 8 TeV

A_{CP}^0 in $B^0 \to K^*(892)^0\rho^0$

NODE=S042A19

VALUE	DOCUMENT ID		TECN	COMMENT
−0.62±0.09±0.09	AAIJ	19J	LHCB	pp at 7, 8 TeV

$A_{CP}^\perp$ in $B^0 \to K^*(892)^0\rho^0$

NODE=S042A20

VALUE	DOCUMENT ID		TECN	COMMENT
0.050±0.039±0.015	AAIJ	19J	LHCB	pp at 7, 8 TeV

$A_{CP}^\parallel$ in $B^0 \to K^*(892)^0\rho^0$

NODE=S042A21

VALUE	DOCUMENT ID		TECN	COMMENT
0.188±0.037±0.022	AAIJ	19J	LHCB	pp at 7, 8 TeV

ϕ_0 in $B^0 \to K^*(892)^0\rho^0$

NODE=S042A25

VALUE	DOCUMENT ID		TECN	COMMENT
1.57±0.08±0.18	AAIJ	19J	LHCB	pp at 7, 8 TeV

$\phi_\perp$ in $B^0 \to K^*(892)^0\rho^0$

NODE=S042A26

VALUE	DOCUMENT ID		TECN	COMMENT
−2.365±0.032±0.054	AAIJ	19J	LHCB	pp at 7, 8 TeV

$\phi_\parallel$ in $B^0 \to K^*(892)^0\rho^0$

NODE=S042A27

VALUE	DOCUMENT ID		TECN	COMMENT
0.795±0.030±0.068	AAIJ	19J	LHCB	pp at 7, 8 TeV

Γ_L/Γ in $B^0 \to K^{*+}\rho^-$

NODE=S042P15

VALUE	DOCUMENT ID		TECN	COMMENT
0.38±0.13±0.03	LEES	12K	BABR	$e^+e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^0 \to \rho^+\rho^-$

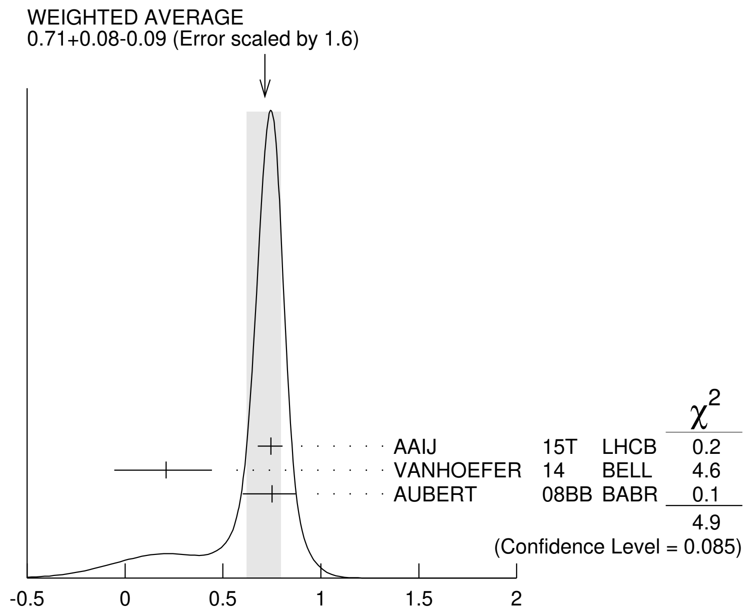
NODE=S042P6

VALUE	DOCUMENT ID		TECN	COMMENT
$0.990^{+0.021}_{-0.019}$ OUR AVERAGE				
0.988±0.012±0.023	VANHOEFER	16	BELL	$e^+e^- \to \Upsilon(4S)$
$0.992\pm0.024^{+0.026}_{-0.013}$	AUBERT	07BF	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.941^{+0.034}_{-0.040}\pm0.030$	SOMOV	06	BELL	Repl. by VANHOEFER 16
$0.978\pm0.014^{+0.021}_{-0.029}$	AUBERT,B	05C	BABR	Repl. by AUBERT 07BF
$0.98\ ^{+0.02}_{-0.08}\ \pm0.03$	AUBERT	04G	BABR	Repl. by AUBERT,B 04R
$0.99\ \pm0.03\ ^{+0.04}_{-0.03}$	AUBERT,B	04R	BABR	Repl. by AUBERT,B 05C

Γ_L/Γ in $B^0 \to \rho^0\rho^0$

NODE=S042P01

VALUE	DOCUMENT ID		TECN	COMMENT
$0.71^{+0.08}_{-0.09}$ OUR AVERAGE Error includes scale factor of 1.6. See the ideogram below.				
$0.745^{+0.048}_{-0.058}\pm0.034$	AAIJ	15T	LHCB	pp at 7, 8 TeV
$0.21\ ^{+0.18}_{-0.22}\ \pm0.15$	VANHOEFER	14	BELL	$e^+e^- \to \Upsilon(4S)$
$0.75\ ^{+0.11}_{-0.14}\ \pm0.05$	AUBERT	08BB	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.87\ \pm0.13\ \pm0.04$	AUBERT	07G	BABR	Repl. by AUBERT 08BB



Γ_L/Γ in $B^0 \to \rho^0\rho^0$

Γ_L/Γ in $B^0 \to \omega\omega$

NODE=S042A53

VALUE	DOCUMENT ID		TECN	COMMENT
0.87±0.13±0.13	GUAN	24	BELL	$e^+e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^0 \to a_1(1260)^+ a_1(1260)^-$

NODE=S042P06

VALUE	DOCUMENT ID		TECN	COMMENT
0.31±0.22±0.10	AUBERT	09AL	BABR	$e^+e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^0 \to p\overline{p}K^*(892)^0$

NODE=S042P10

VALUE	DOCUMENT ID		TECN	COMMENT
1.01±0.13±0.03	CHEN	08C	BELL	$e^+e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^0 \to \Lambda\overline{\Lambda}K^*(892)^0$

NODE=S042P14

VALUE	DOCUMENT ID		TECN	COMMENT
0.60±0.22±0.08	CHANG	09	BELL	$e^+e^- \to \Upsilon(4S)$

Γ_L/Γ in $B^0 \to K^*(892)^0\mu^+\mu^-$ ($0.04 < q^2 < 6.0$ GeV^2/c^4)

NODE=S042A08

VALUE	DOCUMENT ID		TECN	COMMENT
0.50±0.06±0.04	[1] AABOUD	18BY	ATLS	pp at 8 TeV

[1] A set of angular parameters obtained for this decay is also presented.

NODE=S042A08;LINKAGE=A

Γ_L/Γ in $B^0 \to K^*(892)^0 e^+e^-$ (at low q^2)

NODE=S042P07

VALUE	DOCUMENT ID		TECN	COMMENT
0.044±0.026±0.014	[1] AAIJ	20AO	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.16\ \pm0.06\ \pm0.03$	[2] AAIJ	15Z	LHCB	Repl. by AAIJ 20AO

[1] Determined in the effective dielectron invariant mass range $0.0008 < q^2 < 0.257$ GeV^2/c^4.

NODE=S042P07;LINKAGE=B

[2] Determined in the effective dielectron invariant mass range $0.002 < q^2 < 1.120$ GeV^2/c^4.

NODE=S042P07;LINKAGE=A

$A_T^{(2)}$ in $B^0 \to K^*(892)^0 e^+ e^-$ (at low q^2)

NODE=S042P08
NODE=S042P08

VALUE	DOCUMENT ID		TECN	COMMENT
0.11±0.10±0.02	[1] AAIJ	20AO	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.23±0.23±0.05	[2] AAIJ	15Z	LHCB	Repl. by AAIJ 20AO

[1] Determined in the effective dielectron invariant mass range $0.0008 < q^2 < 0.257 GeV^2/c^4$. NODE=S042P08;LINKAGE=A
[2] Determined in the effective dielectron invariant mass range $0.002 < q^2 < 1.120 GeV^2/c^4$. NODE=S042P08;LINKAGE=B

A_T^{Im} in $B^0 \to K^*(892)^0 e^+ e^-$ (at low q^2)

NODE=S042P09
NODE=S042P09

VALUE	DOCUMENT ID		TECN	COMMENT
0.02±0.10±0.01	[1] AAIJ	20AO	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.14±0.22±0.05	[2] AAIJ	15Z	LHCB	Repl. by AAIJ 20AO

[1] Determined in the effective dielectron invariant mass range $0.0008 < q^2 < 0.257 GeV^2/c^4$. NODE=S042P09;LINKAGE=A
[2] Determined in the effective dielectron invariant mass range $0.002 < q^2 < 1.120 GeV^2/c^4$. NODE=S042P09;LINKAGE=B

A_T^{Re} in $B^0 \to K^*(892)^0 e^+ e^-$ (at low q^2)

NODE=S042P11

Related to A_{FB}, F_L by $A_T^{Re} = (4/3)\ A_{FB}\ /\ (1 - F_L)$.

NODE=S042P11
NODE=S042P11

VALUE	DOCUMENT ID		TECN	COMMENT
−0.06±0.08±0.02	[1] AAIJ	20AO	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.10±0.18±0.05	[2] AAIJ	15Z	LHCB	Repl. by AAIJ 20AO

[1] Determined in the effective dielectron invariant mass range $0.0008 < q^2 < 0.257 GeV^2/c^4$. NODE=S042P11;LINKAGE=A
[2] Determined in the effective dielectron invariant mass range $0.002 < q^2 < 1.120 GeV^2/c^4$. NODE=S042P11;LINKAGE=B

See the related review(s):

B^0 — $\overline{B}^0$ Mixing

B^0-$\overline{B}^0$ MIXING PARAMETERS

NODE=S042225

For a discussion of B^0-$\overline{B}^0$ mixing see the note on "B^0-$\overline{B}^0$ Mixing" in the B^0 Particle Listings above.

NODE=S042225

χ_d is a measure of the time-integrated B^0-$\overline{B}^0$ mixing probability that a produced $B^0(\overline{B}^0)$ decays as a $\overline{B}^0(B^0)$. Mixing violates $\Delta B \neq 2$ rule.

$$\chi_d = \frac{x_d^2}{2(1+x_d^2)}$$

$$x_d = \frac{\Delta m_{B^0}}{\Gamma_{B^0}} = (m_{B^0_H} - m_{B^0_L})\ \tau_{B^0}\ ,$$

where H, L stand for heavy and light states of two B^0 CP eigenstates and $\tau_{B^0} = \frac{1}{0.5(\Gamma_{B^0_H} + \Gamma_{B^0_L})}$.

χ_d

NODE=S042CHD
NODE=S042CHD

This B^0-$\overline{B}^0$ mixing parameter is the probability (integrated over time) that a produced B^0 (or $\overline{B}^0$) decays as a $\overline{B}^0$ (or B^0), e.g. for inclusive lepton decays

$$\chi_d = \Gamma(B^0 \to \ell^- X \text{ (via } \overline{B}^0))/\Gamma(B^0 \to \ell^\pm X)$$
$$= \Gamma(\overline{B}^0 \to \ell^+ X \text{ (via } B^0))/\Gamma(\overline{B}^0 \to \ell^\pm X)$$

Where experiments have measured the parameter $r = \chi/(1-\chi)$, we have converted to χ. Mixing violates the $\Delta B \neq 2$ rule.

Note that the measurement of χ at energies higher than the $\Upsilon(4S)$ have not separated χ_d from χ_s where the subscripts indicate $B^0(\overline{b}d)$ or $B^0_s(\overline{b}s)$. They are listed in the $B^\pm/B^0/B^0_s/b$-baryon ADMIXTURE section.

The experiments at $\Upsilon(4S)$ make an assumption about the $B^0\overline{B}^0$ fraction and about the ratio of the $B^\pm$ and B^0 semileptonic branching ratios (usually that it equals one).

"OUR EVALUATION" is an average using rescaled values of the data listed below. The averaging/rescaling procedure takes into account correlations between the measurements, includes χ_d calculated from Δm_{B^0} and τ_{B^0}.

NODE=S042CHD

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
0.1860±0.0011 OUR EVALUATION		(Produced by HFLAV)		
0.182 ±0.015 OUR AVERAGE				
0.198 ±0.013 ±0.014		[1] BEHRENS 00B	CLE2	$e^+e^- \to \Upsilon(4S)$
0.16 ±0.04 ±0.04		[2] ALBRECHT 94	ARG	$e^+e^- \to \Upsilon(4S)$
0.149 ±0.023 ±0.022		[3] BARTELT 93	CLE2	$e^+e^- \to \Upsilon(4S)$
0.171 ±0.048		[4] ALBRECHT 92L	ARG	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.20 ±0.13 ±0.12		[5] ALBRECHT 96D	ARG	$e^+e^- \to \Upsilon(4S)$
0.19 ±0.07 ±0.09		[6] ALBRECHT 96D	ARG	$e^+e^- \to \Upsilon(4S)$
0.24 ±0.12		[7] ELSEN 90	JADE	e^+e^- 35–44 GeV
0.158 $^{+0.052}_{-0.059}$		ARTUSO 89	CLEO	$e^+e^- \to \Upsilon(4S)$
0.17 ±0.05		[8] ALBRECHT 87I	ARG	$e^+e^- \to \Upsilon(4S)$
<0.19	90	[9] BEAN 87B	CLEO	$e^+e^- \to \Upsilon(4S)$
<0.27	90	[10] AVERY 84	CLEO	$e^+e^- \to \Upsilon(4S)$

→ UNCHECKED ←

OCCUR=2

[1] BEHRENS 00B uses high-momentum lepton tags and partially reconstructed $\overline{B}^0 \to D^{*+}\pi^-$, ρ^- decays to determine the flavor of the B meson. NODE=S042CHD;LINKAGE=KS

[2] ALBRECHT 94 reports r=0.194 ± 0.062 ± 0.054. We convert to χ for comparison. Uses tagged events (lepton + pion from D^*). NODE=S042CHD;LINKAGE=B

[3] BARTELT 93 analysis performed using tagged events (lepton+pion from D^*). Using dilepton events they obtain $0.157 \pm 0.016^{+0.033}_{-0.028}$. NODE=S042CHD;LINKAGE=C

[4] ALBRECHT 92L is a combined measurement employing several lepton-based techniques. It uses all previous ARGUS data in addition to new data and therefore supersedes ALBRECHT 87I. A value of $r = 20.6 \pm 7.0\%$ is directly measured. The value can be used to measure $x = \Delta M/\Gamma = 0.72 \pm 0.15$ for the B_d meson. Assumes $f_{+-}/f_0 = 1.0 \pm 0.05$ and uses $\tau_{B^\pm}/\tau_{B^0} = (0.95 \pm 0.14)\ (f_{+-}/f_0)$. NODE=S042CHD;LINKAGE=L

[5] Uses $D^{*+} K^\pm$ correlations. NODE=S042CHD;LINKAGE=F

[6] Uses $(D^{*+}\ell^-)\ K^\pm$ correlations. NODE=S042CHD;LINKAGE=G

[7] These experiments see a combination of B_s and B_d mesons. NODE=S042CHD;LINKAGE=E1

[8] ALBRECHT 87I is inclusive measurement with like-sign dileptons, with tagged B decays plus leptons, and one fully reconstructed event. Measures r=0.21 ± 0.08. We convert to χ for comparison. Superseded by ALBRECHT 92L. NODE=S042CHD;LINKAGE=X

[9] BEAN 87B measured $r <$ 0.24; we converted to χ. NODE=S042CHD;LINKAGE=A1

[10] Same-sign dilepton events. Limit assumes semileptonic BR for B^+ and B^0 equal. If $B^0/B^\pm$ ratio <0.58, no limit exists. The limit was corrected in BEAN 87B from $r <$ 0.30 to $r <$ 0.37. We converted this limit to χ. NODE=S042CHD;LINKAGE=A

$\Delta m_{B^0} = m_{B^0_H} - m_{B^0_L}$

NODE=S042D

Δm_{B^0} is a measure of 2π times the B^0-$\overline{B}^0$ oscillation frequency in time-dependent mixing experiments. NODE=S042D

"OUR EVALUATION" is an average using rescaled values of the data listed below. The averaging/rescaling procedure takes into account correlations between the measurements and includes Δm_d calculated from χ_d measured at $\Upsilon(4S)$.

NODE=S042D

VALUE ($10^{12}\ \hbar\ s^{-1}$)	DOCUMENT ID	TECN	COMMENT
0.5069±0.0019 OUR EVALUATION	(Produced by HFLAV)		
0.516 ±0.008 ±0.005	[1] ABUDINEN 23D	BELL	$e^+e^- \to \Upsilon(4S)$
0.5050±0.0021±0.0010	[2] AAIJ 16AV	LHCB	pp at 7, 8 TeV
0.503 ±0.011 ±0.013	[3] AAIJ 13CF	LHCB	pp at 7 TeV
0.5156±0.0051±0.0033	[4] AAIJ 13F	LHCB	pp at 7 TeV
0.499 ±0.032 ±0.003	[5] AAIJ 12I	LHCB	pp at 7 TeV
0.506 ±0.020 ±0.016	[6] ABAZOV 06W	D0	$p\overline{p}$ at 1.96 TeV
0.511 ±0.007 $^{+0.007}_{-0.006}$	[7] AUBERT 06G	BABR	$e^+e^- \to \Upsilon(4S)$
0.511 ±0.005 ±0.006	[8] ABE 05B	BELL	$e^+e^- \to \Upsilon(4S)$
0.531 ±0.025 ±0.007	[9] ABDALLAH 03B	DLPH	$e^+e^- \to Z$
0.492 ±0.018 ±0.013	[10] AUBERT 03C	BABR	$e^+e^- \to \Upsilon(4S)$
0.503 ±0.008 ±0.010	[11] HASTINGS 03	BELL	$e^+e^- \to \Upsilon(4S)$
0.509 ±0.017 ±0.020	[12] ZHENG 03	BELL	$e^+e^- \to \Upsilon(4S)$
0.516 ±0.016 ±0.010	[13] AUBERT 02I	BABR	$e^+e^- \to \Upsilon(4S)$
0.493 ±0.012 ±0.009	[14] AUBERT 02J	BABR	$e^+e^- \to \Upsilon(4S)$
0.497 ±0.024 ±0.025	[15] ABBIENDI,G 00B	OPAL	$e^+e^- \to Z$
0.503 ±0.064 ±0.071	[16] ABE 99K	CDF	$p\overline{p}$ at 1.8 TeV
0.500 ±0.052 ±0.043	[17] ABE 99Q	CDF	$p\overline{p}$ at 1.8 TeV
0.516 ±0.099 $^{+0.029}_{-0.035}$	[18] AFFOLDER 99C	CDF	$p\overline{p}$ at 1.8 TeV

→ UNCHECKED ←

0.471	$^{+0.078}_{-0.068}$	$^{+0.033}_{-0.034}$	[19] ABE	98C	CDF	$p\overline{p}$ at 1.8 TeV	OCCUR=2
0.458	±0.046	±0.032	[20] ACCIARRI	98D	L3	$e^+e^- \to Z$	
0.437	±0.043	±0.044	[21] ACCIARRI	98D	L3	$e^+e^- \to Z$	OCCUR=2
0.472	±0.049	±0.053	[22] ACCIARRI	98D	L3	$e^+e^- \to Z$	OCCUR=3
0.523	±0.072	±0.043	[23] ABREU	97N	DLPH	$e^+e^- \to Z$	OCCUR=2
0.493	±0.042	±0.027	[21] ABREU	97N	DLPH	$e^+e^- \to Z$	OCCUR=3
0.499	±0.053	±0.015	[24] ABREU	97N	DLPH	$e^+e^- \to Z$	OCCUR=4
0.480	±0.040	±0.051	[20] ABREU	97N	DLPH	$e^+e^- \to Z$	OCCUR=5
0.444	±0.029	$^{+0.020}_{-0.017}$	[21] ACKERSTAFF	97U	OPAL	$e^+e^- \to Z$	OCCUR=2
0.430	±0.043	$^{+0.028}_{-0.030}$	[20] ACKERSTAFF	97V	OPAL	$e^+e^- \to Z$	OCCUR=2
0.482	±0.044	±0.024	[25] BUSKULIC	97D	ALEP	$e^+e^- \to Z$	OCCUR=2
0.404	±0.045	±0.027	[21] BUSKULIC	97D	ALEP	$e^+e^- \to Z$	OCCUR=3
0.452	±0.039	±0.044	[20] BUSKULIC	97D	ALEP	$e^+e^- \to Z$	OCCUR=4
0.539	±0.060	±0.024	[26] ALEXANDER	96V	OPAL	$e^+e^- \to Z$	OCCUR=2
0.567	±0.089	$^{+0.029}_{-0.023}$	[27] ALEXANDER	96V	OPAL	$e^+e^- \to Z$	OCCUR=3
• • • We do not use the following data for averages, fits, limits, etc. • • •							
0.516	±0.016	±0.010	[28] AUBERT	02N	BABR	$e^+e^- \to \Upsilon(4S)$	
0.494	±0.012	±0.015	[29] HARA	02	BELL	Repl. by ABE 05B	
0.528	±0.017	±0.011	[30] TOMURA	02	BELL	Repl. by ABE 05B	
0.463	±0.008	±0.016	[14] ABE	01D	BELL	Repl. by HASTINGS 03	
0.444	±0.028	±0.028	[31] ACCIARRI	98D	L3	$e^+e^- \to Z$	OCCUR=4
0.497	±0.035		[32] ABREU	97N	DLPH	$e^+e^- \to Z$	OCCUR=6
0.467	±0.022	$^{+0.017}_{-0.015}$	[33] ACKERSTAFF	97V	OPAL	$e^+e^- \to Z$	OCCUR=3
0.446	±0.032		[34] BUSKULIC	97D	ALEP	$e^+e^- \to Z$	OCCUR=5
0.531	$^{+0.050}_{-0.046}$	±0.078	[35] ABREU	96Q	DLPH	Sup. by ABREU 97N	
0.496	$^{+0.055}_{-0.051}$	±0.043	[20] ACCIARRI	96E	L3	Repl. by ACCIARRI 98D	
0.548	±0.050	$^{+0.023}_{-0.019}$	[36] ALEXANDER	96V	OPAL	$e^+e^- \to Z$	OCCUR=4
0.496	±0.046		[37] AKERS	95J	OPAL	Repl. by ACKERSTAFF 97V	
0.462	$^{+0.040}_{-0.053}$	$^{+0.052}_{-0.035}$	[20] AKERS	95J	OPAL	Repl. by ACKERSTAFF 97V	OCCUR=2
0.50	±0.12	±0.06	[23] ABREU	94M	DLPH	Sup. by ABREU 97N	
0.508	±0.075	±0.025	[26] AKERS	94C	OPAL	Repl. by ALEXANDER 96V	
0.57	±0.11	±0.02	[27] AKERS	94H	OPAL	Repl. by ALEXANDER 96V	
0.50	$^{+0.07}_{-0.06}$	$^{+0.11}_{-0.10}$	[20] BUSKULIC	94B	ALEP	Sup. by BUSKULIC 97D	
0.52	$^{+0.10}_{-0.11}$	$^{+0.04}_{-0.03}$	[27] BUSKULIC	93K	ALEP	Sup. by BUSKULIC 97D	

[1] Measured using $B^0 \to D^{(*)-}\pi^+$ decays. NODE=S042D;LINKAGE=D

[2] Uses semileptonic decays of $B^0 \to D^-\mu^+\nu_\mu X$ and $B^0 \to D^{(*)-}\mu^+\nu_\mu X$, where the D mesons are reconstructed in $D^- \to K^+\pi^-\pi^-$ and $D^{(*)-} \to \overline{D}^0\pi^-$ with $\overline{D}^0 \to K^+\pi^-$. NODE=S042D;LINKAGE=A

[3] Uses semileptonic decays of $B^0 \to D^-\mu^+\nu_\mu X$ where the D^- mesons are reconstructed in $D^- \to K^+K^-\pi^-$. NODE=S042D;LINKAGE=B

[4] Measured using $B^0 \to D^-\pi^+$ and $B^0 \to J/\psi K^*(892)^0$ decays. NODE=S042D;LINKAGE=AA

[5] Measured using $B^0 \to D^-\pi^+$. NODE=S042D;LINKAGE=AI

[6] Uses opposite-side flavor-tagging with $B \to D^{(*)}\mu\nu_\mu X$ events. NODE=S042D;LINKAGE=AZ

[7] Measured using a simultaneous fit of the B^0 lifetime and $\overline{B}^0 B^0$ oscillation frequency Δm_d in the partially reconstructed $B^0 \to D^{*-}\ell\nu$ decays. NODE=S042D;LINKAGE=AU

[8] Measurement performed using a combined fit of CP-violation, mixing and lifetimes. NODE=S042D;LINKAGE=AE

[9] Events with a high transverse momentum lepton were removed and an inclusively reconstructed vertex was required. NODE=S042D;LINKAGE=BL

[10] AUBERT 03C uses a sample of approximately 14,000 exclusively reconstructed $B^0 \to D^*(2010)^-\ell\nu$ and simultaneously measures the lifetime and oscillation frequency. NODE=S042D;LINKAGE=C3

[11] HASTINGS 03 measurement based on the time evolution of dilepton events. It also reports $f_+/f_0 = 1.01 \pm 0.03 \pm 0.09$ and CPT violation parameters in B^0-$\overline{B}^0$ mixing. NODE=S042D;LINKAGE=HH

[12] ZHENG 03 data analyzed using partially reconstructed $\overline{B}^0 \to D^{*-}\pi^+$ decay and a flavor tag based on the charge of the lepton from the accompanying B decay. NODE=S042D;LINKAGE=ZH

[13] Uses a tagged sample of fully-reconstructed neutral B decays at $\Upsilon(4S)$. NODE=S042D;LINKAGE=KI

[14] Measured based on the time evolution of dilepton events in $\Upsilon(4S)$ decays. NODE=S042D;LINKAGE=D9

[15] Data analyzed using partially reconstructed $\overline{B}^0 \to D^{*+}\ell^-\overline{\nu}$ decay and a combination of flavor tags from the rest of the event. NODE=S042D;LINKAGE=C2

[16] Uses di-muon events. NODE=S042D;LINKAGE=M

[17] Uses jet-charge and lepton-flavor tagging. NODE=S042D;LINKAGE=N
[18] Uses $\ell^- D^{*+}-\ell$ events. NODE=S042D;LINKAGE=N3
[19] Uses π-B in the same side. NODE=S042D;LINKAGE=C1
[20] Uses ℓ-ℓ. NODE=S042D;LINKAGE=A1
[21] Uses ℓ-Q_{hem}. NODE=S042D;LINKAGE=A2
[22] Uses ℓ-ℓ with impact parameters. NODE=S042D;LINKAGE=A3
[23] Uses $D^{*\pm}$-Q_{hem}. NODE=S042D;LINKAGE=C
[24] Uses $\pi_s^{\pm}\,\ell$-Q_{hem}. NODE=S042D;LINKAGE=A9
[25] Uses $D^{*\pm}$-ℓ/Q_{hem}. NODE=S042D;LINKAGE=B6
[26] Uses $D^{*\pm}\,\ell$-Q_{hem}. NODE=S042D;LINKAGE=A6
[27] Uses $D^{*\pm}$-ℓ. NODE=S042D;LINKAGE=A7
[28] AUBERT 02N result based on the same analysis and data sample reported in AUBERT 02I. NODE=S042D;LINKAGE=N2
[29] Uses a tagged sample of B^0 decays reconstructed in the mode $B^0 \to D^* \ell \nu$. NODE=S042D;LINKAGE=H3
[30] Uses a tagged sample of fully-reconstructed hadronic B^0 decays at $\Upsilon(4S)$. NODE=S042D;LINKAGE=K2
[31] ACCIARRI 98D combines results from ℓ-ℓ, ℓ-Q_{hem}, and ℓ-ℓ with impact parameters. NODE=S042D;LINKAGE=A4
[32] ABREU 97N combines results from $D^{*\pm}$-Q_{hem}, ℓ-Q_{hem}, $\pi_s^{\pm}\,\ell$-Q_{hem}, and ℓ-ℓ. NODE=S042D;LINKAGE=B9
[33] ACKERSTAFF 97V combines results from ℓ-ℓ, ℓ-Q_{hem}, D^*-ℓ, and $D^{*\pm}$-Q_{hem}. NODE=S042D;LINKAGE=A5
[34] BUSKULIC 97D combines results from $D^{*\pm}$-ℓ/Q_{hem}, ℓ-Q_{hem}, and ℓ-ℓ. NODE=S042D;LINKAGE=A8
[35] ABREU 96Q analysis performed using lepton, kaon, and jet-charge tags. NODE=S042D;LINKAGE=LK
[36] ALEXANDER 96V combines results from $D^{*\pm}$-ℓ and $D^{*\pm}\,\ell$-Q_{hem}. NODE=S042D;LINKAGE=B3
[37] AKERS 95J combines results from charge measurement, $D^{*\pm}\,\ell$-Q_{hem} and ℓ-ℓ. NODE=S042D;LINKAGE=F

$x_d = \Delta m_{B^0}/\Gamma_{B^0}$

NODE=S042DG

"OUR EVALUATION" is an average using rescaled values of the data listed below. The averaging/rescaling procedure takes into account correlations between the measurements and includes Δm_d calculated from χ_d measured at $\Upsilon(4S)$. NODE=S042DG

NODE=S042DG

VALUE	*DOCUMENT ID*
0.7697±0.0035 OUR EVALUATION	(Produced by HFLAV)

→ UNCHECKED ←

Re(λ_{CP} / $|\lambda_{CP}|$) Re(z)

NODE=S042RZ1

The λ_{CP} characterizes B^0 and $\overline{B}^0$ decays to states of charmonium plus K^0_L. Parameter z is used to describe *CPT* violation in mixing, see the review on "*CP* Violation" in the reviews section. NODE=S042RZ1

NODE=S042RZ1

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
0.047±0.022±0.003	[1] LEES	16E	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.014±0.035±0.034	[2] AUBERT,B	04C	BABR	Repl. by LEES 16E

[1] The first uncertainty is the uncertainty from Re(z) and the second uncertainty is from Re($\lambda/|\lambda|$). NODE=S042RZ1;LINKAGE=A
[2] Corresponds to 90% confidence range [−0.072, 0.101]. NODE=S042RZ1;LINKAGE=AB

$\Delta\Gamma$ Re(z)

NODE=S042GRZ
NODE=S042GRZ

VALUE (ps^{-1})	*DOCUMENT ID*		*TECN*	*COMMENT*
−0.0071±0.0039±0.0020	AUBERT	06T	BABR	$e^+e^- \to \Upsilon(4S)$

Re(z)

NODE=S042RZ0
NODE=S042RZ0

VALUE (units 10^{-2})	*DOCUMENT ID*		*TECN*	*COMMENT*
−4 ± 4 OUR AVERAGE	Error includes scale factor of 1.4.			
−6.5± 2.8±1.4	[1] LEES	16E	BABR	$e^+e^- \to \Upsilon(4S)$
1.9± 3.7±3.3	[2] HIGUCHI	12	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0 ±12 ±1	[3] HASTINGS	03	BELL	Repl. by HIGUCHI 12

[1] Measurement uses decays $B^0/\overline{B}^0 \to c\overline{c}K^0_S/K^0_L$. NODE=S042RZ0;LINKAGE=A
[2] Measured using $B^0 \to J/\psi K^0_S$, $J/\psi K^0_L$, $D^-\pi^+$, $D^{*-}\pi^+$, $D^{*-}\rho^+$, and $D^{*-}\ell^+\nu$ decays. NODE=S042RZ0;LINKAGE=HI
[3] Measured using inclusive dilepton events from B^0 decay. NODE=S042RZ0;LINKAGE=HA

Im(z)

NODE=S042IZ1
NODE=S042IZ1

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
−0.8 ±0.4 OUR AVERAGE				
1.0 ±3.0 ±1.3	[1] LEES	16E	BABR	$e^+ e^- \to \Upsilon(4S)$
−0.57±0.33±0.33	[2] HIGUCHI	12	BELL	$e^+ e^- \to \Upsilon(4S)$
−1.39±0.73±0.32	[3] AUBERT	06T	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3.8 ±2.9 ±2.5	[4] AUBERT,B	04C	BABR	Repl. by AUBERT 06T
−3 ±1 ±3	[5] HASTINGS	03	BELL	Repl. by HIGUCHI 12

[1] Measurement uses decays $B^0/\overline{B}^0 \to c\overline{c}K^0_S/K^0_L$. NODE=S042IZ1;LINKAGE=A

[2] Measured using $B^0 \to J/\psi K^0_S$, $J/\psi K^0_L$, $D^- \pi^+$, $D^{*-} \pi^+$, $D^{*-} \rho^+$, and $D^{*-} \ell^+ \nu$ decays. NODE=S042IZ1;LINKAGE=HI

[3] Measurement uses $B^0/\overline{B}^0 \to \ell^+ X/\ell^- X$ decays. Assuming $\Delta\Gamma = 0$, the result becomes Im(z) = $(-0.37 \pm 0.54) \times 10^{-2}$. NODE=S042IZ1;LINKAGE=AE

[4] Corresponds to 90% confidence range [−0.028, 0.104]. NODE=S042IZ1;LINKAGE=AB

[5] Measured using inclusive dilepton events from B^0 decay. NODE=S042IZ1;LINKAGE=HA

CP VIOLATION PARAMETERS

NODE=S042229

$\mathrm{Re}(\epsilon_{B^0})/(1+|\epsilon_{B^0}|^2)$

NODE=S042EPS
NODE=S042EPS

CP impurity in B^0_d system. It is obtained from either $a_{\ell\ell}$, the charge asymmetry in like-sign dilepton events or a_{cp}, the time-dependent asymmetry of inclusive B^0 and $\overline{B}^0$ decays.

"OUR EVALUATION" is the result of a fit to B_d and B_s *CP* asymmetries, which includes the B_d measurements listed below and the B_s measurements listed in the B_s section, taking into account correlations between those measurements.

NODE=S042EPS

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
− 0.5 ± 0.4 OUR EVALUATION (Produced by HFLAV)				
− 0.1 ± 0.4 OUR AVERAGE				
− 0.05 ± 0.48 ±0.75	[1] AAIJ	15F	LHCB	pp at 7, 8 TeV
− 0.975± 0.875±0.475	[2] LEES	15A	BABR	$e^+ e^- \to \Upsilon(4S)$
1.55 ± 1.05	[3] ABAZOV	14	D0	$p\overline{p}$ at 1.96 TeV
0.15 ± 0.42 $^{+0.94}_{-0.81}$	[4] LEES	13N	BABR	$e^+ e^- \to \Upsilon(4S)$
− 1.7 ± 1.1 ±0.4	[5] ABAZOV	12AC	D0	$p\overline{p}$ at 1.96 TeV
0.4 ± 1.3 ±0.9	[6] AUBERT	06T	BABR	$e^+ e^- \to \Upsilon(4S)$
− 0.3 ± 2.0 ±2.1	[7] NAKANO	06	BELL	$e^+ e^- \to \Upsilon(4S)$
3.5 ±10.3 ±1.5	[8] JAFFE	01	CLE2	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
− 0.3 ± 1.3	[9] ABAZOV	11U	D0	Repl. by ABAZOV 14
− 2.3 ± 1.1 ±0.8	[10] ABAZOV	06S	D0	Repl. by ABAZOV 11U
−14.7 ± 6.7 ±5.7	[11] AUBERT,B	04C	BABR	Repl. by AUBERT 06T
1.2 ± 2.9 ±3.6	[2] AUBERT	02K	BABR	Repl. by LEES 15A
− 3.2 ± 6.5	[12] BARATE	01D	ALEP	$e^+ e^- \to Z$
4 ±18 ±3	[13] BEHRENS	00B	CLE2	Repl. by JAFFE 01
1.2 ±13.8 ±3.2	[14] ABBIENDI	99J	OPAL	$e^+ e^- \to Z$
2 ± 7 ±3	[15] ACKERSTAFF	97U	OPAL	$e^+ e^- \to Z$
< 45	[16] BARTELT	93	CLE2	$e^+ e^- \to \Upsilon(4S)$

→ UNCHECKED ←

[1] AAIJ 15F uses semileptonic B^0 decays in the inclusive final states $D^- \mu^+$ and $D^{*-} \mu^+$, where the D^- meson decays into the $K^+ \pi^- \pi^-$ final state, and the D^{*-} meson into the $\overline{D}^0(\to K^+ \pi^-)\pi^-$ final state. Reports $A^d_{SL} = (-0.02 \pm 0.19 \pm 0.30)\%$, which equals to $4\mathrm{Re}(\epsilon_{B^0})/(1+|\epsilon_{B^0}|^2)$. NODE=S042EPS;LINKAGE=F

[2] Uses the charge asymmetry in like-sign dilepton events. LEES 15A reports $A^d_{SL} = (-3.9 \pm 3.5 \pm 1.9) \times 10^{-3}$. NODE=S042EPS;LINKAGE=KA

[3] ABAZOV 14 uses the dimuon charge asymmetry with different impact parameters from which it reports $A^d_{SL} = (-0.62 \pm 0.42) \times 10^{-2}$. NODE=S042EPS;LINKAGE=D

[4] Uses $B^0 \to D^{*-} X \ell^+ \nu_\ell$ and a kaon-tagged sample which yields measurement of $A^d_{SL} = (0.06 \pm 0.17^{+0.38}_{-0.32})\%$, corresponding to $\Delta_{CP} = 1-|q/p| = (0.29 \pm 0.84^{+1.88}_{-1.61}) \times 10^{-3}$. NODE=S042EPS;LINKAGE=E

[5] ABAZOV 12AC uses $B^0 \to D^- \mu^+ X$ and $B^0 \to D^*(2010)^- \mu^+ X$ decays without initial state flavor tagging which yields measurement of $A^d_{SL} = (6.8 \pm 4.5 \pm 1.4) \times 10^{-3}$. NODE=S042EPS;LINKAGE=AV

[6] AUBERT 06T reports $|q/p|-1 = (-0.8 \pm 2.7 \pm 1.9) \times 10^{-3}$. We convert to $(1-|q/p|^2)/4$. NODE=S042EPS;LINKAGE=AE

[7] Uses the charge asymmetry in like-sign dilepton events and reports $|q/p| = 1.0005 \pm 0.0040 \pm 0.0043$. NODE=S042EPS;LINKAGE=NA

[8] JAFFE 01 finds $a_{\ell\ell}$ = 0.013 ± 0.050 ± 0.005 and combines with the previous BEHRENS 00B independent measurement. NODE=S042EPS;LINKAGE=JP

[9] ABAZOV 11U uses the dimuon charge asymmetry with different impact parameters from which it reports $A^d_{SL} = (-1.2 \pm 5.2) \times 10^{-3}$. NODE=S042EPS;LINKAGE=AO

[10] Uses the dimuon charge asymmetry. NODE=S042EPS;LINKAGE=AZ

[11] AUBERT 04C reports $|q/p| = 1.029 \pm 0.013 \pm 0.011$ and we converted it to $(1- |q/p|^2)/4$. NODE=S042EPS;LINKAGE=AB

[12] BARATE 01D measured by investigating time-dependent asymmetries in semileptonic and fully inclusive B^0_d decays. NODE=S042EPS;LINKAGE=DB

[13] BEHRENS 00B uses high-momentum lepton tags and partially reconstructed $\overline{B}^0 \to D^{*+}\pi^-$, ρ^- decays to determine the flavor of the B meson. NODE=S042EPS;LINKAGE=KS

[14] Data analyzed using the time-dependent asymmetry of inclusive B^0 decay. The production flavor of B^0 mesons is determined using both the jet charge and the charge of secondary vertex in the opposite hemisphere. NODE=S042EPS;LINKAGE=C

[15] ACKERSTAFF 97U assumes *CPT* and is based on measuring the charge asymmetry in a sample of B^0 decays defined by lepton and Q_{hem} tags. If *CPT* is not invoked, $\text{Re}(\epsilon_B) = -0.006 \pm 0.010 \pm 0.006$ is found. The indirect *CPT* violation parameter is determined to $\text{Im}(\delta B) = -0.020 \pm 0.016 \pm 0.006$. NODE=S042EPS;LINKAGE=B

[16] BARTELT 93 finds $a_{\ell\ell} = 0.031 \pm 0.096 \pm 0.032$ which corresponds to $|a_{\ell\ell}| < 0.18$, which yields the above $|\text{Re}(\epsilon_{B^0})/(1+|\epsilon_{B^0}|^2)|$. NODE=S042EPS;LINKAGE=A

$A_{T/CP}$

NODE=S042Y3

$A_{T/CP}$ is defined as NODE=S042Y3

$$\frac{P(\overline{B}^0 \to B^0) - P(B^0 \to \overline{B}^0)}{P(\overline{B}^0 \to B^0) + P(B^0 \to \overline{B}^0)},$$

the *CPT* invariant asymmetry between the oscillation probabilities $P(\overline{B}^0 \to B^0)$ and $P(B^0 \to \overline{B}^0)$.

NODE=S042Y3

VALUE	DOCUMENT ID		TECN	COMMENT
0.005±0.012±0.014	[1] AUBERT	02K	BABR	$e^+e^- \to \Upsilon(4S)$

[1] AUBERT 02K uses the charge asymmetry in like-sign dilepton events. NODE=S042Y3;LINKAGE=KA

$A_{CP}(B^0 \to D^*(2010)^+ D^-)$

NODE=S042AC4

A_{CP} is defined as NODE=S042AC4

$$\frac{B(\overline{B}^0 \to \overline{f}) - B(B^0 \to f)}{B(\overline{B}^0 \to \overline{f}) + B(B^0 \to f)},$$

the *CP*-violation charge asymmetry of exclusive B^0 and $\overline{B}^0$ decay.

NODE=S042AC4

VALUE	DOCUMENT ID		TECN	COMMENT
0.013±0.014 OUR AVERAGE				
0.008±0.014±0.006	AAIJ	20L	LHCB	pp at 7, 8, 13 TeV
0.06 ±0.05 ±0.02	ROHRKEN	12	BELL	$e^+e^- \to \Upsilon(4S)$
0.008±0.048±0.013	AUBERT	09C	BABR	$e^+e^- \to \Upsilon(4S)$
0.07 ±0.08 ±0.04	[1] AUSHEV	04	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.12 ±0.06 ±0.02	AUBERT	07AI	BABR	Repl. by AUBERT 09C
−0.03 ±0.10 ±0.02	AUBERT,B	06A	BABR	Repl. by AUBERT 07AI
−0.03 ±0.11 ±0.05	AUBERT	03J	BABR	Repl. by AUBERT,B 06B

[1] Combines results from fully and partially reconstructed $B^0 \to D^{*\pm} D^{\mp}$ decays. NODE=S042AC4;LINKAGE=AU

$A_{CP}(B^0 \to \overline{D}^0 \pi^0)$

NODE=S042A42
NODE=S042A42

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
0.42±2.05±1.22	BLOOMFIELD	22	BELL	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to [K^+K^-]_D K^*(892)^0)$

NODE=S042AD3
NODE=S042AD3

VALUE	DOCUMENT ID		TECN	COMMENT
−0.05 ±0.06 OUR AVERAGE [−0.05 ± 0.10 OUR 2024 AVERAGE]				
−0.047±0.063±0.015	AAIJ	24M	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.05 ±0.10 ±0.01	AAIJ	19N	LHCB	Repl. by AAIJ 24M
−0.20 ±0.15 ±0.02	AAIJ	14BN	LHCB	Repl. by AAIJ 16S
−0.45 ±0.23 ±0.02	AAIJ	13L	LHCB	Repl. by AAIJ 14BN

NEW

$A_{CP}(B^0 \to [K^+\pi^-]_D K^*(892)^0)$

NODE=S042AD4

VALUE	DOCUMENT ID	TECN	COMMENT
0.031±0.023 OUR AVERAGE [0.047 ± 0.029 OUR 2024 AVERAGE]			
0.031±0.017±0.015	AAIJ 24M	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.047±0.027±0.010	AAIJ 19N	LHCB	Repl. by AAIJ 24M
−0.03 ±0.04 ±0.02	AAIJ 14BN	LHCB	Repl. by AAIJ 19N
−0.08 ±0.08 ±0.01	AAIJ 13L	LHCB	Repl. by AAIJ 14BN

$A_{CP}(B^0 \to [K^+\pi^-\pi^+\pi^-]_D K^*(892)^0)$

NODE=S042A31

VALUE	DOCUMENT ID	TECN	COMMENT
−0.012±0.024 OUR AVERAGE [0.037 ± 0.034 OUR 2024 AVERAGE]			
−0.012±0.018±0.016	AAIJ 24M	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.037±0.032±0.010	AAIJ 19N	LHCB	Repl. by AAIJ 24M

$A_{CP}(B^0 \to [K^-\pi^+]_D K^*(892)^0)$

NODE=S042A32

VALUE	DOCUMENT ID	TECN	COMMENT
0.19±0.19±0.01	AAIJ 19N	LHCB	pp at 7, 8, 13 TeV

$A_{CP}(B^0 \to [K^-\pi^+\pi^+\pi^-]_D K^*(892)^0)$

NODE=S042A33

VALUE	DOCUMENT ID	TECN	COMMENT
−0.01±0.24±0.01	AAIJ 19N	LHCB	pp at 7, 8, 13 TeV

$R_d^+ = \Gamma(B^0 \to [\pi^+K^-]_D K^{*0}) / \Gamma(B^0 \to [\pi^-K^+]_D K^{*0})$

NODE=S042AD6

VALUE	DOCUMENT ID	TECN	COMMENT
0.069±0.014 OUR AVERAGE [0.064 ± 0.021 OUR 2024 AVERAGE]			
0.069±0.013±0.005	AAIJ 24M	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.064±0.021±0.002	AAIJ 19N	LHCB	Repl. by AAIJ 24M
0.06 ±0.03 ±0.01	AAIJ 14BN	LHCB	Repl. by AAIJ 19N

$R_d^- = \Gamma(\overline{B}^0 \to [\pi^-K^+]_D K^{*0}) / \Gamma(\overline{B}^0 \to [\pi^+K^-]_D K^{*0})$

NODE=S042AD7

VALUE	DOCUMENT ID	TECN	COMMENT
0.093±0.014 OUR AVERAGE [0.095 ± 0.021 OUR 2024 AVERAGE]			
0.093±0.013±0.005	AAIJ 24M	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.095±0.021±0.003	AAIJ 19N	LHCB	Repl. by AAIJ 24M
0.06 ±0.03 ±0.01	AAIJ 14BN	LHCB	Repl. by AAIJ 19N

$A_{CP}(B^0 \to [\pi^+\pi^-]_D K^*(892)^0)$

NODE=S042AD5

VALUE	DOCUMENT ID	TECN	COMMENT
−0.03 ±0.10 OUR AVERAGE [−0.18 ± 0.14 OUR 2024 AVERAGE]			
−0.034±0.094±0.016	AAIJ 24M	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
−0.18 ±0.14 ±0.01	AAIJ 19N	LHCB	Repl. by AAIJ 24M
−0.09 ±0.22 ±0.02	AAIJ 14BN	LHCB	Repl. by AAIJ 16S

$A_{CP}(B^0 \to [\pi^+\pi^-\pi^+\pi^-]_D K^*(892)^0)$

NODE=S042A28

VALUE	DOCUMENT ID	TECN	COMMENT
0.02 ±0.09 OUR AVERAGE [−0.03 ± 0.15 OUR 2024 AVERAGE]			
0.021±0.087±0.016	AAIJ 24M	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
−0.03 ±0.15 ±0.01	AAIJ 19N	LHCB	Repl. by AAIJ 24M

$R_d^+ = \Gamma(B^0 \to [\pi^+K^-\pi^+\pi^-]_D K^{*0}) / \Gamma(B^0 \to [\pi^-K^+\pi^+\pi^-]_D K^{*0})$

NODE=S042A29

VALUE	DOCUMENT ID	TECN	COMMENT
0.060±0.015 OUR AVERAGE [0.074 ± 0.026 OUR 2024 AVERAGE]			
0.060±0.014±0.006	AAIJ 24M	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.074±0.026±0.002	AAIJ 19N	LHCB	Repl. by AAIJ 24M

$R_d^- = \Gamma(\overline{B}^0 \to [\pi^-K^+\pi^+\pi^-]_D K^{*0}) / \Gamma(\overline{B}^0 \to [\pi^+K^-\pi^+\pi^-]_D K^{*0})$

NODE=S042A30

VALUE	DOCUMENT ID	TECN	COMMENT
0.038±0.015 OUR AVERAGE [0.072 ± 0.025 OUR 2024 AVERAGE]			
0.038±0.014±0.006	AAIJ 24M	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.072±0.025±0.003	AAIJ 19N	LHCB	Repl. by AAIJ 24M

A_{CP} ($B^0 \to K^+\pi^-$)

NODE=S042ACP

VALUE	DOCUMENT ID		TECN	COMMENT
−0.0831±0.0031 OUR AVERAGE				
−0.072 ±0.019 ±0.007	ADACHI	24	BELL	$e^+e^- \to \Upsilon(4S)$
−0.0824±0.0033±0.0033	AAIJ	21O	LHCB	pp at 13 TeV
−0.084 ±0.004 ±0.003	AAIJ	18O	LHCB	pp at 7, 8 TeV
−0.083 ±0.013 ±0.004	AALTONEN	14P	CDF	$p\overline{p}$ at 1.96 TeV
−0.069 ±0.014 ±0.007	DUH	13	BELL	$e^+e^- \to \Upsilon(4S)$
−0.107 ±0.016 $^{+0.006}_{-0.004}$	LEES	13D	BABR	$e^+e^- \to \Upsilon(4S)$
−0.04 ±0.16	[1] CHEN	00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.080 ±0.007 ±0.003	AAIJ	13AX	LHCB	Repl. by AAIJ 18O
−0.088 ±0.011 ±0.008	AAIJ	12V	LHCB	Repl. by AAIJ 13AX
−0.086 ±0.023 ±0.009	AALTONEN	11N	CDF	Repl. by AALTONEN 14P
−0.094 ±0.018 ±0.008	LIN	08	BELL	Repl. by DUH 13
−0.107 ±0.018 $^{+0.007}_{-0.004}$	AUBERT	07AF	BABR	Repl. by LEES 13D
−0.013 ±0.078 ±0.012	ABULENCIA,A	06D	CDF	Repl. by AALTONEN 11N
−0.088 ±0.035 ±0.013	[2] CHAO	05A	BELL	Repl. by CHAO 04B
−0.133 ±0.030 ±0.009	[3] AUBERT,B	04K	BABR	Repl. by AUBERT 07AF
−0.101 ±0.025 ±0.005	[4] CHAO	04B	BELL	Repl. by LIN 08
−0.07 ±0.08 ±0.02	[5] AUBERT	02D	BABR	Repl. by AUBERT 02Q
−0.102 ±0.050 ±0.016	[6] AUBERT	02Q	BABR	Repl. by AUBERT,B 04K
−0.06 ±0.09 $^{+0.01}_{-0.02}$	[7] CASEY	02	BELL	Repl. by CHAO 04B
0.044 $^{+0.186}_{-0.167}$ $^{+0.018}_{-0.021}$	[8] ABE	01K	BELL	Repl. by CASEY 02
−0.19 ±0.10 ±0.03	[9] AUBERT	01E	BABR	Repl. by AUBERT 02Q

[1] Corresponds to 90% confidence range $-0.30 < A_{CP} < 0.22$. NODE=S042ACP;LINKAGE=AA
[2] Corresponds to a 90% CL interval of $-0.15 < A_{CP} < -0.03$. NODE=S042ACP;LINKAGE=CO
[3] Based on a total signal yield of N($K^-\pi^+$) + N($K^+\pi^-$) = 1606 ± 51 events. NODE=S042ACP;LINKAGE=AU
[4] CHAO 04B reports significance of 3.9 standard deviation for deviation of A_{CP} from zero. NODE=S042ACP;LINKAGE=CH
[5] Corresponds to 90% confidence range $-0.21 < A_{CP} < 0.07$. NODE=S042ACP;LINKAGE=AD
[6] Corresponds to 90% confidence range $-0.188 < A_{CP} < -0.016$. NODE=S042ACP;LINKAGE=BR
[7] Corresponds to 90% confidence range $-0.21 < A_{CP} < +0.09$. NODE=S042ACP;LINKAGE=CA
[8] Corresponds to 90% confidence range $-0.25 < A_{CP} < 0.37$. NODE=S042ACP;LINKAGE=AX
[9] Corresponds to 90% confidence range $-0.35 < A_{CP} < -0.03$. NODE=S042ACP;LINKAGE=L3

$A_{CP}(B^0 \to \eta' K^*(892)^0)$

NODE=S042CP4

VALUE	DOCUMENT ID		TECN	COMMENT
−0.07±0.18 OUR AVERAGE				
−0.22±0.29±0.07	SATO	14	BELL	$e^+e^- \to \Upsilon(4S)$
0.02±0.23±0.02	DEL-AMO-SA...	10A	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.08±0.25±0.02	[1] AUBERT	07E	BABR	Repl. by DEL-AMO-SANCHEZ 10A

[1] Reports A_{CP} with the opposite sign convention. NODE=S042CP4;LINKAGE=OS

$A_{CP}(B^0 \to \eta' K_0^*(1430)^0)$

NODE=S042CT2

VALUE	DOCUMENT ID		TECN	COMMENT
−0.19±0.17±0.02	DEL-AMO-SA...	10A	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to \eta' K_2^*(1430)^0)$

NODE=S042CT3

VALUE	DOCUMENT ID		TECN	COMMENT
0.14±0.18±0.02	DEL-AMO-SA...	10A	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to \eta K^*(892)^0)$

NODE=S042CP1

VALUE	DOCUMENT ID		TECN	COMMENT
0.19±0.05 OUR AVERAGE				
0.17±0.08±0.01	WANG	07B	BELL	$e^+e^- \to \Upsilon(4S)$
0.21±0.06±0.02	AUBERT,B	06H	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.02±0.11±0.02	AUBERT,B	04D	BABR	Repl. by AUBERT,B 06H

$A_{CP}(B^0 \to \eta K_0^*(1430)^0)$

NODE=S042AD1

VALUE	DOCUMENT ID		TECN	COMMENT
0.06±0.13±0.02	AUBERT,B	06H	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to \eta K_2^*(1430)^0)$

NODE=S042AD2

VALUE	DOCUMENT ID		TECN	COMMENT
−0.07±0.19±0.02	AUBERT,B	06H	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to b_1 K^+)$

NODE=S042CQ2

VALUE	DOCUMENT ID		TECN	COMMENT
−0.07±0.12±0.02	AUBERT	07BI	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to \omega K^{*0})$

NODE=S042CQ8

VALUE	DOCUMENT ID		TECN	COMMENT
0.45±0.25±0.02	AUBERT	09H	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to \omega (K\pi)_0^{*0})$

NODE=S042CR0

VALUE	DOCUMENT ID		TECN	COMMENT
−0.07±0.09±0.02	AUBERT	09H	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to \omega K_2^*(1430)^0)$

NODE=S042CR1

VALUE	DOCUMENT ID		TECN	COMMENT
−0.37±0.17±0.02	AUBERT	09H	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to K^+ \pi^- \pi^0)$

NODE=S042AC7

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
0 ± 6 OUR AVERAGE				
$-3.0^{+4.5}_{-5.1}\pm5.5$	[1] AUBERT	08AQ	BABR	$e^+ e^- \to \Upsilon(4S)$
7 ±11 ±1	[2] CHANG	04	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Uses Dalitz plot analysis of $B^0 \to K^+ \pi^- \pi^0$ decays. NODE=S042AC7;LINKAGE=DA

[2] Corresponds to 90% confidence range $-0.12 < A_{CP} < 0.26$. NODE=S042AC7;LINKAGE=CH

$A_{CP}(B^0 \to \rho^- K^+)$

NODE=S042AC6

VALUE	DOCUMENT ID		TECN	COMMENT
0.20±0.11 OUR AVERAGE				
0.20±0.09±0.08	[1] LEES	11	BABR	$e^+ e^- \to \Upsilon(4S)$
$0.22^{+0.22}_{-0.23}{}^{+0.06}_{-0.02}$	[2] CHANG	04	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.11^{+0.14}_{-0.15}\pm0.07$	[1] AUBERT	08AQ	BABR	Repl. by LEES 11
−0.28±0.17±0.08	[3] AUBERT	03T	BABR	Repl. by AUBERT 08AQ

[1] Uses Dalitz plot analysis of $B^0 \to K^+ \pi^- \pi^0$ decays. NODE=S042AC6;LINKAGE=DA

[2] Corresponds to 90% confidence range $-0.18 < A_{CP} < 0.64$. NODE=S042AC6;LINKAGE=CH

[3] The result reported corresponds to $-A_{CP}$. NODE=S042AC6;LINKAGE=AB

$A_{CP}(B^0 \to \rho(1450)^- K^+)$

NODE=S042CT4

VALUE	DOCUMENT ID		TECN	COMMENT
−0.10±0.32±0.09	[1] LEES	11	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Uses Dalitz plot analysis of $B^0 \to K^+ \pi^- \pi^0$ decays. NODE=S042CT4;LINKAGE=DA

$A_{CP}(B^0 \to \rho(1700)^- K^+)$

NODE=S042CT5

VALUE	DOCUMENT ID		TECN	COMMENT
−0.36±0.57±0.23	[1] LEES	11	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Uses Dalitz plot analysis of $B^0 \to K^+ \pi^- \pi^0$ decays. NODE=S042CT5;LINKAGE=DA

$A_{CP}(B^0 \to K^+ \pi^- \pi^0$ nonresonant)

NODE=S042CQ5

VALUE	DOCUMENT ID		TECN	COMMENT
0.10±0.16±0.08	[1] LEES	11	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.23^{+0.19}_{-0.27}{}^{+0.11}_{-0.10}$	[1] AUBERT	08AQ	BABR	Repl. by LEES 11

[1] Uses Dalitz plot analysis of $B^0 \to K^+ \pi^- \pi^0$ decays. The quoted value is only for the flat part of the non-resonant component. NODE=S042CQ5;LINKAGE=DA

$A_{CP}(B^0 \to K^0 \pi^+ \pi^-)$

NODE=S042CQ9

VALUE	DOCUMENT ID		TECN	COMMENT
−0.01±0.05±0.01	[1] AUBERT	09AU	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Uses Dalitz plot analysis of $B^0 \to K^0 \pi^+ \pi^-$ decays and the first of two equivalent solutions is used. NODE=S042CQ9;LINKAGE=AU

$A_{CP}(B^0 \to K^*(892)^+ \pi^-)$

NODE=S042AC3

VALUE	DOCUMENT ID		TECN	COMMENT
−0.27 ±0.04 OUR AVERAGE				
$-0.308 \pm 0.060 \pm 0.016$	[1] AAIJ	18F	LHCB	pp at 7, 8 TeV
$-0.29 \pm 0.11 \pm 0.02$	[2] LEES	11	BABR	$e^+ e^- \to \Upsilon(4S)$
$-0.21 \pm 0.10 \pm 0.02$	[3,4] AUBERT	09AU	BABR	$e^+ e^- \to \Upsilon(4S)$
$-0.21 \pm 0.11 \pm 0.07$	[5] DALSENO	09	BELL	$e^+ e^- \to \Upsilon(4S)$
$0.26 {}^{+0.33}_{-0.34} {}^{+0.10}_{-0.08}$	[6] EISENSTEIN	03	CLE2	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-0.19 {}^{+0.20}_{-0.15} \pm 0.04$	[2] AUBERT	08AQ	BABR	Repl. by LEES 11
$-0.11 \pm 0.14 \pm 0.05$	[3] AUBERT	06I	BABR	Repl. by AUBERT 09AU
$0.23 \pm 0.18 {}^{+0.09}_{-0.06}$	AUBERT,B	04O	BABR	Repl. by AUBERT 06I

[1] Uses Dalitz plot analysis of the $B^0 \to K^0_S \pi^+ \pi^-$ final state decays. NODE=S042AC3;LINKAGE=B

[2] Uses Dalitz plot analysis of $B^0 \to K^+ \pi^- \pi^0$ decays. NODE=S042AC3;LINKAGE=DA

[3] Uses Dalitz plot analysis of $B^0 \to K^0 \pi^+ \pi^-$ decays. NODE=S042AC3;LINKAGE=AU

[4] The first of two equivalent solutions is used. NODE=S042AC3;LINKAGE=BE

[5] Uses Dalitz plot analysis of $B^0 \to K^0 \pi^+ \pi^-$ decays and the first of two consistent solutions that may be preferred. NODE=S042AC3;LINKAGE=DL

[6] Corresponds to 90% confidence range $-0.31 < A_{CP} < 0.78$. NODE=S042AC3;LINKAGE=A

$A_{CP}(B^0 \to (K\pi)^{*+}_0 \pi^-)$

NODE=S042CQ6

VALUE	DOCUMENT ID		TECN	COMMENT
0.02 ±0.04 OUR AVERAGE				
$-0.032 \pm 0.047 \pm 0.031$	[1] AAIJ	18F	LHCB	pp at 7, 8 TeV
$0.07 \pm 0.14 \pm 0.01$	[2] LEES	11	BABR	$e^+ e^- \to \Upsilon(4S)$
$0.09 \pm 0.07 \pm 0.03$	[3] AUBERT	09AU	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.17 {}^{+0.11}_{-0.16} \pm 0.22$	[2] AUBERT	08AQ	BABR	Repl. by LEES 11

[1] Uses Dalitz plot analysis of the $B^0 \to K^0_S \pi^+ \pi^-$ final states decays. NODE=S042CQ6;LINKAGE=A

[2] Uses Dalitz plot analysis of $B^0 \to K^+ \pi^- \pi^0$ decays. NODE=S042CQ6;LINKAGE=DA

[3] Uses Dalitz plot analysis of $B^0 \to K^0 \pi^+ \pi^-$ decays and the first of two equivalent solutions is used. NODE=S042CQ6;LINKAGE=AU

$A_{CP}(B^0 \to K^*_2(1430)^+ \pi^-)$

NODE=S042A09

VALUE	DOCUMENT ID		TECN	COMMENT
$-0.29 \pm 0.22 \pm 0.09$	[1] AAIJ	18F	LHCB	pp at 7, 8 TeV

[1] Uses Dalitz plot analysis of the $B^0 \to K^0_S \pi^+ \pi^-$ final state decays. NODE=S042A09;LINKAGE=A

$A_{CP}(B^0 \to K^*(1680)^+ \pi^-)$

NODE=S042A10

VALUE	DOCUMENT ID		TECN	COMMENT
$-0.07 \pm 0.13 \pm 0.04$	[1] AAIJ	18F	LHCB	pp at 7, 8 TeV

[1] Uses Dalitz plot analysis of the $B^0 \to K^0_S \pi^+ \pi^-$ final state decays. NODE=S042A10;LINKAGE=A

$A_{CP}(B^0 \to f_0(980) K^0_S)$

NODE=S042A11

VALUE	DOCUMENT ID		TECN	COMMENT
$0.28 \pm 0.27 \pm 0.15$	[1] AAIJ	18F	LHCB	pp at 7, 8 TeV

[1] Uses Dalitz plot analysis of the $B^0 \to K^0_S \pi^+ \pi^-$ final state decays. NODE=S042A11;LINKAGE=A

$A_{CP}(B^0 \to (K\pi)^{*0}_0 \pi^0)$

NODE=S042CQ7

VALUE	DOCUMENT ID		TECN	COMMENT
$-0.15 \pm 0.10 \pm 0.04$	[1] LEES	11	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-0.22 \pm 0.12 {}^{+0.30}_{-0.29}$	[1] AUBERT	08AQ	BABR	Repl. by LEES 11

[1] Uses Dalitz plot analysis of $B^0 \to K^+ \pi^- \pi^0$ decays. NODE=S042CQ7;LINKAGE=DA

$A_{CP}(B^0 \to K^{*0} \pi^0)$

NODE=S042CQ4

VALUE	DOCUMENT ID		TECN	COMMENT
$-0.15 \pm 0.12 \pm 0.04$	[1] LEES	11	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-0.09 {}^{+0.21}_{-0.24} \pm 0.09$	[1] AUBERT	08AQ	BABR	Repl. by LEES 11

[1] Uses Dalitz plot analysis of $B^0 \to K^+ \pi^- \pi^0$ decays. NODE=S042CQ4;LINKAGE=DA

$A_{CP}(B^0 \to K^*(892)^0 \pi^+ \pi^-)$

NODE=S042CP6

VALUE	DOCUMENT ID		TECN	COMMENT
0.07±0.04±0.03	AUBERT	07AS	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to K^*(892)^0 \rho^0)$

NODE=S042AC9

VALUE	DOCUMENT ID		TECN	COMMENT
−0.06±0.09±0.02	LEES	12K	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.09±0.19±0.02	AUBERT,B	06G	BABR	Repl. by LEES 12K

$A_{CP}(B^0 \to K^{*0} f_0(980))$

NODE=S042AD0

VALUE	DOCUMENT ID		TECN	COMMENT
0.07±0.10±0.02	LEES	12K	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.17±0.28±0.02	AUBERT,B	06G	BABR	Repl. by LEES 12K

$A_{CP}(B^0 \to K^{*+} \rho^-)$

NODE=S042CT6

VALUE	DOCUMENT ID		TECN	COMMENT
0.21±0.15±0.02	LEES	12K	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to K^*(892)^0 K^+ K^-)$

NODE=S042CP7

VALUE	DOCUMENT ID		TECN	COMMENT
0.01±0.05±0.02	AUBERT	07AS	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to a_1^- K^+)$

NODE=S042CQ1

VALUE	DOCUMENT ID		TECN	COMMENT
−0.16±0.12±0.01	AUBERT	08F	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to K^0 K^0)$

NODE=S042CP5

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{-0.58^{+0.73}_{-0.66}\pm0.04}$	LIN	07	BELL	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to K^*(892)^0 \phi)$

NODE=S042AC1

VALUE	DOCUMENT ID		TECN	COMMENT
0.00 ±0.04 OUR AVERAGE				
−0.007±0.048±0.021	PRIM	13	BELL	$e^+ e^- \to \Upsilon(4S)$
0.01 ±0.06 ±0.03	AUBERT	08BG	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.03 ±0.07 ±0.03	AUBERT	07D	BABR	Repl. by AUBERT 08BG
0.02 ±0.09 ±0.02	[1] CHEN	05A	BELL	Repl. by PRIM 13
−0.01 ±0.09 ±0.02	AUBERT,B	04W	BABR	Repl. by AUBERT 07D
0.04 ±0.12 ±0.02	AUBERT	03V	BABR	Repl. by AUBERT 04W
$0.07 \pm 0.15 {}^{+0.05}_{-0.03}$	[2] CHEN	03B	BELL	Repl. by CHEN 05A
0.00 ±0.27 ±0.03	[3] AUBERT	02E	BABR	Repl. by AUBERT 03V

[1] Corresponds to 90% confidence range $-0.14 < A_{CP} < 0.17$. NODE=S042AC1;LINKAGE=CE

[2] Corresponds to 90% confidence range $-0.18 < A_{CP} < 0.33$. NODE=S042AC1;LINKAGE=CH

[3] Corresponds to 90% confidence range $-0.44 < A_{CP} < 0.44$. NODE=S042AC1;LINKAGE=AY

$A_{CP}(B^0 \to K^*(892)^0 K^- \pi^+)$

NODE=S042CP8

VALUE	DOCUMENT ID		TECN	COMMENT
0.22±0.33±0.20	AUBERT	07AS	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to \phi (K\pi)^{*0}_0)$

NODE=S042CP2

VALUE	DOCUMENT ID		TECN	COMMENT
0.12 ±0.08 OUR AVERAGE				
0.093±0.094±0.017	PRIM	13	BELL	$e^+ e^- \to \Upsilon(4S)$
0.20 ±0.14 ±0.06	AUBERT	08BG	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.17 ±0.15 ±0.03	AUBERT	07D	BABR	Repl. by AUBERT 08BG

$A_{CP}(B^0 \to \phi K_2^*(1430)^0)$

NODE=S042CP3

VALUE	DOCUMENT ID		TECN	COMMENT
−0.11 ±0.10 OUR AVERAGE				
$-0.155^{+0.152}_{-0.133}\pm0.033$	PRIM	13	BELL	$e^+e^- \to \Upsilon(4S)$
$-0.08\pm0.12\pm0.05$	AUBERT	08BG	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-0.12\pm0.14\pm0.04$	AUBERT	07D	BABR	Repl. by AUBERT 08BG

$A_{CP}(B^0 \to K^*(892)^0\gamma)$

NODE=S042AKG

VALUE	DOCUMENT ID		TECN	COMMENT
−0.006±0.011 OUR AVERAGE				
$-0.013\pm0.017\pm0.004$	[1] HORIGUCHI	17	BELL	$e^+e^- \to \Upsilon(4S)$
$0.008\pm0.017\pm0.009$	AAIJ	13	LHCB	pp at 7 TeV
$-0.016\pm0.022\pm0.007$	AUBERT	09AO	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses B($\Upsilon(4S) \to B^+B^-$) = (51.4 ± 0.6)% and B($\Upsilon(4S) \to B^0\overline{B}^0$) = (48.6 ± 0.6)%.

NODE=S042AKG;LINKAGE=A

$A_{CP}(B^0 \to K_2^*(1430)^0\gamma)$

NODE=S042AC8

VALUE	DOCUMENT ID		TECN	COMMENT
−0.08±0.15±0.01	AUBERT,B	04U	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to X_s\gamma)$

NODE=S042A12

VALUE	DOCUMENT ID		TECN	COMMENT
−0.0094±0.0174±0.0047	[1] WATANUKI	19	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Using a sum-of-exclusive technique with $m_{X_s} < 2.8$ GeV/c^2.

NODE=S042A12;LINKAGE=A

$A_{CP}(B^0 \to \rho^+\pi^-)$

NODE=S042AC5

VALUE	DOCUMENT ID		TECN	COMMENT
0.13±0.06 OUR AVERAGE Error includes scale factor of 1.1.				
$0.09^{+0.05}_{-0.06}\pm0.04$	[1] LEES	13J	BABR	$e^+e^- \to \Upsilon(4S)$
$0.21\pm0.08\pm0.04$	[1] KUSAKA	07	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.03\pm0.07\pm0.04$	AUBERT	07AA	BABR	Repl. by LEES 13J
$-0.02\pm0.16^{+0.05}_{-0.02}$	WANG	05	BELL	Repl. by KUSAKA 07
$-0.18\pm0.08\pm0.03$	AUBERT	03T	BABR	Repl. by AUBERT 07AA

[1] Uses time-dependent Dalitz plot analysis of $B^0 \to \pi^+\pi^-\pi^0$ decays.

NODE=S042AC5;LINKAGE=LE

$A_{CP}(B^0 \to \rho^-\pi^+)$

NODE=S042AC0

VALUE	DOCUMENT ID		TECN	COMMENT
−0.08±0.08 OUR AVERAGE				
$-0.12\pm0.08^{+0.04}_{-0.05}$	[1] LEES	13J	BABR	$e^+e^- \to \Upsilon(4S)$
$0.08\pm0.16\pm0.11$	[1] KUSAKA	07	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-0.37\pm0.16^{+0.09}_{-0.10}$	AUBERT	07AA	BABR	Repl. by LEES 13J
$-0.53\pm0.29^{+0.09}_{-0.04}$	WANG	05	BELL	Repl. by KUSAKA 07

[1] Uses time-dependent Dalitz plot analysis of $B^0 \to \pi^+\pi^-\pi^0$ decays.

NODE=S042AC0;LINKAGE=LE

$A_{CP}(B^0 \to \omega\omega)$

NODE=S042A54

VALUE	DOCUMENT ID		TECN	COMMENT
−0.44±0.43±0.11	GUAN	24	BELL	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to a_1(1260)^\pm\pi^\mp)$

NODE=S042AAP

VALUE	DOCUMENT ID		TECN	COMMENT
−0.07±0.06 OUR AVERAGE				
$-0.06\pm0.05\pm0.07$	DALSENO	12	BELL	$e^+e^- \to \Upsilon(4S)$
$-0.07\pm0.07\pm0.02$	AUBERT	07O	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to b_1^-\pi^+)$

NODE=S042CQ3

VALUE	DOCUMENT ID		TECN	COMMENT
−0.05±0.10±0.02	AUBERT	07BI	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to p\overline{p}K^*(892)^0)$

NODE=S042CQ0

VALUE	DOCUMENT ID		TECN	COMMENT
0.05±0.12 OUR AVERAGE				
−0.08±0.20±0.02	CHEN	08C	BELL	$e^+e^- \to \Upsilon(4S)$
0.11±0.13±0.06	AUBERT	07AV	BABR	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to p\overline{\Lambda}\pi^-)$

NODE=S042CLP

VALUE	DOCUMENT ID		TECN	COMMENT
0.04±0.07 OUR AVERAGE				
0.10±0.10±0.02	AUBERT	09AC	BABR	$e^+e^- \to \Upsilon(4S)$
−0.02±0.10±0.03	WANG	07C	BELL	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to K^{*0}\ell^+\ell^-)$

NODE=S042CT1

VALUE	DOCUMENT ID		TECN	COMMENT
−0.05±0.10 OUR AVERAGE				
0.02±0.20±0.02	AUBERT	09T	BABR	$e^+e^- \to \Upsilon(4S)$
−0.08±0.12±0.02	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to K^{*0}e^+e^-)$

NODE=S042CU0

VALUE	DOCUMENT ID		TECN	COMMENT
−0.21±0.19±0.02	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B^0 \to K^{*0}\mu^+\mu^-)$

NODE=S042CU1

VALUE	DOCUMENT ID		TECN	COMMENT
−0.034±0.024 OUR AVERAGE				
−0.035±0.024±0.003	AAIJ	14AN	LHCB	pp at 7, 8 TeV
0.00 ±0.15 ±0.03	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.072±0.040±0.005	AAIJ	13E	LHCB	Repl. by AAIJ 14AN

$C_{D^*(2010)^- D^+}\ (B^0 \to D^*(2010)^- D^+)$

NODE=S042CPJ

VALUE	DOCUMENT ID		TECN	COMMENT
−0.02 ±0.08 OUR AVERAGE				
−0.028±0.130±0.026	[1] AAIJ	20L	LHCB	pp at 7, 8, 13 TeV
−0.13 ±0.16 ±0.05	[2] ROHRKEN	12	BELL	$e^+e^- \to \Upsilon(4S)$
0.00 ±0.17 ±0.03	AUBERT	09C	BABR	$e^+e^- \to \Upsilon(4S)$
0.23 ±0.25 ±0.06	[3] AUSHEV	04	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.23 ±0.15 ±0.04	AUBERT	07AI	BABR	Repl. by AUBERT 09C
0.17 ±0.24 ±0.04	AUBERT,B	05Z	BABR	Repl. by AUBERT 07AI
−0.22 ±0.37 ±0.10	AUBERT	03J	BABR	Repl. by AUBERT,B 05Z

[1] AAIJ 20L reports the measurements of $C = -0.059 \pm 0.092 \pm 0.020$ and $\Delta C = -0.031 \pm 0.092 \pm 0.016$ such that $C_{D^*(2010)^- D^+} = C - \Delta C$. NODE=S042CPJ;LINKAGE=A

[2] ROHRKEN 12 reports the measurements of $C = -0.01 \pm 0.11 \pm 0.04$ and $\Delta C = 0.12 \pm 0.11 \pm 0.03$ such that $C_{D^*(2010)^- D^+} = C - \Delta C$. NODE=S042CPJ;LINKAGE=RO

[3] Combines results from fully and partially reconstructed $B^0 \to D^{*\pm} D^{\mp}$ decays. NODE=S042CPJ;LINKAGE=AU

$S_{D^*(2010)^- D^+}\ (B^0 \to D^*(2010)^- D^+)$

NODE=S042SPJ

VALUE	DOCUMENT ID		TECN	COMMENT
−0.83 ±0.09 OUR AVERAGE				
−0.880±0.107±0.022	[1] AAIJ	20L	LHCB	pp at 7, 8, 13 TeV
−0.65 ±0.22 ±0.07	[2] ROHRKEN	12	BELL	$e^+e^- \to \Upsilon(4S)$
−0.73 ±0.23 ±0.050	AUBERT	09C	BABR	$e^+e^- \to \Upsilon(4S)$
−0.96 ±0.43 ±0.12	[3] AUSHEV	04	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.44 ±0.22 ±0.06	AUBERT	07AI	BABR	Repl. by AUBERT 09C
−0.29 ±0.33 ±0.07	AUBERT,B	05Z	BABR	Repl. by AUBERT 07AI
−0.24 ±0.69 ±0.12	AUBERT	03J	BABR	Repl. by AUBERT,B 05Z

[1] AAIJ 20L reports the measurements of $S = -0.861 \pm 0.077 \pm 0.019$ and $\Delta S = 0.019 \pm 0.075 \pm 0.012$ such that $S_{D^*(2010)^- D^+} = S - \Delta S$. NODE=S042SPJ;LINKAGE=A

[2] ROHRKEN 12 reports the measurements of $S = -0.78 \pm 0.15 \pm 0.05$ and $\Delta S = -0.13 \pm 0.15 \pm 0.04$ such that $S_{D^*(2010)^+ D^-} = S - \Delta S$. NODE=S042SPJ;LINKAGE=RO

[3] Combines results from fully and partially reconstructed $B^0 \to D^{*\pm} D^{\mp}$ decays. NODE=S042SPJ;LINKAGE=AU

$C_{D^*(2010)^+ D^-}$ ($B^0 \to D^*(2010)^+ D^-$)

NODE=S042CPK
NODE=S042CPK

VALUE	DOCUMENT ID		TECN	COMMENT
−0.03 ±0.09 OUR AVERAGE	Error includes scale factor of 1.1.			
−0.090±0.130±0.026	[1] AAIJ	20L	LHCB	$p p$ at 7, 8, 13 TeV
0.11 ±0.14 ±0.06	[2] ROHRKEN	12	BELL	$e^+ e^- \to \Upsilon(4S)$
0.08 ±0.17 ±0.04	AUBERT	09C	BABR	$e^+ e^- \to \Upsilon(4S)$
−0.37 ±0.22 ±0.06	[3] AUSHEV	04	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.18 ±0.15 ±0.04	AUBERT	07AI	BABR	Repl. by AUBERT 09C
0.09 ±0.25 ±0.06	AUBERT,B	05Z	BABR	Repl. by AUBERT 07AI
−0.47 ±0.40 ±0.12	AUBERT	03J	BABR	Repl. by AUBERT,B 05Z

[1] AAIJ 20L reports the measurements of C $= -0.059 \pm 0.092 \pm 0.020$ and ΔC $= -0.031 \pm 0.092 \pm 0.016$ such that $C_{D^*(2010)^+ D^-}$ = C + ΔC. NODE=S042CPK;LINKAGE=A

[2] ROHRKEN 12 reports the measurements of C $= -0.01 \pm 0.11 \pm 0.04$ and ΔC $= 0.12 \pm 0.11 \pm 0.03$ such that $C_{D^*(2010)^+ D^-}$ = C + ΔC . NODE=S042CPK;LINKAGE=RO

[3] Combines results from fully and partially reconstructed $B^0 \to D^{*\pm} D^{\mp}$ decays. NODE=S042CPK;LINKAGE=AU

$S_{D^*(2010)^+ D^-}$ ($B^0 \to D^*(2010)^+ D^-$)

NODE=S042SPK
NODE=S042SPK

VALUE	DOCUMENT ID		TECN	COMMENT
−0.80 ±0.09 OUR AVERAGE				
−0.842±0.107±0.022	[1] AAIJ	20L	LHCB	$p p$ at 7, 8, 13 TeV
−0.90 ±0.21 ±0.07	[2] ROHRKEN	12	BELL	$e^+ e^- \to \Upsilon(4S)$
−0.62 ±0.21 ±0.03	AUBERT	09C	BABR	$e^+ e^- \to \Upsilon(4S)$
−0.55 ±0.39 ±0.12	[3] AUSHEV	04	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.79 ±0.21 ±0.06	AUBERT	07AI	BABR	Repl. by AUBERT 09C
−0.54 ±0.35 ±0.07	AUBERT,B	05Z	BABR	Repl. by AUBERT 07AI
−0.82 ±0.75 ±0.14	AUBERT	03J	BABR	Repl. by AUBERT,B 05Z

[1] AAIJ 20L reports the measurements of S $= -0.861 \pm 0.077 \pm 0.019$ and ΔS $= 0.019 \pm 0.075 \pm 0.012$ such that $S_{D^*(2010)^+ D^-}$ = S + ΔS. NODE=S042SPK;LINKAGE=A

[2] ROHRKEN 12 reports the measurements of S $= -0.78 \pm 0.15 \pm 0.05$ and ΔS $= -0.13 \pm 0.15 \pm 0.04$ such that $S_{D^*(2010)^+ D^-}$ = S + ΔS. NODE=S042SPK;LINKAGE=RO

[3] Combines results from fully and partially reconstructed $B^0 \to D^{*\pm} D^{\mp}$ decays. NODE=S042SPK;LINKAGE=AU

$C_{D^{*+} D^{*-}}$ ($B^0 \to D^{*+} D^{*-}$)

NODE=S042LD1
NODE=S042LD1

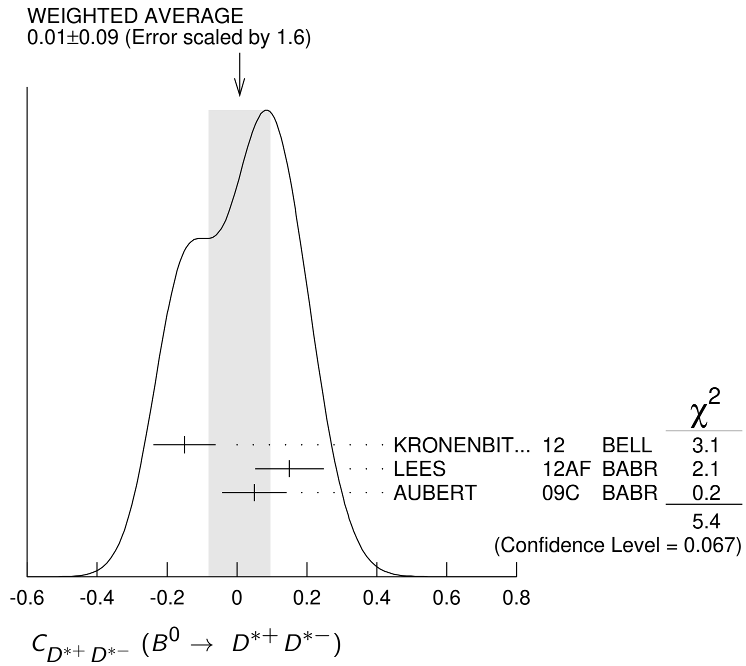
VALUE	DOCUMENT ID		TECN	COMMENT
0.01±0.09 OUR AVERAGE	Error includes scale factor of 1.6. See the ideogram below.			
−0.15±0.08±0.04	[1,2] KRONENBIT...	12	BELL	$e^+ e^- \to \Upsilon(4S)$
+0.15±0.09±0.04	[3] LEES	12AF	BABR	$e^+ e^- \to \Upsilon(4S)$
0.05±0.09±0.02	AUBERT	09C	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.15±0.13±0.04	[2] VERVINK	09	BELL	Repl. by KRONENBITTER 12
−0.02±0.11±0.02	[1] AUBERT	07BO	BABR	Repl. by AUBERT 09C
0.26±0.26±0.06	[2] MIYAKE	05	BELL	Repl. by VERVINK 09
0.28±0.23±0.02	[4] AUBERT	03Q	BABR	Repl. by AUBERT 07BO

[1] Assumes both CP-even and CP-odd states having the CP asymmetry. NODE=S042LD1;LINKAGE=AU

[2] Belle Collab. quotes $A_{D^{*+} D^{*-}}$ which is equal to $-C_{D^{*+} D^{*-}}$. NODE=S042LD1;LINKAGE=MI

[3] Measured partially reconstructed candidates when one D^0 meson is not excplicitely reconstructed. Analysis does not separate CP-even and CP-odd component. NODE=S042LD1;LINKAGE=LE

[4] AUBERT 03Q reports $|\lambda|$=0.75 ± 0.19 ± 0.02 and Im(λ)=0.05 ± 0.29 ± 0.10. We convert them to S and C parameters taking into account correlations. NODE=S042LD1;LINKAGE=AR



$S_{D^{*+}D^{*-}}$ ($B^0 \to D^{*+}D^{*-}$)

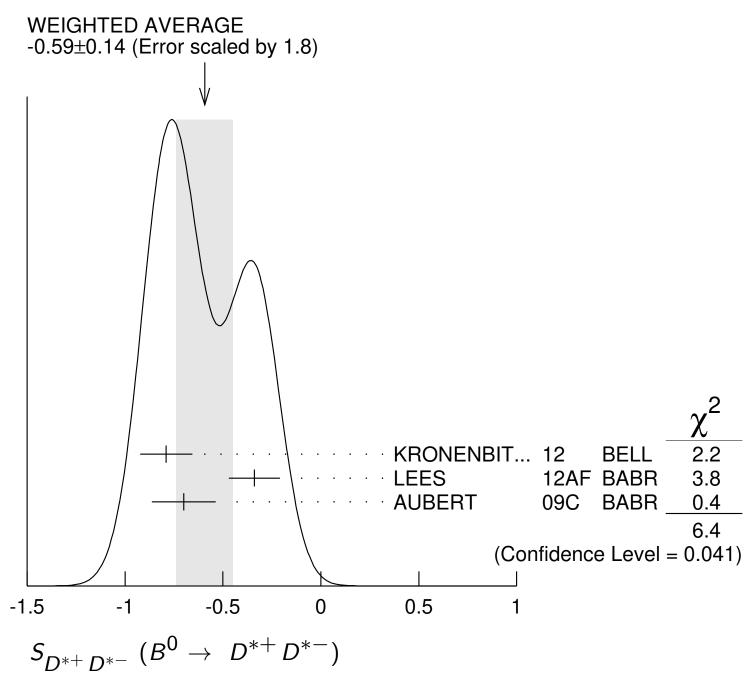
NODE=S042LD2
NODE=S042LD2

VALUE	DOCUMENT ID	TECN	COMMENT
−0.59±0.14 OUR AVERAGE	Error includes scale factor of 1.8. See the ideogram below.		
−0.79±0.13±0.03	[1] KRONENBIT... 12	BELL	$e^+e^- \to \Upsilon(4S)$
−0.34±0.12±0.05	[2] LEES 12AF	BABR	$e^+e^- \to \Upsilon(4S)$
−0.70±0.16±0.03	[1] AUBERT 09C	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$-0.96\pm0.25^{+0.13}_{-0.16}$	VERVINK 09	BELL	Repl. by KRONENBITTER 12
−0.66±0.19±0.04	[1] AUBERT 07BO	BABR	Repl. by AUBERT 09C
−0.75±0.56±0.12	MIYAKE 05	BELL	Repl. by VERVINK 09
0.06±0.37±0.13	[3] AUBERT 03Q	BABR	Repl. by AUBERT 07BO

[1] Assumes both *CP*-even and *CP*-odd states having the *CP* asymmetry. NODE=S042LD2;LINKAGE=AU

[2] Measured partially reconstructed candidates when one D^0 meson is not excplicitely reconstructed. Analysis does not separate *CP*-even and *CP*-odd component. NODE=S042LD2;LINKAGE=LE

[3] AUBERT 03Q reports $|\lambda|$=0.75 ± 0.19 ± 0.02 and Im(λ)=0.05 ± 0.29 ± 0.10. We convert them to *S* and *C* parameters taking into account correlations. NODE=S042LD2;LINKAGE=AR



C_+ ($B^0 \to D^{*+} D^{*-}$)

NODE=S042CD+

See the note in the $C_{\pi\pi}$ datablock, but for *CP* even final state.

NODE=S042CD+
NODE=S042CD+

VALUE	DOCUMENT ID		TECN	COMMENT
0.00±0.10 OUR AVERAGE	Error includes scale factor of 1.6. See the ideogram below.			
−0.18±0.10±0.05	[1] KRONENBIT...	12	BELL	$e^+ e^- \to \Upsilon(4S)$
+0.15±0.09±0.04	[2] LEES	12AF	BABR	$e^+ e^- \to \Upsilon(4S)$
0.00±0.12±0.02	AUBERT	09C	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.05±0.14±0.02	AUBERT	07BO	BABR	Repl. by AUBERT 09C
0.06±0.17±0.03	[3] AUBERT,BE	05A	BABR	Repl. by AUBERT 07BO

[1] Belle Collab. quotes $A_{D^{*+} D^{*-}}$ which is equal to $-C_{D^{*+} D^{*-}}$.

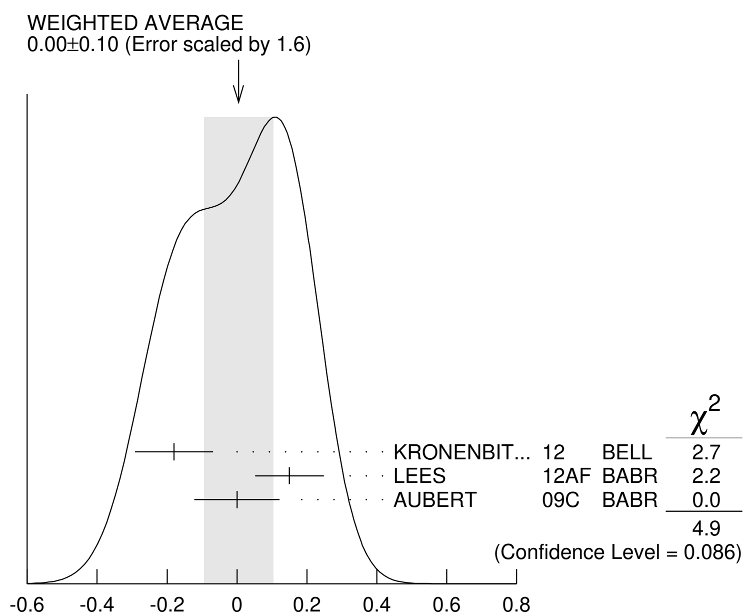
NODE=S042CD+;LINKAGE=KR

[2] Measured partially reconstructed candidates when one D^0 meson is not excplicitely reconstructed. Extracted under assumption of equal C_+ and C_-.

NODE=S042CD+;LINKAGE=LE

[3] AUBERT,BE 05A reports a *CP*-odd fraction $R_\perp = 0.125 \pm 0.044 \pm 0.007$.

NODE=S042CD+;LINKAGE=AU



C_+ ($B^0 \to D^{*+} D^{*-}$)

S_+ ($B^0 \to D^{*+} D^{*-}$)

NODE=S042SD+

See the note in the $S_{\pi\pi}$ datablock, but for *CP* even final state.

NODE=S042SD+
NODE=S042SD+

VALUE	DOCUMENT ID		TECN	COMMENT
−0.73±0.09 OUR AVERAGE				
−0.81±0.13±0.03	KRONENBIT...	12	BELL	$e^+ e^- \to \Upsilon(4S)$
−0.49±0.18±0.08	[1] LEES	12AF	BABR	$e^+ e^- \to \Upsilon(4S)$
−0.76±0.16±0.04	AUBERT	09C	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.72±0.19±0.05	AUBERT	07BO	BABR	Repl. by AUBERT 09C
−0.75±0.25±0.03	[2] AUBERT,BE	05A	BABR	Repl. by AUBERT 07BO

[1] Measured partially reconstructed candidates when one D^0 meson is not excplicitely reconstructed. Analysis does not separate *CP*-even and *CP*-odd component. Value is obtained from $S = -0.34 \pm 0.12 \pm 0.05$ using $S = S_+ (1 - 2 R_\perp)$ with $R_\perp = 0.158 \pm 0.029$.

NODE=S042SD+;LINKAGE=LE

[2] AUBERT,BE 05A reports a *CP*-odd fraction $R_\perp = 0.125 \pm 0.044 \pm 0.007$.

NODE=S042SD+;LINKAGE=AU

C_- ($B^0 \to D^{*+} D^{*-}$)

NODE=S042CD-

See the note in the $C_{\pi\pi}$ datablock, but for *CP* odd final state.

NODE=S042CD-
NODE=S042CD-

VALUE	DOCUMENT ID		TECN	COMMENT
0.19±0.31 OUR AVERAGE				
0.05±0.39±0.08	[1] KRONENBIT...	12	BELL	$e^+ e^- \to \Upsilon(4S)$
0.41±0.49±0.08	AUBERT	09C	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.23±0.67±0.10	AUBERT	07BO	BABR	Repl. by AUBERT 09C
−0.20±0.96±0.11	[2] AUBERT,BE	05A	BABR	Repl. by AUBERT 07BO

[1] Belle Collab. quotes $A_{D^{*+} D^{*-}}$ which is equal to $-C_{D^{*+} D^{*-}}$.

NODE=S042CD-;LINKAGE=KR

[2] AUBERT,BE 05A reports a *CP*-odd fraction $R_\perp = 0.125 \pm 0.044 \pm 0.007$.

NODE=S042CD-;LINKAGE=AU

S_- ($B^0 \to D^{*+} D^{*-}$)

NODE=S042SD-

See the note in the $S_{\pi\pi}$ datablock, but for CP odd final state.

NODE=S042SD-
NODE=S042SD-
NEW

VALUE	DOCUMENT ID		TECN	COMMENT
−1.6 ±0.5 OUR AVERAGE				
[0.1 ± 1.6 OUR 2024 AVERAGE Scale factor = 3.5]				
−1.52±0.62±0.12	[1] KRONENBIT...	12	BELL	$e^+e^- \to \Upsilon(4S)$
−1.80±0.70±0.16	AUBERT	09C	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−1.83±1.04±0.23	AUBERT	07BO	BABR	Repl. by AUBERT 09C
−1.75±1.78±0.22	[2] AUBERT,BE	05A	BABR	Repl. by AUBERT 07BO

[1] KRONENBITTER 12 reported $S_- = 1.52 \pm 0.62 \pm 0.12$. A minus sign results from a different convention, see AUBERT 09C. NODE=S042SD-;LINKAGE=A

[2] AUBERT,BE 05A reports a CP-odd fraction $R_\perp = 0.125 \pm 0.044 \pm 0.007$. NODE=S042SD-;LINKAGE=AU

C ($B^0 \to D^*(2010)^+ D^*(2010)^- K^0_S$)

NODE=S042CDS
NODE=S042CDS

VALUE	DOCUMENT ID		TECN	COMMENT
0.01±0.28±0.09	[1] DALSENO	07	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Reports value of A which is equal to $-C$. NODE=S042CDS;LINKAGE=AC

S ($B^0 \to D^*(2010)^+ D^*(2010)^- K^0_S$)

NODE=S042SDS
NODE=S042SDS

VALUE	DOCUMENT ID		TECN	COMMENT
$0.06^{+0.45}_{-0.44}\pm0.06$	[1] DALSENO	07	BELL	$e^+e^- \to \Upsilon(4S)$

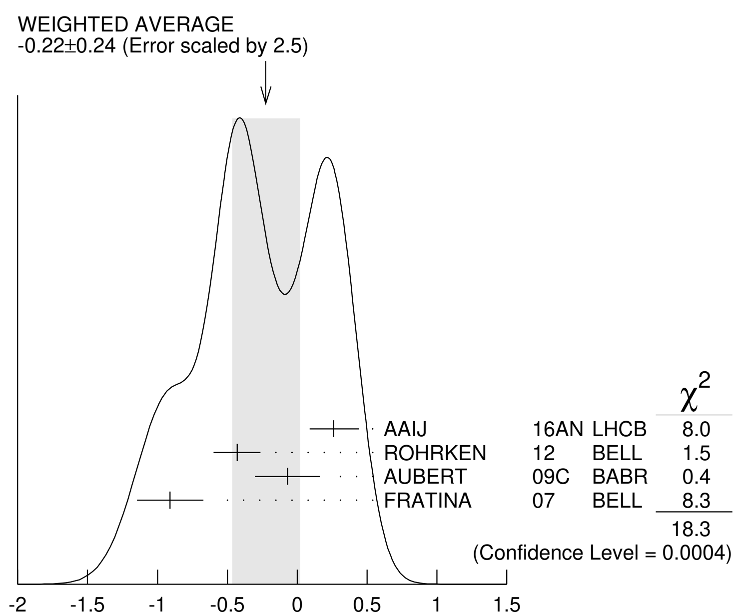
[1] This value includes an unknown CP dilution factor D due to possible contributions from intermediate resonances and different partial waves. NODE=S042SDS;LINKAGE=DA

$C_{D^+D^-}$ ($B^0 \to D^+ D^-$)

NODE=S042CPD
NODE=S042CPD

VALUE	DOCUMENT ID		TECN	COMMENT
−0.22±0.24 OUR AVERAGE	Error includes scale factor of 2.5. See the ideogram below.			
$0.26^{+0.18}_{-0.17}\pm0.02$	AAIJ	16AN	LHCB	pp at 7, 8 TeV
−0.43±0.16±0.05	ROHRKEN	12	BELL	$e^+e^- \to \Upsilon(4S)$
−0.07±0.23±0.03	AUBERT	09C	BABR	$e^+e^- \to \Upsilon(4S)$
−0.91±0.23±0.06	[1] FRATINA	07	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.11±0.22±0.07	AUBERT	07AI	BABR	Repl. by AUBERT 09C
0.11±0.35±0.06	AUBERT,B	05Z	BABR	Repl. by AUBERT 07AI

[1] The paper reports A, which is equal to $-C$. NODE=S042CPD;LINKAGE=BL



$C_{D^+D^-}$ ($B^0 \to D^+ D^-$)

$S_{D^+D^-}$ $(B^0 \to D^+ D^-)$ NODE=S042SPD

VALUE	DOCUMENT ID	TECN	COMMENT
$-0.76^{+0.15}_{-0.13}$ **OUR AVERAGE**	Error includes scale factor of 1.2.		
$-0.54^{+0.17}_{-0.16}\pm0.05$	AAIJ 16AN	LHCB	pp at 7, 8 TeV
$-1.06^{+0.21}_{-0.14}\pm0.08$	ROHRKEN 12	BELL	$e^+e^- \to \Upsilon(4S)$
$-0.63\pm0.36\pm0.05$	AUBERT 09C	BABR	$e^+e^- \to \Upsilon(4S)$
$-1.13\pm0.37\pm0.09$	FRATINA 07	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$-0.54\pm0.34\pm0.06$	AUBERT 07AI	BABR	Repl. by AUBERT 09C
$-0.29\pm0.63\pm0.06$	AUBERT,B 05Z	BABR	Repl. by AUBERT 07AI

$C_{J/\psi(1S)\pi^0}$ $(B^0 \to J/\psi(1S)\pi^0)$ NODE=S042CPL

VALUE	DOCUMENT ID	TECN	COMMENT
0.03±0.17 OUR AVERAGE	Error includes scale factor of 1.5.		
$0.15\pm0.14^{+0.04}_{-0.03}$	[1] PAL 18	BELL	$e^+e^- \to \Upsilon(4S)$
$-0.20\pm0.19\pm0.03$	AUBERT 08AU	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$-0.08\pm0.16\pm0.05$	[1] LEE 08A	BELL	Repl. by PAL 18
$-0.21\pm0.26\pm0.06$	AUBERT,B 06B	BABR	Repl. by AUBERT 08AU
$0.01\pm0.29\pm0.03$	[1] KATAOKA 04	BELL	Repl. by LEE 08A
$0.38\pm0.41\pm0.09$	AUBERT 03N	BABR	Repl. by AUBERT,B 06B

[1] BELLE Collab. quotes $A_{J/\psi\pi^0}$ which is equal to $-C_{J/\psi\pi^0}$. NODE=S042CPL;LINKAGE=KA

$S_{J/\psi(1S)\pi^0}$ $(B^0 \to J/\psi(1S)\pi^0)$ NODE=S042SPL

VALUE	DOCUMENT ID	TECN	COMMENT
−0.88±0.32 OUR AVERAGE	Error includes scale factor of 2.2.		
$-0.59\pm0.19\pm0.03$	PAL 18	BELL	$e^+e^- \to \Upsilon(4S)$
$-1.23\pm0.21\pm0.04$	AUBERT 08AU	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$-0.65\pm0.21\pm0.05$	LEE 08A	BELL	Repl. by PAL 18
$-0.68\pm0.30\pm0.04$	AUBERT,B 06B	BABR	Repl. by AUBERT 08AU
$-0.72\pm0.42\pm0.09$	KATAOKA 04	BELL	Repl. by LEE 08A
$0.05\pm0.49\pm0.16$	AUBERT 03N	BABR	Repl. by AUBERT,B 06B

$C(B^0 \to J/\psi(1S)\rho^0)$ NODE=S042CPR

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{-0.063\pm0.056^{+0.019}_{-0.014}}$	[1] AAIJ 15J	LHCB	pp at 7, 8 TeV

[1] Time-dependent CP violation is measured in the $B^0 \to J/\psi\rho^0$ and was used to limit the size of penguin amplitude contributions to ϕ_s in $B^0_s \to J/\psi\phi$ decays to be between $[-1.05^\circ, 1.18^\circ]$ at 95% confidence level. NODE=S042CPR;LINKAGE=AA

$S(B^0 \to J/\psi(1S)\rho^0)$ NODE=S042SPR

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{-0.66^{+0.13}_{-0.12}{}^{+0.09}_{-0.03}}$	[1] AAIJ 15J	LHCB	pp at 7, 8 TeV

[1] Time-dependent CP violation is measured in the $B^0 \to J/\psi\rho^0$ and was used to limit the size of penguin amplitude contributions to ϕ_s in $B^0_s \to J/\psi\phi$ decays to be between $[-1.05^\circ, 1.18^\circ]$ at 95% confidence level. NODE=S042SPR;LINKAGE=AA

$C_{D^{(*)}_{CP}h^0}$ $(B^0 \to D^{(*)}_{CP}h^0)$ NODE=S042CDH

VALUE	DOCUMENT ID	TECN	COMMENT
−0.02±0.07±0.03	[1] ABDESSALAM 15		$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$-0.23\pm0.16\pm0.04$	AUBERT 07AJ	BABR	Repl. by ABDESSALAM 15

[1] BABAR and BELLE combined analysis uses CP-eigenstate decay modes $D^0 \to K^+K^-$, $K^0_S\pi^0$, $K^0_S\omega$, and $h^0 = \pi^0$, η, ω. NODE=S042CDH;LINKAGE=A

$S_{D^{(*)}_{CP} h^0}$ ($B^0 \to D^{(*)}_{CP} h^0$)

NODE=S042SDH
NODE=S042SDH

VALUE	DOCUMENT ID	TECN	COMMENT
−0.66±0.10±0.06	[1] ABDESSALAM 15		$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
−0.56±0.23±0.05	AUBERT 07AJ	BABR	Repl. by ABDESSALAM 15

[1] BABAR and BELLE combined analysis uses CP-eigenstate decay modes $D^0 \to K^+ K^-$, $K^0_S \pi^0$, $K^0_S \omega$, and $h^0 = \pi^0$, η, ω. NODE=S042SDH;LINKAGE=A

$C_{K^0 \pi^0}$ ($B^0 \to K^0 \pi^0$)

NODE=S042CKP
NODE=S042CKP

VALUE	DOCUMENT ID		TECN	COMMENT
0.00±0.08 OUR AVERAGE				
−0.01±0.12±0.04	[1] ADACHI	24	BELL	$e^+ e^- \to \Upsilon(4S)$
−0.14±0.13±0.06	[2] FUJIKAWA	10A	BELL	$e^+ e^- \to \Upsilon(4S)$
0.13±0.13±0.03	AUBERT	09I	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.06±0.15±0.04	[3] ADACHI	24	BELL	$e^+ e^- \to \Upsilon(4S)$
$-0.04^{+0.14}_{-0.15}\pm0.05$	[4] ADACHI	23E	BELL	$e^+ e^- \to \Upsilon(4S)$
0.24±0.15±0.03	AUBERT	08E	BABR	Repl. by AUBERT 09I
0.05±0.14±0.05	[2] CHAO	07	BELL	Repl. by FUJIKAWA 10A
0.06±0.18±0.03	AUBERT	05Y	BABR	Repl. by AUBERT 08E
−0.16±0.29±0.05	[2,5] CHAO	05A	BELL	Repl. by CHEN 05B
0.11±0.20±0.09	[2] CHEN	05B	BELL	Repl. by CHAO 07
−0.03±0.36±0.11	[2] AUBERT	04M	BABR	Repl. by AUBERT,B 04M
$0.40^{+0.27}_{-0.28}\pm0.09$	[6] AUBERT,B	04M	BABR	Repl. by AUBERT 05Y

OCCUR=2

[1] This is the combined result of this analysis (ADACHI 24) and ADACHI 23E. NODE=S042CKP;LINKAGE=C
[2] Reports A which is equal to $-C$. NODE=S042CKP;LINKAGE=A
[3] The measurement is using BELL II data reported in ADACHI 24. The combination with ADACHI 23E is also reported. NODE=S042CKP;LINKAGE=B
[4] The result has been combined with ADACHI 24. NODE=S042CKP;LINKAGE=D
[5] Corresponds to a 90% CL interval of $-0.33 < A_{CP} < 0.64$. NODE=S042CKP;LINKAGE=CO
[6] Based on a total signal yield of 122 ± 16 events. NODE=S042CKP;LINKAGE=AU

$S_{K^0 \pi^0}$ ($B^0 \to K^0 \pi^0$)

NODE=S042SKP
NODE=S042SKP

VALUE	DOCUMENT ID		TECN	COMMENT
0.64±0.13 OUR AVERAGE				
$0.75^{+0.20}_{-0.23}\pm0.04$	ADACHI	23E	BELL	$e^+ e^- \to \Upsilon(4S)$
0.67±0.31±0.08	FUJIKAWA	10A	BELL	$e^+ e^- \to \Upsilon(4S)$
0.55±0.20±0.03	AUBERT	09I	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.40±0.23±0.03	AUBERT	08E	BABR	Repl. by AUBERT 09I
0.33±0.35±0.08	CHAO	07	BELL	Repl. by FUJIKAWA 10A
$0.35^{+0.30}_{-0.33}\pm0.04$	AUBERT	05Y	BABR	Repl. by AUBERT 08E
0.32±0.61±0.13	CHEN	05B	BELL	Repl. by CHAO 07
$0.48^{+0.38}_{-0.47}\pm0.06$	[1] AUBERT,B	04M	BABR	Repl. by AUBERT 05Y

[1] Based on a total signal yield of 122 ± 16 events. NODE=S042SKP;LINKAGE=AU

$C_{\eta'(958) K^0_S}$ ($B^0 \to \eta'(958) K^0_S$)

NODE=S042Y1

See updated measurements in $C_{\eta' K^0}$

NODE=S042Y1
NODE=S042Y1

VALUE	DOCUMENT ID		TECN	COMMENT
−0.04±0.20 OUR AVERAGE	Error includes scale factor of 2.5.			
−0.21±0.10±0.02	AUBERT	05M	BABR	$e^+ e^- \to \Upsilon(4S)$
0.19±0.11±0.05	[1] CHEN	05B	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.26±0.22±0.03	[1] ABE	03C	BELL	Repl. by ABE 03H
0.01±0.16±0.04	[1] ABE	03H	BELL	Repl. by CHEN 05B
0.10±0.22±0.04	AUBERT	03W	BABR	Repl. by AUBERT 05M
$-0.13\pm0.32^{+0.06}_{-0.09}$	[1] CHEN	02B	BELL	Repl. by ABE 03C

[1] BELLE Collab. quotes $A_{\eta'(958) K^0_S}$ which is equal to $-C_{\eta'(958) K^0_S}$. NODE=S042Y1;LINKAGE=A

$S_{\eta'(958)K^0_S}$ ($B^0 \to \eta'(958)K^0_S$)

NODE=S042Y2

See updated measurements in $S_{\eta' K^0}$

NODE=S042Y2
NODE=S042Y2

VALUE	DOCUMENT ID		TECN	COMMENT
0.43±0.17 OUR AVERAGE	Error includes scale factor of 1.5.			
0.30±0.14±0.02	AUBERT	05M	BABR	$e^+e^- \to \Upsilon(4S)$
0.65±0.18±0.04	CHEN	05B	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.71\pm0.37^{+0.05}_{-0.06}$	ABE	03C	BELL	Repl. by ABE 03H
0.43±0.27±0.05	ABE	03H	BELL	Repl. by CHEN 05B
0.02±0.34±0.03	AUBERT	03W	BABR	Repl. by AUBERT 05M
$0.28\pm0.55^{+0.07}_{-0.08}$	CHEN	02B	BELL	Repl. by ABE 03C

$C_{\eta' K^0}$ ($B^0 \to \eta' K^0$)

NODE=S042CEK
NODE=S042CEK

−0.08±0.04 OUR AVERAGE Error includes scale factor of 1.1. [−0.06 ± 0.04 OUR 2024 AVERAGE]

NEW

VALUE	DOCUMENT ID		TECN	COMMENT
−0.19±0.08±0.03	[1] ADACHI	24P	BEL2	$e^+e^- \to \Upsilon(4S)$
−0.03±0.05±0.04	[2] SANTELJ	14	BELL	$e^+e^- \to \Upsilon(4S)$
−0.08±0.06±0.02	AUBERT	09I	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.16±0.07±0.03	[3] AUBERT	07A	BABR	Repl. by AUBERT 09I
0.01±0.07±0.05	[2,3] CHEN	07	BELL	Repl. by SANTELJ 14

[1] Asymmetries are measured using $B^0 \to \eta' K^0_S$ decays, with $\eta' \to \eta(\to \gamma\gamma)\pi^+\pi^-$ and $\eta' \to \rho(\to \pi^+\pi^-)\gamma$.

NODE=S042CEK;LINKAGE=A

[2] The paper reports A, which is equal to $-C$.

NODE=S042CEK;LINKAGE=CH

[3] The mixing-induced CP violation is reported with a significance of more than 5 standard deviations in this $b \to s$ penguin dominated mode.

NODE=S042CEK;LINKAGE=AU

$S_{\eta' K^0}$ ($B^0 \to \eta' K^0$)

NODE=S042SEK
NODE=S042SEK

0.64±0.05 OUR AVERAGE
[0.63 ± 0.06 OUR 2024 AVERAGE]

NEW

VALUE	DOCUMENT ID		TECN	COMMENT
0.67±0.10±0.03	[1] ADACHI	24P	BEL2	$e^+e^- \to \Upsilon(4S)$
0.68±0.07±0.03	SANTELJ	14	BELL	$e^+e^- \to \Upsilon(4S)$
0.57±0.08±0.02	AUBERT	09I	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.58±0.10±0.03	[2] AUBERT	07A	BABR	Repl. by AUBERT 09I
0.64±0.10±0.04	[2] CHEN	07	BELL	Repl. by SANTELJ 14

[1] Asymmetries are measured using $B^0 \to \eta' K^0_S$ decays, with $\eta' \to \eta(\to \gamma\gamma)\pi^+\pi^-$ and $\eta' \to \rho(\to \pi^+\pi^-)\gamma$.

NODE=S042SEK;LINKAGE=A

[2] The mixing-induced CP violation is reported with a significance of more than 5 standard deviations in this $b \to s$ penguin dominated mode.

NODE=S042SEK;LINKAGE=AU

$C_{\omega K^0_S}$ ($B^0 \to \omega K^0_S$)

NODE=S042CW1
NODE=S042CW1

VALUE	DOCUMENT ID		TECN	COMMENT
0.0 ±0.4 OUR AVERAGE	Error includes scale factor of 3.0.			
0.36±0.19±0.05	[1] CHOBANOVA	14	BELL	$e^+e^- \to \Upsilon(4S)$
$-0.52^{+0.22}_{-0.20}\pm0.03$	AUBERT	09I	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.09±0.29±0.06	[1] CHAO	07	BELL	Repl. by CHOBANOVA 14
$-0.55^{+0.28}_{-0.26}\pm0.03$	AUBERT,B	06E	BABR	Repl. by AUBERT 09I
−0.27±0.48±0.15	[1] CHEN	05B	BELL	Repl. by CHAO 07

[1] Belle Collab. quotes $A_{\omega K^0_S}$ which is equal to $-C_{\omega K^0_S}$.

NODE=S042CW1;LINKAGE=BA

$S_{\omega K^0_S}$ ($B^0 \to \omega K^0_S$)

NODE=S042SW1
NODE=S042SW1

VALUE	DOCUMENT ID		TECN	COMMENT
0.70±0.21 OUR AVERAGE				
0.91±0.32±0.05	CHOBANOVA	14	BELL	$e^+e^- \to \Upsilon(4S)$
$0.55^{+0.26}_{-0.29}\pm0.02$	AUBERT	09I	BABR	$e^+e^- \to \Upsilon(4S)$

• • • We do not use the following data for averages, fits, limits, etc. • • •

$0.11 \pm 0.46 \pm 0.07$	CHAO	07	BELL	Repl. by CHOBANOVA 14
$0.51^{+0.35}_{-0.39} \pm 0.02$	AUBERT,B	06E	BABR	Repl. by AUBERT 09I
$0.76 \pm 0.65^{+0.13}_{-0.16}$	CHEN	05B	BELL	Repl. by CHAO 07

$C(B^0 \to K^0_S \pi^0 \pi^0)$

NODE=S042CK2
NODE=S042CK2

VALUE	DOCUMENT ID		TECN	COMMENT
-0.21 ± 0.20 OUR AVERAGE				
$-0.28 \pm 0.21 \pm 0.04$	[1] YUSA	19	BELL	$e^+ e^- \to \Upsilon(4S)$
$0.23 \pm 0.52 \pm 0.13$	AUBERT	07AQ	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Reports value of A which is equal to $-C$. NODE=S042CK2;LINKAGE=A

$S(B^0 \to K^0_S \pi^0 \pi^0)$

NODE=S042SK2
NODE=S042SK2

VALUE	DOCUMENT ID		TECN	COMMENT
$0.89^{+0.27}_{-0.30}$ OUR AVERAGE				
$0.92^{+0.27}_{-0.31} \pm 0.11$	YUSA	19	BELL	$e^+ e^- \to \Upsilon(4S)$
$0.72 \pm 0.71 \pm 0.08$	AUBERT	07AQ	BABR	$e^+ e^- \to \Upsilon(4S)$

$C_{\rho^0 K^0_S}(B^0 \to \rho^0 K^0_S)$

NODE=S042CX7
NODE=S042CX7

VALUE	DOCUMENT ID		TECN	COMMENT
-0.04 ± 0.20 OUR AVERAGE				
$-0.05 \pm 0.26 \pm 0.10$	[1] AUBERT	09AU	BABR	$e^+ e^- \to \Upsilon(4S)$
$-0.03^{+0.24}_{-0.23} \pm 0.15$	[2,3] DALSENO	09	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.64 \pm 0.41 \pm 0.20$	AUBERT	07F	BABR	Repl. by AUBERT 09AU

[1] Uses Dalitz plot analysis of $B^0 \to K^0 \pi^+ \pi^-$ decays and the first of two equivalent solutions is used. NODE=S042CX7;LINKAGE=AU

[2] Quotes $A_{\rho^0 K^0_S}$ which is equal to $-C_{\rho^0 K^0_S}$. NODE=S042CX7;LINKAGE=BA

[3] Uses Dalitz plot analysis of $B^0 \to K^0 \pi^+ \pi^-$ decays and the first of two consistent solutions that may be preferred. NODE=S042CX7;LINKAGE=DL

$S_{\rho^0 K^0_S}(B^0 \to \rho^0 K^0_S)$

NODE=S042SX7
NODE=S042SX7

VALUE	DOCUMENT ID		TECN	COMMENT
$0.50^{+0.17}_{-0.21}$ OUR AVERAGE				
$0.35^{+0.26}_{-0.31} \pm 0.07$	[1] AUBERT	09AU	BABR	$e^+ e^- \to \Upsilon(4S)$
$0.64^{+0.19}_{-0.25} \pm 0.13$	[2] DALSENO	09	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.20 \pm 0.52 \pm 0.24$	AUBERT	07F	BABR	Repl. by AUBERT 09AU

[1] Uses Dalitz plot analysis of $B^0 \to K^0 \pi^+ \pi^-$ decays and the first of two equivalent solutions is used. NODE=S042SX7;LINKAGE=AU

[2] Uses Dalitz plot analysis of $B^0 \to K^0 \pi^+ \pi^-$ decays and the first of two consistent solutions that may be preferred. NODE=S042SX7;LINKAGE=DL

$C_{f_0(980) K^0_S}(B^0 \to f_0(980) K^0_S)$

NODE=S042CF1
NODE=S042CF1

VALUE	DOCUMENT ID		TECN	COMMENT
0.29 ± 0.20 OUR AVERAGE				
$0.28 \pm 0.24 \pm 0.09$	[1] LEES	12O	BABR	$e^+ e^- \to \Upsilon(4S)$
$0.30 \pm 0.29 \pm 0.14$	[2,3] NAKAHAMA	10	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.08 \pm 0.19 \pm 0.05$	[4] AUBERT	09AU	BABR	Repl. by LEES 12O
$0.06 \pm 0.17 \pm 0.11$	[2,5] DALSENO	09	BELL	Repl. by NAKAHAMA 10
$-0.41 \pm 0.23 \pm 0.07$	[2] AUBERT	07AX	BABR	Repl. by AUBERT 09AU
$0.15 \pm 0.15 \pm 0.07$	[2] CHAO	07	BELL	Repl. by DALSENO 09
$0.39 \pm 0.27 \pm 0.09$	[2] CHEN	05B	BELL	Repl. by CHAO 07

[1] Uses Dalitz plot analysis of the $B^0 \to K^0_S K^+ K^-$ decay. NODE=S042CF1;LINKAGE=LA

[2] Quotes $A_{f_0(980) K^0_S}$ which is equal to $-C_{f_0(980) K^0_S}$. NODE=S042CF1;LINKAGE=BA

[3] Uses Dalitz plot analysis of $B^0 \to K^0_S K^+ K^-$ decays and the first of four consistent solutions that may be preferred. NODE=S042CF1;LINKAGE=NA

[4] Uses Dalitz plot analysis of $B^0 \to K^0 \pi^+ \pi^-$ decays and the first of two equivalent solutions is used. NODE=S042CF1;LINKAGE=AU

[5] Uses Dalitz plot analysis of $B^0 \to K^0 \pi^+ \pi^-$ decays and the first of two consistent solutions that may be preferred. NODE=S042CF1;LINKAGE=DL

$S_{f_0(980) K^0_S}$ ($B^0 \to f_0(980) K^0_S$)

NODE=S042SF1

VALUE	DOCUMENT ID		TECN	COMMENT
-0.50 ± 0.16 OUR AVERAGE				
$-0.55\pm0.18\pm0.12$	[1] LEES	12O	BABR	$e^+ e^- \to \Upsilon(4S)$
$-0.43^{+0.22}_{-0.20}\pm0.14$	[2] DALSENO	09	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-0.96^{+0.21}_{-0.04}\pm0.04$	[3] AUBERT	09AU	BABR	Repl. by LEES 12O
$-0.25\pm0.26\pm0.10$	[4] AUBERT	07AX	BABR	Repl. by AUBERT 09AU
$0.18\pm0.23\pm0.11$	CHAO	07	BELL	Repl. by DALSENO 09
$0.47\pm0.41\pm0.08$	CHEN	05B	BELL	Repl. by CHAO 07

[1] Uses Dalitz plot analysis of the $B^0 \to K^0_S K^+ K^-$ decay. NODE=S042SF1;LINKAGE=LA

[2] Uses Dalitz plot analysis of $B^0 \to K^0 \pi^+ \pi^-$ decays and the first of two consistent solutions that may be preferred. NODE=S042SF1;LINKAGE=DL

[3] Uses Dalitz plot analysis of $B^0 \to K^0 \pi^+ \pi^-$ decays and the first of two equivalent solutions is used. NODE=S042SF1;LINKAGE=AU

[4] Reports β_{eff}. We quote S obtained from epaps: E-PRLTAO-99-076741. NODE=S042SF1;LINKAGE=AX

$S_{f_2(1270) K^0_S}$ ($B^0 \to f_2(1270) K^0_S$)

NODE=S042SF2

VALUE	DOCUMENT ID		TECN	COMMENT
$-0.48\pm0.52\pm0.12$	[1] AUBERT	09AU	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Uses Dalitz plot analysis of $B^0 \to K^0 \pi^+ \pi^-$ decays and the first of two equivalent solutions is used. NODE=S042SF2;LINKAGE=AU

$C_{f_2(1270) K^0_S}$ ($B^0 \to f_2(1270) K^0_S$)

NODE=S042CF2

VALUE	DOCUMENT ID		TECN	COMMENT
$0.28^{+0.35}_{-0.40}\pm0.11$	[1] AUBERT	09AU	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Uses Dalitz plot analysis of $B^0 \to K^0 \pi^+ \pi^-$ decays and the first of two equivalent solutions is used. NODE=S042CF2;LINKAGE=AU

$S_{f_x(1300) K^0_S}$ ($B^0 \to f_x(1300) K^0_S$)

NODE=S042SF3

VALUE	DOCUMENT ID		TECN	COMMENT
$-0.20\pm0.52\pm0.10$	[1] AUBERT	09AU	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Uses Dalitz plot analysis of $B^0 \to K^0 \pi^+ \pi^-$ decays and the first of two equivalent solutions is used. NODE=S042SF3;LINKAGE=AU

$C_{f_x(1300) K^0_S}$ ($B^0 \to f_x(1300) K^0_S$)

NODE=S042CF3

VALUE	DOCUMENT ID		TECN	COMMENT
$0.13^{+0.33}_{-0.35}\pm0.10$	[1] AUBERT	09AU	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Uses Dalitz plot analysis of $B^0 \to K^0 \pi^+ \pi^-$ decays and the first of two equivalent solutions is used. NODE=S042CF3;LINKAGE=AU

$S_{K^0 \pi^+ \pi^-}$ ($B^0 \to K^0 \pi^+ \pi^-$ nonresonant)

NODE=S042SF4

VALUE	DOCUMENT ID		TECN	COMMENT
$-0.01\pm0.31\pm0.10$	[1] AUBERT	09AU	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Uses Dalitz plot analysis of $B^0 \to K^0 \pi^+ \pi^-$ decays and the first of two equivalent solutions is used. NODE=S042SF4;LINKAGE=AU

$C_{K^0 \pi^+ \pi^-}$ ($B^0 \to K^0 \pi^+ \pi^-$ nonresonant)

NODE=S042CF4

VALUE	DOCUMENT ID		TECN	COMMENT
$0.01\pm0.25\pm0.08$	[1] AUBERT	09AU	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Uses Dalitz plot analysis of $B^0 \to K^0 \pi^+ \pi^-$ decays and the first of two equivalent solutions is used. NODE=S042CF4;LINKAGE=AU

$C_{K^0_S K^0_S}$ ($B^0 \to K^0_S K^0_S$)

NODE=S042CKS

VALUE	DOCUMENT ID		TECN	COMMENT
$0.0\ \pm0.4$ OUR AVERAGE	Error includes scale factor of 1.4.			
$0.38\pm0.38\pm0.05$	[1] NAKAHAMA	08	BELL	$e^+ e^- \to \Upsilon(4S)$
$-0.40\pm0.41\pm0.06$	AUBERT,BE	06C	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Reports $A_{K^0_S K^0_S}$ which equals to $-C_{K^0_S K^0_S}$. NODE=S042CKS;LINKAGE=NA

$S_{K^0_S K^0_S}$ ($B^0 \to K^0_S K^0_S$)

NODE=S042SKS

VALUE	DOCUMENT ID	TECN	COMMENT
−0.8 ±0.5 OUR AVERAGE			
$-0.38^{+0.69}_{-0.77}\pm0.09$	NAKAHAMA 08	BELL	$e^+e^- \to \Upsilon(4S)$
$-1.28^{+0.80}_{-0.73}{}^{+0.11}_{-0.16}$	AUBERT,BE 06C	BABR	$e^+e^- \to \Upsilon(4S)$

$C_{K^+K^-K^0_S}$ ($B^0 \to K^+K^-K^0_S$ nonresonant)

NODE=S042CX2

VALUE	DOCUMENT ID	TECN	COMMENT
0.06 ±0.08 OUR AVERAGE			
0.02 ±0.09 ±0.03	[1,2] LEES 12O	BABR	$e^+e^- \to \Upsilon(4S)$
0.14 ±0.11 ±0.09	[3,4] NAKAHAMA 10	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.054±0.102±0.060	[3,5] AUBERT 07AX	BABR	Repl. by LEES 12O
0.09 ±0.10 ±0.05	[3,5] CHAO 07	BELL	Repl. by NAKAHAMA 10
0.10 ±0.14 ±0.04	[5] AUBERT 05T	BABR	Repl. by AUBERT 07AX
0.09 ±0.12 ±0.07	[3] CHEN 05B	BELL	Repl. by CHAO 07
−0.10 ±0.19 ±0.10	[5] AUBERT,B 04V	BABR	Repl. by AUBERT 05T
$0.40\pm0.33{}^{+0.28}_{-0.10}$	[3] ABE 03C	BELL	Repl. by ABE 03H
0.17 ±0.16 ±0.04	[3,5] ABE 03H	BELL	Repl. by CHEN 05B

[1] Uses Dalitz plot analysis of the $B^0 \to K^0_S K^+K^-$ decay. NODE=S042CX2;LINKAGE=LA

[2] This measurement is performed on all the isobar components, excluding ϕK^0_S and $f_0(980)K^0_S$. NODE=S042CX2;LINKAGE=LB

[3] Quotes $A_{K^+K^-K^0_S}$ which is equal to $-C_{K^+K^-K^0_S}$. NODE=S042CX2;LINKAGE=A

[4] Uses Dalitz plot analysis of $B^0 \to K^0_S K^+K^-$ decays and the first of four consistent solutions that may be preferred. NODE=S042CX2;LINKAGE=NA

[5] Excludes the events from $B^0 \to \phi K^0_S$ decay. The results are derived from a combined sample of $K^+K^-K^0_S$ and $K^+K^-K^0_L$ decays. NODE=S042CX2;LINKAGE=AB

$S_{K^+K^-K^0_S}$ ($B^0 \to K^+K^-K^0_S$ nonresonant)

NODE=S042SX2

VALUE	DOCUMENT ID	TECN	COMMENT
−0.66 ±0.11 OUR AVERAGE			
−0.65 ±0.12 ±0.03	[1,2] LEES 12O	BABR	$e^+e^- \to \Upsilon(4S)$
$-0.68\pm0.15{}^{+0.21}_{-0.13}$	[3] CHAO 07	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$-0.764\pm0.111{}^{+0.071}_{-0.040}$	[3,4] AUBERT 07AX	BABR	Repl. by LEES 12O
−0.42 ±0.17 ±0.03	[3,5] AUBERT 05T	BABR	Repl. by AUBERT 07AX
−0.49 ±0.18 ±0.04	CHEN 05B	BELL	Repl. by CHAO 07
−0.56 ±0.25 ±0.04	[3,6] AUBERT,B 04V	BABR	Repl. by AUBERT 05T
−0.49 ±0.43 ±0.11	ABE 03C	BELL	Repl. by ABE 03H
−0.51 ±0.26 ±0.05	[3,7] ABE 03H	BELL	Repl. by CHEN 05B

[1] Uses Dalitz plot analysis of the $B^0 \to K^0_S K^+K^-$ decay. NODE=S042SX2;LINKAGE=LA

[2] This measurement is performed on all the isobar components, excluding ϕK^0_S and $f_0(980)K^0_S$. Note that the nonresonant component is not a *CP* eigenstate. NODE=S042SX2;LINKAGE=LB

[3] Excludes events from $B^0 \to \phi K^0_S$ decay. The results are derived from a combined sample of $K^+K^-K^0_S$ and $K^+K^-K^0_L$ decays. NODE=S042SX2;LINKAGE=AA

[4] Reports β_{eff}. We quote *S* obtained from epaps: E-PRLTAO-99-076741. NODE=S042SX2;LINKAGE=AX

[5] The measured *CP*-even final states fraction is 0.89 ± 0.08 ± 0.06. NODE=S042SX2;LINKAGE=AE

[6] The measured *CP*-even final states fraction is 0.98 ± 0.15 ± 0.04. NODE=S042SX2;LINKAGE=AU

[7] The measured *CP*-even final states fraction is 1.03 ± 0.15 ± 0.05. NODE=S042SX2;LINKAGE=AB

$C_{K^+K^-K^0_S}$ ($B^0 \to K^+K^-K^0_S$ inclusive)

NODE=S042CKK

VALUE	DOCUMENT ID	TECN	COMMENT
0.015±0.077±0.053	[1,2] AUBERT 07AX	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Measured using full Dalitz plot fit including ϕ component. NODE=S042CKK;LINKAGE=AB

[2] The results are derived from a combined sample of $K^+K^-K^0_S$ and $K^+K^-K^0_L$ decays. NODE=S042CKK;LINKAGE=AU

$S_{K^+K^-K^0_S}$ ($B^0 \rightarrow K^+K^-K^0_S$ inclusive)

NODE=S042SKK

VALUE	DOCUMENT ID		TECN	COMMENT
−0.647±0.116±0.040	[1] AUBERT	07AX	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Measured using full Dalitz plot fit including ϕ component.

NODE=S042SKK;LINKAGE=AU

$C_{\phi K^0_S}$ ($B^0 \rightarrow \phi K^0_S$)

NODE=S042CX1

VALUE	DOCUMENT ID		TECN	COMMENT
−0.09±0.12 OUR AVERAGE				
−0.31±0.20±0.05	ADACHI	23I	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
0.05±0.18±0.05	[1] LEES	12O	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
−0.04±0.20±0.10	[2,3] NAKAHAMA	10	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.08±0.18±0.04	[2,4] AUBERT	07AX	BABR	Repl. by LEES 12O
−0.07±0.15±0.05	[2,4] CHEN	07	BELL	Repl. by NAKAHAMA 10
0.00±0.23±0.05	[4] AUBERT	05T	BABR	Repl. by AUBERT 07AX
−0.08±0.22±0.09	[2,4] CHEN	05B	BELL	Repl. by CHEN 07
0.01±0.33±0.10	[4] AUBERT,B	04G	BABR	Repl. by AUBERT 05T
0.56±0.41±0.16	[2] ABE	03C	BELL	Repl. by ABE 03H
0.15±0.29±0.07	[2] ABE	03H	BELL	Repl. by CHEN 05B

[1] Uses Dalitz plot analysis of the $B^0 \rightarrow K^0_S K^+ K^-$ decay.

NODE=S042CX1;LINKAGE=LA

[2] Quotes $A_{\phi K^0_S}$ which is equal to $-C_{\phi K^0_S}$.

NODE=S042CX1;LINKAGE=A

[3] Uses Dalitz plot analysis of $B^0 \rightarrow K^0_S K^+ K^-$ decays and the first of four consistent solutions that may be preferred.

NODE=S042CX1;LINKAGE=NA

[4] Result combines B-meson final states ϕK^0_S and ϕK^0_L by assuming $S_{\phi K^0_S} = -S_{\phi K^0_L}$

NODE=S042CX1;LINKAGE=AU

$S_{\phi K^0_S}$ ($B^0 \rightarrow \phi K^0_S$)

NODE=S042SX1

VALUE	DOCUMENT ID		TECN	COMMENT
0.58±0.12 OUR AVERAGE				
$0.54\pm0.26^{+0.06}_{-0.08}$	ADACHI	23I	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
0.66±0.17±0.07	[1] LEES	12O	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
0.50±0.21±0.06	[2] CHEN	07	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.21±0.26±0.11	[2,3] AUBERT	07AX	BABR	Repl. by LEES 12O
$0.50\pm0.25^{+0.07}_{-0.04}$	[2] AUBERT	05T	BABR	Repl. by AUBERT 07AX
0.08±0.33±0.09	[2] CHEN	05B	BELL	Repl. by CHEN 07
$0.47\pm0.34^{+0.08}_{-0.06}$	[2] AUBERT,B	04G	BABR	Repl. by AUBERT 05T
−0.73±0.64±0.22	ABE	03C	BELL	Repl. by ABE 03H
$-0.96\pm0.50^{+0.09}_{-0.11}$	ABE	03H	BELL	Repl. by CHEN 05B

[1] Uses Dalitz plot analysis of the $B^0 \rightarrow K^0_S K^+ K^-$ decay.

NODE=S042SX1;LINKAGE=LA

[2] Result combines B-meson final states ϕK^0_S and ϕK^0_L by assuming $S_{\phi K^0_S} = -S_{\phi K^0_L}$

NODE=S042SX1;LINKAGE=AU

[3] Reports β_{eff}. We quote S obtained from epaps: E-PRLTAO-99-076741.

NODE=S042SX1;LINKAGE=AX

$C_{K_S K_S K_S}$($B^0 \rightarrow K_S K_S K_S$)

NODE=S042CX5

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
−0.14±0.12 OUR AVERAGE					
−0.12±0.16±0.05		[1] KANG	21	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
−0.17±0.18±0.04		LEES	12I	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
[-0.45, 0.32]	95	[2] ADACHI	24G	BEL2	$e^+e^- \rightarrow \Upsilon(4S)$
0.02±0.21±0.05		AUBERT	07AT	BABR	Repl. by LEES 12I
−0.31±0.20±0.07		[1] CHEN	07	BELL	Repl. by KANG 21
$-0.34^{+0.28}_{-0.25}\pm0.05$		AUBERT,B	05	BABR	Repl. by AUBERT 07AT
−0.54±0.34±0.09		[1] SUMISAWA	05	BELL	Repl. by CHEN 07

[1] KANG 21 quotes $A_{K^0_S K^0_S K^0_S}$ which is equal to $-C_{K^0_S K^0_S K^0_S}$.

NODE=S042CX5;LINKAGE=BA

[2] The two-dimensional intervals at the 95.5 % CL using 362 fb^{-1} BELL II data.

NODE=S042CX5;LINKAGE=B

$S_{K_S K_S K_S}(B^0 \rightarrow K_S K_S K_S)$

NODE=S042SX5

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
-0.82 ± 0.17 OUR AVERAGE					
$-0.71 \pm 0.23 \pm 0.05$		KANG	21	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
$-0.94^{+0.24}_{-0.21} \pm 0.06$		LEES	12I	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
[-1, -0.41]	95	[1] ADACHI	24G	BEL2	$e^+ e^- \rightarrow \Upsilon(4S)$
$-0.71 \pm 0.24 \pm 0.04$		AUBERT	07AT	BABR	Repl. by LEES 12I
$0.30 \pm 0.32 \pm 0.08$		CHEN	07	BELL	Repl. by KANG 21
$-0.71^{+0.38}_{-0.32} \pm 0.04$		AUBERT,B	05	BABR	Repl. by AUBERT 07AT
$1.26 \pm 0.68 \pm 0.20$		SUMISAWA	05	BELL	Repl. by CHEN 07.

[1] The two-dimensional intervals at the 95.5 % CL using 362 fb^{-1} BELL II data. NODE=S042SX5;LINKAGE=A

$C_{K^0_S \pi^0 \gamma}(B^0 \rightarrow K^0_S \pi^0 \gamma)$

NODE=S042CKG

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-0.06 \pm 0.25 \pm 0.09$	[1] ADACHI	25	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
$0.36 \pm 0.33 \pm 0.04$	[2] AUBERT	08BA	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
$0.20 \pm 0.20 \pm 0.06$	[3,4] USHIRODA	06	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
$-1.0 \pm 0.5 \pm 0.2$	[2] AUBERT,B	05P	BABR	Repl. by AUBERT 08BA
$-0.03 \pm 0.34 \pm 0.11$	[4] USHIRODA	05	BELL	Repl. by USHIRODA 06

[1] Requires $0.6 < M_{K^0_S \pi^0} < 0.8$ GeV/c^2 or $1.0 < M_{K^0_S \pi^0} < 1.8$ GeV/c^2. NODE=S042CKG;LINKAGE=A

[2] Requires $1.1 < M_{K^0_S \pi^0} < 1.8$ GeV/c^2. NODE=S042CKG;LINKAGE=AU

[3] Requires $M_{K^0_S \pi^0} < 1.8$ GeV/c^2. NODE=S042CKG;LINKAGE=UH

[4] Reports $A_{K^0_S \pi^0 \gamma}$, which is $-C_{K^0_S \pi^0 \gamma}$. NODE=S042CKG;LINKAGE=US

$S_{K^0_S \pi^0 \gamma}(B^0 \rightarrow K^0_S \pi^0 \gamma)$

NODE=S042SKG

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.04^{+0.45}_{-0.44} \pm 0.10$	[1] ADACHI	25	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
$-0.78 \pm 0.59 \pm 0.09$	[2] AUBERT	08BA	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
$-0.10 \pm 0.31 \pm 0.07$	[3] USHIRODA	06	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
$0.9 \pm 1.0 \pm 0.2$	[2] AUBERT,B	05P	BABR	Repl. by AUBERT 08BA
$-0.58^{+0.46}_{-0.38} \pm 0.11$	USHIRODA	05	BELL	Repl. by USHIRODA 06

[1] Requires $0.6 < M_{K^0_S \pi^0} < 0.8$ GeV/c^2 or $1.0 < M_{K^0_S \pi^0} < 1.8$ GeV/c^2. NODE=S042SKG;LINKAGE=A

[2] Requires $1.1 < M_{K^0_S \pi^0} < 1.8$ GeV/c^2. NODE=S042SKG;LINKAGE=AU

[3] Requires $M_{K^0_S \pi^0} < 1.8$ GeV/c^2. NODE=S042SKG;LINKAGE=UH

$C_{K^0_S \pi^+ \pi^- \gamma}(B^0 \rightarrow K^0_S \pi^+ \pi^- \gamma)$

NODE=S042CK0

VALUE	DOCUMENT ID		TECN	COMMENT
$-0.39 \pm 0.20^{+0.03}_{-0.02}$	[1] DEL-AMO-SA..16		BABR	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Requires $M_{K\pi\pi} < 1.8$ GeV/c^2, 0.6 GeV/$c^2 < m_{\pi^+\pi^-} < 0.9$ GeV/c^2, $m_{K\pi} < 0.845$ GeV/c^2 or $m_{K\pi} > 0.945$ GeV/c^2. NODE=S042CK0;LINKAGE=A

$S_{K^0_S \pi^+ \pi^- \gamma}(B^0 \rightarrow K^0_S \pi^+ \pi^- \gamma)$

NODE=S042SK0

VALUE	DOCUMENT ID		TECN	COMMENT
$0.14 \pm 0.25 \pm 0.03$	[1] DEL-AMO-SA..16		BABR	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Requires $M_{K\pi\pi} < 1.8$ GeV/c^2, 0.6 GeV/$c^2 < m_{\pi^+\pi^-} < 0.9$ GeV/c^2, $m_{K\pi} < 0.845$ GeV/c^2 or $m_{K\pi} > 0.945$ GeV/c^2. NODE=S042SK0;LINKAGE=A

$C_{K^*(892)^0\gamma}$ ($B^0 \to K^*(892)^0\gamma$)

NODE=S042CX4
NODE=S042CX4

VALUE	DOCUMENT ID		TECN	COMMENT
0.03±0.10 OUR AVERAGE				
[−0.04 ± 0.16 OUR 2024 AVERAGE Scale factor = 1.2]				
0.10±0.13±0.04	[1] ADACHI	25	BELL	$e^+e^- \to \Upsilon(4S)$
−0.14±0.16±0.03	[1] AUBERT	08BA	BABR	$e^+e^- \to \Upsilon(4S)$
0.20±0.24±0.05	[1,2] USHIRODA	06	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.40±0.23±0.03	AUBERT,B	05P	BABR	Repl. by AUBERT 08BA
−0.57±0.32±0.09	[3] AUBERT,B	04Z	BABR	Repl. by AUBERT,B 05P

NEW

[1] Requires $0.8 < M_{K^0_S\pi^0} < 1.0$ GeV/c^2.
[2] Reports value of A which is equal to $-C$.
[3] Based on a total signal of 105 ± 14 events with $K^*(892)^0 \to K^0_S\pi^0$ only.

NODE=S042CX4;LINKAGE=UH
NODE=S042CX4;LINKAGE=AC
NODE=S042CX4;LINKAGE=AU

$S_{K^*(892)^0\gamma}$ ($B^0 \to K^*(892)^0\gamma$)

NODE=S042SX4
NODE=S042SX4

VALUE	DOCUMENT ID		TECN	COMMENT
−0.08±0.17 OUR AVERAGE				
[−0.15 ± 0.22 OUR 2024 AVERAGE]				
$0.00^{+0.27}_{-0.26}\pm0.03$	[1] ADACHI	25	BELL	$e^+e^- \to \Upsilon(4S)$
−0.03±0.29±0.03	[1] AUBERT	08BA	BABR	$e^+e^- \to \Upsilon(4S)$
$-0.32^{+0.36}_{-0.33}\pm0.05$	[1] USHIRODA	06	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.21±0.40±0.05	AUBERT,B	05P	BABR	Repl. by AUBERT 08BA
$-0.79^{+0.63}_{-0.50}\pm0.10$	[2] USHIRODA	05	BELL	Repl. by USHIRODA 06
0.25±0.63±0.14	[3] AUBERT,B	04Z	BABR	Repl. by AUBERT,B 05P

NEW

[1] Requires $0.8 < M_{K^0_S\pi^0} < 1.0$ GeV/c^2.
[2] Assumes $C(B^0 \to K^*(892)^0\gamma) = 0$.
[3] Based on a total signal of 105 ± 14 events with $K^*(892)^0 \to K^0_S\pi^0$ only.

NODE=S042SX4;LINKAGE=UH
NODE=S042SX4;LINKAGE=US
NODE=S042SX4;LINKAGE=AU

$C_{\eta K^0\gamma}$ ($B^0 \to \eta K^0\gamma$)

NODE=S042CEG
NODE=S042CEG

VALUE	DOCUMENT ID		TECN	COMMENT
0.1 ±0.4 OUR AVERAGE Error includes scale factor of 1.4.				
0.48±0.41±0.07	[1,2] NAKANO	18	BELL	$e^+e^- \to \Upsilon(4S)$
$-0.32^{+0.40}_{-0.39}\pm0.07$	[3] AUBERT	09	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assuming $m_{\eta K^0_S} < 2.1$ GeV.
[2] Reversed the sign for C=-A.
[3] Assuming $m_{\eta K} < 3.25$ GeV.

NODE=S042CEG;LINKAGE=A
NODE=S042CEG;LINKAGE=B
NODE=S042CEG;LINKAGE=AR

$S_{\eta K^0\gamma}$ ($B^0 \to \eta K^0\gamma$)

NODE=S042SEG
NODE=S042SEG

VALUE	DOCUMENT ID		TECN	COMMENT
−0.5 ±0.5 OUR AVERAGE Error includes scale factor of 1.2.				
−1.32±0.77±0.36	[1] NAKANO	18	BELL	$e^+e^- \to \Upsilon(4S)$
$-0.18^{+0.49}_{-0.46}\pm0.12$	[2] AUBERT	09	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Assuming $m_{\eta K^0_S} < 2.1$ GeV.
[2] Assuming $m_{\eta K} < 3.25$ GeV.

NODE=S042SEG;LINKAGE=A
NODE=S042SEG;LINKAGE=AR

$C_{K^0\phi\gamma}$ ($B^0 \to K^0\phi\gamma$)

NODE=S042CPG
NODE=S042CPG

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{-0.35\pm0.58^{+0.10}_{-0.23}}$	[1] SAHOO	11A	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Reports value of A, which is equal to $-C$.

NODE=S042CPG;LINKAGE=SA

$S_{K^0\phi\gamma}$ ($B^0 \to K^0\phi\gamma$)

NODE=S042SPG
NODE=S042SPG

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.74^{+0.72+0.10}_{-1.05-0.24}}$	SAHOO	11A	BELL	$e^+e^- \to \Upsilon(4S)$

$C(B^0 \to K^0_S \rho^0 \gamma)$ NODE=S042CKR

VALUE	DOCUMENT ID		TECN	COMMENT
−0.05±0.18±0.06	[1,2] LI	08F	BELL	$e^+ e^- \to \Upsilon(4S)$

NODE=S042CKR

[1] Requires $M_{K^0_S \pi^+ \pi^-} < 1.8$ GeV/c^2 and $0.6 < M_{\pi^+\pi^-} < 0.9$ GeV/c^2 . NODE=S042CKR;LINKAGE=LI

[2] Reports value of A_{eff} which is equal to $-C$, and includes the non-resonant $\pi^+\pi^-$ contribution in the ρ^0 region. NODE=S042CKR;LINKAGE=MC

$S(B^0 \to K^0_S \rho^0 \gamma)$ NODE=S042SKR

VALUE	DOCUMENT ID		TECN	COMMENT
−0.04±0.23 OUR AVERAGE				
$-0.18\pm0.32^{+0.06}_{-0.05}$	[1] DEL-AMO-SA...	16	BABR	$e^+ e^- \to \Upsilon(4S)$
$0.11\pm0.33^{+0.05}_{-0.09}$	[2] LI	08F	BELL	$e^+ e^- \to \Upsilon(4S)$

NODE=S042SKR

[1] Requires $M_{K\pi\pi} < 1.8$ GeV/c^2, 0.6 GeV/c^2 $< m_{\pi^+\pi^-} < 0.9$ GeV/c^2, $m_{K\pi} <$ 0.845 GeV/c^2 or $m_{K\pi} > 0.945$ GeV/c^2. NODE=S042SKR;LINKAGE=A

[2] Requires $M_{K\pi\pi} < 1.8$ GeV/c^2. NODE=S042SKR;LINKAGE=LI

$C(B^0 \to \rho^0 \gamma)$ NODE=S042CX8

VALUE	DOCUMENT ID		TECN	COMMENT
0.44±0.49±0.14	[1] USHIRODA	08	BELL	$e^+ e^- \to \Upsilon(4S)$

NODE=S042CX8

[1] Reports value of A which is equal to $-C$. NODE=S042CX8;LINKAGE=A

$S(B^0 \to \rho^0 \gamma)$ NODE=S042SX8

VALUE	DOCUMENT ID		TECN	COMMENT
−0.83±0.65±0.18	USHIRODA	08	BELL	$e^+ e^- \to \Upsilon(4S)$

NODE=S042SX8

$C_{\pi\pi}(B^0 \to \pi^+\pi^-)$ NODE=S042CPI

$C_{\pi\pi}$ is defined as $(1-|\lambda|^2)/(1+|\lambda|^2)$, where the quantity $\lambda = q/p\ \overline{A}_f/A_f$ is a phase convention independent observable quantity for the final state f. For details, see the review on "CP Violation" in the Reviews section. NODE=S042CPI

VALUE	DOCUMENT ID		TECN	COMMENT
−0.314±0.030 OUR AVERAGE				
−0.311±0.045±0.015	AAIJ	21O	LHCB	pp at 13 TeV
−0.34 ±0.06 ±0.01	AAIJ	18O	LHCB	pp at 7, 8 TeV
−0.33 ±0.06 ±0.03	[1] DALSENO	13	BELL	$e^+ e^- \to \Upsilon(4S)$
−0.25 ±0.08 ±0.02	LEES	13D	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.38 ±0.15 ±0.02	AAIJ	13BO	LHCB	Repl. by AAIJ 18O
−0.21 ±0.09 ±0.02	AUBERT	07AF	BABR	Repl. by LEES 13D
−0.55 ±0.08 ±0.05	[1] ISHINO	07	BELL	Repl. by DALSENO 13
−0.56 ±0.12 ±0.06	[1] ABE	05D	BELL	Repl. by ISHINO 07
−0.09 ±0.15 ±0.04	AUBERT,BE	05	BABR	Repl. by AUBERT 07AF
−0.58 ±0.15 ±0.07	[1] ABE	04E	BELL	Repl. by ABE 05D
−0.77 ±0.27 ±0.08	[1] ABE	03G	BELL	Repl. by ABE 04E.
$-0.94\ ^{+0.31}_{-0.25}\ \pm0.09$	[1] ABE	02M	BELL	Repl. by ABE 03G
$-0.25\ ^{+0.45}_{-0.47}\ \pm0.14$	[2] AUBERT	02D	BABR	Repl. by AUBERT 02Q
−0.30 ±0.25 ±0.04	[3] AUBERT	02Q	BABR	Repl. by AUBERT,BE 05

NODE=S042CPI

[1] Paper reports $A_{\pi\pi}$ which equals to $-C_{\pi\pi}$. NODE=S042CPI;LINKAGE=MA

[2] Corresponds to 90% confidence range $-1.0 < C_{\pi\pi} < 0.47$. NODE=S042CPI;LINKAGE=AD

[3] Corresponds to 90% confidence range $-0.72 < C_{\pi\pi} < 0.12$. NODE=S042CPI;LINKAGE=BR

$S_{\pi\pi}(B^0 \to \pi^+\pi^-)$ NODE=S042SPI

$S_{\pi\pi} = 2\text{Im}\lambda/(1+|\lambda|^2)$, see the note in the $C_{\pi\pi}$ datablock above. NODE=S042SPI

VALUE	DOCUMENT ID		TECN	COMMENT
−0.670±0.030 OUR AVERAGE				
−0.706±0.042±0.013	AAIJ	21O	LHCB	pp at 13 TeV
−0.63 ±0.05 ±0.01	AAIJ	18O	LHCB	pp at 7, 8 TeV
−0.64 ±0.08 ±0.03	[1] DALSENO	13	BELL	$e^+ e^- \to \Upsilon(4S)$
−0.68 ±0.10 ±0.03	LEES	13D	BABR	$e^+ e^- \to \Upsilon(4S)$

NODE=S042SPI

• • • We do not use the following data for averages, fits, limits, etc. • • •

$-0.71 \pm0.13 \pm0.02$		AAIJ	13BO	LHCB	Repl. by AAIJ 18O
$-0.60 \pm0.11 \pm0.03$		AUBERT	07AF	BABR	Repl. by LEES 13D
$-0.61 \pm0.10 \pm0.04$		ISHINO	07	BELL	Repl. by DALSENO 13
$-0.67 \pm0.16 \pm0.06$	[2]	ABE	05D	BELL	Repl. by ISHINO 07
$-0.30 \pm0.17 \pm0.03$		AUBERT,BE	05	BABR	Repl. by AUBERT 07AF
$-1.00 \pm0.21 \pm0.07$	[3]	ABE	04E	BELL	Repl. by ABE 05D
$-1.23 \pm0.41 ^{+0.08}_{-0.07}$		ABE	03G	BELL	Repl. by ABE 04E.
$-1.21 ^{+0.38}_{-0.27} ^{+0.16}_{-0.13}$		ABE	02M	BELL	Repl. by ABE 03G
$0.03 ^{+0.52}_{-0.56} \pm0.11$	[4]	AUBERT	02D	BABR	Repl. by AUBERT 02Q
$0.02 \pm0.34 \pm0.05$	[5]	AUBERT	02Q	BABR	Repl. by AUBERT,BE 05

[1] An isospin analysis using other BELLE measurements, disfavors the region of $23.8^\circ < \phi_2 < 66.8^\circ$ at 68% CL. NODE=S042SPI;LINKAGE=DA

[2] Rule out the CP-conserving case, $C_{\pi\pi} = S_{\pi\pi} = 0$, at the 5.4 sigma level. NODE=S042SPI;LINKAGE=AE

[3] Rule out the CP-conserving case, $C_{\pi\pi} = S_{\pi\pi} = 0$, at the 5.2 sigma level. NODE=S042SPI;LINKAGE=AB

[4] Corresponds to 90% confidence range $-0.89 < S_{\pi\pi} < 0.85$. NODE=S042SPI;LINKAGE=AD

[5] Corresponds to 90% confidence range $-0.54 < S_{\pi\pi} < 0.58$. NODE=S042SPI;LINKAGE=BR

$C_{\pi^0\pi^0}(B^0 \to \pi^0\pi^0)$

NODE=S042CX6
NODE=S042CX6

VALUE		DOCUMENT ID		TECN	COMMENT
-0.25 ± 0.20 OUR AVERAGE					NEW
[-0.30 ± 0.20 OUR 2024 AVERAGE]					
$0.14\pm0.46\pm0.07$	[1]	ABUDINEN	23E	BELL	$e^+e^- \to \Upsilon(4S)$
$-0.14\pm0.36\pm0.10$	[1]	JULIUS	17	BELL	$e^+e^- \to \Upsilon(4S)$
$-0.43\pm0.26\pm0.05$		LEES	13D	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$-0.49\pm0.35\pm0.05$		AUBERT	07BC	BABR	Repl. by LEES 13D
$-0.12\pm0.56\pm0.06$	[2]	AUBERT	05L	BABR	Repl. by AUBERT 07BC
$-0.44^{+0.52}_{-0.53}\pm0.17$	[1]	CHAO	05	BELL	Repl. by JULIUS 17

[1] Quotes $A_{\pi^0\pi^0} = -0.14 \pm 0.46 \pm 0.07$ (correction published May 22, 2024) which is equal to $-C_{\pi^0\pi^0}$. NODE=S042CX6;LINKAGE=CH

[2] Corresponds to a 90% CL interval of $-0.88 < A_{CP} < 0.64$. NODE=S042CX6;LINKAGE=AU

$C_{\rho\pi}$ $(B^0 \to \rho^+\pi^-)$

NODE=S042CRP
NODE=S042CRP

VALUE		DOCUMENT ID		TECN	COMMENT
-0.03 ± 0.07 OUR AVERAGE		Error includes scale factor of 1.2.			
$0.016\pm0.059\pm0.036$	[1]	LEES	13J	BABR	$e^+e^- \to \Upsilon(4S)$
$-0.13 \pm0.09 \pm0.05$	[1]	KUSAKA	07	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$0.15 \pm0.09 \pm0.05$		AUBERT	07AA	BABR	Repl. by LEES 13J
$0.25 \pm0.17 ^{+0.02}_{-0.06}$		WANG	05	BELL	Repl. by KUSAKA 07
$0.36 \pm0.18 \pm0.04$		AUBERT	03T	BABR	Repl. by AUBERT 07AA

[1] Uses time-dependent Dalitz plot analysis of $B^0 \to \pi^+\pi^-\pi^0$ decays. NODE=S042CRP;LINKAGE=LE

$S_{\rho\pi}$ $(B^0 \to \rho^+\pi^-)$

NODE=S042SRP
NODE=S042SRP

VALUE		DOCUMENT ID		TECN	COMMENT
0.05 ± 0.07 OUR AVERAGE					
$0.053\pm0.081\pm0.034$	[1]	LEES	13J	BABR	$e^+e^- \to \Upsilon(4S)$
$0.06 \pm0.13 \pm0.05$	[1]	KUSAKA	07	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$-0.03 \pm0.11 \pm0.04$		AUBERT	07AA	BABR	Repl. by LEES 13J
$-0.28 \pm0.23 ^{+0.10}_{-0.08}$		WANG	05	BELL	Repl. by KUSAKA 07
$0.19 \pm0.24 \pm0.03$		AUBERT	03T	BABR	Repl. by AUBERT 07AA

[1] Uses time-dependent Dalitz plot analysis of $B^0 \to \pi^+\pi^-\pi^0$ decays. NODE=S042SRP;LINKAGE=LE

$\Delta C_{\rho\pi}$ $(B^0 \to \rho^+\pi^-)$

NODE=S042CDT

$\Delta C_{\rho\pi}$ describes the asymmetry between the rates $\Gamma(B^0 \to \rho^+\pi^-) + \Gamma(\overline{B}^0 \to \rho^-\pi^+)$ and $\Gamma(B^0 \to \rho^-\pi^+) + \Gamma(\overline{B}^0 \to \rho^+\pi^-)$. NODE=S042CDT

NODE=S042CDT

VALUE		DOCUMENT ID		TECN	COMMENT
0.27 ± 0.06 OUR AVERAGE					
$0.234\pm0.061\pm0.048$	[1]	LEES	13J	BABR	$e^+e^- \to \Upsilon(4S)$
$0.36 \pm0.10 \pm0.05$	[1]	KUSAKA	07	BELL	$e^+e^- \to \Upsilon(4S)$

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.39 $\pm$0.09 $\pm$0.09		AUBERT	07AA BABR	Repl. by LEES 13J
0.38 $\pm$0.18 $^{+0.02}_{-0.04}$		WANG	05 BELL	Repl. by KUSAKA 07
0.28 $^{+0.18}_{-0.19}$ $\pm$0.04		AUBERT	03T BABR	Repl. by AUBERT 07AA

[1] Uses time-dependent Dalitz plot analysis of $B^0 \to \pi^+ \pi^- \pi^0$ decays. NODE=S042CDT;LINKAGE=LE

$\Delta S_{\rho\pi}$ $(B^0 \to \rho^+ \pi^-)$

NODE=S042SDT

$\Delta S_{\rho\pi}$ is related to the strong phase difference between the amplitudes contributing to $B^0 \to \rho^+ \pi^-$. NODE=S042SDT

VALUE		DOCUMENT ID	TECN	COMMENT
0.01 $\pm$0.08 OUR AVERAGE				
0.054$\pm$0.082$\pm$0.039	[1]	LEES	13J BABR	$e^+ e^- \to \Upsilon(4S)$
$-$0.08 $\pm$0.13 $\pm$0.05	[1]	KUSAKA	07 BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-$0.01 $\pm$0.14 $\pm$0.06		AUBERT	07AA BABR	Repl. by LEES 13J
$-$0.30 $\pm$0.24 $\pm$0.09		WANG	05 BELL	Repl. by KUSAKA 07
0.15 $\pm$0.25 $\pm$0.03		AUBERT	03T BABR	Repl. by AUBERT 07AA

NODE=S042SDT

[1] Uses time-dependent Dalitz plot analysis of $B^0 \to \pi^+ \pi^- \pi^0$ decays. NODE=S042SDT;LINKAGE=LE

$C_{\rho^0\pi^0}$ $(B^0 \to \rho^0 \pi^0)$

NODE=S042CRH
NODE=S042CRH

VALUE		DOCUMENT ID	TECN	COMMENT
0.27$\pm$0.24 OUR AVERAGE				
0.19$\pm$0.23$\pm$0.15	[1]	LEES	13J BABR	$e^+ e^- \to \Upsilon(4S)$
0.49$\pm$0.36$\pm$0.28	[1,2]	KUSAKA	07 BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-$0.10$\pm$0.40$\pm$0.53		AUBERT	07AA BABR	Repl. by LEES 13J
0.53$^{+0.67}_{-0.84}$$^{+0.10}_{-0.15}$	[2]	DRAGIC	06 BELL	Repl. by KUSAKA 07

[1] Uses time-dependent Dalitz plot analysis of $B^0 \to \pi^+ \pi^- \pi^0$ decays. NODE=S042CRH;LINKAGE=LE

[2] Quotes $A_{\rho^0\pi^0}$ which is equal to $-C_{\rho^0\pi^0}$. NODE=S042CRH;LINKAGE=DR

$S_{\rho^0\pi^0}$ $(B^0 \to \rho^0 \pi^0)$

NODE=S042SRH
NODE=S042SRH

VALUE		DOCUMENT ID	TECN	COMMENT
$-$0.23$\pm$0.34 OUR AVERAGE				
$-$0.37$\pm$0.34$\pm$0.20	[1]	LEES	13J BABR	$e^+ e^- \to \Upsilon(4S)$
0.17$\pm$0.57$\pm$0.35	[1]	KUSAKA	07 BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.04$\pm$0.44$\pm$0.18		AUBERT	07AA BABR	Repl. by LEES 13J

[1] Uses time-dependent Dalitz plot analysis of $B^0 \to \pi^+ \pi^- \pi^0$ decays. NODE=S042SRH;LINKAGE=LE

$C_{a_1\pi}$ $(B^0 \to a_1(1260)^+ \pi^-)$

NODE=S042CAP
NODE=S042CAP

VALUE	DOCUMENT ID	TECN	COMMENT
$-$0.05$\pm$0.11 OUR AVERAGE			
$-$0.01$\pm$0.11$\pm$0.09	DALSENO	12 BELL	$e^+ e^- \to \Upsilon(4S)$
$-$0.10$\pm$0.15$\pm$0.09	AUBERT	07O BABR	$e^+ e^- \to \Upsilon(4S)$

$S_{a_1\pi}$ $(B^0 \to a_1(1260)^+ \pi^-)$

NODE=S042SAP
NODE=S042SAP

VALUE	DOCUMENT ID	TECN	COMMENT
$-$0.2 $\pm$0.4 OUR AVERAGE Error includes scale factor of 3.2.			
$-$0.51$\pm$0.14$\pm$0.08	DALSENO	12 BELL	$e^+ e^- \to \Upsilon(4S)$
0.37$\pm$0.21$\pm$0.07	AUBERT	07O BABR	$e^+ e^- \to \Upsilon(4S)$

$\Delta C_{a_1\pi}$ $(B^0 \to a_1(1260)^+ \pi^-)$

NODE=S042CDA

$\Delta C_{a_1\pi}$ describes the asymmetry between the rates $\Gamma(B^0 \to a_1^+ \pi^-) + \Gamma(\overline{B}^0 \to a_1^- \pi^+)$ and $\Gamma(B^0 \to a_1^- \pi^+) + \Gamma(\overline{B}^0 \to a_1^+ \pi^-)$. NODE=S042CDA

NODE=S042CDA

VALUE	DOCUMENT ID	TECN	COMMENT
0.43$\pm$0.14 OUR AVERAGE Error includes scale factor of 1.3.			
0.54$\pm$0.11$\pm$0.07	DALSENO	12 BELL	$e^+ e^- \to \Upsilon(4S)$
0.26$\pm$0.15$\pm$0.07	AUBERT	07O BABR	$e^+ e^- \to \Upsilon(4S)$

$\Delta S_{a_1\pi}$ ($B^0 \to a_1(1260)^+\pi^-$)

NODE=S042SDA

$\Delta S_{a_1\pi}$ is related to the strong phase difference between the amplitudes contributing to $B^0 \to a_1\pi$ decays.

NODE=S042SDA

VALUE	DOCUMENT ID		TECN	COMMENT
−0.11±0.12 OUR AVERAGE				
−0.09±0.14±0.06	DALSENO	12	BELL	$e^+e^- \to \Upsilon(4S)$
−0.14±0.21±0.06	AUBERT	07O	BABR	$e^+e^- \to \Upsilon(4S)$

NODE=S042SDA

C ($B^0 \to b_1^- K^+$)

NODE=S042CAQ
NODE=S042CAQ

VALUE	DOCUMENT ID		TECN	COMMENT
−0.22±0.23±0.05	AUBERT	07BI	BABR	$e^+e^- \to \Upsilon(4S)$

ΔC ($B^0 \to b_1^- \pi^+$)

NODE=S042SDB
NODE=S042SDB

VALUE	DOCUMENT ID		TECN	COMMENT
−1.04±0.23±0.08	AUBERT	07BI	BABR	$e^+e^- \to \Upsilon(4S)$

$C_{\rho^0\rho^0}$ ($B^0 \to \rho^0\rho^0$)

NODE=S042CX9
NODE=S042CX9

VALUE	DOCUMENT ID		TECN	COMMENT
0.2±0.8±0.3	AUBERT	08BB	BABR	$e^+e^- \to \Upsilon(4S)$

$S_{\rho^0\rho^0}$ ($B^0 \to \rho^0\rho^0$)

NODE=S042SX9
NODE=S042SX9

VALUE	DOCUMENT ID		TECN	COMMENT
0.3±0.7±0.2	AUBERT	08BB	BABR	$e^+e^- \to \Upsilon(4S)$

$C_{\rho\rho}$ ($B^0 \to \rho^+\rho^-$)

NODE=S042CRR
NODE=S042CRR

VALUE	DOCUMENT ID		TECN	COMMENT
0.00±0.09 OUR AVERAGE				
0.00±0.10±0.06	[1] VANHOEFER	16	BELL	$e^+e^- \to \Upsilon(4S)$
0.01±0.15±0.06	AUBERT	07BF	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.16±0.21±0.08	[1] SOMOV	07	BELL	Repl. by VANHOEFER 16
−0.00±0.30±0.09	[1] SOMOV	06	BELL	Repl. by SOMOV 07
−0.03±0.18±0.09	AUBERT,B	05C	BABR	Repl. by AUBERT 07BF
−0.17±0.27±0.14	AUBERT,B	04R	BABR	Repl. by AUBERT,B 05C

[1] BELLE Collab. quotes A_{CP} which is equal to $-C$.

NODE=S042CRR;LINKAGE=BC

$S_{\rho\rho}$ ($B^0 \to \rho^+\rho^-$)

NODE=S042SRR
NODE=S042SRR

VALUE	DOCUMENT ID		TECN	COMMENT
−0.14±0.13 OUR AVERAGE				
−0.13±0.15±0.05	VANHOEFER	16	BELL	$e^+e^- \to \Upsilon(4S)$
$-0.17\pm0.20^{+0.05}_{-0.06}$	AUBERT	07BF	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.19±0.30±0.08	SOMOV	07	BELL	Repl. by VANHOEFER 16
0.08±0.41±0.09	SOMOV	06	BELL	Repl. by SOMOV 07
$-0.33\pm0.24^{+0.08}_{-0.14}$	AUBERT,B	05C	BABR	Repl. by AUBERT 07BF
−0.42±0.42±0.14	AUBERT,B	04R	BABR	Repl. by AUBERT,B 05C

$|\lambda|$ ($B^0 \to J/\psi K^*(892)^0$)

NODE=S042LD9
NODE=S042LD9

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.25	95	[1] AUBERT,B	04H	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses the measured cosine coefficients C and $\overline{C}$ and assumes $|q/p| = 1$.

NODE=S042LD9;LINKAGE=AU

cos 2β ($B^0 \to J/\psi K^*(892)^0$)

NODE=S042CJ1

β (ϕ_1) is one of the angles of CMK unitarity triangle, see the review on "*CP*" Violation in the Reviews section.

NODE=S042CJ1

VALUE	DOCUMENT ID		TECN	COMMENT
$1.7^{+0.7}_{-0.9}$ OUR AVERAGE Error includes scale factor of 1.6.				
$2.72^{+0.50}_{-0.79}\pm0.27$	[1] AUBERT	05P	BABR	$e^+e^- \to \Upsilon(4S)$
0.87±0.74±0.12	[2] ITOH	05	BELL	$e^+e^- \to \Upsilon(4S)$

NODE=S042CJ1

[1] The measurement is obtained when sin 2β is fixed to 0.726 and the sign of cos 2β is positive with 86% confidence level.

NODE=S042CJ1;LINKAGE=AU

[2] The measurement is obtained with sin 2β fixed to 0.731.

NODE=S042CJ1;LINKAGE=IT

$\cos 2\beta$ ($B^0 \to [K^0_S \pi^+ \pi^-]_{D^{(*)}} h^0$)

NODE=S042CJ2
NODE=S042CJ2

VALUE	DOCUMENT ID		TECN	COMMENT
0.91±0.22±0.11	[1] ADACHI	18		$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1.06 \pm 0.33 ^{+0.21}_{-0.15}$	[2] VOROBYEV	16	BELL	$e^+ e^- \to \Upsilon(4S)$
$0.42 \pm 0.49 \pm 0.16$	[3] AUBERT	07BH	BABR	$e^+ e^- \to \Upsilon(4S)$
$1.87 ^{+0.40}_{-0.53} {}^{+0.22}_{-0.32}$	[4] KROKOVNY	06	BELL	Repl. by VOROBYEV 16

[1] Analyzes joint data sample of Belle and BaBar using Dalitz plot analysis of $D \to K^0_S \pi^+ \pi^-$; the second error combines experimental systematic uncertainty and the Dalitz plot model uncertainty. NODE=S042CJ2;LINKAGE=A

[2] A model-independent measurement uses the binned Dalitz plot technique. NODE=S042CJ2;LINKAGE=B

[3] AUBERT 07BH evaluates the likelihoods for the positive and negative solutions assuming $\sin(2\beta_{eff}) = 0.678$. It quotes $L_+ / (L_+ + L_-) = 0.86$ corresponding to a likelihood ratio of $L_+/L_- = 6.14$ in favor of the positive solution. NODE=S042CJ2;LINKAGE=AU

[4] KROKOVNY 06 evaluates the likelihoods for the positive and negative solutions assuming $\sin(2\beta_{eff}) = 0.689$. It quotes $L_+ / (L_+ + L_-) = 0.983$ corresponding to a likelihood ratio of $L_+/L_- = 57.8$ in favor of the positive solution. NODE=S042CJ2;LINKAGE=KR

$(S_+ + S_-)/2$ ($B^0 \to D^{*-} \pi^+$)

NODE=S042LD3

$S_\pm = -\frac{2Im(\lambda_\pm)}{1+|\lambda_\pm|^2}$ where λ_+ and λ_- are defined in the $C_{\pi\pi}$ datablock above for $B^0 \to D^{*-}\pi^+$ and $\overline{B}^0 \to D^{*+}\pi^-$.

NODE=S042LD3

NODE=S042LD3

VALUE	DOCUMENT ID		TECN	COMMENT
−0.039±0.011 OUR AVERAGE				
$-0.046 \pm 0.013 \pm 0.015$	[1] BAHINIPATI	11	BELL	$e^+ e^- \to \Upsilon(4S)$
$-0.040 \pm 0.023 \pm 0.010$	[2] AUBERT	06Y	BABR	$e^+ e^- \to \Upsilon(4S)$
$-0.034 \pm 0.014 \pm 0.009$	[1] AUBERT	05Z	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-0.039 \pm 0.020 \pm 0.013$	[3] RONGA	06	BELL	Repl. by BAHINIPATI 11
$-0.030 \pm 0.028 \pm 0.018$	[1] GERSHON	05	BELL	Repl. by RONGA 06
$-0.068 \pm 0.038 \pm 0.020$	[2] AUBERT	04V	BABR	Repl. by AUBERT 06Y
$-0.063 \pm 0.024 \pm 0.014$	[1] AUBERT	04W	BABR	Repl. by AUBERT 05Z
$0.060 \pm 0.040 \pm 0.019$	[2] SARANGI	04	BELL	Repl. by RONGA 06

[1] Uses partially reconstructed $B^0 \to D^{*\pm}\pi^\mp$ decays. NODE=S042LD3;LINKAGE=AB

[2] Uses fully reconstructed $B^0 \to D^{*\pm}\pi^\mp$ decays. NODE=S042LD3;LINKAGE=AU

[3] Combines the results from fully reconstructed and partially reconstructed $D^*\pi$ events by taking weighted averages. Assumes that systematic errors from physics parameters and fit biases in the two measurements are 100% correlated. NODE=S042LD3;LINKAGE=RO

$(S_- - S_+)/2$ ($B^0 \to D^{*-} \pi^+$)

NODE=S042LD4
NODE=S042LD4

VALUE	DOCUMENT ID		TECN	COMMENT
−0.009±0.015 OUR AVERAGE				
$-0.015 \pm 0.013 \pm 0.015$	[1] BAHINIPATI	11	BELL	$e^+ e^- \to \Upsilon(4S)$
$0.049 \pm 0.042 \pm 0.015$	[2] AUBERT	06Y	BABR	$e^+ e^- \to \Upsilon(4S)$
$-0.019 \pm 0.022 \pm 0.013$	[1] AUBERT	05Z	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-0.011 \pm 0.020 \pm 0.013$	[3] RONGA	06	BELL	Repl. by BAHINIPATI 11
$-0.005 \pm 0.028 \pm 0.018$	[1] GERSHON	05	BELL	Repl. by RONGA 06
$0.031 \pm 0.070 \pm 0.033$	[2] AUBERT	04V	BABR	Repl. by AUBERT 06Y
$-0.004 \pm 0.037 \pm 0.014$	[1] AUBERT	04W	BABR	Repl. by AUBERT 05Z
$0.049 \pm 0.040 \pm 0.019$	[2] SARANGI	04	BELL	Repl. by RONGA 06

OCCUR=2

[1] Uses partially reconstructed $B^0 \to D^{*\pm}\pi^\mp$ decays. NODE=S042LD4;LINKAGE=AE

[2] Uses fully reconstructed $B^0 \to D^{*\pm}\pi^\mp$ decays. NODE=S042LD4;LINKAGE=AU

[3] Combines the results from fully reconstructed and partially reconstructed $D^*\pi$ events by taking weighted averages. Assumes that systematic errors from physics parameters and fit biases in the two measurements are 100% correlated. NODE=S042LD4;LINKAGE=RO

$(S_+ + S_-)/2$ ($B^0 \to D^- \pi^+$)

NODE=S042LD5
NODE=S042LD5

VALUE	DOCUMENT ID		TECN	COMMENT
−0.046±0.023 OUR AVERAGE				
$-0.010 \pm 0.023 \pm 0.07$	[1] AUBERT	06Y	BABR	$e^+ e^- \to \Upsilon(4S)$
$-0.050 \pm 0.021 \pm 0.012$	[2] RONGA	06	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-0.022 \pm 0.038 \pm 0.020$	[1] AUBERT	04V	BABR	Repl. by AUBERT 06Y
$-0.062 \pm 0.037 \pm 0.018$	[1] SARANGI	04	BELL	Repl. by RONGA 06

[1] Uses fully reconstructed $B^0 \rightarrow D^{\pm}\pi^{\mp}$ decays. NODE=S042LD5;LINKAGE=FR

[2] Combines the results from fully reconstructed and partially reconstructed $D\pi$ events by taking weighted averages. Assumes that systematic errors from physics parameters and fit biases in the two measurements are 100% correlated. NODE=S042LD5;LINKAGE=RO

$(S_- - S_+)/2$ ($B^0 \rightarrow D^-\pi^+$)

NODE=S042LD6
NODE=S042LD6

VALUE	DOCUMENT ID		TECN	COMMENT
−0.022±0.021 OUR AVERAGE				
−0.033±0.042±0.012	[1] AUBERT	06Y	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
−0.019±0.021±0.012	[2] RONGA	06	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.025±0.068±0.033	[1] AUBERT	04V	BABR	Repl. by AUBERT 06Y
−0.025±0.037±0.018	[1] SARANGI	04	BELL	Repl. by RONGA 06

[1] Uses fully reconstructed $B^0 \rightarrow D^{\pm}\pi^{\mp}$ decays. NODE=S042LD6;LINKAGE=FR

[2] Combines the results from fully reconstructed and partially reconstructed $D\pi$ events by taking weighted averages. Assumes that systematic errors from physics parameters and fit biases in the two measurements are 100% correlated. NODE=S042LD6;LINKAGE=RO

S_+ ($B^0 \rightarrow D^-\pi^+$)

NODE=S042A06
NODE=S042A06

VALUE	DOCUMENT ID		TECN	COMMENT
0.058±0.020±0.011	[1] AAIJ	18Z	LHCB	pp at 7, 8 TeV

[1] Measured in the simultaneous analysis of $B^0 \rightarrow D^{\mp}\pi^{\pm}$ decays. AAIJ 18Z reports a statistical (systematic) correlation of 0.6 (−0.41) with the measured value of $S_-(B^0 \rightarrow D^+\pi^-)$. NODE=S042A06;LINKAGE=A

S_- ($B^0 \rightarrow D^+\pi^-$)

NODE=S042A07
NODE=S042A07

VALUE	DOCUMENT ID		TECN	COMMENT
0.038±0.020±0.007	[1] AAIJ	18Z	LHCB	pp at 7, 8 TeV

[1] Measured in the simultaneous analysis of $B^0 \rightarrow D^{\mp}\pi^{\pm}$ decays. AAIJ 18Z reports a statistical (systematic) correlation of 0.6 (−0.41) with the measured value of $S_+(B^0 \rightarrow D^-\pi^+)$. NODE=S042A07;LINKAGE=A

$(S_+ + S_-)/2$ ($B^0 \rightarrow D^-\rho^+$)

NODE=S042DR+
NODE=S042DR+

VALUE	DOCUMENT ID		TECN	COMMENT
−0.024±0.031±0.009	[1] AUBERT	06Y	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Uses fully reconstructed $B^0 \rightarrow D^-\rho^+$ decays. NODE=S042DR+;LINKAGE=AE

$(S_- - S_+)/2$ ($B^0 \rightarrow D^-\rho^+$)

NODE=S042DR-
NODE=S042DR-

VALUE	DOCUMENT ID		TECN	COMMENT
−0.098±0.055±0.018	[1] AUBERT	06Y	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Uses fully reconstructed $B^0 \rightarrow D^-\rho^+$ decays. NODE=S042DR-;LINKAGE=AE

$C_{\eta_c K^0_S}$ ($B^0 \rightarrow \eta_c K^0_S$)

NODE=S042CEC
NODE=S042CEC

VALUE	DOCUMENT ID		TECN	COMMENT
0.080±0.124±0.029	AUBERT	09K	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

$S_{\eta_c K^0_S}$ ($B^0 \rightarrow \eta_c K^0_S$)

NODE=S042SEC
NODE=S042SEC

VALUE	DOCUMENT ID		TECN	COMMENT
0.925±0.160±0.057	AUBERT	09K	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

$C_{c\overline{c}K^{(*)0}}$ ($B^0 \rightarrow c\overline{c}K^{(*)0}$)

NODE=S042CCC
NODE=S042CCC

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
− 0.5± 1.5 OUR EVALUATION	(Produced by HFLAV)			
0.4± 1.0 OUR AVERAGE				
0.4± 1.2	[1] AAIJ	24	LHCB	pp at 7, 8 and 13 TeV
− 0.6± 1.6±1.2	[2] ADACHI	12A	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
$-29 \; ^{+53}_{-44} \pm 6$	[3] AUBERT	09AU	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
2.4± 2.0±1.6	[4] AUBERT	09K	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

→ UNCHECKED ←

OCCUR=2

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.8± 1.2±0.3	[5,6] AAIJ	24	LHCB	pp at 13 TeV
− 1.7± 2.9	[5,7] AAIJ	17BN	LHCB	pp at 7, 8 TeV
− 4 ± 7 ±5	[8] SAHOO	08	BELL	Repl. by ADACHI 12A
4.9± 2.3±1.8	[4] AUBERT	07AY	BABR	Repl. by AUBERT 09K
− 1.8± 2.1±1.4	[9] CHEN	07	BELL	Repl. by ADACHI 12A
− 0.7± 4.1±3.3	[10] ABE	05B	BELL	Repl. by CHEN 07
5.1± 3.2±1.4	[11] AUBERT	05F	BABR	Repl. by AUBERT 07AY
5.1± 5.1±2.6	[12] ABE	02Z	BELL	Repl. by ABE 05B
5.3± 5.4±3.2	[13] AUBERT	02P	BABR	Repl. by AUBERT 05F

[1] A combination of this Run 2 result with the Run 1 result from AAIJ 17BN is reported with a correlation coefficient of 0.40. NODE=S042CCC;LINKAGE=F

[2] Measurement based on $B^0 \to J/\psi K^0_S$, $B^0 \to \psi(2S) K^0_S$, $B^0 \to J/\psi K^0_L$, and $B^0 \to \chi_{c1}(1P) K^0_S$ decays. NODE=S042CCC;LINKAGE=AD

[3] Uses Dalitz plot analysis of $B^0 \to K^0 \pi^+ \pi^-$ decays and the first of two equivalent solutions is used. NODE=S042CCC;LINKAGE=AU

[4] Measurement based on $B^0 \to c\overline{c} K^{(*)0}$ decays. NODE=S042CCC;LINKAGE=UE

[5] Measurement based on $B^0 \to J/\psi K^0_S$, $B^0 \to \psi(2S) K^0_S$ with $J/\psi \to \mu^+\mu^-$, $J/\psi \to e^+e^-$ and $\psi(2S) \to \mu^+\mu^-$. NODE=S042CCC;LINKAGE=C

[6] AAIJ 24 provides the correlation coefficient ρ=0.441 between the uncertainties of sin(2β) and $C_{c\overline{c}K^{(*)0}}$ ($B^0 \to c\overline{c} K^{(*)0}$) measurements. NODE=S042CCC;LINKAGE=E

[7] AAIJ 17BN provides the correlation coefficient ρ=0.42 between the uncertainties of $S_{B^0 \to c\overline{c}K^{(*)0}}(B^0 \to c\overline{c} K^{(*)0})$ and $C_{c\overline{c}K^{(*)0}}$ ($B^0 \to c\overline{c} K^{(*)0}$) measurements. NODE=S042CCC;LINKAGE=D

[8] Reports value of A of $B^0 \to \psi(2S) K^0$ which is equal to $-C$. NODE=S042CCC;LINKAGE=SH

[9] Reports value of A of $B^0 \to J/\psi K^0$ which is equal to $-C$. NODE=S042CCC;LINKAGE=CH

[10] Measurement based on 152 × 10^6 $B\overline{B}$ pairs. NODE=S042CCC;LINKAGE=AE

[11] Measurement based on 227 × 10^6 $B\overline{B}$ pairs. NODE=S042CCC;LINKAGE=AR

[12] Measured with both $\eta_f = \pm 1$ samples. NODE=S042CCC;LINKAGE=A

[13] Measured with the high purity of $\eta_f = -1$ samples. NODE=S042CCC;LINKAGE=B

sin(2β)

NODE=S042BET

For a discussion of CP violation, see the review on "CP Violation" in the Reviews section. sin(2β) is a measure of the CP-violating amplitude in the $B^0_d \to J/\psi(1S) K^0_S$. NODE=S042BET

NODE=S042BET

→ UNCHECKED ← NEW

0.709±0.011 OUR EVALUATION (Produced by HFLAV)

0.710±0.013 OUR AVERAGE Error includes scale factor of 1.2. [0.708 ± 0.017 OUR 2024 AVERAGE Scale factor = 1.5]

OCCUR=2

VALUE	DOCUMENT ID		TECN	COMMENT
0.724±0.014	[1] AAIJ	24	LHCB	pp at 7, 8 and 13 TeV
0.724±0.035±0.009	[2] ADACHI	24H	BEL2	$e^+e^- \to \Upsilon(4S)$
0.667±0.023±0.012	[3] ADACHI	12A	BELL	$e^+e^- \to \Upsilon(4S)$
0.57 ±0.58 ±0.06	[4] SATO	12	BELL	$e^+e^- \to \Upsilon(5S)$
0.69 ±0.52 ±0.08	[5] AUBERT	09AU	BABR	$e^+e^- \to \Upsilon(4S)$
0.687±0.028±0.012	[6] AUBERT	09K	BABR	$e^+e^- \to \Upsilon(4S)$
1.56 ±0.42 ±0.21	[7] AUBERT	04R	BABR	$e^+e^- \to \Upsilon(4S)$
0.79 $^{+0.41}_{-0.44}$	[8] AFFOLDER	00C	CDF	$p\overline{p}$ at 1.8 TeV
0.84 $^{+0.82}_{-1.04}$ ±0.16	[9] BARATE	00Q	ALEP	$e^+e^- \to Z$
3.2 $^{+1.8}_{-2.0}$ ±0.5	[10] ACKERSTAFF	98Z	OPAL	$e^+e^- \to Z$

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.717±0.013±0.008	[11,12] AAIJ	24	LHCB	pp at 13 TeV
0.760±0.034	[11,13] AAIJ	17BN	LHCB	pp at 7, 8 TeV
0.72 ±0.09 ±0.03	[14] SAHOO	08	BELL	Repl. by ADACHI 12A
0.714±0.032±0.018	[6] AUBERT	07AY	BABR	Repl. by AUBERT 09K
0.642±0.031±0.017	CHEN	07	BELL	Repl. by ADACHI 12A
0.728±0.056±0.023	[15] ABE	05B	BELL	Repl. by CHEN 07
0.722±0.040±0.023	[16] AUBERT	05F	BABR	Repl. by AUBERT 07AY
0.99 ±0.14 ±0.06	[17] ABE	02U	BELL	$e^+e^- \to \Upsilon(4S)$
0.719±0.074±0.035	[18] ABE	02Z	BELL	Repl. by ABE 05B
0.59 ±0.14 ±0.05	[19] AUBERT	02N	BABR	$e^+e^- \to \Upsilon(4S)$
0.741±0.067±0.034	[20] AUBERT	02P	BABR	Repl. by AUBERT 05F
0.58 $^{+0.32}_{-0.34}$ $^{+0.09}_{-0.10}$	ABASHIAN	01	BELL	Repl. by ABE 01G
0.99 ±0.14 ±0.06	[21] ABE	01G	BELL	Repl. by ABE 02Z
0.34 ±0.20 ±0.05	AUBERT	01	BABR	Repl. by AUBERT 01B
0.59 ±0.14 ±0.05	[21] AUBERT	01B	BABR	Repl. by AUBERT 02P
1.8 ±1.1 ±0.3	[22] ABE	98U	CDF	Repl. by AFFOLDER 00C

[1] A combination of this Run 2 result with the Run 1 result from AAIJ 17BN is reported with a correlation coefficient of 0.40. NODE=S042BET;LINKAGE=F
[2] Uses $B^0 \to J/\psi K^0_S$ decays with 362 fb^{-1} BELL II data. NODE=S042BET;LINKAGE=G
[3] Measurement based on $B^0 \to J/\psi K^0_S$, $B^0 \to \psi(2S) K^0_S$, $B^0 \to J/\psi K^0_L$, and $B^0 \to \chi_{c1}(1P) K^0_S$ decays. NODE=S042BET;LINKAGE=AD
[4] SATO 12 uses 121 fb^{-1} data collected on $\Upsilon(5S)$ resonance. Uses the "$B-\pi$ tagging" where $B\pi^+$ and $B\pi^-$ tagged $J/\psi K^0_S$ events are compared. NODE=S042BET;LINKAGE=ST
[5] Uses Dalitz plot analysis of $B^0 \to K^0 \pi^+ \pi^-$ decays and the first of two equivalent solutions. NODE=S042BET;LINKAGE=AT
[6] Measurement based on $B^0 \to c\overline{c} K^{(*)0}$ decays. NODE=S042BET;LINKAGE=UE
[7] Measurement in which the J/ψ decays to hadrons or to muons that do not satisfy the standard identification criteria. NODE=S042BET;LINKAGE=AB
[8] AFFOLDER 00C uses about 400 $B^0 \to J/\psi(1S) K^0_S$ events. The production flavor of B^0 was determined using three tagging algorithms: a same-side tag, a jet-charge tag, and a soft-lepton tag. NODE=S042BET;LINKAGE=N
[9] BARATE 00Q uses 23 candidates for $B^0 \to J/\psi(1S) K^0_S$ decays. A combination of jet-charge, vertex-charge, and same-side tagging techniques were used to determine the B^0 production flavor. NODE=S042BET;LINKAGE=BQ
[10] ACKERSTAFF 98Z uses 24 candidates for $B^0_d \to J/\psi(1S) K^0_S$ decay. A combination of jet-charge and vertex-charge techniques were used to tag the B^0_d production flavor. NODE=S042BET;LINKAGE=A
[11] Measurement based on $B^0 \to J/\psi K^0_S$, $B^0 \to \psi(2S) K^0_S$ with $J/\psi \to \mu^+\mu^-$, $J/\psi \to e^+e^-$ and $\psi(2S) \to \mu^+\mu^-$. NODE=S042BET;LINKAGE=C
[12] AAIJ 24 provides the correlation coefficient $\rho = 0.441$ between the uncertainties of $\sin(2\beta)$ and $C_{c\overline{c}K^{(*)0}}$ ($B^0 \to c\overline{c} K^{(*)0}$) measurements. NODE=S042BET;LINKAGE=E
[13] AAIJ 17BN provides the correlation coefficient $\rho = 0.42$ between the uncertainties of $\sin(2\beta)$ and $\cos(2\beta)$ measurements. NODE=S042BET;LINKAGE=D
[14] Based on $B^0 \to \psi(2S) K^0_S$ decays. NODE=S042BET;LINKAGE=SA
[15] Measurement based on 152×10^6 $B\overline{B}$ pairs. NODE=S042BET;LINKAGE=AE
[16] Measurement based on 227×10^6 $B\overline{B}$ pairs. NODE=S042BET;LINKAGE=AR
[17] ABE 02U result is based on the same analysis and data sample reported in ABE 01G. NODE=S042BET;LINKAGE=AU
[18] ABE 02Z result is based on 85×10^6 $B\overline{B}$ pairs. NODE=S042BET;LINKAGE=KZ
[19] AUBERT 02N result based on the same analysis and data sample reported in AUBERT 01B. NODE=S042BET;LINKAGE=N2
[20] AUBERT 02P result is based on 88×10^6 $B\overline{B}$ pairs. NODE=S042BET;LINKAGE=P
[21] First observation of CP violation in B^0 meson system. NODE=S042BET;LINKAGE=BT
[22] ABE 98U uses 198 ± 17 $B^0_d \to J/\psi(1S) K^0$ events. The production flavor of B^0 was determined using the same side tagging technique. NODE=S042BET;LINKAGE=B

$C_{J/\psi(nS)K^0}$ ($B^0 \to J/\psi(nS) K^0$)

NODE=S042CJK
NODE=S042CJK

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT	
$-$ 0.8$\pm$ 1.7 OUR EVALUATION	(Produced by HFLAV)				→ UNCHECKED ←
0.1$\pm$ 1.0 OUR AVERAGE					NEW
[$(0.3 \pm 1.0) \times 10^{-2}$ OUR 2024 AVERAGE]					
0.4$\pm$ 1.2	[1] AAIJ	24	LHCB	pp at 7, 8 and 13 TeV	OCCUR=4
$-$ 3.5$\pm$ 2.6$\pm$2.9	[2] ADACHI	24H	BEL2	$e^+e^- \to \Upsilon(4S)$	
1.5$\pm$ $2.1^{+2.3}_{-4.5}$	[3,4] ADACHI	12A	BELL	$e^+e^- \to \Upsilon(4S)$	
$-$10.4$\pm$ $5.5^{+2.7}_{-4.7}$	[4,5] ADACHI	12A	BELL	$e^+e^- \to \Upsilon(4S)$	OCCUR=2
$-$ 1.9$\pm$ $2.6^{+4.1}_{-1.7}$	[4,6] ADACHI	12A	BELL	$e^+e^- \to \Upsilon(4S)$	OCCUR=3
8.9$\pm$ 7.6$\pm$2.0	[5] AUBERT	09K	BABR	$e^+e^- \to \Upsilon(4S)$	
1.6$\pm$ 2.3$\pm$1.8	AUBERT	09K	BABR	$e^+e^- \to \Upsilon(4S)$	OCCUR=2
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.8$\pm$ 1.2$\pm$0.3	[7,8] AAIJ	24	LHCB	pp at 13 TeV	
$-$ 8.7$\pm$ 4.8$\pm$0.5	[9] AAIJ	24	LHCB	pp at 13 TeV	OCCUR=2
1.5$\pm$ 1.3$\pm$0.3	[10] AAIJ	24	LHCB	pp at 13 TeV	OCCUR=3
$-$ 1.7$\pm$ 2.9	[7,11] AAIJ	17BN	LHCB	pp at 7, 8 TeV	
$-$ 1.4$\pm$ 3.0	[10] AAIJ	17BN	LHCB	pp at 7, 8 TeV	OCCUR=2
$-$ 5 $\pm$10 $\pm$1	[9] AAIJ	17BN	LHCB	pp at 7, 8 TeV	OCCUR=3
$-$ 3.8$\pm$ 3.2$\pm$0.5	[12] AAIJ	15N	LHCB	Repl. by AAIJ 17BN	
3 $\pm$ 9 $\pm$1	[13] AAIJ	13K	LHCB	Repl. by AAIJ 15N	
$-$ 4 $\pm$ 7 $\pm$5	[4,5] SAHOO	08	BELL	Repl. by ADACHI 12A	
$-$ 1.8$\pm$ 2.1$\pm$1.4	[4] CHEN	07	BELL	Repl. by ADACHI 12A	

[1] A combination of this Run 2 result with the Run 1 result from AAIJ 17BN is reported with a correlation coefficient of 0.40. NODE=S042CJK;LINKAGE=G
[2] Uses $B^0 \to J/\psi K^0_S$ decays with 362 fb^{-1} BELL II data. NODE=S042CJK;LINKAGE=H
[3] Uses $B^0 \to J/\psi K^0_S$ decays. NODE=S042CJK;LINKAGE=AD
[4] The paper reports A, which is equal to $-C$. NODE=S042CJK;LINKAGE=CH
[5] Uses $B^0 \to \psi(2S) K^0_S$ decays. NODE=S042CJK;LINKAGE=SA
[6] Uses $B^0 \to J/\psi K^0_L$ decays. NODE=S042CJK;LINKAGE=AH
[7] Measurement based on $B^0 \to J/\psi K^0_S$, $B^0 \to \psi(2S) K^0_S$ with $J/\psi \to \mu^+\mu^-$, $J/\psi \to e^+e^-$ and $\psi(2S) \to \mu^+\mu^-$. NODE=S042CJK;LINKAGE=B
[8] AAIJ 24 provides the correlation coefficient $\rho = 0.441$ between the uncertainties of $C_{J/\psi(nS)K^0}$ ($B^0 \to J/\psi(nS) K^0$) and $S_{J/\psi(nS)K^0}$ ($B^0 \to J/\psi(nS) K^0$) measurements. NODE=S042CJK;LINKAGE=F
[9] Measurement based on $B^0 \to \psi(2S) K^0_S$ with $\psi(2S) \to \mu^+\mu^-$. NODE=S042CJK;LINKAGE=E
[10] Measurement based on $B^0 \to J/\psi K^0_S$ with $J/\psi \to \mu^+\mu^-$ and $J/\psi \to e^+e^-$. NODE=S042CJK;LINKAGE=D
[11] AAIJ 17BN provides the correlation coefficient $\rho = 0.42$ between the uncertainties of $S_{J/\psi(nS)K^0}$ ($B^0 \to J/\psi(nS) K^0$) and $C_{J/\psi(nS)K^0}$ ($B^0 \to J/\psi(nS) K^0$) measurements. NODE=S042CJK;LINKAGE=C
[12] AAIJ 15N uses 41,560 flavor-tagged $B_d \to J/\psi K^0_S$ events from 3 fb^{-1} of integrated luminosity. Provides the correlation coefficient $\rho = 0.483$ between the statistical uncertainties of and measurements. NODE=S042CJK;LINKAGE=A
[13] AAIJ 13K uses 8200 flavor-tagged $B_d \to J/\psi K^0_S$ events from 1 fb^{-1} of integrated luminosity. Provides the correlation coefficient $\rho = 0.42$ between the statistical uncertainties of $S_{J/\psi(nS)K^0}$ ($B^0 \to J/\psi(nS) K^0$) and $C_{J/\psi(nS)K^0}$ ($B^0 \to J/\psi(nS) K^0$) measurements. NODE=S042CJK;LINKAGE=AA

$S_{J/\psi(nS)K^0}$ ($B^0 \to J/\psi(nS) K^0$)

NODE=S042SJK
NODE=S042SJK

VALUE	DOCUMENT ID		TECN	COMMENT	
0.701±0.017 OUR EVALUATION	(Produced by HFLAV)				→ UNCHECKED ←
0.710±0.014 OUR AVERAGE	Error includes scale factor of 1.3. See the ideogram below.				NEW
[0.708 ± 0.016 OUR 2024 AVERAGE Scale factor = 1.4]					
0.724±0.014	[1] AAIJ	24	LHCB	pp at 7, 8 and 13 TeV	OCCUR=4
0.724±0.035±0.009	[2] ADACHI	24H	BEL2	$e^+e^- \to \Upsilon(4S)$	
0.670±0.029±0.013	[3] ADACHI	12A	BELL	$e^+e^- \to \Upsilon(4S)$	
0.738±0.079±0.036	[4] ADACHI	12A	BELL	$e^+e^- \to \Upsilon(4S)$	OCCUR=2
0.642±0.047±0.021	[5] ADACHI	12A	BELL	$e^+e^- \to \Upsilon(4S)$	OCCUR=3
0.57 ±0.58 ±0.06	[6] SATO	12	BELL	$e^+e^- \to \Upsilon(5S)$	
0.897±0.100±0.036	[4] AUBERT	09K	BABR	$e^+e^- \to \Upsilon(4S)$	
0.666±0.031±0.013	AUBERT	09K	BABR	$e^+e^- \to \Upsilon(4S)$	OCCUR=2
0.79 $^{+0.41}_{-0.44}$	[7] AFFOLDER	00C	CDF	$p\overline{p}$ at 1.8 TeV	
0.84 $^{+0.82}_{-1.04}$ ±0.16	[8] BARATE	00Q	ALEP	$e^+e^- \to Z$	
3.2 $^{+1.8}_{-2.0}$ ±0.5	[9] ACKERSTAFF	98Z	OPAL	$e^+e^- \to Z$	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.717±0.013±0.008	[10,11] AAIJ	24	LHCB	pp at 13 TeV	
0.649±0.053±0.018	[12] AAIJ	24	LHCB	pp at 13 TeV	OCCUR=2
0.722±0.014±0.007	[13] AAIJ	24	LHCB	pp at 13 TeV	OCCUR=3
0.760±0.034	[10,14] AAIJ	17BN	LHCB	pp at 7, 8 TeV	
0.75 ±0.04	[13] AAIJ	17BN	LHCB	pp at 7, 8 TeV	OCCUR=2
0.84 ±0.10 ±0.01	[12] AAIJ	17BN	LHCB	pp at 7, 8 TeV	OCCUR=3
0.731±0.035±0.020	[15] AAIJ	15N	LHCB	Repl. by AAIJ 17BN	
0.73 ±0.07 ±0.04	[16] AAIJ	13K	LHCB	Repl. by AAIJ 15N	
0.650±0.029±0.018	[17] SAHOO	08	BELL	Repl. by ADACHI 12A	
0.72 ±0.09 ±0.03	[4] SAHOO	08	BELL	Repl. by ADACHI 12A	OCCUR=2
0.642±0.031±0.017	CHEN	07	BELL	Repl. by ADACHI 12A	

[1] A combination of this Run 2 result with the Run 1 result from AAIJ 17BN is reported with a correlation coefficient of 0.40. NODE=S042SJK;LINKAGE=G
[2] Uses $B^0 \to J/\psi K^0_S$ decays with 362 fb^{-1} BELL II data. NODE=S042SJK;LINKAGE=H
[3] Uses $B^0 \to J/\psi K^0_S$ decays. NODE=S042SJK;LINKAGE=AD
[4] Based on $B^0 \to \psi(2S) K^0_S$ decays. NODE=S042SJK;LINKAGE=SA
[5] Uses $B^0 \to J/\psi K^0_L$ decays. NODE=S042SJK;LINKAGE=AH
[6] SATO 12 uses 121 fb^{-1} data collected at $\Upsilon(5S)$ resonance. Uses the "$B-\pi$ tagging" where $B\pi^+$ and $B\pi^-$ tagged $J/\psi K^0_S$ events are compared. NODE=S042SJK;LINKAGE=ST
[7] AFFOLDER 00C uses about 400 $B^0 \to J/\psi(1S) K^0_S$ events. The production flavor of B^0 was determined using three tagging algorithms: a same-side tag, a jet-charge tag, and a soft-lepton tag. NODE=S042SJK;LINKAGE=AF

[8] BARATE 00Q uses 23 candidates for $B^0 \to J/\psi(1S) K^0_S$ decays. A combination of jet-charge, vertex-charge, and same-side tagging techniques were used to determine the B^0 production flavor. NODE=S042SJK;LINKAGE=BA

[9] ACKERSTAFF 98Z uses 24 candidates for $B^0_d \to J/\psi(1S) K^0_S$ decay. A combination of jet-charge and vertex-charge techniques were used to tag the B^0_d production flavor. NODE=S042SJK;LINKAGE=AC

[10] Measurement based on $B^0 \to J/\psi K^0_S$, $B^0 \to \psi(2S) K^0_S$ with $J/\psi \to \mu^+\mu^-$, $J/\psi \to e^+e^-$ and $\psi(2S) \to \mu^+\mu^-$. NODE=S042SJK;LINKAGE=B

[11] AAIJ 24 provides the correlation coefficient $\rho = 0.441$ between the uncertainties of $C_{J/\psi(\mathrm{nS})K^0}$ ($B^0 \to J/\psi(\mathrm{nS}) K^0$) and $S_{J/\psi(\mathrm{nS})K^0}$ ($B^0 \to J/\psi(\mathrm{nS}) K^0$) measurements. NODE=S042SJK;LINKAGE=F

[12] Measurement based on $B^0 \to \psi(2S) K^0_S$ with $\psi(2S) \to \mu^+\mu^-$. NODE=S042SJK;LINKAGE=D

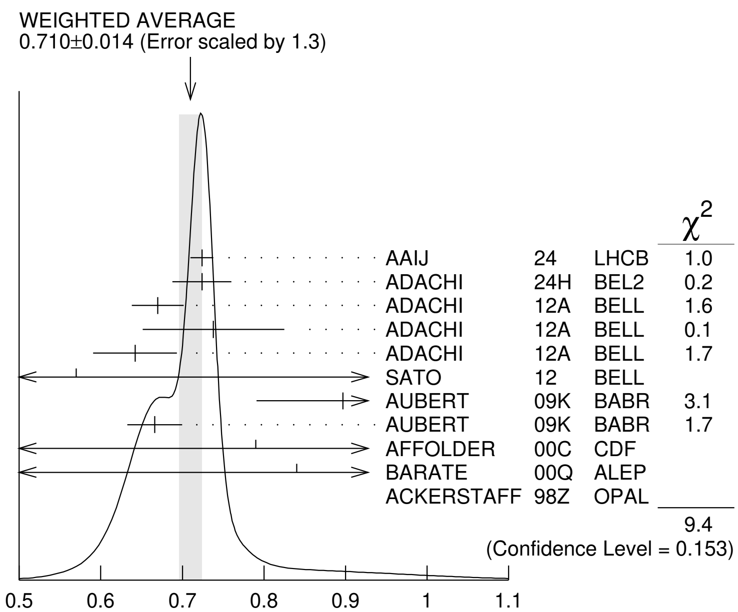
[13] Measurement based on $B^0 \to J/\psi K^0_S$ with $J/\psi \to \mu^+\mu^-$ and $J/\psi \to e^+e^-$. NODE=S042SJK;LINKAGE=C

[14] AAIJ 17BN provides the correlation coefficient $\rho = 0.42$ between the uncertainties of $S_{J/\psi(\mathrm{nS})K^0}$ ($B^0 \to J/\psi(\mathrm{nS}) K^0$) and $C_{J/\psi(\mathrm{nS})K^0}$ ($B^0 \to J/\psi(\mathrm{nS}) K^0$) measurements. NODE=S042SJK;LINKAGE=E

[15] AAIJ 15N uses 41,560 flavor-tagged $B_d \to J/\psi K^0_S$ events from 3 fb^{-1} of integrated luminosity. Provides the correlation coefficient $\rho = 0.483$ between the statistical uncertainties of and measurements. NODE=S042SJK;LINKAGE=A

[16] AAIJ 13K uses 8200 flavor-tagged $B_d \to J/\psi K^0_S$ events from 1 fb^{-1} of integrated luminosity. Provides the correlation coefficient $\rho = 0.42$ between the statistical uncertainties of $S_{J/\psi(\mathrm{nS})K^0}$ ($B^0 \to J/\psi(\mathrm{nS}) K^0$) and $C_{J/\psi(\mathrm{nS})K^0}$ ($B^0 \to J/\psi(\mathrm{nS}) K^0$) measurements. NODE=S042SJK;LINKAGE=AA

[17] Combined result of CHEN 07 and SAHOO 08. NODE=S042SJK;LINKAGE=SC



$S_{J/\psi(\mathrm{nS})K^0}$ ($B^0 \to J/\psi(\mathrm{nS}) K^0$)

$C_{J/\psi K^{*0}}$ ($B^0 \to J/\psi K^{*0}$)

NODE=S042CJS
NODE=S042CJS

VALUE	DOCUMENT ID		TECN	COMMENT
0.025±0.083±0.054	[1] AUBERT	09K	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Based on $B^0 \to J/\psi K^{*0}$, $K^{*0} \to K^0_S \pi^0$. NODE=S042CJS;LINKAGE=AU

$S_{J/\psi K^{*0}}$ ($B^0 \to J/\psi K^{*0}$)

NODE=S042SJS
NODE=S042SJS

VALUE	DOCUMENT ID		TECN	COMMENT
0.601±0.239±0.087	[1,2] AUBERT	09K	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Based on $B^0 \to J/\psi K^{*0}$, $K^{*0} \to K^0_S \pi^0$. NODE=S042SJS;LINKAGE=AU

[2] This $S_{J/\psi K^{*0}}$ value has been corrected for the dilution of the sin(ΔM Δt) coefficient of the CP asymmetry by a factor of $1-R_\perp$, which arises from the mixture of CP-even and CP-odd B decay amplitudes. NODE=S042SJS;LINKAGE=UB

$C_{\chi_{c0} K^0_S}$ ($B^0 \to \chi_{c0} K^0_S$)

NODE=S042CC2

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{-0.29^{+0.53}_{-0.44}\pm0.06}$	[1] AUBERT 09AU	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses Dalitz plot analysis of $B^0 \to K^0\pi^+\pi^-$ decays and the first of two equivalent solutions is used.

NODE=S042CC2;LINKAGE=AU

$S_{\chi_{c0} K^0_S}$ ($B^0 \to \chi_{c0} K^0_S$)

NODE=S042SC2

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{-0.69\pm0.52\pm0.08}$	[1] AUBERT 09AU	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses Dalitz plot analysis of $B^0 \to K^0\pi^+\pi^-$ decays and the first of two equivalent solutions is used.

NODE=S042SC2;LINKAGE=AU

$C_{\chi_{c1} K^0_S}$ ($B^0 \to \chi_{c1} K^0_S$)

NODE=S042CC1

VALUE	DOCUMENT ID	TECN	COMMENT
0.06 ±0.07 OUR AVERAGE			
$0.017\pm0.083^{+0.026}_{-0.046}$	ADACHI 12A	BELL	$e^+e^- \to \Upsilon(4S)$
$0.129\pm0.109\pm0.025$	AUBERT 09K	BABR	$e^+e^- \to \Upsilon(4S)$

$S_{\chi_{c1} K^0_S}$ ($B^0 \to \chi_{c1} K^0_S$)

NODE=S042SC1

VALUE	DOCUMENT ID	TECN	COMMENT
0.63 ±0.10 OUR AVERAGE			
$0.640\pm0.117\pm0.040$	ADACHI 12A	BELL	$e^+e^- \to \Upsilon(4S)$
$0.614\pm0.160\pm0.040$	AUBERT 09K	BABR	$e^+e^- \to \Upsilon(4S)$

$\sin(2\beta_{\rm eff})(B^0 \to \phi K^0)$

NODE=S042BTF

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{0.22\pm0.27\pm0.12}$	AUBERT 07AX	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.50\pm0.25^{+0.07}_{-0.04}$	[1] AUBERT 05T	BABR	Repl. by AUBERT 07AX

[1] Obtained by constraining $C = 0$.

NODE=S042BTF;LINKAGE=AU

$\sin(2\beta_{\rm eff})(B^0 \to \phi K^*_0(1430)^0)$

NODE=S042BFK

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{0.97^{+0.03}_{-0.52}}$	[1] AUBERT 08BG	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Measured using the CP-violation phase difference $\Delta\phi_{00}$ between the B and $\overline{B}$ decay amplitude.

NODE=S042BFK;LINKAGE=AU

$\sin(2\beta_{\rm eff})(B^0 \to K^+K^-K^0_S)$

NODE=S042BTK

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{0.77\pm0.11^{+0.07}_{-0.04}}$	AUBERT 07AX	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.55\pm0.22\pm0.12$	[1] AUBERT 05T	BABR	Repl. by AUBERT 07AX

[1] Obtained by constraining $C = 0$.

NODE=S042BTK;LINKAGE=AU

$\sin(2\beta_{\rm eff})(B^0 \to [K^0_S\pi^+\pi^-]_{D^{(*)}} h^0)$

NODE=S042BTM

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{0.80\pm0.14\pm0.07}$	[1] ADACHI 18		$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.43\pm0.27\pm0.08$	[2] VOROBYEV 16	BELL	$e^+e^- \to \Upsilon(4S)$
$0.29\pm0.34\pm0.06$	AUBERT 07BH	BABR	$e^+e^- \to \Upsilon(4S)$
$0.78\pm0.44\pm0.22$	KROKOVNY 06	BELL	Repl. by VOROBYEV 16

[1] Analyzes joint data sample of Belle and BaBar using Dalitz plot analysis of $D \to K^0_S\pi^+\pi^-$; the second error combines experimental systematic uncertainty and the Dalitz plot model uncertainty.

NODE=S042BTM;LINKAGE=A

[2] A model-independent measurement uses the binned Dalitz plot technique.

NODE=S042BTM;LINKAGE=B

$\beta_{\text{eff}}(B^0 \to [K^0_S \pi^+ \pi^-]_{D^{(*)}} h^0)$

NODE=S042A01

VALUE (°)	DOCUMENT ID		TECN	COMMENT
22.5±4.4±1.3	[1] ADACHI	18		$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
11.7±7.8±2.1	[2] VOROBYEV	16	BELL	$e^+ e^- \to \Upsilon(4S)$

OCCUR=2

[1] Analyzes joint data sample of Belle and BaBar using Dalitz plot analysis of $D \to K^0_S \pi^+ \pi^-$; the second error combines experimental systematic uncertainty and the Dalitz plot model uncertainty. NODE=S042A01;LINKAGE=C

[2] A model-independent measurement uses the binned Dalitz plot technique. NODE=S042A01;LINKAGE=A

$2\beta_{\text{eff}}(B^0 \to J/\psi \rho^0)$

NODE=S042BEF

VALUE (°)	DOCUMENT ID		TECN	COMMENT
$41.7 \pm 9.6^{+2.8}_{-6.3}$	AAIJ	15J	LHCB	pp at 7, 8 TeV

$|\lambda|$ $(B^0 \to [K^0_S \pi^+ \pi^-]_{D^{(*)}} h^0)$

NODE=S042LDH

VALUE	DOCUMENT ID		TECN	COMMENT
1.01±0.08±0.02	AUBERT	07BH	BABR	$e^+ e^- \to \Upsilon(4S)$

$|\sin(2\beta + \gamma)|$

NODE=S042BGA

β (ϕ_1) and γ (ϕ_3) are angles of CKM unitarity triangle, see the review on "*CP* Violation" in the Reviews section.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
>0.40	90	[1] AUBERT	06Y	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
>0.77	68	[2] AAIJ	18Z	LHCB	pp at 7, 8 TeV
>0.13	95	[3] RONGA	06	BELL	$e^+ e^- \to \Upsilon(4S)$
>0.07	95	[3] RONGA	06	BELL	$e^+ e^- \to \Upsilon(4S)$
>0.35	90	[4] AUBERT	05Z	BABR	$e^+ e^- \to \Upsilon(4S)$
>0.69	68	[5] AUBERT	04V	BABR	$e^+ e^- \to \Upsilon(4S)$
>0.58	95	[6] AUBERT	04W	BABR	Repl. by AUBERT 05Z

OCCUR=2

[1] Uses fully reconstructed $B^0 \to D^{(*)\pm} \pi^\mp$ and $D^\pm \rho^\mp$ decays and some theoretical assumptions. NODE=S042BGA;LINKAGE=AE

[2] Uses a time dependent CP violation measurement in $B^0 \to D^\mp \pi^\pm$ decays with external input and some theoretical assumptions. NODE=S042BGA;LINKAGE=A

[3] Combines the results from fully reconstructed and partially reconstructed $D^{(*)}\pi$ events by taking weighted averages. Assumes that systematic errors from physics parameters and fit biases in the two measurements are 100% correlated. NODE=S042BGA;LINKAGE=RO

[4] Uses partially reconstructed $B^0 \to D^{*\pm} \pi^\mp$ decays and some theoretical assumptions. NODE=S042BGA;LINKAGE=AP

[5] Uses fully reconstructed $B^0 \to D^{(*)\pm} \pi^\mp$ decays and some theoretical assumptions, such as the SU(3) symmetry relation. NODE=S042BGA;LINKAGE=AU

[6] Combining this measurement with the results from AUBERT 04V for fully reconstructed $B^0 \to D^{(*)\pm} \pi^\mp$ and some theoretical assumptions, such as the SU(3) symmetry relation. NODE=S042BGA;LINKAGE=AB

$2\beta + \gamma$

NODE=S042BG0

VALUE (°)	DOCUMENT ID		TECN	COMMENT
83±53±20	[1] AUBERT	08AC	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Used a time-dependent Dalitz-plot analysis of $B^0 \to D^\mp K^0 \pi^\pm$ assuming the ratio of the $b \to u$ and $b \to c$ decay amplitudes to be 0.3. NODE=S042BG0;LINKAGE=AU

α

NODE=S042ALP

For angle $\alpha(\phi_2)$ of the CKM unitarity triangle, see the review on "*CP* violation" in the reviews section.

VALUE (°)	DOCUMENT ID		TECN	COMMENT
$84.1^{+4.5}_{-3.8}$ OUR EVALUATION (Produced by HFLAV)				
• • • We do not use the following data for averages, fits, limits, etc. • • •				
93.7±10.6	[1] VANHOEFER	16	BELL	$e^+ e^- \to \Upsilon(4S)$
84.9±13.5	[1] VANHOEFER	14	BELL	Repl. by VANHOEFER 16
79 ± 7 ±11	[2] AUBERT	10D	BABR	$e^+ e^- \to \Upsilon(4S)$
$92.4^{+6.0}_{-6.5}$	[1] AUBERT	09G	BABR	$e^+ e^- \to \Upsilon(4S)$
78.6± 7.3	[3] AUBERT	07O	BABR	$e^+ e^- \to \Upsilon(4S)$
88 ±17	[4] SOMOV	06	BELL	Repl. by VANHOEFER 14
100 ±13	[5] AUBERT,B	05C	BABR	Repl. by AUBERT 09G
102^{+16}_{-12} ±14	[6] AUBERT,B	04R	BABR	Repl. by AUBERT,B 05C

→ UNCHECKED ←

[1] Based on an isospin analysis of the $B \to \rho\rho$ system. NODE=S042ALP;LINKAGE=BE
[2] Obtained using the time dependent analysis of $B^0 \to a_1(1260)^{\pm}\pi^{\mp}$ and branching fraction measurements of $B \to a_1(1260)K$ and $B \to K_1\pi$. Uses SU(3) flavor relations. NODE=S042ALP;LINKAGE=AE
[3] The angle $\alpha_{\rm eff}$ is obtained using the measured *CP* parameters of $B^0 \to a_1(1260)^{\pm}\pi^{\mp}$ and choosing one of the four solutions that is compatible with the result of SM-based fits. NODE=S042ALP;LINKAGE=UB
[4] Obtained using isospin relation and selecting a solution closest to the CKM best fit average; the 90% CL allowed interval is $59^\circ < \phi_2$ ($\equiv \alpha$) $< 115^\circ$. NODE=S042ALP;LINKAGE=SO
[5] Obtained using isospin relation and selecting a solution closest to the CKM best fit average; 90% CL allowed interval is $79^\circ < \alpha < 123^\circ$. NODE=S042ALP;LINKAGE=AB
[6] Obtained from the measured *CP* parameters of the longitudinal polarization by selecting the solution closest to the CKM best fit central value of $\alpha = 95^\circ - 98^\circ$. NODE=S042ALP;LINKAGE=AU

CP VIOLATION PARAMETERS IN $B^0 \to D^0 K^{*0}$ DECAY

NODE=S042330

The parameters r_{B^0} and δ_{B^0} are the magnitude ratio and strong phase difference between the amplitudes of A($B^0 \to D^0 K^{*0}$) and A($B^0 \to \overline{D}^0 K^{*0}$). The measured observables and are defined as $x_\pm = r_{B^0}$ cos($\delta_{B^0} \pm \gamma$) and $y_\pm = r_{B^0}$ sin($\delta_{B^0} \pm \gamma$) where γ is the CKM angle γ.

NODE=S042330

"OUR EVALUATION" is provided by the Heavy Flavor Averaging Group (HFLAV). The CKM angle γ is listed in the B^+ section for "*CP* VIOLATION PARAMETERS IN $B^+ \to D K^+$ AND SIMILAR DECAYS."

$x_+(B^0 \to D K^{*0})$

NODE=S042XP
NODE=S042XP

VALUE	DOCUMENT ID	TECN	COMMENT
0.07 ±0.08 OUR AVERAGE			
[0.04 ± 0.17 OUR 2024 AVERAGE]			
0.074±0.086±0.012	[1] AAIJ 24U	LHCB	pp at 7, 8, 13 TeV
0.04 ±0.16 ±0.11	[2] AAIJ 16S	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.05 ±0.24 ±0.04	[3] AAIJ 16AA	LHCB	Repl. by AAIJ 16Z
0.05 ±0.35 ±0.02	[4] AAIJ 16Z	LHCB	Repl. by AAIJ 24U

NEW

[1] Uses Dalitz plot analysis of $D \to K^0_S\pi^+\pi^-$, $K^0_S K^+K^-$ decays coming from $B^0 \to D K^*(892)^0$ modes. The second error is the systematic contribution from the D decay strong-phase inputs and from the experimental systematic uncertainties. NODE=S042XP;LINKAGE=C
[2] Uses Dalitz plof of $B^0 \to D K^+\pi^-$ with $D \to K^+K^-$, $\pi^+\pi^-$, or $K^+\pi^-$. NODE=S042XP;LINKAGE=A
[3] Uses Dalitz plot analysis of $D \to K^0_S\pi^+\pi^-$ decays coming from $B^0 \to D K^*(892)^0$ modes. NODE=S042XP;LINKAGE=B
[4] Uses Dalitz plot analysis of $D \to K^0_S\pi^+\pi^-$, $K^0_S K^+K^-$ decays coming from $B^0 \to D K^*(892)^0$ modes. NODE=S042XP;LINKAGE=D

$x_-(B^0 \to D K^{*0})$

NODE=S042XM
NODE=S042XM

VALUE	DOCUMENT ID	TECN	COMMENT
−0.18 ±0.08 OUR AVERAGE			
[−0.16 ± 0.14 OUR 2024 AVERAGE]			
−0.215±0.086±0.014	[1] AAIJ 24U	LHCB	pp at 7, 8, 13 TeV
−0.02 ±0.13 ±0.14	[2] AAIJ 16S	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
−0.15 ±0.14 ±0.03	[3] AAIJ 16AA	LHCB	Repl. by AAIJ 16Z
−0.31 ±0.20 ±0.04	[4] AAIJ 16Z	LHCB	Repl. by AAIJ 24U

NEW

[1] Uses Dalitz plot analysis of $D \to K^0_S\pi^+\pi^-$, $K^0_S K^+K^-$ decays coming from $B^0 \to D K^*(892)^0$ modes. The second error is the systematic contribution from the D decay strong-phase inputs and from the experimental systematic uncertainties. NODE=S042XM;LINKAGE=C
[2] Uses Dalitz plot of $B^0 \to D K^+\pi^-$ with $D \to K^+K^-$, $\pi^+\pi^-$, or $K^+\pi^-$. NODE=S042XM;LINKAGE=A
[3] Uses Dalitz plot analysis of $D \to K^0_S\pi^+\pi^-$ decays coming from $B^0 \to D K^*(892)^0$ modes. NODE=S042XM;LINKAGE=B
[4] Uses Dalitz plot analysis of $D \to K^0_S\pi^+\pi^-$, $K^0_S K^+K^-$ decays coming from $B^0 \to D K^*(892)^0$ modes. NODE=S042XM;LINKAGE=D

$y_+(B^0 \to D K^{*0})$

NODE=S042YP

VALUE	DOCUMENT ID	TECN	COMMENT
−0.35 ±0.10 OUR AVERAGE			
[−0.68 ± 0.22 OUR 2024 AVERAGE]			
−0.336±0.105±0.019	[1] AAIJ 24U	LHCB	pp at 7, 8, 13 TeV
−0.47 ±0.28 ±0.22	[2] AAIJ 16S	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$-0.65\ ^{+0.24}_{-0.23}\ \pm0.08$	[3] AAIJ 16AA	LHCB	Repl. by AAIJ 16Z
−0.81 ±0.28 ±0.06	[4] AAIJ 16Z	LHCB	Repl. by AAIJ 24U

NODE=S042YP NEW

[1] Uses Dalitz plot analysis of $D \to K^0_S \pi^+\pi^-$, $K^0_S K^+ K^-$ decays coming from $B^0 \to D K^*(892)^0$ modes. The second error is the systematic contribution from the D decay strong-phase inputs and from the experimental systematic uncertainties. NODE=S042YP;LINKAGE=C

[2] Uses Dalitz plof of $B^0 \to D K^+\pi^-$ with $D \to K^+K^-$, $\pi^+\pi^-$, or $K^+\pi^-$. NODE=S042YP;LINKAGE=A

[3] Uses Dalitz plot analysis of $D \to K^0_S \pi^+\pi^-$ decays coming from $B^0 \to D K^*(892)^0$ modes. NODE=S042YP;LINKAGE=B

[4] Uses Dalitz plot analysis of $D \to K^0_S \pi^+\pi^-$, $K^0_S K^+ K^-$ decays coming from $B^0 \to D K^*(892)^0$ modes. NODE=S042YP;LINKAGE=D

$y_-(B^0 \to D K^{*0})$

NODE=S042YM

VALUE	DOCUMENT ID	TECN	COMMENT
−0.03 ±0.13 OUR AVERAGE			
[0.20 ± 0.25 OUR 2024 AVERAGE Scale factor = 1.2]			
−0.012±0.128±0.026	[1] AAIJ 24U	LHCB	pp at 7, 8, 13 TeV
−0.35 ±0.26 ±0.41	[2] AAIJ 16S	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.25 ±0.15 ±0.06	[3] AAIJ 16AA	LHCB	Repl. by AAIJ 16Z
0.31 ±0.21 ±0.05	[4] AAIJ 16Z	LHCB	Repl. by AAIJ 24U

NODE=S042YM NEW

[1] Uses Dalitz plot analysis of $D \to K^0_S \pi^+\pi^-$, $K^0_S K^+ K^-$ decays coming from $B^0 \to D K^*(892)^0$ modes. The second error is the systematic contribution from the D decay strong-phase inputs and from the experimental systematic uncertainties. NODE=S042YM;LINKAGE=C

[2] Uses Dalitz plof of $B^0 \to D K^+\pi^-$ with $D \to K^+K^-$, $\pi^+\pi^-$, or $K^+\pi^-$. NODE=S042YM;LINKAGE=A

[3] Uses Dalitz plot analysis of $D \to K^0_S \pi^+\pi^-$ decays coming from $B^0 \to D K^*(892)^0$ modes. NODE=S042YM;LINKAGE=B

[4] Uses Dalitz plot analysis of $D \to K^0_S \pi^+\pi^-$, $K^0_S K^+ K^-$ decays coming from $B^0 \to D K^*(892)^0$ modes. NODE=S042YM;LINKAGE=D

$r_{B^0}(B^0 \to D K^{*0})$

NODE=S042AR

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{0.257^{+0.021}_{-0.023}}$ **OUR EVALUATION** (Produced by HFLAV)			
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.271^{+0.065}_{-0.066}$	[1] AAIJ 24U	LHCB	pp at 7, 8, 13 TeV
0.39 ±0.13	[2] AAIJ 16AA	LHCB	Repl. by AAIJ 16Z
0.56 ±0.17	[3,4] AAIJ 16Z	LHCB	Repl. by AAIJ 24U

NODE=S042AR → UNCHECKED ←

[1] Uses Dalitz plot analysis of $D \to K^0_S \pi^+\pi^-$, $K^0_S K^+ K^-$ decays coming from $B^0 \to D K^*(892)^0$ modes. NODE=S042AR;LINKAGE=A

[2] Uses Dalitz plot analysis of $D \to K^0_S \pi^+\pi^-$ decays coming from $B^0 \to D K^*(892)^0$ modes. NODE=S042AR;LINKAGE=C

[3] Measurement is performed with $K^+\pi^-$ masses within 50 MeV of the K^{*0} mass and an absolute value of the cosine of the K^{*0} helicity angle greater than 0.4. Angle γ is required to satisfy $0 < \gamma < 180$ degrees. NODE=S042AR;LINKAGE=B

[4] Uses Dalitz plot analysis of $D \to K^0_S \pi^+\pi^-$, $K^0_S K^+ K^-$ decays coming from $B^0 \to D K^*(892)^0$ modes. NODE=S042AR;LINKAGE=D

$\delta_{B^0}(B^0 \to D K^{*0})$

NODE=S042A00

VALUE (°)	DOCUMENT ID	TECN	COMMENT
$\mathbf{194.1^{+\ 9.6}_{-\ 8.8}}$ **OUR EVALUATION** (Produced by HFLAV)			
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$236\ ^{+19}_{-21}$	[1] AAIJ 24U	LHCB	pp at 7, 8, 13 TeV
$197\ ^{+24}_{-20}$	[2] AAIJ 16AA	LHCB	Repl. by AAIJ 16Z
$204\ ^{+21}_{-20}$	[3,4] AAIJ 16Z	LHCB	Repl. by AAIJ 24U

NODE=S042A00 → UNCHECKED ←

[1] Uses Dalitz plot analysis of $D \to K^0_S \pi^+ \pi^-$, $K^0_S K^+ K^-$ decays coming from $B^0 \to D K^*(892)^0$ modes. NODE=S042A00;LINKAGE=A

[2] Uses Dalitz plot analysis of $D \to K^0_S \pi^+ \pi^-$ decays coming from $B^0 \to D K^*(892)^0$ modes. NODE=S042A00;LINKAGE=C

[3] Measurement is performed with $K^+ \pi^-$ masses within 50 MeV of the K^{*0} mass and an absolute value of the cosine of the K^{*0} helicity angle greater than 0.4. Angle γ is required to satisfy $0 < \gamma < 180$ degrees. NODE=S042A00;LINKAGE=B

[4] Uses Dalitz plot analysis of $D \to K^0_S \pi^+ \pi^-$, $K^0_S K^+ K^-$ decays coming from $B^0 \to D K^*(892)^0$ modes. NODE=S042A00;LINKAGE=D

$a_{CP}(B^0 \to p\overline{p}K^+\pi^-)$ NODE=S042A44

Observable $a_{CP}(B^0 \to p\overline{p}K^+\pi^-)$ calculated as half of the difference between triple products for B^0 and $\overline{B}^0$, which is sensitive to CP violation. NODE=S042A44

NODE=S042A44

VALUE (%)	DOCUMENT ID		TECN	COMMENT
0.51±0.85±0.08	[1] AAIJ	23AG	LHCB	pp at 7, 8 and 13 TeV

[1] Phase-space integrated asymmetry. NODE=S042A44;LINKAGE=A

$a_{P}(B^0 \to p\overline{p}K^+\pi^-)$ NODE=S042A45

Observable $a_{P}(B^0 \to p\overline{p}K^+\pi^-)$ calculated as the average of the triple products for B^0 and $\overline{B}^0$, which is sensitive to parity violation. NODE=S042A45

NODE=S042A45

VALUE (%)	DOCUMENT ID		TECN	COMMENT
1.49±0.85±0.08	[1] AAIJ	23AG	LHCB	pp at 7, 8 and 13 TeV

[1] Phase-space integrated asymmetry. NODE=S042A45;LINKAGE=A

T and CPT VIOLATION PARAMETERS NODE=S042235

Measured values of the T-, CP-, and CPT-asymmetry parameters, defined as the differences in $S^{\pm}_{\alpha,\beta}$ and $C^{\pm}_{\alpha,\beta}$ between symmetry-transformed transitions. The indices $\alpha = \ell^+$, ℓ^- and $\beta = K^0_S$, K^0_L stand for reconstructed the flavor final state and the CP final states from $\Upsilon(4S)$ decay. The sign $\pm$ indicates whether the decay to the flavor final state α occurs before or after the decay to the CP final state. NODE=S042235

Alternatively, violations of CPT symmetry and Lorentz invariance are searched for by studying interference effects in B^0 mixing. Results are expressed in terms of the standard model extension parameter Δa, which describes the difference between the couplings of the valence quarks within B^0 meson with the Lorentz-violating fields.

ΔS^+_T $(S^-_{\ell^-,K^0_S} - S^+_{\ell^+,K^0_S})$ NODE=S042TVA

NODE=S042TVA

VALUE	DOCUMENT ID		TECN	COMMENT
−1.37±0.14±0.06	LEES	12W	BABR	$e^+e^- \to \Upsilon(4S)$

ΔS^-_T $(S^+_{\ell^-,K^0_S} - S^-_{\ell^+,K^0_S})$ NODE=S042TVB

NODE=S042TVB

VALUE	DOCUMENT ID		TECN	COMMENT
1.17±0.18±0.11	LEES	12W	BABR	$e^+e^- \to \Upsilon(4S)$

ΔC^+_T $(C^-_{\ell^-,K^0_S} - C^+_{\ell^+,K^0_S})$ NODE=S042TVC

NODE=S042TVC

VALUE	DOCUMENT ID		TECN	COMMENT
0.10±0.14±0.08	LEES	12W	BABR	$e^+e^- \to \Upsilon(4S)$

ΔC^-_T $(C^+_{\ell^-,K^0_S} - C^-_{\ell^+,K^0_S})$ NODE=S042TVD

NODE=S042TVD

VALUE	DOCUMENT ID		TECN	COMMENT
0.04±0.14±0.08	LEES	12W	BABR	$e^+e^- \to \Upsilon(4S)$

ΔS^+_{CP} $(S^+_{\ell^-,K^0_S} - S^+_{\ell^+,K^0_S})$ NODE=S042TVE

NODE=S042TVE

VALUE	DOCUMENT ID		TECN	COMMENT
−1.30±0.11±0.07	LEES	12W	BABR	$e^+e^- \to \Upsilon(4S)$

ΔS^-_{CP} $(S^-_{\ell^-,K^0_S} - S^-_{\ell^+,K^0_S})$ NODE=S042TVF

NODE=S042TVF

VALUE	DOCUMENT ID		TECN	COMMENT
1.33±0.12±0.06	LEES	12W	BABR	$e^+e^- \to \Upsilon(4S)$

ΔC^{+}_{CP} ($C^{+}_{\ell^-,K^0_S}$ − $C^{+}_{\ell^+,K^0_S}$)

NODE=S042TVG

VALUE	DOCUMENT ID		TECN	COMMENT
0.07±0.09±0.03	LEES	12W	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

ΔC^{-}_{CP} ($C^{-}_{\ell^-,K^0_S}$ − $C^{-}_{\ell^+,K^0_S}$)

NODE=S042TVH

VALUE	DOCUMENT ID		TECN	COMMENT
0.08±0.10±0.04	LEES	12W	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

ΔS^{+}_{CPT} ($S^{-}_{\ell^+,K^0_S}$ − $S^{+}_{\ell^+,K^0_S}$)

NODE=S042TVI

VALUE	DOCUMENT ID		TECN	COMMENT
0.16±0.21±0.09	LEES	12W	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

ΔS^{-}_{CPT} ($S^{+}_{\ell^+,K^0_S}$ − $S^{-}_{\ell^+,K^0_S}$)

NODE=S042TVJ

VALUE	DOCUMENT ID		TECN	COMMENT
−0.03±0.13±0.06	LEES	12W	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

ΔC^{+}_{CPT} ($C^{-}_{\ell^+,K^0_S}$ − $C^{+}_{\ell^+,K^0_S}$)

NODE=S042TVK

VALUE	DOCUMENT ID		TECN	COMMENT
0.14±0.15±0.07	LEES	12W	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

ΔC^{-}_{CPT} ($C^{+}_{\ell^+,K^0_S}$ − $C^{-}_{\ell^+,K^0_S}$)

NODE=S042TVL

VALUE	DOCUMENT ID		TECN	COMMENT
0.03±0.12±0.08	LEES	12W	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

$\Delta a_{\parallel}$ CPT parameter in B^0 mixing

NODE=S042CT7

VALUE (10^{-15} GeV)	DOCUMENT ID		TECN	COMMENT
−0.10±0.82±0.54	[1] AAIJ	16E	LHCB	pp at 7, 8 TeV

[1] Uses $B^0 \rightarrow J/\psi K^0_S$ decays.

NODE=S042CT7;LINKAGE=A

$\Delta a_{\perp}$ CPT parameter in B^0 mixing

NODE=S042CT8

VALUE (10^{-13} GeV)	DOCUMENT ID		TECN	COMMENT
−0.20±0.22±0.04	[1] AAIJ	16E	LHCB	pp at 7, 8 TeV

[1] Uses $B^0 \rightarrow J/\psi K^0_S$ decays.

NODE=S042CT8;LINKAGE=A

Δa_X CPT parameter in B^0 mixing

NODE=S042CTX

VALUE (10^{-15} GeV)	DOCUMENT ID		TECN	COMMENT
+1.97±1.30±0.29	[1] AAIJ	16E	LHCB	pp at 7, 8 TeV

[1] Uses $B^0 \rightarrow J/\psi K^0_S$ decays.

NODE=S042CTX;LINKAGE=A

Δa_Y CPT parameter in B^0 mixing

NODE=S042CTY

VALUE (10^{-15} GeV)	DOCUMENT ID		TECN	COMMENT
+0.44±1.26±0.29	[1] AAIJ	16E	LHCB	pp at 7, 8 TeV

[1] Uses $B^0 \rightarrow J/\psi K^0_S$ decays.

NODE=S042CTY;LINKAGE=A

$B^0 \rightarrow D^{*-}\ell^+\nu_\ell$ FORM FACTORS

NODE=S042250

R_1 (form factor ratio ∼ V/A_1)

NODE=S042RV

VALUE	DOCUMENT ID		TECN	COMMENT
1.239±0.029 OUR AVERAGE				
1.229±0.028±0.009	[1] WAHEED	19	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
1.56 ±0.07 ±0.15	AUBERT	09A	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
1.18 ±0.30 ±0.12	DUBOSCQ	96	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.401±0.034±0.018	[1] DUNGEL	10	BELL	Repl. by WAHEED 19
1.429±0.061±0.044	AUBERT	08R	BABR	Repl. by AUBERT 09A
1.396±0.060±0.044	AUBERT,B	06Z	BABR	Repl. by AUBERT 08R

[1] Uses fully reconstructed $D^{*-}\ell^+\nu$ events ($\ell = e$ or μ).

NODE=S042RV;LINKAGE=DU

R_2 (form factor ratio $\sim A_2/A_1$) NODE=S042RA

VALUE	DOCUMENT ID		TECN	COMMENT
0.84 ±0.04 OUR AVERAGE	Error includes scale factor of 1.8.			
0.852±0.021±0.006	[1] WAHEED	19	BELL	$e^+e^- \to \Upsilon(4S)$
0.66 ±0.05 ±0.09	AUBERT	09A	BABR	$e^+e^- \to \Upsilon(4S)$
0.71 ±0.22 ±0.07	DUBOSCQ	96	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.864±0.024±0.008	[1] DUNGEL	10	BELL	Repl. by WAHEED 19
0.827±0.038±0.022	AUBERT	08R	BABR	Repl. by AUBERT 09A
0.885±0.040±0.026	AUBERT,B	06Z	BABR	Repl. by AUBERT 08R

[1] Uses fully reconstructed $D^{*-}\ell^+\nu$ events ($\ell = e$ or μ). NODE=S042RA;LINKAGE=DU

$\rho^2_{A_1}$ (form factor slope) NODE=S042RH

VALUE	DOCUMENT ID		TECN	COMMENT
1.12 ±0.04 OUR AVERAGE	Error includes scale factor of 1.5.			
1.106±0.031±0.007	[1] WAHEED	19	BELL	$e^+e^- \to \Upsilon(4S)$
1.22 ±0.02 ±0.07	AUBERT	09A	BABR	$e^+e^- \to \Upsilon(4S)$
0.91 ±0.15 ±0.06	DUBOSCQ	96	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.214±0.034±0.009	[1] DUNGEL	10	BELL	Repl. by WAHEED 19
1.191±0.048±0.028	AUBERT	08R	BABR	Repl. by AUBERT 09A
1.145±0.059±0.046	AUBERT,B	06Z	BABR	Repl. by AUBERT 08R

[1] Uses fully reconstructed $D^{*-}\ell^+\nu$ events ($\ell = e$ or μ). NODE=S042RH;LINKAGE=DU

PARTIAL BRANCHING FRACTIONS IN $B^0 \to K^{(*)0}\ell^+\ell^-$

NODE=S042240

B($B^0 \to K^{*0}e^+e^-$) (0.0009 < q^2 < 1.0 GeV^2/c^4)

NODE=S042PBH

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
$3.1^{+0.9}_{-0.8}{}^{+0.2}_{-0.3}\pm0.2$	[1] AAIJ	13U	LHCB	pp at 7 TeV

[1] The last uncertainty is due to uncertainties of B($B^0 \to J/\psi K^{*0}$) and B($J/\psi \to e^+e^-$) branching fraction measurements. NODE=S042PBH;LINKAGE=AA

B($B^0 \to K^{*0}\ell^+\ell^-$) (0.1 < q^2 < 2.0 GeV^2/c^4)

NODE=S042PB1

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
$1.24^{+0.23}_{-0.27}$ OUR AVERAGE	Error includes scale factor of 1.6.			
$1.14\pm0.11^{+0.11}_{-0.15}$	AAIJ	13Y	LHCB	pp at 7 TeV, $K^{*0}\mu^+\mu^-$
1.80±0.36±0.11	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.48^{+0.14}_{-0.12}\pm0.04$	[1] CHATRCHYAN	13BL	CMS	pp at 7 TeV
1.16±0.23±0.11	AAIJ	12U	LHCB	Repl. by AAIJ 13Y

[1] CHATRCHYAN 13BL uses, for this bin, 1.0 < q^2 < 2.0 GeV^2/c^4. NODE=S042PB1;LINKAGE=CH

B($B^0 \to K^{*0}\ell^+\ell^-$) (2.0 < q^2 < 4.3 GeV^2/c^4)

NODE=S042PB2

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
0.76 ±0.07 OUR AVERAGE				
0.759±0.115±0.046	KHACHATRY...	16D	CMS	pp at 8 TeV
0.69 ±0.07 ±0.09	AAIJ	13Y	LHCB	pp at 7 TeV, $K^{*0}\mu^+\mu^-$
0.87 ±0.16 ±0.07	CHATRCHYAN	13BL	CMS	pp at 7 TeV
0.84 ±0.28 ±0.06	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.78 ±0.21 ±0.05	AAIJ	12U	LHCB	Repl. by AAIJ 13Y

B($B^0 \to K^{*0}\ell^+\ell^-$) (4.3 < q^2 < 8.68 GeV^2/c^4)

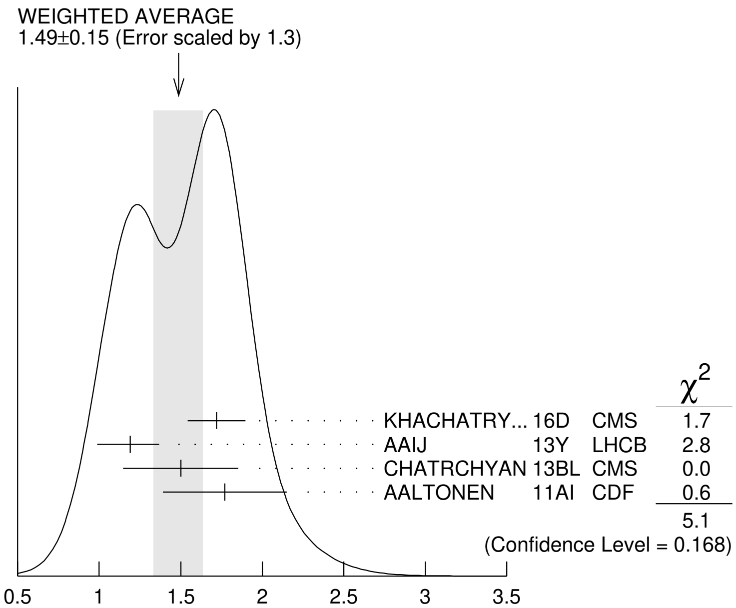
NODE=S042PB3

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
1.87±0.21 OUR AVERAGE				
$2.15\pm0.18^{+0.22}_{-0.28}$	AAIJ	13Y	LHCB	pp at 7 TeV, $K^{*0}\mu^+\mu^-$
1.62±0.31±0.18	CHATRCHYAN	13BL	CMS	pp at 7 TeV
1.73±0.43±0.15	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3.02±0.35±0.22	AAIJ	12U	LHCB	Repl. by AAIJ 13Y

B($B^0 \to K^{*0} \ell^+ \ell^-$) ($10.09 < q^2 < 12.86$ GeV^2/c^4)

NODE=S042PB4
NODE=S042PB4

VALUE (units 10^{-7})	DOCUMENT ID	TECN	COMMENT
1.49±0.15 OUR AVERAGE	Error includes scale factor of 1.3. See the ideogram below.		
$1.72 \pm 0.11 \pm 0.14$	KHACHATRY...16D	CMS	pp at 8 TeV
$1.19 \pm 0.11 {}^{+0.14}_{-0.17}$	AAIJ 13Y	LHCB	pp at 7 TeV, $K^{*0} \mu^+ \mu^-$
$1.50 \pm 0.25 \pm 0.25$	CHATRCHYAN 13BL	CMS	pp at 7 TeV
$1.77 \pm 0.36 \pm 0.12$	AALTONEN 11AI	CDF	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$1.52 \pm 0.25 \pm 0.19$	AAIJ 12U	LHCB	Repl. by AAIJ 13Y



B($B^0 \to K^{*0} \ell^+ \ell^-$) ($10.09 < q^2 < 12.86$ GeV^2/c^4) (units 10^{-7})

B($B^0 \to K^{*0} \ell^+ \ell^-$) ($14.18 < q^2 < 16.0$ GeV^2/c^4)

NODE=S042PB5
NODE=S042PB5

VALUE (units 10^{-7})	DOCUMENT ID	TECN	COMMENT
1.09±0.10 OUR AVERAGE	Error includes scale factor of 1.1.		
$1.22 \pm 0.11 \pm 0.09$	KHACHATRY...16D	CMS	pp at 8 TeV
$1.02 \pm 0.11 {}^{+0.11}_{-0.15}$	AAIJ 13Y	LHCB	pp at 7 TeV, $K^{*0} \mu^+ \mu^-$
$0.84 {}^{+0.16}_{-0.15} \pm 0.09$	CHATRCHYAN 13BL	CMS	pp at 7 TeV
$1.34 \pm 0.26 \pm 0.08$	AALTONEN 11AI	CDF	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$1.15 \pm 0.20 \pm 0.09$	AAIJ 12U	LHCB	Repl. by AAIJ 13Y

B($B^0 \to K^{*0} \ell^+ \ell^-$) ($16.0 < q^2 < 19.0$ GeV^2/c^4)

NODE=S042PB6
NODE=S042PB6

VALUE (units 10^{-7})	DOCUMENT ID	TECN	COMMENT
1.27±0.09 OUR AVERAGE			
$1.26 \pm 0.09 \pm 0.09$	KHACHATRY...16D	CMS	pp at 8 TeV
$1.23 \pm 0.12 {}^{+0.15}_{-0.18}$	AAIJ 13Y	LHCB	pp at 7 TeV, $K^{*0} \mu^+ \mu^-$
$1.56 \pm 0.18 \pm 0.15$	CHATRCHYAN 13BL	CMS	pp at 7 TeV
$0.97 \pm 0.26 \pm 0.07$	AALTONEN 11AI	CDF	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$1.50 \pm 0.24 \pm 0.15$	AAIJ 12U	LHCB	Repl. by AAIJ 13Y

B($B^0 \to K^*(892)^0 \ell^+ \ell^-$) ($15.0 < q^2 < 19.0$ GeV^2/c^4)

NODE=S042A02
NODE=S042A02

VALUE (units 10^{-7})	DOCUMENT ID	TECN	COMMENT
1.80 ±0.13 OUR AVERAGE			
$2.2 {}^{+0.5}_{-0.4} \pm 0.2$	[1] WEHLE 21	BELL	$e^+ e^- \to \Upsilon(4S)$
$2.0 {}^{+0.6}_{-0.5} \pm 0.2$	[2] WEHLE 21	BELL	$e^+ e^- \to \Upsilon(4S)$
$1.744 {}^{+0.072}_{-0.076} \pm 0.123$	[1] AAIJ 17Q	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$1.95 {}^{+0.08}_{-0.09} \pm 0.13$	[1] AAIJ 16AO	LHCB	Repl. by AAIJ 17Q

OCCUR=2

[1] Measured with $\mu^+\mu^-$ as lepton pair. NODE=S042A02;LINKAGE=A
[2] Measured with e^+e^- as lepton pair. NODE=S042A02;LINKAGE=B

B($B^0 \to K^{*0}\ell^+\ell^-$) (1.0 < q^2 < 6.0 GeV^2/c^4)

NODE=S042PB7
NODE=S042PB7

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
1.74±0.11 OUR AVERAGE				
$1.9\ ^{+0.6}_{-0.5}\ \pm0.3$	[1,2] WEHLE	21	BELL	$e^+e^- \to \Upsilon(4S)$
$1.8\ ^{+0.6}_{-0.6}\ \pm0.2$	[1,3] WEHLE	21	BELL	$e^+e^- \to \Upsilon(4S)$ OCCUR=2
$1.68\pm0.083\pm0.12$	[1,2] AAIJ	17Q	LHCB	pp at 7, 8 TeV
1.90 ± 0.20	[2] KHACHATRY...	16D	CMS	pp at 7, 8 TeV
$1.42\pm0.41\ \pm0.12$	[2] AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1.92\,^{+0.10}_{-0.09}\ \pm0.14$	AAIJ	16AO	LHCB	Repl. by AAIJ 17Q
$1.70\pm0.15\ ^{+0.20}_{-0.25}$	AAIJ	13Y	LHCB	Repl. by AAIJ 16AO
$2.20\pm0.30\ \pm0.20$	CHATRCHYAN	13BL	CMS	Repl. by KHACHATRYAN 16D
$2.10\pm0.30\ \pm0.15$	AAIJ	12U	LHCB	Repl. by AAIJ 13Y

[1] Result is determined for the range $1.1 < q^2 < 6.0$ GeV^4/c^2. NODE=S042PB7;LINKAGE=A
[2] Measured with $\mu^+\mu^-$ as lepton pair. NODE=S042PB7;LINKAGE=B
[3] Measured with e^+e^- as lepton pair. NODE=S042PB7;LINKAGE=C

B($B^0 \to K^{*0}\ell^+\ell^-$) (0.0 < q^2 < 4.3 GeV^2/c^4)

NODE=S042PB8
NODE=S042PB8

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
2.60±0.45±0.17	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV

B($B^0 \to K^{*0}\mu^+\mu^-$)/B($B^0 \to K^{*0}e^+e^-$) (0.045 < q^2 < 1.1 GeV^2/c^4)

NODE=S042A05
NODE=S042A05

VALUE	DOCUMENT ID		TECN	COMMENT
0.91 ±0.09 OUR AVERAGE				
$0.927\,^{+0.093}_{-0.087}\,^{+0.036}_{-0.035}$	[1] AAIJ	23AB	LHCB	pp at 7, 8, 13 TeV
$0.46\ ^{+0.55}_{-0.27}\ \pm0.13$	WEHLE	21	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.66\ ^{+0.11}_{-0.07}\ \pm0.03$	[2] AAIJ	17W	LHCB	pp at 7, 8 TeV

[1] Measured for the region $0.1 < q^2 < 1.1$ GeV^2/c^4. NODE=S042A05;LINKAGE=A
[2] Superseded by AAIJ 23AB. NODE=S042A05;LINKAGE=C

B($B^0 \to K^{*0}\mu^+\mu^-$)/B($B^0 \to K^{*0}e^+e^-$) (1.1 < q^2 < 6.0 GeV^2/c^4)

NODE=S042A04
NODE=S042A04

VALUE	DOCUMENT ID		TECN	COMMENT
1.03 ±0.07 OUR AVERAGE				
$1.027\,^{+0.072}_{-0.068}\,^{+0.027}_{-0.026}$	AAIJ	23AB	LHCB	pp at 7, 8, 13 TeV
$1.06\ ^{+0.63}_{-0.38}\ \pm0.13$	WEHLE	21	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.69\ ^{+0.11}_{-0.07}\ \pm0.05$	[1] AAIJ	17W	LHCB	pp at 7, 8 TeV

[1] Superseded by AAIJ 23AB. NODE=S042A04;LINKAGE=D

B($B^0 \to K^{*0}\mu^+\mu^-$)/B($B^0 \to K^{*0}e^+e^-$) (15.0 < q^2 < 19.0 GeV^2/c^4)

NODE=S042A36
NODE=S042A36

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{1.12^{+0.61}_{-0.36}\pm0.10}$	WEHLE	21	BELL	$e^+e^- \to \Upsilon(4S)$

B($B^0 \to K^0\ell^+\ell^-$) (q^2 < 2.0 GeV^2/c^4)

NODE=S042PB9
NODE=S042PB9

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.24^{+0.22}_{-0.20}}$ **OUR AVERAGE**				
$0.21\,^{+0.27}_{-0.23}$	AAIJ	12AH	LHCB	pp at 7 TeV
$0.31\pm0.37\pm0.02$	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV

$B(B^0 \to K^0 \ell^+ \ell^-)$ ($2.0 < q^2 < 4.3$ GeV^2/c^4)

NODE=S042PBA
NODE=S042PBA

VALUE (units 10^{-7})	DOCUMENT ID	TECN	COMMENT
$0.24^{+0.35}_{-0.30}$ OUR AVERAGE Error includes scale factor of 1.6.			
$0.07^{+0.25}_{-0.21}$	AAIJ 12AH	LHCB	pp at 7 TeV
$0.93\pm0.49\pm0.07$	AALTONEN 11AI	CDF	$p\overline{p}$ at 1.96 TeV

$B(B^0 \to K^0 \ell^+ \ell^-)$ ($4.3 < q^2 < 8.68$ GeV^2/c^4)

NODE=S042PBB
NODE=S042PBB

VALUE (units 10^{-7})	DOCUMENT ID	TECN	COMMENT
1.08 ± 0.27 OUR AVERAGE			
1.23 ± 0.31	AAIJ 12AH	LHCB	pp at 7 TeV
$0.66\pm0.51\pm0.05$	AALTONEN 11AI	CDF	$p\overline{p}$ at 1.96 TeV

$B(B^0 \to K^0 \ell^+ \ell^-)$ ($10.09 < q^2 < 12.86$ GeV^2/c^4)

NODE=S042PBC
NODE=S042PBC

VALUE (units 10^{-7})	DOCUMENT ID	TECN	COMMENT
0.27 ± 0.27 OUR AVERAGE Error includes scale factor of 1.8.			
$0.50^{+0.22}_{-0.19}$	AAIJ 12AH	LHCB	pp at 7 TeV
$-0.03\pm0.22\pm0.01$	AALTONEN 11AI	CDF	$p\overline{p}$ at 1.96 TeV

$B(B^0 \to K^0 \ell^+ \ell^-)$ ($14.18 < q^2 < 16.0$ GeV^2/c^4)

NODE=S042PBD
NODE=S042PBD

VALUE (units 10^{-7})	DOCUMENT ID	TECN	COMMENT
$0.29^{+0.21}_{-0.15}$ OUR AVERAGE Error includes scale factor of 1.8.			
$0.20^{+0.13}_{-0.09}$	AAIJ 12AH	LHCB	pp at 7 TeV
$0.73\pm0.26\pm0.06$	AALTONEN 11AI	CDF	$p\overline{p}$ at 1.96 TeV

$B(B^0 \to K^0 \ell^+ \ell^-)$ ($q^2 > 16.0$ GeV^2/c^4)

NODE=S042PBE
NODE=S042PBE

VALUE (units 10^{-7})	DOCUMENT ID	TECN	COMMENT
$0.31^{+0.16}_{-0.12}$ OUR AVERAGE			
$0.35^{+0.21}_{-0.14}$	AAIJ 12AH	LHCB	pp at 7 TeV
$0.21\pm0.18\pm0.16$	AALTONEN 11AI	CDF	$p\overline{p}$ at 1.96 TeV

$B(B^0 \to K^0 \ell^+ \ell^-)$ ($1.0 < q^2 < 6.0$ GeV^2/c^4)

NODE=S042PBF
NODE=S042PBF

VALUE (units 10^{-7})	DOCUMENT ID	TECN	COMMENT
$0.91^{+0.15}_{-0.13}$ OUR AVERAGE			
$0.62^{+0.44}_{-0.32}\pm0.02$	[1] CHOUDHURY 21	BELL	$e^+e^- \to \Upsilon(4S)$
$1.12^{+0.50}_{-0.40}\pm0.04$	[2] CHOUDHURY 21	BELL	$e^+e^- \to \Upsilon(4S)$ OCCUR=2
$0.916^{+0.172}_{-0.157}\pm0.004$	[3] AAIJ 14M	LHCB	pp at 7, 8 TeV
$0.98\pm0.61\pm0.08$	AALTONEN 11AI	CDF	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.65^{+0.45}_{-0.35}$	AAIJ 12AH	LHCB	Repl. by AAIJ 14M

[1] Measured for $B^0 \to K^0_S \mu^+ \mu^-$ decays. Measurements in other q^2 bins are also reported. NODE=S042PBF;LINKAGE=B

[2] Measured for $B^0 \to K^0_S e^+ e^-$ decays. Measurements in other q^2 bins are also reported. NODE=S042PBF;LINKAGE=C

[3] Uses $B(B^0 \to J/\psi(1S) K^0) = (0.928 \pm 0.013 \pm 0.037) \times 10^{-3}$ for normalisation and $\mu^+\mu^-$ as a lepton pair. Measured in $1.1 < q^2 < 6.0$ GeV^2/c^4. NODE=S042PBF;LINKAGE=A

$B(B^0 \to K^0 \mu^+ \mu^-)$ / $B(B^0 \to K^0 e^+ e^-)$ ($1.0 < q^2 < 6.0$ GeV^2/c^4)

NODE=S042A34
NODE=S042A34

VALUE	DOCUMENT ID	TECN	COMMENT
$0.64^{+0.18}_{-0.13}$ OUR AVERAGE			
$0.66^{+0.20+0.02}_{-0.14-0.04}$	[1] AAIJ 22J	LHCB	pp at 7, 8, 13 TeV
$0.55^{+0.46}_{-0.34}\pm0.01$	[2] CHOUDHURY 21	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Measured in the range $1.1 < q^2 < 6.0$ GeV^2/c^4. NODE=S042A34;LINKAGE=B

[2] Measured from the ratio of $K^0_S \mu^+ \mu^-$ and $K^0_S e^+ e^-$. Measurements in other q^2 bins are also reported. NODE=S042A34;LINKAGE=A

$B(B^0 \to K^0 \ell^+ \ell^-)$ $(0.0 < q^2 < 4.3\ GeV^2/c^4)$

NODE=S042PBG
NODE=S042PBG

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
1.27±0.62±0.10	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV

$B(B^0 \to K^0 \ell^+ \ell^-)$ $(15.0 < q^2 < 22.0\ GeV^2/c^4)$

NODE=S042PBK
NODE=S042PBK

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.67^{+0.11}_{-0.11}\pm0.04}$	[1] AAIJ	14M	LHCB	pp at 7, 8 TeV

[1] Uses $B(B^0 \to J/\psi(1S) K^0) = (0.928 \pm 0.013 \pm 0.037) \times 10^{-3}$ for normalisation and $\mu^+\mu^-$ as a lepton pair. NODE=S042PBK;LINKAGE=A

$B(B^0 \to K^0 e^+ e^-)$ $(1.1 < q^2 < 6.0\ GeV^2/c^4)$

NODE=S042A41
NODE=S042A41

VALUE (units 10^{-8})	DOCUMENT ID		TECN	COMMENT
13±3±1	[1] AAIJ	22J	LHCB	pp at 7, 8, 13 TeV

[1] The reported value is converted from the measured $dB/dq^2 = (2.6 \pm 0.6 \pm 0.1) \times 10^{-8}$ $(GeV^2/c^4)^{-1}$ by multiplying by the $\Delta q^2 = 4.9\ GeV^2/c^4$ range. NODE=S042A41;LINKAGE=A

$B(B^0 \to K^*_{0,2}(1430)^0 \mu^+ \mu^-)$ $(1.10 < q^2 < 6.00\ GeV^2/c^4)$

NODE=S042A03
NODE=S042A03

VALUE (units 10^{-8})	DOCUMENT ID		TECN	COMMENT
4.02±0.44±0.31	[1,2] AAIJ	16AP	LHCB	pp at 7, 8 TeV

[1] Measured the differential branching fraction and angular moments of the decay $B^0 \to K^+ \pi^- \mu^+ \mu^-$ in the $K^+\pi^-$ invariant mass range $1330 < m(K^+\pi^-) < 1530$ MeV/c^2. NODE=S042A03;LINKAGE=A

[2] The reported value is converted from the measured $dB/dq^2 = (0.82 \pm 0.09 \pm 0.063) \times 10^{-8}$ $(GeV^2/c^4)^{-1}$ by multiplying by the $\Delta q^2 = 4.9\ GeV^2/c^4$ range. NODE=S042A03;LINKAGE=B

$F_H(B^0 \to K^0 \mu^+ \mu^-)$ $(1.1 < q^2 < 6.0\ GeV^2/c^4)$

NODE=S042PBI

F_H is a fractional contribution of (pseudo) scalar and tensor amplitudes to the decay width in the massless muon approximation. NODE=S042PBI

NODE=S042PBI

VALUE	DOCUMENT ID		TECN	COMMENT
0.78±0.46±0.09	[1] AAIJ	14O	LHCB	pp at 7, 8 TeV

[1] AAIJ 14O reports 68% C.L. interval, which we encode as midpoint with uncertainty as half of the width of interval. NODE=S042PBI;LINKAGE=A

$F_H(B^0 \to K^0 \mu^+ \mu^-)$ $(15.0 < q^2 < 22.0\ GeV^2/c^4)$

NODE=S042PBJ
NODE=S042PBJ

VALUE	DOCUMENT ID		TECN	COMMENT
0.34±0.25±0.03	[1] AAIJ	14O	LHCB	pp at 7, 8 TeV

[1] AAIJ 14O reports 68% C.L. interval, which we encode as midpoint with uncertainty as half of the width of interval. NODE=S042PBJ;LINKAGE=A

PRODUCTION ASYMMETRIES

NODE=S042270

$A_P(B^0)$

NODE=S042PAX

$A_P(B^0) = [\sigma(\overline{B}^0) - \sigma(B^0)] \ / \ [\sigma(\overline{B}^0) + \sigma(B^0)]$ NODE=S042PAX

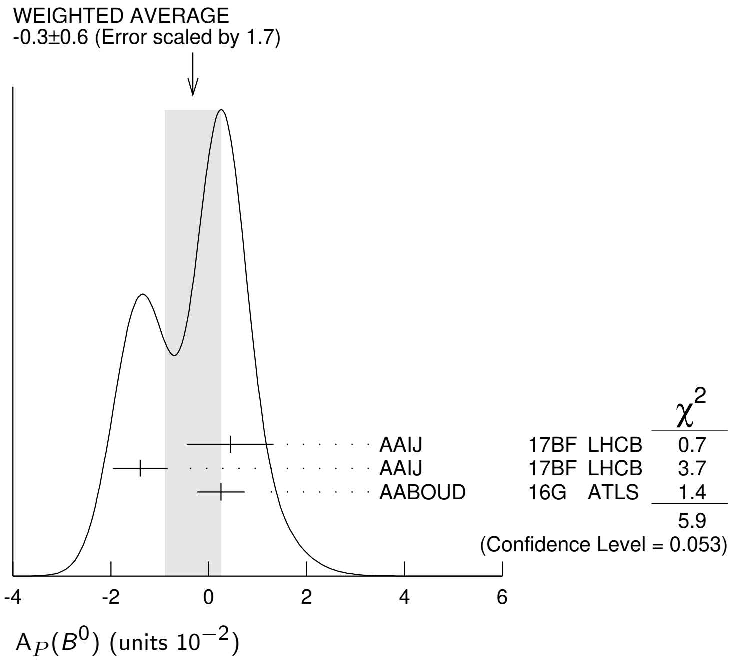
NODE=S042PAX

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
−0.3 ±0.6 OUR AVERAGE	Error includes scale factor of 1.7. See the ideogram below.			
0.44±0.88±0.11	[1] AAIJ	17BF	LHCB	pp at 7 TeV
−1.40±0.55±0.10	[1] AAIJ	17BF	LHCB	pp at 8 TeV (OCCUR=2)
0.25±0.48±0.05	[2] AABOUD	16G	ATLS	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.35±0.76±0.28	[3] AAIJ	14BP	LHCB	Repl. by AAIJ 17BF, pp at 7 TeV

[1] AAIJ 17BF uses $B^0 \to J/\psi K^{*0}$ decays with B^0 transverse momenta p_T and rapidities y in the region of $0 < p_T < 30$ GeV/c and $2.1 < y < 4.5$. NODE=S042PAX;LINKAGE=C

[2] Based on time-dependent analysis of $B^0 \to J/\psi K^{*0}$ decay in kinematic range $p_T > 10$ GeV/c and $|\eta| < 2.5$. NODE=S042PAX;LINKAGE=B

[3] Based on time-dependent analysis of $B^0 \to J/\psi K^{*0}$ and $B^0 \to D^- \pi^+$ in kinematic range $4 < p_T < 30$ GeV/c and $2.5 < \eta < 4.5$. NODE=S042PAX;LINKAGE=A



NODE=S042A13

$A(B^0+\overline{B}^0)$ in $K^0_S K^{\mp}\pi^{\pm}$

NODE=S042A13

$A(B^0+\overline{B}^0) = [n(K^0_S K^-\pi^+) - n(K^0_S K^+\pi^-)] \;/\; [n(K^0_S K^-\pi^+) + n(K^0_S K^+\pi^-)]$

NODE=S042A13

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
−8.5±8.9±0.2	LAI	19	BELL	$e^+e^- \to \Upsilon(4S)$

FORWARD-BACKWARD ASYMMETRIES

NODE=S042280

A_{FB} in $B^0 \to D^{*-}e^+\nu_e$

NODE=S042A50
NODE=S042A50

VALUE	DOCUMENT ID		TECN	COMMENT
0.225±0.018 OUR AVERAGE				
0.228±0.012±0.018	ADACHI	23J	BELL	$e^+e^- \to \Upsilon(4S)$
0.218±0.030±0.009	PRIM	23	BELL	$e^+e^- \to \Upsilon(4S)$

A_{FB} in $B^0 \to D^{*-}\mu^+\nu_\mu$

NODE=S042A51
NODE=S042A51

VALUE	DOCUMENT ID		TECN	COMMENT
0.235±0.033 OUR AVERAGE	Error includes scale factor of 1.7.			
0.211±0.011±0.021	ADACHI	23J	BELL	$e^+e^- \to \Upsilon(4S)$
0.281±0.032±0.007	PRIM	23	BELL	$e^+e^- \to \Upsilon(4S)$

$\Delta(A_{FB}) = (A^{\mu}_{FB} - A^{e}_{FB})$ in $B^0 \to D^{*-}\ell^+\nu_\ell$

NODE=S042A52
NODE=S042A52

VALUE	DOCUMENT ID		TECN	COMMENT
−0.018±0.020 OUR AVERAGE				
−0.024±0.043±0.016	[1] ADACHI	23H	BELL	$e^+e^- \to \Upsilon(4S)$
−0.017±0.016±0.016	ADACHI	23J	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.063±0.044±0.012	PRIM	23	BELL	$e^+e^- \to \Upsilon(4S)$

[1] ADACHI 23H measurement is based on the angular asymmetries of $B^0 \to D^{*-}\ell^+\nu_\ell$ decays using explicit reconstruction of the B tag. Other asymmetries from $\Delta(S_3)$, $\Delta(S_5)$, $\Delta(S_7)$, and $\Delta(S_9)$ are also reported. NODE=S042A52;LINKAGE=A

B^0 REFERENCES

NODE=S042

ADACHI	25	PRL 134 011802	I. Adachi *et al.*	(BELLE II Collab.)	REFID=63163
AAIJ	24	PRL 132 021801	R. Aaij *et al.*	(LHCb Collab.)	REFID=62568
AAIJ	24AN	PR D110 092007	R. Aaij *et al.*	(LHCb Collab.)	REFID=63186
AAIJ	24F	JHEP 2402 032	R. Aaij *et al.*	(LHCb Collab.)	REFID=62831
AAIJ	24M	JHEP 2405 025	R. Aaij *et al.*	(LHCb Collab.)	REFID=62849
AAIJ	24N	JHEP 2405 065	R. Aaij *et al.*	(LHCb Collab.)	REFID=62852
AAIJ	24U	EPJ C84 206	R. Aaij *et al.*	(LHCb Collab.)	REFID=62884
ADACHI	24	PR D109 012001	I. Adachi *et al.*	(BELLE II Collab.)	REFID=62572
ADACHI	24G	PR D109 112020	I. Adachi *et al.*	(BELLE II Collab.)	REFID=62816
ADACHI	24H	PR D110 012001	I. Adachi *et al.*	(BELLE II Collab.)	REFID=62819
ADACHI	24J	PR D110 L031106	I. Adachi *et al.*	(BELLE and BELLE II Collab.)	REFID=62929
ADACHI	24L	JHEP 2408 206	I. Adachi *et al.*	(BELLE II Collab.)	REFID=62947
ADACHI	24N	PRL 133 101804	I. Adachi *et al.*	(BELLE and BELLE II Collab.)	REFID=63043
ADACHI	24P	PR D110 112002	I. Adachi *et al.*	(BELLE II Collab.)	REFID=63104
ALONSO-ALV...	24	EPJ C84 553	G. Alonso-Alvarez, M.E. Abenza	(MCGI, TNTO+)	REFID=62892
GUAN	24	PRL 133 081801	Y. Guan *et al.*	(BELLE Collab.)	REFID=62923

SAVINOV	24	PR D110 L031102	V. Savinov *et al.*	(BELLE Collab.)	REFID=62927
AAIJ	23AB	PRL 131 051803	R. Aaij *et al.*	(LHCb Collab.)	REFID=62318
Also		PR D108 032002	R. Aaij *et al.*	(LHCb Collab.)	REFID=62342
AAIJ	23AD	PRL 131 091901	R. Aaij *et al.*	(LHCb Collab.)	REFID=62327
AAIJ	23AG	PR D108 032007	R. Aaij *et al.*	(LHCb Collab.)	REFID=62346
AAIJ	23AR	PRL 131 111802	R. Aaij *et al.*	(LHCb Collab.)	REFID=62445
AAIJ	23AY	JHEP 2310 106	R. Aaij *et al.*	(LHCb Collab.)	REFID=62541
AAIJ	23AZ	JHEP 2310 123	R. Aaij *et al.*	(LHCb Collab.)	REFID=62542
AAIJ	23B	PR D108 012017	R. Aaij *et al.*	(LHCb Collab.)	REFID=62091
AAIJ	23F	JHEP 2306 143	R. Aaij *et al.*	(LHCb Collab.)	REFID=62123
AAIJ	23G	JHEP 2306 073	R. Aaij *et al.*	(LHCb Collab.)	REFID=62129
AAIJ	23T	PR D108 012007	R. Aaij *et al.*	(LHCb Collab.)	REFID=62291
AAIJ	23W	PR D108 012018	R. Aaij *et al.*	(LHCb Collab.)	REFID=62299
Also		PR D109 119902 (errat.)	R. Aaij *et al.*	(LHCb Collab.)	REFID=62817
AAIJ	23Y	PR D108 012021	R. Aaij *et al.*	(LHCb Collab.)	REFID=62301
ABUDINEN	23D	PR D107 L091102	F. Abudinen *et al.*	(BELLE II Collab.)	REFID=62270
ABUDINEN	23E	PR D107 112009	F. Abudinen *et al.*	(BELLE II Collab.)	REFID=62280
ADACHI	23E	PRL 131 111803	I. Adachi *et al.*	(BELLE II Collab.)	REFID=62446
ADACHI	23H	PRL 131 181801	I. Adachi *et al.*	(BELLE II Collab.)	REFID=62460
ADACHI	23I	PR D108 072012	I. Adachi *et al.*	(BELLE II Collab.)	REFID=62493
ADACHI	23J	PR D108 092013	I. Adachi *et al.*	(BELLE II Collab.)	REFID=62502
CAO	23	PRL 131 211801	L. Cao *et al.*	(BELLE Collab.)	REFID=62467
CHANG	23	PR D108 052011	C.-Y. Chang *et al.*	(BELLE Collab.)	REFID=62590
CHOUDHURY	23	PR D107 L031102	S. Choudhury *et al.*	(BELLE Collab.)	REFID=62074
DONG	23	PR D108 L011102	T.V. Dong *et al.*	(BELLE Collab.)	REFID=62286
HIRATA	23	PR D107 112011	H. Hirata *et al.*	(BELLE Collab.)	REFID=62281
KROHN	23	PR D107 012003	J.-F. Krohn *et al.*	(BELLE Collab.)	REFID=62241
KUMAR	23	PR D107 L031101	M. Kumar *et al.*	(BELLE Collab.)	REFID=62246
LEES	23B	PR D107 092001	J.P. Lees *et al.*	(BABAR Collab.)	REFID=62271
LI	23E	PRL 130 031901	Y.B. Li *et al.*	(BELLE Collab.)	REFID=62197
MEIER	23	PR D107 092003	F. Meier *et al.*	(BELLE Collab.)	REFID=62272
PRIM	23	PR D108 012002	M.T. Prim *et al.*	(BELLE Collab.)	REFID=62303
TUMASYAN	23A	PL B842 137955	A. Tumasyan *et al.*	(CMS Collab.)	REFID=62102
AAIJ	22	PRL 128 041801	R. Aaij *et al.*	(LHCb Collab.)	REFID=61624
Also		PR D105 012010	R. Aaij *et al.*	(LHCb Collab.)	REFID=61625
AAIJ	22J	PRL 128 191802	R. Aaij *et al.*	(LHCb Collab.)	REFID=61677
AAIJ	22N	PR D105 072005	R. Aaij *et al.*	(LHCb Collab.)	REFID=61737
AAIJ	22Q	JHEP 2203 109	R. Aaij *et al.*	(LHCb Collab.)	REFID=61780
AAIJ	22S	JHEP 2205 067	R. Aaij *et al.*	(LHCb Collab.)	REFID=61798
BLOOMFIELD	22	PR D105 072007	T. Bloomfield *et al.*	(BELLE Collab.)	REFID=61738
HADJIVASILIOU	22	PR D105 L051101	C. Hadjivasiliou *et al.*	(BELLE Collab.)	REFID=61725
JEON	22	PR D106 012006	H.B. Jeon *et al.*	(BELLE Collab.)	REFID=61759
TUMASYAN	22AI	EPJ C82 499	A. Tumasyan *et al.*	(CMS Collab.)	REFID=61833
WAHEED	22	PR D105 012003	E. Waheed *et al.*	(BELLE Collab.)	REFID=61541
AAIJ	21K	CP C45 043001	R. Aaij *et al.*	(LHCb Collab.)	REFID=61262
AAIJ	21O	JHEP 2103 075	R. Aaij *et al.*	(LHCb Collab.)	REFID=61290
AAIJ	21Q	JHEP 2104 081	R. Aaij *et al.*	(LHCb Collab.)	REFID=61300
AAIJ	21S	JHEP 2106 177	R. Aaij *et al.*	(LHCb Collab.)	REFID=61307
AAIJ	21W	EPJ C81 314	R. Aaij *et al.*	(LHCb Collab.)	REFID=61334
ATMACAN	21	PR D104 L091105	H. Atmacan *et al.*	(BELLE Collab.)	REFID=61525
CAO	21A	PR D104 012008	L. Cao *et al.*	(BELLE Collab.)	REFID=61361
CHOUDHURY	21	JHEP 2103 105	S. Choudhury *et al.*	(BELLE Collab.)	REFID=61037
KANG	21	PR D103 032003	K.H. Kang *et al.*	(BELLE Collab.)	REFID=61206
MOHANTY	21	PR D103 052013	S. Mohanty *et al.*	(BELLE Collab.)	REFID=61222
WAHEED	21	PR D103 079901	E. Waheed *et al.*	(BELLE Collab.)	REFID=61232
WEHLE	21	PRL 126 161801	S. Wehle *et al.*	(BELLE Collab.)	REFID=61178
AAIJ	20AG	PR D102 051102	R. Aaij *et al.*	(LHCb Collab.)	REFID=60713
AAIJ	20AN	JHEP 2012 139	R. Aaij *et al.*	(LHCb Collab.)	REFID=60765
AAIJ	20AO	JHEP 2012 081	R. Aaij *et al.*	(LHCb Collab.)	REFID=60767
AAIJ	20F	PR D102 012011	R. Aaij *et al.*	(LHCb Collab.)	REFID=60339
AAIJ	20L	JHEP 2003 147	R. Aaij *et al.*	(LHCb Collab.)	REFID=60486
AAIJ	20W	PRL 124 211802	R. Aaij *et al.*	(LHCb Collab.)	REFID=60562
CHILIKIN	20	JHEP 2005 034	K. Chilikin *et al.*	(BELLE Collab.)	REFID=60493
CHU	20	PR D101 052012	K. Chu *et al.*	(BELLE Collab.)	REFID=60275
KU	20	PR D102 012003	Y. Ku *et al.*	(BELLE Collab.)	REFID=60334
SIRUNYAN	20AG	JHEP 2004 188	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=60490
AABOUD	19L	JHEP 1904 098	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=59640
AAIJ	19AK	PRL 123 211801	R. Aaij *et al.*	(LHCb Collab.)	REFID=60068
AAIJ	19AP	JHEP 1912 155	R. Aaij *et al.*	(LHCb Collab.)	REFID=60103
AAIJ	19J	JHEP 1905 026	R. Aaij *et al.*	(LHCb Collab.)	REFID=59679
AAIJ	19L	JHEP 1907 032	R. Aaij *et al.*	(LHCb Collab.)	REFID=59696
AAIJ	19N	JHEP 1908 041	R. Aaij *et al.*	(LHCb Collab.)	REFID=59701
AAIJ	19U	PRL 122 191804	R. Aaij *et al.*	(LHCb Collab.)	REFID=59783
CHILIKIN	19	PR D100 012001	K. Chilikin *et al.*	(BELLE Collab.)	REFID=59899
CHOU	19	PR D100 012002	P.-C. Chou *et al.*	(BELLE Collab.)	REFID=59900
GARG	19	PR D99 071102	R. Garg *et al.*	(BELLE Collab.)	REFID=59851
LAI	19	PR D100 011101	Y.-T. Lai *et al.*	(BELLE Collab.)	REFID=59897
LI	19C	PR D100 031101	Y.B. Li *et al.*	(BELLE Collab.)	REFID=59906
PAL	19	PR D99 091104	B. Pal *et al.*	(BELLE Collab.)	REFID=59872
WAHEED	19	PR D100 052007	E. Waheed *et al.*	(BELLE Collab.)	REFID=59994
WATANUKI	19	PR D99 032012	S. Watanuki *et al.*	(BELLE Collab.)	REFID=59618
YUSA	19	PR D99 011102	Y. Yusa *et al.*	(BELLE Collab.)	REFID=59597
AABOUD	18BY	JHEP 1810 047	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=59350
AAIJ	18AN	EPJ C78 1019	R. Aaij *et al.*	(LHCb Collab.)	REFID=59335
AAIJ	18AY	PR D98 071103	R. Aaij *et al.*	(LHCb Collab.)	REFID=59452
AAIJ	18AZ	PR D98 072006	R. Aaij *et al.*	(LHCb Collab.)	REFID=59457
AAIJ	18D	PRL 120 171802	R. Aaij *et al.*	(LHCb Collab.)	REFID=58822
AAIJ	18F	PRL 120 261801	R. Aaij *et al.*	(LHCb Collab.)	REFID=58844
AAIJ	18O	PR D98 032004	R. Aaij *et al.*	(LHCb Collab.)	REFID=58973
AAIJ	18T	JHEP 1803 078	R. Aaij *et al.*	(LHCb Collab.)	REFID=59088
AAIJ	18Z	JHEP 1806 084	R. Aaij *et al.*	(LHCb Collab.)	REFID=59118
ABAZOV	18B	PR D98 052010	V.M. Abazov *et al.*	(D0 Collab.)	REFID=59442
ADACHI	18	PR D98 112012	I. Adachi *et al.*	(BELLE and BABAR Collab.)	REFID=59502
Also		PRL 121 261801	I. Adachi *et al.*	(BELLE and BABAR Collab.)	REFID=59543
LEES	18C	PR D98 071102	J.P. Lees *et al.*	(BABAR Collab.)	REFID=59451
LI	18D	EPJ C78 928	Y.B. Li *et al.*	(BELLE Collab.)	REFID=59326
NAKANO	18	PR D97 092003	H. Nakano *et al.*	(BELLE Collab.)	REFID=58936
PAL	18	PR D98 112008	B. Pal *et al.*	(BELLE Collab.)	REFID=59499
PDG	18	PR D98 030001	M. Tanabashi *et al.*	(PDG Collab.)	REFID=59304

SANDILYA	18	PR D98 071101	S. Sandilya *et al.*	(BELLE Collab.)	REFID=59450
SIRUNYAN	18BY	EPJ C78 457	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=59185
SIRUNYAN	18DF	EPJ C78 939	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=59328
VOSSEN	18	PR D98 012005	A. Vossen *et al.*	(BELLE Collab.)	REFID=58961
AAIJ	17A	PR D95 012006	R. Aaij *et al.*	(LHCb Collab.)	REFID=57640
AAIJ	17AI	PRL 118 191801	R. Aaij *et al.*	(LHCb Collab.)	REFID=57928
AAIJ	17AJ	PRL 118 251802	R. Aaij *et al.*	(LHCb Collab.)	REFID=57938
AAIJ	17BD	PR D96 051103	R. Aaij *et al.*	(LHCb Collab.)	REFID=58214
AAIJ	17BF	PL B774 139	R. Aaij *et al.*	(LHCb Collab.)	REFID=58252
AAIJ	17BJ	PRL 119 232001	R. Aaij *et al.*	(LHCb Collab.)	REFID=58281
AAIJ	17BN	JHEP 1711 170	R. Aaij *et al.*	(LHCb Collab.)	REFID=58342
AAIJ	17BP	JHEP 1711 027	R. Aaij *et al.*	(LHCb Collab.)	REFID=58347
AAIJ	17G	PRL 118 081801	R. Aaij *et al.*	(LHCb Collab.)	REFID=57757
AAIJ	17N	JHEP 1703 001	R. Aaij *et al.*	(LHCb Collab.)	REFID=57797
AAIJ	17Q	JHEP 1704 142	R. Aaij *et al.*	(LHCb Collab.)	REFID=57809
AAIJ	17W	JHEP 1708 055	R. Aaij *et al.*	(LHCb Collab.)	REFID=57830
GRYGIER	17	PR D96 091101	J. Grygier *et al.*	(BELLE Collab.)	REFID=58302
HORIGUCHI	17	PRL 119 191802	T. Horiguchi *et al.*	(BELLE Collab.)	REFID=58275
JULIUS	17	PR D96 032007	T. Julius *et al.*	(BELLE Collab.)	REFID=58030
AABOUD	16G	JHEP 1606 081	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=57337
AABOUD	16L	EPJ C76 513	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=57469
AAIJ	16	JHEP 1601 012	R. Aaij *et al.*	(LHCb Collab.)	REFID=57025
AAIJ	16AA	JHEP 1608 137	R. Aaij *et al.*	(LHCb Collab.)	REFID=57349
AAIJ	16AN	PRL 117 261801	R. Aaij *et al.*	(LHCb Collab.)	REFID=57647
AAIJ	16AO	JHEP 1611 047	R. Aaij *et al.*	(LHCb Collab.)	REFID=57660
AAIJ	16AP	JHEP 1612 065	R. Aaij *et al.*	(LHCb Collab.)	REFID=57663
AAIJ	16AV	EPJ C76 412	R. Aaij *et al.*	(LHCb Collab.)	REFID=57778
AAIJ	16E	PRL 116 241601	R. Aaij *et al.*	(LHCb Collab.)	REFID=57191
AAIJ	16S	PR D93 112018	R. Aaij *et al.*	(LHCb Collab.)	REFID=57300
AAIJ	16Z	JHEP 1606 131	R. Aaij *et al.*	(LHCb Collab.)	REFID=57338
BHARDWAJ	16	PR D93 052016	V. Bhardwaj *et al.*	(BELLE Collab.)	REFID=57272
CHOBANOVA	16	PR D93 031101	V. Chobanova *et al.*	(BELLE Collab.)	REFID=57133
DEL-AMO-SA...	16	PR D93 052013	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=57269
GLATTAUER	16	PR D93 032006	R. Glattauer *et al.*	(BELLE Collab.)	REFID=57132
HAMER	16	PR D93 032007	P. Hamer *et al.*	(BELLE Collab.)	REFID=57130
KHACHATRY...	16D	PL B753 424	V. Khachatryan *et al.*	(CMS Collab.)	REFID=57008
KING	16	PR D93 111101	Z. King *et al.*	(BELLE Collab.)	REFID=57292
LEES	16	PRL 116 041801	J.P. Lees *et al.*	(BABAR Collab.)	REFID=57108
LEES	16E	PR D94 011101	J.P. Lees *et al.*	(BABAR Collab.)	REFID=57303
LEES	16H	PR D94 091101	J.P. Lees *et al.*	(BABAR Collab.)	REFID=57535
SATO	16B	PR D94 072007	Y. Sato *et al.*	(BELLE Collab.)	REFID=57523
VANHOEFER	16	PR D93 032010	P. Vanhoefer *et al.*	(BELLE Collab.)	REFID=57131
Also		PR D94 099903 (errat.)	P. Vanhoefer *et al.*	(BELLE Collab.)	REFID=57543
VOROBYEV	16	PR D94 052004	V. Vorobyev *et al.*	(BELLE Collab.)	REFID=57427
AAIJ	15AC	JHEP 1505 019	R. Aaij *et al.*	(LHCb Collab.)	REFID=56629
AAIJ	15AS	JHEP 1510 053	R. Aaij *et al.*	(LHCb Collab.)	REFID=56857
AAIJ	15AZ	PRL 115 161802	R. Aaij *et al.*	(LHCb Collab.)	REFID=56922
AAIJ	15BB	PR D92 112002	R. Aaij *et al.*	(LHCb Collab.)	REFID=57010
AAIJ	15D	JHEP 1501 024	R. Aaij *et al.*	(LHCb Collab.)	REFID=56299
AAIJ	15F	PRL 114 041601	R. Aaij *et al.*	(LHCb Collab.)	REFID=56369
AAIJ	15J	PL B742 38	R. Aaij *et al.*	(LHCb Collab.)	REFID=56378
AAIJ	15N	PRL 115 031601	R. Aaji *et al.*	(LHCb Collab.)	REFID=56480
AAIJ	15Q	PRL 115 111803	R. Aaij *et al.*	(LHCb Collab.)	REFID=56493
AAIJ	15S	PL B743 46	R. Aaij *et al.*	(LHCb Collab.)	REFID=56499
AAIJ	15T	PL B747 468	R. Aaij *et al.*	(LHCb Collab.)	REFID=56518
AAIJ	15X	PR D92 012012	R. Aaij *et al.*	(LHCb Collab.)	REFID=56588
AAIJ	15Y	PR D92 032002	R. Aaij *et al.*	(LHCb Collab.)	REFID=56609
AAIJ	15Z	JHEP 1504 064	R. Aaij *et al.*	(LHCb Collab.)	REFID=56615
ABAZOV	15A	PRL 114 062001	V.M. Abazov *et al.*	(D0 Collab.)	REFID=56380
ABDESSALAM	15	PRL 115 121604	A. Abdessalam *et al.*	(BABAR and BELLE Collabs.)	REFID=56916
BALA	15	PR D91 051101	A. Bala *et al.*	(BELLE Collab.)	REFID=56408
CHANG	15	PRL 115 221803	Y.-Y. Chang *et al.*	(BELLE Collab.)	REFID=56926
CHOI	15A	PR D91 092011	S.-K. Choi *et al.*	(BELLE Collab.)	REFID=56577
KHACHATRY...	15BE	NAT 522 68	V. Khachatryan *et al.*	(CMS and LHCb Collab.)	REFID=56946
LEES	15	PR D91 012003	J.P. Lees *et al.*	(BABAR Collab.)	REFID=56289
LEES	15A	PRL 114 081801	J.P. Lees *et al.*	(BABAR Collab.)	REFID=56410
LEES	15B	PR D91 031102	J.P. Lees *et al.*	(BABAR Collab.)	REFID=56411
LEES	15C	PR D91 052002	J.P. Lees *et al.*	(BABAR Collab.)	REFID=56412
MATVIENKO	15	PR D92 012013	D. Matvienko *et al.*	(BELLE Collab.)	REFID=56601
PAL	15	PR D92 011101	B. Pal *et al.*	(BELLE Collab.)	REFID=56597
WIECHCZYN...	15	PR D91 032008	J. Wiechczynski *et al.*	(BELLE Collab.)	REFID=56407
AAIJ	14AA	PRL 112 202001	R. Aaij *et al.*	(LHCb Collab.)	REFID=55843
AAIJ	14AM	JHEP 1405 069	R. Aaij *et al.*	(LHCb Collab.)	REFID=55996
AAIJ	14AN	JHEP 1409 177	R. Aaij *et al.*	(LHCb Collab.)	REFID=56009
AAIJ	14BM	NJP 16 123001	R. Aaij *et al.*	(LHCb Collab.)	REFID=56322
AAIJ	14BN	PR D90 112002	R. Aaij *et al.*	(LHCb Collab.)	REFID=56328
AAIJ	14BP	PL B739 218	R. Aaij *et al.*	(LHCb Collab.)	REFID=56336
AAIJ	14E	JHEP 1404 114	R. Aaij *et al.*	(LHCb Collab.)	REFID=55689
AAIJ	14L	JHEP 1407 140	R. Aaij *et al.*	(LHCb Collab.)	REFID=55725
AAIJ	14M	JHEP 1406 133	R. Aaij *et al.*	(LHCb Collab.)	REFID=55726
AAIJ	14O	JHEP 1405 082	R. Aaij *et al.*	(LHCb Collab.)	REFID=55728
AAIJ	14R	PL B736 446	R. Aaij *et al.*	(LHCb Collab.)	REFID=55760
AAIJ	14X	PR D90 012003	R. Aaij *et al.*	(LHCb Collab.)	REFID=55818
AAIJ	14Y	PRL 112 091802	R. Aaij *et al.*	(LHCb Collab.)	REFID=55837
AALTONEN	14P	PRL 113 242001	T. Aaltonen *et al.*	(CDF Collab.)	REFID=56259
ABAZOV	14	PR D89 012002	V.M. Abazov *et al.*	(D0 Collab.)	REFID=55621
CHILIKIN	14	PR D90 112009	K. Chilikin *et al.*	(BELLE Collab.)	REFID=56344
CHOBANOVA	14	PR D90 012002	V. Chobanova *et al.*	(BELLE Collab.)	REFID=55819
IWASHITA	14	PTEP 2014 043C01	T. Iwashita *et al.*	(BELLE Collab.)	REFID=55925
LAI	14	PR D89 051103	Y.-T. Lai *et al.*	(BELLE Collab.)	REFID=55794
LEES	14	PR D89 051101	J.P. Lees *et al.*	(BABAR Collab.)	REFID=55690
LEES	14B	PR D89 112002	J.P. Lees *et al.*	(BABAR Collab.)	REFID=55799
LEES	14C	PR D89 071102	J.P. Lees *et al.*	(BABAR Collab.)	REFID=55800
PDG	14	CP C38 070001	K. Olive *et al.*	(PDG Collab.)	REFID=55687
SANTELJ	14	JHEP 1410 165	L. Santelj *et al.*	(BELLE Collab.)	REFID=56161
SATO	14	PR D90 072009	S. Sato *et al.*	(BELLE Collab.)	REFID=56217
VANHOEFER	14	PR D89 072008	P. Vanhoefer *et al.*	(BELLE Collab.)	REFID=55811
AAD	13U	PR D87 032002	G. Aad *et al.*	(ATLAS Collab.)	REFID=54939
AAIJ	13	NP B867 1	R. Aaij *et al.*	(LHCb Collab.)	REFID=54596

AAIJ	13A	NP B867 547	R. Aaij *et al.*	(LHCb Collab.)	REFID=54670
AAIJ	13AA	NP B871 403	R. Aaij *et al.*	(LHCb Collab.)	REFID=55062
AAIJ	13AC	NP B874 663	R. Aaij *et al.*	(LHCb Collab.)	REFID=55064
AAIJ	13AO	PR D87 092001	R. Aaij *et al.*	(LHCb Collab.)	REFID=55149
AAIJ	13AP	PR D87 092007	R. Aaij *et al.*	(LHCb Collab.)	REFID=55150
AAIJ	13AQ	PR D87 112009	R. Aaij *et al.*	(LHCb Collab.)	REFID=55158
AAIJ	13AT	PR D88 052002	R. Aaij *et al.*	(LHCb Collab.)	REFID=55180
AAIJ	13AW	PRL 110 211801	R. Aaij *et al.*	(LHCb Collab.)	REFID=55207
AAIJ	13AX	PRL 110 221601	R. Aaij *et al.*	(LHCb Collab.)	REFID=55208
AAIJ	13B	PRL 110 021801	R. Aaij *et al.*	(LHCb Collab.)	REFID=54767
AAIJ	13BA	PRL 111 101805	R. Aaij *et al.*	(LHCb Collab.)	REFID=55227
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CHATRCHYAN	13AW	PRL 111 101804	S. Chatrchyan *et al.*	(CMS Collab.)	REFID=55225
CHATRCHYAN	13BL	PL B727 77	S. Chatrchyan *et al.*	(CMS Collab.)	REFID=55439
CHILIKIN	13	PR D88 074026	K. Chilikin *et al.*	(BELLE Collab.)	REFID=55551
DALSENO	13	PR D88 092003	J. Dalseno *et al.*	(BELLE Collab.)	REFID=55488
DUH	13	PR D87 031103	Y. T. Duh *et al.*	(BELLE Collab.)	REFID=54957
GAUR	13	PR D87 091101	V. Gaur *et al.*	(BELLE Collab.)	REFID=55146
LEES	13D	PR D87 052009	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54958
LEES	13H	PR D87 092004	J.P. Lees *et al.*	(BABAR Collab.)	REFID=55148
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LEES	13J	PR D88 012003	J.P. Lees *et al.*	(BABAR Collab.)	REFID=55165
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Also		PRL 111 159901(errat.)	J.P. Lees *et al.*	(BABAR Collab.)	REFID=55468
Also		PR D93 032001	J.P. Lees *et al.*	(BABAR Collab.)	REFID=57247
LUTZ	13	PR D87 111103	O. Lutz *et al.*	(BELLE Collab.)	REFID=55147
PRIM	13	PR D88 072004	M. Prim *et al.*	(BELLE Collab.)	REFID=55415
SIBIDANOV	13	PR D88 032005	A. Sibidanov *et al.*	(BELLE Collab.)	REFID=55176
AAIJ	12A	PL B708 55	R. Aaij *et al.*	(LHCb Collab.)	REFID=54033
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AAIJ	12I	PL B709 177	R. Aaij *et al.*	(LHCb Collab.)	REFID=54061
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AAIJ	12U	PRL 108 181806	R. Aaij *et al.*	(LHCb Collab.)	REFID=54215
AAIJ	12V	PRL 108 201601	R. Aaij *et al.*	(LHCb Collab.)	REFID=54216
AAIJ	12W	PRL 108 231801	R. Aaij *et al.*	(LHCb Collab.)	REFID=54217
AALTONEN	12L	PRL 108 211803	T. Aaltonen *et al.*	(CDF Collab.)	REFID=54241
ABAZOV	12AC	PR D86 072009	V.M. Abazov *et al.*	(D0 Collab.)	REFID=54605
ABAZOV	12U	PR D85 112003	V.M. Abazov *et al.*	(D0 Collab.)	REFID=54350
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CHANG	12	PR D85 091102	M.-C. Chang *et al.*	(BELLE Collab.)	REFID=54403
CHATRCHYAN	12A	JHEP 1204 033	S. Chatrchyan *et al.*	(CMS Collab.)	REFID=54060
DALSENO	12	PR D86 092012	J. Dalseno *et al.*	(BELLE Collab.)	REFID=54709
DEL-AMO-SA...	12	PR D85 092017	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=54286
HIGUCHI	12	PR D85 071105	T. Higuchi *et al.*	(BELLE Collab.)	REFID=54069
HOI	12	PRL 108 031801	C.-T. Hoi *et al.*	(BELLE Collab.)	REFID=54011
HSU	12	PR D86 032002	C.-L. Hsu *et al.*	(BELLE Collab.)	REFID=54427
KIM	12A	PR D86 031101	J.H. Kim *et al.*	(BELLE Collab.)	REFID=54426
KRONENBIT...	12	PR D86 071103	B. Kronenbitter *et al.*	(BELLE Collab.)	REFID=54630
LEES	12AA	PR D86 092004	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54717
LEES	12AF	PR D86 112006	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54801
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LEES	12D	PRL 109 101802	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54261
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LEES	12W	PRL 109 211801	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54682
NEGISHI	12	PR D86 011101	K. Negishi *et al.*	(BELLE Collab.)	REFID=54415
PDG	12	PR D86 010001	J. Beringer *et al.*	(PDG Collab.)	REFID=54066
ROHRKEN	12	PR D85 091106	M. Rohrken *et al.*	(BELLE Collab.)	REFID=54404
SATO	12	PRL 108 171801	Y. Sato *et al.*	(BELLE Collab.)	REFID=54221
AAIJ	11B	PL B699 330	R. Aaij *et al.*	(LHCb Collab.)	REFID=16667
AAIJ	11E	PR D84 092001	R. Aaij *et al.*	(LHCb Collab.)	REFID=53856
Also		PR D85 039904 (errat.)	R. Aaij *et al.*	(LHCb Collab.)	REFID=54371
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Also		PRL 107 239903 (errat.)	T. Aaltonen *et al.*	(CDF Collab.)	REFID=54005
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AALTONEN	11N	PRL 106 181802	T. Aaltonen *et al.*	(CDF Collab.)	REFID=16447
ABAZOV	11U	PR D84 052007	V.M. Abazov *et al.*	(D0 Collab.)	REFID=53796
AUSHEV	11	PR D83 051102	T. Aushev *et al.*	(BELLE Collab.)	REFID=16505
BAHINIPATI	11	PR D84 021101	S. Bahinipati *et al.*	(BELLE Collab.)	REFID=16601
BHARDWAJ	11	PRL 107 091803	V. Bhardwaj *et al.*	(BELLE Collab.)	REFID=53779
CHATRCHYAN	11T	PRL 107 191802	S. Chatrchyan *et al.*	(CMS Collab.)	REFID=53839
CHOI	11	PR D84 052004	S.-K. Choi *et al.*	(BELLE Collab.)	REFID=53934
DEL-AMO-SA...	11A	PR D83 032006	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=53664

DEL-AMO-SA...	11B	PR D83 032004	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=53665
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DEL-AMO-SA...	11K	PR D83 091101	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=16497
HA	11	PR D83 071101	H. Ha *et al.*	(BELLE Collab.)	REFID=16513
LEES	11	PR D83 112010	J.P. Lees *et al.*	(BABAR Collab.)	REFID=16579
LEES	11A	PR D84 012001	J.P. Lees *et al.*	(BABAR Collab.)	REFID=16595
LEES	11F	PR D84 071102	J.P. Lees *et al.*	(BABAR Collab.)	REFID=53807
LEES	11M	PR D84 112007	J.P. Lees *et al.*	(BABAR Collab.)	REFID=53991
Also		PR D87 039901 (errat.)	J.P. Lees *et al.*	(BABAR Collab.)	REFID=55128
SAHOO	11A	PR D84 071101	H. Sahoo *et al.*	(BELLE Collab.)	REFID=53810
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AUBERT	10D	PR D81 052009	B. Aubert *et al.*	(BABAR Collab.)	REFID=53217
AUBERT	10H	PR D82 031102	B. Aubert *et al.*	(BABAR Collab.)	REFID=53363
AUSHEV	10	PR D81 031103	T. Aushev *et al.*	(BELLE Collab.)	REFID=53225
CHIANG	10	PR D81 071101	C.-C. Chiang *et al.*	(BELLE Collab.)	REFID=53288
DAS	10	PR D82 051103	A. Das *et al.*	(BELLE Collab.)	REFID=53498
DEL-AMO-SA...	10A	PR D82 011502	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=53325
DEL-AMO-SA...	10B	PR D82 011101	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=53362
DEL-AMO-SA...	10E	PR D82 031101	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=53371
DEL-AMO-SA...	10Q	PR D82 112002	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=53575
DUNGEL	10	PR D82 112007	W. Dungel *et al.*	(BELLE Collab.)	REFID=53579
FUJIKAWA	10A	PR D81 011101	M. Fujikawa *et al.*	(BELLE Collab.)	REFID=53200
HYUN	10	PRL 105 091801	H.J. Hyun *et al.*	(BELLE Collab.)	REFID=53372
JOSHI	10	PR D81 031101	N.J. Joshi *et al.*	(BELLE Collab.)	REFID=53227
NAKAHAMA	10	PR D82 073011	Y. Nakahama *et al.*	(BELLE Collab.)	REFID=53467
WEDD	10	PR D81 111104	R. Wedd *et al.*	(BELLE Collab.)	REFID=53344
AALTONEN	09B	PR D79 011104	T. Aaltonen *et al.*	(CDF Collab.)	REFID=52686
AALTONEN	09C	PRL 103 031801	T. Aaltonen *et al.*	(CDF Collab.)	REFID=52698
AALTONEN	09E	PR D79 032001	T. Aaltonen *et al.*	(CDF Collab.)	REFID=52701
AALTONEN	09P	PRL 102 201801	T. Aaltonen *et al.*	(CDF Collab.)	REFID=52855
ABAZOV	09E	PRL 102 032001	V.M. Abazov *et al.*	(D0 Collab.)	REFID=52650
AUBERT	09	PR D79 011102	B. Aubert *et al.*	(BABAR Collab.)	REFID=52639
AUBERT	09A	PR D79 012002	B. Aubert *et al.*	(BABAR Collab.)	REFID=52640
AUBERT	09AA	PR D79 112001	B. Aubert *et al.*	(BABAR Collab.)	REFID=52940
AUBERT	09AC	PR D79 112009	B. Aubert *et al.*	(BABAR Collab.)	REFID=52942
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AUBERT	09K	PR D79 072009	B. Aubert *et al.*	(BABAR Collab.)	REFID=52704
AUBERT	09S	PR D79 092002	B. Aubert *et al.*	(BABAR Collab.)	REFID=52799
AUBERT	09T	PRL 102 091803	B. Aubert *et al.*	(BABAR Collab.)	REFID=52829
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CHANG	09	PR D79 052006	Y.-W. Chang *et al.*	(BELLE Collab.)	REFID=52822
DALSENO	09	PR D79 072004	J. Dalseno *et al.*	(BELLE Collab.)	REFID=52807
KYEONG	09	PR D80 051103	S.-H. Kyeong *et al.*	(BELLE Collab.)	REFID=53017
MIZUK	09	PR D80 031104	R. Mizuk *et al.*	(BELLE Collab.)	REFID=52960
VERVINK	09	PR D80 111104	K. Vervink *et al.*	(BELLE Collab.)	REFID=53178
WEI	09A	PRL 103 171801	J.-T. Wei *et al.*	(BELLE Collab.)	REFID=53061
Also		EPAPS Supplement	J.-T. Wei *et al.*	(BELLE Collab.)	REFID=53240
ADACHI	08	PR D77 091101	I. Adachi *et al.*	(BELLE Collab.)	REFID=52344
AUBERT	08AB	PR D78 012006	B. Aubert *et al.*	(BABAR Collab.)	REFID=52267
AUBERT	08AC	PR D77 071102	B. Aubert *et al.*	(BABAR Collab.)	REFID=52339
AUBERT	08AD	PR D77 091104	B. Aubert *et al.*	(BABAR Collab.)	REFID=52347
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AUBERT	08G	PRL 100 171803	B. Aubert *et al.*	(BABAR Collab.)	REFID=52157
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AUBERT	08I	PRL 100 081801	B. Aubert *et al.*	(BABAR Collab.)	REFID=52167
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AUBERT	08Y	PR D77 111101	B. Aubert *et al.*	(BABAR Collab.)	REFID=52265
CHEN	08C	PRL 100 251801	J.-H. Chen *et al.*	(BELLE Collab.)	REFID=52442
CHIANG	08	PR D78 111102	C.C. Chiang *et al.*	(BELLE Collab.)	REFID=52544
CHOI	08	PRL 100 142001	S.-K. Choi *et al.*	(BELLE Collab.)	REFID=52178

GOLDENZWE...	08	PRL 101 231801	P. Goldenzweig *et al.*	(BELLE Collab.)	REFID=52602
KIM	08	PL B669 287	H.O. Kim *et al.*	(BELLE Collab.)	REFID=52525
KUMAR	08	PR D78 091104	R. Kumar *et al.*	(BELLE Collab.)	REFID=52539
KUSAKA	08	PR D77 072001	A. Kusaka *et al.*	(BELLE Collab.)	REFID=52340
LEE	08A	PR D77 071101	S.E. Lee *et al.*	(BELLE Collab.)	REFID=52338
LI	08F	PRL 101 251601	J. Li *et al.*	(BELLE Collab.)	REFID=52606
LIN	08	NAT 452 332	S.-W. Lin *et al.*	(BELLE Collab.)	REFID=52509
LIU	08I	PR D78 011106	Y. Liu *et al.*	(BELLE Collab.)	REFID=52410
LIVENTSEV	08	PR D77 091503	D. Liventsev *et al.*	(BELLE Collab.)	REFID=52230
MIZUK	08	PR D78 072004	R. Mizuk *et al.*	(BELLE Collab.)	REFID=52535
NAKAHAMA	08	PRL 100 121601	Y. Nakahama *et al.*	(BELLE Collab.)	REFID=52435
PDG	08	PL B667 1	C. Amsler *et al.*	(PDG Collab.)	REFID=52166
SAHOO	08	PR D77 091103	H. Sahoo *et al.*	(BELLE Collab.)	REFID=52346
TANIGUCHI	08	PRL 101 111801	N. Taniguchi *et al.*	(BELLE Collab.)	REFID=52449
UCHIDA	08	PR D77 051101	Y. Uchida *et al.*	(BELLE Collab.)	REFID=52224
USHIRODA	08	PRL 100 021602	Y. Ushiroda *et al.*	(BELLE Collab.)	REFID=52147
WEI	08A	PR D78 011101	J.-T. Wei *et al.*	(BELLE Collab.)	REFID=52409
ABAZOV	07S	PRL 99 142001	V.M. Abazov *et al.*	(D0 Collab.)	REFID=52008
ABULENCIA	07A	PRL 98 122001	A. Abulencia *et al.*	(FNAL CDF Collab.)	REFID=51662
ADAM	07	PRL 99 041802	N.E. Adam *et al.*	(CLEO Collab.)	REFID=51868
Also		PR D76 012007	D.M. Asner *et al.*	(CLEO Collab.)	REFID=51855
AUBERT	07A	PRL 98 031801	B. Aubert *et al.*	(BABAR Collab.)	REFID=51608
AUBERT	07AA	PR D76 012004	B. Aubert *et al.*	(BABAR Collab.)	REFID=51853
AUBERT	07AC	PR D76 031101	B. Aubert *et al.*	(BABAR Collab.)	REFID=51857
AUBERT	07AD	PR D76 031102	B. Aubert *et al.*	(BABAR Collab.)	REFID=51858
AUBERT	07AE	PR D76 031103	B. Aubert *et al.*	(BABAR Collab.)	REFID=51859
AUBERT	07AF	PRL 99 021603	B. Aubert *et al.*	(BABAR Collab.)	REFID=51861
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AUBERT	07L	PRL 98 151802	B. Aubert *et al.*	(BABAR Collab.)	REFID=51676
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Also		PRL 100 199905E	B. Aubert *et al.*	(BABAR Collab.)	REFID=52502
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CHANG	07B	PR D75 071104	P. Chang *et al.*	(BELLE Collab.)	REFID=51784
CHAO	07	PR D76 091103	Y. Chao *et al.*	(BELLE Collab.)	REFID=52000
CHEN	07	PRL 98 031802	K.-F. Chen *et al.*	(BELLE Collab.)	REFID=51609
CHEN	07D	PRL 99 221802	K.-F. Chen *et al.*	(BELLE Collab.)	REFID=52024
DALSENO	07	PR D76 072004	J. Dalseno *et al.*	(BELLE Collab.)	REFID=51992
FRATINA	07	PRL 98 221802	S. Fratina *et al.*	(BELLE Collab.)	REFID=51811
GARMASH	07	PR D75 012006	A. Garmash *et al.*	(BELLE Collab.)	REFID=51594
HOKUUE	07	PL B648 139	T. Hokuue *et al.*	(BELLE Collab.)	REFID=51672
ISHINO	07	PRL 98 211801	H. Ishino *et al.*	(BELLE Collab.)	REFID=51753
KUSAKA	07	PRL 98 221602	A. Kusaka *et al.*	(BELLE Collab.)	REFID=51809
Also		PR D77 072001	A. Kusaka *et al.*	(BELLE Collab.)	REFID=52340
KUZMIN	07	PR D76 012006	A. Kuzmin *et al.*	(BELLE Collab.)	REFID=51854
LIN	07	PRL 98 181804	S.-W. Lin *et al.*	(BELLE Collab.)	REFID=51752
LIN	07A	PRL 99 121601	S.-W. Lin *et al.*	(BELLE Collab.)	REFID=51921
MATYJA	07	PRL 99 191807	A. Matyja *et al.*	(BELLE Collab.)	REFID=52022
MEDVEDEVA	07	PR D76 051102	T. Medvedeva *et al.*	(BELLE Collab.)	REFID=51931
PARK	07	PR D75 011101	K.S. Park *et al.*	(BELLE Collab.)	REFID=51591
SCHUEMANN	07	PR D75 092002	J. Schuemann *et al.*	(BELLE Collab.)	REFID=51793
SOMOV	07	PR D76 011104	A. Somov *et al.*	(BELLE Collab.)	REFID=51851
TSAI	07	PR D75 111101	Y.-T. Tsai *et al.*	(BELLE Collab.)	REFID=51800
URQUIJO	07	PR D75 032001	P. Urquijo *et al.*	(BELLE Collab.)	REFID=51647
WANG	07B	PR D75 092005	C.H. Wang *et al.*	(BELLE Collab.)	REFID=51796
WANG	07C	PR D76 052004	M.-Z. Wang *et al.*	(BELLE Collab.)	REFID=51935
XIE	07	PR D75 017101	Q.L. Xie *et al.*	(BELLE Collab.)	REFID=51732
ZUPANC	07	PR D75 091102	A. Zupanc *et al.*	(BELLE Collab.)	REFID=51790
ABAZOV	06S	PR D74 092001	V.M. Abazov *et al.*	(D0 Collab.)	REFID=51499
ABAZOV	06W	PR D74 112002	V.M. Abazov *et al.*	(D0 Collab.)	REFID=51589
ABULENCIA,A	06D	PRL 97 211802	A. Abulencia *et al.*	(CDF Collab.)	REFID=51490
ACOSTA	06	PRL 96 202001	D. Acosta *et al.*	(CDF Collab.)	REFID=51231
AUBERT	06	PR D73 011101	B. Aubert *et al.*	(BABAR Collab.)	REFID=51017
AUBERT	06A	PRL 96 011803	B. Aubert *et al.*	(BABAR Collab.)	REFID=51021
AUBERT	06E	PRL 96 052002	B. Aubert *et al.*	(BABAR Collab.)	REFID=51059
AUBERT	06G	PR D73 012004	B. Aubert *et al.*	(BABAR Collab.)	REFID=51087
AUBERT	06I	PR D73 031101	B. Aubert *et al.*	(BABAR Collab.)	REFID=51089
AUBERT	06L	PR D74 012001	B. Aubert *et al.*	(BABAR Collab.)	REFID=51140
AUBERT	06N	PR D74 031103	B. Aubert *et al.*	(BABAR Collab.)	REFID=51142
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AUBERT,B	06Y	PR D74 091105	B. Aubert *et al.*	(BABAR Collab.)	REFID=51498
AUBERT,B	06Z	PR D74 092004	B. Aubert *et al.*	(BABAR Collab.)	REFID=51502
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AUBERT,BE	06H	PRL 97 261803	B. Aubert *et al.*	(BABAR Collab.)	REFID=51571
AUBERT,BE	06J	PR D74 111102	B. Aubert *et al.*	(BABAR Collab.)	REFID=51586
AUBERT,BE	06N	PR D74 072008	B. Aubert *et al.*	(BABAR Collab.)	REFID=51455
BLYTH	06	PR D74 092002	S. Blyth *et al.*	(BELLE Collab.)	REFID=51500
CHISTOV	06A	PR D74 111105	R. Chistov *et al.*	(BELLE Collab.)	REFID=51588
DRAGIC	06	PR D73 111105	J. Dragic *et al.*	(BELLE Collab.)	REFID=51278
GABYSHEV	06	PRL 97 202003	N. Gabyshev *et al.*	(BELLE Collab.)	REFID=51488
GOKHROO	06	PRL 97 162002	G. Gokhroo *et al.*	(BELLE Collab.)	REFID=51432
JEN	06	PR D74 111101	C.-M. Jen *et al.*	(BELLE Collab.)	REFID=51573
KROKOVNY	06	PRL 97 081801	P. Krokovny *et al.*	(BELLE Collab.)	REFID=51363
MOHAPATRA	06	PRL 96 221601	D. Mohapatra *et al.*	(BELLE Collab.)	REFID=51235
NAKANO	06	PR D73 112002	E. Nakano *et al.*	(BELLE Collab.)	REFID=51281
RONGA	06	PR D73 092003	F.J. Ronga *et al.*	(BELLE Collab.)	REFID=51307
SCHUEMANN	06	PRL 97 061802	J. Schuemann *et al.*	(BELLE Collab.)	REFID=51250
SOMOV	06	PRL 96 171801	A. Somov *et al.*	(BELLE Collab.)	REFID=51096
SONI	06	PL B634 155	N. Soni *et al.*	(BELLE Collab.)	REFID=51093
USHIRODA	06	PR D74 111104	Y. Ushiroda *et al.*	(BELLE Collab.)	REFID=51587
VILLA	06	PR D73 051107	S. Villa *et al.*	(BELLE Collab.)	REFID=51094
ABAZOV	05B	PRL 94 042001	V.M. Abazov *et al.*	(D0 Collab.)	REFID=50492
ABAZOV	05C	PRL 94 102001	V.M. Abazov *et al.*	(D0 Collab.)	REFID=50511
ABAZOV	05D	PRL 94 182001	V.M. Abazov *et al.*	(D0 Collab.)	REFID=50518
ABAZOV	05W	PRL 95 171801	V.M. Abazov *et al.*	(D0 Collab.)	REFID=50929
ABE	05A	PRL 94 221805	K. Abe *et al.*	(BELLE Collab.)	REFID=50755
ABE	05B	PR D71 072003	K. Abe *et al.*	(BELLE Collab.)	REFID=50517
Also		PR D71 079903 (errat.)	K. Abe *et al.*	(BELLE Collab.)	REFID=50555
ABE	05D	PRL 95 101801	K. Abe *et al.*	(BELLE Collab.)	REFID=50561
ABE	05G	PRL 95 231802	K. Abe *et al.*	(BELLE Collab.)	REFID=50936
ACOSTA	05	PRL 94 101803	D. Acosta *et al.*	(CDF Collab.)	REFID=50519
AUBERT	05	PRL 94 011801	B. Aubert *et al.*	(BABAR Collab.)	REFID=50366
AUBERT	05B	PR D71 031501	B. Aubert *et al.*	(BABAR Collab.)	REFID=50498
AUBERT	05E	PR D71 051502	B. Aubert *et al.*	(BABAR Collab.)	REFID=50510
AUBERT	05F	PRL 94 161803	B. Aubert *et al.*	(BABAR Collab.)	REFID=50545
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AUBERT	05L	PRL 94 181802	B. Aubert *et al.*	(BABAR Collab.)	REFID=50593
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AUBERT,B	05P	PR D72 051103	B. Aubert *et al.*	(BABAR Collab.)	REFID=50894
AUBERT,B	05Q	PR D72 051106	B. Aubert *et al.*	(BABAR Collab.)	REFID=50893
AUBERT,B	05Z	PRL 95 131802	B. Aubert *et al.*	(BABAR Collab.)	REFID=50920
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AUBERT,BE	05A	PRL 95 151804	B. Aubert *et al.*	(BABAR Collab.)	REFID=50922
AUBERT,BE	05B	PRL 95 171802	B. Aubert *et al.*	(BABAR Collab.)	REFID=50923
AUBERT,BE	05C	PR D72 091103	B. Aubert *et al.*	(BABAR Collab.)	REFID=50944
AUBERT,BE	05E	PRL 95 221801	B. Aubert *et al.*	(BABAR Collab.)	REFID=50948
AUBERT,BE	05F	PR D72 111101	B. Aubert *et al.*	(BABAR Collab.)	REFID=51006
CHANG	05	PR D71 072007	M.-C. Chang *et al.*	(BELLE Collab.)	REFID=50631
CHANG	05A	PR D71 091106	P. Chang *et al.*	(BELLE Collab.)	REFID=50638
CHAO	05	PRL 94 181803	Y. Chao *et al.*	(BELLE Collab.)	REFID=50594
CHAO	05A	PR D71 031502	Y. Chao *et al.*	(BELLE Collab.)	REFID=50619
CHEN	05A	PRL 94 221804	K.-F. Chen *et al.*	(BELLE Collab.)	REFID=50659
CHEN	05B	PR D72 012004	K.-F. Chen *et al.*	(BELLE Collab.)	REFID=50706
DRUTSKOY	05	PRL 94 061802	A. Drutskoy *et al.*	(BELLE Collab.)	REFID=50573
GERSHON	05	PL B624 11	T. Gershon *et al.*	(BELLE Collab.)	REFID=50569
ITOH	05	PRL 95 091601	R. Itoh *et al.*	(BELLE Collab.)	REFID=50559
LIVENTSEV	05	PR D72 051109	D. Liventsev *et al.*	(BELLE Collab.)	REFID=50903
MAJUMDER	05	PRL 95 041803	G. Majumder *et al.*	(BELLE Collab.)	REFID=50689
MIYAKE	05	PL B618 34	H. Miyake *et al.*	(BELLE Collab.)	REFID=50654
MOHAPATRA	05	PR D72 011101	D. Mohapatra *et al.*	(BELLE Collab.)	REFID=50700
NISHIDA	05	PL B610 23	S. Nishida *et al.*	(BELLE Collab.)	REFID=50596

OKABE	05	PL B614 27	T. Okabe *et al.*	(BELLE Collab.)	REFID=50601
PARK	05	PRL 94 021801	H.K. Park *et al.*	(FNAL HyperCP Collab.)	REFID=50480
SCHUMANN	05	PR D72 011103	J. Schumann *et al.*	(BELLE Collab.)	REFID=50702
SUMISAWA	05	PRL 95 061801	K. Sumisawa *et al.*	(BELLE Collab.)	REFID=50695
USHIRODA	05	PRL 94 231601	Y. Ushiroda *et al.*	(BELLE Collab.)	REFID=50660
WANG	05	PRL 94 121801	C.C. Wang *et al.*	(BELLE Collab.)	REFID=50587
WANG	05A	PL B617 141	M.-Z. Wang *et al.*	(BELLE Collab.)	REFID=50651
XIE	05	PR D72 051105	Q.L. Xie *et al.*	(BELLE Collab.)	REFID=50902
YANG	05	PRL 94 111802	H. Yang *et al.*	(BELLE Collab.)	REFID=50585
ZHANG	05B	PR D71 091107	L.M. Zhang *et al.*	(BELLE Collab.)	REFID=50639
ABDALLAH	04D	EPJ C33 213	J. Abdallah *et al.*	(DELPHI Collab.)	REFID=49916
ABDALLAH	04E	EPJ C33 307	J. Abdallah *et al.*	(DELPHI Collab.)	REFID=49917
ABE	04E	PRL 93 021601	K. Abe *et al.*	(BELLE Collab.)	REFID=50056
AUBERT	04A	PR D69 011102	B. Aubert *et al.*	(BABAR Collab.)	REFID=49719
AUBERT	04B	PR D69 032004	B. Aubert *et al.*	(BABAR Collab.)	REFID=49720
AUBERT	04C	PRL 92 111801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49670
AUBERT	04G	PR D69 031102	B. Aubert *et al.*	(BABAR Collab.)	REFID=49864
AUBERT	04H	PRL 92 061801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49867
AUBERT	04M	PRL 92 201802	B. Aubert *et al.*	(BABAR Collab.)	REFID=49928
AUBERT	04R	PR D69 052001	B. Aubert *et al.*	(BABAR Collab.)	REFID=49956
AUBERT	04U	PR D69 091503	B. Aubert *et al.*	(BABAR Collab.)	REFID=49959
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AUBERT	04W	PRL 92 251802	B. Aubert *et al.*	(BABAR Collab.)	REFID=49987
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AUBERT,B	04B	PR D70 011101	B. Aubert *et al.*	(BABAR Collab.)	REFID=50043
AUBERT,B	04C	PR D70 012007	B. Aubert *et al.*	(BABAR Collab.)	REFID=50046
Also		PRL 92 181801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49927
AUBERT,B	04D	PR D70 032006	B. Aubert *et al.*	(BABAR Collab.)	REFID=50051
AUBERT,B	04G	PRL 93 071801	B. Aubert *et al.*	(BABAR Collab.)	REFID=50070
AUBERT,B	04H	PRL 93 081801	B. Aubert *et al.*	(BABAR Collab.)	REFID=50071
AUBERT,B	04J	PRL 93 091802	B. Aubert *et al.*	(BABAR Collab.)	REFID=50074
AUBERT,B	04K	PRL 93 131801	B. Aubert *et al.*	(BABAR Collab.)	REFID=50084
AUBERT,B	04M	PRL 93 131805	B. Aubert	(BABAR Collab.)	REFID=50088
AUBERT,B	04O	PR D70 091103	B. Aubert *et al.*	(BABAR Collab.)	REFID=50190
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AUBERT,B	04U	PR D70 091105	B. Aubert *et al.*	(BABAR Collab.)	REFID=50241
AUBERT,B	04V	PRL 93 181805	B. Aubert *et al.*	(BABAR Collab.)	REFID=50265
AUBERT,B	04W	PRL 93 231804	B. Aubert *et al.*	(BABAR Collab.)	REFID=50362
AUBERT,B	04X	PRL 93 181806	B. Aubert *et al.*	(BABAR Collab.)	REFID=50266
AUBERT,B	04Z	PRL 93 201801	B. Aubert *et al.*	(BABAR Collab.)	REFID=50273
AUBERT,BE	04	PR D70 111102	B. Aubert *et al.*	(BABAR Collab.)	REFID=50371
AUBERT,BE	04A	PR D70 112006	B. Aubert *et al.*	(BABAR Collab.)	REFID=50377
AUBERT,BE	04B	PR D70 091106	B. Aubert *et al.*	(BABAR Collab.)	REFID=50416
AUSHEV	04	PRL 93 201802	T. Aushev *et al.*	(BELLE Collab.)	REFID=50274
BORNHEIM	04	PRL 93 241802	A. Bornheim *et al.*	(CLEO Collab.)	REFID=50363
CHANG	04	PL B599 148	P. Chang *et al.*	(BELLE Collab.)	REFID=50123
CHAO	04	PR D69 111102	Y. Chao *et al.*	(BELLE Collab.)	REFID=50006
CHAO	04B	PRL 93 191802	Y. Chao *et al.*	(BELLE Collab.)	REFID=50272
DRAGIC	04	PRL 93 131802	J. Dragic	(BELLE Collab.)	REFID=50085
DRUTSKOY	04	PRL 92 051801	A. Drutskoy *et al.*	(BELLE Collab.)	REFID=49717
GARMASH	04	PR D69 012001	A. Garmash *et al.*	(BELLE Collab.)	REFID=49642
KATAOKA	04	PRL 93 261801	S.U. Kataoka *et al.*	(BELLE Collab.)	REFID=50364
MAJUMDER	04	PR D70 111103	G. Majumder *et al.*	(BELLE Collab.)	REFID=50372
NAKAO	04	PR D69 112001	M. Nakao *et al.*	(BELLE Collab.)	REFID=50010
SARANGI	04	PRL 93 031802	T.R. Sarangi *et al.*	(BELLE Collab.)	REFID=49993
WANG	04	PRL 92 131801	M.Z. Wang *et al.*	(BELLE Collab.)	REFID=49936
WANG	04A	PR D70 012001	C.H. Wang *et al.*	(BELLE Collab.)	REFID=50045
ABDALLAH	03B	EPJ C28 155	J. Abdallah *et al.*	(DELPHI Collab.)	REFID=49242
ABE	03B	PR D67 032003	K. Abe *et al.*	(BELLE Collab.)	REFID=49205
ABE	03C	PR D67 031102	K. Abe *et al.*	(BELLE Collab.)	REFID=49208
ABE	03G	PR D68 012001	K. Abe *et al.*	(BELLE Collab.)	REFID=49506
ABE	03H	PRL 91 261602	K. Abe *et al.*	(BELLE Collab.)	REFID=49635
ADAM	03	PR D67 032001	N.E. Adam *et al.*	(CLEO Collab.)	REFID=49204
ATHAR	03	PR D68 072003	S.B. Athar *et al.*	(CLEO Collab.)	REFID=49666
AUBERT	03B	PRL 90 091801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49207
AUBERT	03C	PR D67 072002	B. Aubert *et al.*	(BABAR Collab.)	REFID=49210
AUBERT	03D	PRL 90 181803	B. Aubert *et al.*	(BABAR Collab.)	REFID=49212
AUBERT	03E	PRL 90 181801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49359
AUBERT	03H	PR D67 091101	B. Aubert *et al.*	(BABAR Collab.)	REFID=49430
AUBERT	03I	PR D67 092003	B. Aubert *et al.*	(BABAR Collab.)	REFID=49431
AUBERT	03J	PRL 90 221801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49438
AUBERT	03K	PRL 90 231801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49439
AUBERT	03L	PRL 91 021801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49493
AUBERT	03N	PRL 91 061802	B. Aubert *et al.*	(BABAR Collab.)	REFID=49514
AUBERT	03O	PRL 91 071801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49515
AUBERT	03Q	PRL 91 131801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49542
AUBERT	03S	PRL 91 241801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49646
AUBERT	03T	PRL 91 201802	B. Aubert *et al.*	(BABAR Collab.)	REFID=49647
AUBERT	03U	PRL 91 221802	B. Aubert *et al.*	(BABAR Collab.)	REFID=49648
AUBERT	03V	PRL 91 171802	B. Aubert *et al.*	(BABAR Collab.)	REFID=49663
AUBERT	03W	PRL 91 161801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49664
AUBERT	03X	PR D68 092001	B. Aubert *et al.*	(BABAR Collab.)	REFID=49665
BORNHEIM	03	PR D68 052002	A. Bornheim *et al.*	(CLEO Collab.)	REFID=49546
CHANG	03	PR D68 111101	M.-C. Chang *et al.*	(BELLE Collab.)	REFID=49640
CHEN	03B	PRL 91 201801	K.-F. Chen *et al.*	(BELLE Collab.)	REFID=49639
CSORNA	03	PR D67 112002	S.E. Csorna *et al.*	(CLEO Collab.)	REFID=49435
EISENSTEIN	03	PR D68 017101	B.I. Eisenstein *et al.*	(CLEO Collab.)	REFID=49509
FANG	03	PRL 90 071801	F. Fang *et al.*	(BELLE Collab.)	REFID=49206
GABYSHEV	03	PRL 90 121802	N. Gabyshev *et al.*	(BELLE Collab.)	REFID=49201
HASTINGS	03	PR D67 052004	N.C. Hastings *et al.*	(BELLE Collab.)	REFID=49209

ISHIKAWA	03	PRL 91 261601	A. Ishikawa *et al.*	(BELLE Collab.)	REFID=49641
KROKOVNY	03	PRL 90 141802	P. Krokovny *et al.*	(BELLE Collab.)	REFID=49218
KROKOVNY	03B	PRL 91 262002	P. Krokovny *et al.*	(BELLE Collab.)	REFID=49615
LEE	03	PRL 91 261801	S.H. Lee *et al.*	(BELLE Collab.)	REFID=49636
SATPATHY	03	PL B553 159	A. Satpathy *et al.*	(BELLE Collab.)	REFID=49157
WANG	03	PRL 90 201802	M.-Z. Wang *et al.*	(BELLE Collab.)	REFID=49437
ZHENG	03	PR D67 092004	Y. Zheng *et al.*	(BELLE Collab.)	REFID=49219
ABE	02	PRL 88 021801	K. Abe *et al.*	(BELLE Collab.)	REFID=48518
ABE	02E	PL B526 258	K. Abe *et al.*	(BELLE Collab.)	REFID=48601
ABE	02F	PL B526 247	K. Abe *et al.*	(BELLE Collab.)	REFID=48602
ABE	02H	PRL 88 171801	K. Abe *et al.*	(BELLE Collab.)	REFID=48633
ABE	02J	PRL 88 052002	K. Abe *et al.*	(BELLE Collab.)	REFID=48689
ABE	02K	PRL 88 181803	K. Abe *et al.*	(BELLE Collab.)	REFID=48690
ABE	02M	PRL 89 071801	K. Abe *et al.*	(BELLE Collab.)	REFID=48757
ABE	02N	PL B538 11	K. Abe *et al.*	(BELLE Collab.)	REFID=48769
ABE	02O	PR D65 091103	K. Abe *et al.*	(BELLE Collab.)	REFID=48790
ABE	02Q	PRL 89 122001	K. Abe *et al.*	(BELLE Collab.)	REFID=48808
ABE	02U	PR D66 032007	K. Abe *et al.*	(BELLE Collab.)	REFID=48905
ABE	02W	PRL 89 151802	K. Abe *et al.*	(BELLE Collab.)	REFID=48980
ABE	02Z	PR D66 071102	K. Abe *et al.*	(BELLE Collab.)	REFID=49062
ACOSTA	02C	PR D65 092009	D. Acosta *et al.*	(CDF Collab.)	REFID=48794
ACOSTA	02G	PR D66 112002	D. Acosta *et al.*	(CDF Collab.)	REFID=49132
AFFOLDER	02B	PRL 88 071801	T. Affolder *et al.*	(CDF Collab.)	REFID=48603
AHMED	02B	PR D66 031101	S. Ahmed *et al.*	(CLEO Collab.)	REFID=48901
ASNER	02	PR D65 031103	D.M. Asner *et al.*	(CLEO Collab.)	REFID=48515
AUBERT	02	PR D65 032001	B. Aubert *et al.*	(BABAR Collab.)	REFID=48514
AUBERT	02C	PRL 88 101805	B. Aubert *et al.*	(BABAR Collab.)	REFID=48600
AUBERT	02D	PR D65 051502	B. Aubert *et al.*	(BABAR Collab.)	REFID=48635
AUBERT	02E	PR D65 051101	B. Aubert *et al.*	(BABAR Collab.)	REFID=48636
AUBERT	02H	PRL 89 011802	B. Aubert *et al.*	(BABAR Collab.)	REFID=48639
Also		PRL 89 169903 (errat.)	B. Aubert *et al.*	(BABAR Collab.)	REFID=48983
AUBERT	02I	PRL 88 221802	B. Aubert *et al.*	(BABAR Collab.)	REFID=48640
AUBERT	02J	PRL 88 221803	B. Aubert *et al.*	(BABAR Collab.)	REFID=48641
AUBERT	02K	PRL 88 231801	B. Aubert *et al.*	(BABAR Collab.)	REFID=48708
AUBERT	02L	PRL 88 241801	B. Aubert *et al.*	(BABAR Collab.)	REFID=48751
AUBERT	02M	PRL 89 061801	B. Aubert *et al.*	(BABAR Collab.)	REFID=48755
AUBERT	02N	PR D66 032003	B. Aubert *et al.*	(BABAR Collab.)	REFID=48902
AUBERT	02P	PRL 89 201802	B. Aubert *et al.*	(BABAR Collab.)	REFID=48995
AUBERT	02Q	PRL 89 281802	B. Aubert *et al.*	(BABAR Collab.)	REFID=49243
BRIERE	02	PRL 89 081803	R. Briere *et al.*	(CLEO Collab.)	REFID=48758
CASEY	02	PR D66 092002	B.C.K. Casey *et al.*	(BELLE Collab.)	REFID=49071
CHEN	02B	PL B546 196	K.-F. Chen *et al.*	(BELLE Collab.)	REFID=48992
COAN	02	PRL 88 062001	T.E. Coan *et al.*	(CLEO Collab.)	REFID=48604
Also		PRL 88 069902 (errat.)	T.E. Coan *et al.*	(CLEO Collab.)	REFID=48696
DRUTSKOY	02	PL B542 171	A. Drutskoy *et al.*	(BELLE Collab.)	REFID=48780
DYTMAN	02	PR D66 091101	S.A. Dytman *et al.*	(CLEO Collab.)	REFID=49070
ECKHART	02	PRL 89 251801	E. Eckhart *et al.*	(CLEO Collab.)	REFID=49080
EDWARDS	02	PR D65 012002	K.W. Edwards *et al.*	(CLEO Collab.)	REFID=48512
GABYSHEV	02	PR D66 091102	N. Gabyshev *et al.*	(BELLE Collab.)	REFID=49102
GODANG	02	PRL 88 021802	R. Godang *et al.*	(CLEO Collab.)	REFID=48519
GORDON	02	PL B542 183	A. Gordon *et al.*	(BELLE Collab.)	REFID=48781
HARA	02	PRL 89 251803	K. Hara *et al.*	(BELLE Collab.)	REFID=49082
KROKOVNY	02	PRL 89 231804	P. Korkovny *et al.*	(BELLE Collab.)	REFID=49079
MAHAPATRA	02	PRL 88 101803	R. Mahapatra *et al.*	(CLEO Collab.)	REFID=48599
NISHIDA	02	PRL 89 231801	S. Nishida *et al.*	(BELLE Collab.)	REFID=49078
TOMURA	02	PL B542 207	T. Tomura *et al.*	(BELLE Collab.)	REFID=48782
ABASHIAN	01	PRL 86 2509	A. Abashian *et al.*	(BELLE Collab.)	REFID=48105
ABE	01D	PRL 86 3228	K. Abe *et al.*	(BELLE Collab.)	REFID=48061
ABE	01G	PRL 87 091802	K. Abe *et al.*	(BELLE Collab.)	REFID=48246
ABE	01H	PRL 87 101801	K. Abe *et al.*	(BELLE Collab.)	REFID=48247
ABE	01I	PRL 87 111801	K. Abe *et al.*	(BELLE Collab.)	REFID=48248
ABE	01K	PR D64 071101	K. Abe *et al.*	(BELLE Collab.)	REFID=48367
ABE	01L	PRL 87 161601	K. Abe *et al.*	(BELLE Collab.)	REFID=48379
ABE	01M	PL B517 309	K. Abe *et al.*	(BELLE Collab.)	REFID=48382
ABREU	01H	PL B510 55	P. Abreu *et al.*	(DELPHI Collab.)	REFID=48075
ALEXANDER	01B	PR D64 092001	J.P. Alexander *et al.*	(CLEO Collab.)	REFID=48391
AMMAR	01B	PRL 87 271801	R. Ammar *et al.*	(CLEO Collab.)	REFID=48534
ANDERSON	01	PRL 86 2732	S. Anderson *et al.*	(CLEO Collab.)	REFID=48093
ANDERSON	01B	PRL 87 181803	S. Anderson *et al.*	(CLEO Collab.)	REFID=48389
AUBERT	01	PRL 86 2515	B. Aubert *et al.*	(BABAR Collab.)	REFID=48106
AUBERT	01B	PRL 87 091801	B. Aubert *et al.*	(BABAR Collab.)	REFID=48245
AUBERT	01D	PRL 87 151801	B. Aubert *et al.*	(BABAR Collab.)	REFID=48377
AUBERT	01E	PRL 87 151802	B. Aubert *et al.*	(BABAR Collab.)	REFID=48378
AUBERT	01F	PRL 87 201803	B. Aubert *et al.*	(BABAR Collab.)	REFID=48432
AUBERT	01G	PRL 87 221802	B. Aubert *et al.*	(BABAR Collab.)	REFID=48434
AUBERT	01H	PRL 87 241801	B. Aubert *et al.*	(BABAR Collab.)	REFID=48435
AUBERT	01I	PRL 87 241803	B. Aubert *et al.*	(BABAR Collab.)	REFID=48436
BARATE	01D	EPJ C20 431	R. Barate *et al.*	(ALEPH Collab.)	REFID=48076
BARATE	01E	EPJ C19 213	R. Barate *et al.*	(ALEPH Collab.)	REFID=48135
BRIERE	01	PRL 86 3718	R.A. Biere *et al.*	(CLEO Collab.)	REFID=48119
EDWARDS	01	PRL 86 30	K.W. Edwards *et al.*	(CLEO Collab.)	REFID=47903
JAFFE	01	PRL 86 5000	D. Jaffe *et al.*	(CLEO Collab.)	REFID=48139
RICHICHI	01	PR D63 031103	S.J. Richichi *et al.*	(CLEO Collab.)	REFID=48226
ABBIENDI	00Q	PL B482 15	G. Abbiendi *et al.*	(OPAL Collab.)	REFID=47640
ABBIENDI,G	00B	PL B493 266	G. Abbiendi *et al.*	(OPAL Collab.)	REFID=47835
ABE	00C	PR D62 071101	K. Abe *et al.*	(SLD Collab.)	REFID=47762
AFFOLDER	00C	PR D61 072005	T. Affolder *et al.*	(CDF Collab.)	REFID=47438
AFFOLDER	00N	PRL 85 4668	T. Affolder *et al.*	(CDF Collab.)	REFID=47875
AHMED	00B	PR D62 112003	S. Ahmed *et al.*	(CLEO Collab.)	REFID=47822
ANASTASSOV	00	PRL 84 1393	A. Anastassov *et al.*	(CLEO Collab.)	REFID=47574
ARTUSO	00	PRL 84 4292	M. Artuso *et al.*	(CLEO Collab.)	REFID=47626
AVERY	00	PR D62 051101	P. Avery *et al.*	(CLEO Collab.)	REFID=47693
BARATE	00Q	PL B492 259	R. Barate *et al.*	(ALEPH Collab.)	REFID=47826
BARATE	00R	PL B492 275	R. Barate *et al.*	(ALEPH Collab.)	REFID=47827

BEHRENS	00	PR D61 052001	B.H. Behrens *et al.*	(CLEO Collab.)	REFID=47558
BEHRENS	00B	PL B490 36	B.H. Behrens *et al.*	(CLEO Collab.)	REFID=47776
BERGFELD	00B	PR D62 091102	T. Bergfeld *et al.*	(CLEO Collab.)	REFID=47814
CHEN	00	PRL 85 525	S. Chen *et al.*	(CLEO Collab.)	REFID=47669
COAN	00	PRL 84 5283	T.E. Coan *et al.*	(CLEO Collab.)	REFID=47633
CRONIN-HEN...	00	PRL 85 515	D. Cronin-Hennessy *et al.*	(CLEO Collab.)	REFID=47659
CSORNA	00	PR D61 111101	S.E. Csorna *et al.*	(CLEO Collab.)	REFID=47435
JESSOP	00	PRL 85 2881	C.P. Jessop *et al.*	(CLEO Collab.)	REFID=47771
LIPELES	00	PR D62 032005	E. Lipeles *et al.*	(CLEO Collab.)	REFID=47690
RICHICHI	00	PRL 85 520	S.J. Richichi *et al.*	(CLEO Collab.)	REFID=47660
ABBIENDI	99J	EPJ C12 609	G. Abbiendi *et al.*	(OPAL Collab.)	REFID=46738
ABE	99K	PR D60 051101	F. Abe *et al.*	(CDF Collab.)	REFID=47134
ABE	99Q	PR D60 072003	F. Abe *et al.*	(CDF Collab.)	REFID=47263
AFFOLDER	99B	PRL 83 3378	T. Affolder *et al.*	(CDF Collab.)	REFID=47213
AFFOLDER	99C	PR D60 112004	T. Affolder *et al.*	(CDF Collab.)	REFID=47269
ARTUSO	99	PRL 82 3020	M. Artuso *et al.*	(CLEO Collab.)	REFID=46984
BARTELT	99	PRL 82 3746	J. Bartelt *et al.*	(CLEO Collab.)	REFID=47004
COAN	99	PR D59 111101	T.E. Coan *et al.*	(CLEO Collab.)	REFID=47019
ABE	98B	PR D57 5382	F. Abe *et al.*	(CDF Collab.)	REFID=45880
ABE	98C	PRL 80 2057	F. Abe *et al.*	(CDF Collab.)	REFID=45884
Also		PR D59 032001	F. Abe *et al.*	(CDF Collab.)	REFID=46704
ABE	98O	PR D58 072001	F. Abe *et al.*	(CDF Collab.)	REFID=46156
ABE	98Q	PR D58 092002	F. Abe *et al.*	(CDF Collab.)	REFID=46475
ABE	98U	PRL 81 5513	F. Abe *et al.*	(CDF Collab.)	REFID=46693
ABE	98V	PRL 81 5742	F. Abe *et al.*	(CDF Collab.)	REFID=46697
ACCIARRI	98D	EPJ C5 195	M. Acciarri *et al.*	(L3 Collab.)	REFID=45947
ACCIARRI	98S	PL B438 417	M. Acciarri *et al.*	(L3 Collab.)	REFID=46503
ACKERSTAFF	98Z	EPJ C5 379	K. Ackerstaff *et al.*	(OPAL Collab.)	REFID=46262
BARATE	98Q	EPJ C4 387	R. Barate *et al.*	(ALEPH Collab.)	REFID=46146
BEHRENS	98	PRL 80 3710	B.H. Behrens *et al.*	(CLEO Collab.)	REFID=45936
BERGFELD	98	PRL 81 272	T. Bergfeld *et al.*	(CLEO Collab.)	REFID=46091
BRANDENB...	98	PRL 80 2762	G. Brandenbrug *et al.*	(CLEO Collab.)	REFID=45874
GODANG	98	PRL 80 3456	R. Godang *et al.*	(CLEO Collab.)	REFID=45935
NEMATI	98	PR D57 5363	B. Nemati *et al.*	(CLEO Collab.)	REFID=45871
ABE	97J	PRL 79 590	K. Abe *et al.*	(SLD Collab.)	REFID=45413
ABREU	97F	ZPHY C74 19	P. Abreu *et al.*	(DELPHI Collab.)	REFID=45412
Also		ZPHY C75 579 (errat.)	P. Abreu *et al.*	(DELPHI Collab.)	REFID=45614
ABREU	97N	ZPHY C76 579	P. Abreu *et al.*	(DELPHI Collab.)	REFID=45789
ACCIARRI	97B	PL B391 474	M. Acciarri *et al.*	(L3 Collab.)	REFID=45248
ACCIARRI	97C	PL B391 481	M. Acciarri *et al.*	(L3 Collab.)	REFID=45249
ACKERSTAFF	97G	PL B395 128	K. Ackerstaff *et al.*	(OPAL Collab.)	REFID=45260
ACKERSTAFF	97U	ZPHY C76 401	K. Ackerstaff *et al.*	(OPAL Collab.)	REFID=45786
ACKERSTAFF	97V	ZPHY C76 417	K. Ackerstaff *et al.*	(OPAL Collab.)	REFID=45787
ARTUSO	97	PL B399 321	M. Artuso *et al.*	(CLEO Collab.)	REFID=45327
ASNER	97	PRL 79 799	D. Asner *et al.*	(CLEO Collab.)	REFID=45441
ATHANAS	97	PRL 79 2208	M. Athanas *et al.*	(CLEO Collab.)	REFID=45598
BUSKULIC	97	PL B395 373	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=45291
BUSKULIC	97D	ZPHY C75 397	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=45611
FU	97	PRL 79 3125	X. Fu *et al.*	(CLEO Collab.)	REFID=45625
JESSOP	97	PRL 79 4533	C.P. Jessop *et al.*	(CLEO Collab.)	REFID=45744
ABE	96B	PR D53 3496	F. Abe *et al.*	(CDF Collab.)	REFID=44688
ABE	96C	PRL 76 4462	F. Abe *et al.*	(CDF Collab.)	REFID=44700
ABE	96H	PRL 76 2015	F. Abe *et al.*	(CDF Collab.)	REFID=44798
ABE	96Q	PR D54 6596	F. Abe *et al.*	(CDF Collab.)	REFID=44974
ABREU	96P	ZPHY C71 539	P. Abreu *et al.*	(DELPHI Collab.)	REFID=44932
ABREU	96Q	ZPHY C72 17	P. Abreu *et al.*	(DELPHI Collab.)	REFID=44934
ACCIARRI	96E	PL B383 487	M. Acciarri *et al.*	(L3 Collab.)	REFID=44857
ADAM	96D	ZPHY C72 207	W. Adam *et al.*	(DELPHI Collab.)	REFID=45276
ALBRECHT	96D	PL B374 256	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=44891
ALEXANDER	96T	PRL 77 5000	J.P. Alexander *et al.*	(CLEO Collab.)	REFID=44972
ALEXANDER	96V	ZPHY C72 377	G. Alexander *et al.*	(OPAL Collab.)	REFID=45279
ASNER	96	PR D53 1039	D.M. Asner *et al.*	(CLEO Collab.)	REFID=44734
BARISH	96B	PRL 76 1570	B.C. Barish *et al.*	(CLEO Collab.)	REFID=44693
BISHAI	96	PL B369 186	M. Bishai *et al.*	(CLEO Collab.)	REFID=44832
BUSKULIC	96J	ZPHY C71 31	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=44824
BUSKULIC	96V	PL B384 471	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=44909
DUBOSCQ	96	PRL 76 3898	J.E. Duboscq *et al.*	(CLEO Collab.)	REFID=44803
GIBAUT	96	PR D53 4734	D. Gibaut *et al.*	(CLEO Collab.)	REFID=44784
PDG	96	PR D54 1	R. M. Barnett *et al.*	(PDG Collab.)	REFID=44495
ABE	95Z	PRL 75 3068	F. Abe *et al.*	(CDF Collab.)	REFID=44490
ABREU	95N	PL B357 255	P. Abreu *et al.*	(DELPHI Collab.)	REFID=44417
ABREU	95Q	ZPHY C68 13	P. Abreu *et al.*	(DELPHI Collab.)	REFID=44460
ACCIARRI	95H	PL B363 127	M. Acciarri *et al.*	(L3 Collab.)	REFID=44544
ACCIARRI	95I	PL B363 137	M. Acciarri *et al.*	(L3 Collab.)	REFID=44545
ADAM	95	ZPHY C68 363	W. Adam *et al.*	(DELPHI Collab.)	REFID=44465
AKERS	95J	ZPHY C66 555	R. Akers *et al.*	(OPAL Collab.)	REFID=44289
AKERS	95T	ZPHY C67 379	R. Akers *et al.*	(OPAL Collab.)	REFID=44379
ALEXANDER	95	PL B341 435	J. Alexander *et al.*	(CLEO Collab.)	REFID=44113
Also		PL B347 469 (errat.)	J. Alexander *et al.*	(CLEO Collab.)	REFID=44211
BARISH	95	PR D51 1014	B.C. Barish *et al.*	(CLEO Collab.)	REFID=44139
BUSKULIC	95N	PL B359 236	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=44475
ABE	94D	PRL 72 3456	F. Abe *et al.*	(CDF Collab.)	REFID=43761
ABREU	94M	PL B338 409	P. Abreu *et al.*	(DELPHI Collab.)	REFID=44022
AKERS	94C	PL B327 411	R. Akers *et al.*	(OPAL Collab.)	REFID=43762
AKERS	94H	PL B336 585	R. Akers *et al.*	(OPAL Collab.)	REFID=43968
AKERS	94J	PL B337 196	R. Akers *et al.*	(OPAL Collab.)	REFID=44014
AKERS	94L	PL B337 393	R. Akers *et al.*	(OPAL Collab.)	REFID=44018
ALAM	94	PR D50 43	M.S. Alam *et al.*	(CLEO Collab.)	REFID=43738
ALBRECHT	94	PL B324 249	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=43782
ALBRECHT	94G	PL B340 217	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=44045
AMMAR	94	PR D49 5701	R. Ammar *et al.*	(CLEO Collab.)	REFID=43736
ATHANAS	94	PRL 73 3503	M. Athanas *et al.*	(CLEO Collab.)	REFID=44064
Also		PRL 74 3090 (errat.)	M. Athanas *et al.*	(CLEO Collab.)	REFID=44196
BUSKULIC	94B	PL B322 441	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=43741
PDG	94	PR D50 1173	L. Montanet *et al.*	(CERN, LBL, BOST+)	REFID=43653
PROCARIO	94	PRL 73 1472	M. Procario *et al.*	(CLEO Collab.)	REFID=43735

STONE	94	HEPSY 93-11	S. Stone		REFID=43737
Published in B Decays, 2nd Edition, World Scientific, Singapore					
ABREU	93D	ZPHY C57 181	P. Abreu *et al.*	(DELPHI Collab.)	REFID=43267
ABREU	93G	PL B312 253	P. Abreu *et al.*	(DELPHI Collab.)	REFID=43443
ACTON	93C	PL B307 247	P.D. Acton *et al.*	(OPAL Collab.)	REFID=43352
ALBRECHT	93	ZPHY C57 533	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=43269
ALBRECHT	93E	ZPHY C60 11	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=43514
ALEXANDER	93B	PL B319 365	J. Alexander *et al.*	(CLEO Collab.)	REFID=43725
AMMAR	93	PRL 71 674	R. Ammar *et al.*	(CLEO Collab.)	REFID=43452
BARTELT	93	PRL 71 1680	J.E. Bartelt *et al.*	(CLEO Collab.)	REFID=43507
BATTLE	93	PRL 71 3922	M. Battle *et al.*	(CLEO Collab.)	REFID=43640
BEAN	93B	PRL 70 2681	A. Bean *et al.*	(CLEO Collab.)	REFID=43356
BUSKULIC	93D	PL B307 194	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=43349
Also		PL B325 537 (errat.)	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=43945
BUSKULIC	93K	PL B313 498	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=43523
SANGHERA	93	PR D47 791	S. Sanghera *et al.*	(CLEO Collab.)	REFID=43098
ALBRECHT	92C	PL B275 195	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41928
ALBRECHT	92G	ZPHY C54 1	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=42037
ALBRECHT	92L	ZPHY C55 357	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=42201
BORTOLETTO	92	PR D45 21	D. Bortoletto *et al.*	(CLEO Collab.)	REFID=41920
HENDERSON	92	PR D45 2212	S. Henderson *et al.*	(CLEO Collab.)	REFID=42014
KRAMER	92	PL B279 181	G. Kramer, W.F. Palmer	(HAMB, OSU)	REFID=43834
ALBAJAR	91E	PL B273 540	C. Albajar *et al.*	(UA1 Collab.)	REFID=41642
ALBRECHT	91B	PL B254 288	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41451
ALBRECHT	91C	PL B255 297	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41454
ALBRECHT	91E	PL B262 148	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41549
BERKELMAN	91	ARNPS 41 1	K. Berkelman, S. Stone	(CORN, SYRA)	REFID=41929
"Decays of *B* Mesons"					
FULTON	91	PR D43 651	R. Fulton *et al.*	(CLEO Collab.)	REFID=41391
ALBRECHT	90B	PL B241 278	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41216
ALBRECHT	90J	ZPHY C48 543	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41437
ANTREASYAN	90B	ZPHY C48 553	D. Antreasyan *et al.*	(Crystal Ball Collab.)	REFID=41438
BORTOLETTO	90	PRL 64 2117	D. Bortoletto *et al.*	(CLEO Collab.)	REFID=41178
ELSEN	90	ZPHY C46 349	E. Elsen *et al.*	(JADE Collab.)	REFID=41049
ROSNER	90	PR D42 3732	J.L. Rosner		REFID=41464
WAGNER	90	PRL 64 1095	S.R. Wagner *et al.*	(Mark II Collab.)	REFID=41096
ALBRECHT	89C	PL B219 121	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40809
ALBRECHT	89G	PL B229 304	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40942
ALBRECHT	89J	PL B229 175	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41099
ALBRECHT	89L	PL B232 554	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41275
ARTUSO	89	PRL 62 2233	M. Artuso *et al.*	(CLEO Collab.)	REFID=40785
AVERILL	89	PR D39 123	D.A. Averill *et al.*	(HRS Collab.)	REFID=40691
AVERY	89B	PL B223 470	P. Avery *et al.*	(CLEO Collab.)	REFID=40820
BEBEK	89	PRL 62 8	C. Bebek *et al.*	(CLEO Collab.)	REFID=40626
BORTOLETTO	89	PRL 62 2436	D. Bortoletto *et al.*	(CLEO Collab.)	REFID=40787
BORTOLETTO	89B	PRL 63 1667	D. Bortoletto *et al.*	(CLEO Collab.)	REFID=40800
ALBRECHT	88F	PL B209 119	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40649
ALBRECHT	88K	PL B215 424	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40662
ALBRECHT	87C	PL B185 218	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40323
ALBRECHT	87D	PL B199 451	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40325
ALBRECHT	87I	PL B192 245	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40389
ALBRECHT	87J	PL B197 452	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40391
AVERY	87	PL B183 429	P. Avery *et al.*	(CLEO Collab.)	REFID=40387
BEAN	87B	PRL 58 183	A. Bean *et al.*	(CLEO Collab.)	REFID=40384
BEBEK	87	PR D36 1289	C. Bebek *et al.*	(CLEO Collab.)	REFID=40270
ALAM	86	PR D34 3279	M.S. Alam *et al.*	(CLEO Collab.)	REFID=40324
ALBRECHT	86F	PL B182 95	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40388
PDG	86	PL 170B 1	M. Aguilar-Benitez *et al.*	(CERN, CIT+)	REFID=40122
CHEN	85	PR D31 2386	A. Chen *et al.*	(CLEO Collab.)	REFID=11574
HAAS	85	PRL 55 1248	J. Haas *et al.*	(CLEO Collab.)	REFID=11611
AVERY	84	PRL 53 1309	P. Avery *et al.*	(CLEO Collab.)	REFID=11572
GILES	84	PR D30 2279	R. Giles *et al.*	(CLEO Collab.)	REFID=11570
BEHRENDS	83	PRL 50 881	S. Behrends *et al.*	(CLEO Collab.)	REFID=11569

$B^{\pm}/B^0$ ADMIXTURE

NODE=S049

B DECAY MODES

NODE=S049210;NODE=S049

The branching fraction measurements are for an admixture of B mesons at the $\Upsilon(4S)$. The values quoted assume that B($\Upsilon(4S) \to B\overline{B}$) = 100%.

NODE=S049

For inclusive branching fractions, *e.g.*, $B \to D^{\pm}$ *anything*, the treatment of multiple D's in the final state must be defined. One possibility would be to count the number of events with one-or-more D's and divide by the total number of B's. Another possibility would be to count the total number of D's and divide by the total number of B's, which is the definition of average multiplicity. The two definitions are identical if only one D is allowed in the final state. Even though the "one-or-more" definition seems sensible, for practical reasons inclusive branching fractions are almost always measured using the multiplicity definition. For heavy final state particles, authors call their results inclusive branching fractions while for light particles some authors call their results multiplicities. In the B sections, we list all results as inclusive branching fractions, adopting a multiplicity definition. This means that inclusive branching fractions can exceed 100% and that inclusive partial widths can exceed total widths, just as inclusive cross sections can exceed total cross section.

$\overline{B}$ modes are charge conjugates of the modes below. Reactions indicate the weak decay vertex and do not include mixing.

	Mode		Fraction (Γ_i/Γ)	Scale factor/ Confidence level	
	Semileptonic and leptonic modes				NODE=S049;CLUMP=L
Γ_1	$e^+ \nu_e$ anything	[a]			DESIG=100
Γ_2	$\mu^+ \nu_\mu$ anything	[a]			DESIG=102
Γ_3	$\ell^+ \nu_\ell$ anything	[a,b]	(10.82 ± 0.15) %		DESIG=131
Γ_4	$D^- \ell^+ \nu_\ell$ anything	[b]	(2.6 ± 0.5) %		DESIG=148
Γ_5	$\overline{D}^0 \ell^+ \nu_\ell$ anything	[b]	(7.2 ± 1.5) %		DESIG=147
Γ_6	$\overline{D} \ell^+ \nu_\ell$		(2.41 ± 0.12) %		DESIG=274
Γ_7	$D^{*-} \ell^+ \nu_\ell$ anything	[c]	(6.7 ± 1.3) $\times 10^{-3}$		DESIG=182
Γ_8	$D^{*0} \ell^+ \nu_\ell$ anything				DESIG=183
Γ_9	$\overline{D}^* \ell^+ \nu_\ell$	[d]	(4.95 ± 0.11) %		DESIG=280;OUR EVAL;→ UNCHECKED ←
Γ_{10}	$\overline{D}^* e^+ \nu_e$				DESIG=297
Γ_{11}	$\overline{D}^* \mu^+ \nu_\mu$				DESIG=298
Γ_{12}	$\overline{D}^{**} \ell^+ \nu_\ell$	[b,e]	(2.7 ± 0.7) %		DESIG=217
Γ_{13}	$\overline{D}_1(2420) \ell^+ \nu_\ell$ anything		(3.8 ± 1.3) $\times 10^{-3}$	S=2.4	DESIG=11
Γ_{14}	$\overline{D} \pi \ell^+ \nu_\ell$ anything + $\overline{D}^* \pi \ell^+ \nu_\ell$ anything		(2.6 ± 0.5) %	S=1.5	DESIG=34
Γ_{15}	$\overline{D} \pi \ell^+ \nu_\ell$ anything		(1.5 ± 0.6) %		DESIG=232
Γ_{16}	$\overline{D}^* \pi \ell^+ \nu_\ell$ anything		(1.9 ± 0.4) %		DESIG=233
Γ_{17}	$\overline{D}_2^*(2460) \ell^+ \nu_\ell$ anything		(4.4 ± 1.6) $\times 10^{-3}$		DESIG=12
Γ_{18}	$D^{*-} \pi^+ \ell^+ \nu_\ell$ anything		(1.00 ± 0.34) %		DESIG=13
Γ_{19}	$\overline{D} \pi^+ \pi^- \ell^+ \nu_\ell$		(1.62 ± 0.32) $\times 10^{-3}$		DESIG=285
Γ_{20}	$\overline{D}^* \pi^+ \pi^- \ell^+ \nu_\ell$		(9.4 ± 3.2) $\times 10^{-4}$		DESIG=286
Γ_{21}	$D_s^- \ell^+ \nu_\ell$ anything	[b]	< 7 $\times 10^{-3}$	CL=90%	DESIG=36
Γ_{22}	$D_s^- \ell^+ \nu_\ell K^+$ anything	[b]	< 5 $\times 10^{-3}$	CL=90%	DESIG=37
Γ_{23}	$D_s^- \ell^+ \nu_\ell K^0$ anything	[b]	< 7 $\times 10^{-3}$	CL=90%	DESIG=38
Γ_{24}	$X_c \ell^+ \nu_\ell$		(10.63 ± 0.15) %		DESIG=260
Γ_{25}	$X_u \ell^+ \nu_\ell$		(1.92 ± 0.21) $\times 10^{-3}$		DESIG=259
Γ_{26}	$X_u e^+ \nu_e$		(1.57 ± 0.19) $\times 10^{-3}$		DESIG=295
Γ_{27}	$X_u \mu^+ \nu_\mu$		(1.62 ± 0.21) $\times 10^{-3}$		DESIG=296
Γ_{28}	$K^+ \ell^+ \nu_\ell$ anything	[b]	(6.3 ± 0.5) %		DESIG=117
Γ_{29}	$K^- \ell^+ \nu_\ell$ anything	[b]	(10 ± 4) $\times 10^{-3}$		DESIG=118
Γ_{30}	$K^0 / \overline{K}^0 \ell^+ \nu_\ell$ anything	[b]	(4.6 ± 0.5) %		DESIG=119
Γ_{31}	$\overline{D} \tau^+ \nu_\tau$		(8.3 ± 0.8) $\times 10^{-3}$		DESIG=267
Γ_{32}	$\overline{D}^* \tau^+ \nu_\tau$		(1.42 ± 0.07) %		DESIG=268

	Mode		Fraction		Code
	D, D^*, or D_s modes				NODE=S049;CLUMP=M
Γ_{33}	$D^{\pm}$ anything		(23.1 ± 1.2) %		DESIG=116
Γ_{34}	$D^0/\overline{D}^0$ anything		(64.6 ± 2.1) %	S=1.5	DESIG=107
Γ_{35}	$D^*(2010)^{\pm}$ anything		(22.5 ± 1.5) %		DESIG=111
Γ_{36}	$\overline{D}^*(2007)^0$ anything		(26.0 ± 2.7) %		DESIG=35
Γ_{37}	$D_s^{\pm}$ anything	[f]	(10.6 ± 0.6) %	S=1.7	DESIG=113
Γ_{38}	$D_s^{*\pm}$ anything		(6.3 ± 1.0) %		DESIG=57
Γ_{39}	$D_s^{*\pm}\overline{D}^{(*)}$		(3.4 ± 0.6) %		DESIG=58
Γ_{40}	$\overline{D}D_{s0}(2317)$		seen		DESIG=248;OUR EVAL;→ UNCHECKED ←
Γ_{41}	$\overline{D}D_{sJ}(2457)$		seen		DESIG=249;OUR EVAL;→ UNCHECKED ←
Γ_{42}	$D^{(*)}\overline{D}^{(*)}K^0 + D^{(*)}\overline{D}^{(*)}K^{\pm}$	[f,g]	$(7.1 {}^{+2.7}_{-1.7})$ %		DESIG=51
Γ_{43}	$b \to c\overline{c}s$		(22 ± 4) %		DESIG=31
Γ_{44}	$D_s^{(*)}\overline{D}^{(*)}$	[f,g]	(5.0 ± 0.4) %		DESIG=52
Γ_{45}	$D^* D^*(2010)^{\pm}$	[f]	$< 5.9 \times 10^{-3}$	CL=90%	DESIG=54
Γ_{46}	$D D^*(2010)^{\pm} + D^* D^{\pm}$	[f]	$< 5.5 \times 10^{-3}$	CL=90%	DESIG=55
Γ_{47}	$D D^{\pm}$	[f]	$< 3.1 \times 10^{-3}$	CL=90%	DESIG=56
Γ_{48}	$D_s^{(*)\pm}\overline{D}^{(*)}X(n\pi^{\pm})$	[f,g]	$(9 {}^{+5}_{-4})$ %		DESIG=53
Γ_{49}	$\overline{D}^*(2010)\gamma$		$< 1.1 \times 10^{-3}$	CL=90%	DESIG=180
Γ_{50}	$D_s^+\pi^-$, $D_s^{*+}\pi^-$, $D_s^+\rho^-$, $D_s^{*+}\rho^-$, $D_s^+\pi^0$, $D_s^{*+}\pi^0$, $D_s^+\eta$, $D_s^{*+}\eta$, $D_s^+\rho^0$, $D_s^{*+}\rho^0$, $D_s^+\omega$, $D_s^{*+}\omega$	[f]	$< 4 \times 10^{-4}$	CL=90%	DESIG=210
Γ_{51}	$D_{s1}(2536)^+$ anything		$< 9.5 \times 10^{-3}$	CL=90%	DESIG=32
	Charmonium modes				NODE=S049;CLUMP=N
Γ_{52}	$J/\psi(1S)$ anything		(1.094 ± 0.032) %	S=1.1	DESIG=106
Γ_{53}	$J/\psi(1S)$ (direct) anything		$(7.8 \pm 0.4) \times 10^{-3}$	S=1.1	DESIG=23
Γ_{54}	$\psi(2S)$ anything		$(3.07 \pm 0.21) \times 10^{-3}$		DESIG=124
Γ_{55}	$\chi_{c1}(1P)$ anything		$(3.55 \pm 0.27) \times 10^{-3}$	S=1.3	DESIG=170
Γ_{56}	$\chi_{c1}(1P)$ (direct) anything		$(3.08 \pm 0.19) \times 10^{-3}$		DESIG=24
Γ_{57}	$\chi_{c2}(1P)$ anything		$(9.9 \pm 1.7) \times 10^{-4}$	S=1.6	DESIG=21
Γ_{58}	$\chi_{c2}(1P)$ (direct) anything		$(7.5 \pm 1.1) \times 10^{-4}$		DESIG=247
Γ_{59}	$\eta_c(1S)$ anything		$< 9 \times 10^{-3}$	CL=90%	DESIG=22
Γ_{60}	$K\chi_{c1}(3872)$		$(1.9 \pm 0.7) \times 10^{-4}$		DESIG=292
Γ_{61}	$K X(3940)$, $X \to D^{*0}D^0$		$< 6.7 \times 10^{-5}$	CL=90%	DESIG=273
Γ_{62}	$K\chi_{c0}(3915)$, $\chi_{c0} \to \omega J/\psi$	[h]	$(7.1 \pm 3.4) \times 10^{-5}$		DESIG=262
	K or K^* modes				NODE=S049;CLUMP=O
Γ_{63}	$K^{\pm}$ anything	[f]	(78.9 ± 2.5) %		DESIG=105
Γ_{64}	K^+ anything		(66 ± 5) %		DESIG=120
Γ_{65}	K^- anything		(13 ± 4) %		DESIG=121
Γ_{66}	$K^0/\overline{K}^0$ anything	[f]	(64 ± 4) %		DESIG=122
Γ_{67}	$K^*(892)^{\pm}$ anything		(18 ± 6) %		DESIG=223
Γ_{68}	$K^*(892)^0/\overline{K}^*(892)^0$ anything	[f]	(14.6 ± 2.6) %		DESIG=224
Γ_{69}	$K^*(892)\gamma$		$(4.2 \pm 0.6) \times 10^{-5}$		DESIG=126
Γ_{70}	$\eta K\gamma$		$(8.5 {}^{+1.8}_{-1.6}) \times 10^{-6}$		DESIG=263
Γ_{71}	$K_1(1400)\gamma$		$< 1.27 \times 10^{-4}$	CL=90%	DESIG=127
Γ_{72}	$K_2^*(1430)\gamma$		$(1.7 {}^{+0.6}_{-0.5}) \times 10^{-5}$		DESIG=128
Γ_{73}	$K_2(1770)\gamma$		$< 1.2 \times 10^{-3}$	CL=90%	DESIG=179
Γ_{74}	$K_3^*(1780)\gamma$		$< 3.7 \times 10^{-5}$	CL=90%	DESIG=129
Γ_{75}	$K_4^*(2045)\gamma$		$< 1.0 \times 10^{-3}$	CL=90%	DESIG=178
Γ_{76}	$K\eta'(958)$		$(8.3 \pm 1.1) \times 10^{-5}$		DESIG=226
Γ_{77}	$K^*(892)\eta'(958)$		$(4.1 \pm 1.1) \times 10^{-6}$		DESIG=227
Γ_{78}	$K\eta$		$< 5.2 \times 10^{-6}$	CL=90%	DESIG=228
Γ_{79}	$K^*(892)\eta$		$(1.8 \pm 0.5) \times 10^{-5}$		DESIG=229
Γ_{80}	$K\phi\phi$		$(2.3 \pm 0.9) \times 10^{-6}$		DESIG=250
Γ_{81}	$\overline{b} \to \overline{s}\gamma$		$(3.49 \pm 0.19) \times 10^{-4}$		DESIG=225
Γ_{82}	$\overline{b} \to \overline{d}\gamma$		$(9.2 \pm 3.0) \times 10^{-6}$		DESIG=270
Γ_{83}	$\overline{b} \to \overline{s}$ gluon		< 6.8 %	CL=90%	DESIG=20
Γ_{84}	η anything		$(2.6 {}^{+0.5}_{-0.8}) \times 10^{-4}$		DESIG=47
Γ_{85}	η' anything		$(4.2 \pm 0.9) \times 10^{-4}$		DESIG=48
Γ_{86}	K^+ gluon (charmless)		$< 1.87 \times 10^{-4}$	CL=90%	DESIG=276
Γ_{87}	K^0 gluon (charmless)		$(1.9 \pm 0.7) \times 10^{-4}$		DESIG=277

Light unflavored meson modes

NODE=S049;CLUMP=P

Γ_{88}	$\rho\gamma$		$(1.39 \pm 0.25) \times 10^{-6}$	S=1.2	DESIG=230
Γ_{89}	$\rho/\omega\gamma$		$(1.30 \pm 0.23) \times 10^{-6}$	S=1.2	DESIG=261
Γ_{90}	$\pi^{\pm}$ anything	[f,i]	(358 ± 7) %		DESIG=220
Γ_{91}	π^0 anything		(235 ± 11) %		DESIG=240
Γ_{92}	η anything		(17.6 ± 1.6) %		DESIG=39
Γ_{93}	ρ^0 anything		(21 ± 5) %		DESIG=221
Γ_{94}	ω anything		< 81 %	CL=90%	DESIG=222
Γ_{95}	ϕ anything		(3.43 ± 0.12) %		DESIG=114
Γ_{96}	$\phi K^*(892)$		$< 2.2 \times 10^{-5}$	CL=90%	DESIG=46
Γ_{97}	$\overline{b} \to \overline{d}$ gluon				DESIG=278
Γ_{98}	π^+ gluon (charmless)		$(3.7 \pm 0.8) \times 10^{-4}$		DESIG=279

Baryon modes

NODE=S049;CLUMP=Q

Γ_{99}	$\Lambda_c^+ / \overline{\Lambda}_c^-$ anything		(3.55 ± 0.35) %		DESIG=115
Γ_{100}	Λ_c^+ anything		< 1.3 %	CL=90%	DESIG=40
Γ_{101}	$\overline{\Lambda}_c^-$ anything		< 7 %	CL=90%	DESIG=41
Γ_{102}	$\overline{\Lambda}_c^- \ell^+$ anything		$< 9 \times 10^{-4}$	CL=90%	DESIG=281
Γ_{103}	$\overline{\Lambda}_c^- e^+$ anything		$< 1.8 \times 10^{-3}$	CL=90%	DESIG=14
Γ_{104}	$\overline{\Lambda}_c^- \mu^+$ anything		< − 1.4 $\times 10^{-3}$	CL=90%	DESIG=282
Γ_{105}	$\overline{\Lambda}_c^- p$ anything		(2.02 ± 0.32) %		DESIG=16
Γ_{106}	$\overline{\Lambda}_c^- p e^+ \nu_e$		$< 8 \times 10^{-4}$	CL=90%	DESIG=17
Γ_{107}	$\overline{\Sigma}_c^{--}$ anything		$(3.3 \pm 1.7) \times 10^{-3}$		DESIG=201
Γ_{108}	$\overline{\Sigma}_c^-$ anything		$< 8 \times 10^{-3}$	CL=90%	DESIG=202
Γ_{109}	$\overline{\Sigma}_c^0$ anything		$(3.6 \pm 1.7) \times 10^{-3}$		DESIG=203
Γ_{110}	$\overline{\Sigma}_c^0 N (N = p$ or $n)$		$< 1.2 \times 10^{-3}$	CL=90%	DESIG=205
Γ_{111}	Ξ_c^0 anything, $\Xi_c^0 \to \Xi^- \pi^+$		$(1.93 \pm 0.30) \times 10^{-4}$	S=1.1	DESIG=44
Γ_{112}	Ξ_c^+, $\Xi_c^+ \to \Xi^- \pi^+ \pi^+$		$(4.5 {+1.3 \atop -1.2}) \times 10^{-4}$		DESIG=45
Γ_{113}	$p/\overline{p}$ anything	[f]	(8.0 ± 0.4) %		DESIG=108
Γ_{114}	$p/\overline{p}$ (direct) anything	[f]	(5.5 ± 0.5) %		DESIG=132
Γ_{115}	$\overline{p} e^+ \nu_e$ anything		$< 5.9 \times 10^{-4}$	CL=90%	DESIG=140
Γ_{116}	$\Lambda/\overline{\Lambda}$ anything	[f]	(4.0 ± 0.5) %		DESIG=109
Γ_{117}	Λ anything		seen		DESIG=42;OUR EVAL;→ UNCHECKED ←
Γ_{118}	$\overline{\Lambda}$ anything		seen		DESIG=43;OUR EVAL;→ UNCHECKED ←
Γ_{119}	$\Xi^- / \overline{\Xi}^+$ anything	[f]	$(2.7 \pm 0.6) \times 10^{-3}$		DESIG=133
Γ_{120}	baryons anything		(6.8 ± 0.6) %		DESIG=134
Γ_{121}	$p\overline{p}$ anything		(2.47 ± 0.23) %		DESIG=135
Γ_{122}	$\Lambda\overline{p}/\overline{\Lambda}p$ anything	[f]	(2.5 ± 0.4) %		DESIG=136
Γ_{123}	$\Lambda\overline{\Lambda}$ anything		$< 5 \times 10^{-3}$	CL=90%	DESIG=137

Lepton Family number (*LF*) violating modes or $\Delta B = 1$ weak neutral current (*B1*) modes

NODE=S049;CLUMP=R

Γ_{124}	$s e^+ e^-$	B1		$(6.7 \pm 1.7) \times 10^{-6}$	S=2.0	DESIG=103
Γ_{125}	$s \mu^+ \mu^-$	B1		$(4.3 \pm 1.0) \times 10^{-6}$		DESIG=104
Γ_{126}	$s \ell^+ \ell^-$	B1	[b]	$(5.8 \pm 1.3) \times 10^{-6}$	S=1.8	DESIG=59
Γ_{127}	$\pi \ell^+ \ell^-$	B1		$< 5.9 \times 10^{-8}$	CL=90%	DESIG=266
Γ_{128}	$\pi e^+ e^-$	B1		$< 1.10 \times 10^{-7}$	CL=90%	DESIG=283
Γ_{129}	$\pi \mu^+ \mu^-$	B1		$< 5.0 \times 10^{-8}$	CL=90%	DESIG=284
Γ_{130}	$K e^+ e^-$	B1		$(4.4 \pm 0.6) \times 10^{-7}$		DESIG=234
Γ_{131}	$K^*(892) e^+ e^-$	B1		$(1.19 \pm 0.20) \times 10^{-6}$	S=1.2	DESIG=235
Γ_{132}	$K \mu^+ \mu^-$	B1		$(4.4 \pm 0.4) \times 10^{-7}$		DESIG=236
Γ_{133}	$K^*(892) \mu^+ \mu^-$	B1		$(1.06 \pm 0.09) \times 10^{-6}$		DESIG=237
Γ_{134}	$K \ell^+ \ell^-$	B1		$(4.8 \pm 0.4) \times 10^{-7}$		DESIG=238
Γ_{135}	$K^*(892) \ell^+ \ell^-$	B1		$(1.05 \pm 0.10) \times 10^{-6}$		DESIG=239
Γ_{136}	$K \nu \overline{\nu}$	B1		$< 1.6 \times 10^{-5}$	CL=90%	DESIG=275
Γ_{137}	$K^* \nu \overline{\nu}$	B1		$< 2.7 \times 10^{-5}$	CL=90%	DESIG=269
Γ_{138}	$\pi \nu \overline{\nu}$	B1		$< 8 \times 10^{-6}$	CL=90%	DESIG=287
Γ_{139}	$\rho \nu \overline{\nu}$	B1		$< 2.8 \times 10^{-5}$	CL=90%	DESIG=288
Γ_{140}	$s e^{\pm} \mu^{\mp}$	LF	[f]	$< 2.2 \times 10^{-5}$	CL=90%	DESIG=33
Γ_{141}	$\pi e^{\pm} \mu^{\mp}$	LF		$< 9.2 \times 10^{-8}$	CL=90%	DESIG=243
Γ_{142}	$\rho e^{\pm} \mu^{\mp}$	LF		$< 3.2 \times 10^{-6}$	CL=90%	DESIG=244
Γ_{143}	$K e^{\pm} \mu^{\mp}$	LF		$< 3.8 \times 10^{-8}$	CL=90%	DESIG=241
Γ_{144}	$K^*(892) e^{\pm} \mu^{\mp}$	LF		$< 5.1 \times 10^{-7}$	CL=90%	DESIG=242

[a] These values are model dependent. LINKAGE=AAA

[b] An ℓ indicates an e or a μ mode, not a sum over these modes. LINKAGE=DX

[c] Here "anything" means at least one particle observed. LINKAGE=LX

[d] This is a B($B^0 \rightarrow D^{*-} \ell^+ \nu_\ell$) value. LINKAGE=B0V

[e] D^{**} stands for the sum of the $D(1\,^1P_1)$, $D(1\,^3P_0)$, $D(1\,^3P_1)$, $D(1\,^3P_2)$, $D(2\,^1S_0)$, and $D(2\,^1S_1)$ resonances. LINKAGE=DSS

[f] The value is for the sum of the charge states or particle/antiparticle states indicated. LINKAGE=SG

[g] $D^{(*)}\overline{D}^{(*)}$ stands for the sum of $D^*\overline{D}^*$, $D^*\overline{D}$, $D\overline{D}^*$, and $D\overline{D}$. LINKAGE=SGG

[h] $X(3915)$ denotes a near-threshold enhancement in the $\omega J/\psi$ mass spectrum. LINKAGE=YOJ

[i] Inclusive branching fractions have a multiplicity definition and can be greater than 100%. LINKAGE=M

$B^\pm/B^0$ ADMIXTURE BRANCHING RATIOS

NODE=S049215

$\Gamma(\ell^+\nu_\ell\,\text{anything})/\Gamma_{\text{total}}$ Γ_3/Γ

NODE=S049S45

These branching fraction values are model dependent.

NODE=S049S45
NODE=S049S45

VALUE (%)	DOCUMENT ID		TECN	COMMENT
10.82±0.15 OUR EVALUATION	(Produced by HFLAV)			
10.49±0.20 OUR AVERAGE	Error includes scale factor of 1.3. See the ideogram below.			
10.34±0.04±0.26	[1] LEES	17B	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
10.28±0.18±0.24	[2] URQUIJO	07	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
10.91±0.09±0.24	[3] MAHMOOD	04	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$
9.7 ±0.5 ±0.4	[4] ALBRECHT	93H	ARG	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
9.96±0.19±0.32	[5] AUBERT,B	06Y	BABR	Repl. by LEES 17B
10.85±0.21±0.36	[6] OKABE	05	BELL	Repl. by URQUIJO 07
10.83±0.16±0.06	[7] AUBERT	04X	BABR	Repl. by AUBERT,B 06Y
10.36±0.06±0.23	[8] AUBERT,B	04A	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
10.87±0.18±0.30	[9] AUBERT	03	BABR	Repl. by AUBERT 04X
10.90±0.12±0.49	[10] ABE	02Y	BELL	Repl. by OKABE 05
10.49±0.17±0.43	[11] BARISH	96B	CLE2	Repl. by MAHMOOD 04
10.80±0.20±0.56	[12] HENDERSON	92	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$
10.0 ±0.4 ±0.3	[13] YANAGISAWA	91	CSB2	$e^+e^- \rightarrow \Upsilon(4S)$
10.3 ±0.6 ±0.2	[14] ALBRECHT	90H	ARG	Direct e at $\Upsilon(4S)$
10.0 ±0.6 ±0.2	[15] ALBRECHT	90H	ARG	Direct μ at $\Upsilon(4S)$
11.7 ±0.4 ±1.0	[16] WACHS	89	CBAL	Direct e at $\Upsilon(4S)$
12.0 ±0.7 ±0.5	CHEN	84	CLEO	Direct e at $\Upsilon(4S)$
10.8 ±0.6 ±1.0	CHEN	84	CLEO	Direct μ at $\Upsilon(4S)$
11.2 ±0.9 ±1.0	LEVMAN	84	CUSB	Direct μ at $\Upsilon(4S)$
13.2 ±0.8 ±1.4	[17] KLOPFEN...	83B	CUSB	Direct e at $\Upsilon(4S)$

→ UNCHECKED ←

OCCUR=2

OCCUR=2

[1] LEES 17B measurement is obtained from semileptonic decays to electrons. The result is averaged over $B^\pm$ and B^0 mesons, assuming lepton universality. NODE=S049S45;LINKAGE=A

[2] URQUIJO 07 report a measurement of $(10.07 \pm 0.18 \pm 0.21)$% for the partial branching fraction of $B \rightarrow e\nu_e X_c$ decay with electron energy above 0.6 GeV. We converted the result to $B \rightarrow e\nu_e X$ branching fraction. NODE=S049S45;LINKAGE=UR

[3] Uses charge and angular correlations in $\Upsilon(4S)$ events with a high-momentum lepton and an additional electron. NODE=S049S45;LINKAGE=MA

[4] ALBRECHT 93H analysis performed using tagged semileptonic decays of the B. This technique is almost model independent for the lepton branching ratio. NODE=S049S45;LINKAGE=I

[5] The measurements are obtained for charged and neutral B mesons partial rates of semileptonic decay to electrons with momentum above 0.6 GeV/c in the B rest frame. The best precision on the ratio is achieved for a momentum threshold of 1.0 GeV: B($B^+ \rightarrow e^+\nu_e X$) / B($B^0 \rightarrow e^+\nu_e X$) = 1.074 ± 0.041 ± 0.026. NODE=S049S45;LINKAGE=AE

[6] The measurements are obtained for charged and neutral B mesons partial rates of semileptonic decay to electrons with momentum above 0.6 GeV/c in the B rest frame, and their ratio of B($B^+ \rightarrow e^+\nu_e X$)/B($B^0 \rightarrow e^+\nu_e X$) = 1.08 ± 0.05 ± 0.02. NODE=S049S45;LINKAGE=OK

[7] The semileptonic branching ratio, $|V_{cb}|$ and other heavy-quark parameters are determined from a simultaneous fit to moments of the hadronic-mass and lepton-energy distribution. NODE=S049S45;LINKAGE=AU

[8] Uses the high-momentum lepton tag method and requires the electron energy above 0.6 GeV. NODE=S049S45;LINKAGE=AB

[9] Uses the high-momentum lepton tag method. They also report $|V_{cb}|$ = 0.0423 ± 0.0007(exp) ±0.0020(theo.). NODE=S049S45;LINKAGE=YA

[10] Uses the high-momentum lepton tag method. ABE 02Y also reports $|V_{cb}| = 0.0408 \pm 0.0010(\text{exp}) \pm 0.0025(\text{theo.})$. The second error is due to uncertainties of theoretical inputs. NODE=S049S45;LINKAGE=AY

[11] BARISH 96B analysis performed using tagged semileptonic decays of the B. This technique is almost model independent for the lepton branching ratio. NODE=S049S45;LINKAGE=E

[12] HENDERSON 92 measurement employs e and μ. The systematic error contains 0.004 in quadrature from model dependence. The authors average a variation of the Isgur, Scora, Grinstein, and Wise model with that of the Altarelli-Cabibbo-Corbò-Maiani-Martinelli model for semileptonic decays to correct the acceptance. NODE=S049S45;LINKAGE=AH

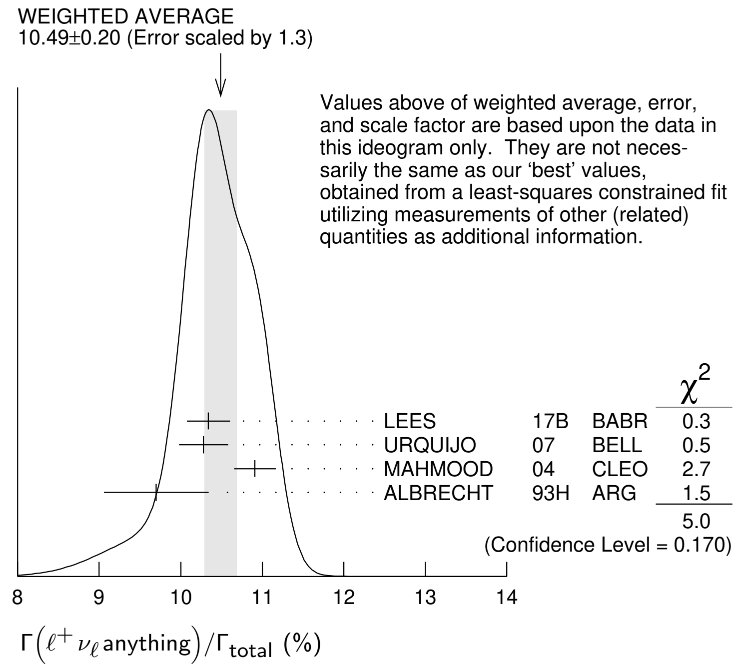
[13] YANAGISAWA 91 also measures an average semileptonic branching ratio at the $\Upsilon(5S)$ of 9.6–10.5% depending on assumptions about the relative production of different B meson species. NODE=S049S45;LINKAGE=C

[14] ALBRECHT 90H uses the model of ALTARELLI 82 to correct over all lepton momenta. 0.099 ± 0.006 is obtained using ISGUR 89B. NODE=S049S45;LINKAGE=AQ

[15] ALBRECHT 90H uses the model of ALTARELLI 82 to correct over all lepton momenta. 0.097 ± 0.006 is obtained using ISGUR 89B. NODE=S049S45;LINKAGE=AT

[16] Using data above $p(e) = 2.4$ GeV, WACHS 89 determine $\sigma(B \to e\nu\,\text{up})/\sigma(B \to e\nu\,\text{charm}) < 0.065$ at 90% CL. NODE=S049S45;LINKAGE=DD

[17] Ratio $\sigma(b \to e\nu\,\text{up})/\sigma(b \to e\nu\,\text{charm}) < 0.055$ at CL = 90%. NODE=S049S45;LINKAGE=D



$\Gamma(e^+\nu_e\,\text{anything})/\Gamma(\mu^+\nu_\mu\,\text{anything})$ Γ_1/Γ_2

NODE=S049R45

VALUE	DOCUMENT ID		TECN	COMMENT
1.007±0.009±0.019	[1] AGGARWAL	23	BELL	$e^+e^- \to \Upsilon(4S)$

[1] The accompanying B meson is fully reconstructed in its hadronic decay modes. NODE=S049R45;LINKAGE=A

$\Gamma(D^-\ell^+\nu_\ell\,\text{anything})/\Gamma(\ell^+\nu_\ell\,\text{anything})$ Γ_4/Γ_3

NODE=S049S40

$\ell = e$ or μ.

VALUE	DOCUMENT ID		TECN	COMMENT
0.26±0.07±0.04	[1] FULTON	91	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] FULTON 91 uses $B(D^+ \to K^-\pi^+\pi^+) = (9.1 \pm 1.3 \pm 0.4)\%$ as measured by MARK III. NODE=S049S40;LINKAGE=A

$\Gamma(\overline{D}^0\ell^+\nu_\ell\,\text{anything})/\Gamma(\ell^+\nu_\ell\,\text{anything})$ Γ_5/Γ_3

NODE=S049S39

$\ell = e$ or μ.

VALUE	DOCUMENT ID		TECN	COMMENT
0.67±0.09±0.10	[1] FULTON	91	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] FULTON 91 uses $B(D^0 \to K^-\pi^+) = (4.2 \pm 0.4 \pm 0.4)\%$ as measured by MARK III. NODE=S049S39;LINKAGE=A

$\Gamma(\overline{D}\ell^+\nu_\ell)/\Gamma(\ell^+\nu_\ell\,\text{anything})$ Γ_6/Γ_3

NODE=S049R80

VALUE	DOCUMENT ID		TECN	COMMENT
0.223±0.006±0.009	[1] AUBERT	10	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses a fully reconstructed B meson as a tag on the recoil side. NODE=S049R80;LINKAGE=AU

$\Gamma(D^{*-}\ell^+\nu_\ell \text{anything})/\Gamma_{total}$ Γ_7/Γ

NODE=S049R16
NODE=S049R16

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
0.67±0.08±0.10	ABDALLAH	04D	DLPH	$e^+e^- \to Z^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.6 ±0.3 ±0.1	[1] BARISH	95	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] BARISH 95 use B($D^0 \to K^-\pi^+$) = (3.91 ± 0.08 ± 0.17)% and B($D^{*+} \to D^0\pi^+$) = (68.1 ± 1.0 ± 1.3)%. NODE=S049R16;LINKAGE=A1

$\Gamma(D^{*0}\ell^+\nu_\ell \text{anything})/\Gamma_{total}$ Γ_8/Γ

NODE=S049R17
NODE=S049R17

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.6±0.6±0.1	[1] BARISH	95	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] BARISH 95 use B($D^0 \to K^-\pi^+$) = (3.91 ± 0.08 ± 0.17)%, B($D^{*+} \to D^0\pi^+$) = (68.1 ± 1.0 ± 1.3)%, B($D^{*0} \to D^0\pi^0$) = (63.6 ± 2.3 ± 3.3)%. NODE=S049R17;LINKAGE=B1

$\Gamma(\overline{D}^* e^+\nu_e)/\Gamma(\overline{D}^*\mu^+\nu_\mu)$ Γ_{10}/Γ_{11}

NODE=S049R49
NODE=S049R49

VALUE	DOCUMENT ID		TECN	COMMENT
0.993±0.023±0.023	[1] PRIM	23	BELL	$e^+e^- \to \Upsilon(4S)$

[1] This is the lepton-flavor universality ratio $R_{e\mu}$ for the $B^+ \to \overline{D}^{*0}\ell^+\nu_\ell$ and $B^0 \to D^{*-}\ell^+\nu_\ell$ average. NODE=S049R49;LINKAGE=A

$\Gamma(\overline{D}^{**}\ell^+\nu_\ell)/\Gamma_{total}$ Γ_{12}/Γ

NODE=S049R96

D^{**} stands for the sum of the $D(1\,^1P_1)$, $D(1\,^3P_0)$, $D(1\,^3P_1)$, $D(1\,^3P_2)$, $D(2\,^1S_0)$, and $D(2\,^1S_1)$ resonances. $\ell = e$ or μ, not sum over e and μ modes. NODE=S049R96

NODE=S049R96

VALUE	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
0.027±0.005±0.005		63	[1] ALBRECHT	93	ARG	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<0.028	95		[2] BARISH	95	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] ALBRECHT 93 assumes the GISW model to correct for unseen modes. Using the BHKT model, the result becomes 0.023 ± 0.006 ± 0.004. Assumes B($D^{*+} \to D^0\pi^+$) = 68.1%, B($D^0 \to K^-\pi^+$) = 3.65%, B($D^0 \to K^-\pi^+\pi^-\pi^+$) = 7.5%. We have taken their average e and μ value. NODE=S049R96;LINKAGE=A

[2] BARISH 95 use B($D^0 \to K^-\pi^+$) = (3.91 ± 0.08 ± 0.17)%, assume all nonresonant channels are zero, and use GISW model for relative abundances of D^{**} states. NODE=S049R96;LINKAGE=C1

$\Gamma(\overline{D}_1(2420)\ell^+\nu_\ell \text{anything})/\Gamma_{total}$ Γ_{13}/Γ

NODE=S049R25
NODE=S049R25

VALUE	DOCUMENT ID		TECN	COMMENT
0.0038±0.0013 OUR AVERAGE	Error includes scale factor of 2.4.			
0.0033±0.0006	[1] ABAZOV	05O	D0	$p\overline{p}$ at 1.96 TeV
0.0074±0.0016	[2] BUSKULIC	97B	ALEP	$e^+e^- \to Z$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
seen	[3] BUSKULIC	95B	ALEP	Repl. by BUSKULIC 97B

[1] Assumes B($D_1 \to D^*\pi$) = 1, B($D_1 \to D^*\pi^\pm$) = 2/3, and B($b \to B$) =0.397. NODE=S049R25;LINKAGE=AB

[2] BUSKULIC 97B assumes B($D_1(2420) \to D^*\pi$) = 1, B($D_1(2420) \to D^*\pi^\pm$) = 2/3, and B($b \to B$) = 0.378 ± 0.022. NODE=S049R25;LINKAGE=B

[3] BUSKULIC 95B reports f_B × B($B \to \overline{D}_1(2420)^0\ell^+\nu_\ell$ anything) × B($\overline{D}_1(2420)^0 \to \overline{D}^*(2010)^-\pi^+$) = (2.04 ± 0.58 ± 0.34)$10^{-3}$, where f_B is the production fraction for a single B charge state. NODE=S049R25;LINKAGE=A

$[\Gamma(\overline{D}\pi\ell^+\nu_\ell \text{anything}) + \Gamma(\overline{D}^*\pi\ell^+\nu_\ell \text{anything})]/\Gamma_{total}$ Γ_{14}/Γ

NODE=S049R34
NODE=S049R34

VALUE	DOCUMENT ID		TECN	COMMENT
0.026 ±0.005 OUR AVERAGE	Error includes scale factor of 1.5.			
0.0340±0.0052±0.0032	[1] ABREU	00R	DLPH	$e^+e^- \to Z$
0.0226±0.0029±0.0033	[2] BUSKULIC	97B	ALEP	$e^+e^- \to Z$

[1] Assumes no contribution from B_s and b baryons. Further assumes contributions from single pion ($D\pi$ and $D^*\pi$) states only, allowing isospin conservation to relate the relative π^0 and π^+ rates. NODE=S049R34;LINKAGE=B3

[2] BUSKULIC 97B assumes B($b \to B$) = 0.378 ± 0.022 and uses isospin invariance by assuming that all observed $D^0\pi^+$, $D^{*0}\pi^+$, $D^+\pi^-$, and $D^{*+}\pi^-$ are from D^{**} states. A correction has been applied to account for the production of B_s^0 and Λ_b^0. NODE=S049R34;LINKAGE=B

$\Gamma(\overline{D}\pi\ell^+\nu_\ell \text{anything})/\Gamma_{total}$ Γ_{15}/Γ

NODE=S049R55
NODE=S049R55

VALUE	DOCUMENT ID		TECN	COMMENT
0.0154±0.0061	ABREU	00R	DLPH	$e^+e^- \to Z$

$\Gamma\big(\overline{D}^* \pi \ell^+ \nu_\ell \text{anything}\big)/\Gamma_{total}$ — Γ_{16}/Γ

NODE=S049R56

VALUE	DOCUMENT ID		TECN	COMMENT
0.0186±0.0038	ABREU	00R	DLPH	$e^+e^- \rightarrow Z$

$\Gamma\big(\overline{D}_2^*(2460) \ell^+ \nu_\ell \text{anything}\big)/\Gamma_{total}$ — Γ_{17}/Γ

NODE=S049R26

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
0.0044±0.0016		[1] ABAZOV	05O	D0	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.0065	95	[2] BUSKULIC	97B	ALEP	$e^+e^- \rightarrow Z$
not seen		[3] BUSKULIC	95B	ALEP	$e^+e^- \rightarrow Z$

OCCUR=2

[1] Assumes B($D_2^* \rightarrow D^* \pi^\pm$) = 0.30 ± 0.06 and B($b \rightarrow B$) =0.397. NODE=S049R26;LINKAGE=AB

[2] A revised number based on BUSKULIC 97B which assumes B($D_2^*(2460) \rightarrow D^* \pi^\pm$) = 0.20 and B($b \rightarrow B$) = 0.378 ± 0.022. NODE=S049R26;LINKAGE=B1

[3] BUSKULIC 95B reports f_B × B($B \rightarrow \overline{D}_2^*(2460)^0 \ell^+ \nu_\ell$ anything) × B($\overline{D}_2^*(2460)^0 \rightarrow \overline{D}^*(2010)^- \pi^+$) $\leq 0.81 \times 10^{-3}$ at CL=95%, where f_B is the production fraction for a single B charge state. NODE=S049R26;LINKAGE=A

$\dfrac{\Gamma(B \rightarrow \overline{D}_2^*(2460) \ell^+ \nu_\ell \text{anything}) \times B(D_2^*(2460) \rightarrow D^{*-} \pi^+)}{\Gamma(B \rightarrow \overline{D}_1(2420) \ell^+ \nu_\ell \text{anything}) \times B(\overline{D}_1(2420) \rightarrow D^{*-} \pi^+)}$

NODE=S049R19

VALUE	DOCUMENT ID		TECN	COMMENT
0.39±0.09±0.12	ABAZOV	05O	D0	$p\overline{p}$ at 1.96 TeV

$\Gamma\big(D^{*-} \pi^+ \ell^+ \nu_\ell \text{anything}\big)/\Gamma_{total}$ — Γ_{18}/Γ

NODE=S049R27

Includes resonant and nonresonant contributions.

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
10.0±2.7±2.1	[1] BUSKULIC	95B	ALEP	$e^+e^- \rightarrow Z$

[1] BUSKULIC 95B reports f_B × B($B \rightarrow \overline{D}^*(2010)^- \pi^+ \ell^+ \nu_\ell$ anything) = (3.7 ± 1.0 ± 0.7)10^{-3}. Above value assumes f_B = 0.37 ± 0.03. NODE=S049R27;LINKAGE=A

$\Gamma\big(\overline{D} \pi^+ \pi^- \ell^+ \nu_\ell\big)/\Gamma\big(\overline{D} \ell^+ \nu_\ell\big)$ — Γ_{19}/Γ_6

NODE=S049R90

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
6.7±1.0±0.8	[1] LEES	16	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Measurement used electrons and muons as leptons. NODE=S049R90;LINKAGE=A

$\Gamma\big(\overline{D}^* \pi^+ \pi^- \ell^+ \nu_\ell\big)/\Gamma\big(\overline{D}^* \ell^+ \nu_\ell\big)$ — Γ_{20}/Γ_9

NODE=S049R91

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
1.9±0.5±0.4	[1] LEES	16	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Measurement used electrons and muons as leptons. NODE=S049R91;LINKAGE=A

$\Gamma\big(D_s^- \ell^+ \nu_\ell \text{anything}\big)/\Gamma_{total}$ — Γ_{21}/Γ

NODE=S049S75

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<7 × 10⁻³	90	[1] ALBRECHT	93E	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[1] ALBRECHT 93E reports < 0.012 from a measurement of [$\Gamma\big(B \rightarrow D_s^- \ell^+ \nu_\ell \text{anything}\big)/\Gamma_{total}$] × [B($D_s^+ \rightarrow \phi \pi^+$)] assuming B($D_s^+ \rightarrow \phi \pi^+$) = 0.027, which we rescale to our best value B($D_s^+ \rightarrow \phi \pi^+$) = 4.5×10^{-2}. NODE=S049S75;LINKAGE=CA

$\Gamma\big(D_s^- \ell^+ \nu_\ell K^+ \text{anything}\big)/\Gamma_{total}$ — Γ_{22}/Γ

NODE=S049S76

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<5 × 10⁻³	90	[1] ALBRECHT	93E	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[1] ALBRECHT 93E reports < 0.008 from a measurement of [$\Gamma\big(B \rightarrow D_s^- \ell^+ \nu_\ell K^+ \text{anything}\big)/\Gamma_{total}$] × [B($D_s^+ \rightarrow \phi \pi^+$)] assuming B($D_s^+ \rightarrow \phi \pi^+$) = 0.027, which we rescale to our best value B($D_s^+ \rightarrow \phi \pi^+$) = 4.5×10^{-2}. NODE=S049S76;LINKAGE=CA

$\Gamma\big(D_s^- \ell^+ \nu_\ell K^0 \text{anything}\big)/\Gamma_{total}$ — Γ_{23}/Γ

NODE=S049S77

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<7 × 10⁻³	90	[1] ALBRECHT	93E	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[1] ALBRECHT 93E reports < 0.012 from a measurement of [$\Gamma\big(B \rightarrow D_s^- \ell^+ \nu_\ell K^0 \text{anything}\big)/\Gamma_{total}$] × [B($D_s^+ \rightarrow \phi \pi^+$)] assuming B($D_s^+ \rightarrow \phi \pi^+$) = 0.027, which we rescale to our best value B($D_s^+ \rightarrow \phi \pi^+$) = 4.5×10^{-2}. NODE=S049S77;LINKAGE=CA

$\Gamma(X_c \ell^+ \nu_\ell)/\Gamma_{total}$ Γ_{24}/Γ

NODE=S049S96

VALUE (%)	DOCUMENT ID	TECN	COMMENT
10.63±0.15 OUR EVALUATION	(Produced by HFLAV)		
10.29±0.19 OUR AVERAGE			
10.18±0.03±0.24	[1] LEES 17B	BABR	$e^+e^- \to \Upsilon(4S)$
10.44±0.19±0.22	[2] URQUIJO 07	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
10.64±0.17±0.06	[3] AUBERT 10A	BABR	Repl. by LEES 17B
10.61±0.16±0.06	[4] AUBERT 04X	BABR	Repl. by AUBERT 10A

→ UNCHECKED ←

[1] The measurement is obtained from semileptonic decays to electrons $B \to X e \nu$, and using a theoretical model (GAMBINO 07, GAMBINO 11) to predict the contribution from $B \to X_u e \nu$. The result is averaged over $B^\pm$ and B^0 mesons, assuming lepton universality. NODE=S049S96;LINKAGE=A

[2] Measured the independent B^+ and B^0 partial branching fractions with electron energy above 0.4 GeV. NODE=S049S96;LINKAGE=UR

[3] Obtained from a combined fit to the moments of observed spectra in inclusive $B \to X_c \ell^+ \nu_\ell$ decay. NODE=S049S96;LINKAGE=AB

[4] The semileptonic branching ratio, $|V_{cb}|$ and other heavy-quark parameters are determined from a simultaneous fit to moments of the hadronic-mass and lepton-energy distribution. NODE=S049S96;LINKAGE=AU

$\Gamma(X_u \ell^+ \nu_\ell)/\Gamma_{total}$ Γ_{25}/Γ

NODE=S049S95

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
1.92 ±0.21 OUR EVALUATION	(Produced by HFLAV)		
1.85 ±0.08 ±0.19	[1] CAO 21A	BELL	$e^+e^- \to \Upsilon(4S)$
$1.665\pm0.087^{+0.103}_{-0.094}$	[2] LEES 17B	BABR	$e^+e^- \to \Upsilon(4S)$
2.01 ±0.15 ±0.25	[3] LEES 12R	BABR	$e^+e^- \to \Upsilon(4S)$
2.53 ±0.24 ±0.24	[4] AUBERT,B 05X	BABR	$e^+e^- \to \Upsilon(4S)$
2.80 ±0.52 ±0.41	[5] LIMOSANI 05	BELL	$e^+e^- \to \Upsilon(4S)$
1.77 ±0.29 ±0.38	[6] BORNHEIM 02	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
1.39 ±0.14 ±0.22	[7] CAO 23	BELL	$e^+e^- \to \Upsilon(4S)$
1.963±0.173±0.159	[8] URQUIJO 10	BELL	Repl. by CAO 21A
1.18 ±0.09 ±0.07	[9] AUBERT 08AS	BABR	Repl. by LEES 12R
$2.27 \pm0.26\ ^{+0.37}_{-0.33}$	[10] AUBERT 06H	BABR	Repl. by LEES 17B
2.24 ±0.27 ±0.47	[11,12] AUBERT 04I	BABR	Repl. by AUBERT,B 05X

→ UNCHECKED ←

[1] Measures several partial branching fractions in different phase space regions. The most inclusive result of the full branching fraction is obtained in the region for lepton energy in B rest frame $E^*_\ell > 1$ GeV, where the measured partial branching fraction is $\Delta B = (1.59 \pm 0.07 \pm 0.16) \times 10^{-3}$. The acceptance in that region is reported to be 0.86. NODE=S049S95;LINKAGE=B

[2] Obtained from the partial rate $\Delta B = (1.554 \pm 0.082^{+0.095}_{-0.086}) \times 10^{-3}$ for the electron momentum interval of 0.8–2.7 GeV/c based on GGOU1 method ($X_c \ell \nu$, m_c constraint fit of SF parameters). NODE=S049S95;LINKAGE=A

[3] Measures several partial branching fractions in different phase space regions. The most precise result on the full branching fraction is obtained in the region for lepton momentum in B rest frame $p^*_\ell > 1$ GeV/c, where the measured partial branching fraction is $\Delta B = (1.80 \pm 0.13 \pm 0.15) \times 10^{-3}$. The acceptance in that region is reported in a private communication by the Authors to be 0.894. The corresponding $|V_{ub}|$ from the BLNP method is $(4.28 \pm 0.15 \pm 0.18 \pm 0.19) \times 10^{-3}$, where the last uncertainty comes from theoretical prediction. NODE=S049S95;LINKAGE=LE

[4] Determined from the partial rate $\Delta B = (4.41 \pm 0.42 \pm 0.42) \times 10^{-4}$ measured for electron energy > 2 GeV and hadronic mass squared < 3.5 GeV^2, and calculated acceptance 0.174 in that region. The V_{ub} is measured as $(4.41 \pm 0.30^{+0.65}_{-0.47} \pm 0.28) \times 10^{-3}$. NODE=S049S95;LINKAGE=AE

[5] Uses electrons in the momentum interval 1.9–2.6 GeV/c in the center-of-mass frame. The V_{ub} is found to be $(5.08 \pm 0.47^{+0.49}_{-0.48}) \times 10^{-3}$. NODE=S049S95;LINKAGE=LI

[6] BORNHEIM 02 uses the observed yield of leptons from semileptonic B decays in the end-point momentum interval 2.2–2.6 GeV/c with recent CLEO-2 data on $B \to X_s \gamma$. The V_{ub} is found to be $(4.08 \pm 0.34 \pm 0.53) \times 10^{-3}$. NODE=S049S95;LINKAGE=BO

[7] Measurement requires lepton energy $E^*_\ell > 1$ GeV in the B rest frame. It is a part of the inclusive and exclusive $|V_{ub}|$ determination. NODE=S049S95;LINKAGE=C

[8] Uses a multivariate analysis method and requires lepton momentum in the B rest frame, $p^*_\ell > 1.0$ GeV/c. NODE=S049S95;LINKAGE=UR

[9] Measures several partial branching fractions in different phase space regions. The most precise result is obtained in the region for hadronic mass $M_X < 1.55$ GeV/c^2, and is $\Delta B = (1.18 \pm 0.09 \pm 0.07) \times 10^{-3}$. The corresponding $|V_{ub}|$ from the BLNP method NODE=S049S95;LINKAGE=UB

is $(4.27 \pm 0.16 \pm 0.13 \pm 0.30) \times 10^{-3}$, where the last uncertainty comes from the theoretical prediction of the partial rate in the given phase-space region.

[10] Obtained from the partial rate $\Delta B = (0.572 \pm 0.041 \pm 0.065) \times 10^{-3}$ for the electron momentum interval of 2.0–2.6 GeV/c based on BLNP method. NODE=S049S95;LINKAGE=AT

[11] Used BaBar measurement of Semileptonic branching fraction $B(B \to X \ell \nu_\ell) = (10.87 \pm 0.18 \pm 0.30)\%$ to convert the ratio of rates to branching fraction. NODE=S049S95;LINKAGE=AB

[12] The third error includes the systematics and theoretical errors summed in quadrature. NODE=S049S95;LINKAGE=AU

$\Gamma(X_u \ell^+ \nu_\ell)/\Gamma(\ell^+ \nu_\ell \text{anything})$ Γ_{25}/Γ_3

NODE=S049S11

ℓ denotes e or μ, not the sum. These experiments measure this ratio in very limited momentum intervals. NODE=S049S11

NODE=S049S11

VALUE (units 10^{-2})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
2.06±0.25±0.42			[1] AUBERT	04I	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
			[2] ALBRECHT	94C	ARG	$e^+ e^- \to \Upsilon(4S)$
		107	[3] BARTELT	93B	CLE2	$e^+ e^- \to \Upsilon(4S)$
		77	[4] ALBRECHT	91C	ARG	$e^+ e^- \to \Upsilon(4S)$
		41	[5] ALBRECHT	90	ARG	$e^+ e^- \to \Upsilon(4S)$
		76	[6] FULTON	90	CLEO	$e^+ e^- \to \Upsilon(4S)$
<4.0	90		[7] BEHRENDS	87	CLEO	$e^+ e^- \to \Upsilon(4S)$
<4.0	90		CHEN	84	CLEO	Direct e at $\Upsilon(4S)$
<5.5	90		KLOPFEN...	83B	CUSB	Direct e at $\Upsilon(4S)$

[1] The third error includes the systematics and theoretical errors summed in quadrature. NODE=S049S11;LINKAGE=AU

[2] ALBRECHT 94C find $\Gamma(b \to c)/\Gamma(b \to \text{all}) = 0.99 \pm 0.02 \pm 0.04$. NODE=S049S11;LINKAGE=KA

[3] BARTELT 93B (CLEO II) measures an excess of $107 \pm 15 \pm 11$ leptons in the lepton momentum interval 2.3–2.6 GeV/c which is attributed to $b \to u \ell \nu_\ell$. This corresponds to a model-dependent partial branching ratio ΔB_{ub} between $(1.15 \pm 0.16 \pm 0.15) \times 10^{-4}$, as evaluated using the KS model (KOERNER 88), and $(1.54 \pm 0.22 \pm 0.20) \times 10^{-4}$ using the ACCMM model (ARTUSO 93). The corresponding values of $|V_{ub}|/|V_{cb}|$ are 0.056 ± 0.006 and 0.076 ± 0.008, respectively. NODE=S049S11;LINKAGE=E

[4] ALBRECHT 91C result supersedes ALBRECHT 90. Two events are fully reconstructed providing evidence for the $b \to u$ transition. Using the model of ALTARELLI 82, they obtain $|V_{ub}/V_{cb}| = 0.11 \pm 0.012$ from 77 leptons in the 2.3–2.6 GeV momentum range. NODE=S049S11;LINKAGE=D

[5] ALBRECHT 90 observes 41 ± 10 excess e and μ (lepton) events in the momentum interval $p = 2.3$–2.6 GeV signaling the presence of the $b \to u$ transition. The events correspond to a model-dependent measurement of $|V_{ub}/V_{cb}| = 0.10 \pm 0.01$. NODE=S049S11;LINKAGE=B

[6] FULTON 90 observe 76 ± 20 excess e and μ (lepton) events in the momentum interval $p = 2.4$–2.6 GeV signaling the presence of the $b \to u$ transition. The average branching ratio, $(1.8 \pm 0.4 \pm 0.3) \times 10^{-4}$, corresponds to a model-dependent measurement of approximately $|V_{ub}/V_{cb}| = 0.1$ using $B(b \to c \ell \nu) = 10.2 \pm 0.2 \pm 0.7\%$. NODE=S049S11;LINKAGE=A

[7] The quoted possible limits range from 0.018 to 0.04 for the ratio, depending on which model or momentum range is chosen. We select the most conservative limit they have calculated. This corresponds to a limit on $|V_{ub}|/|V_{cb}| < 0.20$. While the endpoint technique employed is more robust than their previous results in CHEN 84, these results do not provide a numerical improvement in the limit. NODE=S049S11;LINKAGE=C

$\Gamma(X_u e^+ \nu_e)/\Gamma_{\text{total}}$ Γ_{26}/Γ

NODE=S049R09

Requires $E^*_e > 1$ GeV, where E^*_e is e^+ energy in B rest frame. NODE=S049R09

NODE=S049R09

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
1.57±0.10±0.16	[1] CAO	21A	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] The correlation of 53% with $B(B \to X_u \mu^+ \nu_\mu)$(letpon energy in B rest frame $E^*_{\mu^+} >$ 1 GeV) is reported. NODE=S049R09;LINKAGE=A

$\Gamma(X_u \mu^+ \nu_\mu)/\Gamma_{\text{total}}$ Γ_{27}/Γ

NODE=S049R44

Requires $E^*_\mu > 1$ GeV, where E^*_μ is μ^+ energy in B rest frame. NODE=S049R44

NODE=S049R44

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
1.62±0.10±0.18	[1] CAO	21A	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] The correlation of 53% with $B(B \to X_u e^+ \nu_e)$(letpon energy in B rest frame $E^*_{e^+} >$ 1 GeV) is reported. NODE=S049R44;LINKAGE=A

$\Gamma(K^+ \ell^+ \nu_\ell \text{anything})/\Gamma(\ell^+ \nu_\ell \text{anything})$ Γ_{28}/Γ_3

NODE=S049S18

ℓ denotes e or μ, not the sum. NODE=S049S18

NODE=S049S18

VALUE	DOCUMENT ID		TECN	COMMENT
0.58 ±0.05 OUR AVERAGE				
0.594±0.021±0.056	ALBRECHT	94C	ARG	$e^+ e^- \to \Upsilon(4S)$
0.54 ±0.07 ±0.06	[1] ALAM	87B	CLEO	$e^+ e^- \to \Upsilon(4S)$

[1] ALAM 87B measurement relies on lepton-kaon correlations. NODE=S049S18;LINKAGE=A

$\Gamma(K^- \ell^+ \nu_\ell \text{anything})/\Gamma(\ell^+ \nu_\ell \text{anything})$ Γ_{29}/Γ_3

NODE=S049S19

ℓ denotes e or μ, not the sum.

NODE=S049S19
NODE=S049S19

VALUE	DOCUMENT ID		TECN	COMMENT
0.092±0.035 OUR AVERAGE				
0.086±0.011±0.044	ALBRECHT	94C	ARG	$e^+ e^- \to \Upsilon(4S)$
0.10 ±0.05 ±0.02	[1] ALAM	87B	CLEO	$e^+ e^- \to \Upsilon(4S)$

[1] ALAM 87B measurement relies on lepton-kaon correlations.

NODE=S049S19;LINKAGE=A

$\Gamma(K^0/\overline{K}^0 \ell^+ \nu_\ell \text{anything})/\Gamma(\ell^+ \nu_\ell \text{anything})$ Γ_{30}/Γ_3

NODE=S049S20

ℓ denotes e or μ, not the sum. Sum over K^0 and $\overline{K}^0$ states.

NODE=S049S20
NODE=S049S20

VALUE	DOCUMENT ID		TECN	COMMENT
0.42 ±0.05 OUR AVERAGE				
0.452±0.038±0.056	[1] ALBRECHT	94C	ARG	$e^+ e^- \to \Upsilon(4S)$
0.39 ±0.06 ±0.04	[2] ALAM	87B	CLEO	$e^+ e^- \to \Upsilon(4S)$

[1] ALBRECHT 94C assume a $K^0/\overline{K}^0$ multiplicity twice that of K^0_S.

NODE=S049S20;LINKAGE=KZ

[2] ALAM 87B measurement relies on lepton-kaon correlations.

NODE=S049S20;LINKAGE=A

$\Gamma(\overline{D}\tau^+\nu_\tau)/\Gamma(\overline{D}\ell^+\nu_\ell)$ Γ_{31}/Γ_6

NODE=S049R36
NODE=S049R36

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
34.2 ± 2.6 OUR EVALUATION	(Produced by HFLAV)			
35 ± 4 OUR AVERAGE	Error includes scale factor of 1.2.			
30.7 ± 3.7±1.6	[1] CARIA	20	BELL	$e^+ e^- \to \Upsilon(4S)$
37.5 ± 6.4±2.6	[2,3] HUSCHLE	15	BELL	$e^+ e^- \to \Upsilon(4S)$
44.0 ± 5.8±4.2	[2,3] LEES	12D	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
4.16±11.7±5.2	[2] AUBERT	08N	BABR	Repl. by LEES 12D

→ UNCHECKED ←

[1] The tag-side B meson is reconstructed in a semileptonic decay mode and the signal-side τ is reconstructed in a purely leptonic decay. The Belle combination of HUSCHLE 15 and CARIA 20 yields R(D) =(32.6 ± 3.4) × 10^{-2}.

NODE=S049R36;LINKAGE=A

[2] Uses a fully reconstructed B meson as a tag on the recoil side.

NODE=S049R36;LINKAGE=AU

[3] Uses $\tau^+ \to e^+ \nu_e \overline{\nu}_\tau$ and $\tau^+ \to \mu^+ \nu_\mu \overline{\nu}_\tau$ and e^+ or μ^+ as ℓ^+. Obtained from simultaneous fit to B+ and B0 assuming isospin symmetry.

NODE=S049R36;LINKAGE=LE

$\Gamma(\overline{D}^* \tau^+\nu_\tau)/\Gamma(\overline{D}^* \ell^+\nu_\ell)$ Γ_{32}/Γ_9

NODE=S049R37
NODE=S049R37

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
28.6±1.2 OUR EVALUATION	(Produced by HFLAV) with ρ^2=1.128 ± 0.033 and a correlation 0.747. The fitted χ^2 is 4.8 for 8 degrees of freedom.			
29.1±1.3 OUR AVERAGE				
[(29.3 ± 1.4) × 10^{-2} OUR 2024 AVERAGE]				
$26.2^{+4.1}_{-3.9}{}^{+3.5}_{-3.2}$	[1] ADACHI	24O	BELL	$e^+ e^- \to \Upsilon(4S)$
28.1±1.8±2.4	[2] AAIJ	23AR	LHCB	pp at 7 and 8 TeV
28.3±1.8±1.4	[3] CARIA	20	BELL	$e^+ e^- \to \Upsilon(4S)$
$27.0\pm3.5^{+2.8}_{-2.5}$	[4] HIROSE	17	BELL	$e^+ e^- \to \Upsilon(4S)$
29.3±3.8±1.5	[5] HUSCHLE	15	BELL	$e^+ e^- \to \Upsilon(4S)$
33.2±2.4±1.8	[5] LEES	12D	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
29.7±5.6±1.8	[6] AUBERT	08N	BABR	Repl. by LEES 12D

→ UNCHECKED ←

NEW

[1] Uses leptonic τ decays and a fully reconstructed B meson in hadronic final states as a tag on the recoil side.

NODE=S049R37;LINKAGE=D

[2] Uses $\tau^+ \to \mu^+ \nu_\mu \overline{\nu}_\tau$ and μ^+ as ℓ^+. The measurement combines fully reconstructed D^{*+} sample with sample where only D^0 from D^* decays is reconstructed.

NODE=S049R37;LINKAGE=C

[3] The tag-side B meson is reconstructed in a semileptonic decay mode and the signal-side τ is reconstructed in a purely leptonic decay. The Belle combination of HUSCHLE 15, HIROSE 17, and CARIA 20 yields R(D^*) = 0.238 ± 0.018.

NODE=S049R37;LINKAGE=B

[4] Uses a fully reconstructed B meson as a tag on the recoil side.

NODE=S049R37;LINKAGE=A

[5] Uses $\tau^+ \to e^+ \nu_e \overline{\nu}_\tau$ and $\tau^+ \to \mu^+ \nu_\mu \overline{\nu}_\tau$ and e^+ or μ^+ as ℓ^+. Obtained from simultaneous fit to B+ and B0 assuming isospin symmetry. Uses a fully reconstructed B meson as a tag on the recoil side.

NODE=S049R37;LINKAGE=LE

[6] Uses a fully reconstructed B meson as a tag on the recoil side. The results are normalized to the B^+ decay rate.

NODE=S049R37;LINKAGE=AU

$\langle n_c \rangle$

NODE=S049S24

VALUE	DOCUMENT ID		TECN	COMMENT
1.10±0.05	[1] GIBBONS	97B	CLE2	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.98±0.16±0.12	[2] ALAM	87B	CLEO	$e^+ e^- \to \Upsilon(4S)$

[1] GIBBONS 97B from charm counting using B($D_s^+ \to \phi\pi$) = 0.036 ± 0.009 and B($\Lambda_c^+ \to pK^-\pi^+$) = 0.044 ± 0.006. NODE=S049S24;LINKAGE=B

[2] From the difference between K^- and K^+ widths. ALAM 87B measurement relies on lepton-kaon correlations. It does not consider the possibility of $B\overline{B}$ mixing. We have thus removed it from the average. NODE=S049S24;LINKAGE=A

$\Gamma(D^{\pm}\text{anything})/\Gamma_{total}$ Γ_{33}/Γ

NODE=S049S17

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.231±0.012 OUR AVERAGE					
0.230±0.012±0.004		[1] GIBBONS	97B	CLE2	$e^+ e^- \to \Upsilon(4S)$
0.241±0.037±0.004		[2] BORTOLETTO	92	CLEO	$e^+ e^- \to \Upsilon(4S)$
0.223±0.051±0.004		[3] ALBRECHT	91H	ARG	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.203±0.048±0.003	20k	[4] BORTOLETTO	87	CLEO	Sup. by BORTOLETTO 92

[1] GIBBONS 97B reports $[\Gamma(B \to D^{\pm}\text{anything})/\Gamma_{total}] \times [B(D^+ \to K^- 2\pi^+)] = 0.0216 \pm 0.0008 \pm 0.00082$ which we divide by our best value $B(D^+ \to K^- 2\pi^+) = (9.38 \pm 0.16) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S049S17;LINKAGE=D

[2] BORTOLETTO 92 reports $[\Gamma(B \to D^{\pm}\text{anything})/\Gamma_{total}] \times [B(D^+ \to K^- 2\pi^+)] = 0.0226 \pm 0.0030 \pm 0.0018$ which we divide by our best value $B(D^+ \to K^- 2\pi^+) = (9.38 \pm 0.16) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S049S17;LINKAGE=QZ

[3] ALBRECHT 91H reports $[\Gamma(B \to D^{\pm}\text{anything})/\Gamma_{total}] \times [B(D^+ \to K^- 2\pi^+)] = 0.0209 \pm 0.0027 \pm 0.0040$ which we divide by our best value $B(D^+ \to K^- 2\pi^+) = (9.38 \pm 0.16) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S049S17;LINKAGE=C

[4] BORTOLETTO 87 reports $[\Gamma(B \to D^{\pm}\text{anything})/\Gamma_{total}] \times [B(D^+ \to K^- 2\pi^+)] = 0.019 \pm 0.004 \pm 0.002$ which we divide by our best value $B(D^+ \to K^- 2\pi^+) = (9.38 \pm 0.16) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S049S17;LINKAGE=B

$\Gamma(D^0/\overline{D}^0\text{anything})/\Gamma_{total}$ Γ_{34}/Γ

NODE=S049S8

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.646 ±0.021 OUR AVERAGE Error includes scale factor of 1.5. See the ideogram below.					
0.6663±0.0004±0.0177		ZHUKOVA	23	BELL	$e^+ e^- \to \Upsilon(4S)$
0.636 ±0.024 ±0.005		[1] GIBBONS	97B	CLE2	$e^+ e^- \to \Upsilon(4S)$
0.591 ±0.047 ±0.005		[2] BORTOLETTO	92	CLEO	$e^+ e^- \to \Upsilon(4S)$
0.492 ±0.074 ±0.004		[3] ALBRECHT	91H	ARG	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.532 ±0.065 ±0.004	21k	[4] BORTOLETTO	87	CLEO	$e^+ e^- \to \Upsilon(4S)$
0.608 ±0.183 ±0.005		[5] GREEN	83	CLEO	Repl. by BORTOLETTO 87

[1] GIBBONS 97B reports $[\Gamma(B \to D^0/\overline{D}^0\text{anything})/\Gamma_{total}] \times [B(D^0 \to K^-\pi^+)] = 0.0251 \pm 0.0006 \pm 0.00075$ which we divide by our best value $B(D^0 \to K^-\pi^+) = (3.945 \pm 0.030) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S049S8;LINKAGE=D

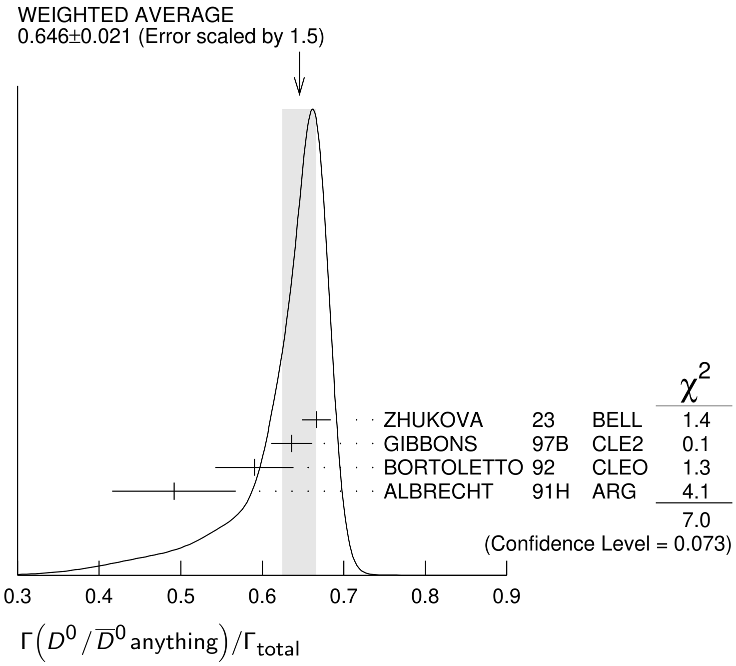
[2] BORTOLETTO 92 reports $[\Gamma(B \to D^0/\overline{D}^0\text{anything})/\Gamma_{total}] \times [B(D^0 \to K^-\pi^+)] = 0.0233 \pm 0.0012 \pm 0.0014$ which we divide by our best value $B(D^0 \to K^-\pi^+) = (3.945 \pm 0.030) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S049S8;LINKAGE=QZ

[3] ALBRECHT 91H reports $[\Gamma(B \to D^0/\overline{D}^0\text{anything})/\Gamma_{total}] \times [B(D^0 \to K^-\pi^+)] = 0.0194 \pm 0.0015 \pm 0.0025$ which we divide by our best value $B(D^0 \to K^-\pi^+) = (3.945 \pm 0.030) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S049S8;LINKAGE=C

[4] BORTOLETTO 87 reports $[\Gamma(B \to D^0/\overline{D}^0\text{anything})/\Gamma_{total}] \times [B(D^0 \to K^-\pi^+)] = 0.0210 \pm 0.0015 \pm 0.0021$ which we divide by our best value $B(D^0 \to K^-\pi^+) = (3.945 \pm 0.030) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S049S8;LINKAGE=B

[5] GREEN 83 reports $[\Gamma(B \to D^0/\overline{D}^0\text{anything})/\Gamma_{total}] \times [B(D^0 \to K^-\pi^+)] = 0.024 \pm 0.006 \pm 0.004$ which we divide by our best value $B(D^0 \to K^-\pi^+) = (3.945 \pm 0.030) \times$ NODE=S049S8;LINKAGE=A

10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best value.



$\Gamma(D^- \ell^+ \nu_\ell \text{anything})/\Gamma(\overline{D}^0 \ell^+ \nu_\ell \text{anything})$ Γ_4/Γ_5

NODE=S049R06
NODE=S049R06

VALUE	DOCUMENT ID		TECN	COMMENT
0.359±0.006±0.009	[1] AAIJ	19AD	LHCB	pp at 13 TeV

[1] AAIJ 19AD uses $D^0 \rightarrow K^- \pi^+$ and $D^+ \rightarrow K^- \pi^+ \pi^+$ modes.

NODE=S049R06;LINKAGE=A

$\Gamma(D^*(2010)^{\pm} \text{anything})/\Gamma_{total}$ Γ_{35}/Γ

NODE=S049S12
NODE=S049S12

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT	
0.225±0.015 OUR AVERAGE						
0.247±0.019±0.01		[1] GIBBONS	97B	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$	SYCLP=A
0.205±0.019±0.007		[2] ALBRECHT	96D	ARG	$e^+e^- \rightarrow \Upsilon(4S)$	OCCUR=2;SYCLP=A
0.230±0.028±0.009		[3] BORTOLETTO	92	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$	OCCUR=4;SYCLP=A
• • • We do not use the following data for averages, fits, limits, etc. • • •						
0.283±0.053±0.002		[4] ALBRECHT	91H	ARG	Sup. by ALBRECHT 96D	
0.22 ±0.04 $^{+0.07}_{-0.04}$	5200	[5] BORTOLETTO	87	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$	
0.27 ±0.06 $^{+0.08}_{-0.06}$	510	[6] CSORNA	85	CLEO	Repl. by BORTOLETTO 87	

[1] GIBBONS 97B reports B($B \rightarrow D^*(2010)^+$ anything) = 0.239 ± 0.015 ± 0.014 ± 0.009 using CLEO measured D and D^* branching fractions. We rescale to our PDG 96 values of D and D^* branching ratios. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S049S12;LINKAGE=E

[2] ALBRECHT 96D reports B($B \rightarrow D^*(2010)^+$ anything) 0.196 ± 0.019 using CLEO measured B($D^*(2010)^+ \rightarrow D^0\pi^+$) = 0.681 ± 0.01 ± 0.013, B($D^0 \rightarrow K^-\pi^+$) = 0.0401 ± 0.0014, B($D^0 \rightarrow K^-\pi^+\pi^+\pi^-$) = 0.081 ± 0.005., We rescale to our PDG 96 values of D and D^* branching ratios. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S049S12;LINKAGE=F

[3] BORTOLETTO 92 reports B($B \rightarrow D^*(2010)^+$ anything) = 0.25 ± 0.03 ± 0.04 using MARK II B($D^*(2010)^+ \rightarrow D^0\pi^+$) = 0.57 ± 0.06 and B($D^0 \rightarrow K^-\pi^+$) = 0.042 ± 0.008. We rescale to our PDG 96 values of D and D^* branching ratios. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S049S12;LINKAGE=G

[4] ALBRECHT 91H reports 0.348 ± 0.060 ± 0.035 from a measurement of [$\Gamma(B \rightarrow D^*(2010)^{\pm}$ anything)/Γ_{total}] × [B($D^*(2010)^+ \rightarrow D^0\pi^+$)] assuming B($D^*(2010)^+ \rightarrow D^0\pi^+$) = 0.55 ± 0.04, which we rescale to our best value B($D^*(2010)^+ \rightarrow D^0\pi^+$) = (67.7 ± 0.5) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best value. Uses the PDG 90 B($D^0 \rightarrow K^-\pi^+$) =0.0371 ± 0.0025.

NODE=S049S12;LINKAGE=C

[5] BORTOLETTO 87 uses old MARK III (BALTRUSAITIS 86E) branching ratios B($D^0 \rightarrow K^-\pi^+$) = 0.056 ± 0.004 ± 0.003 and also assumes B($D^*(2010)^+ \rightarrow D^0\pi^+$) = $0.60^{+0.08}_{-0.15}$. The product branching ratio for B($B \rightarrow D^*(2010)^+$) B($D^*(2010)^+ \rightarrow D^0\pi^+$) is 0.13 ± 0.02 ± 0.012. Superseded by BORTOLETTO 92.

NODE=S049S12;LINKAGE=B

[6] $V-A$ momentum spectrum used to extrapolate below p = 1 GeV. We correct the value assuming B($D^0 \to K^- \pi^+$) = 0.042 ± 0.006 and B($D^{*+} \to D^0 \pi^+$) = $0.6^{+0.08}_{-0.15}$. The product branching fraction is B($B \to D^{*+}$X)·B($D^{*+} \to \pi^+ D^0$)·B($D^0 \to K^- \pi^+$) = (68 ± 15 ± 9) × 10^{-4}. NODE=S049S12;LINKAGE=A

$\Gamma(\overline{D}^*(2007)^0 \text{anything})/\Gamma_{\text{total}}$ Γ_{36}/Γ

NODE=S049R35
NODE=S049R35

VALUE	DOCUMENT ID		TECN	COMMENT
0.260±0.023±0.015	[1] GIBBONS	97B	CLE2	$e^+ e^- \to \Upsilon(4S)$

[1] GIBBONS 97B reports B($B \to D^*(2007)^0$ anything) 0.247 ± 0.012 ± 0.018 ± 0.018 using CLEO measured D and D^* branching fractions. We rescale to our PDG 96 values of D and D^* branching ratios. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S049R35;LINKAGE=A

$\Gamma(D_s^\pm \text{anything})/\Gamma_{\text{total}}$ Γ_{37}/Γ

NODE=S049S14
NODE=S049S14

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.106 ±0.006 OUR AVERAGE		Error includes scale factor of 1.7. See the ideogram below.			
0.1128±0.0003±0.0043		ZHUKOVA	23	BELL	$e^+ e^- \to \Upsilon(4S)$
0.089 ±0.010 ±0.008		[1] ARTUSO	05B	CLE2	$e^+ e^- \to \Upsilon(5S)$
0.087 ±0.005 ±0.008		[2] AUBERT	02G	BABR	$e^+ e^- \to \Upsilon(4S)$
0.065 ±0.011 ±0.006		[3] ALBRECHT	92G	ARG	$e^+ e^- \to \Upsilon(4S)$
0.068 ±0.010 ±0.006	257	[4] BORTOLETTO	90	CLEO	$e^+ e^- \to \Upsilon(4S)$
0.085 ±0.022 ±0.008		[5] HAAS	86	CLEO	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.094 ±0.007 ±0.008		[6] GIBAUT	96	CLE2	Repl. by ARTUSO 05B
0.094 ±0.024 ±0.008		[7] ALBRECHT	87H	ARG	$e^+ e^- \to \Upsilon(4S)$

[1] ARTUSO 05B reports 0.0905 ± 0.0025 ± 0.0140 from a measurement of [Γ($B \to D_s^\pm$ anything)/Γ_{total}] × [B($D_s^+ \to \phi\pi^+$)] assuming B($D_s^+ \to \phi\pi^+$) = (4.4 ± 0.5) × 10^{-2}, which we rescale to our best value B($D_s^+ \to \phi\pi^+$) = (4.5 ± 0.4) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S049S14;LINKAGE=AR

[2] AUBERT 02G reports [Γ($B \to D_s^\pm$ anything)/Γ_{total}] × [B($D_s^+ \to \phi\pi^+$)] = 0.00393 ± 0.00007 ± 0.00021 which we divide by our best value B($D_s^+ \to \phi\pi^+$) = (4.5 ± 0.4) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S049S14;LINKAGE=AG

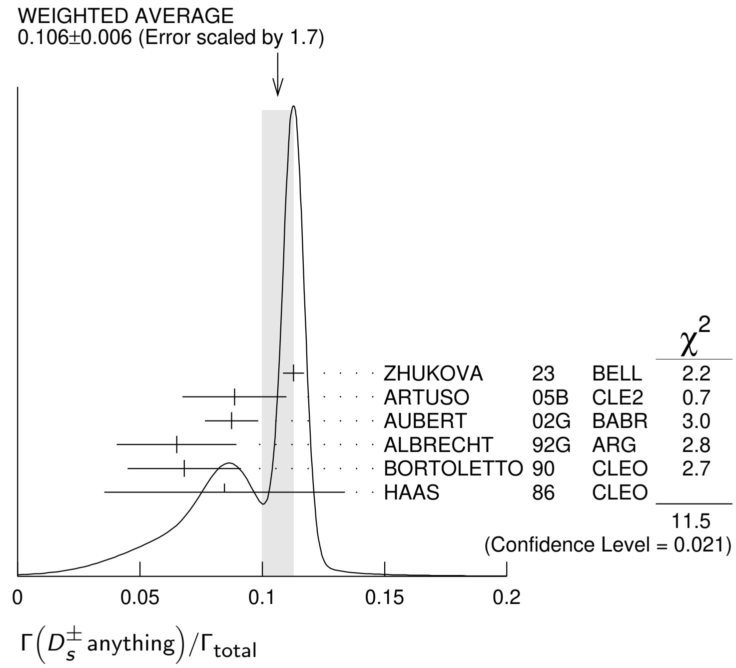
[3] ALBRECHT 92G reports [Γ($B \to D_s^\pm$ anything)/Γ_{total}] × [B($D_s^+ \to \phi\pi^+$)] = 0.00292 ± 0.00039 ± 0.00031 which we divide by our best value B($D_s^+ \to \phi\pi^+$) = (4.5 ± 0.4) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S049S14;LINKAGE=C

[4] BORTOLETTO 90 reports [Γ($B \to D_s^\pm$ anything)/Γ_{total}] × [B($D_s^+ \to \phi\pi^+$)] = 0.00306 ± 0.00047 which we divide by our best value B($D_s^+ \to \phi\pi^+$) = (4.5 ± 0.4) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S049S14;LINKAGE=A2

[5] HAAS 86 reports [Γ($B \to D_s^\pm$ anything)/Γ_{total}] × [B($D_s^+ \to \phi\pi^+$)] = 0.0038 ± 0.0010 which we divide by our best value B($D_s^+ \to \phi\pi^+$) = (4.5 ± 0.4) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best value. 64 ± 22% decays are 2-body. NODE=S049S14;LINKAGE=A

[6] GIBAUT 96 reports 0.1211 ± 0.0039 ± 0.0088 from a measurement of [Γ($B \to D_s^\pm$ anything)/Γ_{total}] × [B($D_s^+ \to \phi\pi^+$)] assuming B($D_s^+ \to \phi\pi^+$) = 0.035, which we rescale to our best value B($D_s^+ \to \phi\pi^+$) = (4.5 ± 0.4) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S049S14;LINKAGE=Z9

[7] ALBRECHT 87H reports [Γ($B \to D_s^\pm$ anything)/Γ_{total}] × [B($D_s^+ \to \phi\pi^+$)] = 0.0042 ± 0.0009 ± 0.0006 which we divide by our best value B($D_s^+ \to \phi\pi^+$) = (4.5 ± 0.4) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best value. 46 ± 16% of $B \to D_s$X decays are 2-body. Superseded by ALBRECHT 92G. NODE=S049S14;LINKAGE=B



$\Gamma(D_s^{*\pm}\text{ anything})/\Gamma_{total}$ Γ_{38}/Γ

NODE=S049R63

VALUE	DOCUMENT ID		TECN	COMMENT
0.063±0.009±0.006	[1] AUBERT	02G	BABR	$e^+e^- \to \Upsilon(4S)$

[1] AUBERT 02G reports $[\Gamma(B \to D_s^{*\pm}\text{ anything})/\Gamma_{total}] \times [B(D_s^+ \to \phi\pi^+)] = 0.00284 \pm 0.00029 \pm 0.00025$ which we divide by our best value $B(D_s^+ \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S049R63;LINKAGE=AG

$\Gamma(D_s^{*\pm}\overline{D}^{(*)})/\Gamma(D_s^{*\pm}\text{ anything})$ Γ_{39}/Γ_{38}

NODE=S049R64

Sum over modes

VALUE	DOCUMENT ID		TECN	COMMENT
0.533±0.037±0.037	AUBERT	02G	BABR	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\overline{D}D_{s0}(2317))/\Gamma_{total}$ Γ_{40}/Γ

NODE=S049R73

VALUE	DOCUMENT ID		TECN	COMMENT
seen	[1] KROKOVNY	03B	BELL	$e^+e^- \to \Upsilon(4S)$

[1] The product branching ratio for $B(B \to \overline{D}D_{s0}(2317)^+) \times B(D_{s0}(2317)^+ \to D_s\pi^0)$ is measured to be $(8.5^{+2.1}_{-1.9} \pm 2.6) \times 10^{-4}$. NODE=S049R73;LINKAGE=A

$\Gamma(\overline{D}D_{sJ}(2457))/\Gamma_{total}$ Γ_{41}/Γ

NODE=S049R74

VALUE	DOCUMENT ID		TECN	COMMENT
seen	[1] KROKOVNY	03B	BELL	$e^+e^- \to \Upsilon(4S)$

[1] The product branching ratio for $B(B \to \overline{D}D_{sJ}(2457)^+) \times B(D_{sJ}(2457)^+ \to D_s^{*+}\pi^0, D_s^+\gamma)$ are measured to be $(17.8^{+4.5}_{-3.9} \pm 5.3) \times 10^{-4}$ and $(6.7^{+1.3}_{-1.2} \pm 2.0) \times 10^{-4}$, respectively. NODE=S049R74;LINKAGE=A

$[\Gamma(D^{(*)}\overline{D}^{(*)}K^0) + \Gamma(D^{(*)}\overline{D}^{(*)}K^\pm)]/\Gamma_{total}$ Γ_{42}/Γ

NODE=S049R1

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.071^{+0.025}_{-0.015}{}^{+0.010}_{-0.009}}$	[1] BARATE	98Q	ALEP	$e^+e^- \to Z$

[1] The systematic error includes the uncertainties due to the charm branching ratios. NODE=S049R1;LINKAGE=A

$\Gamma(b \to c\overline{c}s)/\Gamma_{total}$ Γ_{43}/Γ

NODE=S049R31

VALUE	DOCUMENT ID		TECN	COMMENT
0.219±0.037	[1] COAN	98	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] COAN 98 uses D-ℓ correlation. NODE=S049R31;LINKAGE=B

$\Gamma(D_s^{(*)}\overline{D}^{(*)})/\Gamma(D_s^{\pm}\text{ anything})$ Γ_{44}/Γ_{37}

NODE=S049S36

Sum over modes.

VALUE		DOCUMENT ID		TECN	COMMENT
0.469±0.017 OUR AVERAGE					
0.464±0.013±0.015		AUBERT	02G	BABR	$e^+e^- \to \Upsilon(4S)$
$0.56\ ^{+0.21}_{-0.15}\ ^{+0.09}_{-0.08}$	[1]	BARATE	98Q	ALEP	$e^+e^- \to Z$
0.457±0.019±0.037		GIBAUT	96	CLE2	$e^+e^- \to \Upsilon(4S)$
0.58 ±0.07 ±0.09		ALBRECHT	92G	ARG	$e^+e^- \to \Upsilon(4S)$
0.56 ±0.10		BORTOLETTO	90	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] BARATE 98Q measures $B(B \to D_s^{(*)}\overline{D}^{(*)}) = 0.056\ ^{+0.021}_{-0.015}\ ^{+0.009}_{-0.008}\ ^{+0.019}_{-0.011}$, where the third error results from the uncertainty on the different D branching ratios and is dominated by the uncertainty on $B(D_s^+ \to \phi\pi^+)$. We divide $B(B \to D_s^{(*)}\overline{D}^{(*)})$ by our best value of $B(B \to D_s\text{ anything}) = 0.1 \pm 0.025$.

NODE=S049S36;LINKAGE=B

$\Gamma(D^* D^*(2010)^{\pm})/\Gamma_{\text{total}}$ Γ_{45}/Γ

NODE=S049R4

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<5.9 × 10^{-3}	90	BARATE	98Q	ALEP	$e^+e^- \to Z$

$[\Gamma(D D^*(2010)^{\pm}) + \Gamma(D^* D^{\pm})]/\Gamma_{\text{total}}$ Γ_{46}/Γ

NODE=S049R5

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<5.5 × 10^{-3}	90	BARATE	98Q	ALEP	$e^+e^- \to Z$

$\Gamma(D D^{\pm})/\Gamma_{\text{total}}$ Γ_{47}/Γ

NODE=S049R6

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<3.1 × 10^{-3}	90	BARATE	98Q	ALEP	$e^+e^- \to Z$

$\Gamma(D_s^{(*)\pm}\overline{D}^{(*)}X(n\pi^{\pm}))/\Gamma_{\text{total}}$ Γ_{48}/Γ

NODE=S049R3

VALUE		DOCUMENT ID		TECN	COMMENT
$\mathbf{0.094\ ^{+0.040}_{-0.031}\ ^{+0.034}_{-0.024}}$	[1]	BARATE	98Q	ALEP	$e^+e^- \to Z$

[1] The systematic error includes the uncertainties due to the charm branching ratios.

NODE=S049R3;LINKAGE=A

$\Gamma(\overline{D}^*(2010)\gamma)/\Gamma_{\text{total}}$ Γ_{49}/Γ

NODE=S049S54

VALUE	CL%		DOCUMENT ID		TECN	COMMENT
<1.1 × 10^{-3}	90	[1]	LESIAK	92	CBAL	$e^+e^- \to \Upsilon(4S)$

[1] LESIAK 92 set a limit on the inclusive process $B(b \to s\gamma) < 2.8 \times 10^{-3}$ at 90% CL for the range of masses of 892–2045 MeV, independent of assumptions about s-quark hadronization.

NODE=S049S54;LINKAGE=A

$\Gamma(D_s^+\pi^-, D_s^{*+}\pi^-, D_s^+\rho^-, D_s^{*+}\rho^-, D_s^+\pi^0, D_s^{*+}\pi^0, D_s^+\eta, D_s^{*+}\eta, D_s^+\rho^0, D_s^{*+}\rho^0, D_s^+\omega, D_s^{*+}\omega)/\Gamma_{\text{total}}$ Γ_{50}/Γ

NODE=S049S91

Sum over modes.

VALUE	CL%		DOCUMENT ID		TECN	COMMENT
<4 × 10^{-4}	90	[1]	ALEXANDER	93B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] ALEXANDER 93B reports $< 4.8 \times 10^{-4}$ from a measurement of $[\Gamma(B \to D_s^+\pi^-, D_s^{*+}\pi^-, D_s^+\rho^-, D_s^{*+}\rho^-, D_s^+\pi^0, D_s^{*+}\pi^0, D_s^+\eta, D_s^{*+}\eta, D_s^+\rho^0, D_s^{*+}\rho^0, D_s^+\omega, D_s^{*+}\omega)/\Gamma_{\text{total}}] \times [B(D_s^+ \to \phi\pi^+)]$ assuming $B(D_s^+ \to \phi\pi^+) = 0.037$, which we rescale to our best value $B(D_s^+ \to \phi\pi^+) = 4.5 \times 10^{-2}$. This branching ratio limit provides a model-dependent upper limit $|V_{ub}|/|V_{cb}| < 0.16$ at CL=90%.

NODE=S049S91;LINKAGE=XB

$\Gamma(D_{s1}(2536)^+\text{ anything})/\Gamma_{\text{total}}$ Γ_{51}/Γ

NODE=S049R32

$D_{s1}(2536)^+$ is the narrow P-wave D_s^+ meson with $J^P = 1^+$.

VALUE	CL%		DOCUMENT ID		TECN	COMMENT
<0.0095	90	[1]	BISHAI	98	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assuming factorization, the decay constant $f_{D_{s1}^+}$ is at least a factor of 2.5 times smaller than $f_{D_s^+}$.

NODE=S049R32;LINKAGE=A

$\Gamma(J/\psi(1S)\,\text{anything})/\Gamma_{total}$ Γ_{52}/Γ

NODE=S049S7

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.094±0.032 OUR AVERAGE		Error includes scale factor of 1.1.			
1.057±0.012±0.040		[1] AUBERT	03F	BABR	$e^+e^- \to \Upsilon(4S)$
1.121±0.013±0.042		ANDERSON	02	CLE2	$e^+e^- \to \Upsilon(4S)$
1.29 ±0.45 ±0.01	27	[2] MASCHMANN	90	CBAL	$e^+e^- \to \Upsilon(4S)$
1.24 ±0.27 ±0.01	120	[3] ALBRECHT	87D	ARG	$e^+e^- \to \Upsilon(4S)$
1.35 ±0.24 ±0.01	52	[4] ALAM	86	CLEO	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.12 ±0.06 ±0.01	1489	[5] BALEST	95B	CLE2	$e^+e^- \to \Upsilon(4S)$
1.4 $^{+0.6}_{-0.5}$	7	[6] ALBRECHT	85H	ARG	$e^+e^- \to \Upsilon(4S)$
1.1 ±0.21 ±0.23	46	[7] HAAS	85	CLEO	Repl. by ALAM 86

[1] AUBERT 03F also reports the momentum distribution and helicity of $J/\psi \to \ell^+\ell^-$ in the $\Upsilon(4S)$ center-of-mass frame. NODE=S049S7;LINKAGE=TX

[2] MASCHMANN 90 reports $(1.12 \pm 0.33 \pm 0.25) \times 10^{-2}$ from a measurement of $[\Gamma(B \to J/\psi(1S)\,\text{anything})/\Gamma_{total}] \times [B(J/\psi(1S) \to e^+e^-)]$ assuming $B(J/\psi(1S) \to e^+e^-) = 0.069 \pm 0.009$, which we rescale to our best value $B(J/\psi(1S) \to e^+e^-) = (5.971 \pm 0.032) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S049S7;LINKAGE=BC

[3] ALBRECHT 87D reports $(1.07 \pm 0.16 \pm 0.22) \times 10^{-2}$ from a measurement of $[\Gamma(B \to J/\psi(1S)\,\text{anything})/\Gamma_{total}] \times [B(J/\psi(1S) \to e^+e^-)]$ assuming $B(J/\psi(1S) \to e^+e^-) = 0.069 \pm 0.009$, which we rescale to our best value $B(J/\psi(1S) \to e^+e^-) = (5.971 \pm 0.032) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. ALBRECHT 87D find the branching ratio for J/ψ not from $\psi(2S)$ to be 0.0081 ± 0.0023. NODE=S049S7;LINKAGE=B

[4] ALAM 86 reports $(1.09 \pm 0.16 \pm 0.21) \times 10^{-2}$ from a measurement of $[\Gamma(B \to J/\psi(1S)\,\text{anything})/\Gamma_{total}] \times [B(J/\psi(1S) \to \mu^+\mu^-)]$ assuming $B(J/\psi(1S) \to \mu^+\mu^-) = 0.074 \pm 0.012$, which we rescale to our best value $B(J/\psi(1S) \to \mu^+\mu^-) = (5.961 \pm 0.033) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S049S7;LINKAGE=BD

[5] BALEST 95B reports $(1.12 \pm 0.04 \pm 0.06) \times 10^{-2}$ from a measurement of $[\Gamma(B \to J/\psi(1S)\,\text{anything})/\Gamma_{total}] \times [B(J/\psi(1S) \to e^+e^-)]$ assuming $B(J/\psi(1S) \to e^+e^-) = 0.0599 \pm 0.0025$, which we rescale to our best value $B(J/\psi(1S) \to e^+e^-) = (5.971 \pm 0.032) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. They measure $J/\psi(1S) \to e^+e^-$ and $\mu^+\mu^-$ and use PDG 1994 values for the branching fractions. The rescaling is the same for either mode so we use e^+e^-. NODE=S049S7;LINKAGE=D

[6] Statistical and systematic errors were added in quadrature. ALBRECHT 85H also report a CL = 90% limit of 0.007 for $B \to J/\psi(1S) + X$ where m_X <1 GeV. NODE=S049S7;LINKAGE=A

[7] Dimuon and dielectron events used. NODE=S049S7;LINKAGE=C

$\Gamma(J/\psi(1S)(\text{direct})\,\text{anything})/\Gamma_{total}$ Γ_{53}/Γ

NODE=S049R23

VALUE	DOCUMENT ID		TECN	COMMENT
0.0078 ±0.0004 OUR AVERAGE	Error includes scale factor of 1.1.			
0.00740±0.00023±0.00043	[1] AUBERT	03F	BABR	$e^+e^- \to \Upsilon(4S)$
0.00813±0.00017±0.00037	[2] ANDERSON	02	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.0080 ±0.0008	[3] BALEST	95B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] AUBERT 03F also reports the helicity of $J/\psi \to \ell^+\ell^-$ produced directly in B decay. NODE=S049R23;LINKAGE=TX

[2] Also reports the measurement of $J/\psi \to \ell^+\ell^-$ polarization produced directly from B decay. NODE=S049R23;LINKAGE=PO

[3] BALEST 95B assume PDG 1994 values for sub mode branching ratios. $J/\psi(1S)$ mesons are reconstructed in $J/\psi(1S) \to e^+e^-$ and $J/\psi(1S) \to \mu^+\mu^-$. The $B \to J/\psi(1S)X$ branching ratio contains $J/\psi(1S)$ mesons directly from B decays and also from feeddown through $\psi(2S) \to J/\psi(1S)$, $\chi_{c1}(1P) \to J/\psi(1S)$, or $\chi_{c2}(1P) \to J/\psi(1S)$. Using the measured inclusive rates, BALEST 95B corrects for the feeddown and finds the $B \to J/\psi(1S)(\text{direct})$ X branching ratio. NODE=S049R23;LINKAGE=D

$\Gamma(\psi(2S)\,\text{anything})/\Gamma_{total}$ Γ_{54}/Γ

NODE=S049S25

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.00307±0.00021 OUR AVERAGE					
0.00297±0.00020±0.00020		AUBERT	03F	BABR	$e^+e^- \to \Upsilon(4S)$
0.00316±0.00014±0.00028		[1] ANDERSON	02	CLE2	$e^+e^- \to \Upsilon(4S)$
0.0046 ±0.0017 ±0.0011	8	ALBRECHT	87D	ARG	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.0034 ±0.0004 ±0.0003	240	[2] BALEST	95B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Also reports the measurement of $\psi(2S) \to \ell^+\ell^-$ polarization produced directly from B decay. NODE=S049S25;LINKAGE=PO

[2] BALEST 95B assume PDG 1994 values for sub mode branching ratios. They find B($B \to \psi(2S)X$, $\psi(2S) \to \ell^+\ell^-$) = 0.30 ± 0.05 ± 0.04 and B($B \to \psi(2S)X$, $\psi(2S) \to J/\psi(1S)\pi^+\pi^-$) = 0.37±0.05±0.05. Weighted average is quoted for B($B \to \psi(2S)X$). NODE=S049S25;LINKAGE=D

$\Gamma(\chi_{c1}(1P)\,\text{anything})/\Gamma_{\text{total}}$ Γ_{55}/Γ

NODE=S049R89
NODE=S049R89

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
3.55±0.27 OUR AVERAGE		Error includes scale factor of 1.3. See the ideogram below.			
3.33±0.05±0.24		[1] BHARDWAJ	16	BELL	$e^+e^- \to \Upsilon(4S)$
3.67±0.35±0.44		AUBERT	03F	BABR	$e^+e^- \to \Upsilon(4S)$
4.35±0.29±0.40		ANDERSON	02	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
3.63±0.22±0.34		[2] ABE	02L	BELL	Repl. by BHARDWAJ 16
3.30±0.35±0.12		[3] CHEN	01	CLE2	$e^+e^- \to \Upsilon(4S)$
4.0 ±0.6 ±0.4	112	[4] BALEST	95B	CLE2	Repl. by CHEN 01
10.5 ±3.5 ±2.5		[5] ALBRECHT	92E	ARG	$e^+e^- \to \Upsilon(4S)$

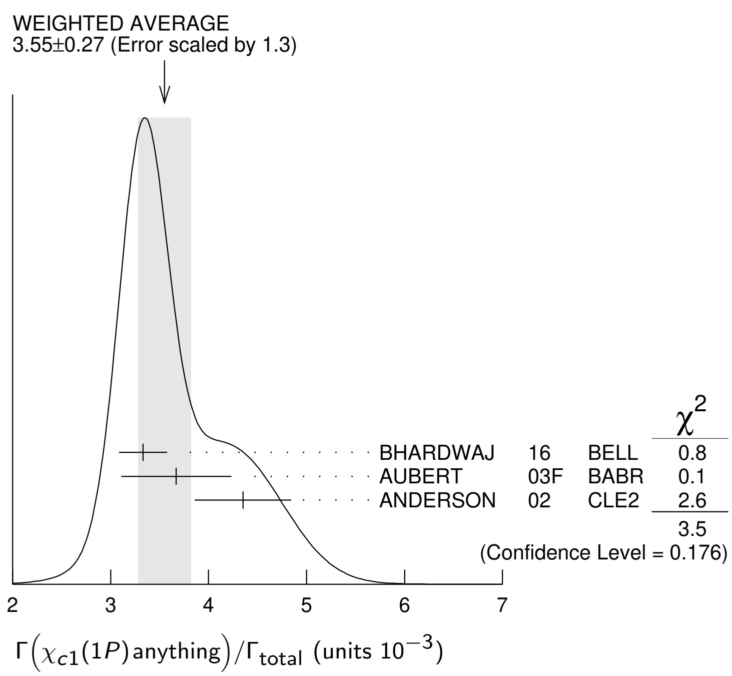
[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S049R89;LINKAGE=B

[2] ABE 02L uses PDG 01 values for B($J/\psi(1S) \to \ell^+\ell^-$) and B($\chi_{c1,c2} \to J/\psi(1S)\gamma$). NODE=S049R89;LINKAGE=LA

[3] CHEN 01 reports 0.00414 ± 0.00031 ± 0.00040 from a measurement of [$\Gamma(B \to \chi_{c1}(1P)\,\text{anything})/\Gamma_{\text{total}}$] × [B($\chi_{c1}(1P) \to \gamma J/\psi(1S)$)] assuming B($\chi_{c1}(1P) \to \gamma J/\psi(1S)$) = 0.273 ± 0.016, which we rescale to our best value B($\chi_{c1}(1P) \to \gamma J/\psi(1S)$) = $(34.3 \pm 1.3) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S049R89;LINKAGE=J3

[4] BALEST 95B assume B($\chi_{c1}(1P) \to J/\psi(1S)\gamma$) = $(27.3 \pm 1.6) \times 10^{-2}$, the PDG 1994 value. Fit to ψ-photon invariant mass distribution allows for a $\chi_{c1}(1P)$ and a $\chi_{c2}(1P)$ component. NODE=S049R89;LINKAGE=D

[5] ALBRECHT 92E assumes no $\chi_{c2}(1P)$ production. NODE=S049R89;LINKAGE=A



$\Gamma(\chi_{c1}(1P)\,(\text{direct})\,\text{anything})/\Gamma_{\text{total}}$ Γ_{56}/Γ

NODE=S049R24
NODE=S049R24

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
3.08±0.19 OUR AVERAGE				
3.03±0.05±0.24	[1] BHARDWAJ	16	BELL	$e^+e^- \to \Upsilon(4S)$
3.41±0.35±0.42	AUBERT	03F	BABR	$e^+e^- \to \Upsilon(4S)$
3.1 ±0.4 ±0.1	[2] CHEN	01	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3.32±0.22±0.34	[3] ABE	02L	BELL	Repl. by BHARDWAJ 16
3.7 ±0.7	[4] BALEST	95B	CLE2	Repl. by CHEN 01

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S049R24;LINKAGE=A

[2] CHEN 01 reports 0.00383 ± 0.00031 ± 0.00040 from a measurement of $[\Gamma(B \to \chi_{c1}(1P)(\text{direct})\ \text{anything})/\Gamma_{total}] \times [B(\chi_{c1}(1P) \to \gamma J/\psi(1S))]$ assuming $B(\chi_{c1}(1P) \to \gamma J/\psi(1S)) = 0.273 \pm 0.016$, which we rescale to our best value $B(\chi_{c1}(1P) \to \gamma J/\psi(1S)) = (34.3 \pm 1.3) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S049R24;LINKAGE=J3

[3] ABE 02L uses PDG 01 values for $B(J/\psi(1S) \to \ell^+\ell^-)$ and $B(\chi_{c1,c2} \to J/\psi(1S)\gamma)$. NODE=S049R24;LINKAGE=LA

[4] BALEST 95B assume PDG 1994 values. $J/\psi(1S)$ mesons are reconstructed in the e^+e^- and $\mu^+\mu^-$ modes. The $B \to \chi_{c1}(1P)X$ branching ratio contains $\chi_{c1}(1P)$ mesons directly from B decays and also from feeddown through $\psi(2S) \to \chi_{c1}(1P)\gamma$. Using the measured inclusive rates, BALEST 95B corrects for the feeddown and finds the $B \to \chi_{c1}(1P)(\text{direct})$ X branching ratio. NODE=S049R24;LINKAGE=D

$\Gamma(\chi_{c2}(1P)\text{anything})/\Gamma_{total}$ Γ_{57}/Γ

NODE=S049R21
NODE=S049R21

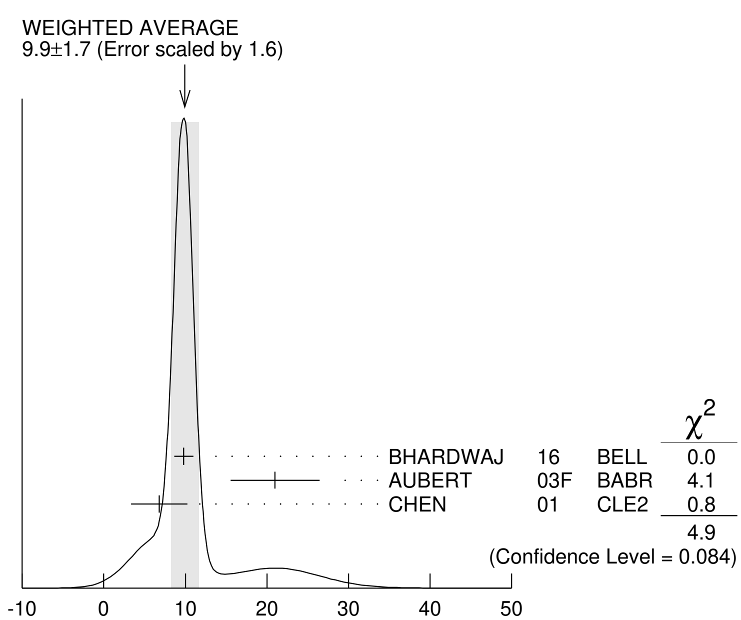
VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
9.9±1.7 OUR AVERAGE		Error includes scale factor of 1.6. See the ideogram below.			
$9.8 \pm 0.6 \pm 1.0$		[1] BHARDWAJ	16	BELL	$e^+e^- \to \Upsilon(4S)$
$21.0 \pm 4.5 \pm 3.1$		AUBERT	03F	BABR	$e^+e^- \to \Upsilon(4S)$
$6.8 \pm 3.4 \pm 0.3$		[2] CHEN	01	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$18.0^{+2.3}_{-2.8} \pm 2.6$		[3] ABE	02L	BELL	Repl. by BHARDWAJ 16
<38	90	[4] BALEST	95B	CLE2	Repl. by CHEN 01

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S049R21;LINKAGE=A

[2] CHEN 01 reports $(9.8 \pm 4.8 \pm 1.5) \times 10^{-4}$ from a measurement of $[\Gamma(B \to \chi_{c2}(1P)\text{anything})/\Gamma_{total}] \times [B(\chi_{c2}(1P) \to \gamma J/\psi(1S))]$ assuming $B(\chi_{c2}(1P) \to \gamma J/\psi(1S)) = 0.135 \pm 0.011$, which we rescale to our best value $B(\chi_{c2}(1P) \to \gamma J/\psi(1S)) = (19.5 \pm 0.7) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S049R21;LINKAGE=J3

[3] ABE 02L uses PDG 01 values for $B(J/\psi(1S) \to \ell^+\ell^-)$ and $B(\chi_{c1,c2} \to J/\psi(1S)\gamma)$. NODE=S049R21;LINKAGE=LA

[4] BALEST 95B assume $B(\chi_{c2}(1P) \to J/\psi(1S)\gamma) = (13.5 \pm 1.1) \times 10^{-2}$, the PDG 1994 value. $J/\psi(1S)$ mesons are reconstructed in the e^+e^- and $\mu^+\mu^-$ modes, and PDG 1994 branching fractions are used. If interpreted as signal, the 35 ± 13 events correspond to $B(B \to \chi_{c2}(1P)X) = (0.25 \pm 0.10 \pm 0.03) \times 10^{-2}$. NODE=S049R21;LINKAGE=D



$\Gamma(\chi_{c2}(1P)\text{anything})/\Gamma_{total}$ Γ_{57}/Γ

$\Gamma(\chi_{c2}(1P)\text{(direct) anything})/\Gamma_{total}$ — Γ_{58}/Γ

NODE=S049R71

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
0.75±0.11 OUR AVERAGE				
0.70±0.06±0.10	[1] BHARDWAJ	16	BELL	$e^+e^- \to \Upsilon(4S)$
1.90±0.45±0.29	AUBERT	03F	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1.53^{+0.23}_{-0.28}\pm0.27$	[2] ABE	02L	BELL	Repl. by BHARDWAJ 16

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S049R71;LINKAGE=A

[2] ABE 02L uses PDG 01 values for $B(J/\psi(1S) \to \ell^+\ell^-)$ and $B(\chi_{c1,c2} \to J/\psi(1S)\gamma)$. NODE=S049R71;LINKAGE=LA

$\Gamma(\eta_c(1S)\text{anything})/\Gamma_{total}$ — Γ_{59}/Γ

NODE=S049R22

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.009	90	[1] BALEST	95B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] BALEST 95B assume PDG 1994 values for sub mode branching ratios. $J/\psi(1S)$ mesons are reconstructed in $J/\psi(1S) \to e^+e^-$ and $J/\psi(1S) \to \mu^+\mu^-$. Search region 2960 $< m_{\eta_c(1S)} <$ 3010 MeV/c^2. NODE=S049R22;LINKAGE=D

$\Gamma(K\chi_{c1}(3872))/\Gamma_{total}$ — Γ_{60}/Γ

NODE=S049S41

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
1.9±0.7 OUR AVERAGE				
[$(2.5 \pm 0.9) \times 10^{-4}$ OUR 2024 AVERAGE]				
1.7±0.5±0.6	[1] AUSHEV	10	BELL	$e^+e^- \to \Upsilon(4S)$
$2.2^{+0.7}_{-0.8}{}^{+1.2}_{-1.1}$	[2,3] GOKHROO	06	BELL	$e^+e^- \to \Upsilon(4S)$

NEW

[1] AUSHEV 10 reports $[\Gamma(B \to K\chi_{c1}(3872))/\Gamma_{total}] \times [B(\chi_{c1}(3872) \to \overline{D}^{*0}D^0)] = (0.80\pm0.20\pm0.10)\times10^{-4}$ which we divide by our best value $B(\chi_{c1}(3872) \to \overline{D}^{*0}D^0) = (46 \pm 16) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S049S41;LINKAGE=B

[2] GOKHROO 06 reports $[\Gamma(B \to K\chi_{c1}(3872))/\Gamma_{total}] \times [B(\chi_{c1}(3872) \to D^0\overline{D}^0\pi^0)] = (1.22 \pm 0.31^{+0.23}_{-0.30}) \times 10^{-4}$ which we divide by our best value $B(\chi_{c1}(3872) \to D^0\overline{D}^0\pi^0) = (55 \pm 28) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S049S41;LINKAGE=A

[3] Measure the near-threshold enhancements in the $(D^0\overline{D}^0\pi^0)$ system at a mass 3875.2 $\pm$ $0.7^{+0.3}_{-1.6} \pm 0.8$ MeV/c^2. NODE=S049S41;LINKAGE=GO

$\Gamma(K X(3940),\ X \to D^{*0}D^0)/\Gamma_{total}$ — Γ_{61}/Γ

NODE=S049R82

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
<0.67	90	AUSHEV	10	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(K\chi_{c0}(3915),\ \chi_{c0} \to \omega J/\psi)/\Gamma_{total}$ — Γ_{62}/Γ

NODE=S049R20

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
7.1±1.3±3.1	[1] CHOI	05	BELL	$e^+e^- \to \Upsilon(4S)$

[1] CHOI 05 reports the observation of a near-threshold enhancement in the $\omega J/\psi$ mass spectrum in exclusive $B \to K\omega J/\psi$. The new state, denoted as $\chi_{c0}(3915)$, is measured to have a mass of 3943 $\pm$ 11 $\pm$ 13 GeV/c^2 and a width $\Gamma = 87 \pm 22 \pm 26$ MeV. NODE=S049R20;LINKAGE=CH

$\Gamma(K^\pm\text{anything})/\Gamma_{total}$ — Γ_{63}/Γ

NODE=S049S6

VALUE	DOCUMENT ID		TECN	COMMENT
0.789±0.025 OUR AVERAGE				
0.82 ±0.01 ±0.05	ALBRECHT	94C	ARG	$e^+e^- \to \Upsilon(4S)$
0.775±0.015±0.025	[1] ALBRECHT	93I	ARG	$e^+e^- \to \Upsilon(4S)$
0.85 ±0.07 ±0.09	ALAM	87B	CLEO	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
seen	[2] BRODY	82	CLEO	$e^+e^- \to \Upsilon(4S)$
seen	[3] GIANNINI	82	CUSB	$e^+e^- \to \Upsilon(4S)$

[1] ALBRECHT 93I value is not independent of the sum of $B \to K^+$anything and $B \to K^-$anything ALBRECHT 94C values. NODE=S049S6;LINKAGE=A

[2] Assuming $\Upsilon(4S) \to B\overline{B}$, a total of 3.38 $\pm$ 0.34 $\pm$ 0.68 kaons per $\Upsilon(4S)$ decay is found (the second error is systematic). In the context of the standard B-decay model, this leads to a value for (b-quark $\to$ c-quark)/(b-quark $\to$ all) of 1.09 $\pm$ 0.33 $\pm$ 0.13. NODE=S049S6;LINKAGE=C

[3] GIANNINI 82 at CESR-CUSB observed 1.58 $\pm$ 0.35 K^0 per hadronic event much higher than 0.82 $\pm$ 0.10 below threshold. Consistent with predominant $b \to cX$ decay. NODE=S049S6;LINKAGE=D

$\Gamma(K^+ \text{anything})/\Gamma_{total}$ — Γ_{64}/Γ

NODE=S049S21
NODE=S049S21

VALUE	DOCUMENT ID		TECN	COMMENT
0.66 ±0.05	[1] ALBRECHT	94C	ARG	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.620±0.013±0.038	[2] ALBRECHT	94C	ARG	$e^+e^- \to \Upsilon(4S)$
0.66 ±0.05 ±0.07	[2] ALAM	87B	CLEO	$e^+e^- \to \Upsilon(4S)$

OCCUR=2

[1] Measurement relies on lepton-kaon correlations. It is for the weak decay vertex and does not include mixing of the neutral B meson. Mixing effects were corrected for by assuming a mixing parameter r of (18.1 ± 4.3)%.

NODE=S049S21;LINKAGE=B

[2] Measurement relies on lepton-kaon correlations. It includes production through mixing of the neutral B meson.

NODE=S049S21;LINKAGE=A

$\Gamma(K^- \text{anything})/\Gamma_{total}$ — Γ_{65}/Γ

NODE=S049S22
NODE=S049S22

VALUE	DOCUMENT ID		TECN	COMMENT
0.13 ±0.04	[1] ALBRECHT	94C	ARG	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.165±0.011±0.036	[2] ALBRECHT	94C	ARG	$e^+e^- \to \Upsilon(4S)$
0.19 ±0.05 ±0.02	[2] ALAM	87B	CLEO	$e^+e^- \to \Upsilon(4S)$

OCCUR=2

[1] Measurement relies on lepton-kaon correlations. It is for the weak decay vertex and does not include mixing of the neutral B meson. Mixing effects were corrected for by assuming a mixing parameter r of (18.1 ± 4.3)%.

NODE=S049S22;LINKAGE=B

[2] Measurement relies on lepton-kaon correlations. It includes production through mixing of the neutral B meson.

NODE=S049S22;LINKAGE=A

$\Gamma(K^0/\overline{K}^0 \text{anything})/\Gamma_{total}$ — Γ_{66}/Γ

NODE=S049S23
NODE=S049S23

VALUE	DOCUMENT ID		TECN	COMMENT
0.64 ±0.04 OUR AVERAGE				
0.642±0.010±0.042	[1] ALBRECHT	94C	ARG	$e^+e^- \to \Upsilon(4S)$
0.63 ±0.06 ±0.06	ALAM	87B	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] ALBRECHT 94C assume a $K^0/\overline{K}^0$ multiplicity twice that of K^0_S.

NODE=S049S23;LINKAGE=KA

$\Gamma(K^*(892)^\pm \text{anything})/\Gamma_{total}$ — Γ_{67}/Γ

NODE=S049R12
NODE=S049R12

VALUE	DOCUMENT ID		TECN	COMMENT
0.182±0.054±0.024	ALBRECHT	94J	ARG	$e^+e^- \to \Upsilon(4S)$

$\Gamma(K^*(892)^0/\overline{K}^*(892)^0 \text{anything})/\Gamma_{total}$ — Γ_{68}/Γ

NODE=S049R13
NODE=S049R13

VALUE	DOCUMENT ID		TECN	COMMENT
0.146±0.016±0.020	ALBRECHT	94J	ARG	$e^+e^- \to \Upsilon(4S)$

$\Gamma(K^*(892)\gamma)/\Gamma_{total}$ — Γ_{69}/Γ

NODE=S049S26
NODE=S049S26

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
4.24±0.54±0.32		[1] COAN	00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<150	90	[2] LESIAK	92	CBAL	$e^+e^- \to \Upsilon(4S)$
< 24	90	ALBRECHT	88H	ARG	$e^+e^- \to \Upsilon(4S)$

[1] An average of $B(B^+ \to K^*(892)^+\gamma)$ and $B(B^0 \to K^*(892)^0\gamma)$ measurements reported in COAN 00 by assuming full correlated systematic errors.

NODE=S049S26;LINKAGE=N3

[2] LESIAK 92 set a limit on the inclusive process $B(b \to s\gamma) < 2.8 \times 10^{-3}$ at 90% CL for the range of masses of 892–2045 MeV, independent of assumptions about s-quark hadronization.

NODE=S049S26;LINKAGE=A

$\Gamma(\eta K\gamma)/\Gamma_{total}$ — Γ_{70}/Γ

NODE=S049S01
NODE=S049S01

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$8.5\pm1.3^{+1.2}_{-0.9}$	[1] NISHIDA	05	BELL	$e^+e^- \to \Upsilon(4S)$

[1] $m_{\eta K} < 2.4$ GeV/c^2

NODE=S049S01;LINKAGE=NI

$\Gamma(K_1(1400)\gamma)/\Gamma_{total}$ — Γ_{71}/Γ

NODE=S049S27
NODE=S049S27

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<12.7 \times 10^{-5}$	90	[1] COAN	00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$< 1.6 \times 10^{-3}$	90	[2] LESIAK	92	CBAL	$e^+e^- \to \Upsilon(4S)$
$< 4.1 \times 10^{-4}$	90	ALBRECHT	88H	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S049S27;LINKAGE=EP

[2] LESIAK 92 set a limit on the inclusive process $B(b \to s\gamma) < 2.8 \times 10^{-3}$ at 90% CL for the range of masses of 892–2045 MeV, independent of assumptions about s-quark hadronization.

NODE=S049S27;LINKAGE=A

$\Gamma(K_2^*(1430)\gamma)/\Gamma_{total}$ Γ_{72}/Γ

NODE=S049S28
NODE=S049S28

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
$1.66^{+0.59}_{-0.53}\pm0.13$		[1] COAN	00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<83	90	ALBRECHT	88H	ARG	$e^+e^- \to \Upsilon(4S)$

[1] COAN 00 obtains a fitted signal yield of $15.9^{+5.7}_{-5.2}$ events. A search for contamination by $K^*(1410)$ yielded a rate consistent with 0; the central value assumes no contamination.

NODE=S049S28;LINKAGE=N2

$\Gamma(K_2(1770)\gamma)/\Gamma_{total}$ Γ_{73}/Γ

NODE=S049S53
NODE=S049S53

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.2\times10^{-3}$	90	[1] LESIAK	92	CBAL	$e^+e^- \to \Upsilon(4S)$

[1] LESIAK 92 set a limit on the inclusive process $B(b \to s\gamma) < 2.8\times10^{-3}$ at 90% CL for the range of masses of 892–2045 MeV, independent of assumptions about s-quark hadronization.

NODE=S049S53;LINKAGE=A

$\Gamma(K_3^*(1780)\gamma)/\Gamma_{total}$ Γ_{74}/Γ

NODE=S049S29
NODE=S049S29

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.7\times10^{-5}$	90	[1] NISHIDA	05	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<3.0\times10^{-3}$	90	ALBRECHT	88H	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Uses $B(K_3^*(1780) \to \eta K) = 0.11^{+0.05}_{-0.04}$.

NODE=S049S29;LINKAGE=NS

$\Gamma(K_4^*(2045)\gamma)/\Gamma_{total}$ Γ_{75}/Γ

NODE=S049S52
NODE=S049S52

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.0\times10^{-3}$	90	[1] LESIAK	92	CBAL	$e^+e^- \to \Upsilon(4S)$

[1] LESIAK 92 set a limit on the inclusive process $B(b \to s\gamma) < 2.8\times10^{-3}$ at 90% CL for the range of masses of 892–2045 MeV, independent of assumptions about s-quark hadronization.

NODE=S049S52;LINKAGE=A

$\Gamma(K\eta'(958))/\Gamma_{total}$ Γ_{76}/Γ

NODE=S049R50
NODE=S049R50

VALUE	DOCUMENT ID		TECN	COMMENT
$(8.3^{+0.9}_{-0.8}\pm0.7)\times10^{-5}$	[1] RICHICHI	00	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S049R50;LINKAGE=EP

$\Gamma(K^*(892)\eta'(958))/\Gamma_{total}$ Γ_{77}/Γ

NODE=S049R51
NODE=S049R51

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$4.1^{+1.0}_{-0.9}\pm0.5$		[1] AUBERT	07E	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<22	90	[1] RICHICHI	00	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S049R51;LINKAGE=EP

$\Gamma(K\eta)/\Gamma_{total}$ Γ_{78}/Γ

NODE=S049R52
NODE=S049R52

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5.2\times10^{-6}$	90	[1] RICHICHI	00	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S049R52;LINKAGE=EP

$\Gamma(K^*(892)\eta)/\Gamma_{total}$ Γ_{79}/Γ

NODE=S049R53
NODE=S049R53

VALUE	DOCUMENT ID		TECN	COMMENT
$(1.80^{+0.49}_{-0.43}\pm0.18)\times10^{-5}$	[1] RICHICHI	00	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S049R53;LINKAGE=EP

$\Gamma(K\phi\phi)/\Gamma_{total}$ Γ_{80}/Γ

NODE=S049R75
NODE=S049R75

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$2.3^{+0.9}_{-0.8}\pm0.3$	[1] HUANG	03	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of charged and neutral B meson pairs and isospin symmetry.

NODE=S049R75;LINKAGE=A

$\Gamma(\overline{b} \to \overline{s}\gamma)/\Gamma_{total}$ Γ_{81}/Γ

NODE=S049R15
NODE=S049R15

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
3.49±0.19 OUR AVERAGE				
3.75±0.18±0.35	[1,2] SAITO	15	BELL	$e^+e^- \to \Upsilon(4S)$
3.52±0.20±0.51	[1,3] LEES	12U	BABR	$e^+e^- \to \Upsilon(4S)$
3.32±0.16±0.31	[1,4] LEES	12V	BABR	$e^+e^- \to \Upsilon(4S)$
3.47±0.15±0.40	[1,5] LIMOSANI	09	BELL	$e^+e^- \to \Upsilon(4S)$
3.90±0.91±0.64	[1,6] AUBERT	08O	BABR	$e^+e^- \to \Upsilon(4S)$
3.29±0.44±0.29	[1,7] CHEN	01C	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2.30±0.08±0.30	[8] DEL-AMO-SA..	10M	BABR	$e^+e^- \to \Upsilon(4S)$
4.3 ±0.3 ±0.7	[9] AUBERT	09U	BABR	Repl. by DEL-AMO-SANCHEZ 10M
3.92±0.31±0.47	[1,10] AUBERT,BE	06B	BABR	Repl. by LEES 12V
$3.49\pm0.20^{+0.59}_{-0.46}$	[1,11] AUBERT,B	05R	BABR	Repl. by LEES 12U
3.50±0.32±0.31	[1,12] KOPPENBURG	04	BELL	Repl. by LIMOSANI 09
$3.36\pm0.53^{+0.65}_{-0.68}$	[13] ABE	01F	BELL	Repl. by SAITO 15
2.32±0.57±0.35	ALAM	95	CLE2	Repl. by CHEN 01C

[1] We extrapolate the measured value to $E_\gamma > 1.6$ GeV using the method of BUCHMUELLER 06 (average of three theoretical models). NODE=S049R15;LINKAGE=AA

[2] SAITO 15 measured $(3.51 \pm 0.17 \pm 0.33) \times 10^{-4}$ using a sum-of-exclusive approach in which 38 of the hadronic final states with $m_{X_s} < 2.8$ GeV/c^2 are reconstructed. The cut of minimum photon energy is $E_\gamma > 1.9$ GeV. NODE=S049R15;LINKAGE=SA

[3] Reports $(3.29 \pm 0.19 \pm 0.48) \times 10^{-4}$ for $E_\gamma > 1.9$ GeV. NODE=S049R15;LINKAGE=LS

[4] Reports $(3.21 \pm 0.15 \pm 0.29 \pm 0.08) \times 10^{-4}$ for $1.8 < E_\gamma < 2.8$ GeV, where the last systematic uncertainty is for model dependency. Results with other cutoffs are also reported. NODE=S049R15;LINKAGE=LE

[5] The measurement reported is $(3.45 \pm 0.15 \pm 0.40) \times 10^{-4}$ for $E_\gamma > 1.7$ GeV. NODE=S049R15;LINKAGE=LI

[6] Uses a fully reconstructed B meson as a tag on the recoil side. The measurement reported is $(3.66 \pm 0.85 \pm 0.60) \times 10^{-4}$ for $E_\gamma > 1.9$ GeV. NODE=S049R15;LINKAGE=UB

[7] The measurement reported is $(3.21 \pm 0.43^{+0.32}_{-0.29}) \times 10^{-4}$ for $E_\gamma > 2.0$ GeV. NODE=S049R15;LINKAGE=KO

[8] Measured using sums of seven exclusive final states $B \to X_{d(s)}\gamma$ where $X_{d(s)}$ is a nonstrange (strange) charmless hadronic system in mass range 0.5–2.0 GeV/c^2. NODE=S049R15;LINKAGE=DE

[9] Measured using sums of seven exclusive final states $B \to X_{d(s)}\gamma$ where $X_{d(s)}$ is a nonstrange (strange) charmless hadronic system in mass range 0.6–1.8 GeV/c^2. NODE=S049R15;LINKAGE=AE

[10] The measurement reported is $(3.67 \pm 0.29 \pm 0.45) \times 10^{-4}$ for $E_\gamma > 1.9$ GeV. NODE=S049R15;LINKAGE=AB

[11] The measurement reported is $(3.27 \pm 0.18^{+0.55}_{-0.42}) \times 10^{-4}$ for $E_\gamma > 1.9$ GeV. NODE=S049R15;LINKAGE=AU

[12] The measurement reported is $(3.55 \pm 0.32 \pm 0.32) \times 10^{-4}$ for $E_\gamma > 1.8$ GeV. NODE=S049R15;LINKAGE=CE

[13] ABE 01F reports their systematic errors $(\pm0.42^{+0.50}_{-0.54}) \times 10^{-4}$, where the second error is due to the theoretical uncertainty. We combine them in quadrature. NODE=S049R15;LINKAGE=FA

$\Gamma(\overline{b} \to \overline{d}\gamma)/\Gamma_{total}$ Γ_{82}/Γ

NODE=S049R38
NODE=S049R38

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
9.2±2.0±2.3	[1] DEL-AMO-SA..	10M	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
14 ±5 ±4	[2] AUBERT	09U	BABR	Repl. by DEL-AMO-SANCHEZ 10M

[1] Measured using sums of seven exclusive final states $B \to X_{d(s)}\gamma$ where $X_{d(s)}$ is a nonstrange (strange) charmless hadronic system in mass range 0.5–2.0 GeV/c^2. NODE=S049R38;LINKAGE=DE

[2] Measured using sums of seven exclusive final states $B \to X_{d(s)}\gamma$ where $X_{d(s)}$ is a nonstrange (strange) charmless hadronic system in mass range 0.6–1.8 GeV/c^2. NODE=S049R38;LINKAGE=AE

$\Gamma(\overline{b} \to \overline{d}\gamma)/\Gamma(\overline{b} \to \overline{s}\gamma)$ Γ_{82}/Γ_{81}

NODE=S049R39
NODE=S049R39

VALUE	DOCUMENT ID		TECN	COMMENT
0.040±0.009±0.010	[1] DEL-AMO-SA..	10M	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.033±0.013±0.009	[2] AUBERT	09U	BABR	Repl. by DEL-AMO-SANCHEZ 10M

[1] Measured using sums of seven exclusive final states $B \to X_{d(s)}\gamma$ where $X_{d(s)}$ is a nonstrange (strange) charmless hadronic system in mass range 0.5–2.0 GeV/c^2. NODE=S049R39;LINKAGE=DE

[2] Measured using sums of seven exclusive final states $B \to X_{d(s)}\gamma$ where $X_{d(s)}$ is a nonstrange (strange) charmless hadronic system in mass range 0.6–1.8 GeV/c^2. NODE=S049R39;LINKAGE=AE

$\Gamma(\overline{b} \to \overline{s}\text{gluon})/\Gamma_{total}$ — Γ_{83}/Γ

NODE=S049R14

VALUE	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
<0.068	90		[1] COAN	98	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<0.08		2	[2] ALBRECHT	95D	ARG	$e^+e^- \to \Upsilon(4S)$

[1] COAN 98 uses D-ℓ correlation. NODE=S049R14;LINKAGE=B

[2] ALBRECHT 95D use full reconstruction of one B decay as tag. Two candidate events for charmless B decay can be interpreted as either $b \to s$gluon or $b \to u$ transition. If interpreted as $b \to s$gluon they find a branching ratio of ~ 0.026 or the upper limit quoted above. Result is highly model dependent. NODE=S049R14;LINKAGE=A

$\Gamma(\eta\text{ anything})/\Gamma_{total}$ — Γ_{84}/Γ

NODE=S049R47

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
$2.61 \pm 0.30^{+0.44}_{-0.74}$		[1] NISHIMURA	10	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$1.69 \pm 0.29^{+0.36}_{-0.62}$		[2] NISHIMURA	10	BELL	$e^+e^- \to \Upsilon(4S)$
<4.4	90	[3] BROWDER	98	CLE2	$e^+e^- \to \Upsilon(4S)$

OCCUR=2

[1] Uses $B \to \eta X_s$ with $0.4 < m_{X_s} < 2.6$ GeV/c^2. NODE=S049R47;LINKAGE=NI

[2] Uses $B \to \eta X_s$ with $1.8 < m_{X_s} < 2.6$ GeV/c^2. NODE=S049R47;LINKAGE=NS

[3] BROWDER 98 search for high momentum $B \to \eta X_s$ between 2.1 and 2.7 GeV/c. NODE=S049R47;LINKAGE=A

$\Gamma(\eta'\text{ anything})/\Gamma_{total}$ — Γ_{85}/Γ

NODE=S049R48

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
4.2±0.9 OUR AVERAGE				
3.9±0.8±0.9	[1] AUBERT,B	04F	BABR	$e^+e^- \to \Upsilon(4S)$
4.6±1.1±0.6	[2] BONVICINI	03	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$6.2 \pm 1.6^{+1.3}_{-2.0}$	[3] BROWDER	98	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] AUBERT,B 04F reports branching ratio $B \to \eta' X_s$ for high momentum η' between 2.0 and 2.7 GeV/c in the $\Upsilon(4S)$ center-of-mass frame. X_s represents a recoil system consisting of a kaon and zero to four pions. NODE=S049R48;LINKAGE=AU

[2] BONVICINI 03 observed a signal of 61.2 ± 13.9 events in $B \to \eta' X_{nc}$ production for high momentum η' between 2.0 and 2.7 GeV/c in the $\Upsilon(4S)$ center-of-mass frame. The X_{nc} denotes "charmless" hadronic states recoiling against η'. The second error combines systematic and background subtraction uncertainties in quadrature. NODE=S049R48;LINKAGE=CE

[3] BROWDER 98 observed a signal of 39.0 ± 11.6 events in high momentum $B \to \eta' X_s$ production between 2.0 and 2.7 GeV/c. The branching fraction is based on the interpretation of $b \to sg$, where the last error includes additional uncertainties due to the color-suppressed $b \to$ backgrounds. NODE=S049R48;LINKAGE=A

$\Gamma(K^+\text{gluon (charmless)})/\Gamma_{total}$ — Γ_{86}/Γ

NODE=S049R84

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
<1.87	90	[1] DEL-AMO-SA..11		BABR	$e^+e^- \to \Upsilon(4S)$

[1] $B \to K^+ X$ with $m_X < 1.69$ GeV/c^2. NODE=S049R84;LINKAGE=DA

$\Gamma(K^0\text{gluon (charmless)})/\Gamma_{total}$ — Γ_{87}/Γ

NODE=S049R85

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
$1.95^{+0.51}_{-0.45} \pm 0.50$	[1] DEL-AMO-SA..11		BABR	$e^+e^- \to \Upsilon(4S)$

[1] $B \to K^0 X$ with $m_X < 1.69$ GeV/c^2. NODE=S049R85;LINKAGE=DA

$\Gamma(\rho\gamma)/\Gamma_{total}$ — Γ_{88}/Γ

NODE=S049R54

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
1.39±0.25 OUR AVERAGE		Error includes scale factor of 1.2.			
$1.73^{+0.34}_{-0.32} \pm 0.17$		[1,2] AUBERT	08BH	BABR	$e^+e^- \to \Upsilon(4S)$
$1.21^{+0.24}_{-0.22} \pm 0.12$		[1,2] TANIGUCHI	08	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$1.36^{+0.29}_{-0.27} \pm 0.10$		[1,3] AUBERT	07L	BABR	Repl. by AUBERT 08BH
< 1.9	90	[1,3] AUBERT	04C	BABR	Repl. by AUBERT 07L
<14	90	[1,4] COAN	00	CLE2	$e^+e^- \to \Upsilon(4S)$

NODE=S049R54;LINKAGE=EP

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S049R54;LINKAGE=UB

[2] Assumes $\Gamma(B \to \rho\gamma) = \Gamma(B^+ \to \rho^+\gamma) = 2\,\Gamma(B^0 \to \rho^0\gamma)$ and uses lifetime ratio of $\tau_{B^+}/\tau_{B^0} = 1.071 \pm 0.009$.

NODE=S049R54;LINKAGE=AU

[3] Assumes $\Gamma(B \to \rho\gamma) = \Gamma(B^+ \to \rho^+\gamma) = 2\,\Gamma(B^0 \to \rho^0\gamma)$ and uses lifetime ratio of $\tau_{B^+}/\tau_{B^0} = 1.083 \pm 0.017$.

NODE=S049R54;LINKAGE=N4

[4] COAN 00 reports $B(B \to \rho\gamma)/B(B \to K^*(892)\gamma) < 0.32$ at 90%CL and scaled by the central value of $B(B \to K^*(892)\gamma)=(4.24 \pm 0.54 \pm 0.32) \times 10^{-5}$.

$\Gamma(\rho\gamma)/\Gamma(K^*(892)\gamma)$ — Γ_{88}/Γ_{69}

NODE=S049RW3
NODE=S049RW3

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
$3.02^{+0.60+0.26}_{-0.55-0.28}$	TANIGUCHI	08	BELL	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\rho/\omega\gamma)/\Gamma_{total}$ — Γ_{89}/Γ

NODE=S049RW1
NODE=S049RW1

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
1.30±0.23 OUR AVERAGE		Error includes scale factor of 1.2.			
$1.63^{+0.30}_{-0.28}\pm0.16$		[1,2,3] AUBERT	08BH	BABR	$e^+e^- \to \Upsilon(4S)$
$1.14\pm0.20^{+0.10}_{-0.12}$		[1,3] TANIGUCHI	08	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$1.25^{+0.25}_{-0.24}\pm0.09$		[4] AUBERT	07L	BABR	Repl. by AUBERT 08BH
$1.32^{+0.34+0.10}_{-0.31-0.09}$		[4] MOHAPATRA	06	BELL	Repl. by TANIGUCHI 08
0.6 ±0.3 ±0.1		[4] AUBERT	05	BABR	Repl. by AUBERT 07L
<1.4	90	[4] MOHAPATRA	05	BELL	$e^+e^- \to \Upsilon(4S)$

NODE=S049RW1;LINKAGE=AR

[1] Assumes $\Gamma(B \to \rho\gamma) = \Gamma(B^+ \to \rho^+\gamma) = 2\,\Gamma(B^0 \to \rho^0\gamma)$ and uses lifetime ratio of $\tau_{B^+}/\tau_{B^0} = 1.071 \pm 0.009$.

NODE=S049RW1;LINKAGE=AU

[2] Also reports $|V_{td}/V_{ts}| = 0.233^{+0.025+0.022}_{-0.024-0.021}$.

NODE=S049RW1;LINKAGE=EP

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S049RW1;LINKAGE=AB

[4] Assumes $\Gamma(B \to \rho\gamma) = \Gamma(B^+ \to \rho^+\gamma) = 2\,\Gamma(B^0 \to \rho^0\gamma)$ and uses lifetime ratio of $\tau_{B^+}/\tau_{B^0} = 1.083 \pm 0.017$.

$\Gamma(\rho/\omega\gamma)/\Gamma(K^*(892)\gamma)$ — Γ_{89}/Γ_{69}

NODE=S049RW2
NODE=S049RW2

VALUE (units 10^{-2})	CL%	DOCUMENT ID		TECN	COMMENT
$2.84\pm0.50^{+0.27}_{-0.29}$		[1] TANIGUCHI	08	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<3.5	90	MOHAPATRA	05	BELL	Repl. by TANIGUCHI 08

NODE=S049RW2;LINKAGE=TA

[1] Also reports $|V_{td}/V_{ts}| = 0.195^{+0.020}_{-0.019} \pm 0.015$.

$\Gamma(\pi^\pm\ \text{anything})/\Gamma_{total}$ — Γ_{90}/Γ

NODE=S049R9
NODE=S049R9

VALUE	DOCUMENT ID		TECN	COMMENT
3.585±0.025±0.070	[1] ALBRECHT	93I	ARG	$e^+e^- \to \Upsilon(4S)$

NODE=S049R9;LINKAGE=A

[1] ALBRECHT 93 excludes $\pi^\pm$ from K^0_S and Λ decays. If included, they find 4.105 ± 0.025 ± 0.080.

$\Gamma(\pi^0\ \text{anything})/\Gamma_{total}$ — Γ_{91}/Γ

NODE=S049S60
NODE=S049S60

VALUE	DOCUMENT ID		TECN	COMMENT
2.35±0.02±0.11	[1] ABE	01J	BELL	$e^+e \to \Upsilon(4S)$

NODE=S049S60;LINKAGE=A1

[1] From fully inclusive π^0 yield with no corrections from decays of K^0_S or other particles.

$\Gamma(\eta\ \text{anything})/\Gamma_{total}$ — Γ_{92}/Γ

NODE=S049R18
NODE=S049R18

VALUE	DOCUMENT ID		TECN	COMMENT
0.176±0.011±0.012	KUBOTA	96	CLE2	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\rho^0\ \text{anything})/\Gamma_{total}$ — Γ_{93}/Γ

NODE=S049R10
NODE=S049R10

VALUE	DOCUMENT ID		TECN	COMMENT
0.208±0.042±0.032	ALBRECHT	94J	ARG	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\omega\ \text{anything})/\Gamma_{total}$ — Γ_{94}/Γ

NODE=S049R11
NODE=S049R11

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.81	90	ALBRECHT	94J	ARG	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\phi \text{ anything})/\Gamma_{total}$ — Γ_{95}/Γ

NODE=S049S15

VALUE	DOCUMENT ID		TECN	COMMENT
0.0343±0.0012 OUR AVERAGE				
0.0353±0.0005±0.0030	HUANG	07	CLEO	$e^+e^- \to \Upsilon(4S)$
0.0341±0.0006±0.0012	AUBERT	04S	BABR	$e^+e^- \to \Upsilon(4S)$
0.0390±0.0030±0.0035	ALBRECHT	94J	ARG	$e^+e^- \to \Upsilon(4S)$
0.023 ±0.006 ±0.005	BORTOLETTO	86	CLEO	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\phi K^*(892))/\Gamma_{total}$ — Γ_{96}/Γ

NODE=S049R46

VALUE	CL%	DOCUMENT ID		TECN
$<2.2 \times 10^{-5}$	90	[1] BERGFELD	98	CLE2

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S049R46;LINKAGE=EQ

$\Gamma(\pi^+ \text{ gluon (charmless)})/\Gamma_{total}$ — Γ_{98}/Γ

NODE=S049R86

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
$3.72^{+0.50}_{-0.47}\pm0.59$	[1] DEL-AMO-SA...	11	BABR	$e^+e^- \to \Upsilon(4S)$

[1] $B \to \pi^+ X$ with $m_X < 1.71$ GeV/c^2.

NODE=S049R86;LINKAGE=DA

$\Gamma(\Lambda_c^+ / \overline{\Lambda}_c^- \text{ anything})/\Gamma_{total}$ — Γ_{99}/Γ

NODE=S049S16

VALUE (%)	CL%	DOCUMENT ID		TECN	COMMENT
3.55±0.35 OUR AVERAGE [(3.6 ± 0.4)% OUR 2024 AVERAGE]					
3.55±0.32±0.14		[1] AUBERT	07C	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
6.4 ±0.8 ±0.8		[2] CRAWFORD	92	CLEO	$e^+e^- \to \Upsilon(4S)$
14 ±9		[3] ALBRECHT	88E	ARG	$e^+e^- \to \Upsilon(4S)$
<11.2	90	[4] ALAM	87	CLEO	$e^+e^- \to \Upsilon(4S)$

NEW

[1] AUBERT 07C reports 0.045 ± 0.003 ± 0.012 from a measurement of $[\Gamma(B \to \Lambda_c^+ / \overline{\Lambda}_c^- \text{ anything})/\Gamma_{total}] \times [B(\Lambda_c^+ \to pK^-\pi^+)]$ assuming $B(\Lambda_c^+ \to pK^-\pi^+) = (5.0 \pm 1.3) \times 10^{-2}$, which we rescale to our best value $B(\Lambda_c^+ \to pK^-\pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S049S16;LINKAGE=AU

[2] CRAWFORD 92 result derived from lepton baryon correlations. Assumes all charmed baryons in B^0 and $B^\pm$ decay are Λ_c.

NODE=S049S16;LINKAGE=D

[3] ALBRECHT 88E measured $B(B \to \Lambda_c^+ X) \cdot B(\Lambda_c^+ \to pK^-\pi^+) = (0.30 \pm 0.12 \pm 0.06)\%$ and used $B(\Lambda_c^+ \to pK^-\pi^+) = (2.2 \pm 1.0)\%$ from ABRAMS 80 to obtain above number.

NODE=S049S16;LINKAGE=B

[4] Assuming all baryons result from charmed baryons, ALAM 86 conclude the branching fraction is 7.4 ± 2.9%. The limit given above is model independent.

NODE=S049S16;LINKAGE=A

$\Gamma(\Lambda_c^+ \text{ anything})/\Gamma(\overline{\Lambda}_c^- \text{ anything})$ — $\Gamma_{100}/\Gamma_{101}$

NODE=S049R41

VALUE	DOCUMENT ID		TECN	COMMENT
0.19±0.13±0.04	[1] AMMAR	97	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] AMMAR 97 uses a high-momentum lepton tag ($P_\ell > 1.4$ GeV/c^2).

NODE=S049R41;LINKAGE=A

$\Gamma(\overline{\Lambda}_c^- \mu^+ \text{ anything})/\Gamma(\overline{\Lambda}_c^- \text{ anything})$ — $\Gamma_{104}/\Gamma_{101}$

NODE=S049R03

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
−2.0±2.0±1.9	LEES	12	BABR	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\overline{\Lambda}_c^- \ell^+ \text{ anything})/\Gamma(\Lambda_c^+ / \overline{\Lambda}_c^- \text{ anything})$ — Γ_{102}/Γ_{99}

NODE=S049R04

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.5 \times 10^{-2}$	90	[1] LEES	12	BABR	$e^+e^- \to \Upsilon(4S)$

[1] LEES 12 quotes also the measurement $\Gamma(B \to \overline{\Lambda}_c^- \ell^+ \text{ anything})/\Gamma(B \to \Lambda_c^+ / \overline{\Lambda}_c^- \text{ anything}) = (1.2 \pm 0.7 \pm 0.4) \times 10^{-2}$.

NODE=S049R04;LINKAGE=LE

$\Gamma(\overline{\Lambda}_c^- e^+ \text{ anything})/\Gamma(\Lambda_c^+ / \overline{\Lambda}_c^- \text{ anything})$ — Γ_{103}/Γ_{99}

NODE=S049R28

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.05	90	[1] BONVICINI	98	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] BONVICINI 98 uses the electron with momentum above 0.6 GeV/c.

NODE=S049R28;LINKAGE=A

$\Gamma(\overline{\Lambda}_c^- e^+ \text{ anything})/\Gamma(\overline{\Lambda}_c^- \text{ anything})$ — $\Gamma_{103}/\Gamma_{101}$

NODE=S049R01

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
2.5±1.1±0.6	[1] LEES	12	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Uses the full reconstruction of the recoiling B in a hadronic decay as a tag.

NODE=S049R01;LINKAGE=LE

$\Gamma(\overline{\Lambda}_c^- \ell^+ \text{anything})/\Gamma(\overline{\Lambda}_c^- \text{anything})$ — $\Gamma_{102}/\Gamma_{101}$

NODE=S049R02

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.5 \times 10^{-2}$	90	[1] LEES	12	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] LEES 12 quotes also the measurement $\Gamma(B \rightarrow \overline{\Lambda}_c^- \ell^+ \text{anything})/\Gamma(B \rightarrow \overline{\Lambda}_c^- \text{anything}) = (1.7 \pm 1.0 \pm 0.6) \times 10^{-2}$.

NODE=S049R02;LINKAGE=LE

$\Gamma(\overline{\Lambda}_c^- p \text{ anything})/\Gamma(\Lambda_c^+ / \overline{\Lambda}_c^- \text{anything})$ — Γ_{105}/Γ_{99}

NODE=S049R29

VALUE	DOCUMENT ID		TECN	COMMENT
$0.57 \pm 0.05 \pm 0.05$	BONVICINI	98	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

$\Gamma(\overline{\Lambda}_c^- p e^+ \nu_e)/\Gamma(\overline{\Lambda}_c^- p \text{ anything})$ — $\Gamma_{106}/\Gamma_{105}$

NODE=S049R30

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.04	90	[1] BONVICINI	98	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] BONVICINI 98 uses the electron with momentum above 0.6 GeV/c.

NODE=S049R30;LINKAGE=A

$\Gamma(\overline{\Sigma}_c^{--} \text{anything})/\Gamma_{\text{total}}$ — Γ_{107}/Γ

NODE=S049S78

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.0033 ± 0.0017 OUR AVERAGE	[0.0034 ± 0.0017 OUR 2024 AVERAGE]				
$0.0033 \pm 0.0017 \pm 0.0001$	77	[1] PROCARIO	94	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

NEW

[1] PROCARIO 94 reports $[\Gamma(B \rightarrow \overline{\Sigma}_c^{--} \text{anything})/\Gamma_{\text{total}}] \times [B(\Lambda_c^+ \rightarrow p K^- \pi^+)] = 0.00021 \pm 0.00008 \pm 0.00007$ which we divide by our best value $B(\Lambda_c^+ \rightarrow p K^- \pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S049S78;LINKAGE=A

$\Gamma(\overline{\Sigma}_c^- \text{anything})/\Gamma_{\text{total}}$ — Γ_{108}/Γ

NODE=S049S79

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<8 \times 10^{-3}$	90	[1] PROCARIO	94	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] PROCARIO 94 reports $[\Gamma(B \rightarrow \overline{\Sigma}_c^- \text{anything})/\Gamma_{\text{total}}] \times [B(\Lambda_c^+ \rightarrow p K^- \pi^+)] < 0.00048$ which we divide by our best value $B(\Lambda_c^+ \rightarrow p K^- \pi^+) = 6.35 \times 10^{-2}$.

NODE=S049S79;LINKAGE=A

$\Gamma(\overline{\Sigma}_c^0 \text{anything})/\Gamma_{\text{total}}$ — Γ_{109}/Γ

NODE=S049S80

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.0036 ± 0.0017 OUR AVERAGE	[0.0037 ± 0.0017 OUR 2024 AVERAGE]				
$0.0036 \pm 0.0017 \pm 0.0001$	76	[1] PROCARIO	94	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

NEW

[1] PROCARIO 94 reports $[\Gamma(B \rightarrow \overline{\Sigma}_c^0 \text{anything})/\Gamma_{\text{total}}] \times [B(\Lambda_c^+ \rightarrow p K^- \pi^+)] = 0.00023 \pm 0.00008 \pm 0.00007$ which we divide by our best value $B(\Lambda_c^+ \rightarrow p K^- \pi^+) = (6.35 \pm 0.25) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S049S80;LINKAGE=A

$\Gamma(\overline{\Sigma}_c^0 N(N = p \text{ or } n))/\Gamma_{\text{total}}$ — Γ_{110}/Γ

NODE=S049S82

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.2 \times 10^{-3}$	90	[1] PROCARIO	94	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] PROCARIO 94 reports < 0.0017 from a measurement of $[\Gamma(B \rightarrow \overline{\Sigma}_c^0 N(N = p \text{ or } n))/\Gamma_{\text{total}}] \times [B(\Lambda_c^+ \rightarrow p K^- \pi^+)]$ assuming $B(\Lambda_c^+ \rightarrow p K^- \pi^+) = 0.043$, which we rescale to our best value $B(\Lambda_c^+ \rightarrow p K^- \pi^+) = 6.35 \times 10^{-2}$.

NODE=S049S82;LINKAGE=A

$\Gamma(\Xi_c^0 \text{anything}, \Xi_c^0 \rightarrow \Xi^- \pi^+)/\Gamma_{\text{total}}$ — Γ_{111}/Γ

NODE=S049R42

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
0.193 ± 0.030 OUR AVERAGE	Error includes scale factor of 1.1.			
$0.211 \pm 0.019 \pm 0.025$	[1] AUBERT,B	05M	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
$0.144 \pm 0.048 \pm 0.021$	[2] BARISH	97	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] The yield is obtained by requiring the momentum P < 2.15 GeV/c.

NODE=S049R42;LINKAGE=AU

[2] BARISH 97 find 79 ± 27 Ξ_c^0 events.

NODE=S049R42;LINKAGE=A

$\Gamma(\Xi_c^+, \Xi_c^+ \rightarrow \Xi^- \pi^+ \pi^+)/\Gamma_{\text{total}}$ — Γ_{112}/Γ

NODE=S049R43

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
$0.453 \pm 0.096^{+0.085}_{-0.065}$	[1] BARISH	97	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] BARISH 97 find 125 ± 28 Ξ_c^+ events.

NODE=S049R43;LINKAGE=A

$\Gamma(p/\overline{p}$ anything$)/\Gamma_{total}$ — Γ_{113}/Γ

NODE=S049S9

Includes p and $\overline{p}$ from Λ and $\overline{\Lambda}$ decay.

NODE=S049S9
NODE=S049S9

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.080±0.004 OUR AVERAGE					
0.080±0.005±0.005		ALBRECHT	93I	ARG	$e^+e^- \to \Upsilon(4S)$
0.080±0.005±0.003		CRAWFORD	92	CLEO	$e^+e^- \to \Upsilon(4S)$
$0.082\pm0.005^{+0.013}_{-0.010}$	2163	[1] ALBRECHT	89K	ARG	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
>0.021		[2] ALAM	83B	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] ALBRECHT 89K include direct and nondirect protons.

NODE=S049S9;LINKAGE=AK

[2] ALAM 83B reported their result as > 0.036 ± 0.006 ± 0.009. Data are consistent with equal yields of p and $\overline{p}$. Using assumed yields below cut, B($B \to p+$ X) = 0.03 not including protons from Λ decays.

NODE=S049S9;LINKAGE=A

$\Gamma(p/\overline{p}$ (direct) anything$)/\Gamma_{total}$ — Γ_{114}/Γ

NODE=S049S30
NODE=S049S30

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.055±0.005 OUR AVERAGE					
0.055±0.005±0.0035		ALBRECHT	93I	ARG	$e^+e^- \to \Upsilon(4S)$
0.056±0.006±0.005		CRAWFORD	92	CLEO	$e^+e^- \to \Upsilon(4S)$
0.055±0.016	1220	[1] ALBRECHT	89K	ARG	$e^+e^- \to \Upsilon(4S)$

[1] ALBRECHT 89K subtract contribution of Λ decay from the inclusive proton yield.

NODE=S049S30;LINKAGE=AK

$\Gamma(\overline{p}e^+\nu_e$ anything$)/\Gamma_{total}$ — Γ_{115}/Γ

NODE=S049S38
NODE=S049S38

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$< 5.9 \times 10^{-4}$	90	[1] ADAM	03B	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<16 \times 10^{-4}$	90	ALBRECHT	90H	ARG	$e^+e^- \to \Upsilon(4S)$

[1] Based on $V-A$ model.

NODE=S049S38;LINKAGE=VA

$\Gamma(\Lambda/\overline{\Lambda}$ anything$)/\Gamma_{total}$ — Γ_{116}/Γ

NODE=S049S10
NODE=S049S10

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.040±0.005 OUR AVERAGE					
0.038±0.004±0.006	2998	CRAWFORD	92	CLEO	$e^+e^- \to \Upsilon(4S)$
0.042±0.005±0.006	943	ALBRECHT	89K	ARG	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.022±0.003±0.0022		[1] ACKERSTAFF	97N	OPAL	$e^+e^- \to Z$
>0.011		[2] ALAM	83B	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] ACKERSTAFF 97N assumes B($b \to B$) = 0.868 ± 0.041, *i.e.*, an admixture of B^0, $B^{\pm}$, and B_s.

NODE=S049S10;LINKAGE=AN

[2] ALAM 83B reported their result as > 0.022 ± 0.007 ± 0.004. Values are for (B(ΛX)+B($\overline{\Lambda}$X))/2. Data are consistent with equal yields of p and $\overline{p}$. Using assumed yields below cut, B($B \to \Lambda$X) = 0.03.

NODE=S049S10;LINKAGE=A

$\Gamma(\Lambda$ anything$)/\Gamma(\overline{\Lambda}$ anything$)$ — $\Gamma_{117}/\Gamma_{118}$

NODE=S049R40
NODE=S049R40

VALUE	DOCUMENT ID		TECN	COMMENT
0.43±0.09±0.07	[1] AMMAR	97	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] AMMAR 97 uses a high-momentum lepton tag ($P_\ell > 1.4$ GeV/c^2).

NODE=S049R40;LINKAGE=A

$\Gamma(\Xi^-/\overline{\Xi}^+$ anything$)/\Gamma_{total}$ — Γ_{119}/Γ

NODE=S049S31
NODE=S049S31

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.0027±0.0006 OUR AVERAGE					
0.0027±0.0005±0.0004	147	CRAWFORD	92	CLEO	$e^+e^- \to \Upsilon(4S)$
0.0028±0.0014	54	ALBRECHT	89K	ARG	$e^+e^- \to \Upsilon(4S)$

$\Gamma($baryons anything$)/\Gamma_{total}$ — Γ_{120}/Γ

NODE=S049S32
NODE=S049S32

VALUE	DOCUMENT ID		TECN	COMMENT
0.068±0.005±0.003	[1] ALBRECHT	92O	ARG	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.076±0.014	[2] ALBRECHT	89K	ARG	$e^+e^- \to \Upsilon(4S)$

[1] ALBRECHT 92O result is from simultaneous analysis of p and Λ yields, $p\overline{p}$ and $\Lambda\overline{p}$ correlations, and various lepton-baryon and lepton-baryon-antibaryon correlations. Supersedes ALBRECHT 89K.

NODE=S049S32;LINKAGE=A

[2] ALBRECHT 89K obtain this result by adding their their measurements (5.5 ± 1.6)% for direct protons and (4.2 ± 0.5 ± 0.6)% for inclusive Λ production. They then assume (5.5 ± 1.6)% for neutron production and add it in also. Since each B decay has two baryons, they divide by 2 to obtain (7.6 ± 1.4)%.

NODE=S049S32;LINKAGE=AK

$\Gamma(p\overline{p}$ anything$)/\Gamma_{total}$ — Γ_{121}/Γ

NODE=S049S33

Includes p and $\overline{p}$ from Λ and $\overline{\Lambda}$ decay.

NODE=S049S33
NODE=S049S33

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.0247±0.0023 OUR AVERAGE					
0.024 ±0.001 ±0.004		CRAWFORD	92	CLEO	$e^+e^- \to \Upsilon(4S)$
0.025 ±0.002 ±0.002	918	ALBRECHT	89K	ARG	$e^+e^- \to \Upsilon(4S)$

$\Gamma(p\overline{p}$ anything$)/\Gamma(p/\overline{p}$ anything$)$ — $\Gamma_{121}/\Gamma_{113}$

NODE=S049S44

Includes p and $\overline{p}$ from Λ and $\overline{\Lambda}$ decay.

NODE=S049S44
NODE=S049S44

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.30±0.02±0.05	[1] CRAWFORD	92	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] CRAWFORD 92 value is not independent of their $\Gamma(p\overline{p}$anything$)/\Gamma_{total}$ value.

NODE=S049S44;LINKAGE=AA

$\Gamma(\Lambda\overline{p}/\overline{\Lambda}p$ anything$)/\Gamma_{total}$ — Γ_{122}/Γ

NODE=S049S34

Includes p and $\overline{p}$ from Λ and $\overline{\Lambda}$ decay.

NODE=S049S34
NODE=S049S34

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.025±0.004 OUR AVERAGE					
0.029±0.005±0.005		CRAWFORD	92	CLEO	$e^+e^- \to \Upsilon(4S)$
0.023±0.004±0.003	165	ALBRECHT	89K	ARG	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\Lambda\overline{p}/\overline{\Lambda}p$ anything$)/\Gamma(\Lambda/\overline{\Lambda}$ anything$)$ — $\Gamma_{122}/\Gamma_{116}$

NODE=S049S43

Includes p and $\overline{p}$ from Λ and $\overline{\Lambda}$ decay.

NODE=S049S43
NODE=S049S43

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.76±0.11±0.08	[1] CRAWFORD	92	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] CRAWFORD 92 value is not independent of their $[\Gamma(\Lambda\overline{p}$anything$)+\Gamma(\overline{\Lambda}p$anything$)]/\Gamma_{total}$ value.

NODE=S049S43;LINKAGE=AA

$\Gamma(\Lambda\overline{\Lambda}$ anything$)/\Gamma_{total}$ — Γ_{123}/Γ

NODE=S049S35
NODE=S049S35

VALUE	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
<0.005	90		CRAWFORD	92	CLEO	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<0.0088	90	12	ALBRECHT	89K	ARG	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\Lambda\overline{\Lambda}$ anything$)/\Gamma(\Lambda/\overline{\Lambda}$ anything$)$ — $\Gamma_{123}/\Gamma_{116}$

NODE=S049S42
NODE=S049S42

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.13	90	[1] CRAWFORD	92	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] CRAWFORD 92 value is not independent of their $\Gamma(\Lambda\overline{\Lambda}$anything$)/\Gamma_{total}$ value.

NODE=S049S42;LINKAGE=AA

$\Gamma(se^+e^-)/\Gamma_{total}$ — Γ_{124}/Γ

NODE=S049S3

Test for $\Delta B = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

NODE=S049S3

NODE=S049S3

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
6.7 ±1.7 OUR AVERAGE		Error includes scale factor of 2.0.			
$7.69^{+0.82+0.71}_{-0.77-0.60}$		[1] LEES	14D	BABR	$e^+e^- \to \Upsilon(4S)$
$4.04\pm1.30^{+0.87}_{-0.83}$		[2] IWASAKI	05	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
6.0 ±1.7 ±1.3		[2] AUBERT,B	04I	BABR	Repl. by LEES 14D
$5.0\pm2.3^{+1.3}_{-1.1}$		[2] KANEKO	03	BELL	Repl. by IWASAKI 05
< 57	90	GLENN	98	CLEO	$e^+e^- \to \Upsilon(4S)$
<50000	90	BEBEK	81	CLEO	$e^+e^- \to \Upsilon(4S)$

[1] Measured from sum of exclusive modes through K^+, $K^+\pi^0$, $K^+\pi^-$, $K^+\pi^-\pi^0$, $K^+\pi^-\pi^+$, K^0_S, $K^0_S\pi^0$, $K^0_S\pi^+$, $K^0_S\pi^+\pi^0$, and $K^0_S\pi^+\pi^-$ corrected for unobserved modes.

NODE=S049S3;LINKAGE=A

[2] Requires $M_{\ell^+\ell^-} > 0.2$ GeV/c^2.

NODE=S049S3;LINKAGE=IW

$\Gamma(s\mu^+\mu^-)/\Gamma_{total}$ Γ_{125}/Γ

NODE=S049S4

Test for $\Delta B = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
4.3 ±1.0 OUR AVERAGE					
$4.41^{+1.31}_{-1.17}{}^{+0.63}_{-0.50}$		[1] LEES	14D	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$4.13 \pm 1.05^{+0.85}_{-0.81}$		[2] IWASAKI	05	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$5.0 \pm 2.8 \pm 1.2$		AUBERT,B	04I	BABR	Repl. by LEES 14D
$7.9 \pm 2.1 {}^{+2.1}_{-1.5}$		KANEKO	03	BELL	Repl. by IWASAKI 05
<58	90	GLENN	98	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$
<17000	90	CHADWICK	81	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Measured from sum of exclusive modes through K^+, $K^+\pi^0$, $K^+\pi^-$, $K^+\pi^-\pi^0$, $K^+\pi^-\pi^+$, K^0_S, $K^0_S\pi^0$, $K^0_S\pi^+$, $K^0_S\pi^+\pi^0$, and $K^0_S\pi + \pi^-$ corrected for unobserved modes.

[2] Requires $M_{\ell^+\ell^-} > 0.2$ GeV/c^2.

NODE=S049S4;LINKAGE=B

NODE=S049S4;LINKAGE=IW

$[\Gamma(se^+e^-) + \Gamma(s\mu^+\mu^-)]/\Gamma_{total}$ $(\Gamma_{124}+\Gamma_{125})/\Gamma$

NODE=S049S5

Test for $\Delta B = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<4.2 × 10^{-5}	90	GLENN	98	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.0024	90	[1] BEAN	87	CLEO	Repl. by GLENN 98
<0.0062	90	[2] AVERY	84	CLEO	Repl. by BEAN 87

[1] BEAN 87 reports $[(\mu^+\mu^-)+(e^+e^-)]/2$ and we converted it.

[2] Determine ratio of B^+ to B^0 semileptonic decays to be in the range 0.25–2.9.

NODE=S049S5;LINKAGE=B

NODE=S049S5;LINKAGE=A

$\Gamma(s\ell^+\ell^-)/\Gamma_{total}$ Γ_{126}/Γ

NODE=S049R72

Test for $\Delta B = 1$ weak neutral current.

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
5.8 ±1.3 OUR AVERAGE Error includes scale factor of 1.8.				
$6.73^{+0.70}_{-0.64}{}^{+0.60}_{-0.56}$	[1] LEES	14D	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$4.11 \pm 0.83^{+0.85}_{-0.81}$	[2] IWASAKI	05	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$5.6 \pm 1.5 \pm 1.3$	[3] AUBERT,B	04I	BABR	Repl. by LEES 14D
$6.1 \pm 1.4 {}^{+1.4}_{-1.1}$	[3] KANEKO	03	BELL	Repl. by IWASAKI 05

[1] Measured from sum of exclusive modes through K^+, $K^+\pi^0$, $K^+\pi^-$, $K^+\pi^-\pi^0$, $K^+\pi^-\pi^+$, K^0_S, $K^0_S\pi^0$, $K^0_S\pi^+$, $K^0_S\pi^+\pi^0$, and $K^0_S\pi + \pi^-$ corrected for unobserved modes.

[2] Requires $M_{\ell^+\ell^-} > 0.2$ GeV/c^2.

[3] Requires $M_{e^+e^-} > 0.2$ GeV/c^2.

NODE=S049R72;LINKAGE=A

NODE=S049R72;LINKAGE=IW

NODE=S049R72;LINKAGE=KN

$\Gamma(\pi\ell^+\ell^-)/\Gamma_{total}$ Γ_{127}/Γ

NODE=S049R78

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<5.9 × 10^{-8}	90	[1] LEES	13M	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<6.2 × 10^{-8}	90	[1] WEI	08A	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
<9.1 × 10^{-8}	90	[1] AUBERT	07AG	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S049R78;LINKAGE=EP

$\Gamma(\pi e^+e^-)/\Gamma_{total}$ Γ_{128}/Γ

NODE=S049R87

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<11.0 × 10^{-8}	90	[1] LEES	13M	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S049R87;LINKAGE=EP

$\Gamma(\pi\mu^+\mu^-)/\Gamma_{total}$ Γ_{129}/Γ

NODE=S049R88

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<5.0 × 10^{-8}	90	[1] LEES	13M	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S049R88;LINKAGE=EP

$\Gamma(K e^+ e^-)/\Gamma_{total}$ Γ_{130}/Γ

NODE=S049R57

Test for $\Delta B = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE (units 10^{-7})	CL%	DOCUMENT ID		TECN	COMMENT
4.4±0.6 OUR AVERAGE					
$3.9^{+0.9}_{-0.8}\pm0.2$		[1] AUBERT	09T	BABR	$e^+e^- \to \Upsilon(4S)$
$4.8^{+0.8}_{-0.7}\pm0.3$		[1] WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$3.3^{+0.9}_{-0.8}\pm0.2$		[1] AUBERT,B	06J	BABR	Repl. by AUBERT 09T
$7.4^{+1.8}_{-1.6}\pm0.5$		[1] AUBERT	03U	BABR	Repl. by AUBERT,B 06J
$4.8^{+1.5}_{-1.3}\pm0.3$		[1,2] ISHIKAWA	03	BELL	Repl. by WEI 09A
<13	90	ABE	02	BELL	Repl. by ISHIKAWA 03

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] The second error is a total of systematic uncertainties including model dependence.

NODE=S049R57;LINKAGE=EP
NODE=S049R57;LINKAGE=IS

$\Gamma(K^*(892) e^+ e^-)/\Gamma_{total}$ Γ_{131}/Γ

NODE=S049R58

Test for $\Delta B = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE (units 10^{-7})	CL%	DOCUMENT ID		TECN	COMMENT
11.9±2.0 OUR AVERAGE Error includes scale factor of 1.2.					
$9.9^{+2.3}_{-2.1}\pm0.6$		[1] AUBERT	09T	BABR	$e^+e^- \to \Upsilon(4S)$
$13.9^{+2.3}_{-2.0}\pm1.2$		[1] WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$9.7^{+3.0}_{-2.7}\pm1.4$		[1] AUBERT,B	06J	BABR	Repl. by AUBERT 09T
$9.8^{+5.0}_{-4.2}\pm1.1$		[1] AUBERT	03U	BABR	Repl. by AUBERT,B 06J
$14.9^{+5.2}_{-4.6}{}^{+1.2}_{-1.3}$		[2] ISHIKAWA	03	BELL	Repl. by WEI 09A
<56	90	ABE	02	BELL	Repl. by ISHIKAWA 03

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. The second error is a total of systematic uncertainties including model dependence.

NODE=S049R58;LINKAGE=EP
NODE=S049R58;LINKAGE=IS

$\Gamma(K \mu^+ \mu^-)/\Gamma_{total}$ Γ_{132}/Γ

NODE=S049R59

Test for $\Delta B = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
4.4±0.4 OUR AVERAGE				
4.2±0.4±0.2	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV
$4.1^{+1.3}_{-1.2}\pm0.2$	[1] AUBERT	09T	BABR	$e^+e^- \to \Upsilon(4S)$
5.0±0.6±0.3	[1] WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$3.5^{+1.3}_{-1.1}\pm0.3$	[1] AUBERT,B	06J	BABR	Repl. by AUBERT 09T
$4.5^{+2.3}_{-1.9}\pm0.4$	[1] AUBERT	03U	BABR	Repl. by AUBERT,B 06J
$4.8^{+1.2}_{-1.1}\pm0.4$	[1,2] ISHIKAWA	03	BELL	Repl. by WEI 09A
$9.9^{+4.0}_{-3.2}{}^{+1.3}_{-1.0}$	ABE	02	BELL	Repl. by ISHIKAWA 03

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[2] The second error is a total of systematic uncertainties including model dependence.

NODE=S049R59;LINKAGE=EP
NODE=S049R59;LINKAGE=IS

$\Gamma(K \mu^+ \mu^-)/\Gamma(K e^+ e^-)$ $\Gamma_{132}/\Gamma_{130}$

NODE=S049R76

VALUE	DOCUMENT ID		TECN	COMMENT
$1.01^{+0.19}_{-0.16}$ OUR AVERAGE				
$1.03^{+0.28}_{-0.24}\pm0.01$	[1] CHOUDHURY	21	BELL	$e^+e^- \to \Upsilon(4S)$
$1.00^{+0.31}_{-0.25}\pm0.07$	[2] LEES	12S	BABR	$e^+e^- \to \Upsilon(4S)$
$0.96^{+0.44}_{-0.34}\pm0.05$	AUBERT	09T	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				

$1.03\pm0.19\pm0.06$		[3] WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
$1.06\pm0.48\pm0.08$		AUBERT,B	06J	BABR	Repl. by AUBERT 09T

[1] For $1.0 < q^2 < 6.0$ GeV^2/c^4. Measurements in other q^2 bins are also reported. NODE=S049R76;LINKAGE=A

[2] Measured in the union of $0.10 < q^2 < 8.12$ GeV^2/c^4 and $q^2 > 10.11$ GeV^2/c^4. LEES 12S reports also individual measurements $\Gamma(B \to K\mu^+\mu^-)/\Gamma(B \to Ke^+e^-) = 0.74^{+0.40}_{-0.31} \pm 0.06$ for $0.10 < q^2 < 8.12$ GeV^2/c^4 and $\Gamma(B \to K\mu^+\mu^-)/\Gamma(B \to Ke^+e^-) = 1.43^{+0.65}_{-0.44} \pm 0.12$ for $q^2 > 10.11$ GeV^2/c^4. NODE=S049R76;LINKAGE=LE

[3] Superseded by CHOUDHURY 21. NODE=S049R76;LINKAGE=B

$\Gamma(K^*(892)\mu^+\mu^-)/\Gamma_{total}$ Γ_{133}/Γ

NODE=S049R60

Test for $\Delta B = 1$ weak neutral current. Allowed by higher-order electroweak interactions. NODE=S049R60

NODE=S049R60

VALUE (units 10^{-7})	CL%	DOCUMENT ID		TECN	COMMENT
10.6±0.9 OUR AVERAGE					
$10.1\pm1.0\pm0.5$		AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV
$13.5^{+3.5}_{-3.3}\pm1.0$		[1] AUBERT	09T	BABR	$e^+e^- \to \Upsilon(4S)$
$11.0^{+1.6}_{-1.4}\pm0.8$		[1] WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$8.8^{+3.5}_{-3.0}\pm1.2$		[1] AUBERT,B	06J	BABR	Repl. by AUBERT 09T
$12.7^{+7.6}_{-6.1}\pm1.6$		[1] AUBERT	03U	BABR	Repl. by AUBERT,B 06J
$11.7^{+3.6}_{-3.1}\pm1.0$		[2] ISHIKAWA	03	BELL	Repl. by WEI 09A
<31	90	ABE	02	BELL	Repl. by ISHIKAWA 03

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S049R60;LINKAGE=EP

[2] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. The second error is a total of systematic uncertainties including model dependence. NODE=S049R60;LINKAGE=IS

$\Gamma(K^*(892)\mu^+\mu^-)/\Gamma(K^*(892)e^+e^-)$ $\Gamma_{133}/\Gamma_{131}$

NODE=S049R77

NODE=S049R77

VALUE	DOCUMENT ID		TECN	COMMENT
0.98±0.15 OUR AVERAGE				
$1.13^{+0.34}_{-0.26}\pm0.10$	[1] LEES	12S	BABR	$e^+e^- \to \Upsilon(4S)$
$1.37^{+0.53}_{-0.40}\pm0.09$	AUBERT	09T	BABR	$e^+e^- \to \Upsilon(4S)$
$0.83\pm0.17\pm0.08$	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.91\pm0.45\pm0.06$	AUBERT,B	06J	BABR	Repl. by AUBERT 09T

[1] Measured in the union of $0.10 < q^2 < 8.12$ GeV^2/c^4 and $q^2 > 10.11$ GeV^2/c^4. LEES 12S reports also individual measurements $\Gamma(B \to K^*(892)\mu^+\mu^-)/\Gamma(B \to K^*(892)e^+e^-) = 1.06^{+0.48}_{-0.33} \pm 0.08$ for $0.10 < q^2 < 8.12$ GeV^2/c^4 and $\Gamma(B \to K^*(892)\mu^+\mu^-)/\Gamma(B \to K^*(892)e^+e^-) = 1.18^{+0.55}_{-0.37} \pm 0.11$ for $q^2 > 10.11$ GeV^2/c^4. NODE=S049R77;LINKAGE=LE

$\Gamma(K\ell^+\ell^-)/\Gamma_{total}$ Γ_{134}/Γ

NODE=S049R61

Test for $\Delta B = 1$ weak neutral current. Allowed by higher-order electroweak interactions. NODE=S049R61

NODE=S049R61

VALUE (units 10^{-7})	CL%	DOCUMENT ID		TECN	COMMENT
4.8±0.4 OUR AVERAGE					
$4.7\pm0.6\pm0.2$		LEES	12S	BABR	$e^+e^- \to \Upsilon(4S)$
$4.8^{+0.5}_{-0.4}\pm0.3$		WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$3.9\pm0.7\pm0.2$		[1] AUBERT	09T	BABR	Repl. by LEES 12S
$3.4\pm0.7\pm0.2$		[1] AUBERT,B	06J	BABR	Repl. by AUBERT 09T
$6.5^{+1.4}_{-1.3}\pm0.4$		[2] AUBERT	03U	BABR	Repl. by AUBERT,B 06J
$4.8^{+1.0}_{-0.9}\pm0.3$		[3] ISHIKAWA	03	BELL	Repl. by WEI 09A
$7.5^{+2.5}_{-2.1}\pm0.6$		[4] ABE	02	BELL	Repl. by ISHIKAWA 03
<5.1	90	[1] AUBERT	02L	BABR	$e^+e^- \to \Upsilon(4S)$
<17	90	[5] ANDERSON	01B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S049R61;LINKAGE=EP
[2] Assumes all four $B \to K\ell^+\ell^-$ modes having equal partial widths in the fit. NODE=S049R61;LINKAGE=UA
[3] Assumes equal production rate for charge and neutral B meson pairs, isospin invariance, lepton universality for $B \to K\ell^+\ell^-$, and B($B \to K^*(892)\mu^+\mu^-$) = 1.33. The second error is total systematic uncertainties including model dependence. NODE=S049R61;LINKAGE=IK
[4] Assumes lepton universality. NODE=S049R61;LINKAGE=LU
[5] The result is for di-lepton masses above 0.5 GeV. NODE=S049R61;LINKAGE=A

$\Gamma(K^*(892)\ell^+\ell^-)/\Gamma_{total}$ Γ_{135}/Γ

NODE=S049R62

Test for $\Delta B = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

NODE=S049R62

NODE=S049R62

VALUE (units 10^{-7})	CL%	DOCUMENT ID		TECN	COMMENT
10.5±1.0 OUR AVERAGE					
$10.2^{+1.4}_{-1.3}\pm0.5$		LEES	12S	BABR	$e^+e^- \to \Upsilon(4S)$
$10.7^{+1.1}_{-1.0}\pm0.9$		WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$11.1^{+1.9}_{-1.8}\pm0.7$		[1] AUBERT	09T	BABR	Repl. by LEES 12S
$7.8^{+1.9}_{-1.7}\pm1.1$		[1] AUBERT,B	06J	BABR	Repl. by AUBERT 09T
$8.8^{+3.3}_{-2.9}\pm1.0$		[2] AUBERT	03U	BABR	Repl. by AUBERT,B 06J
$11.5^{+2.6}_{-2.4}\pm0.8$		[3] ISHIKAWA	03	BELL	Repl. by WEI 09A
<31	90	[1,4] AUBERT	02L	BABR	Repl. by AUBERT 03U
<33	90	[5] ANDERSON	01B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S049R62;LINKAGE=EP
[2] Assumes the partial width ratio of electron and muon modes to be $\Gamma(B \to K^*(892)e^+e^-)/\Gamma(B \to K^*(892)\mu^+\mu^-) = 1.33$. NODE=S049R62;LINKAGE=AU
[3] Assumes equal production rate for charge and neutral B meson pairs, isospin invariance, lepton universality for $B \to K\ell^+\ell^-$, and B($B \to K^*(892)\mu^+\mu^-$) = 1.33. The second error is total systematic uncertainties including model dependence. NODE=S049R62;LINKAGE=IK
[4] For averaging $K^*(892)\mu^+\mu^-$ and $K^*(892)e^+e^-$ modes, AUBERT 02L assumed B($B \to K^*(892)e^+e^-$)/B($B \to K^*(892)\mu^+\mu^-$) = 1.2. NODE=S049R62;LINKAGE=H3
[5] The result is for di-lepton masses above 0.5 GeV. NODE=S049R62;LINKAGE=A

$\Gamma(K\nu\overline{\nu})/\Gamma_{total}$ Γ_{136}/Γ

NODE=S049R83

Test for ΔB =1 weak neutral current.

NODE=S049R83

NODE=S049R83

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.6 × 10⁻⁵	90	[1] GRYGIER	17	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.7 \times 10^{-5}$	90	[1,2] LEES	13I	BABR	$e^+e^- \to \Upsilon(4S)$
$<1.4 \times 10^{-5}$	90	[1] DEL-AMO-SA...	10Q	BABR	Repl. by LEES 13I

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S049R83;LINKAGE=EP
[2] Also reported a limit $< 3.2 \times 10^{-5}$ at 90% CL obtained using a fully reconstructed hadronic B-tag evnets. NODE=S049R83;LINKAGE=LE

$\Gamma(K^*\nu\overline{\nu})/\Gamma_{total}$ Γ_{137}/Γ

NODE=S049R79

Test for ΔB =1 weak neutral current.

NODE=S049R79

NODE=S049R79

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.7 \times 10^{-5}$	90	[1] GRYGIER	17	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<7.6 \times 10^{-5}$	90	[1,2] LEES	13I	BABR	$e^+e^- \to \Upsilon(4S)$
$<8 \times 10^{-5}$	90	AUBERT	08BC	BABR	Repl. by LEES 13I

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S049R79;LINKAGE=EP
[2] Also reported a limit $< 7.9 \times 10^{-5}$ at 90% CL obtained using a fully reconstructed hadronic B-tag evnets. NODE=S049R79;LINKAGE=LE

$\Gamma(\pi\nu\overline{\nu})/\Gamma_{total}$ Γ_{138}/Γ

NODE=S049R00

NODE=S049R00

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<0.8 \times 10^{-5}$	90	[1] GRYGIER	17	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S049R00;LINKAGE=A

$\Gamma(\rho\nu\overline{\nu})/\Gamma_{total}$ Γ_{139}/Γ

NODE=S049R05

NODE=S049R05

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.8 \times 10^{-5}$	90	[1] GRYGIER	17	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S049R05;LINKAGE=A

$\Gamma(s e^{\pm} \mu^{\mp})/\Gamma_{total}$ — Γ_{140}/Γ

NODE=S049R33

Test for lepton family number conservation. Allowed by higher-order electroweak interactions.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<2.2 × 10^{-5}	90	GLENN	98	CLEO	$e^+ e^- \rightarrow \Upsilon(4S)$

$\Gamma(\pi e^{\pm} \mu^{\mp})/\Gamma_{total}$ — Γ_{141}/Γ

NODE=S049R67

Test of lepton family number conservation.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<9.2 × 10^{-8}	90	[1] AUBERT	07AG	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.6 \times 10^{-6}$	90	[1] EDWARDS	02B	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S049R67;LINKAGE=EP

$\Gamma(\rho e^{\pm} \mu^{\mp})/\Gamma_{total}$ — Γ_{142}/Γ

NODE=S049R68

Test of lepton family number conservation.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<3.2 × 10^{-6}	90	[1] EDWARDS	02B	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S049R68;LINKAGE=EP

$\Gamma(K e^{\pm} \mu^{\mp})/\Gamma_{total}$ — Γ_{143}/Γ

NODE=S049R65

Test of lepton family number conservation.

VALUE (units 10^{-7})	CL%	DOCUMENT ID		TECN	COMMENT
< 0.38	90	[1] AUBERT,B	06J	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<16	90	[1] EDWARDS	02B	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S049R65;LINKAGE=EP

$\Gamma(K^*(892) e^{\pm} \mu^{\mp})/\Gamma_{total}$ — Γ_{144}/Γ

NODE=S049R66

Test of lepton family number conservation.

VALUE (units 10^{-7})	CL%	DOCUMENT ID		TECN	COMMENT
< 5.1	90	[1] AUBERT,B	06J	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<62	90	[1] EDWARDS	02B	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

NODE=S049R66;LINKAGE=EP

CP VIOLATION

NODE=S049225

A_{CP} is defined as

$$\frac{B(\overline{B} \rightarrow \overline{f}) - B(B \rightarrow f)}{B(\overline{B} \rightarrow \overline{f}) + B(B \rightarrow f)},$$

the *CP*-violation charge asymmetry of inclusive $B^{\pm}$ and B^0 decay.

$A_{CP}(B \rightarrow K^*(892)\gamma)$

NODE=S049CP1

VALUE	DOCUMENT ID		TECN	COMMENT
−0.003±0.011 OUR AVERAGE				
−0.004±0.014±0.003	[1] HORIGUCHI	17	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
−0.003±0.017±0.007	[2] AUBERT	09AO	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
0.08 ±0.13 ±0.03	[3] COAN	00	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.013±0.036±0.010	[4] AUBERT,BE	04A	BABR	Repl. by AUBERT 09AO
−0.015±0.044±0.012	[3] NAKAO	04	BELL	Repl. by HORIGUCHI 17
−0.044±0.076±0.012	[5] AUBERT	02C	BABR	Repl. by AUBERT,BE 04A

[1] Uses B($\Upsilon(4S) \rightarrow B^+ B^-$) = (51.4 ± 0.6)% and B($\Upsilon(4S) \rightarrow B^0 \overline{B}^0$) = (48.6 ± 0.6)%. NODE=S049CP1;LINKAGE=A

[2] Corresponds to a 90% CL interval $-0.033 < A_{CP} < 0.028$. NODE=S049CP1;LINKAGE=AE

[3] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S049CP1;LINKAGE=EP

[4] Corresponds to a 90% CL allowed region, $-0.074 < A_{CP} < 0.049$. NODE=S049CP1;LINKAGE=AU

[5] A 90% CL range is $-0.170 < A_{CP} < 0.082$. NODE=S049CP1;LINKAGE=C7

$A_{CP}(B \to s\gamma)$

NODE=S049CP2

VALUE	DOCUMENT ID		TECN	COMMENT
0.015 ±0.011 OUR AVERAGE				
0.0144±0.0128±0.0011	[1] WATANUKI	19	BELL	$e^+e^- \to \Upsilon(4S)$
0.017 ±0.019 ±0.010	[2] LEES	14K	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.011 ±0.030 ±0.014	[3] AUBERT	08BJ	BABR	Repl. by LEES 14K
0.025 ±0.050 ±0.015	[4] AUBERT,B	04E	BABR	Repl. by AUBERT 08BJ
0.002 ±0.050 ±0.030	[5] NISHIDA	04	BELL	Repl. by WATANUKI 19

[1] Using a sum-of-exclusive technique with $m_{X_s} < 2.8$ GeV/c^2. NODE=S049CP2;LINKAGE=C

[2] Measured with 16 exclusively reconstructed $B \to X_s\gamma$ decays with $0.6 < m_{X_s} < 2.0$ GeV/c^2 (ten charged and six neutral self-tagging B modes). NODE=S049CP2;LINKAGE=B

[3] Uses a sum of exclusively reconstructed $B \to X_s$ decay modes, with X_s mass between 0.6 and 2.8 GeV/c^2. NODE=S049CP2;LINKAGE=BE

[4] Corresponds to $-0.06 < A_{CP} < 0.11$ at 90% CL. NODE=S049CP2;LINKAGE=AU

[5] This measurement is performed inclusively for recoil mass X_s less than 2.1 GeV, which corresponds to $-0.093 < A_{CP} < 0.096$ at 90% CL. NODE=S049CP2;LINKAGE=NI

$A_{CP}(B \to (s+d)\gamma)$

NODE=S049CP4

VALUE	DOCUMENT ID		TECN	COMMENT
0.010±0.031 OUR AVERAGE				
0.022±0.039±0.009	[1] PESANTEZ	15	BELL	$e^+e^- \to \Upsilon(4S)$
0.057±0.060±0.018	LEES	12V	BABR	$e^+e^- \to \Upsilon(4S)$
−0.10 ±0.18 ±0.05	[2] AUBERT	08O	BABR	$e^+e^- \to \Upsilon(4S)$
−0.110±0.115±0.017	AUBERT,BE	06B	BABR	$e^+e^- \to \Upsilon(4S)$
−0.079±0.108±0.022	[3] COAN	01	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. Uses an opposite side lepton tag. Requires center-of-mass frame $E_\gamma > 2.1$ GeV. NODE=S049CP4;LINKAGE=B

[2] Uses a fully reconstructed B meson as a tag on the recoil side. Requires $E_\gamma > 2.2$ GeV. NODE=S049CP4;LINKAGE=UB

[3] Corresponds to $-0.27 < A_{CP} < 0.10$ at 90% CL. NODE=S049CP4;LINKAGE=A

$A_{CP}(B \to X_s\ell^+\ell^-)$

NODE=S049CP3

VALUE	DOCUMENT ID		TECN	COMMENT
0.04±0.11±0.01	[1] LEES	14D	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−0.22±0.26±0.02	[2] AUBERT,B	04I	BABR	Repl. by LEES 14D

[1] Measured from sum of exclusive modes through K^+, $K^+\pi^0$, $K^+\pi^-$, $K^+\pi^-\pi^0$, $K^+\pi^-\pi^+$, $K^0_S\pi^+$, and $K^0_S\pi^+\pi^0$. NODE=S049CP3;LINKAGE=A

[2] The final state flavor is determined by the kaon and pion charges where modes with $X_s = K^0_S$, $K^0_S\pi^0$ or $K^0_S\pi^+\pi^-$ are not used. NODE=S049CP3;LINKAGE=AU

$A_{CP}(B \to X_s\ell^+\ell^-)$ ($1.0 < q^2 < 6.0$ GeV^2/c^4)

NODE=S049CP9

VALUE	DOCUMENT ID		TECN	COMMENT
−0.06±0.22±0.01	[1] LEES	14D	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Measured from sum of exclusive modes through K^+, $K^+\pi^0$, $K^+\pi^-$, $K^+\pi^-\pi^0$, $K^+\pi^-\pi^+$, $K^0_S\pi^+$, and $K^0_S\pi^+\pi^0$. NODE=S049CP9;LINKAGE=A

$A_{CP}(B \to X_s\ell^+\ell^-)$ ($10.1 < q^2 < 12.9$ or $q^2 > 14.2$ GeV^2/c^4)

NODE=S049CPA

VALUE	DOCUMENT ID		TECN	COMMENT
$0.19^{+0.18}_{-0.17}$±0.01	[1] LEES	14D	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Measured from sum of exclusive modes through K^+, $K^+\pi^0$, $K^+\pi^-$, $K^+\pi^-\pi^0$, $K^+\pi^-\pi^+$, $K^0_S\pi^+$, and $K^0_S\pi +$ $(pi-)^0$. NODE=S049CPA;LINKAGE=LE

$A_{CP}(B \to K^* e^+e^-)$

NODE=S049CP6

VALUE	DOCUMENT ID		TECN	COMMENT
−0.18±0.15±0.01	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B \to K^* \mu^+\mu^-)$

NODE=S049CP7

VALUE	DOCUMENT ID		TECN	COMMENT
−0.03±0.13±0.02	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$

$A_{CP}(B \to K^* \ell^+ \ell^-)$

NODE=S049CP5

VALUE	DOCUMENT ID		TECN	COMMENT
-0.04 ± 0.07 OUR AVERAGE				
$0.03 \pm 0.13 \pm 0.01$	[1] LEES	12S	BABR	$e^+ e^- \to \Upsilon(4S)$
$+0.01^{+0.16}_{-0.15} \pm 0.01$	AUBERT	09T	BABR	$e^+ e^- \to \Upsilon(4S)$
$-0.10 \pm 0.10 \pm 0.01$	WEI	09A	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Measured in the union of $0.10 < q^2 < 8.12$ GeV^2/c^4 and $q^2 > 10.11$ GeV^2/c^4. LEES 12S reports also individual measurements $A_{CP}(B \to K^* \ell^+ \ell^-) = -0.13^{+0.18}_{-0.19} \pm 0.01$ for $0.10 < q^2 < 8.12$ GeV^2/c^4 and $A_{CP}(B \to K^* \ell^+ \ell^-) = 0.16^{+0.18}_{-0.19} \pm 0.01$ for $q^2 > 10.11$ GeV^2/c^4.

NODE=S049CP5;LINKAGE=LE

$A_{CP}(B \to \eta\,\text{anything})$

NODE=S049CP8

VALUE	DOCUMENT ID		TECN	COMMENT
$-0.13 \pm 0.04^{+0.02}_{-0.03}$	[1] NISHIMURA	10	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Uses $B \to \eta X_s$ with $0.4 < m_{X_s} < 2.6$ GeV/c^2.

NODE=S049CP8;LINKAGE=NI

$\Delta A_{CP}(X_s \gamma) = A_{CP}(B^\pm \to X_s \gamma) - A_{CP}(B^0 \to X_s \gamma)$

NODE=S049DA1

This is the isospin difference of the *CP* asymmetries.

VALUE	DOCUMENT ID		TECN	COMMENT
0.041 ± 0.023 OUR AVERAGE				
$0.0369 \pm 0.0265 \pm 0.0076$	[1] WATANUKI	19	BELL	$e^+ e^- \to \Upsilon(4S)$
$0.050 \pm 0.039 \pm 0.015$	[2] LEES	14K	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Using a sum-of-exclusive technique with $m_{X_s} < 2.8$ GeV/c^2.

NODE=S049DA1;LINKAGE=B

[2] Measured with 16 exclusively reconstructed $B \to X_s \gamma$ decays with $0.6 < m_{X_s} < 2.0$ GeV/c^2 (ten charged and six neutral self-tagging B modes).

NODE=S049DA1;LINKAGE=A

$\overline{A}_{CP}(B \to X_s \gamma) = (A_{CP}(B^+ \to X_s \gamma) + A_{CP}(B^0 \to X_s \gamma))/2$

NODE=S049A06

VALUE	DOCUMENT ID		TECN	COMMENT
$0.0091 \pm 0.0121 \pm 0.0013$	[1] WATANUKI	19	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Using a sum-of-exclusive technique with $m_{X_s} < 2.8$ GeV/c^2.

NODE=S049A06;LINKAGE=A

$\Delta A_{CP}(B \to K^* \gamma) = A_{CP}(B^+ \to K^{*+} \gamma) - A_{CP}(B^0 \to K^{*0} \gamma)$

NODE=S049A02

This is the isospin difference of the *CP* asymmetries.

VALUE	DOCUMENT ID		TECN	COMMENT
$0.024 \pm 0.028 \pm 0.005$	[1] HORIGUCHI	17	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Uses B($\Upsilon(4S) \to B^+ B^-$) = (51.4 ± 0.6)% and B($\Upsilon(4S) \to B^0 \overline{B}^0$) = (48.6 ± 0.6)%.

NODE=S049A02;LINKAGE=A

$\overline{A}_{CP}(B \to K^* \gamma) = (A_{CP}(B^+ \to K^{*+} \gamma) + A_{CP}(B^0 \to K^{*0} \gamma))/2$

NODE=S049A03

This is the average *CP* asymmetry.

VALUE	DOCUMENT ID		TECN	COMMENT
$-0.001 \pm 0.014 \pm 0.003$	[1] HORIGUCHI	17	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Uses B($\Upsilon(4S) \to B^+ B^-$) = (51.4 ± 0.6)% and B($\Upsilon(4S) \to B^0 \overline{B}^0$) = (48.6 ± 0.6)%.

NODE=S049A03;LINKAGE=A

POLARIZATION IN *B* DECAY

NODE=S049224

In decays involving two vector mesons, one can distinguish among the states in which meson polarizations are both longitudinal (L) or both are transverse and parallel ($\parallel$) or perpendicular ($\perp$) to each other with the parameters Γ_L/Γ, $\Gamma_\perp/\Gamma$, and the relative phases $\phi_\parallel$ and $\phi_\perp$. See the definitions in the note on "Polarization in B Decays" review in the B^0 Particle Listings.

$F_L(B \to K^* \ell^+ \ell^-)$ ($q^2 > 0.1$ GeV^2/c^4)

NODE=S049FL

VALUE	DOCUMENT ID		TECN	COMMENT
$0.63^{+0.18}_{-0.19} \pm 0.05$	[1] AUBERT,B	06J	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Results with different q^2 cuts are also reported.

NODE=S049FL;LINKAGE=AU

$F_L(B \to K^* \ell^+ \ell^-)$ ($m_{\ell\ell} < 2.5$ GeV/c^2)

NODE=S049FL1

VALUE	DOCUMENT ID		TECN	COMMENT
$0.35 \pm 0.16 \pm 0.04$	AUBERT	09N	BABR	$e^+ e^- \to \Upsilon(4S)$

$F_L(B \to K^* \ell^+ \ell^-)$ ($m_{\ell\ell} > 3.2$ GeV/c^2)

NODE=S049FL2

VALUE	DOCUMENT ID		TECN	COMMENT
$0.71^{+0.20}_{-0.22}\pm0.04$	AUBERT	09N	BABR	$e^+e^- \to \Upsilon(4S)$

$F_L(B \to K^* \ell^+ \ell^-)$ ($0.10 < q^2 < 0.98$ GeV^2/c^4)

NODE=S049FLB

VALUE	DOCUMENT ID		TECN	COMMENT
$0.263^{+0.045}_{-0.044}\pm0.017$	AAIJ	16B	LHCB	pp at 7, 8 TeV

$F_L(B \to K^* \ell^+ \ell^-)$ ($1.1 < q^2 < 2.5$ GeV^2/c^4)

NODE=S049FLC

VALUE	DOCUMENT ID		TECN	COMMENT
$0.660^{+0.083}_{-0.077}\pm0.022$	AAIJ	16B	LHCB	pp at 7, 8 TeV

$F_L(B \to K^* \ell^+ \ell^-)$ ($0.1 < q^2 < 2.0$ GeV^2/c^4)

NODE=S049FL3

VALUE	DOCUMENT ID		TECN	COMMENT
$0.34^{+0.08}_{-0.07}$ OUR AVERAGE				
$0.37^{+0.10}_{-0.09}{}^{+0.04}_{-0.03}$	AAIJ	13Y	LHCB	pp at 7 TeV, $K^{*0}\mu^+\mu^-$
$0.30\pm0.16\pm0.02$	AALTONEN	12I	CDF	$p\overline{p}$ at 1.96 TeV
$0.29^{+0.21}_{-0.18}\pm0.02$	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.60^{+0.00}_{-0.28}\pm0.19$	[1] CHATRCHYAN	13BL	CMS	pp at 7 TeV
$0.00^{+0.13}_{-0.00}\pm0.02$	AAIJ	12U	LHCB	Repl. by AAIJ 13Y
$0.53^{+0.32}_{-0.34}\pm0.07$	AALTONEN	11L	CDF	Repl. by AALTONEN 12I

[1] CHATRCHYAN 13BL uses, for this bin, $1.0 < q^2 < 2.0$ GeV^2/c^4.

NODE=S049FL3;LINKAGE=CH

$F_L(B \to K^* \ell^+ \ell^-)$ ($2.0 < q^2 < 4.3$ GeV^2/c^4)

NODE=S049FL4

VALUE	DOCUMENT ID		TECN	COMMENT
0.77 ± 0.05 OUR AVERAGE				
$0.876^{+0.109}_{-0.097}\pm0.017$	[1] AAIJ	16B	LHCB	pp at 7, 8 TeV
$0.80\pm0.08\pm0.06$	KHACHATRY...	16D	CMS	pp at 8 TeV
$0.74^{+0.10}_{-0.09}{}^{+0.02}_{-0.03}$	AAIJ	13Y	LHCB	pp at 7 TeV, $K^{*0}\mu^+\mu^-$
$0.65\pm0.17\pm0.03$	CHATRCHYAN	13BL	CMS	pp at 7 TeV
$0.37^{+0.25}_{-0.24}\pm0.10$	AALTONEN	12I	CDF	$p\overline{p}$ at 1.96 TeV
$0.71\pm0.24\pm0.05$	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.77\pm0.15\pm0.03$	AAIJ	12U	LHCB	Repl. by AAIJ 13Y
$0.40^{+0.32}_{-0.33}\pm0.08$	AALTONEN	11L	CDF	Repl. by AALTONEN 12I

[1] Measured in $2.5 < q^2 < 4.0$ GeV^2/c^4.

NODE=S049FL4;LINKAGE=A

$F_L(B \to K^* \ell^+ \ell^-)$ ($4.0 < q^2 < 6.0$ GeV^2/c^4)

NODE=S049FLD

VALUE	DOCUMENT ID		TECN	COMMENT
$0.611^{+0.052}_{-0.053}\pm0.017$	AAIJ	16B	LHCB	pp at 7, 8 TeV

$F_L(B \to K^* \ell^+ \ell^-)$ ($6.0 < q^2 < 8.0$ GeV^2/c^4)

NODE=S049FLE

VALUE	DOCUMENT ID		TECN	COMMENT
$0.579\pm0.046\pm0.015$	AAIJ	16B	LHCB	pp at 7, 8 TeV

$F_L(B \to K^* \ell^+ \ell^-)$ ($4.3 < q^2 < 8.6$ GeV^2/c^4)

NODE=S049FL5

VALUE	DOCUMENT ID		TECN	COMMENT
0.64 ± 0.06 OUR AVERAGE				
$0.57\pm0.07\pm0.03$	AAIJ	13Y	LHCB	pp at 7 TeV, $K^{*0}\mu^+\mu^-$
$0.81^{+0.13}_{-0.12}\pm0.05$	CHATRCHYAN	13BL	CMS	pp at 7 TeV
$0.68^{+0.15}_{-0.17}\pm0.09$	AALTONEN	12I	CDF	$p\overline{p}$ at 1.96 TeV
$0.64^{+0.23}_{-0.24}\pm0.07$	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.60^{+0.06}_{-0.07}\pm0.01$	AAIJ	12U	LHCB	Repl. by AAIJ 13Y
$0.82^{+0.19}_{-0.23}\pm0.07$	AALTONEN	11L	CDF	Repl. by AALTONEN 12I

$F_L(B \to K^* \ell^+ \ell^-)$ $(10.09 < q^2 < 12.86\ GeV^2/c^4)$

NODE=S049FL6

VALUE	DOCUMENT ID	TECN	COMMENT
0.448±0.033 OUR AVERAGE			
$0.493^{+0.049}_{-0.047}\pm0.013$	[1] AAIJ 16B	LHCB	pp at 7, 8 TeV
$0.39\ \pm0.05\ \pm0.04$	KHACHATRY...16D	CMS	pp at 8 TeV
$0.48\ ^{+0.08}_{-0.09}\ \pm0.03$	AAIJ 13Y	LHCB	pp at 7 TeV, $K^{*0}\mu^+\mu^-$
$0.45\ ^{+0.10}_{-0.11}\ \pm0.04$	CHATRCHYAN 13BL	CMS	pp at 7 TeV
$0.47\ \pm0.14\ \pm0.03$	AALTONEN 12I	CDF	$p\overline{p}$ at 1.96 TeV
$0.17\ ^{+0.17}_{-0.15}\ \pm0.03$	WEI 09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.41\ \pm0.11\ \pm0.03$	AAIJ 12U	LHCB	Repl. by AAIJ 13Y
$0.31\ ^{+0.19}_{-0.18}\ \pm0.02$	AALTONEN 11L	CDF	Repl. by AALTONEN 12I

[1] Measured in $11.0 < q^2 < 12.5$ GeV^2/c^4.

NODE=S049FL6;LINKAGE=A

$F_L(B \to K^* \ell^+ \ell^-)$ $(15.0 < q^2 < 17.0\ GeV^2/c^4)$

NODE=S049FLF

VALUE	DOCUMENT ID	TECN	COMMENT
0.349±0.039±0.009	AAIJ 16B	LHCB	pp at 7, 8 TeV

$F_L(B \to K^* \ell^+ \ell^-)$ $(17.0 < q^2 < 19.0\ GeV^2/c^4)$

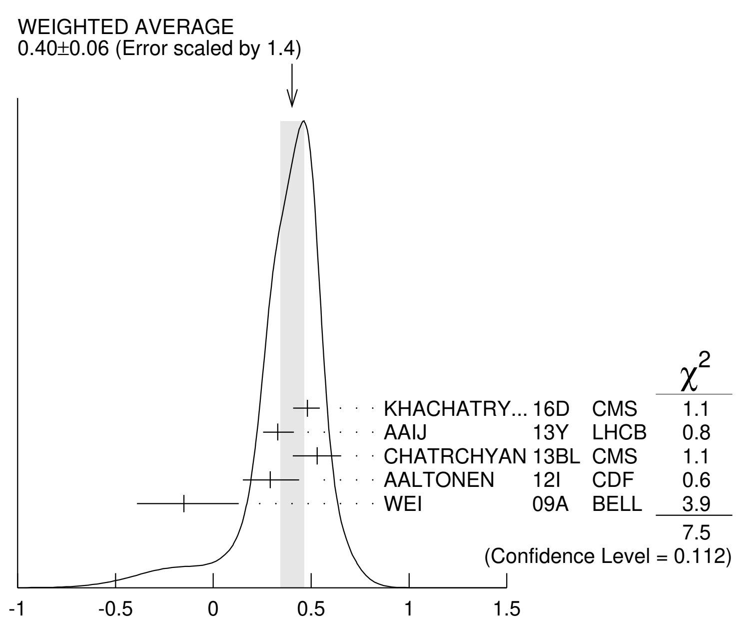
NODE=S049FLG

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{0.354^{+0.049}_{-0.048}\pm0.025}$	AAIJ 16B	LHCB	pp at 7, 8 TeV

$F_L(B \to K^* \ell^+ \ell^-)$ $(14.18 < q^2 < 16.0\ GeV^2/c^4)$

NODE=S049FL7

VALUE	DOCUMENT ID	TECN	COMMENT
0.40±0.06 OUR AVERAGE	Error includes scale factor of 1.4. See the ideogram below.		
$0.48^{+0.05}_{-0.06}\pm0.04$	KHACHATRY...16D	CMS	pp at 8 TeV
$0.33^{+0.08}_{-0.07}{}^{+0.02}_{-0.03}$	AAIJ 13Y	LHCB	pp at 7 TeV, $K^{*0}\mu^+\mu^-$
$0.53\pm0.12\pm0.03$	CHATRCHYAN 13BL	CMS	pp at 7 TeV
$0.29^{+0.14}_{-0.13}\pm0.05$	AALTONEN 12I	CDF	$p\overline{p}$ at 1.96 TeV
$-0.15^{+0.27}_{-0.23}\pm0.07$	WEI 09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.37\pm0.09\pm0.05$	AAIJ 12U	LHCB	Repl. by AAIJ 13Y
$0.55^{+0.17}_{-0.18}\pm0.02$	AALTONEN 11L	CDF	Repl. by AALTONEN 12I



$F_L(B \to K^* \ell^+ \ell^-)$ $(14.18 < q^2 < 16.0$ GeV^2/c$^4)$

$F_L(B \to K^* \ell^+ \ell^-)$ $(16.0 < q^2 < 19.0\ GeV^2/c^4)$

NODE=S049FL8

VALUE		DOCUMENT ID	TECN	COMMENT
0.350±0.019 OUR AVERAGE				
0.345±0.020±0.007	[1]	AAIJ 20Y	LHCB	pp at 7, 8, 13 TeV
0.38 $^{+0.05}_{-0.06}$ ±0.04		KHACHATRY... 16D	CMS	pp at 8 TeV
0.38 $^{+0.09}_{-0.07}$ ±0.03		AAIJ 13Y	LHCB	pp at 7 TeV, $K^{*0}\mu^+\mu^-$
0.44 ±0.07 ±0.03		CHATRCHYAN 13BL	CMS	pp at 7 TeV
0.20 $^{+0.19}_{-0.17}$ ±0.05		AALTONEN 12I	CDF	$p\overline{p}$ at 1.96 TeV
0.12 $^{+0.15}_{-0.13}$ ±0.02		WEI 09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.344 $^{+0.028}_{-0.030}$ ±0.008	[1]	AAIJ 16B	LHCB	Repl. by AAIJ 20Y
0.26 $^{+0.10}_{-0.08}$ ±0.03		AAIJ 12U	LHCB	Repl. by AAIJ 13Y
0.09 $^{+0.18}_{-0.14}$ ±0.03		AALTONEN 11L	CDF	Repl. by AALTONEN 12I

[1] Measured in $15.0 < q^2 < 19.0$ GeV^2/c^4.

NODE=S049FL8;LINKAGE=A

$F_L(B \to K^* \ell^+ \ell^-)$ $(1.0 < q^2 < 6.0\ GeV^2/c^4)$

NODE=S049FL9

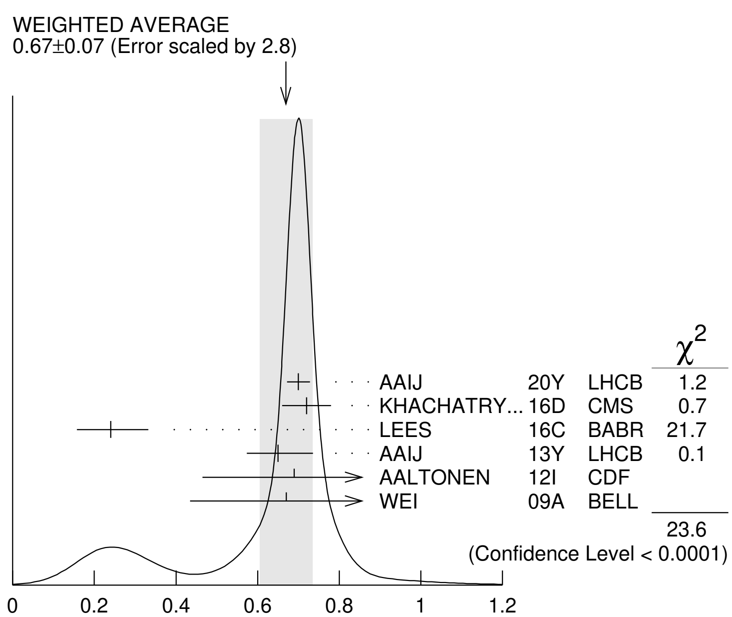
VALUE		DOCUMENT ID	TECN	COMMENT
0.67 ±0.07 OUR AVERAGE Error includes scale factor of 2.8. See the ideogram below.				
0.700±0.025±0.013	[1]	AAIJ 20Y	LHCB	pp at 7, 8, 13 TeV
0.72 ±0.06		KHACHATRY... 16D	CMS	pp at 7, 8 TeV
0.24 $^{+0.09}_{-0.08}$ ±0.02	[2]	LEES 16C	BABR	$e^+e^- \to \Upsilon(4S)$
0.65 $^{+0.08}_{-0.07}$ ±0.03		AAIJ 13Y	LHCB	pp at 7 TeV, $K^{*0}\mu^+\mu^-$
0.69 $^{+0.19}_{-0.21}$ ±0.08		AALTONEN 12I	CDF	$p\overline{p}$ at 1.96 TeV
0.67 ±0.23 ±0.05		WEI 09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.690 $^{+0.035}_{-0.036}$ ±0.017	[1]	AAIJ 16B	LHCB	Repl. by AAIJ 20Y
0.68 ±0.10 ±0.02		CHATRCHYAN 13BL	CMS	Repl. by KHACHATRYAN 16D
0.55 ±0.10 ±0.03		AAIJ 12U	LHCB	Repl. by AAIJ 13Y
0.50 $^{+0.27}_{-0.30}$ ±0.03		AALTONEN 11L	CDF	Repl. by AALTONEN 12I

[1] Measured in $1.1 < q^2 < 6.0$ GeV^2/c^4.

NODE=S049FL9;LINKAGE=A

[2] Measured by combining B^0 and B^+ with e and μ as leptons. Results are also provided separately for B^0 and B^+.

NODE=S049FL9;LINKAGE=B



$F_L(B \to K^* \ell^+ \ell^-)$ $(1.0 < q^2 < 6.0$ GeV^2/c^4)

$F_L(B \to K^* \ell^+ \ell^-)$ $(0.0 < q^2 < 4.3\ GeV^2/c^4)$

NODE=S049FLA
NODE=S049FLA

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.33^{+0.14}_{-0.13}\pm0.03}$	AALTONEN	12I	CDF	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.47^{+0.23}_{-0.24}\pm0.03$	AALTONEN	11L	CDF	Repl. by AALTONEN 12I

$A_T^{(2)}$ in $B \to K^* e^+ e^-$ (at low q^2)

NODE=S049A20
NODE=S049A20

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.52\pm0.53\pm0.11}$	[1,2] FERLEWICZ	24	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Events are reconstructed in $B^0 \to K^{*0}(\to K^+\pi^-)e^+e^-$ and $B^+ \to K^{*+}(\to K^0_S\pi^+)e^+e^-$ decay modes. The effective dielectron invariant mass is required to be in the range $0.0008 < q^2 < 1.12\ GeV^2/c^4$.

NODE=S049A20;LINKAGE=A

[2] A_T^{Im} and $A_T^{(2)}$ measure the ratio of the right- and left-handed Wilson coefficients, C_7'/C_7, which constrains non-SM contributions at small q^2.

NODE=S049A20;LINKAGE=B

A_T^{Im} in $B \to K^* e^+ e^-$ (at low q^2)

NODE=S049A21
NODE=S049A21

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{-1.27\pm0.52\pm0.12}$	[1,2] FERLEWICZ	24	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Events are reconstructed in $B^0 \to K^{*0}(\to K^+\pi^-)e^+e^-$ and $B^+ \to K^{*+}(\to K^0_S\pi^+)e^+e^-$ decay modes. The effective dielectron invariant mass is required to be in the range $0.0008 < q^2 < 1.12\ GeV^2/c^4$.

NODE=S049A21;LINKAGE=A

[2] A_T^{Im} and $A_T^{(2)}$ measure the ratio of the right- and left-handed Wilson coefficients, C_7'/C_7, which constrains non-SM contributions at small q^2.

NODE=S049A21;LINKAGE=B

$P_\tau(B \to D^* \tau^+ \nu_\tau)$

NODE=S049A01

Measures difference in decay widths with positive and negative τ^+ helicities normalized to the sum of those decay widths.

NODE=S049A01

NODE=S049A01

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{-0.38\pm0.51^{+0.21}_{-0.16}}$	[1] HIROSE	17	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Uses a fully reconstructed B meson as a tag on the recoil side.

NODE=S049A01;LINKAGE=A

Γ_L/Γ in $B \to \overline{D}^* \ell^+ \nu_\ell$

NODE=S049A13
NODE=S049A13

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.502\pm0.012\pm0.004}$	[1] PRIM	23	BELL	$e^+e^- \to \Upsilon(4S)$

[1] This is the $B^+ \to \overline{D}^{*0}\ell^+\nu_\ell$ and $B^0 \to D^{*-}\ell^+\nu_\ell$ average.

NODE=S049A13;LINKAGE=A

Γ_L/Γ in $B \to \overline{D}^* e^+ \nu_e$

NODE=S049A14
NODE=S049A14

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.485\pm0.018\pm0.005}$	[1] PRIM	23	BELL	$e^+e^- \to \Upsilon(4S)$

[1] This is the $B^+ \to \overline{D}^{*0}e^+\nu_e$ and $B^0 \to D^{*-}e^+\nu_e$ average.

NODE=S049A14;LINKAGE=A

Γ_L/Γ in $B \to \overline{D}^* \mu^+ \nu_\mu$

NODE=S049A15
NODE=S049A15

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.515\pm0.017\pm0.005}$	[1] PRIM	23	BELL	$e^+e^- \to \Upsilon(4S)$

[1] This is the $B^+ \to \overline{D}^{*0}\mu^+\nu_\mu$ and $B^0 \to D^{*-}\mu^+\nu_\mu$ average.

NODE=S049A15;LINKAGE=A

$\Delta(\Gamma_L/\Gamma)$ in $B \to \overline{D}^* (leption)^+ \nu_\ell$

NODE=S049A16

$\Delta(\Gamma_L/\Gamma) = (\Gamma_L/\Gamma)^\mu - (\Gamma_L/\Gamma)^e$

NODE=S049A16
NODE=S049A16

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.030\pm0.025\pm0.007}$	[1] PRIM	23	BELL	$e^+e^- \to \Upsilon(4S)$

[1] This is the B^+ and B^0 average.

NODE=S049A16;LINKAGE=A

PARTIAL BRANCHING FRACTIONS IN $B \to K^{(*)}\ell^+\ell^-$

NODE=S049223

$B(B \to K^*\ell^+\ell^-)$ ($q^2 < 2.0$ GeV^2/c^4)

NODE=S049PB1
NODE=S049PB1

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
1.68±0.23 OUR AVERAGE				
$1.89^{+0.52}_{-0.46}\pm0.06$	[1] LEES	12S	BABR	$e^+e^- \to \Upsilon(4S)$
$1.73\pm0.33\pm0.10$	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV
$1.46^{+0.40}_{-0.35}\pm0.11$	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.98\pm0.40\pm0.09$	AALTONEN	11L	CDF	Repl. by AALTONEN 11AI

[1] The value reported here from LEES 12S refers to $0.1 < q^2 < 2.0$ GeV^2/c^2.

NODE=S049PB1;LINKAGE=LE

$B(B \to K^*\ell^+\ell^-)$ ($2.0 < q^2 < 4.3$ GeV^2/c^4)

NODE=S049PB2
NODE=S049PB2

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
0.87±0.17 OUR AVERAGE				
$0.95^{+0.35}_{-0.30}\pm0.04$	LEES	12S	BABR	$e^+e^- \to \Upsilon(4S)$
$0.82\pm0.26\pm0.06$	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV
$0.86^{+0.31}_{-0.27}\pm0.07$	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1.00\pm0.38\pm0.09$	AALTONEN	11L	CDF	Repl. by AALTONEN 11AI

$B(B \to K^*\ell^+\ell^-)$ ($4.3 < q^2 < 8.68$ GeV^2/c^4)

NODE=S049PB3
NODE=S049PB3

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
1.67±0.29 OUR AVERAGE				
$1.82^{+0.56}_{-0.52}\pm0.09$	[1] LEES	12S	BABR	$e^+e^- \to \Upsilon(4S)$
$1.72\pm0.41\pm0.14$	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV
$1.37^{+0.47}_{-0.42}\pm0.39$	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1.69\pm0.57\pm0.15$	AALTONEN	11L	CDF	Repl. by AALTONEN 11AI

[1] The value reported here from LEES 12S refers to $4.3 < q^2 < 8.12$ GeV^2/c^2.

NODE=S049PB3;LINKAGE=LE

$B(B \to K^*\ell^+\ell^-)$ ($10.09 < q^2 < 12.86$ GeV^2/c^4)

NODE=S049PB4
NODE=S049PB4

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
1.93±0.25 OUR AVERAGE				
$1.86^{+0.52}_{-0.48}\pm0.10$	[1] LEES	12S	BABR	$e^+e^- \to \Upsilon(4S)$
$1.77\pm0.34\pm0.11$	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV
$2.24^{+0.44}_{-0.40}\pm0.19$	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1.97\pm0.47\pm0.17$	AALTONEN	11L	CDF	Repl. by AALTONEN 11AI

[1] The value reported here from LEES 12S refers to $10.11 < q^2 < 12.89$ GeV^2/c^2.

NODE=S049PB4;LINKAGE=LE

$B(B \to K^*\ell^+\ell^-)$ ($14.18 < q^2 < 16.0$ GeV^2/c^4)

NODE=S049PB5
NODE=S049PB5

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
1.21±0.17 OUR AVERAGE				
$1.46^{+0.41}_{-0.36}\pm0.06$	[1] LEES	12S	BABR	$e^+e^- \to \Upsilon(4S)$
$1.21\pm0.24\pm0.07$	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV
$1.05^{+0.29}_{-0.26}\pm0.08$	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1.51\pm0.36\pm0.13$	AALTONEN	11L	CDF	Repl. by AALTONEN 11AI

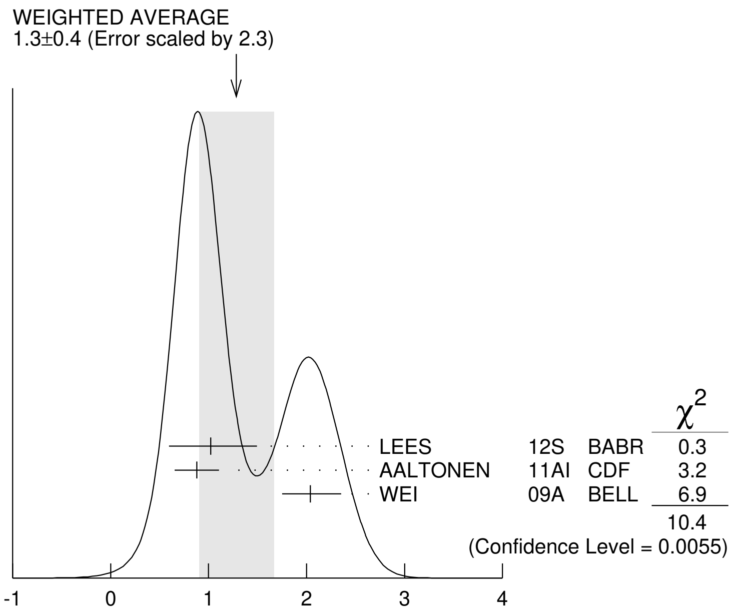
[1] The value reported here from LEES 12S refers to $14.21 < q^2 < 16.0$ GeV^2/c^2.

NODE=S049PB5;LINKAGE=LE

B($B \to K^* \ell^+ \ell^-$) ($16.0 < q^2$ GeV^2/c^4)

NODE=S049PB6

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
1.3 ±0.4 OUR AVERAGE	Error includes scale factor of 2.3. See the ideogram below.			
$1.02^{+0.47}_{-0.42} \pm 0.06$	LEES	12S	BABR	$e^+e^- \to \Upsilon(4S)$
$0.88 \pm 0.22 \pm 0.05$	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV
$2.04^{+0.27}_{-0.24} \pm 0.16$	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1.35 \pm 0.37 \pm 0.12$	AALTONEN	11L	CDF	Repl. by AALTONEN 11AI



B($B \to K^* \ell^+ \ell^-$) ($16.0 < q^2$ GeV^2/c^4) (units 10^{-7})

B($B \to K^* \ell^+ \ell^-$) ($1.0 < q^2 < 6.0$ GeV^2/c^4)

NODE=S049PB7

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
1.64±0.26 OUR AVERAGE				
$2.05^{+0.53}_{-0.48} \pm 0.07$	LEES	12S	BABR	$e^+e^- \to \Upsilon(4S)$
$1.48 \pm 0.39 \pm 0.12$	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV
$1.49^{+0.45}_{-0.40} \pm 0.12$	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1.60 \pm 0.54 \pm 0.14$	AALTONEN	11L	CDF	Repl. by AALTONEN 11AI

B($B \to K^* \ell^+ \ell^-$) ($0.0 < q^2 < 4.3$ GeV^2/c^4)

NODE=S049PB8

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
2.53±0.43±0.15	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1.98 \pm 0.55 \pm 0.18$	AALTONEN	11L	CDF	Repl. by AALTONEN 11AI

B($B^+ \to K^* \mu^+ \mu^-$) / B($B^+ \to K^* e^+ e^-$) ($0.045 < q^2 < 1.1$ GeV^2/c^4)

NODE=S049A10

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.52^{+0.36}_{-0.26} \pm 0.05}$	WEHLE	21	BELL	$e^+e^- \to \Upsilon(4S)$

B($B^+ \to K^* \mu^+ \mu^-$) / B($B^+ \to K^* e^+ e^-$) ($1.1 < q^2 < 6.0$ GeV^2/c^4)

NODE=S049A11

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.96^{+0.45}_{-0.29} \pm 0.11}$	WEHLE	21	BELL	$e^+e^- \to \Upsilon(4S)$

B($B^+ \to K^* \mu^+ \mu^-$) / B($B^+ \to K^* e^+ e^-$) ($15.0 < q^2 < 19.0$ GeV^2/c^4)

NODE=S049A12

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{1.18^{+0.52}_{-0.32} \pm 0.10}$	WEHLE	21	BELL	$e^+e^- \to \Upsilon(4S)$

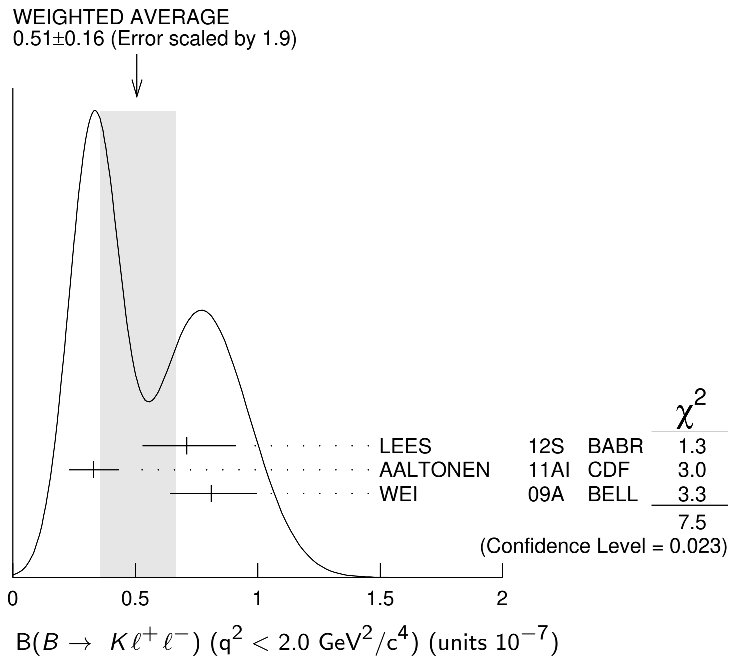
B($B \to K \ell^+ \ell^-$) ($q^2 < 2.0$ GeV^2/c^4)

NODE=S049PB9
NODE=S049PB9

VALUE (units 10^{-7})	DOCUMENT ID	TECN	COMMENT
0.51±0.16 OUR AVERAGE	Error includes scale factor of 1.9. See the ideogram below.		
$0.71^{+0.20}_{-0.18}\pm0.02$	[1] LEES 12S	BABR	$e^+ e^- \to \Upsilon(4S)$
0.33±0.10±0.02	AALTONEN 11AI	CDF	$p\overline{p}$ at 1.96 TeV
$0.81^{+0.18}_{-0.16}\pm0.05$	WEI 09A	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.38±0.16±0.03	AALTONEN 11L	CDF	Repl. by AALTONEN 11AI

[1] The value reported here from LEES 12S refers to $0.1 < q^2 < 2.0$ GeV^2/c^2.

NODE=S049PB9;LINKAGE=LE



B($B \to K \ell^+ \ell^-$) ($2.0 < q^2 < 4.3$ GeV^2/c^4)

NODE=S049PBA
NODE=S049PBA

VALUE (units 10^{-7})	DOCUMENT ID	TECN	COMMENT
$0.57^{+0.10}_{-0.09}$ OUR AVERAGE	Error includes scale factor of 1.2.		
$0.49^{+0.15}_{-0.13}\pm0.01$	LEES 12S	BABR	$e^+ e^- \to \Upsilon(4S)$
0.77±0.14±0.05	AALTONEN 11AI	CDF	$p\overline{p}$ at 1.96 TeV
$0.46^{+0.14}_{-0.12}\pm0.03$	WEI 09A	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.58±0.19±0.04	AALTONEN 11L	CDF	Repl. by AALTONEN 11AI

B($B \to K \ell^+ \ell^-$) ($4.3 < q^2 < 8.68$ GeV^2/c^4)

NODE=S049PBB
NODE=S049PBB

VALUE (units 10^{-7})	DOCUMENT ID	TECN	COMMENT
1.00±0.11 OUR AVERAGE			
$0.94^{+0.20}_{-0.19}\pm0.02$	[1] LEES 12S	BABR	$e^+ e^- \to \Upsilon(4S)$
1.05±0.17±0.07	AALTONEN 11AI	CDF	$p\overline{p}$ at 1.96 TeV
$1.00^{+0.19}_{-0.18}\pm0.06$	WEI 09A	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.93±0.25±0.06	AALTONEN 11L	CDF	Repl. by AALTONEN 11AI

[1] The value reported here from LEES 12S refers to $4.3 < q^2 < 8.12$ GeV^2/c^2.

NODE=S049PBB;LINKAGE=LE

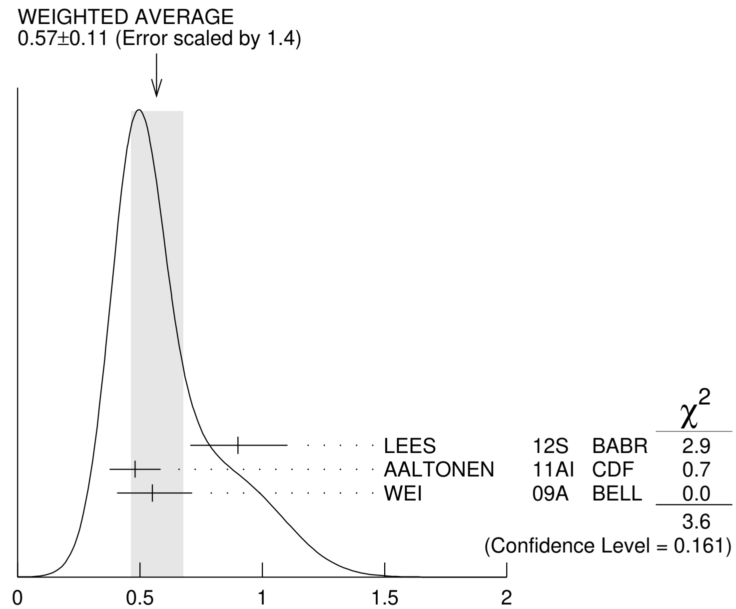
B($B \to K \ell^+ \ell^-$) ($10.09 < q^2 < 12.86$ GeV^2/c^4)

NODE=S049PBC
NODE=S049PBC

VALUE (units 10^{-7})	DOCUMENT ID	TECN	COMMENT
0.57±0.11 OUR AVERAGE	Error includes scale factor of 1.4. See the ideogram below.		
$0.90^{+0.20}_{-0.19}\pm0.04$	[1] LEES 12S	BABR	$e^+ e^- \to \Upsilon(4S)$
0.48±0.10±0.03	AALTONEN 11AI	CDF	$p\overline{p}$ at 1.96 TeV
$0.55^{+0.16}_{-0.14}\pm0.03$	WEI 09A	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.72±0.17±0.05	AALTONEN 11L	CDF	Repl. by AALTONEN 11AI

[1] The value reported here from LEES 12S refers to $10.11 < q^2 < 12.89$ GeV^2/c^2.

NODE=S049PBC;LINKAGE=LE



B($B \to K \ell^+ \ell^-$) ($10.09 < q^2 < 12.86$ GeV^2/c^4) (units 10^{-7})

B($B \to K \ell^+ \ell^-$) ($14.18 < q^2 < 16.0$ GeV^2/c^4)

NODE=S049PBD
NODE=S049PBD

VALUE (units 10^{-7})	*DOCUMENT ID*		*TECN*	*COMMENT*
0.49±0.07 OUR AVERAGE				
$0.49^{+0.15}_{-0.14} \pm 0.02$	[1] LEES	12S	BABR	$e^+ e^- \to \Upsilon(4S)$
$0.52 \pm 0.09 \pm 0.03$	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV
$0.38^{+0.19}_{-0.12} \pm 0.02$	WEI	09A	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.38 \pm 0.12 \pm 0.03$	AALTONEN	11L	CDF	Repl. by AALTONEN 11AI

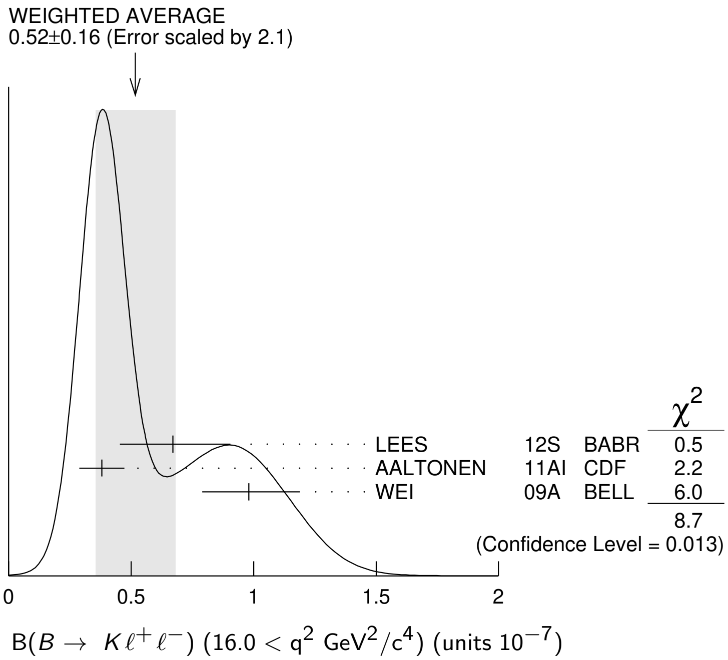
[1] The value reported here from LEES 12S refers to $14.21 < q^2 < 16.0$ GeV^2/c^2.

NODE=S049PBD;LINKAGE=LE

B($B \to K \ell^+ \ell^-$) ($16.0 < q^2$ GeV^2/c^4)

NODE=S049PBE
NODE=S049PBE

VALUE (units 10^{-7})	*DOCUMENT ID*		*TECN*	*COMMENT*
0.52±0.16 OUR AVERAGE	Error includes scale factor of 2.1. See the ideogram below.			
$0.67^{+0.23}_{-0.21} \pm 0.05$	LEES	12S	BABR	$e^+ e^- \to \Upsilon(4S)$
$0.38 \pm 0.09 \pm 0.02$	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV
$0.98^{+0.20}_{-0.18} \pm 0.06$	WEI	09A	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.35 \pm 0.13 \pm 0.02$	AALTONEN	11L	CDF	Repl. by AALTONEN 11AI



$B(B \to K\ell^+\ell^-)$ $(1.0 < q^2 < 6.0\ \mathrm{GeV}^2/c^4)$

NODE=S049PBF
NODE=S049PBF

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
1.33±0.13 OUR AVERAGE				
$1.36^{+0.27}_{-0.24}\pm0.03$	LEES	12S	BABR	$e^+e^- \to \Upsilon(4S)$
$1.29\pm0.18\pm0.08$	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV
$1.36^{+0.23}_{-0.21}\pm0.08$	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1.01\pm0.26\pm0.07$	AALTONEN	11L	CDF	Repl. by AALTONEN 11AI

$B(B \to K\ell^+\ell^-)$ $(0.0 < q^2 < 4.3\ \mathrm{GeV}^2/c^4)$

NODE=S049PBG
NODE=S049PBG

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
$1.07\pm0.17\pm0.07$	AALTONEN	11AI	CDF	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.96\pm0.25\pm0.06$	AALTONEN	11L	CDF	Repl. by AALTONEN 11AI

$B(B \to X_s\ell^+\ell^-)$ $(1.0 < q^2 < 6.0\ \mathrm{GeV}^2/c^4)$

NODE=S049PBH
NODE=S049PBH

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$1.60^{+0.41+0.25}_{-0.39-0.22}$	[1] LEES	14D	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Measured from sum of exclusive modes through K^+, $K^+\pi^0$, $K^+\pi^-$, $K^+\pi^-\pi^0$, $K^+\pi^-\pi^+$, K^0_S, $K^0_S\pi^0$, $K^0_S\pi^+$, $K^0_S\pi^+\pi^0$, and $K^0_S\pi^+\pi^-$ corrected for unobserved modes.

NODE=S049PBH;LINKAGE=A

$B(B \to X_s e^+e^-)$ $(1.0 < q^2 < 6.0\ \mathrm{GeV}^2/c^4)$

NODE=S049PBI
NODE=S049PBI

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$1.93^{+0.47+0.28}_{-0.45-0.24}$	[1] LEES	14D	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Measured from sum of exclusive modes through K^+, $K^+\pi^0$, $K^+\pi^-$, $K^+\pi^-\pi^0$, $K^+\pi^-\pi^+$, K^0_S, $K^0_S\pi^0$, $K^0_S\pi^+$, $K^0_S\pi^+\pi^0$, and $K^0_S\pi^+\pi^-$ corrected for unobserved modes.

NODE=S049PBI;LINKAGE=A

$B(B \to X_s\mu^+\mu^-)$ $(1.0 < q^2 < 6.0\ \mathrm{GeV}^2/c^4)$

NODE=S049PBJ
NODE=S049PBJ

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$0.66^{+0.82+0.31}_{-0.76-0.25}$	[1] LEES	14D	BABR	$e^+e^- \to \Upsilon(4S)$

[1] Measured from sum of exclusive modes through K^+, $K^+\pi^0$, $K^+\pi^-$, $K^+\pi^-\pi^0$, $K^+\pi^-\pi^+$, K^0_S, $K^0_S\pi^0$, $K^0_S\pi^+$, $K^0_S\pi^+\pi^0$, and $K^0_S\pi^+\pi^-$ corrected for unobserved modes.

NODE=S049PBJ;LINKAGE=A

$B(B \to X_s \ell^+ \ell^-)$ (14.2 < q^2 GeV^2/c^4)

NODE=S049PBK

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$0.57^{+0.16}_{-0.15}{}^{+0.03}_{-0.02}$	[1] LEES	14D	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Measured from sum of exclusive modes through K^+, $K^+\pi^0$, $K^+\pi^-$, $K^+\pi^-\pi^0$, $K^+\pi^-\pi^+$, K^0_S, $K^0_S\pi^0$, $K^0_S\pi^+$, $K^0_S\pi^+\pi^0$, and $K^0_S\pi + \pi^-$ corrected for unobserved modes.

NODE=S049PBK;LINKAGE=A

$B(B \to X_s e^+ e^-)$ (14.2 < q^2 GeV^2/c^4)

NODE=S049PBL

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$0.56^{+0.19}_{-0.18}{}^{+0.03}_{-0.03}$	[1] LEES	14D	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Measured from sum of exclusive modes through K^+, $K^+\pi^0$, $K^+\pi^-$, $K^+\pi^-\pi^0$, $K^+\pi^-\pi^+$, K^0_S, $K^0_S\pi^0$, $K^0_S\pi^+$, $K^0_S\pi^+\pi^0$, and $K^0_S\pi + \pi^-$ corrected for unobserved modes.

NODE=S049PBL;LINKAGE=A

$B(B \to X_s \mu^+ \mu^-)$ (14.2 < q^2 GeV^2/c^4)

NODE=S049PBM

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$0.60^{+0.31}_{-0.29}{}^{+0.05}_{-0.04}$	[1] LEES	14D	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Measured from sum of exclusive modes through K^+, $K^+\pi^0$, $K^+\pi^-$, $K^+\pi^-\pi^0$, $K^+\pi^-\pi^+$, K^0_S, $K^0_S\pi^0$, $K^0_S\pi^+$, $K^0_S\pi^+\pi^0$, and $K^0_S\pi + \pi^-$ corrected for unobserved modes.

NODE=S049PBM;LINKAGE=A

LEPTON (HADRON) FORWARD-BACKWARD ASYMMETRY IN $B \to K^{(*)}\ell^+\ell^-$ ($B \to K/\pi h^+ h^-$) DECAY

NODE=S049220

The forward-backward angular asymmetry of the lepton pair in $B \to K^{(*)}\ell^+\ell^-$ ($B \to K/\pi h^+ h^-$) decay is defined as

$$A_{FB}(s) = \frac{N(cos\theta>0)-N(cos\theta<0)}{N(cos\theta>0)+N(cos\theta<0)},$$

where $s=q^2/m_B^2$, and θ is the angle of the ℓ^- (h^-) with respect to the flight direction of the B meson, measured in the dilepton (dihadron) rest frame. In addition, the fraction of longitudinal polarization F_L of the K^* and F_S, the relative contribution from scalar and pseudoscalar penguin amplitudes in $B \to K\ell^+\ell^-$, can be measured from the angular distribution of its decay products.

NODE=S049220

$A_{FB}(B \to K^*\ell^+\ell^-)$ (q^2 > 0.1 GeV^2/c^4)

NODE=S049FB1

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
0.50±0.15±0.02		[1] ISHIKAWA	06	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
>0.55	95	[2] AUBERT,B	06J	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Using an unbinned max. likelihood fits to the M_{bc} distribution in five q^2 bins for $\cos\theta > 0$ and $\cos\theta < 0$.

NODE=S049FB1;LINKAGE=IS

[2] Results with different q^2 cuts are also reported.

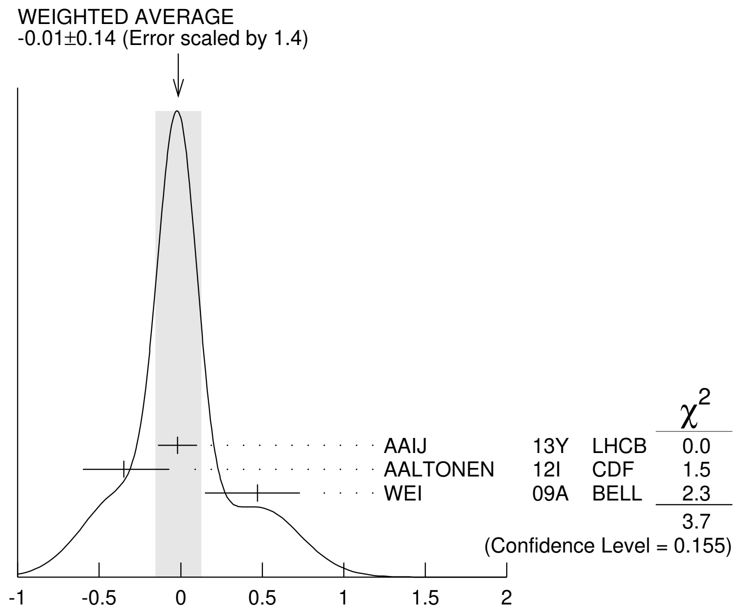
NODE=S049FB1;LINKAGE=AU

$A_{FB}(B \to K^*\ell^+\ell^-)$ (0.1 < q^2 < 2.0 GeV^2/c^4)

NODE=S049FB5

VALUE	DOCUMENT ID		TECN	COMMENT
−0.01±0.14 OUR AVERAGE	Error includes scale factor of 1.4. See the ideogram below.			
−0.02±0.12±0.01	AAIJ	13Y	LHCB	pp at 7 TeV, $K^{*0}\mu^+\mu^-$
$-0.35^{+0.26}_{-0.23}\pm0.10$	AALTONEN	12I	CDF	$p\overline{p}$ at 1.96 TeV
$0.47^{+0.26}_{-0.32}\pm0.03$	WEI	09A	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-0.29^{+0.37}_{-0.00}\pm0.18$	[1] CHATRCHYAN	13BL	CMS	pp at 7 TeV
−0.15±0.20±0.06	AAIJ	12U	LHCB	Repl. by AAIJ 13Y
$0.13^{+1.65}_{-0.75}\pm0.25$	AALTONEN	11L	CDF	Repl. by AALTONEN 12I

[1] CHATRCHYAN 13BL uses, for this bin, $1.0 < q^2 < 2.0$ GeV^2/c^4. NODE=S049FB5;LINKAGE=CH



$A_{FB}(B \to K^* \ell^+ \ell^-)$ ($0.1 < q^2 < 2.0$ GeV^2/c^4)

$A_{FB}(B \to K^* \ell^+ \ell^-)$ ($m_{\ell\ell} < 2.5$ GeV/c^2)

NODE=S049FB3

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.24^{+0.18}_{-0.23} \pm 0.05}$	AUBERT	09N	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{FB}(B \to K^* \ell^+ \ell^-)$ ($m_{\ell\ell} > 3.2$ GeV/c^2)

NODE=S049FB4

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.76^{+0.52}_{-0.32} \pm 0.07}$	AUBERT	09N	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{FB}(B \to K^* \ell^+ \ell^-)$ ($0.10 < q^2 < 0.98$ GeV^2/c^4)

NODE=S049FBP

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{-0.003^{+0.058}_{-0.057} \pm 0.009}$	AAIJ	16B	LHCB	pp at 7, 8 TeV

$A_{FB}(B \to K^* \ell^+ \ell^-)$ ($1.1 < q^2 < 2.5$ GeV^2/c^4)

NODE=S049FBQ

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{-0.191^{+0.068}_{-0.080} \pm 0.012}$	AAIJ	16B	LHCB	pp at 7, 8 TeV

$A_{FB}(B \to K^* \ell^+ \ell^-)$ ($2.0 < q^2 < 4.3$ GeV^2/c^4)

NODE=S049FB6

VALUE	DOCUMENT ID		TECN	COMMENT
−0.14 ±0.05 OUR AVERAGE				
$-0.118^{+0.082}_{-0.090} \pm 0.007$	[1] AAIJ	16B	LHCB	pp at 7, 8 TeV
$-0.12\ ^{+0.15}_{-0.17} \pm 0.05$	KHACHATRY...	16D	CMS	pp at 8 TeV
$-0.20 \pm 0.08 \pm 0.01$	AAIJ	13Y	LHCB	pp at 7 TeV, $K^{*0}\mu^+\mu^-$
$-0.07 \pm 0.20 \pm 0.02$	CHATRCHYAN	13BL	CMS	pp at 7 TeV
$0.29\ ^{+0.32}_{-0.35} \pm 0.15$	AALTONEN	12I	CDF	$p\overline{p}$ at 1.96 TeV
$0.11\ ^{+0.31}_{-0.36} \pm 0.07$	WEI	09A	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.05\ ^{+0.16}_{-0.20} \pm 0.04$	AAIJ	12U	LHCB	Repl. by AAIJ 13Y
$0.19\ ^{+0.40}_{-0.41} \pm 0.14$	AALTONEN	11L	CDF	Repl. by AALTONEN 12I

[1] Measured in $2.5 < q^2 < 4.0$ GeV^2/c^4. NODE=S049FB6;LINKAGE=A

$A_{FB}(B \to K^* \ell^+ \ell^-)$ ($0.0 < q^2 < 4.3$ GeV^2/c^4)

NODE=S049FBF

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{-0.08^{+0.21}_{-0.20} \pm 0.05}$	AALTONEN	12I	CDF	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.21^{+0.31}_{-0.33} \pm 0.05$	AALTONEN	11L	CDF	Repl. by AALTONEN 12I

$A_{FB}(B \to K^* \ell^+ \ell^-)$ ($4.0 < q^2 < 6.0$ GeV^2/c^4)

NODE=S049FBR

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.025^{+0.051}_{-0.052} \pm 0.004}$	AAIJ	16B	LHCB	pp at 7, 8 TeV

$A_{FB}(B \to K^* \ell^+ \ell^-)$ ($6.0 < q^2 < 8.0$ GeV^2/c^4)

NODE=S049FBS

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.152^{+0.041}_{-0.040} \pm 0.008}$	AAIJ	16B	LHCB	pp at 7, 8 TeV

$A_{FB}(B \to K^* \ell^+ \ell^-)$ ($1.0 < q^2 < 6.0$ GeV^2/c^4)

NODE=S049FBE

VALUE	DOCUMENT ID		TECN	COMMENT
-0.078 ± 0.022 OUR AVERAGE Error includes scale factor of 1.1.				
$-0.073 \pm 0.021 \pm 0.002$	[1] AAIJ	20Y	LHCB	pp at 7, 8, 13 TeV
-0.12 ± 0.08	KHACHATRY...	16D	CMS	pp at 7, 8 TeV
$0.21 ^{+0.10}_{-0.15} {}^{+0.07}_{-0.09}$	[2] LEES	16C	BABR	$e^+ e^- \to \Upsilon(4S)$
$-0.17 \pm 0.06 \pm 0.01$	AAIJ	13Y	LHCB	pp at 7 TeV, $K^{*0} \mu^+ \mu^-$
$0.29 ^{+0.20}_{-0.23} \pm 0.07$	AALTONEN	12I	CDF	$p\overline{p}$ at 1.96 TeV
$0.26 ^{+0.27}_{-0.30} \pm 0.07$	WEI	09A	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-0.075^{+0.032}_{-0.034} \pm 0.007$	[1] AAIJ	16B	LHCB	Repl. by AAIJ 20Y
0.55 ± 0.43	[3] SATO	16	BELL	$e^+ e^- \to \Upsilon(4S)$
$-0.07 \pm 0.12 \pm 0.01$	CHATRCHYAN	13BL	CMS	Repl. by KHACHATRYAN 16D
$-0.06 ^{+0.13}_{-0.14} \pm 0.07$	AAIJ	12U	LHCB	Repl. by AAIJ 13Y
$0.43 ^{+0.36}_{-0.37} \pm 0.06$	AALTONEN	11L	CDF	Repl. by AALTONEN 12I

[1] Measured in $1.1 < q^2 < 6.0$ GeV^2/c^4. NODE=S049FBE;LINKAGE=A

[2] Measured by combining B^0 and B^+ with e and μ as leptons. Results are also provided separately for B^0 and B^+. NODE=S049FBE;LINKAGE=C

[3] Uses $K^* \to K^- \pi^+$, $K^- \pi^0$, $K^0_S \pi^-$ in the range M($K\pi$) < 1.1 GeV/c^2. Uncertainty is statistical only. NODE=S049FBE;LINKAGE=B

$A_{FB}(B \to K^* \ell^+ \ell^-)$ ($4.3 < q^2 < 8.6$ GeV^2/c^4)

NODE=S049FB7

VALUE	DOCUMENT ID		TECN	COMMENT
$0.13^{+0.06}_{-0.05}$ OUR AVERAGE Error includes scale factor of 1.1.				
$0.16^{+0.06}_{-0.05} \pm 0.01$	AAIJ	13Y	LHCB	pp at 7 TeV, $K^{*0} \mu^+ \mu^-$
$-0.01 \pm 0.11 \pm 0.03$	CHATRCHYAN	13BL	CMS	pp at 7 TeV
$0.01 \pm 0.20 \pm 0.09$	AALTONEN	12I	CDF	$p\overline{p}$ at 1.96 TeV
$0.45^{+0.15}_{-0.21} \pm 0.15$	WEI	09A	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.27^{+0.06}_{-0.08} \pm 0.02$	AAIJ	12U	LHCB	Repl. by AAIJ 13Y
$-0.06^{+0.30}_{-0.28} \pm 0.05$	AALTONEN	11L	CDF	Repl. by AALTONEN 12I

$A_{FB}(B \to K^* \ell^+ \ell^-)$ ($10.09 < q^2 < 12.86$ GeV^2/c^4)

NODE=S049FBB

NEW

VALUE	DOCUMENT ID		TECN	COMMENT
0.288 ± 0.034 OUR AVERAGE Error includes scale factor of 1.2. [0.02 ± 0.13 OUR 2024 AVERAGE Scale factor = 4.5]				
$0.318^{+0.044}_{-0.040} \pm 0.009$	[1] AAIJ	16B	LHCB	pp at 7, 8 TeV
$0.16 \pm 0.06 \pm 0.01$	KHACHATRY...	16D	CMS	pp at 8 TeV
$0.28 ^{+0.07}_{-0.06} \pm 0.02$	AAIJ	13Y	LHCB	pp at 7 TeV, $K^{*0} \mu^+ \mu^-$

$0.40 \pm 0.08 \pm 0.05$	CHATRCHYAN	13BL	CMS	pp at 7 TeV
$0.38 {}^{+0.16}_{-0.19} \pm 0.09$	AALTONEN	12I	CDF	$p\overline{p}$ at 1.96 TeV
$0.43 {}^{+0.18}_{-0.20} \pm 0.03$	WEI	09A	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.27 {}^{+0.11}_{-0.13} \pm 0.02$	AAIJ	12U	LHCB	Repl. by AAIJ 13Y
$0.66 {}^{+0.23}_{-0.20} \pm 0.07$	AALTONEN	11L	CDF	Repl. by AALTONEN 12I

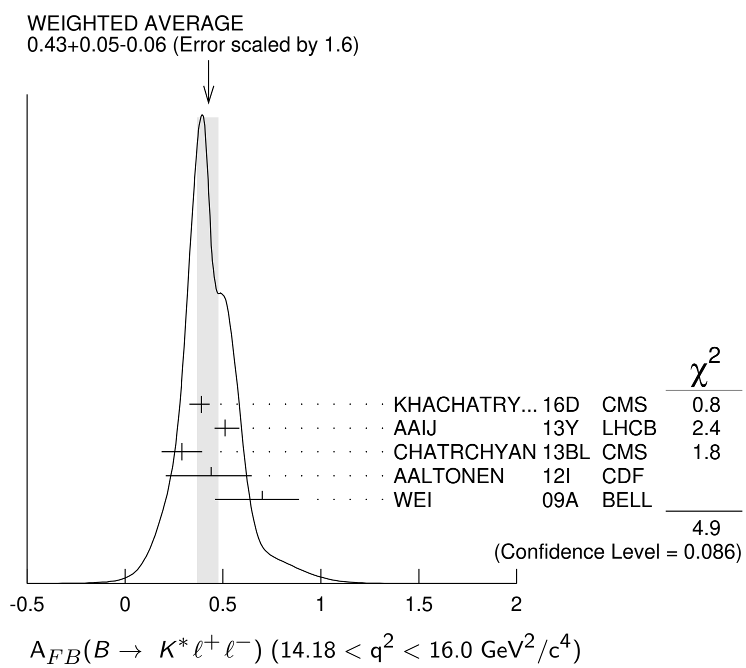
[1] Measured in $11.0 < q^2 < 12.5$ GeV^2/c^4.

NODE=S049FBB;LINKAGE=A

$A_{FB}(B \to K^* \ell^+ \ell^-)$ $(14.18 < q^2 < 16.0$ GeV^2/c$^4)$

NODE=S049FBC
NODE=S049FBC

VALUE	DOCUMENT ID		TECN	COMMENT
$0.43 {}^{+0.05}_{-0.06}$ OUR AVERAGE	Error includes scale factor of 1.6. See the ideogram below.			
$0.39 {}^{+0.04}_{-0.06} \pm 0.01$	KHACHATRY...	16D	CMS	pp at 8 TeV
$0.51 {}^{+0.07}_{-0.05} \pm 0.02$	AAIJ	13Y	LHCB	pp at 7 TeV, $K^{*0} \mu^+ \mu^-$
$0.29 \pm 0.09 \pm 0.05$	CHATRCHYAN	13BL	CMS	pp at 7 TeV
$0.44 {}^{+0.18}_{-0.21} \pm 0.10$	AALTONEN	12I	CDF	$p\overline{p}$ at 1.96 TeV
$0.70 {}^{+0.16}_{-0.22} \pm 0.10$	WEI	09A	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.47 {}^{+0.06}_{-0.08} \pm 0.03$	AAIJ	12U	LHCB	Repl. by AAIJ 13Y
$0.42 \pm 0.16 \pm 0.09$	AALTONEN	11L	CDF	Repl. by AALTONEN 12I



$A_{FB}(B \to K^* \ell^+ \ell^-)$ $(15.0 < q^2 < 17.0$ GeV^2/c$^4)$

NODE=S049FBT
NODE=S049FBT

VALUE	DOCUMENT ID		TECN	COMMENT
$0.411 {}^{+0.41}_{-0.037} \pm 0.008$	AAIJ	16B	LHCB	pp at 7, 8 TeV

$A_{FB}(B \to K^* \ell^+ \ell^-)$ $(17.0 < q^2 < 19.0$ GeV^2/c$^4)$

NODE=S049FBU
NODE=S049FBU

VALUE	DOCUMENT ID		TECN	COMMENT
$0.305 {}^{+0.049}_{-0.048} \pm 0.013$	AAIJ	16B	LHCB	pp at 7, 8 TeV

$A_{FB}(B \to K^* \ell^+ \ell^-)$ ($16.0 < q^2 < 19.0$ GeV^2/c^4)

NODE=S049FBD

VALUE	DOCUMENT ID		TECN	COMMENT
0.362±0.019 OUR AVERAGE				
0.353±0.020±0.010	[1] AAIJ	20Y	LHCB	pp at 7, 8, 13 TeV
0.35 ±0.07 ±0.01	KHACHATRY...	16D	CMS	pp at 8 TeV
0.30 ±0.08 $^{+0.01}_{-0.02}$	AAIJ	13Y	LHCB	pp at 7 TeV, $K^{*0}\mu^+\mu^-$
0.41 ±0.05 ±0.03	CHATRCHYAN	13BL	CMS	pp at 7 TeV
0.65 $^{+0.17}_{-0.18}$ ±0.16	AALTONEN	12I	CDF	$p\overline{p}$ at 1.96 TeV
0.66 $^{+0.11}_{-0.16}$ ±0.04	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.355±0.027±0.009	[1] AAIJ	16B	LHCB	Repl. by AAIJ 20Y
0.16 $^{+0.11}_{-0.13}$ ±0.06	AAIJ	12U	LHCB	Repl. by AAIJ 13Y
0.70 $^{+0.16}_{-0.25}$ ±0.10	AALTONEN	11L	CDF	Repl. by AALTONEN 12I

[1] Measured in $15.0 < q^2 < 19.0$ GeV^2/c^4.

NODE=S049FBD;LINKAGE=A

$A_{FB}(B \to K \ell^+ \ell^-)$ ($q^2 > 0.1$ GeV^2/c^4)

NODE=S049FB2

VALUE	DOCUMENT ID		TECN	COMMENT
0.11±0.12 OUR AVERAGE				
$0.15^{+0.21}_{-0.23}$±0.08	[1] AUBERT,B	06J	BABR	$e^+e^- \to \Upsilon(4S)$
0.10±0.14±0.01	[2] ISHIKAWA	06	BELL	$e^+e^- \to \Upsilon(4S)$

[1] Results with different q^2 cuts are also reported.

NODE=S049FB2;LINKAGE=AU

[2] Using an unbinned max. likelihood fits to the M_{bc} distribution in five q^2 bins for $\cos\theta > 0$ and $\cos\theta < 0$.

NODE=S049FB2;LINKAGE=IS

$A_{FB}(B \to K \ell^+ \ell^-)$ ($q^2 < 2.0$ GeV^2/c^4)

NODE=S049FB8

VALUE	DOCUMENT ID		TECN	COMMENT
$0.00^{+0.06}_{-0.05}$ OUR AVERAGE				
$0.00^{+0.06}_{-0.05}{}^{+0.03}_{-0.01}$	AAIJ	13H	LHCB	pp at 7 TeV
$0.13^{+0.42}_{-0.43}$±0.07	AALTONEN	12I	CDF	$p\overline{p}$ at 1.96 TeV
$0.06^{+0.32}_{-0.35}$±0.02	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-0.15^{+0.46}_{-0.39}$±0.08	AALTONEN	11L	CDF	Repl. by AALTONEN 12I

$A_{FB}(B \to K \ell^+ \ell^-)$ ($2.0 < q^2 < 4.3$ GeV^2/c^4)

NODE=S049FB9

VALUE	DOCUMENT ID		TECN	COMMENT
$0.09^{+0.10}_{-0.07}$ OUR AVERAGE Error includes scale factor of 1.4.				
$0.07^{+0.08}_{-0.05}{}^{+0.02}_{-0.01}$	AAIJ	13H	LHCB	pp at 7 TeV
$0.32^{+0.15}_{-0.16}$±0.05	AALTONEN	12I	CDF	$p\overline{p}$ at 1.96 TeV
$-0.43^{+0.38}_{-0.40}$±0.09	WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.72^{+0.40}_{-0.35}$±0.07	AALTONEN	11L	CDF	Repl. by AALTONEN 12I

$A_{FB}(B \to K \ell^+ \ell^-)$ ($0.0 < q^2 < 4.3$ GeV^2/c^4)

NODE=S049FBK

VALUE	DOCUMENT ID		TECN	COMMENT
0.31±0.16±0.04	AALTONEN	12I	CDF	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.36^{+0.24}_{-0.26}$±0.06	AALTONEN	11L	CDF	Repl. by AALTONEN 12I

$A_{FB}(B \to K \ell^+ \ell^-)$ ($1.0 < q^2 < 6.0$ GeV^2/c^4)

NODE=S049FBJ

VALUE	DOCUMENT ID	TECN	COMMENT
$0.034^{+0.040}_{-0.029}$ OUR AVERAGE			
$0.02\ ^{+0.05}_{-0.03}\ ^{+0.02}_{-0.01}$	AAIJ 13H	LHCB	pp at 7 TeV
$0.13 \pm 0.09 \pm 0.02$	AALTONEN 12I	CDF	$p\overline{p}$ at 1.96 TeV
$-0.04\ ^{+0.13}_{-0.16} \pm 0.05$	WEI 09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.00 ± 0.13	[1] SATO 16	BELL	$e^+e^- \to \Upsilon(4S)$
$0.08\ ^{+0.27}_{-0.22} \pm 0.07$	AALTONEN 11L	CDF	Repl. by AALTONEN 12I

[1] Statistical uncertainty only.

NODE=S049FBJ;LINKAGE=A

$A_{FB}(B \to K \ell^+ \ell^-)$ ($4.3 < q^2 < 8.6$ GeV^2/c^4)

NODE=S049FBA

VALUE	DOCUMENT ID	TECN	COMMENT
$-0.04^{+0.04}_{-0.05}$ OUR AVERAGE			
$-0.02^{+0.03}_{-0.05} \pm 0.03$	AAIJ 13H	LHCB	pp at 7 TeV
$0.01^{+0.13}_{-0.10} \pm 0.01$	AALTONEN 12I	CDF	$p\overline{p}$ at 1.96 TeV
$-0.20^{+0.12}_{-0.14} \pm 0.03$	WEI 09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$-0.20^{+0.17}_{-0.28} \pm 0.03$	AALTONEN 11L	CDF	Repl. by AALTONEN 12I

$A_{FB}(B \to K \ell^+ \ell^-)$ ($10.09 < q^2 < 12.86$ GeV^2/c^4)

NODE=S049FBG

VALUE	DOCUMENT ID	TECN	COMMENT
-0.05 ± 0.06 OUR AVERAGE			
$-0.03 \pm 0.07 \pm 0.01$	AAIJ 13H	LHCB	pp at 7 TeV
$-0.03^{+0.11}_{-0.10} \pm 0.04$	AALTONEN 12I	CDF	$p\overline{p}$ at 1.96 TeV
$-0.21^{+0.17}_{-0.15} \pm 0.06$	WEI 09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$-0.10^{+0.17}_{-0.15} \pm 0.07$	AALTONEN 11L	CDF	Repl. by AALTONEN 12I

$A_{FB}(B \to K \ell^+ \ell^-)$ ($14.18 < q^2 < 16.0$ GeV^2/c^4)

NODE=S049FBH

VALUE	DOCUMENT ID	TECN	COMMENT
$-0.02^{+0.07}_{-0.05}$ OUR AVERAGE			
$-0.01^{+0.12}_{-0.06} \pm 0.01$	AAIJ 13H	LHCB	pp at 7 TeV
$-0.05^{+0.09}_{-0.11} \pm 0.03$	AALTONEN 12I	CDF	$p\overline{p}$ at 1.96 TeV
$0.04^{+0.32}_{-0.26} \pm 0.05$	WEI 09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.03^{+0.49}_{-0.16} \pm 0.04$	AALTONEN 11L	CDF	Repl. by AALTONEN 12I

$A_{FB}(B \to K \ell^+ \ell^-)$ ($16.0 < q^2 < 18.0$ GeV^2/c^4)

NODE=S049FBL

VALUE	DOCUMENT ID	TECN	COMMENT
$-0.09^{+0.07}_{-0.09}{}^{+0.02}_{-0.01}$	AAIJ 13H	LHCB	pp at 7 TeV

$A_{FB}(B \to K \ell^+ \ell^-)$ ($18.0 < q^2 < 22.0$ GeV^2/c^4)

NODE=S049FBM

VALUE	DOCUMENT ID	TECN	COMMENT
$0.02 \pm 0.11 \pm 0.01$	AAIJ 13H	LHCB	pp at 7 TeV

$A_{FB}(B \to K \ell^+ \ell^-)$ ($q^2 > 16.0$ GeV^2/c^4)

NODE=S049FBI

VALUE	DOCUMENT ID	TECN	COMMENT
$0.04^{+0.09}_{-0.07}$ OUR AVERAGE			
$0.09^{+0.17}_{-0.13} \pm 0.03$	AALTONEN 12I	CDF	$p\overline{p}$ at 1.96 TeV
$0.02^{+0.11}_{-0.08} \pm 0.02$	WEI 09A	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.07^{+0.30}_{-0.23} \pm 0.02$	AALTONEN 11L	CDF	Repl. by AALTONEN 12I

$A_{FB}(B \to X_s \ell^+ \ell^-)$ ($1.0 < q^2 < 6.0$ GeV^2/c^4)

NODE=S049A00

VALUE	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.74 ± 0.54	[1] SATO 16	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] Uses the sum of 10 exclusive X_s modes in the range M(X_s) > 1.1 GeV/c^2. Uncertainty is statistical only.

NODE=S049A00;LINKAGE=A

$F_S(B \to K \ell^+ \ell^-)$ ($q^2 > 0.1$ GeV^2/c^4)

NODE=S049FS

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{0.81^{+0.58}_{-0.61} \pm 0.46}$	[1] AUBERT,B 06J	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Results with different q^2 cuts are also reported.

NODE=S049FS;LINKAGE=AU

$A_{FB}(B \to K p \overline{p})$ ($m_{p\overline{p}} < 2.85$ GeV/c^2)

NODE=S049FBN

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{0.495 \pm 0.012 \pm 0.007}$	[1] AAIJ 14AF	LHCB	pp at 7, 8 TeV

[1] Measured in $B^+ \to K^+ p \overline{p}$ decays.

NODE=S049FBN;LINKAGE=AA

$A_{FB}(B \to \pi p \overline{p})$ ($m_{p\overline{p}} < 2.85$ GeV/c^2)

NODE=S049FBO

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{-0.409 \pm 0.033 \pm 0.006}$	[1] AAIJ 14AF	LHCB	pp at 7, 8 TeV

[1] Measured in $B^+ \to \pi^+ p \overline{p}$ decays.

NODE=S049FBO;LINKAGE=AA

A_{FB} in $B \to \overline{D}^* e^+ \nu_e$

NODE=S049A17

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{0.227 \pm 0.020 \pm 0.006}$	[1] PRIM 23	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] This is the B^+ and B^0 average.

NODE=S049A17;LINKAGE=A

A_{FB} in $B \to \overline{D}^* \mu^+ \nu_\mu$

NODE=S049A18

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{0.256 \pm 0.020 \pm 0.005}$	[1] PRIM 23	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] This is the B^+ and B^0 average.

NODE=S049A18;LINKAGE=A

$\Delta(A_{FB}) = (A^{\mu}_{FB} - A^{e}_{FB})$ in $B^0 \to D^{*-} \ell^+ \nu_\ell$

NODE=S049A19

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{0.028 \pm 0.028 \pm 0.008}$	[1] PRIM 23	BELL	$e^+ e^- \to \Upsilon(4S)$

[1] This is the B^+ and B^0 average.

NODE=S049A19;LINKAGE=A

ISOSPIN ASYMMETRY

NODE=S049245

Δ_{0-} is defined as

NODE=S049245

$$\frac{\Gamma(\overline{B}^0 \to f_d) - \Gamma(B^- \to f_u)}{\Gamma(\overline{B}^0 \to f_d) + \Gamma(B^- \to f_u)},$$

the isospin asymmetry of inclusive neutral and charged B decay.

$\Delta_{0-}(B(B \to X_s \gamma))$

NODE=S049IA1

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{-0.005 \pm 0.020}$ **OUR AVERAGE**			
$-0.0048 \pm 0.0149 \pm 0.0150$	[1] WATANUKI 19	BELL	$e^+ e^- \to \Upsilon(4S)$
$-0.006 \pm 0.058 \pm 0.026$	AUBERT,B 05R	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Using a sum-of-exclusive technique with $m_{X_s} < 2.8$ GeV/c^2.

NODE=S049IA1;LINKAGE=A

$\Delta_{0-}(B(B \to X_{s+d} \gamma))$

NODE=S049A07

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{-0.06 \pm 0.15 \pm 0.07}$	[1] AUBERT 08O	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] Uses a fully reconstructed B meson as a tag on the recoil side. The result is for $E_\gamma >$ 2.2 GeV.

NODE=S049A07;LINKAGE=A

$\Delta_{0+}(B \to K^*(892)\gamma)$ NODE=S049IS1

Δ_{0+} describes the isospin asymmetry between $\Gamma(B^0 \to K^*(892)^0\gamma)$ and $\Gamma(B^+ \to K^*(892)^+\gamma)$. NODE=S049IS1

VALUE	DOCUMENT ID		TECN	COMMENT	NODE=S049IS1
0.063±0.017 OUR AVERAGE					
0.062±0.015±0.013	[1] HORIGUCHI	17	BELL	$e^+e^- \to \Upsilon(4S)$	
0.066±0.021±0.022	[2] AUBERT	09AO	BABR	$e^+e^- \to \Upsilon(4S)$	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.050±0.045±0.037	[3] AUBERT,BE	04A	BABR	Repl. by AUBERT 09AO	
0.012±0.044±0.026	NAKAO	04	BELL	Repl. by HORIGUCHI 17	

[1] Uses B($\Upsilon(4S) \to B^+B^-$) = (51.4 ± 0.6)% and B($\Upsilon(4S) \to B^0\overline{B}^0$) = (48.6 ± 0.6)%. NODE=S049IS1;LINKAGE=A

[2] Uses the production ratio of charged and neutral B from $\Upsilon(4S)$ decays and the lifetime ratio τ_{B^+}/τ_{B^0} = 1.071 ± 0.009. The 90% CL interval is 0.017< Δ_{0+} < 0.116 NODE=S049IS1;LINKAGE=AE

[3] Uses the production ratio of charged and neutral B from $\Upsilon(4S)$ decays $R^{+/0}$ = 1.006 ± 0.048 and the lifetime ratio of τ_{B^+} / τ_{B^0} = 1.083 ± 0.017. The 90% CL interval is −0.046 < Δ_{0+} < 0.146. NODE=S049IS1;LINKAGE=AU

$\Delta_{\rho\gamma} = \Gamma(B^+ \to \rho^+\gamma) / (2 \cdot \Gamma(B^0 \to \rho^0\gamma)) - 1$ NODE=S049IA2

VALUE	DOCUMENT ID		TECN	COMMENT	NODE=S049IA2
−0.46±0.17 OUR AVERAGE					
$-0.43^{+0.25}_{-0.22}\pm0.10$	AUBERT	08BH	BABR	$e^+e^- \to \Upsilon(4S)$	
$-0.48^{+0.21}_{-0.19}{}^{+0.08}_{-0.09}$	TANIGUCHI	08	BELL	$e^+e^- \to \Upsilon(4S)$	

$\Delta_{0-}(B(B \to K\ell^+\ell^-))$ NODE=S049IA3

VALUE	DOCUMENT ID		TECN	COMMENT	NODE=S049IA3
−0.15±0.06 OUR AVERAGE Error includes scale factor of 1.2.					
$-0.31^{+0.13}_{-0.11}\pm0.01$	[1] CHOUDHURY	21	BELL	$e^+e^- \to \Upsilon(4S)$	
$-0.10^{+0.08}_{-0.09}\pm0.02$	[2] AAIJ	14M	LHCB	pp at 7, 8 TeV	
$-0.09^{+0.08}_{-0.08}\pm0.02$	[3] AAIJ	14M	LHCB	pp at 7, 8 TeV	OCCUR=2
$-0.58^{+0.29}_{-0.37}\pm0.02$	[4] LEES	12S	BABR	$e^+e^- \to \Upsilon(4S)$	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$-0.35^{+0.23}_{-0.27}$	[5] AAIJ	12AH	LHCB	Repl. by AAIJ 14M	
$-1.43^{+0.56}_{-0.85}\pm0.05$	[6,7] AUBERT	09T	BABR	Repl. by LEES 12S	
$-0.31^{+0.17}_{-0.14}\pm0.08$	[8,9] WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$	

[1] For 1.0 < q^2 < 6.0 GeV^2/c^4 using both $\mu^+\mu^-$ and e^+e^- as a lepton pair. Measurements in other q^2 bins are also reported. NODE=S049IA3;LINKAGE=C

[2] For 1.1 < q^2 < 6.0 GeV^2/c^4 using $\mu^+\mu^-$ as a lepton pair and assuming isospin symmetry for the $B \to J/\psi(1S)K$. Measurements in other q^2 bins are also reported. NODE=S049IA3;LINKAGE=A

[3] For 15.0 < q^2 < 19.0 GeV^2/c^4 using $\mu^+\mu^-$ as a lepton pair and assuming isospin symmetry for the $B \to J/\psi(1S)K$. Measurements in other q^2 bins are also reported. NODE=S049IA3;LINKAGE=B

[4] For 0.10 < q^2 < 8.12 GeV^2/c^4. Measurements in other q^2 bins are also reported. NODE=S049IA3;LINKAGE=LE

[5] For 1 < q^2 < 6 GeV^2/c^4. NODE=S049IA3;LINKAGE=AA

[6] For 0.1 < $m^2_{\ell^+\ell^-}$ < 7.02 GeV^2/c^4. NODE=S049IA3;LINKAGE=AU

[7] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S049IA3;LINKAGE=EP

[8] Superseded by CHOUDHURY 21. NODE=S049IA3;LINKAGE=D

[9] For q^2 < 8.68 GeV^2/c^4. NODE=S049IA3;LINKAGE=WE

$\Delta_{0-}(B(B \to K^*\ell^+\ell^-))$ NODE=S049IA4

VALUE	DOCUMENT ID		TECN	COMMENT	NODE=S049IA4
$-0.03^{+0.08}_{-0.07}$ OUR AVERAGE Error includes scale factor of 1.2.					
$0.00^{+0.12}_{-0.10}\pm0.02$	[1] AAIJ	14M	LHCB	pp at 7, 8 TeV	
$0.06^{+0.10}_{-0.09}\pm0.02$	[2] AAIJ	14M	LHCB	pp at 7, 8 TeV	OCCUR=2
$-0.25^{+0.20}_{-0.17}\pm0.03$	[3] LEES	12S	BABR	$e^+e^- \to \Upsilon(4S)$	
−0.29±0.16±0.09	[4] WEI	09A	BELL	$e^+e^- \to \Upsilon(4S)$	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
−0.15±0.16	[5] AAIJ	12AH	LHCB	Repl. by AAIJ 14M	
$-0.56^{+0.17}_{-0.15}\pm0.03$	[6,7] AUBERT	09T	BABR	Repl. by LEES 12S	

[1] For 1.1 < q^2 < 6.0 GeV^2/c^4 using $\mu^+\mu^-$ as a lepton pair and assuming isospin symmetry for the B($B \to J/\psi(1S) K^*(892)$). Measurements in other q^2 bins are also reported. NODE=S049IA4;LINKAGE=A
[2] For 15.0 < q^2 < 22.0 GeV^2/c^4 using $\mu^+\mu^-$ as a lepton pair and assuming isospin symmetry for the B($B \to J/\psi(1S) K^*(892)$). Measurements in other q^2 bins are also reported. NODE=S049IA4;LINKAGE=B
[3] For 0.10 < q^2 < 8.12 GeV^2/c^4. Measurements in other q^2 bins are also reported. NODE=S049IA4;LINKAGE=LE
[4] For q^2 < 8.68 GeV^2/c^4. NODE=S049IA4;LINKAGE=WE
[5] For 1 < q^2 < 6 GeV^2/c^4. NODE=S049IA4;LINKAGE=AA
[6] For 0.1 < $m^2_{\ell^+\ell^-}$ < 7.02 GeV^2/c^4. NODE=S049IA4;LINKAGE=AU
[7] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S049IA4;LINKAGE=EP

Δ_{0-}(B($B \to K^{(*)}\ell^+\ell^-$))

NODE=S049IA5
NODE=S049IA5

VALUE	DOCUMENT ID	TECN	COMMENT
−0.45±0.17 OUR AVERAGE	Error includes scale factor of 1.7.		
$-0.64^{+0.15}_{-0.14}\pm0.03$	[1,2] AUBERT 09T	BABR	$e^+e^- \to \Upsilon(4S)$
$-0.30^{+0.12}_{-0.11}\pm0.08$	[3] WEI 09A	BELL	$e^+e^- \to \Upsilon(4S)$

[1] For 0.1 < $m^2_{\ell^+\ell^-}$ < 7.02 GeV^2/c^4. NODE=S049IA5;LINKAGE=AU
[2] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. NODE=S049IA5;LINKAGE=EP
[3] For q^2 < 8.68 GeV^2/c^2. NODE=S049IA5;LINKAGE=WE

$B \to X_c \ell\nu$ HADRONIC MASS MOMENTS

NODE=S049230

$\langle M_X^2 - \overline{M}_D^2 \rangle$ (First Moments)

NODE=S049MX1
NODE=S049MX1

VALUE (GeV^2)	DOCUMENT ID	TECN	COMMENT
0.36 ±0.08 OUR AVERAGE	Error includes scale factor of 1.8.		
0.467±0.038±0.068	[1] ACOSTA 05F	CDF	$p\overline{p}$ at 1.96 TeV
0.293±0.012±0.058	[2] CSORNA 04	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.251±0.023±0.062	[3] CRONIN-HEN..01B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] Moments are measured with a minimum lepton momentum of 0.7 GeV/c in the B rest frame; NODE=S049MX1;LINKAGE=AC
[2] Uses minimum lepton energy of 1.5 GeV and also reports moments with E_ℓ > 1.0 GeV. NODE=S049MX1;LINKAGE=CS
[3] The leptons are required to have P_ℓ > 1.5 GeV/c. NODE=S049MX1;LINKAGE=A

$\langle M_X^2 \rangle$ (First Moments)

NODE=S049MX4
NODE=S049MX4

VALUE (GeV^2)	DOCUMENT ID	TECN	COMMENT
4.156±0.029 OUR AVERAGE			
4.144±0.028±0.022	[1] SCHWANDA 07	BELL	$e^+e^- \to \Upsilon(4S)$
4.18 ±0.04 ±0.03	[1] AUBERT,B 04	BABR	$e^+e^- \to \Upsilon(4S)$

[1] The leptons are required to have E_ℓ > 1.5 GeV/c. NODE=S049MX4;LINKAGE=SC

$\langle (M_X^2 - \overline{M}_X^2)^2 \rangle$ (Second Moments)

NODE=S049MX2
NODE=S049MX2

VALUE (GeV^4)	DOCUMENT ID	TECN	COMMENT
0.55 ±0.08 OUR AVERAGE			
0.515±0.061±0.064	[1] SCHWANDA 07	BELL	$e^+e^- \to \Upsilon(4S)$
0.629±0.031±0.143	[2] CSORNA 04	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
1.05 ±0.26 ±0.13	[3] ACOSTA 05F	CDF	$p\overline{p}$ at 1.96 TeV
0.576±0.048±0.168	[1] CRONIN-HEN..01B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] The leptons are required to have E_ℓ > 1.5 GeV/c. NODE=S049MX2;LINKAGE=A
[2] Uses minimum lepton energy of 1.5 GeV and also reports moments with E_ℓ > 1.0 GeV. NODE=S049MX2;LINKAGE=CS
[3] Moments are measured with a minimum lepton momentum of 0.7 GeV/c in the B rest frame; NODE=S049MX2;LINKAGE=AC

$\langle (M_X^2 - \overline{M}_D^2)^2 \rangle$ (Second Moments)

NODE=S049MX3
NODE=S049MX3

VALUE (GeV^4)	DOCUMENT ID	TECN	COMMENT
0.639±0.056±0.178	[1] CRONIN-HEN..01B	CLE2	$e^+e^- \to \Upsilon(4S)$

[1] The leptons are required to have E_ℓ > 1.5 GeV/c. NODE=S049MX3;LINKAGE=A

$B \to X_c \ell \nu$ LEPTON MOMENTUM MOMENTS

NODE=S049240

R_0 ($\Gamma_{E_l>1.7GeV}$ / $\Gamma_{E_l>1.5GeV}$)

NODE=S049EL
NODE=S049EL

VALUE	DOCUMENT ID		TECN	COMMENT
0.6187±0.0014±0.0016	[1] MAHMOOD	03	CLE2	$e^+ e^- \to \Upsilon(4S)$

[1] The leptons are required to have E_l >1.5 GeV in the B rest frame.

NODE=S049EL;LINKAGE=LE

R_1 ($\langle E_l \rangle_{E_l>1.5GeV}$)

NODE=S049AEL
NODE=S049AEL

VALUE	DOCUMENT ID		TECN	COMMENT
1.7797±0.0018 OUR AVERAGE	Error includes scale factor of 1.8. See the ideogram below.			
1.7743±0.0019±0.0014	[1] AUBERT,B	04A	BABR	$e^+ e^- \to \Upsilon(4S)$
1.7792±0.0021±0.0027	[2] MAHMOOD	04	CLEO	$e^+ e^- \to \Upsilon(4S)$
1.7810±0.0007±0.0009	[3] MAHMOOD	03	CLE2	$e^+ e^- \to \Upsilon(4S)$

[1] The leptons are required to have E_l > 1.5 GeV in the B rest frame. The result with E_l > 0.6 GeV is also given.

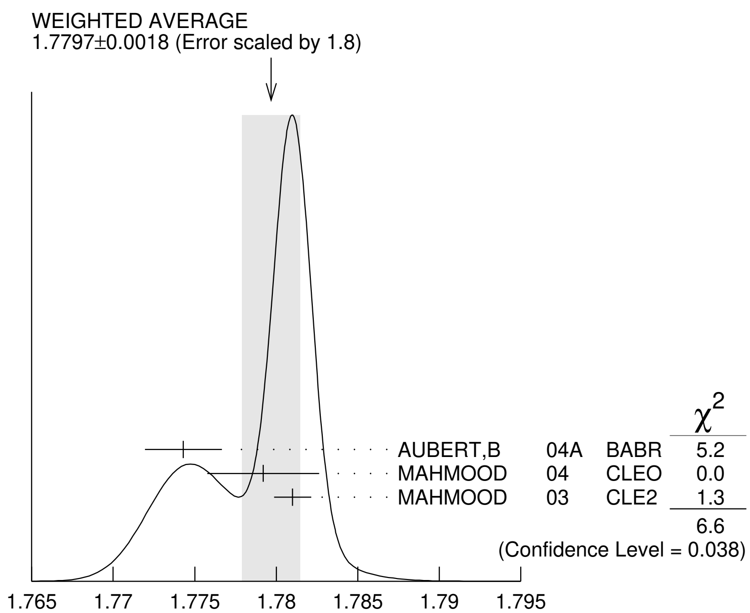
NODE=S049AEL;LINKAGE=AU

[2] Uses E_e > 1.5 GeV and also reports moments with other minimum minimum E_e conditions, as low as E_e > 0.6 GeV.

NODE=S049AEL;LINKAGE=MA

[3] The leptons are required to have E_l >1.5 GeV in the B rest frame.

NODE=S049AEL;LINKAGE=LE



R_1 ($\langle E_l \rangle_{E_l>1.5GeV}$)

R_2 ($\langle E_l^2 - \overline{E}_l^2 \rangle_{E_l>1.5GeV}$)

NODE=S049EL2
NODE=S049EL2

VALUE (10^{-3} GeV^2)	DOCUMENT ID		TECN	COMMENT
30.8±0.8 OUR AVERAGE				
30.3±0.9±0.5	[1] AUBERT,B	04A	BABR	$e^+ e^- \to \Upsilon(4S)$
31.6±0.8±1.0	[2] MAHMOOD	04	CLEO	$e^+ e^- \to \Upsilon(4S)$

[1] The leptons are required to have E_l > 1.5 GeV in the B rest frame. The result with E_l > 0.6 GeV is also given.

NODE=S049EL2;LINKAGE=AU

[2] Uses E_e > 1.5 GeV and also reports moments with other minimum minimum E_e conditions, as low as E_e > 0.6 GeV.

NODE=S049EL2;LINKAGE=MA

R_3 ($\langle E_l^3 - \overline{E}_l^3 \rangle_{E_l>1.5GeV}$)

NODE=S049EL3
NODE=S049EL3

VALUE (10^{-3} GeV^3)	DOCUMENT ID		TECN	COMMENT
2.12±0.47±0.20	[1] AUBERT,B	04A	BABR	$e^+ e^- \to \Upsilon(4S)$

[1] The leptons are required to have E_l > 1.5 GeV in the B rest frame. The result with E_l > 0.6 GeV is also given.

NODE=S049EL3;LINKAGE=AU

$B \to X_s\gamma$ PHOTON ENERGY MOMENTS

NODE=S049250

$\langle E_\gamma \rangle$

NODE=S049GM1
NODE=S049GM1

VALUE (GeV)		DOCUMENT ID		TECN	COMMENT
2.314±0.011 OUR AVERAGE					
$2.346 \pm 0.018 ^{+0.027}_{-0.022}$	[1,2]	LEES	12U	BABR	$e^+ e^- \to \Upsilon(4S)$
$2.304 \pm 0.014 \pm 0.017$	[2,3]	LEES	12V	BABR	$e^+ e^- \to \Upsilon(4S)$
$2.311 \pm 0.009 \pm 0.015$	[3]	LIMOSANI	09	BELL	$e^+ e^- \to \Upsilon(4S)$
$2.289 \pm 0.058 \pm 0.027$	[3,4]	AUBERT	08O	BABR	$e^+ e^- \to \Upsilon(4S)$
$2.309 \pm 0.023 \pm 0.023$	[2,3]	SCHWANDA	08	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$2.288 \pm 0.025 \pm 0.023$	[3]	AUBERT,BE	06B	BABR	Repl. by LEES 12V

[1] LEES 12U uses $E_\gamma > 1.897$ GeV to calculate the moments; the moments are used to calculate the HQET parameters $m_b = 4.579^{+0.032}_{-0.029}$ GeV/c^2 and $\mu_\pi^2 = 0.257^{+0.034}_{-0.039}$ GeV^2 in the shape function model. The same HQET parameters are also determined in the kinetic model.

NODE=S049GM1;LINKAGE=LE

[2] Results for different E_γ threshold values are also measured.

NODE=S049GM1;LINKAGE=SC

[3] The result is for $E_\gamma > 1.9$ GeV.

NODE=S049GM1;LINKAGE=AU

[4] Uses a fully reconstructed B meson as a tag on the recoil side.

NODE=S049GM1;LINKAGE=UB

$\langle E_\gamma^2 \rangle - \langle E_\gamma \rangle^2$

NODE=S049GM2
NODE=S049GM2

VALUE (10^{-2} GeV^2)		DOCUMENT ID		TECN	COMMENT
3.03±0.25 OUR AVERAGE					
$2.11 \pm 0.57 ^{+0.55}_{-0.69}$	[1,2]	LEES	12U	BABR	$e^+ e^- \to \Upsilon(4S)$
$3.62 \pm 0.33 \pm 0.33$	[2,3]	LEES	12V	BABR	$e^+ e^- \to \Upsilon(4S)$
$3.02 \pm 0.19 \pm 0.30$	[3]	LIMOSANI	09	BELL	$e^+ e^- \to \Upsilon(4S)$
$3.34 \pm 1.24 \pm 0.62$	[3,4]	AUBERT	08O	BABR	$e^+ e^- \to \Upsilon(4S)$
$2.17 \pm 0.60 \pm 0.55$	[2,3]	SCHWANDA	08	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$3.28 \pm 0.40 \pm 0.43$	[3]	AUBERT,BE	06B	BABR	Repl. by LEES 12V

[1] LEES 12U uses $E_\gamma > 1.897$ GeV to calculate the moments; the moments are used to calculate the HQET parameters $m_b = 4.579^{+0.032}_{-0.029}$ GeV/c^2 and $\mu_\pi^2 = 0.257^{+0.034}_{-0.039}$ GeV^2 in the shape function model. The same HQET parameters are also determined in the kinetic model.

NODE=S049GM2;LINKAGE=LE

[2] Results for different E_γ threshold values are also measured.

NODE=S049GM2;LINKAGE=SC

[3] The result is for $E_\gamma > 1.9$ GeV.

NODE=S049GM2;LINKAGE=AU

[4] Uses a fully reconstructed B meson as a tag on the recoil side.

NODE=S049GM2;LINKAGE=UB

$B^\pm/B^0$ ADMIXTURE REFERENCES

NODE=S049

ADACHI	24O	PR D110 072020	I. Adachi *et al.*	(BELLE II Collab.)	REFID=63091
FERLEWICZ	24	PR D110 072005	D. Ferlewicz *et al.*	(BELLE Collab.)	REFID=63084
AAIJ	23AR	PRL 131 111802	R. Aaij *et al.*	(LHCb Collab.)	REFID=62445
AGGARWAL	23	PRL 131 051804	L. Aggarwal *et al.*	(BELLE II Collab.)	REFID=62319
CAO	23	PRL 131 211801	L. Cao *et al.*	(BELLE Collab.)	REFID=62467
PRIM	23	PR D108 012002	M.T. Prim *et al.*	(BELLE Collab.)	REFID=62303
ZHUKOVA	23	JHEP 2308 131	V. Zhukova *et al.*	(BELLE Collab.)	REFID=62312
CAO	21A	PR D104 012008	L. Cao *et al.*	(BELLE Collab.)	REFID=61361
CHOUDHURY	21	JHEP 2103 105	S. Choudhury *et al.*	(BELLE Collab.)	REFID=61037
WEHLE	21	PRL 126 161801	S. Wehle *et al.*	(BELLE Collab.)	REFID=61178
AAIJ	20Y	PRL 125 011802	R. Aaij *et al.*	(LHCb Collab.)	REFID=60572
CARIA	20	PRL 124 161803	G. Caria *et al.*	(BELLE Collab.)	REFID=60557
AAIJ	19AD	PR D100 031102	R. Aaij *et al.*	(LHCb Collab.)	REFID=59907
WATANUKI	19	PR D99 032012	S. Watanuki *et al.*	(BELLE Collab.)	REFID=59618
GRYGIER	17	PR D96 091101	J. Grygier *et al.*	(BELLE Collab.)	REFID=58302
HIROSE	17	PRL 118 211801	S. Hirose *et al.*	(BELLE Collab.)	REFID=57929
Also		PR D97 012004	S. Hirose *et al.*	(BELLE Collab.)	REFID=58712
HORIGUCHI	17	PRL 119 191802	T. Horiguchi *et al.*	(BELLE Collab.)	REFID=58275
LEES	17B	PR D95 072001	J.P. Lees *et al.*	(BABAR Collab.)	REFID=57976
AAIJ	16B	JHEP 1602 104	R. Aaij *et al.*	(LHCb Collab.)	REFID=57152
BHARDWAJ	16	PR D93 052016	V. Bhardwaj *et al.*	(BELLE Collab.)	REFID=57272
KHACHATRY...	16D	PL B753 424	V. Khachatryan *et al.*	(CMS Collab.)	REFID=57008
LEES	16	PRL 116 041801	J.P. Lees *et al.*	(BABAR Collab.)	REFID=57108
LEES	16C	PR D93 052015	J.P. Lees *et al.*	(BABAR Collab.)	REFID=57271
SATO	16	PR D93 032008	Y. Sato *et al.*	(BELLE Collab.)	REFID=57251
Also		PR D93 059901 (errat.)	Y. Sato *et al.*	(BELLE Collab.)	REFID=57274
HUSCHLE	15	PR D92 072014	M. Huschle *et al.*	(BELLE Collab.)	REFID=56899
PESANTEZ	15	PRL 114 151601	L. Pesantez *et al.*	(BELLE Collab.)	REFID=56470
SAITO	15	PR D91 052004	T. Saito *et al.*	(BELLE Collab.)	REFID=56405
AAIJ	14AF	PRL 113 141801	R. Aaij *et al.*	(LHCb Collab.)	REFID=55891
AAIJ	14M	JHEP 1406 133	R. Aaij *et al.*	(LHCb Collab.)	REFID=55726
LEES	14D	PRL 112 211802	J.P. Lees *et al.*	(BABAR Collab.)	REFID=55853
LEES	14K	PR D90 092001	J.P. Lees *et al.*	(BABAR Collab.)	REFID=56157
AAIJ	13H	JHEP 1302 105	R. Aaij *et al.*	(LHCb Collab.)	REFID=54859
AAIJ	13Y	JHEP 1308 131	R. Aaij *et al.*	(LHCb Collab.)	REFID=55047

CHATRCHYAN	13BL	PL B727 77	S. Chatrchyan *et al.*	(CMS Collab.)	REFID=55439
LEES	13I	PR D87 112005	J.P. Lees *et al.*	(BABAR Collab.)	REFID=55161
LEES	13M	PR D88 032012	J.P. Lees *et al.*	(BABAR Collab.)	REFID=55178
AAIJ	12AH	JHEP 1207 133	R. Aaij *et al.*	(LHCb Collab.)	REFID=54472
AAIJ	12U	PRL 108 181806	R. Aaij *et al.*	(LHCb Collab.)	REFID=54215
AALTONEN	12I	PRL 108 081807	T. Aaltonen *et al.*	(CDF Collab.)	REFID=54206
LEES	12	PR D85 011102	J.P. Lees *et al.*	(BABAR Collab.)	REFID=53992
LEES	12D	PRL 109 101802	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54261
Also		PR D88 072012	J.P. Lees *et al.*	(BABAR Collab.)	REFID=55461
LEES	12R	PR D86 032004	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54385
LEES	12S	PR D86 032012	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54386
LEES	12U	PR D86 052012	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54613
LEES	12V	PRL 109 191801	J.P. Lees	(BABAR Collab.)	REFID=54614
Also		PR D86 112008	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54802
AALTONEN	11AI	PRL 107 201802	T. Aaltonen *et al.*	(CDF Collab.)	REFID=53836
AALTONEN	11L	PRL 106 161801	T. Aaltonen *et al.*	(CDF Collab.)	REFID=16443
DEL-AMO-SA...	11	PR D83 031103	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=53663
GAMBINO	11	JHEP 1109 055	P. Gambino	(LCGT)	REFID=58783
AUBERT	10	PRL 104 011802	B. Aubert *et al.*	(BABAR Collab.)	REFID=53189
AUBERT	10A	PR D81 032003	B. Aubert *et al.*	(BABAR Collab.)	REFID=53198
AUSHEV	10	PR D81 031103	T. Aushev *et al.*	(BELLE Collab.)	REFID=53225
DEL-AMO-SA...	10M	PR D82 051101	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=53500
DEL-AMO-SA...	10Q	PR D82 112002	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=53575
NISHIMURA	10	PRL 105 191803	K. Nishimura *et al.*	(BELLE Collab.)	REFID=53468
URQUIJO	10	PRL 104 021801	P. Urquijo *et al.*	(BELLE Collab.)	REFID=53190
AUBERT	09AO	PRL 103 211802	B. Aubert *et al.*	(BABAR Collab.)	REFID=53083
AUBERT	09N	PR D79 031102	B. Aubert *et al.*	(BABAR Collab.)	REFID=52794
AUBERT	09T	PRL 102 091803	B. Aubert *et al.*	(BABAR Collab.)	REFID=52829
Also		EPAPS Document No.	E-PRLTAO-102-060910	(BABAR Collab.)	REFID=53060;ERROR=3
AUBERT	09U	PRL 102 161803	B. Aubert *et al.*	(BABAR Collab.)	REFID=52830
LIMOSANI	09	PRL 103 241801	A. Limosani *et al.*	(BELLE Collab.)	REFID=53155
WEI	09A	PRL 103 171801	J.-T. Wei *et al.*	(BELLE Collab.)	REFID=53061
Also		EPAPS Supplement	J.-T. Wei *et al.*	(BELLE Collab.)	REFID=53240
AUBERT	08AS	PRL 100 171802	B. Aubert *et al.*	(BABAR Collab.)	REFID=52367
AUBERT	08BC	PR D78 072007	B. Aubert *et al.*	(BABAR Collab.)	REFID=52537
AUBERT	08BH	PR D78 112001	B. Aubert *et al.*	(BABAR Collab.)	REFID=52545
AUBERT	08BJ	PRL 101 171804	B. Aubert *et al.*	(BABAR Collab.)	REFID=52553
AUBERT	08N	PRL 100 021801	B. Aubert *et al.*	(BABAR Collab.)	REFID=52222
Also		PR D79 092002	B. Aubert *et al.*	(BABAR Collab.)	REFID=52799
AUBERT	08O	PR D77 051103	B. Aubert *et al.*	(BABAR Collab.)	REFID=52223
SCHWANDA	08	PR D78 032016	C. Schwanda *et al.*	(BELLE Collab.)	REFID=52422
TANIGUCHI	08	PRL 101 111801	N. Taniguchi *et al.*	(BELLE Collab.)	REFID=52449
WEI	08A	PR D78 011101	J.-T. Wei *et al.*	(BELLE Collab.)	REFID=52409
AUBERT	07AG	PRL 99 051801	B. Aubert *et al.*	(BABAR Collab.)	REFID=51862
AUBERT	07C	PR D75 012003	B. Aubert *et al.*	(BABAR Collab.)	REFID=51619
AUBERT	07E	PRL 98 051802	B. Aubert *et al.*	(BABAR Collab.)	REFID=51633
AUBERT	07L	PRL 98 151802	B. Aubert *et al.*	(BABAR Collab.)	REFID=51676
GAMBINO	07	JHEP 0710 058	P. Gambino *et al.*		REFID=58784
HUANG	07	PR D75 012002	G.S. Huang *et al.*	(CLEO Collab.)	REFID=51624
SCHWANDA	07	PR D75 032005	C. Schwanda *et al.*	(BELLE Collab.)	REFID=51648
URQUIJO	07	PR D75 032001	P. Urquijo *et al.*	(BELLE Collab.)	REFID=51647
AUBERT	06H	PR D73 012006	B. Aubert *et al.*	(BABAR Collab.)	REFID=51088
AUBERT,B	06J	PR D73 092001	B. Aubert *et al.*	(BABAR Collab.)	REFID=51305
AUBERT,B	06Y	PR D74 091105	B. Aubert *et al.*	(BABAR Collab.)	REFID=51498
AUBERT,BE	06B	PRL 97 171803	B. Aubert *et al.*	(BABAR Collab.)	REFID=51435
BUCHMUEL...	06	PR D73 073008	O.L. Buchmueller, H.U. Flacher	(RHBL)	REFID=52217
GOKHROO	06	PRL 97 162002	G. Gokhroo *et al.*	(BELLE Collab.)	REFID=51432
ISHIKAWA	06	PRL 96 251801	A. Ishikawa *et al.*	(BELLE Collab.)	REFID=51239
MOHAPATRA	06	PRL 96 221601	D. Mohapatra *et al.*	(BELLE Collab.)	REFID=51235
ABAZOV	05O	PRL 95 171803	V.M. Abazov *et al.*	(D0 Collab.)	REFID=50834
ACOSTA	05F	PR D71 051103	D. Acosta *et al.*	(CDF Collab.)	REFID=50623
ARTUSO	05B	PRL 95 261801	M. Artuso *et al.*	(CLEO Collab.)	REFID=50992
AUBERT	05	PRL 94 011801	B. Aubert *et al.*	(BABAR Collab.)	REFID=50366
AUBERT,B	05M	PRL 95 142003	B. Aubert *et al.*	(BABAR Collab.)	REFID=50831
AUBERT,B	05R	PR D72 052004	B. Aubert *et al.*	(BABAR Collab.)	REFID=50896
AUBERT,B	05X	PRL 95 111801	B. Aubert *et al.*	(BABAR Collab.)	REFID=50918
Also		PRL 97 019903 (errat.)	B. Aubert *et al.*	(BABAR Collab.)	REFID=51243
CHOI	05	PRL 94 182002	S.-K. Choi *et al.*	(BELLE Collab.)	REFID=50737
IWASAKI	05	PR D72 092005	M. Iwasaki *et al.*	(BELLE Collab.)	REFID=50945
LIMOSANI	05	PL B621 28	A. Limosani *et al.*	(BELLE Collab.)	REFID=50678
MOHAPATRA	05	PR D72 011101	D. Mohapatra *et al.*	(BELLE Collab.)	REFID=50700
NISHIDA	05	PL B610 23	S. Nishida *et al.*	(BELLE Collab.)	REFID=50596
OKABE	05	PL B614 27	T. Okabe *et al.*	(BELLE Collab.)	REFID=50601
ABDALLAH	04D	EPJ C33 213	J. Abdallah *et al.*	(DELPHI Collab.)	REFID=49916
AUBERT	04C	PRL 92 111801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49670
AUBERT	04I	PRL 92 071802	B. Aubert *et al.*	(BABAR Collab.)	REFID=49873
AUBERT	04S	PR D69 052005	B. Aubert *et al.*	(BABAR Collab.)	REFID=49957
AUBERT	04X	PRL 93 011803	B. Aubert *et al.*	(BABAR Collab.)	REFID=49991
AUBERT,B	04	PR D69 111103	B. Aubert *et al.*	(BABAR Collab.)	REFID=50008
AUBERT,B	04A	PR D69 111104	B. Aubert *et al.*	(BABAR Collab.)	REFID=50009
AUBERT,B	04E	PRL 93 021804	B. Aubert *et al.*	(BABAR Collab.)	REFID=50058
AUBERT,B	04F	PRL 93 061801	B. Aubert *et al.*	(BABAR Collab.)	REFID=50062
AUBERT,B	04I	PRL 93 081802	B. Aubert *et al.*	(BABAR Collab.)	REFID=50072
AUBERT,BE	04A	PR D70 112006	B. Aubert *et al.*	(BABAR Collab.)	REFID=50377
CSORNA	04	PR D70 032002	S.E. Csorna *et al.*	(CLEO Collab.)	REFID=50048
KOPPENBURG	04	PRL 93 061803	P. Koppenburg *et al.*	(BELLE Collab.)	REFID=50069
MAHMOOD	04	PR D70 032003	A.H. Mahmodd *et al.*	(CLEO Collab.)	REFID=50049
NAKAO	04	PR D69 112001	M. Nakao *et al.*	(BELLE Collab.)	REFID=50010
NISHIDA	04	PRL 93 031803	S. Nishida *et al.*	(BELLE Collab.)	REFID=49994
ADAM	03B	PR D68 012004	N.E. Adam *et al.*	(CLEO Collab.)	REFID=49507
AUBERT	03	PR D67 031101	B. Aubert *et al.*	(BABAR Collab.)	REFID=49202
AUBERT	03F	PR D67 032002	B. Aubert *et al.*	(BABAR Collab.)	REFID=49214

AUBERT	03U	PRL 91 221802	B. Aubert *et al.*	(BABAR Collab.)	REFID=49648
BONVICINI	03	PR D68 011101	G. Bonvicini *et al.*	(CLEO Collab.)	REFID=49503
HUANG	03	PRL 91 241802	H.-C. Huang *et al.*	(BELLE Collab.)	REFID=49621
ISHIKAWA	03	PRL 91 261601	A. Ishikawa *et al.*	(BELLE Collab.)	REFID=49641
KANEKO	03	PRL 90 021801	J. Kaneko *et al.*	(BELLE Collab.)	REFID=49165
KROKOVNY	03B	PRL 91 262002	P. Krokovny *et al.*	(BELLE Collab.)	REFID=49615
MAHMOOD	03	PR D67 072001	A.H. Mahmood *et al.*	(CLEO Collab.)	REFID=49211
ABE	02	PRL 88 021801	K. Abe *et al.*	(BELLE Collab.)	REFID=48518
ABE	02L	PRL 89 011803	K. Abe *et al.*	(BELLE Collab.)	REFID=48691
ABE	02Y	PL B547 181	K. Abe *et al.*	(BELLE Collab.)	REFID=49005
ANDERSON	02	PRL 89 282001	S. Anderson *et al.*	(CLEO Collab.)	REFID=49292
AUBERT	02C	PRL 88 101805	B. Aubert *et al.*	(BABAR Collab.)	REFID=48600
AUBERT	02G	PR D65 091104	B. Aubert *et al.*	(BABAR Collab.)	REFID=48638
AUBERT	02L	PRL 88 241801	B. Aubert *et al.*	(BABAR Collab.)	REFID=48751
BORNHEIM	02	PRL 88 231803	A. Bornheim *et al.*	(CLEO Collab.)	REFID=48709
EDWARDS	02B	PR D65 111102	K.W. Edwards *et al.*	(CLEO Collab.)	REFID=48799
ABE	01F	PL B511 151	K. Abe *et al.*	(BELLE Collab.)	REFID=48171
ABE	01J	PR D64 072001	K. Abe *et al.*	(BELLE Collab.)	REFID=48342
ANDERSON	01B	PRL 87 181803	S. Anderson *et al.*	(CLEO Collab.)	REFID=48389
CHEN	01	PR D63 031102	S. Chen *et al.*	(CLEO Collab.)	REFID=48225
CHEN	01C	PRL 87 251807	S. Chen *et al.*	(CLEO Collab.)	REFID=48532
COAN	01	PRL 86 5661	T.E. Coan *et al.*	(CLEO Collab.)	REFID=48240
CRONIN-HEN...	01B	PRL 87 251808	D. Cronin-Hennessy *et al.*	(CLEO Collab.)	REFID=48533
PDG	01	Unofficial 2001 WWW edition			REFID=49189;ERROR=4
ABREU	00R	PL B475 407	P. Abreu *et al.*	(DELPHI Collab.)	REFID=47657
COAN	00	PRL 84 5283	T.E. Coan *et al.*	(CLEO Collab.)	REFID=47633
RICHICHI	00	PRL 85 520	S.J. Richichi *et al.*	(CLEO Collab.)	REFID=47660
BARATE	98Q	EPJ C4 387	R. Barate *et al.*	(ALEPH Collab.)	REFID=46146
BERGFELD	98	PRL 81 272	T. Bergfeld *et al.*	(CLEO Collab.)	REFID=46091
BISHAI	98	PR D57 3847	M. Bishai *et al.*	(CLEO Collab.)	REFID=45870
BONVICINI	98	PR D57 6604	G. Bonvicini *et al.*	(CLEO Collab.)	REFID=45934
BROWDER	98	PRL 81 1786	T.E. Browder *et al.*	(CLEO Collab.)	REFID=46116
COAN	98	PRL 80 1150	T.E. Coan *et al.*	(CLEO Collab.)	REFID=45872
GLENN	98	PRL 80 2289	S. Glenn *et al.*	(CLEO Collab.)	REFID=45869
ACKERSTAFF	97N	ZPHY C74 423	K. Ackerstaff *et al.*	(OPAL Collab.)	REFID=45488
AMMAR	97	PR D55 13	R. Ammar *et al.*	(CLEO Collab.)	REFID=45263
BARISH	97	PRL 79 3599	B. Barish *et al.*	(CLEO Collab.)	REFID=45717
BUSKULIC	97B	ZPHY C73 601	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=45294
GIBBONS	97B	PR D56 3783	L. Gibbons *et al.*	(CLEO Collab.)	REFID=45668
ALBRECHT	96D	PL B374 256	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=44891
BARISH	96B	PRL 76 1570	B.C. Barish *et al.*	(CLEO Collab.)	REFID=44693
GIBAUT	96	PR D53 4734	D. Gibaut *et al.*	(CLEO Collab.)	REFID=44784
KUBOTA	96	PR D53 6033	Y. Kubota *et al.*	(CLEO Collab.)	REFID=44786
PDG	96	PR D54 1	R. M. Barnett *et al.*	(PDG Collab.)	REFID=44495
ALAM	95	PRL 74 2885	M.S. Alam *et al.*	(CLEO Collab.)	REFID=44192
ALBRECHT	95D	PL B353 554	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=44352
BALEST	95B	PR D52 2661	R. Balest *et al.*	(CLEO Collab.)	REFID=44415
BARISH	95	PR D51 1014	B.C. Barish *et al.*	(CLEO Collab.)	REFID=44139
BUSKULIC	95B	PL B345 103	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=44127
ALBRECHT	94C	ZPHY C62 371	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=43912
ALBRECHT	94J	ZPHY C61 1	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=44172
PROCARIO	94	PRL 73 1472	M. Procario *et al.*	(CLEO Collab.)	REFID=43735
ALBRECHT	93	ZPHY C57 533	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=43269
ALBRECHT	93E	ZPHY C60 11	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=43514
ALBRECHT	93H	PL B318 397	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=43633
ALBRECHT	93I	ZPHY C58 191	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=44171
ALEXANDER	93B	PL B319 365	J. Alexander *et al.*	(CLEO Collab.)	REFID=43725
ARTUSO	93	PL B311 307	M. Artuso	(SYRA)	REFID=43792
BARTELT	93B	PRL 71 4111	J.E. Bartelt *et al.*	(CLEO Collab.)	REFID=43642
ALBRECHT	92E	PL B277 209	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41985
ALBRECHT	92G	ZPHY C54 1	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=42037
ALBRECHT	92O	ZPHY C56 1	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=43148
BORTOLETTO	92	PR D45 21	D. Bortoletto *et al.*	(CLEO Collab.)	REFID=41920
CRAWFORD	92	PR D45 752	G. Crawford *et al.*	(CLEO Collab.)	REFID=42008
HENDERSON	92	PR D45 2212	S. Henderson *et al.*	(CLEO Collab.)	REFID=42014
LESIAK	92	ZPHY C55 33	T. Lesiak *et al.*	(Crystal Ball Collab.)	REFID=42108
ALBRECHT	91C	PL B255 297	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41454
ALBRECHT	91H	ZPHY C52 353	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41875
FULTON	91	PR D43 651	R. Fulton *et al.*	(CLEO Collab.)	REFID=41391
YANAGISAWA	91	PRL 66 2436	C. Yanagisawa *et al.*	(CUSB II Collab.)	REFID=41703
ALBRECHT	90	PL B234 409	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41040
ALBRECHT	90H	PL B249 359	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41412
BORTOLETTO	90	PRL 64 2117	D. Bortoletto *et al.*	(CLEO Collab.)	REFID=41178
Also		PR D45 21	D. Bortoletto *et al.*	(CLEO Collab.)	REFID=41920
FULTON	90	PRL 64 16	R. Fulton *et al.*	(CLEO Collab.)	REFID=41039
MASCHMANN	90	ZPHY C46 555	W.S. Maschmann *et al.*	(Crystal Ball Collab.)	REFID=41224
PDG	90	PL B239 1	J.J. Hernandez *et al.*	(IFIC, BOST, CIT+)	REFID=40744
ALBRECHT	89K	ZPHY C42 519	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41112
ISGUR	89B	PR D39 799	N. Isgur *et al.*	(TNTO, CIT)	REFID=41916
WACHS	89	ZPHY C42 33	K. Wachs *et al.*	(Crystal Ball Collab.)	REFID=40855
ALBRECHT	88E	PL B210 263	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40595
ALBRECHT	88H	PL B210 258	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40652
KOERNER	88	ZPHY C38 511	J.G. Korner, G.A. Schuler	(MAINZ, DESY)	REFID=43791
ALAM	87	PRL 59 22	M.S. Alam *et al.*	(CLEO Collab.)	REFID=40380
ALAM	87B	PRL 58 1814	M.S. Alam *et al.*	(CLEO Collab.)	REFID=40382
ALBRECHT	87D	PL B199 451	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40325
ALBRECHT	87H	PL B187 425	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40379
BEAN	87	PR D35 3533	A. Bean *et al.*	(CLEO Collab.)	REFID=40383
BEHRENDS	87	PRL 59 407	S. Behrends *et al.*	(CLEO Collab.)	REFID=40386
BORTOLETTO	87	PR D35 19	D. Bortoletto *et al.*	(CLEO Collab.)	REFID=40381
ALAM	86	PR D34 3279	M.S. Alam *et al.*	(CLEO Collab.)	REFID=40324
BALTRUSAIT...	86E	PRL 56 2140	R.M. Baltrusaitis *et al.*	(Mark III Collab.)	REFID=11477
BORTOLETTO	86	PRL 56 800	D. Bortoletto *et al.*	(CLEO Collab.)	REFID=11613
HAAS	86	PRL 56 2781	J. Haas *et al.*	(CLEO Collab.)	REFID=11614
ALBRECHT	85H	PL 162B 395	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=11608
CSORNA	85	PRL 54 1894	S.E. Csorna *et al.*	(CLEO Collab.)	REFID=11610
HAAS	85	PRL 55 1248	J. Haas *et al.*	(CLEO Collab.)	REFID=11611
AVERY	84	PRL 53 1309	P. Avery *et al.*	(CLEO Collab.)	REFID=11572
CHEN	84	PRL 52 1084	A. Chen *et al.*	(CLEO Collab.)	REFID=11601
LEVMAN	84	PL 141B 271	G.M. Levman *et al.*	(CUSB Collab.)	REFID=11605
ALAM	83B	PRL 51 1143	M.S. Alam *et al.*	(CLEO Collab.)	REFID=11587
GREEN	83	PRL 51 347	J. Green *et al.*	(CLEO Collab.)	REFID=11592
KLOPFEN...	83B	PL 130B 444	C. Klopfenstein *et al.*	(CUSB Collab.)	REFID=11593
ALTARELLI	82	NP B208 365	G. Altarelli *et al.*	(ROMA, INFN, FRAS)	REFID=41915
BRODY	82	PRL 48 1070	A.D. Brody *et al.*	(CLEO Collab.)	REFID=11582
GIANNINI	82	NP B206 1	G. Giannini *et al.*	(CUSB Collab.)	REFID=11583
BEBEK	81	PRL 46 84	C. Bebek *et al.*	(CLEO Collab.)	REFID=11578
CHADWICK	81	PRL 46 88	K. Chadwick *et al.*	(CLEO Collab.)	REFID=11579
ABRAMS	80	PRL 44 10	G.S. Abrams *et al.*	(SLAC, LBL)	REFID=12114

$B^{\pm}/B^0/B^0_s/b$-baryon ADMIXTURE

NODE=S051

$B^{\pm}/B^0/B^0_s/b$-baryon ADMIXTURE MEAN LIFE

NODE=S051T

NODE=S051T

Each measurement of the B mean life is an average over an admixture of various bottom mesons and baryons which decay weakly. Different techniques emphasize different admixtures of produced particles, which could result in a different B mean life.

"OUR EVALUATION" is an average using rescaled values of the data listed below. This is a weighted average of the lifetimes of the five main b-hadron species (B^+, B^0, B^0_{sH}, B^0_{sL}, and Λ_b) that assumes the production fractions in Z decays (given at the end of this section) and equal production fractions of B^0_{sH} and B^0_{sL} mesons.

NODE=S051T

VALUE (10^{-12} s)	EVTS	DOCUMENT ID		TECN	COMMENT
1.5673±0.0029 OUR EVALUATION		(Produced by HFLAV)			
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$1.570 \pm 0.005 \pm 0.008$		[1] ABDALLAH	04E	DLPH	$e^+e^- \to Z$
$1.533 \pm 0.015 {}^{+0.035}_{-0.031}$		[2] ABE	98B	CDF	$p\overline{p}$ at 1.8 TeV
$1.549 \pm 0.009 \pm 0.015$		[3] ACCIARRI	98	L3	$e^+e^- \to Z$
$1.611 \pm 0.010 \pm 0.027$		[4] ACKERSTAFF	97F	OPAL	$e^+e^- \to Z$
$1.582 \pm 0.011 \pm 0.027$		[4] ABREU	96E	DLPH	$e^+e^- \to Z$
$1.575 \pm 0.010 \pm 0.026$		[5] ABREU	96E	DLPH	$e^+e^- \to Z$
$1.533 \pm 0.013 \pm 0.022$	29.8k	[6] BUSKULIC	96F	ALEP	$e^+e^- \to Z$
$1.564 \pm 0.030 \pm 0.036$		[7] ABE,K	95B	SLD	$e^+e^- \to Z$
$1.542 \pm 0.021 \pm 0.045$		[8] ABREU	94L	DLPH	$e^+e^- \to Z$
$1.50 {}^{+0.24}_{-0.21} \pm 0.03$		[9] ABREU	94P	DLPH	$e^+e^- \to Z$
$1.46 \pm 0.06 \pm 0.06$	5344	[10] ABE	93J	CDF	Repl. by ABE 98B
$1.23 {}^{+0.14}_{-0.13} \pm 0.15$	188	[11] ABREU	93D	DLPH	Sup. by ABREU 94L
$1.49 \pm 0.11 \pm 0.12$	253	[12] ABREU	93G	DLPH	Sup. by ABREU 94L
$1.51 {}^{+0.16}_{-0.14} \pm 0.11$	130	[13] ACTON	93C	OPAL	$e^+e^- \to Z$
$1.523 \pm 0.034 \pm 0.038$	5372	[14] ACTON	93L	OPAL	$e^+e^- \to Z$
$1.535 \pm 0.035 \pm 0.028$	7357	[14] ADRIANI	93K	L3	Repl. by ACCIARRI 98
$1.511 \pm 0.022 \pm 0.078$		[15] BUSKULIC	93O	ALEP	$e^+e^- \to Z$
1.28 ± 0.10		[16] ABREU	92	DLPH	Sup. by ABREU 94L
$1.37 \pm 0.07 \pm 0.06$	1354	[17] ACTON	92	OPAL	Sup. by ACTON 93L
$1.49 \pm 0.03 \pm 0.06$		[18] BUSKULIC	92F	ALEP	Sup. by BUSKULIC 96F
$1.35 {}^{+0.19}_{-0.17} \pm 0.05$		[19] BUSKULIC	92G	ALEP	$e^+e^- \to Z$
$1.32 \pm 0.08 \pm 0.09$	1386	[20] ADEVA	91H	L3	Sup. by ADRIANI 93K
$1.32 {}^{+0.31}_{-0.25} \pm 0.15$	37	[21] ALEXANDER	91G	OPAL	$e^+e^- \to Z$
$1.29 \pm 0.06 \pm 0.10$	2973	[22] DECAMP	91C	ALEP	Sup. by BUSKULIC 92F
$1.36 {}^{+0.25}_{-0.23}$		[23] HAGEMANN	90	JADE	$E^{ee}_{\rm cm}$= 35 GeV
1.13 ± 0.15		[24] LYONS	90	RVUE	
$1.35 \pm 0.10 \pm 0.24$		BRAUNSCH...	89B	TASS	$E^{ee}_{\rm cm}$= 35 GeV
$0.98 \pm 0.12 \pm 0.13$		ONG	89	MRK2	$E^{ee}_{\rm cm}$= 29 GeV
$1.17 {}^{+0.27}_{-0.22} {}^{+0.17}_{-0.16}$		KLEM	88	DLCO	$E^{ee}_{\rm cm}$= 29 GeV
$1.29 \pm 0.20 \pm 0.21$		[25] ASH	87	MAC	$E^{ee}_{\rm cm}$= 29 GeV
$1.02 {}^{+0.42}_{-0.39}$	301	[26] BROM	87	HRS	$E^{ee}_{\rm cm}$= 29 GeV

NODE=S051T
→ UNCHECKED ←
OCCUR=2

[1] Measurement performed using an inclusive reconstruction and B flavor identification technique. NODE=S051T;LINKAGE=AB

[2] Measured using inclusive $J/\psi(1S) \to \mu^+\mu^-$ vertex. NODE=S051T;LINKAGE=CD

[3] ACCIARRI 98 uses inclusively reconstructed secondary vertex and lepton impact parameter. NODE=S051T;LINKAGE=S

[4] ACKERSTAFF 97F uses inclusively reconstructed secondary vertices. NODE=S051T;LINKAGE=R1

[5] Combines ABREU 96E secondary vertex result with ABREU 94L impact parameter result. NODE=S051T;LINKAGE=R2

[6] BUSKULIC 96F analyzed using 3D impact parameter. NODE=S051T;LINKAGE=R

[7] ABE,K 95B uses an inclusive topological technique. NODE=S051T;LINKAGE=N

[8] ABREU 94L uses charged particle impact parameters. Their result from inclusively reconstructed secondary vertices is superseded by ABREU 96E. NODE=S051T;LINKAGE=FA

[9] From proper time distribution of $b \to J/\psi(1S)$ anything. NODE=S051T;LINKAGE=F
[10] ABE 93J analyzed using $J/\psi(1S) \to \mu\mu$ vertices. NODE=S051T;LINKAGE=P
[11] ABREU 93D data analyzed using $D\,/\,D^{*}\,\ell$ anything event vertices. NODE=S051T;LINKAGE=CC
[12] ABREU 93G data analyzed using charged and neutral vertices. NODE=S051T;LINKAGE=BC
[13] ACTON 93C analysed using $D\,/\,D^{*}\,\ell$ anything event vertices. NODE=S051T;LINKAGE=A
[14] ACTON 93L and ADRIANI 93K analyzed using lepton (e and μ) impact parameter at Z. NODE=S051T;LINKAGE=M
[15] BUSKULIC 93O analyzed using dipole method. NODE=S051T;LINKAGE=O
[16] ABREU 92 is combined result of muon and hadron impact parameter analyses. Hadron tracks gave $(12.7 \pm 0.4 \pm 1.2) \times 10^{-13}$ s for an admixture of B species weighted by production fraction and mean charge multiplicity, while muon tracks gave $(13.0 \pm 1.0 \pm 0.8) \times 10^{-13}$ s for an admixture weighted by production fraction and semileptonic branching fraction. NODE=S051T;LINKAGE=H
[17] ACTON 92 is combined result of muon and electron impact parameter analyses. NODE=S051T;LINKAGE=L
[18] BUSKULIC 92F uses the lepton impact parameter distribution for data from the 1991 run. NODE=S051T;LINKAGE=EE
[19] BUSKULIC 92G use $J/\psi(1S)$ tags to measure the average b lifetime. This is comparable to other methods only if the $J/\psi(1S)$ branching fractions of the different b-flavored hadrons are in the same ratio. NODE=S051T;LINKAGE=E
[20] Using $Z \to e^{+}X$ or $\mu^{+}X$, ADEVA 91H determined the average lifetime for an admixture of B hadrons from the impact parameter distribution of the lepton. NODE=S051T;LINKAGE=K
[21] Using $Z \to J/\psi(1S)X$, $J/\psi(1S) \to \ell^{+}\ell^{-}$, ALEXANDER 91G determined the average lifetime for an admixture of B hadrons from the decay point of the $J/\psi(1S)$. NODE=S051T;LINKAGE=J
[22] Using $Z \to eX$ or μX, DECAMP 91C determines the average lifetime for an admixture of B hadrons from the signed impact parameter distribution of the lepton. NODE=S051T;LINKAGE=D
[23] HAGEMANN 90 uses electrons and muons in an impact parameter analysis. NODE=S051T;LINKAGE=BQ
[24] LYONS 90 combine the results of the B lifetime measurements of ONG 89, BRAUNSCHWEIG 89B, KLEM 88, and ASH 87, and JADE data by private communication. They use statistical techniques which include variation of the error with the mean life, and possible correlations between the systematic errors. This result is not independent of the measured results used in our average. NODE=S051T;LINKAGE=C
[25] We have combined an overall scale error of 15% in quadrature with the systematic error of ± 0.7 to obtain ± 2.1 systematic error. NODE=S051T;LINKAGE=G
[26] Statistical and systematic errors were combined by BROM 87. NODE=S051T;LINKAGE=I

CHARGED *b*-HADRON ADMIXTURE MEAN LIFE

NODE=S051T1

NODE=S051T1

VALUE (10^{-12} s)	*DOCUMENT ID*		*TECN*	*COMMENT*
1.72±0.08±0.06	[1] ADAM	95	DLPH	$e^{+}e^{-} \to Z$

[1] ADAM 95 data analyzed using vertex-charge technique to tag b-hadron charge. NODE=S051T1;LINKAGE=F

NEUTRAL *b*-HADRON ADMIXTURE MEAN LIFE

NODE=S051T2

NODE=S051T2

VALUE (10^{-12} s)	*DOCUMENT ID*		*TECN*	*COMMENT*
1.58±0.11±0.09	[1] ADAM	95	DLPH	$e^{+}e^{-} \to Z$

[1] ADAM 95 data analyzed using vertex-charge technique to tag b-hadron charge. NODE=S051T2;LINKAGE=F

MEAN LIFE RATIO $\tau_{\text{charged } b-\text{hadron}}/\tau_{\text{neutral } b-\text{hadron}}$

NODE=S051DT

NODE=S051DT

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
$\mathbf{1.09^{+0.11}_{-0.10}\pm0.08}$	[1] ADAM	95	DLPH	$e^{+}e^{-} \to Z$

[1] ADAM 95 data analyzed using vertex-charge technique to tag b-hadron charge. NODE=S051DT;LINKAGE=F

$\left|\Delta\tau_{b}\right|/\tau_{b,\overline{b}}$

NODE=S051DTB

$\tau_{b,\overline{b}}$ and $\left|\Delta\tau_{b}\right|$ are the mean life average and difference between b and $\overline{b}$ hadrons.

NODE=S051DTB

NODE=S051DTB

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
−0.001±0.012±0.008	[1] ABBIENDI	99J	OPAL	$e^{+}e^{-} \to Z$

[1] Data analyzed using both the jet charge and the charge of secondary vertex in the opposite hemisphere. NODE=S051DTB;LINKAGE=A

$\overline{b}$ PRODUCTION FRACTIONS AND DECAY MODES

NODE=S051210;NODE=S051

The branching fraction measurements are for an admixture of B mesons and baryons at energies above the $\Upsilon(4S)$. Only the highest energy results (LHC, LEP, Tevatron, $Sp\overline{p}S$) are used in the branching fraction averages. In the following, we assume that the production fractions are the same at the LHC, LEP, and at the Tevatron.

NODE=S051

For inclusive branching fractions, *e.g.*, $B \to D^{\pm}$ anything, the values usually are multiplicities, not branching fractions. They can be greater than one.

The modes below are listed for a $\overline{b}$ initial state. b modes are their charge conjugates. Reactions indicate the weak decay vertex and do not include mixing.

	Mode		Fraction (Γ_i/Γ)	Scale factor/ Confidence level	

PRODUCTION FRACTIONS

NODE=S051;CLUMP=P

The production fractions for weakly decaying b-hadrons at high energy have been calculated from the best values of mean lives, mixing parameters, and branching fractions in this edition by the Heavy Flavor Averaging Group (HFLAV) as described in the note "B^0-$\overline{B}^0$ Mixing" in the B^0 Particle Listings. We no longer provide world averages of the b-hadron production fractions, where results from LEP, Tevatron and LHC are averaged together; indeed the available data (from CDF and LHCb) shows that the fractions depend on the kinematics (in particular the p_T) of the produced b hadron. Hence we would like to list the fractions in Z decays instead, which are well-defined physics observables. The production fractions in $p\overline{p}$ collisions at the Tevatron are also listed at the end of the section. Values assume

NODE=S051

$$B(\overline{b} \to B^+) = B(\overline{b} \to B^0)$$
$$B(\overline{b} \to B^+) + B(\overline{b} \to B^0) + B(\overline{b} \to B^0_s) + B(b \to b\text{-baryon}) = 100\%.$$

The correlation coefficients between production fractions are also reported:

$cor(B^0_s,\ b\text{-baryon}) = 0.064$
$cor(B^0_s,\ B^{\pm}{=}B^0) = -0.633$
$cor(b\text{-baryon},\ B^{\pm}{=}B^0) = -0.813.$

The notation for production fractions varies in the literature (f_d, d_{B^0}, $f(b \to \overline{B}^0)$, $Br(b \to \overline{B}^0)$). We use our own branching fraction notation here, $B(\overline{b} \to B^0)$.

Note these production fractions are b-hadronization fractions, not the conventional branching fractions of b-quark to a B-hadron, which may have considerable dependence on the initial and final state kinematic and production environment.

Γ_1	B^+		(40.8 ± 0.7) %		DESIG=1;OUR EVAL;→ UNCHECKED ←
Γ_2	B^0		(40.8 ± 0.7) %		DESIG=2;OUR EVAL;→ UNCHECKED ←
Γ_3	B^0_s		(10.0 ± 0.8) %		DESIG=3;OUR EVAL;→ UNCHECKED ←
Γ_4	B^+_c				DESIG=235
Γ_5	b-baryon		(8.4 ± 1.1) %		DESIG=4;OUR EVAL;→ UNCHECKED ←

DECAY MODES

NODE=S051;CLUMP=L

Semileptonic and leptonic modes

Γ_6	ν anything		(23.1 ± 1.5) %		DESIG=23
Γ_7	$\ell^+ \nu_\ell$ anything	[a]	(10.69 ± 0.22) %		DESIG=131
Γ_8	$e^+ \nu_e$ anything		(10.86 ± 0.35) %		DESIG=100
Γ_9	$\mu^+ \nu_\mu$ anything		($10.95^{+0.29}_{-0.25}$) %		DESIG=102
Γ_{10}	$D^- \ell^+ \nu_\ell$ anything	[a]	(2.2 ± 0.4) %	S=1.9	DESIG=15
Γ_{11}	$D^- \pi^+ \ell^+ \nu_\ell$ anything		(4.9 ± 1.9) $\times 10^{-3}$		DESIG=58
Γ_{12}	$D^- \pi^- \ell^+ \nu_\ell$ anything		(2.6 ± 1.6) $\times 10^{-3}$		DESIG=61
Γ_{13}	$\overline{D}^0 \ell^+ \nu_\ell$ anything	[a]	(6.79 ± 0.34) %		DESIG=16
Γ_{14}	$\overline{D}^0 \pi^- \ell^+ \nu_\ell$ anything		(1.07 ± 0.27) %		DESIG=57
Γ_{15}	$\overline{D}^0 \pi^+ \ell^+ \nu_\ell$ anything		(2.3 ± 1.6) $\times 10^{-3}$		DESIG=60

Γ_{16}	$D^{*-}\ell^+\nu_\ell$ anything	[a]	(2.75 ± 0.19) %		DESIG=17
Γ_{17}	$D^{*-}\pi^-\ell^+\nu_\ell$ anything		$(6 \pm 7) \times 10^{-4}$		DESIG=62
Γ_{18}	$D^{*-}\pi^+\ell^+\nu_\ell$ anything		$(4.8 \pm 1.0) \times 10^{-3}$		DESIG=59
Γ_{19}	$\overline{D}{}^0_j\ell^+\nu_\ell$ anything $\times$ B$(\overline{D}{}^0_j \to D^{*+}\pi^-)$	[a,b]	$(2.6 \pm 0.9) \times 10^{-3}$		DESIG=18
Γ_{20}	$D^-_j\ell^+\nu_\ell$ anything $\times$ B$(D^-_j \to D^0\pi^-)$	[a,b]	$(7.0 \pm 2.3) \times 10^{-3}$		DESIG=19
Γ_{21}	$\overline{D}{}^*_2(2460)^0\ell^+\nu_\ell$ anything $\times$ B$(\overline{D}{}^*_2(2460)^0 \to D^{*-}\pi^+)$		$< 1.4 \times 10^{-3}$	CL=90%	DESIG=21
Γ_{22}	$D^*_2(2460)^-\ell^+\nu_\ell$ anything $\times$ B$(D^*_2(2460)^- \to D^0\pi^-)$		$(4.2^{+1.5}_{-1.8}) \times 10^{-3}$		DESIG=22
Γ_{23}	$\overline{D}{}^*_2(2460)^0\ell^+\nu_\ell$ anything $\times$ B$(\overline{D}{}^*_2(2460)^0 \to D^-\pi^+)$		$(1.6 \pm 0.8) \times 10^{-3}$		DESIG=220
Γ_{24}	charmless $\ell\overline{\nu}_\ell$	[a]	$(1.7 \pm 0.5) \times 10^{-3}$		DESIG=31
Γ_{25}	$\tau^+\nu_\tau$ anything		(2.41 ± 0.23) %		DESIG=172
Γ_{26}	$D^{*-}\tau\nu_\tau$ anything		$(9 \pm 4) \times 10^{-3}$		DESIG=64
Γ_{27}	$\overline{c} \to \ell^-\overline{\nu}_\ell$ anything	[a]	(8.02 ± 0.19) %		DESIG=219
Γ_{28}	$c \to \ell^+\nu$ anything		$(1.6^{+0.4}_{-0.5})$ %		DESIG=66
	Charmed meson and baryon modes				NODE=S051;CLUMP=M
Γ_{29}	$\overline{D}{}^0$ anything		(58.7 ± 2.8) %		DESIG=24
Γ_{30}	$D^0 D^\pm_s$ anything	[c]	$(9.1^{+4.0}_{-2.8})$ %		DESIG=50
Γ_{31}	$D^\mp D^\pm_s$ anything	[c]	$(4.0^{+2.3}_{-1.8})$ %		DESIG=51
Γ_{32}	$\overline{D}{}^0 D^0$ anything	[c]	$(5.1^{+2.0}_{-1.8})$ %		DESIG=47
Γ_{33}	$D^0 D^\pm$ anything	[c]	$(2.7^{+1.8}_{-1.6})$ %		DESIG=48
Γ_{34}	$D^\pm D^\mp$ anything	[c]	$< 9 \times 10^{-3}$	CL=90%	DESIG=49
Γ_{35}	D^0 anything				DESIG=32
Γ_{36}	D^+ anything				DESIG=33
Γ_{37}	D^- anything		(22.7 ± 1.6) %		DESIG=25
Γ_{38}	$D^*(2010)^+$ anything		(17.3 ± 2.0) %		DESIG=46
Γ_{39}	$D_1(2420)^0$ anything		(5.0 ± 1.5) %		DESIG=42
Γ_{40}	$D^*(2010)^\mp D^\pm_s$ anything	[c]	$(3.3^{+1.6}_{-1.3})$ %		DESIG=52
Γ_{41}	$D^0 D^*(2010)^\pm$ anything	[c]	$(3.0^{+1.1}_{-0.9})$ %		DESIG=53
Γ_{42}	$D^*(2010)^\pm D^\mp$ anything	[c]	$(2.5^{+1.2}_{-1.0})$ %		DESIG=54
Γ_{43}	$D^*(2010)^\pm D^*(2010)^\mp$ anything	[c]	(1.2 ± 0.4) %		DESIG=55
Γ_{44}	$\overline{D}D$ anything		(10^{+11}_{-10}) %		DESIG=68
Γ_{45}	$D^*_2(2460)^0$ anything		(4.7 ± 2.7) %		DESIG=43
Γ_{46}	D^-_s anything		(14.7 ± 2.1) %		DESIG=26
Γ_{47}	D^+_s anything		(10.1 ± 3.1) %		DESIG=34
Γ_{48}	Λ^+_c anything		(7.6 ± 1.1) %		DESIG=27
Γ_{49}	$\overline{c}/c$ anything	[d]	(116.2 ± 3.2) %		DESIG=28
	Charmonium modes				NODE=S051;CLUMP=N
Γ_{50}	$J/\psi(1S)$ anything		(1.16 ± 0.10) %		DESIG=106
Γ_{51}	$\psi(2S)$ anything		$(3.06 \pm 0.30) \times 10^{-3}$		DESIG=124
Γ_{52}	$\chi_{c0}(1P)$ anything		$(3.0 \pm 0.6) \times 10^{-3}$		DESIG=221
Γ_{53}	$\chi_{c1}(1P)$ anything		$(5.9 \pm 1.5) \times 10^{-3}$	S=1.2	DESIG=170
Γ_{54}	$\chi_{c2}(1P)$ anything		$(1.6 \pm 1.2) \times 10^{-3}$		DESIG=222
Γ_{55}	$\chi_c(2P)$ anything, $\chi_c \to \phi\phi$		$< 2.8 \times 10^{-7}$	CL=95%	DESIG=231
Γ_{56}	$\eta_c(1S)$ anything		$(5.7 \pm 0.7) \times 10^{-3}$		DESIG=223
Γ_{57}	$\eta_c(2S)$ anything, $\eta_c \to \phi\phi$		$(4.1 \pm 1.6) \times 10^{-7}$		DESIG=228
Γ_{58}	$\chi_{c1}(3872)$ anything, $\chi_{c1} \to \phi\phi$		$< 4.5 \times 10^{-7}$	CL=95%	DESIG=229
Γ_{59}	$\chi_{c0}(3915)$ anything, $\chi_{c0} \to \phi\phi$		$< 3.1 \times 10^{-7}$	CL=95%	DESIG=230

K or K^* modes

NODE=S051;CLUMP=O

Γ_{60}	$\overline{s}\gamma$		$(3.1 \pm 1.1) \times 10^{-4}$		DESIG=185
Γ_{61}	$\overline{s}\overline{\nu}\nu$	B1	$< 6.4 \times 10^{-4}$	CL=90%	DESIG=65
Γ_{62}	$K^{\pm}$ anything		(74 ± 6) %		DESIG=10
Γ_{63}	K^0_S anything		(29.0 ± 2.9) %		DESIG=11

Pion modes

NODE=S051;CLUMP=C

Γ_{64}	$\pi^{\pm}$ anything		(397 ± 21) %		DESIG=44
Γ_{65}	π^0 anything	[d]	(280 ± 60) %		DESIG=5
Γ_{66}	ϕ anything		(2.82 ± 0.23) %		DESIG=56

Baryon modes

NODE=S051;CLUMP=A

Γ_{67}	$p/\overline{p}$ anything		(13.1 ± 1.1) %		DESIG=12
Γ_{68}	$\Lambda/\overline{\Lambda}$ anything		(5.9 ± 0.6) %		DESIG=13
Γ_{69}	b-baryon anything		(10.2 ± 2.8) %		DESIG=45
Γ_{70}	$\overline{\Lambda}^0_b$ anything				DESIG=232
Γ_{71}	Ξ^+_b anything				DESIG=233

Other modes

NODE=S051;CLUMP=B

Γ_{72}	charged anything	[d]	(497 ± 7) %		DESIG=14
Γ_{73}	hadron$^+$ hadron$^-$		$(1.7 ^{+1.0}_{-0.7}) \times 10^{-5}$		DESIG=29
Γ_{74}	charmless		$(7 \pm 21) \times 10^{-3}$		DESIG=7

$\Delta B = 1$ weak neutral current ($B1$) modes

NODE=S051;CLUMP=R

Γ_{75}	e^+e^- anything				DESIG=103
Γ_{76}	$\mu^+\mu^-$ anything	B1	$< 3.2 \times 10^{-4}$	CL=90%	DESIG=104
Γ_{77}	$\nu\overline{\nu}$ anything				DESIG=20

[a] An ℓ indicates an e or a μ mode, not a sum over these modes. LINKAGE=DX

[b] D_j represents an unresolved mixture of pseudoscalar and tensor D^{**} (P-wave) states. LINKAGE=DJ

[c] The value is for the sum of the charge states or particle/antiparticle states indicated. LINKAGE=SG

[d] Inclusive branching fractions have a multiplicity definition and can be greater than 100%. LINKAGE=M

$B^{\pm}/B^0/B^0_s/b$-baryon ADMIXTURE BRANCHING RATIOS

NODE=S051215

$\Gamma(B^+)/\Gamma_{total}$ — Γ_1/Γ

NODE=S051R9

"OUR EVALUATION" is an average from Z decay.

NODE=S051R9

VALUE	DOCUMENT ID		TECN	COMMENT
0.408 ±0.007 OUR EVALUATION	(Produced by HFLAV)			
0.4099±0.0082±0.0111	[1] ABDALLAH	03K	DLPH	$e^+e^- \to Z$

NODE=S051R9

→ UNCHECKED ←

[1] The analysis is based on a neural network, to estimate the charge of the weakly-decaying b hadron by distinguishing its decay products from particles produced at the primary vertex. NODE=S051R9;LINKAGE=A

$\Gamma(B^+)/\Gamma(B^0)$ — Γ_1/Γ_2

NODE=S051R69

NODE=S051R69

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{1.054 \pm 0.018 ^{+0.062}_{-0.074}}$	AALTONEN	08N	CDF	$p\overline{p}$ at 1.96 TeV

$\Gamma(B^0_s)/\Gamma(B^+)$ — Γ_3/Γ_1

NODE=S051R41

NODE=S051R41

VALUE	DOCUMENT ID		TECN	COMMENT	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.123±0.002±0.005	[1,2] AAIJ	20V	LHCB	pp at 7 TeV	SYCLP=A
0.126±0.002±0.005	[1,3] AAIJ	20V	LHCB	pp at 8 TeV	OCCUR=2;SYCLP=A
0.131±0.002±0.005	[1,4,5] AAIJ	20V	LHCB	pp at 13 TeV	OCCUR=3;SYCLP=A

[1] AAIJ 20V measures the average value using the observed $B^0_s \to J/\psi\phi$ and $B^+ \to J/\psi K^+$ yields, over the ranges b-hadron p_T of 0.5 and 40 GeV and η of 2.0 and 6.5. The value is not used in averages as BR-related systematic uncertainties are not evaluated. NODE=S051R41;LINKAGE=A

[2] AAIJ 20V reports $[\Gamma(\overline{b} \to B^0_s)/\Gamma(\overline{b} \to B^+)] \times [B(B^0_s \to J/\psi(1S)\phi)] / [B(B^+ \to J/\psi(1S)K^+)] = 0.1238 \pm 0.0010 \pm 0.0022$ which we multiply or divide by our best values $B(B^0_s \to J/\psi(1S)\phi) = (1.03 \pm 0.04) \times 10^{-3}$, $B(B^+ \to J/\psi(1S)K^+) = (1.020 \pm 0.019) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best values. NODE=S051R41;LINKAGE=C

[3] AAIJ 20V reports $[\Gamma(\overline{b} \to B^0_s)/\Gamma(\overline{b} \to B^+)] \times [B(B^0_s \to J/\psi(1S)\phi)] / [B(B^+ \to J/\psi(1S)K^+)] = 0.1270 \pm 0.0007 \pm 0.0022$ which we multiply or divide by our best values $B(B^0_s \to J/\psi(1S)\phi) = (1.03 \pm 0.04) \times 10^{-3}$, $B(B^+ \to J/\psi(1S)K^+) = (1.020 \pm 0.019) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best values. NODE=S051R41;LINKAGE=D

[4] AAIJ 20V reports the results in two different data sets, and we quote here the weighted average. NODE=S051R41;LINKAGE=B

[5] AAIJ 20V reports $[\Gamma(\overline{b} \to B^0_s)/\Gamma(\overline{b} \to B^+)] \times [B(B^0_s \to J/\psi(1S)\phi)] / [B(B^+ \to J/\psi(1S)K^+)] = 0.1326 \pm 0.0007 \pm 0.0023$ which we multiply or divide by our best values $B(B^0_s \to J/\psi(1S)\phi) = (1.03 \pm 0.04) \times 10^{-3}$, $B(B^+ \to J/\psi(1S)K^+) = (1.020 \pm 0.019) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best values. NODE=S051R41;LINKAGE=E

$\Gamma(B^0_s)/[\Gamma(B^+)+\Gamma(B^0)]$ $\Gamma_3/(\Gamma_1+\Gamma_2)$

NODE=S051R2

"OUR EVALUATION" is an average from Z decay. NODE=S051R2

NODE=S051R2

VALUE	DOCUMENT ID		TECN	COMMENT
0.1230±0.0115 OUR EVALUATION	(Produced by HFLAV)			
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.122 ±0.006	[1] AAIJ	19AD	LHCB	pp at 13 TeV
0.134 ±0.004 $^{+0.011}_{-0.010}$	[2] AAIJ	12J	LHCB	pp at 7 TeV
0.1265±0.0085±0.0131	[3] AAIJ	11F	LHCB	pp at 7 TeV
0.128 $^{+0.011}_{-0.010}$ ±0.011	[4] AALTONEN	08N	CDF	$p\overline{p}$ at 1.96 TeV
0.213 ±0.068	[5] AFFOLDER	00E	CDF	$p\overline{p}$ at 1.8 TeV
0.21 ±0.036 $^{+0.038}_{-0.030}$	[6] ABE	99P	CDF	$\overline{p}p$ at 1.8 TeV

→ UNCHECKED ←

[1] AAIJ 19AD measured the average value using b-hadron semileptonic decays and assuming isospin symmetry for b-hadron p_T of 4 and 25 GeV and η of 2 and 5. NODE=S051R2;LINKAGE=C

[2] AAIJ 12J measured this value using b-hadron semileptonic decays and assuming isospin symmetry. NODE=S051R2;LINKAGE=AJ

[3] AAIJ 11F measured $f_s/f_d = 0.253 \pm 0.017 \pm 0.017 \pm 0.020$, where the errors are statistical, systematic, and theoretical. We divide their value by 2. Our second error combines systematic and theoretical uncertainties. NODE=S051R2;LINKAGE=AI

[4] AALTONEN 08N reports $[\Gamma(\overline{b} \to B^0_s)/[\Gamma(\overline{b} \to B^+) + \Gamma(\overline{b} \to B^0)]] \times [B(D^+_s \to \phi\pi^+)] = (5.76 \pm 0.18^{+0.45}_{-0.42}) \times 10^{-3}$ which we divide by our best value $B(D^+_s \to \phi\pi^+) = (4.5 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S051R2;LINKAGE=AA

[5] AFFOLDER 00E uses several electron-charm final states in $b \to c e^- X$. NODE=S051R2;LINKAGE=A

[6] ABE 99P uses the numbers of $K^*(892)^0$, $K^*(892)^+$, and $\phi(1020)$ events produced in association with the double semileptonic decays $b \to c\mu^- X$ with $c \to s\mu^+ X$. NODE=S051R2;LINKAGE=B

$\Gamma(B^0_s)/\Gamma(B^0)$ Γ_3/Γ_2

NODE=S051R01

NODE=S051R01

VALUE	DOCUMENT ID		TECN	COMMENT	
0.246 ±0.023 OUR EVALUATION	(Produced by HFLAV)				→ UNCHECKED ←
0.239 ±0.016 OUR AVERAGE					
0.240 ±0.004 ±0.020	[1] AAD	15CM	ATLS	pp at 7 TeV	
0.238 ±0.004 ±0.026	[2] AAIJ	13P	LHCB	pp at 7 TeV	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.2385±0.0075	[3] AAIJ	21Y	LHCB	pp at 8 TeV	OCCUR=2
0.2539±0.0079	[3] AAIJ	21Y	LHCB	pp at 13 TeV	OCCUR=3
0.2390±0.0076	[3] AAIJ	21Y	LHCB	pp at 7 TeV	OCCUR=4

[1] AAD 15CM measurement is derived from the observed $B^0_s \to J/\psi\phi$ and $B^0_d \to J/\psi K^{*0}$ yields and a recent theory prediction of B($B^0_s \to J/\psi\phi$)/B($B^0_d \to J/\psi K^{*0}$). The second uncertainty combines in quadrature systematic and theoretical uncertainties. NODE=S051R01;LINKAGE=A

[2] AAIJ 13P studies also separately the $p_T(B)$ and $\eta(B)$ dependency of $\Gamma(\overline{b} \to B^0_s)/\Gamma(\overline{b} \to B^0)$, finding $f_s/f_d(p_T)$= (0.256 ± 0.020) + (−2.0 ± 0.6) 10^{-3} /GeV/c ($p_T - \langle p_T \rangle$) and $f_s/f_d(\eta)$= (0.256 ± 0.020) + (0.005 ± 0.006) ($\eta - \langle\eta\rangle$), where $\langle p_T \rangle$ = 10.4 GeV/c and $\langle\eta\rangle$ = 3.28. AAIJ 13P reports the measurement as 0.238 ± 0.004 ± 0.015 ± 0.021 where the last uncertainly is theoretical. NODE=S051R01;LINKAGE=AA

[3] AAIJ 21Y uses hadronic decays $B^0 \to D^-\pi^+$, $B^0 \to D^- K^+$, $B^0_s \to D^-_s \pi^+$ and $B^0_s \to J/\psi\phi$ as well as semileptonic B^0 and B^0_s decays. Measured within the p_T range [0.5,40] GeV/c, η range [2, 6.4]. NODE=S051R01;LINKAGE=B

$\Gamma(B^+_c)/[\Gamma(B^+)+\Gamma(B^0)]$ — $\Gamma_4/(\Gamma_1+\Gamma_2)$

NODE=S051R39
NODE=S051R39

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
3.7 ±0.6 OUR AVERAGE				
3.63±0.08±0.87	[1] AAIJ	19AI	LHCB	pp at 7 TeV
3.78±0.04±0.90	[1] AAIJ	19AI	LHCB	pp at 13 TeV

OCCUR=2

[1] Measured using B^+_c semileptonic decays. NODE=S051R39;LINKAGE=A

$\Gamma(b\text{-baryon})/[\Gamma(B^+)+\Gamma(B^0)]$ — $\Gamma_5/(\Gamma_1+\Gamma_2)$

NODE=S051R3

"OUR EVALUATION" is an average from Z decay. NODE=S051R3

NODE=S051R3

VALUE	DOCUMENT ID		TECN	COMMENT
0.103±0.015 OUR EVALUATION	(Produced by HFLAV)			
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.259±0.018	[1] AAIJ	19AD	LHCB	pp at 13 TeV
0.305±0.010±0.081	[2] AAIJ	12J	LHCB	pp at 7 TeV
0.31 ±0.11 $^{+0.12}_{-0.08}$	[3] AALTONEN	09E	CDF	$p\overline{p}$ at 1.8 TeV
0.22 $^{+0.08}_{-0.07}$ ±0.01	[4] AALTONEN	08N	CDF	$p\overline{p}$ at 1.96 TeV
0.118±0.042	[3,5] AFFOLDER	00E	CDF	$p\overline{p}$ at 1.8 TeV

→ UNCHECKED ←

[1] AAIJ 19AD measured the average value for Λ^0_b using semileptonic decays and assuming isospin symmetry for b-hadron p_T of 4 and 25 GeV and η of 2 and 5. NODE=S051R3;LINKAGE=B

[2] AAIJ 12J measured the ratio to be (0.404 ± 0.017 ± 0.027 ± 0.105) × [1 − (0.031 ± 0.004 ± 0.003)×P_T]using b-hadron semileptonic decays where the P_T is the momentum of charmed hadron-muon pair in GeV/c.We quote their weighted average value where the second error combines systematic and the error on B($\Lambda^+_c \to pK^-\pi^+$). NODE=S051R3;LINKAGE=AJ

[3] AALTONEN 09E errata to the measurement reported in AFFOLDER 00E using the p_T spectra from fully reconstructed B^0 and Λ_b decays. NODE=S051R3;LINKAGE=AL

[4] AALTONEN 08N reports $[\Gamma(\overline{b} \to b\text{-baryon})/\left[\Gamma(\overline{b} \to B^+) + \Gamma(\overline{b} \to B^0)\right]] \times [B(\Lambda^+_c \to pK^-\pi^+)] = (14.1 \pm 0.6^{+5.3}_{-4.4}) \times 10^{-3}$ which we divide by our best value B($\Lambda^+_c \to pK^-\pi^+$) = (6.35 ± 0.25) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S051R3;LINKAGE=AA

[5] AFFOLDER 00E uses several electron-charm final states in $b \to c e^- X$. NODE=S051R3;LINKAGE=A

$\Gamma(\nu\,\text{anything})/\Gamma_{total}$ — Γ_6/Γ

NODE=S051R6
NODE=S051R6

VALUE	DOCUMENT ID		TECN	COMMENT
0.2308±0.0077±0.0124	[1,2] ACCIARRI	96C	L3	$e^+e^- \to Z$

[1] ACCIARRI 96C assumes relative b semileptonic decay rates e:μ:τ of 1:1:0.25. Based on missing-energy spectrum. NODE=S051R6;LINKAGE=MS

[2] Assumes Standard Model value for R_B. NODE=S051R6;LINKAGE=SM

$\Gamma(\ell^+\nu_\ell\,\text{anything})/\Gamma_{total}$ — Γ_7/Γ

NODE=S051S45

"OUR EVALUATION" is an average of the data listed below, excluding all asymmetry measurements, performed by the LEP Electroweak Working Group as described in the "Note on the Z boson" in the Z Particle Listings. NODE=S051S45

NODE=S051S45

VALUE	DOCUMENT ID		TECN	COMMENT
0.1069±0.0022 OUR EVALUATION				
0.1064±0.0016 OUR AVERAGE				
0.1070±0.0010±0.0035	[1] HEISTER	02G	ALEP	$e^+e^- \to Z$
0.1070±0.0008$^{+0.0037}_{-0.0049}$	[2] ABREU	01L	DLPH	$e^+e^- \to Z$
0.1083±0.0010$^{+0.0028}_{-0.0024}$	[3] ABBIENDI	00E	OPAL	$e^+e^- \to Z$
0.1016±0.0013±0.0030	[4] ACCIARRI	00	L3	$e^+e^- \to Z$
0.1085±0.0012±0.0047	[5,6] ACCIARRI	96C	L3	$e^+e^- \to Z$

→ UNCHECKED ←

• • • We do not use the following data for averages, fits, limits, etc. • • •

$0.1106 \pm 0.0039 \pm 0.0022$	[7] ABREU	95D	DLPH	$e^+e^- \to Z$
$0.114 \pm 0.003 \pm 0.004$	[8] BUSKULIC	94G	ALEP	$e^+e^- \to Z$
$0.100 \pm 0.007 \pm 0.007$	[9] ABREU	93C	DLPH	$e^+e^- \to Z$
$0.105 \pm 0.006 \pm 0.005$	[10] AKERS	93B	OPAL	Repl. by ABBIENDI 00E

[1] Uses the combination of lepton transverse momentum spectrum and the correlation between the charge of the lepton and opposite jet charge. The first error is statistic and the second error is the total systematic error including the modeling. NODE=S051S45;LINKAGE=HG

[2] The experimental systematic and model uncertainties are combined in quadrature. NODE=S051S45;LINKAGE=L1

[3] ABBIENDI 00E result is determined by comparing the distribution of several kinematic variables of leptonic events in a lifetime tagged $Z \to b\bar{b}$ sample using artificial neural network techniques. The first error is statistic; the second error is the total systematic error. NODE=S051S45;LINKAGE=ES

[4] ACCIARRI 00 result obtained from a combined fit of $R_b = \Gamma(Z \to b\bar{b})/\Gamma(Z \to \text{hadrons})$ and $B(b \to \ell\nu X)$, using double-tagging method. NODE=S051S45;LINKAGE=N

[5] ACCIARRI 96C result obtained by a fit to the single lepton spectrum. NODE=S051S45;LINKAGE=MS

[6] Assumes Standard Model value for R_B. NODE=S051S45;LINKAGE=SM

[7] ABREU 95D give systematic errors ± 0.0019 (model) and 0.0012 (R_c). We combine these in quadrature. NODE=S051S45;LINKAGE=B

[8] BUSKULIC 94G uses e and μ events. This value is from a global fit to the lepton p and p_T (relative to jet) spectra which also determines the b and c production fractions, the fragmentation functions, and the forward-backward asymmetries. This branching ratio depends primarily on the ratio of dileptons to single leptons at high p_T, but the lower p_T portion of the lepton spectrum is included in the global fit to reduce the model dependence. The model dependence is ± 0.0026 and is included in the systematic error. NODE=S051S45;LINKAGE=A

[9] ABREU 93C event count includes ee events. Combining ee, $\mu\mu$, and $e\mu$ events, they obtain $0.100 \pm 0.007 \pm 0.007$. NODE=S051S45;LINKAGE=G

[10] AKERS 93B analysis performed using single and dilepton events. NODE=S051S45;LINKAGE=SB

$\Gamma(e^+\nu_e \text{anything})/\Gamma_{\text{total}}$ Γ_8/Γ

NODE=S051S1
NODE=S051S1

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.1086±0.0035 OUR AVERAGE					
$0.1078 \pm 0.0008 ^{+0.0050}_{-0.0046}$		[1] ABBIENDI	00E	OPAL	$e^+e^- \to Z$
$0.1089 \pm 0.0020 \pm 0.0051$		[2,3] ACCIARRI	96C	L3	$e^+e^- \to Z$
$0.107 \pm 0.015 \pm 0.007$	260	[4] ABREU	93C	DLPH	$e^+e^- \to Z$
$0.138 \pm 0.032 \pm 0.008$		[5] ADEVA	91C	L3	$e^+e^- \to Z$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$0.086 \pm 0.027 \pm 0.008$		[6] ABE	93E	VNS	$E^{ee}_{\text{cm}} = 58$ GeV
$0.109 ^{+0.014}_{-0.013} \pm 0.0055$	2719	[7] AKERS	93B	OPAL	Repl. by ABBIENDI 00E
$0.111 \pm 0.028 \pm 0.026$		BEHREND	90D	CELL	$E^{ee}_{\text{cm}} = 43$ GeV
$0.150 \pm 0.011 \pm 0.022$		BEHREND	90D	CELL	$E^{ee}_{\text{cm}} = 35$ GeV
$0.112 \pm 0.009 \pm 0.011$		ONG	88	MRK2	$E^{ee}_{\text{cm}} = 29$ GeV
$0.149 ^{+0.022}_{-0.019}$		PAL	86	DLCO	$E^{ee}_{\text{cm}} = 29$ GeV
$0.110 \pm 0.018 \pm 0.010$		AIHARA	85	TPC	$E^{ee}_{\text{cm}} = 29$ GeV
$0.111 \pm 0.034 \pm 0.040$		ALTHOFF	84J	TASS	$E^{ee}_{\text{cm}} = 34.6$ GeV
0.146 ± 0.028		KOOP	84	DLCO	Repl. by PAL 86
$0.116 \pm 0.021 \pm 0.017$		NELSON	83	MRK2	$E^{ee}_{\text{cm}} = 29$ GeV

OCCUR=2

[1] ABBIENDI 00E result is determined by comparing the distribution of several kinematic variables of leptonic events in a lifetime tagged $Z \to b\bar{b}$ sample using artificial neural network techniques. The first error is statistic; the second error is the total systematic error. NODE=S051S1;LINKAGE=ES

[2] ACCIARRI 96C result obtained by a fit to the single lepton spectrum. NODE=S051S1;LINKAGE=MS

[3] Assumes Standard Model value for R_B. NODE=S051S1;LINKAGE=SM

[4] ABREU 93C event count includes ee events. Combining ee, $\mu\mu$, and $e\mu$ events, they obtain $0.100 \pm 0.007 \pm 0.007$. NODE=S051S1;LINKAGE=G

[5] ADEVA 91C measure the average $B(b \to eX)$ branching ratio using single and double tagged b enhanced Z events. Combining e and μ results, they obtain $0.113 \pm 0.010 \pm 0.006$. Constraining the initial number of b quarks by the Standard Model prediction (378 ± 3 MeV) for the decay of the Z into $b\bar{b}$, the electron result gives $0.112 \pm 0.004 \pm 0.008$. They obtain $0.119 \pm 0.003 \pm 0.006$ when e and μ results are combined. Used to measure the $b\bar{b}$ width itself, this electron result gives $370 \pm 12 \pm 24$ MeV and combined with the muon result gives $385 \pm 7 \pm 22$ MeV. NODE=S051S1;LINKAGE=E

[6] ABE 93E experiment also measures forward-backward asymmetries and fragmentation functions for b and c. NODE=S051S1;LINKAGE=F

[7] AKERS 93B analysis performed using single and dilepton events. NODE=S051S1;LINKAGE=H

$\Gamma(\mu^+ \nu_\mu \text{anything})/\Gamma_{total}$ — Γ_9/Γ

NODE=S051S2

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
$0.1095^{+0.0029}_{-0.0025}$ OUR AVERAGE				
$0.1096 \pm 0.0008 ^{+0.0034}_{-0.0027}$		[1] ABBIENDI	00E	OPAL	$e^+e^- \to Z$
$0.1082 \pm 0.0015 \pm 0.0059$		[2,3] ACCIARRI	96C	L3	$e^+e^- \to Z$
$0.110 \pm 0.012 \pm 0.007$	656	[4] ABREU	93C	DLPH	$e^+e^- \to Z$
$0.113 \pm 0.012 \pm 0.006$		[5] ADEVA	91C	L3	$e^+e^- \to Z$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.122 \pm 0.006 \pm 0.007$		[3] UENO	96	AMY	e^+e^- at 57.9 GeV
$0.101 ^{+0.010}_{-0.009} \pm 0.0055$	4248	[6] AKERS	93B	OPAL	Repl. by ABBIENDI 00E
$0.104 \pm 0.023 \pm 0.016$		BEHREND	90D	CELL	E^{ee}_{cm}= 43 GeV
$0.148 \pm 0.010 \pm 0.016$		BEHREND	90D	CELL	E^{ee}_{cm}= 35 GeV
$0.118 \pm 0.012 \pm 0.010$		ONG	88	MRK2	E^{ee}_{cm}= 29 GeV
$0.117 \pm 0.016 \pm 0.015$		BARTEL	87	JADE	E^{ee}_{cm}= 34.6 GeV
$0.114 \pm 0.018 \pm 0.025$		BARTEL	85J	JADE	Repl. by BARTEL 87
$0.117 \pm 0.028 \pm 0.010$		ALTHOFF	84G	TASS	E^{ee}_{cm}= 34.5 GeV
$0.105 \pm 0.015 \pm 0.013$		ADEVA	83B	MRKJ	E^{ee}_{cm}= 33–38.5 GeV
$0.155 ^{+0.054}_{-0.029}$		FERNANDEZ	83D	MAC	E^{ee}_{cm}= 29 GeV

OCCUR=2

[1] ABBIENDI 00E result is determined by comparing the distribution of several kinematic variables of leptonic events in a lifetime tagged $Z \to b\overline{b}$ sample using artificial neural network techniques. The first error is statistic; the second error is the total systematic error. NODE=S051S2;LINKAGE=ES

[2] ACCIARRI 96C result obtained by a fit to the single lepton spectrum. NODE=S051S2;LINKAGE=MS

[3] Assumes Standard Model value for R_B. NODE=S051S2;LINKAGE=SM

[4] ABREU 93C event count includes $\mu\mu$ events. Combining ee, $\mu\mu$, and $e\mu$ events, they obtain $0.100 \pm 0.007 \pm 0.007$. NODE=S051S2;LINKAGE=G

[5] ADEVA 91C measure the average B($b \to eX$) branching ratio using single and double tagged b enhanced Z events. Combining e and μ results, they obtain $0.113 \pm 0.010 \pm 0.006$. Constraining the initial number of b quarks by the Standard Model prediction (378 ± 3 MeV) for the decay of the Z into $b\overline{b}$, the muon result gives $0.123 \pm 0.003 \pm 0.006$. They obtain $0.119 \pm 0.003 \pm 0.006$ when e and μ results are combined. Used to measure the $b\overline{b}$ width itself, this muon result gives $394 \pm 9 \pm 22$ MeV and combined with the electron result gives $385 \pm 7 \pm 22$ MeV. NODE=S051S2;LINKAGE=E

[6] AKERS 93B analysis performed using single and dilepton events. NODE=S051S2;LINKAGE=B

$\Gamma(D^- \ell^+ \nu_\ell \text{anything})/\Gamma_{total}$ — Γ_{10}/Γ

NODE=S051R15

VALUE	DOCUMENT ID	TECN	COMMENT
0.022 ± 0.004 OUR AVERAGE	Error includes scale factor of 1.9.		
$0.0272 \pm 0.0028 \pm 0.0018$	[1] ABREU 00R	DLPH	$e^+e^- \to Z$
$0.0194 \pm 0.0025 \pm 0.0003$	[2] AKERS 95Q	OPAL	$e^+e^- \to Z$

[1] ABREU 00R reports their experiment's uncertainties $\pm 0.0019 \pm 0.0016 \pm 0.0018$, where the first error is statistical, the second is systematic, and the third is the uncertainty due to the D branching fraction. We combine first two in quadrature. NODE=S051R15;LINKAGE=B3

[2] AKERS 95Q reports $[\Gamma(\overline{b} \to D^- \ell^+ \nu_\ell \text{anything})/\Gamma_{total}] \times [B(D^+ \to K^- 2\pi^+)] = (1.82 \pm 0.20 \pm 0.12) \times 10^{-3}$ which we divide by our best value $B(D^+ \to K^- 2\pi^+) = (9.38 \pm 0.16) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S051R15;LINKAGE=A

$\Gamma(D^- \pi^+ \ell^+ \nu_\ell \text{anything})/\Gamma_{total}$ — Γ_{11}/Γ

NODE=S051R60

VALUE	DOCUMENT ID	TECN	COMMENT
$0.0049 \pm 0.0018 \pm 0.0007$	ABREU 00R	DLPH	$e^+e^- \to Z$

$\Gamma(D^- \pi^- \ell^+ \nu_\ell \text{anything})/\Gamma_{total}$ — Γ_{12}/Γ

NODE=S051R63

VALUE	DOCUMENT ID	TECN	COMMENT
$0.0026 \pm 0.0015 \pm 0.0004$	ABREU 00R	DLPH	$e^+e^- \to Z$

$\Gamma(\overline{D}^0 \ell^+ \nu_\ell \text{anything})/\Gamma_{total}$ — Γ_{13}/Γ

NODE=S051R16

VALUE	DOCUMENT ID	TECN	COMMENT
0.0679 ± 0.0034 OUR AVERAGE			
$0.0704 \pm 0.0040 \pm 0.0017$	[1] ABREU 00R	DLPH	$e^+e^- \to Z$
$0.0639 \pm 0.0056 \pm 0.0005$	[2] AKERS 95Q	OPAL	$e^+e^- \to Z$

[1] ABREU 00R reports their experiment's uncertainties $\pm 0.0034 \pm 0.0036 \pm 0.0017$, where the first error is statistical, the second is systematic, and the third is the uncertainty due to the D branching fraction. We combine first two in quadrature. NODE=S051R16;LINKAGE=B3

[2] AKERS 95Q reports $[\Gamma(\overline{b} \to \overline{D}^0 \ell^+ \nu_\ell \text{anything})/\Gamma_{total}] \times [B(D^0 \to K^- \pi^+)] = (2.52 \pm 0.14 \pm 0.17) \times 10^{-3}$ which we divide by our best value $B(D^0 \to K^- \pi^+) = (3.945 \pm 0.030) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S051R16;LINKAGE=A

$\Gamma(\overline{D}^0 \pi^- \ell^+ \nu_\ell \text{anything})/\Gamma_{total}$ — Γ_{14}/Γ

NODE=S051R59

VALUE	DOCUMENT ID		TECN	COMMENT
0.0107±0.0025±0.0011	ABREU	00R	DLPH	$e^+ e^- \to Z$

$\Gamma(\overline{D}^0 \pi^+ \ell^+ \nu_\ell \text{anything})/\Gamma_{total}$ — Γ_{15}/Γ

NODE=S051R62

VALUE	DOCUMENT ID		TECN	COMMENT
0.0023±0.0015±0.0004	ABREU	00R	DLPH	$e^+ e^- \to Z$

$\Gamma(D^{*-} \ell^+ \nu_\ell \text{anything})/\Gamma_{total}$ — Γ_{16}/Γ

NODE=S051R17

VALUE	DOCUMENT ID		TECN	COMMENT
0.0275±0.0019 OUR AVERAGE				
0.0275±0.0021±0.0009	[1] ABREU	00R	DLPH	$e^+ e^- \to Z$
0.0276±0.0027±0.0011	[2] AKERS	95Q	OPAL	$e^+ e^- \to Z$

SYCLP=A
SYCLP=A

[1] ABREU 00R reports their experiment's uncertainties $\pm 0.0017 \pm 0.0013 \pm 0.0009$, where the first error is statistical, the second is systematic, and the third is the uncertainty due to the D branching fraction. We combine first two in quadrature. NODE=S051R17;LINKAGE=B3

[2] AKERS 95Q reports $[B(\overline{b} \to D^* \ell^+ \nu_\ell X) \times B(D^{*+} \to D^0 \pi^+) \times B(D^0 \to K^- \pi^+)] = ((7.53 \pm 0.47 \pm 0.56) \times 10^{-4})$ and uses $B(D^{*+} \to D^0 \pi^+) = 0.681 \pm 0.013$ and $B(D^0 \to K^- \pi^+) = 0.0401 \pm 0.0014$ to obtain the above result. The first error is the experiments error and the second error is the systematic error from the D^{*+} and D^0 branching ratios. NODE=S051R17;LINKAGE=A

$\Gamma(D^{*-} \pi^- \ell^+ \nu_\ell \text{anything})/\Gamma_{total}$ — Γ_{17}/Γ

NODE=S051R64

VALUE	DOCUMENT ID		TECN	COMMENT
0.0006±0.0007±0.0002	ABREU	00R	DLPH	$e^+ e^- \to Z$

$\Gamma(D^{*-} \pi^+ \ell^+ \nu_\ell \text{anything})/\Gamma_{total}$ — Γ_{18}/Γ

NODE=S051R61

VALUE	DOCUMENT ID		TECN	COMMENT
0.0048±0.0009±0.0005	ABREU	00R	DLPH	$e^+ e^- \to Z$

$\Gamma(\overline{D}_j^0 \ell^+ \nu_\ell \text{anything} \times B(\overline{D}_j^0 \to D^{*+} \pi^-))/\Gamma_{total}$ — Γ_{19}/Γ

NODE=S051R18

D_j represents an unresolved mixture of pseudoscalar and tensor D^{**} (P-wave) states. NODE=S051R18

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
2.64±0.79±0.39	ABBIENDI	03M	OPAL	$e^+ e^- \to Z$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
6.1 ±1.3 ±1.3	AKERS	95Q	OPAL	Repl. by ABBIENDI 03M

$\Gamma(D_j^- \ell^+ \nu_\ell \text{anything} \times B(D_j^- \to D^0 \pi^-))/\Gamma_{total}$ — Γ_{20}/Γ

NODE=S051R19

D_j represents an unresolved mixture of pseudoscalar and tensor D^{**} (P-wave) states. NODE=S051R19

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
$7.0 \pm 1.9^{+1.2}_{-1.3}$	AKERS	95Q	OPAL	$e^+ e^- \to Z$

$\Gamma(\overline{D}_2^*(2460)^0 \ell^+ \nu_\ell \text{anything} \times B(\overline{D}_2^*(2460)^0 \to D^{*-} \pi^+))/\Gamma_{total}$ — Γ_{21}/Γ

NODE=S051R21

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
<1.4	90	ABBIENDI	03M	OPAL	$e^+ e^- \to Z$

$\Gamma(D_2^*(2460)^- \ell^+ \nu_\ell \text{anything} \times B(D_2^*(2460)^- \to D^0 \pi^-))/\Gamma_{total}$ — Γ_{22}/Γ

NODE=S051R22

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
$4.2 \pm 1.3^{+0.7}_{-1.2}$	AKERS	95Q	OPAL	$e^+ e^- \to Z$

$\Gamma(\overline{D}_2^*(2460)^0 \ell^+ \nu_\ell \text{anything} \times B(\overline{D}_2^*(2460)^0 \to D^- \pi^+))/\Gamma_{total}$ — Γ_{23}/Γ

NODE=S051R68

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
1.6±0.7±0.3	AKERS	95Q	OPAL	$e^+ e^- \to Z$

$\Gamma(\text{charmless } \ell \overline{\nu}_\ell)/\Gamma_{total}$ — Γ_{24}/Γ

NODE=S051R31

"OUR EVALUATION" is an average of the data listed below performed by the LEP Heavy Flavour Steering Group. The averaging procedure takes into account correlations between the measurements.

NODE=S051R31

VALUE	DOCUMENT ID		TECN	COMMENT
0.00171±0.00052 OUR EVALUATION				
0.0017 ±0.0004 OUR AVERAGE				
$0.00163\pm0.00053^{+0.00055}_{-0.00062}$	[1] ABBIENDI	01R	OPAL	$e^+e^- \to Z$
0.00157±0.00035±0.00055	[2] ABREU	00D	DLPH	$e^+e^- \to Z$
0.00173±0.00055±0.00055	[3] BARATE	99G	ALEP	$e^+e^- \to Z$
0.0033 ±0.0010 ±0.0017	[4] ACCIARRI	98K	L3	$e^+e^- \to Z$

NODE=S051R31
→ UNCHECKED ←

[1] Obtained from the best fit of the MC simulated events to the data based on the $b \to X_u \ell \nu$ neutral network output distributions. NODE=S051R31;LINKAGE=AR

[2] ABREU 00D result obtained from a fit to the numbers of decays in $b \to u$ enriched and depleted samples and their lepton spectra, and assuming $|V_{cb}|= 0.0384 \pm 0.0033$ and $\tau_b= 1.564 \pm 0.014$ ps. NODE=S051R31;LINKAGE=D

[3] Uses lifetime tagged $b\overline{b}$ sample. NODE=S051R31;LINKAGE=B

[4] ACCIARRI 98K assumes $R_b= 0.2174 \pm 0.0009$ at Z decay. NODE=S051R31;LINKAGE=A

$\Gamma(\tau^+ \nu_\tau \text{anything})/\Gamma_{total}$ — Γ_{25}/Γ

NODE=S051S46
NODE=S051S46

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
2.41±0.23 OUR AVERAGE					
2.78±0.18±0.51		[1] ABBIENDI	01Q	OPAL	$e^+e^- \to Z$
2.43±0.20±0.25		[2] BARATE	01E	ALEP	$e^+e^- \to Z$
2.19±0.24±0.39		[3] ABREU	00C	DLPH	$e^+e^- \to Z$
1.7 ±0.5 ±1.1		[4,5] ACCIARRI	96C	L3	$e^+e^- \to Z$
2.4 ±0.7 ±0.8	1032	[6] ACCIARRI	94C	L3	$e^+e^- \to Z$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2.75±0.30±0.37	405	[7] BUSKULIC	95	ALEP	Repl. by BARATE 01E
4.08±0.76±0.62		BUSKULIC	93B	ALEP	Repl. by BUSKULIC 95

[1] ABBIENDI 01Q uses a missing energy technique. NODE=S051S46;LINKAGE=AK

[2] The energy-flow and b-tagging algorithms were used. NODE=S051S46;LINKAGE=QK

[3] Uses the missing energy in $Z \to b\overline{b}$ decays without identifying leptons. NODE=S051S46;LINKAGE=N2

[4] ACCIARRI 96C result obtained from missing energy spectrum. NODE=S051S46;LINKAGE=MS

[5] Assumes Standard Model value for R_B. NODE=S051S46;LINKAGE=SM

[6] This is a direct result using tagged $b\overline{b}$ events at the Z, but species are not separated. NODE=S051S46;LINKAGE=A

[7] BUSKULIC 95 uses missing-energy technique. NODE=S051S46;LINKAGE=B

$\Gamma(D^{*-} \tau \nu_\tau \text{anything})/\Gamma_{total}$ — Γ_{26}/Γ

NODE=S051R66
NODE=S051R66

VALUE	DOCUMENT ID		TECN	COMMENT
$(0.88\pm0.31\pm0.28) \times 10^{-2}$	[1] BARATE	01E	ALEP	$e^+e^- \to Z$

[1] The energy-flow and b-tagging algorithms were used. NODE=S051R66;LINKAGE=QK

$\Gamma(\overline{b} \to \overline{c} \to \ell^- \overline{\nu}_\ell \text{anything})/\Gamma_{total}$ — Γ_{27}/Γ

NODE=S051S94

"OUR EVALUATION" is an average of the data listed below, excluding all asymmetry measurements, performed by the LEP Electroweak Working Group as described in the "Note on the Z boson" in the Z Particle Listings.

NODE=S051S94

VALUE	DOCUMENT ID		TECN	COMMENT
0.0802±0.0019 OUR EVALUATION				
0.0817±0.0020 OUR AVERAGE				
$0.0818\pm0.0015^{+0.0024}_{-0.0026}$	[1] HEISTER	02G	ALEP	$e^+e^- \to Z$
$0.0798\pm0.0022^{+0.0025}_{-0.0029}$	[2] ABREU	01L	DLPH	$e^+e^- \to Z$
$0.0840\pm0.0016^{+0.0039}_{-0.0036}$	[3] ABBIENDI	00E	OPAL	$e^+e^- \to Z$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.0770±0.0097±0.0046	[4] ABREU	95D	DLPH	$e^+e^- \to Z$
0.082 ±0.003 ±0.012	[5] BUSKULIC	94G	ALEP	$e^+e^- \to Z$
0.077 ±0.004 ±0.007	[6] AKERS	93B	OPAL	Repl. by ABBIENDI 00E

NODE=S051S94
→ UNCHECKED ←

[1] Uses the combination of lepton transverse momentum spectrum and the correlation between the charge of the lepton and opposite jet charge. The first error is statistic and the second error is the total systematic error including the modeling. NODE=S051S94;LINKAGE=HG

[2] The experimental systematic and model uncertainties are combined in quadrature. NODE=S051S94;LINKAGE=L1

[3] ABBIENDI 00E result is determined by comparing the distribution of several kinematic variables of leptonic events in a lifetime tagged $Z \to b\overline{b}$ sample using artificial neural network techniques. The first error is statistic; the second error is the total systematic error. NODE=S051S94;LINKAGE=ES

[4] ABREU 95D give systematic errors ±0.0033 (model) and 0.0032 (R_c). We combine these in quadrature. This result is from the same global fit as their $\Gamma(\overline{b} \to \ell^+ \nu_\ell X)$ data. NODE=S051S94;LINKAGE=B

[5] BUSKULIC 94G uses e and μ events. This value is from the same global fit as their $\Gamma(\overline{b} \to \ell^+ \nu_\ell \text{anything})/\Gamma_{total}$ data. NODE=S051S94;LINKAGE=A

[6] AKERS 93B analysis performed using single and dilepton events. NODE=S051S94;LINKAGE=SB

$\Gamma(c \to \ell^+ \nu \text{anything})/\Gamma_{total}$ Γ_{28}/Γ

NODE=S051R8

VALUE	DOCUMENT ID		TECN	COMMENT
$0.0161\pm0.0020^{+0.0034}_{-0.0047}$	[1] ABREU	01L	DLPH	$e^+e^- \to Z$

[1] The experimental systematic and model uncertainties are combined in quadrature. NODE=S051R8;LINKAGE=L1

$\Gamma(\overline{D}^0 \text{anything})/\Gamma_{total}$ Γ_{29}/Γ

NODE=S051R24

VALUE	DOCUMENT ID		TECN	COMMENT
$0.587\pm0.028\pm0.005$	[1] BUSKULIC	96Y	ALEP	$e^+e^- \to Z$

[1] BUSKULIC 96Y reports $0.605 \pm 0.024 \pm 0.016$ from a measurement of $[\Gamma(\overline{b} \to \overline{D}^0 \text{anything})/\Gamma_{total}] \times [B(D^0 \to K^-\pi^+)]$ assuming $B(D^0 \to K^-\pi^+) = 0.0383$, which we rescale to our best value $B(D^0 \to K^-\pi^+) = (3.945 \pm 0.030) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S051R24;LINKAGE=A

$\Gamma(D^0 D_s^\pm \text{anything})/\Gamma_{total}$ Γ_{30}/Γ

NODE=S051R51

VALUE	DOCUMENT ID		TECN	COMMENT
$0.091^{+0.020}_{-0.018}{}^{+0.034}_{-0.022}$	[1] BARATE	98Q	ALEP	$e^+e^- \to Z$

[1] The systematic error includes the uncertainties due to the charm branching ratios. NODE=S051R51;LINKAGE=A

$\Gamma(D^\mp D_s^\pm \text{anything})/\Gamma_{total}$ Γ_{31}/Γ

NODE=S051R52

VALUE	DOCUMENT ID		TECN	COMMENT
$0.040^{+0.017}_{-0.014}{}^{+0.016}_{-0.011}$	[1] BARATE	98Q	ALEP	$e^+e^- \to Z$

[1] The systematic error includes the uncertainties due to the charm branching ratios. NODE=S051R52;LINKAGE=A

$\left[\Gamma(D^0 D_s^\pm \text{anything}) + \Gamma(D^\mp D_s^\pm \text{anything})\right]/\Gamma_{total}$ $(\Gamma_{30}+\Gamma_{31})/\Gamma$

NODE=S051R53

VALUE	DOCUMENT ID		TECN	COMMENT
$0.131^{+0.026}_{-0.022}{}^{+0.048}_{-0.031}$	[1] BARATE	98Q	ALEP	$e^+e^- \to Z$

[1] The systematic error includes the uncertainties due to the charm branching ratios. NODE=S051R53;LINKAGE=A

$\Gamma(\overline{D}^0 D^0 \text{anything})/\Gamma_{total}$ Γ_{32}/Γ

NODE=S051R47

VALUE	DOCUMENT ID		TECN	COMMENT
$0.051^{+0.016}_{-0.014}{}^{+0.012}_{-0.011}$	[1] BARATE	98Q	ALEP	$e^+e^- \to Z$

[1] The systematic error includes the uncertainties due to the charm branching ratios. NODE=S051R47;LINKAGE=A

$\Gamma(D^0 D^\pm \text{anything})/\Gamma_{total}$ Γ_{33}/Γ

NODE=S051R48

VALUE	DOCUMENT ID		TECN	COMMENT
$0.027^{+0.015}_{-0.013}{}^{+0.010}_{-0.009}$	[1] BARATE	98Q	ALEP	$e^+e^- \to Z$

[1] The systematic error includes the uncertainties due to the charm branching ratios. NODE=S051R48;LINKAGE=A

$\left[\Gamma(\overline{D}^0 D^0 \text{anything}) + \Gamma(D^0 D^\pm \text{anything})\right]/\Gamma_{total}$ $(\Gamma_{32}+\Gamma_{33})/\Gamma$

NODE=S051R50

VALUE	DOCUMENT ID		TECN	COMMENT
$0.078^{+0.020}_{-0.018}{}^{+0.018}_{-0.016}$	[1] BARATE	98Q	ALEP	$e^+e^- \to Z$

[1] The systematic error includes the uncertainties due to the charm branching ratios. NODE=S051R50;LINKAGE=A

$\Gamma(D^\pm D^\mp \text{anything})/\Gamma_{total}$ Γ_{34}/Γ

NODE=S051R49

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.009	90	BARATE	98Q	ALEP	$e^+e^- \to Z$

$\left[\Gamma(D^0 \text{anything}) + \Gamma(D^+ \text{anything})\right]/\Gamma_{total}$ $(\Gamma_{35}+\Gamma_{36})/\Gamma$

NODE=S051R70

VALUE	DOCUMENT ID		TECN	COMMENT
0.093±0.017±0.014	[1] ABDALLAH	03E	DLPH	$e^+ e^- \to Z$

[1] The second error is the total of systematic uncertainties including the branching fractions used in the measurement.

NODE=S051R70;LINKAGE=SE

$\Gamma(D^- \text{anything})/\Gamma_{total}$ Γ_{37}/Γ

NODE=S051R25

VALUE	DOCUMENT ID		TECN	COMMENT
0.227±0.016±0.004	[1] BUSKULIC	96Y	ALEP	$e^+ e^- \to Z$

[1] BUSKULIC 96Y reports 0.234 ± 0.013 ± 0.010 from a measurement of $[\Gamma(\overline{b} \to D^- \text{anything})/\Gamma_{total}] \times [B(D^+ \to K^- 2\pi^+)]$ assuming $B(D^+ \to K^- 2\pi^+) = 0.091$, which we rescale to our best value $B(D^+ \to K^- 2\pi^+) = (9.38 \pm 0.16) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S051R25;LINKAGE=A

$\Gamma(D^*(2010)^+ \text{anything})/\Gamma_{total}$ Γ_{38}/Γ

NODE=S051R46

VALUE	DOCUMENT ID		TECN	COMMENT
0.173±0.016±0.012	[1] ACKERSTAFF	98E	OPAL	$e^+ e^- \to Z$

[1] Uses lepton tags to select $Z \to b\overline{b}$ events.

NODE=S051R46;LINKAGE=A

$\Gamma(D_1(2420)^0 \text{anything})/\Gamma_{total}$ Γ_{39}/Γ

NODE=S051R32

VALUE	DOCUMENT ID		TECN	COMMENT
0.050±0.014±0.006	[1] ACKERSTAFF	97W	OPAL	$e^+ e^- \to Z$

[1] ACKERSTAFF 97W assumes $B(D_2^*(2460)^0 \to D^{*+}\pi^-) = 0.21 \pm 0.04$ and $\Gamma_{b\overline{b}}/\Gamma_{hadrons} = 0.216$ at Z decay.

NODE=S051R32;LINKAGE=A

$\Gamma(D^*(2010)^\mp D_s^\pm \text{anything})/\Gamma_{total}$ Γ_{40}/Γ

NODE=S051R54

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.033^{+0.010}_{-0.009}{}^{+0.012}_{-0.009}}$	[1] BARATE	98Q	ALEP	$e^+ e^- \to Z$

[1] The systematic error includes the uncertainties due to the charm branching ratios.

NODE=S051R54;LINKAGE=A

$\Gamma(D^0 D^*(2010)^\pm \text{anything})/\Gamma_{total}$ Γ_{41}/Γ

NODE=S051R55

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.030^{+0.009}_{-0.008}{}^{+0.007}_{-0.005}}$	[1] BARATE	98Q	ALEP	$e^+ e^- \to Z$

[1] The systematic error includes the uncertainties due to the charm branching ratios.

NODE=S051R55;LINKAGE=A

$\Gamma(D^*(2010)^\pm D^\mp \text{anything})/\Gamma_{total}$ Γ_{42}/Γ

NODE=S051R56

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.025^{+0.010}_{-0.009}{}^{+0.006}_{-0.005}}$	[1] BARATE	98Q	ALEP	$e^+ e^- \to Z$

[1] The systematic error includes the uncertainties due to the charm branching ratios.

NODE=S051R56;LINKAGE=A

$\Gamma(D^*(2010)^\pm D^*(2010)^\mp \text{anything})/\Gamma_{total}$ Γ_{43}/Γ

NODE=S051R57

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.012^{+0.004}_{-0.003} \pm 0.002}$	[1] BARATE	98Q	ALEP	$e^+ e^- \to Z$

[1] The systematic error includes the uncertainties due to the charm branching ratios.

NODE=S051R57;LINKAGE=A

$\Gamma(\overline{D} D \text{anything})/\Gamma_{total}$ Γ_{44}/Γ

NODE=S051R90

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.10 \pm 0.032^{+0.107}_{-0.095}}$	[1] ABBIENDI	04I	OPAL	$e^+ e^- \to Z$

[1] Measurement performed using an inclusive identification of B mesons and the D candidates.

NODE=S051R90;LINKAGE=AB

$\Gamma(D_2^*(2460)^0 \text{anything})/\Gamma_{total}$ Γ_{45}/Γ

NODE=S051R33

VALUE	DOCUMENT ID		TECN	COMMENT
0.047±0.024±0.013	[1] ACKERSTAFF	97W	OPAL	$e^+ e^- \to Z$

[1] ACKERSTAFF 97W assumes $B(D_2^*(2460)^0 \to D^{*+}\pi^-) = 0.21 \pm 0.04$ and $\Gamma_{b\overline{b}}/\Gamma_{hadrons} = 0.216$ at Z decay.

NODE=S051R33;LINKAGE=A

$\Gamma(D_s^-\text{ anything})/\Gamma_{total}$ — Γ_{46}/Γ

NODE=S051R26

VALUE	DOCUMENT ID		TECN	COMMENT
0.147±0.017±0.013	[1] BUSKULIC	96Y	ALEP	$e^+e^-\to Z$

[1] BUSKULIC 96Y reports 0.183 ± 0.019 ± 0.009 from a measurement of $[\Gamma(\overline{b}\to D_s^-\text{ anything})/\Gamma_{total}]\times[B(D_s^+\to\phi\pi^+)]$ assuming $B(D_s^+\to\phi\pi^+)=0.036$, which we rescale to our best value $B(D_s^+\to\phi\pi^+)=(4.5\pm0.4)\times10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S051R26;LINKAGE=A

$\Gamma(D_s^+\text{ anything})/\Gamma_{total}$ — Γ_{47}/Γ

NODE=S051R71

VALUE	DOCUMENT ID		TECN	COMMENT
0.101±0.010±0.029	[1] ABDALLAH	03E	DLPH	$e^+e^-\to Z$

[1] The second error is the total of systematic uncertainties including the branching fractions used in the measurement. NODE=S051R71;LINKAGE=SE

$\Gamma(b\to\Lambda_c^+\text{ anything})/\Gamma_{total}$ — Γ_{48}/Γ

NODE=S051R27

VALUE	DOCUMENT ID		TECN	COMMENT
0.076±0.011 OUR AVERAGE [0.078 ± 0.011 OUR 2024 AVERAGE] NEW				
0.076±0.011±0.003	[1] BUSKULIC	96Y	ALEP	$e^+e^-\to Z$

[1] BUSKULIC 96Y reports 0.110 ± 0.014 ± 0.006 from a measurement of $[\Gamma(b\to\Lambda_c^+\text{ anything})/\Gamma_{total}]\times[B(\Lambda_c^+\to pK^-\pi^+)]$ assuming $B(\Lambda_c^+\to pK^-\pi^+)=0.044$, which we rescale to our best value $B(\Lambda_c^+\to pK^-\pi^+)=(6.35\pm0.25)\times10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S051R27;LINKAGE=A

$\Gamma(\overline{c}/c\text{ anything})/\Gamma_{total}$ — Γ_{49}/Γ

NODE=S051R28

VALUE	DOCUMENT ID		TECN	COMMENT
1.162±0.032 OUR AVERAGE				
$1.12^{+0.11}_{-0.10}$	[1] ABBIENDI	04I	OPAL	$e^+e^-\to Z$
1.166±0.031±0.080	[2] ABREU	00	DLPH	$e^+e^-\to Z$
1.147±0.041	[3] ABREU	98D	DLPH	$e^+e^-\to Z$
1.230±0.036±0.065	[4] BUSKULIC	96Y	ALEP	$e^+e^-\to Z$

[1] Measurement performed using an inclusive identification of B mesons and the D candidates. NODE=S051R28;LINKAGE=AB

[2] Evaluated via summation of exclusive and inclusive channels. NODE=S051R28;LINKAGE=C3

[3] ABREU 98D results are extracted from a fit to the b-tagging probability distribution based on the impact parameter. NODE=S051R28;LINKAGE=B

[4] BUSKULIC 96Y assumes PDG 96 production fractions for B^0, B^+, B_s, b baryons, and PDG 96 branching ratios for charm decays. This is sum of their inclusive $\overline{D}^0$, D^-, $\overline{D}_s$, and Λ_c branching ratios, corrected to include inclusive Ξ_c and charmonium. NODE=S051R28;LINKAGE=A

$\Gamma(J/\psi(1S)\text{ anything})/\Gamma_{total}$ — Γ_{50}/Γ

NODE=S051S7

VALUE (units 10^{-2})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
1.16±0.10 OUR AVERAGE						
1.12±0.12±0.10			[1] ABREU	94P	DLPH	$e^+e^-\to Z$
1.16±0.16±0.14		121	[2] ADRIANI	93J	L3	$e^+e^-\to Z$
1.21±0.13±0.08			BUSKULIC	92G	ALEP	$e^+e^-\to Z$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
1.3 ±0.2 ±0.2			[3] ADRIANI	92	L3	$e^+e^-\to Z$
<4.9	90		MATTEUZZI	83	MRK2	$E_{cm}^{ee}=29$ GeV

[1] ABREU 94P is an inclusive measurement from b decays at the Z. Uses $J/\psi(1S)\to e^+e^-$ and $\mu^+\mu^-$ channels. Assumes $\Gamma(Z\to b\overline{b})/\Gamma_{hadron}$=0.22. NODE=S051S7;LINKAGE=E

[2] ADRIANI 93J is an inclusive measurement from b decays at the Z. Uses $J/\psi(1S)\to\mu^+\mu^-$ and $J/\psi(1S)\to e^+e^-$ channels. NODE=S051S7;LINKAGE=D

[3] ADRIANI 92 measurement is an inclusive result for $B(Z\to J/\psi(1S)X)=(4.1\pm0.7\pm0.3)\times10^{-3}$ which is used to extract the b-hadron contribution to $J/\psi(1S)$ production. NODE=S051S7;LINKAGE=CC

$\Gamma(\psi(2S)\text{ anything})/\Gamma_{total}$ — Γ_{51}/Γ

NODE=S051S25

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.0048±0.0022±0.0010	[1] ABREU	94P	DLPH	$e^+e^-\to Z$

[1] ABREU 94P is an inclusive measurement from b decays at the Z. Uses $\psi(2S)\to J/\psi(1S)\pi^+\pi^-$, $J/\psi(1S)\to\mu^+\mu^-$ channels. Assumes $\Gamma(Z\to b\overline{b})/\Gamma_{hadron}$=0.22. NODE=S051S25;LINKAGE=E

$\Gamma(\psi(2S)\text{anything})/\Gamma(J/\psi(1S)\text{anything})$ — Γ_{51}/Γ_{50}

NODE=S051R95

VALUE	DOCUMENT ID		TECN	COMMENT
0.263±0.013 OUR AVERAGE				
0.265±0.002±0.016	[1] AAIJ	20G	LHCB	pp at 13 TeV
0.266±0.06 ±0.03	[2,3] AAIJ	12BD	LHCB	pp at 7 TeV
0.257±0.015±0.019	[4,5] CHATRCHYAN	12AK	CMS	pp at 7 TeV

[1] The first error is statistic; the second error is the total systematic error. NODE=S051R95;LINKAGE=C

[2] AAIJ 12BD reports $B(b \to \psi(2S)X) = (3.08 \pm 0.07 \pm 0.36 \pm 0.27) \times 10^{-3}$ and we divided our best value of $B(b \to \psi(1S)X) = (1.16 \pm 0.10) \times 10^{-2}$ as the ratio listed here. NODE=S051R95;LINKAGE=A

[3] Assumes lepton universality imposing $B(\psi(2s) \to \mu^+\mu^-) = B(\psi(2s) \to e^+e^-)$. NODE=S051R95;LINKAGE=B

[4] CHATRCHYAN 12AK really reports $\Gamma_{51}/\Gamma = (3.08\pm0.12\pm0.13\pm0.42)\times10^{-3}$ assuming PDG 10 value of $\Gamma_{50}/\Gamma = (1.16 \pm 0.10)\times10^{-2}$ which we present as a ratio of $\Gamma_{51}/\Gamma_{50} = (26.5 \pm 1.0 \pm 1.1 \pm 2.8)\times10^{-2}$. NODE=S051R95;LINKAGE=AA

[5] CHATRCHYAN 12AK reports $(26.5 \pm 1.0 \pm 1.1 \pm 2.8) \times 10^{-2}$ from a measurement of $[\Gamma(\overline{b} \to \psi(2S)\text{anything})/\Gamma(\overline{b} \to J/\psi(1S)\text{anything})] \times [B(\psi(2S) \to \mu^+\mu^-)] / [B(J/\psi(1S) \to \mu^+\mu^-)]$ assuming $B(\psi(2S) \to \mu^+\mu^-) = (7.7 \pm 0.8) \times 10^{-3}$,$B(J/\psi(1S) \to \mu^+\mu^-) = (5.93 \pm 0.06) \times 10^{-2}$, which we rescale to our best values $B(\psi(2S) \to \mu^+\mu^-) = (8.0 \pm 0.6) \times 10^{-3}$, $B(J/\psi(1S) \to \mu^+\mu^-) = (5.961 \pm 0.033) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best values. NODE=S051R95;LINKAGE=CH

$\Gamma(\chi_{c0}(1P)\text{anything})/\Gamma_{\text{total}}$ — Γ_{52}/Γ

NODE=S051R43

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
3.0±0.6±0.2	[1] AAIJ	24AP	LHCB	pp at 13 TeV

[1] AAIJ 24AP reports $[\Gamma(\overline{b} \to \chi_{c0}(1P)\text{anything})/\Gamma_{\text{total}}] \times [B(\chi_{c0}(1P) \to p\overline{p})] = (6.74 \pm 1.18 \pm 0.62) \times 10^{-7}$ which we divide by our best value $B(\chi_{c0}(1P) \to p\overline{p}) = (2.21 \pm 0.14) \times 10^{-4}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S051R43;LINKAGE=A

$\Gamma(\chi_{c0}(1P)\text{anything})/\Gamma(\eta_c(1S)\text{anything})$ — Γ_{52}/Γ_{56}

NODE=S051R00

VALUE	DOCUMENT ID		TECN	COMMENT
0.32±0.05±0.08	[1] AAIJ	17BB	LHCB	pp at 7, 8 TeV

[1] AAIJ 17BB reports $[\Gamma(\overline{b} \to \chi_{c0}(1P)\text{anything})/\Gamma(\overline{b} \to \eta_c(1S)\text{anything})] / [B(\eta_c(1S) \to \phi\phi)] \times [B(\chi_{c0}(1P) \to \phi\phi)] = 0.147 \pm 0.023 \pm 0.011$ which we multiply or divide by our best values $B(\eta_c(1S) \to \phi\phi) = (1.8 \pm 0.4) \times 10^{-3}$, $B(\chi_{c0}(1P) \to \phi\phi) = (8.48 \pm 0.31) \times 10^{-4}$. Our first error is their experiment's error and our second error is the systematic error from using our best values. NODE=S051R00;LINKAGE=A

$\Gamma(\chi_{c1}(1P)\text{anything})/\Gamma_{\text{total}}$ — Γ_{53}/Γ

NODE=S051R89

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
5.9±1.5 OUR AVERAGE Error includes scale factor of 1.2. [0.014 ± 0.004 OUR 2024 AVERAGE]					
5.1±1.3±0.3		[1] AAIJ	24AP	LHCB	pp at 13 TeV
$11.2^{+5.7}_{-5.0}\pm0.4$		[2] ABREU	94P	DLPH	$e^+e^- \to Z$
19 ±7 ±1	19	[3] ADRIANI	93J	L3	$e^+e^- \to Z$

NEW

[1] AAIJ 24AP reports $[\Gamma(\overline{b} \to \chi_{c1}(1P)\text{anything})/\Gamma_{\text{total}}] \times [B(\chi_{c1}(1P) \to p\overline{p})] = (3.88 \pm 0.91 \pm 0.36) \times 10^{-7}$ which we divide by our best value $B(\chi_{c1}(1P) \to p\overline{p}) = (7.6 \pm 0.4) \times 10^{-5}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S051R89;LINKAGE=A

[2] ABREU 94P reports $(1.4 \pm 0.6^{+0.4}_{-0.2}) \times 10^{-2}$ from a measurement of $[\Gamma(\overline{b} \to \chi_{c1}(1P)\text{anything})/\Gamma_{\text{total}}] \times [B(\chi_{c1}(1P) \to \gamma J/\psi(1S))]$ assuming $B(\chi_{c1}(1P) \to \gamma J/\psi(1S)) = (27.3 \pm 1.6) \times 10^{-2}$, which we rescale to our best value $B(\chi_{c1}(1P) \to \gamma J/\psi(1S)) = (34.3 \pm 1.3) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes no $\chi_{c2}(1P)$ and $\Gamma(Z \to b\overline{b})/\Gamma_{\text{hadron}}$=0.22. NODE=S051R89;LINKAGE=J3

[3] ADRIANI 93J reports $(2.4 \pm 0.9 \pm 0.2) \times 10^{-2}$ from a measurement of $[\Gamma(\overline{b} \to \chi_{c1}(1P)\text{anything})/\Gamma_{\text{total}}] \times [B(\chi_{c1}(1P) \to \gamma J/\psi(1S))]$ assuming $B(\chi_{c1}(1P) \to \gamma J/\psi(1S)) = (27.3 \pm 1.6) \times 10^{-2}$, which we rescale to our best value $B(\chi_{c1}(1P) \to \gamma J/\psi(1S)) = (34.3 \pm 1.3) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. NODE=S051R89;LINKAGE=J4

$\Gamma(\chi_{c1}(1P)\,\text{anything})/\Gamma(J/\psi(1S)\,\text{anything})$ — Γ_{53}/Γ_{50}

NODE=S051S59

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.92 ± 0.82	121	[1] ADRIANI	93J	L3	$e^+e^- \rightarrow Z$

[1] ADRIANI 93J is a ratio of inclusive measurements from b decays at the Z using only the $J/\psi(1S) \rightarrow \mu^+\mu^-$ channel since some systematics cancel.

NODE=S051S59;LINKAGE=A

$\Gamma(\chi_{c1}(1P)\,\text{anything})/\Gamma(\chi_{c0}(1P)\,\text{anything})$ — Γ_{53}/Γ_{52}

NODE=S051R05

VALUE	DOCUMENT ID		TECN	COMMENT
1.06±0.22 OUR AVERAGE				
[1.00 ± 0.23 OUR 2024 AVERAGE]				
$1.7\ \pm0.7\ \pm0.1$	[1] AAIJ	24AP	LHCB	pp at 13 TeV
$1.00\pm0.22\pm0.06$	[2] AAIJ	17BB	LHCB	pp at 7, 8 TeV

NEW

[1] AAIJ 24AP reports $[\Gamma(\overline{b} \rightarrow \chi_{c1}(1P)\,\text{anything})/\Gamma(\overline{b} \rightarrow \chi_{c0}(1P)\,\text{anything})]$ / $[B(\chi_{c0}(1P) \rightarrow p\overline{p})] \times [B(\chi_{c1}(1P) \rightarrow p\overline{p})] = 0.58 \pm 0.23 \pm 0.02$ which we multiply or divide by our best values $B(\chi_{c0}(1P) \rightarrow p\overline{p}) = (2.21 \pm 0.14) \times 10^{-4}$, $B(\chi_{c1}(1P) \rightarrow p\overline{p}) = (7.6 \pm 0.4) \times 10^{-5}$. Our first error is their experiment's error and our second error is the systematic error from using our best values.

NODE=S051R05;LINKAGE=B

[2] AAIJ 17BB reports $[\Gamma(\overline{b} \rightarrow \chi_{c1}(1P)\,\text{anything})/\Gamma(\overline{b} \rightarrow \chi_{c0}(1P)\,\text{anything})]$ / $[B(\chi_{c0}(1P) \rightarrow \phi\phi)] \times [B(\chi_{c1}(1P) \rightarrow \phi\phi)] = 0.50 \pm 0.11 \pm 0.01$ which we multiply or divide by our best values $B(\chi_{c0}(1P) \rightarrow \phi\phi) = (8.48 \pm 0.31) \times 10^{-4}$, $B(\chi_{c1}(1P) \rightarrow \phi\phi) = (4.26 \pm 0.21) \times 10^{-4}$. Our first error is their experiment's error and our second error is the systematic error from using our best values.

NODE=S051R05;LINKAGE=A

$\Gamma(\chi_{c1}(1P)\,\text{anything})/\Gamma(\eta_c(1S)\,\text{anything})$ — Γ_{53}/Γ_{56}

NODE=S051R03

VALUE	DOCUMENT ID		TECN	COMMENT
0.31±0.07±0.08	[1] AAIJ	17BB	LHCB	pp at 7, 8 TeV

[1] AAIJ 17BB reports $[\Gamma(\overline{b} \rightarrow \chi_{c1}(1P)\,\text{anything})/\Gamma(\overline{b} \rightarrow \eta_c(1S)\,\text{anything})]$ / $[B(\eta_c(1S) \rightarrow \phi\phi)] \times [B(\chi_{c1}(1P) \rightarrow \phi\phi)] = 0.073 \pm 0.016 \pm 0.006$ which we multiply or divide by our best values $B(\eta_c(1S) \rightarrow \phi\phi) = (1.8 \pm 0.4) \times 10^{-3}$, $B(\chi_{c1}(1P) \rightarrow \phi\phi) = (4.26 \pm 0.21) \times 10^{-4}$. Our first error is their experiment's error and our second error is the systematic error from using our best values.

NODE=S051R03;LINKAGE=A

$\Gamma(\chi_{c2}(1P)\,\text{anything})/\Gamma_{\text{total}}$ — Γ_{54}/Γ

NODE=S051R44

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
1.6±1.1±0.1	[1] AAIJ	24AP	LHCB	pp at 13 TeV

[1] AAIJ 24AP reports $[\Gamma(\overline{b} \rightarrow \chi_{c2}(1P)\,\text{anything})/\Gamma_{\text{total}}] \times [B(\chi_{c2}(1P) \rightarrow p\overline{p})] = (1.13 \pm 0.83 \pm 0.10) \times 10^{-7}$ which we divide by our best value $B(\chi_{c2}(1P) \rightarrow p\overline{p}) = (7.3 \pm 0.4) \times 10^{-5}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S051R44;LINKAGE=A

$\Gamma(\chi_{c2}(1P)\,\text{anything})/\Gamma(\chi_{c0}(1P)\,\text{anything})$ — Γ_{54}/Γ_{52}

NODE=S051R06

VALUE	DOCUMENT ID		TECN	COMMENT
0.39±0.07 OUR AVERAGE				
$0.52\pm0.37\pm0.04$	[1] AAIJ	24AP	LHCB	pp at 13 TeV
$0.39\pm0.07\pm0.03$	[2] AAIJ	17BB	LHCB	pp at 7, 8 TeV

[1] AAIJ 24AP reports $[\Gamma(\overline{b} \rightarrow \chi_{c2}(1P)\,\text{anything})/\Gamma(\overline{b} \rightarrow \chi_{c0}(1P)\,\text{anything})]$ / $[B(\chi_{c0}(1P) \rightarrow p\overline{p})] \times [B(\chi_{c2}(1P) \rightarrow p\overline{p})] = 0.17 \pm 0.12 \pm 0.01$ which we multiply or divide by our best values $B(\chi_{c0}(1P) \rightarrow p\overline{p}) = (2.21 \pm 0.14) \times 10^{-4}$, $B(\chi_{c2}(1P) \rightarrow p\overline{p}) = (7.3 \pm 0.4) \times 10^{-5}$. Our first error is their experiment's error and our second error is the systematic error from using our best values.

NODE=S051R06;LINKAGE=B

[2] AAIJ 17BB reports $[\Gamma(\overline{b} \rightarrow \chi_{c2}(1P)\,\text{anything})/\Gamma(\overline{b} \rightarrow \chi_{c0}(1P)\,\text{anything})]$ / $[B(\chi_{c0}(1P) \rightarrow \phi\phi)] \times [B(\chi_{c2}(1P) \rightarrow \phi\phi)] = 0.56 \pm 0.10 \pm 0.01$ which we multiply or divide by our best values $B(\chi_{c0}(1P) \rightarrow \phi\phi) = (8.48 \pm 0.31) \times 10^{-4}$, $B(\chi_{c2}(1P) \rightarrow \phi\phi) = (1.23 \pm 0.07) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best values.

NODE=S051R06;LINKAGE=A

$\Gamma(\chi_{c2}(1P)\,\text{anything})/\Gamma(\eta_c(1S)\,\text{anything})$ — Γ_{54}/Γ_{56}

NODE=S051R04

VALUE	DOCUMENT ID		TECN	COMMENT
0.121±0.021±0.030	[1] AAIJ	17BB	LHCB	pp at 7, 8 TeV

[1] AAIJ 17BB reports $[\Gamma(\overline{b} \rightarrow \chi_{c2}(1P)\,\text{anything})/\Gamma(\overline{b} \rightarrow \eta_c(1S)\,\text{anything})]$ / $[B(\eta_c(1S) \rightarrow \phi\phi)] \times [B(\chi_{c2}(1P) \rightarrow \phi\phi)] = 0.081 \pm 0.013 \pm 0.005$ which we multiply or divide by our best values $B(\eta_c(1S) \rightarrow \phi\phi) = (1.8 \pm 0.4) \times 10^{-3}$, $B(\chi_{c2}(1P) \rightarrow \phi\phi) = (1.23 \pm 0.07) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best values.

NODE=S051R04;LINKAGE=A

$\Gamma(\chi_c(2P)\text{anything},\ \chi_c \to \phi\phi)/\Gamma_{total}$ — Γ_{55}/Γ

NODE=S051R30

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.8 \times 10^{-7}$	95	AAIJ	17BB	LHCB	pp at 7, 8 TeV

$\Gamma(\eta_c(1S)\text{anything})/\Gamma(J/\psi(1S)\text{anything})$ — Γ_{56}/Γ_{50}

NODE=S051R40

NEW

VALUE	DOCUMENT ID		TECN	COMMENT
0.49±0.04 OUR AVERAGE				
[0.48 ± 0.07 OUR 2024 AVERAGE]				
0.49±0.03±0.05	[1] AAIJ	24AP	LHCB	pp at 13 TeV
0.48±0.03±0.06	AAIJ	20H	LHCB	pp at 13 TeV

[1] Using $\eta_c(1S)$ and $J/\psi(1S)$ decays to $p\overline{p}$.

NODE=S051R40;LINKAGE=A

$\Gamma(\eta_c(2S)\text{anything},\ \eta_c \to \phi\phi)/\Gamma(\eta_c(1S)\text{anything})$ — Γ_{57}/Γ_{56}

NODE=S051R07

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
7.3±2.1±1.7	[1] AAIJ	17BB	LHCB	pp at 7, 8 TeV

[1] AAIJ 17BB reports $[\Gamma(\overline{b} \to \eta_c(2S)\text{anything},\ \eta_c \to \phi\phi)/\Gamma(\overline{b} \to \eta_c(1S)\text{anything})]$ / $[B(\eta_c(1S) \to \phi\phi)] = 0.040 \pm 0.011 \pm 0.004$ which we multiply by our best value $B(\eta_c(1S) \to \phi\phi) = (1.8 \pm 0.4) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S051R07;LINKAGE=A

$\Gamma(\chi_{c1}(3872)\text{anything},\ \chi_{c1} \to \phi\phi)/\Gamma_{total}$ — Γ_{58}/Γ

NODE=S051R08

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<4.5 \times 10^{-7}$	95	AAIJ	17BB	LHCB	pp at 7, 8 TeV

$\Gamma(\chi_{c0}(3915)\text{anything},\ \chi_{c0} \to \phi\phi)/\Gamma_{total}$ — Γ_{59}/Γ

NODE=S051R09

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.1 \times 10^{-7}$	95	AAIJ	17BB	LHCB	pp at 7, 8 TeV

$\Gamma(\overline{s}\gamma)/\Gamma_{total}$ — Γ_{60}/Γ

NODE=S051S58

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
3.11±0.80±0.72		[1] BARATE	98I	ALEP	$e^+e^- \to Z$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 5.4	90	[2] ADAM	96D	DLPH	$e^+e^- \to Z$
<12	90	[3] ADRIANI	93L	L3	$e^+e^- \to Z$

[1] BARATE 98I uses lifetime tagged $Z \to b\overline{b}$ sample.

NODE=S051S58;LINKAGE=B

[2] ADAM 96D assumes $f_{B^0} = f_{B^-} = 0.39$ and $f_{B_s} = 0.12$.

NODE=S051S58;LINKAGE=DQ

[3] ADRIANI 93L result is for $\overline{b} \to \overline{s}\gamma$ is performed inclusively.

NODE=S051S58;LINKAGE=A

$\Gamma(\overline{s}\overline{\nu}\nu)/\Gamma_{total}$ — Γ_{61}/Γ

NODE=S051R67

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<6.4 \times 10^{-4}$	90	[1] BARATE	01E	ALEP	$e^+e^- \to Z$

[1] The energy-flow and b-tagging algorithms were used.

NODE=S051R67;LINKAGE=QK

$\Gamma(K^\pm\text{anything})/\Gamma_{total}$ — Γ_{62}/Γ

NODE=S051R10

VALUE	DOCUMENT ID		TECN	COMMENT
0.74±0.06 OUR AVERAGE				
0.72±0.02±0.06	BARATE	98V	ALEP	$e^+e^- \to Z$
0.88±0.05±0.18	ABREU	95C	DLPH	$e^+e^- \to Z$

$\Gamma(K^0_S\text{anything})/\Gamma_{total}$ — Γ_{63}/Γ

NODE=S051R11

VALUE	DOCUMENT ID		TECN	COMMENT
0.290±0.011±0.027	ABREU	95C	DLPH	$e^+e^- \to Z$

$\Gamma(\pi^\pm\text{anything})/\Gamma_{total}$ — Γ_{64}/Γ

NODE=S051R34

VALUE	DOCUMENT ID		TECN	COMMENT
3.97±0.02±0.21	BARATE	98V	ALEP	$e^+e^- \to Z$

$\Gamma(\pi^0\text{anything})/\Gamma_{total}$ — Γ_{65}/Γ

NODE=S051R5

VALUE	DOCUMENT ID		TECN	COMMENT
2.78±0.15±0.60	[1] ADAM	96	DLPH	$e^+e^- \to Z$

[1] ADAM 96 measurement obtained from a fit to the rapidity distribution of $\pi^{0's}$ in $Z \to bb$ events.

NODE=S051R5;LINKAGE=A

$\Gamma(\phi\text{anything})/\Gamma_{total}$ — Γ_{66}/Γ

NODE=S051R58

VALUE	DOCUMENT ID		TECN	COMMENT
0.0282±0.0013±0.0019	ABBIENDI	00Z	OPAL	$e^+e^- \to Z$

$\Gamma(p/\overline{p}\text{anything})/\Gamma_{total}$ — Γ_{67}/Γ

NODE=S051R12

VALUE	DOCUMENT ID		TECN	COMMENT
0.131±0.011 OUR AVERAGE				
0.131±0.004±0.011	BARATE	98V	ALEP	$e^+e^- \to Z$
0.141±0.018±0.056	ABREU	95C	DLPH	$e^+e^- \to Z$

$\Gamma(\Lambda/\overline{\Lambda}\text{anything})/\Gamma_{total}$ — Γ_{68}/Γ

NODE=S051R13

VALUE	DOCUMENT ID		TECN	COMMENT
0.059 ±0.006 OUR AVERAGE				
0.0587±0.0046±0.0048	ACKERSTAFF	97N	OPAL	$e^+e^- \to Z$
0.059 ±0.007 ±0.009	ABREU	95C	DLPH	$e^+e^- \to Z$

$\Gamma(b\text{-baryon anything})/\Gamma_{total}$ — Γ_{69}/Γ

NODE=S051R35

VALUE	DOCUMENT ID		TECN	COMMENT
0.102±0.007±0.027	[1] BARATE	98V	ALEP	$e^+e^- \to Z$

[1] BARATE 98V assumes $B(B_s \to pX) = 8 \pm 4\%$ and $B(b\text{-baryon} \to pX) = 58 \pm 6\%$. NODE=S051R35;LINKAGE=A

$\Gamma(\Xi_b^+\text{ anything})/\Gamma(\overline{\Lambda}_b^0\text{anything})$ — Γ_{71}/Γ_{70}

NODE=S051R36

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
7.3±1.7 OUR AVERAGE				
6.7±0.5±2.1	[1] AAIJ	19AB	LHCB	pp at 7 and 8 TeV
8.2±0.7±2.6	[1] AAIJ	19AB	LHCB	pp at 13 TeV (OCCUR=2)

[1] Measured from $R = [B(\overline{b} \to \Xi_b^+)\times B(\Xi_b \to J/\psi\,\Xi^+)]/[B(\overline{b} \to \overline{\Lambda}_b^0)\times B(\overline{\Lambda}_b^0 \to J/\psi\,\overline{\Lambda}^0)]$ and assumes $\Gamma_{\Xi_b^+ \to J/\psi\,\Xi^+}/\Gamma_{\overline{\Lambda}_b^0 \to J/\psi\,\overline{\Lambda}^0} = 3/2$ related through SU(3) flavor symmetry. NODE=S051R36;LINKAGE=A

$\Gamma(\text{charged anything})/\Gamma_{total}$ — Γ_{72}/Γ

NODE=S051R14

VALUE	DOCUMENT ID		TECN	COMMENT
4.97±0.03±0.06	[1] ABREU	98H	DLPH	$e^+e^- \to Z$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
5.84±0.04±0.38	ABREU	95C	DLPH	Repl. by ABREU 98H

[1] ABREU 98H measurement excludes the contribution from K^0 and Λ decay. NODE=S051R14;LINKAGE=A

$\Gamma(\text{hadron}^+\ \text{hadron}^-)/\Gamma_{total}$ — Γ_{73}/Γ

NODE=S051R29

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
$1.7^{+1.0}_{-0.7}\pm0.2$	[1,2] BUSKULIC	96V	ALEP	$e^+e^- \to Z$

[1] BUSKULIC 96V assumes PDG 96 production fractions for B^0, B^+, B_s, b baryons. NODE=S051R29;LINKAGE=BV

[2] Average branching fraction of weakly decaying B hadrons into two long-lived charged hadrons, weighted by their production cross section and lifetimes. NODE=S051R29;LINKAGE=CV

$\Gamma(\text{charmless})/\Gamma_{total}$ — Γ_{74}/Γ

NODE=S051R7

VALUE	DOCUMENT ID		TECN	COMMENT
0.007±0.021	[1] ABREU	98D	DLPH	$e^+e^- \to Z$

[1] ABREU 98D results are extracted from a fit to the b-tagging probability distribution based on the impact parameter. The expected hidden charm contribution of 0.026 ± 0.004 has been subtracted. NODE=S051R7;LINKAGE=B

$\Gamma(\mu^+\mu^-\text{ anything})/\Gamma_{total}$ — Γ_{76}/Γ

NODE=S051S4

Test for $\Delta B = 1$ weak neutral current.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<3.2 × 10^{-4}	90	ABBOTT	98B	D0	$p\overline{p}$ 1.8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<5.0 × 10^{-5}	90	[1] ALBAJAR	91C	UA1	$E_{cm}^{p\overline{p}}$= 630 GeV
<0.02	95	ALTHOFF	84G	TASS	E_{cm}^{ee}= 34.5 GeV
<0.007	95	ADEVA	83	MRKJ	E_{cm}^{ee}= 30–38 GeV
<0.007	95	BARTEL	83B	JADE	E_{cm}^{ee}= 33–37 GeV

[1] Both ABBOTT 98B and GLENN 98 claim that the efficiency quoted in ALBAJAR 91C was overestimated by a large factor. NODE=S051S4;LINKAGE=B

$[\Gamma(e^+e^-\text{ anything}) + \Gamma(\mu^+\mu^-\text{ anything})]/\Gamma_{total}$ — $(\Gamma_{75}+\Gamma_{76})/\Gamma$

NODE=S051S5

Test for $\Delta B = 1$ weak neutral current.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.008	90	MATTEUZZI	83	MRK2	E_{cm}^{ee}= 29 GeV

$\Gamma(\nu\overline{\nu}\text{anything})/\Gamma_{\text{total}}$ — Γ_{77}/Γ

NODE=S051R20

VALUE	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$<3.9 \times 10^{-4}$	[1] GROSSMAN 96	RVUE	$e^+e^- \rightarrow Z$

[1] GROSSMAN 96 limit is derived from the ALEPH BUSKULIC 95 limit B($B^+ \rightarrow \tau^+\nu_\tau$) $< 1.8 \times 10^{-3}$ at CL=90% using conservative simplifying assumptions. NODE=S051R20;LINKAGE=A

χ_b AT HIGH ENERGY

NODE=S051CB

χ_b is the average B-$\overline{B}$ mixing parameter at high-energy $\chi_b = f'_d\chi_d + f'_s\chi_s$ where f'_d and f'_s are the fractions of B^0 and B^0_s hadrons in an unbiased sample of semileptonic b-hadron decays. We consider here $\overline{\chi}$ for hadrons produced in Z decays.

NODE=S051CB

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
12.59± 0.42 OUR EVALUATION		(from LEP-SLC 06, eq. 5.39)			
12.6 ± 0.4 OUR AVERAGE					
13.12± 0.49±0.42		[1] ABBIENDI	03P	OPAL	$e^+e^- \rightarrow Z$
12.7 ± 1.3 ±0.6		[2] ABREU	01L	DLPH	$e^+e^- \rightarrow Z$
11.92± 0.68±0.51		[3] ACCIARRI	99D	L3	$e^+e^- \rightarrow Z$
12.1 ± 1.6 ±0.6		[4] ABREU	94J	DLPH	$e^+e^- \rightarrow Z$
11.4 ± 1.4 ±0.8		[5] BUSKULIC	94G	ALEP	$e^+e^- \rightarrow Z$
12.9 ± 2.2		[6] BUSKULIC	92B	ALEP	$e^+e^- \rightarrow Z$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
13.2 ± 0.1 ±2.4		[7] ABAZOV	06S	D0	$p\overline{p}$ at 1.96 TeV
15.2 ± 0.7 ±1.1		[8] ACOSTA	04A	CDF	$p\overline{p}$ at 1.8 TeV
13.1 ± 2.0 ±1.6		[9] ABE	97I	CDF	Repl. by ACOSTA 04A
11.07± 0.62±0.55		[10] ALEXANDER	96	OPAL	Rep. by ABBIENDI 03P
13.6 ± 3.7 ±4.0		[11] UENO	96	AMY	e^+e^- at 57.9 GeV
14.4 ± 1.4 $^{+1.7}_{-1.1}$		[12] ABREU	94F	DLPH	Sup. by ABREU 94J
13.1 ± 1.4		[13] ABREU	94J	DLPH	$e^+e^- \rightarrow Z$
12.3 ± 1.2 ±0.8		ACCIARRI	94D	L3	Repl. by ACCIARRI 99D
15.7 ± 2.0 ±3.2		[14] ALBAJAR	94	UA1	$\sqrt{s}$ = 630 GeV
12.1 $^{+4.4}_{-4.0}$ ±1.7	1665	[15] ABREU	93C	DLPH	Sup. by ABREU 94J
14.3 $^{+2.2}_{-2.1}$ ±0.7		[16] AKERS	93B	OPAL	Sup. by ALEXANDER 96
14.5 $^{+4.1}_{-3.5}$ ±1.8		[17] ACTON	92C	OPAL	$e^+e^- \rightarrow Z$
12.1 ± 1.7 ±0.6		[18] ADEVA	92C	L3	Sup. by ACCIARRI 94D
17.6 ± 3.1 ±3.2	1112	[19] ABE	91G	CDF	$p\overline{p}$ 1.8 TeV
14.8 ± 2.9 ±1.7		[20] ALBAJAR	91D	UA1	$p\overline{p}$ 630 GeV
13.2 ±22.0 $^{+1.5}_{-1.2}$	823	[21] DECAMP	91	ALEP	$e^+e^- \rightarrow Z$
17.8 $^{+4.9}_{-4.0}$ ±2.0		[22] ADEVA	90P	L3	$e^+e^- \rightarrow Z$
17 $^{+15}_{-8}$		[23,24] WEIR	90	MRK2	e^+e^- 29 GeV
21 $^{+29}_{-15}$		[23] BAND	88	MAC	E^{ee}_{cm}= 29 GeV
>2 at 90%CL		[23] BAND	88	MAC	E^{ee}_{cm}= 29 GeV
12.1 ± 4.7		[23,25] ALBAJAR	87C	UA1	Repl. by ALBAJAR 91D
<12 at 90%CL		[23,26] SCHAAD	85	MRK2	E^{ee}_{cm}= 29 GeV

NODE=S051CB

→ UNCHECKED ←

OCCUR=2 (ABREU 94J, 13.1 ± 1.4)

OCCUR=2 (BAND 88, >2 at 90%CL)

[1] The average B mixing parameter is determined simultaneously with b and c forward-backward asymmetries in the fit. NODE=S051CB;LINKAGE=AE

[2] The experimental systematic and model uncertainties are combined in quadrature. NODE=S051CB;LINKAGE=L1

[3] ACCIARRI 99D uses maximum-likelihood fits to extract χ_b as well as the A^b_{FB} in $Z \rightarrow b\overline{b}$ events containing prompt leptons. NODE=S051CB;LINKAGE=9D

[4] This ABREU 94J result is from 5182 $\ell\ell$ and 279 $\Lambda\ell$ events. The systematic error includes 0.004 for model dependence. NODE=S051CB;LINKAGE=D

[5] BUSKULIC 94G data analyzed using ee, $e\mu$, and $\mu\mu$ events. NODE=S051CB;LINKAGE=H

[6] BUSKULIC 92B uses a jet charge technique combined with electrons and muons. NODE=S051CB;LINKAGE=O

[7] Uses the dimuon charge asymmetry. Averaged over the mix of b-flavored hadrons. NODE=S051CB;LINKAGE=AZ

[8] Measurement performed using events containing a dimuon or an e/μ pair. NODE=S051CB;LINKAGE=AC

[9] Uses di-muon events. NODE=S051CB;LINKAGE=T

[10] ALEXANDER 96 uses a maximum likelihood fit to simultaneously extract χ as well as the forward-backward asymmetries in $e^+e^- \rightarrow Z \rightarrow b\overline{b}$ and $c\overline{c}$. NODE=S051CB;LINKAGE=R

[11] UENO 96 extracted χ from the energy dependence of the forward-backward asymmetry. NODE=S051CB;LINKAGE=S
[12] ABREU 94F uses the average electric charge sum of the jets recoiling against a b-quark jet tagged by a high p_T muon. The result is for $\overline{\chi} = f_d \chi_d + 0.9 f_s \chi_s$. NODE=S051CB;LINKAGE=B
[13] This ABREU 94J result combines $\ell\ell$, $\Lambda\ell$, and jet-charge ℓ (ABREU 94F) analyses. It is for $\overline{\chi} = f_d \chi_d + 0.96 f_s \chi_s$. NODE=S051CB;LINKAGE=Q
[14] ALBAJAR 94 uses dimuon events. Not independent of ALBAJAR 91D. NODE=S051CB;LINKAGE=L
[15] ABREU 93C data analyzed using ee, $e\mu$, and $\mu\mu$ events. NODE=S051CB;LINKAGE=P
[16] AKERS 93B analysis performed using dilepton events. NODE=S051CB;LINKAGE=A
[17] ACTON 92C uses electrons and muons. Superseded by AKERS 93B. NODE=S051CB;LINKAGE=N
[18] ADEVA 92C uses electrons and muons. NODE=S051CB;LINKAGE=M
[19] ABE 91G measurement of χ is done with $e\mu$ and ee events. NODE=S051CB;LINKAGE=I
[20] ALBAJAR 91D measurement of χ is done with dimuons. NODE=S051CB;LINKAGE=J
[21] DECAMP 91 done with opposite and like-sign dileptons. Superseded by BUSKULIC 92B. NODE=S051CB;LINKAGE=K
[22] ADEVA 90P measurement uses ee, $\mu\mu$, and $e\mu$ events from 118k events at the Z. Superseded by ADEVA 92C. NODE=S051CB;LINKAGE=C
[23] These experiments are not in the average because the combination of B_s and B_d mesons which they see could differ from those at higher energy. NODE=S051CB;LINKAGE=E9
[24] The WEIR 90 measurement supersedes the limit obtained in SCHAAD 85. The 90% CL are 0.06 and 0.38. NODE=S051CB;LINKAGE=G
[25] ALBAJAR 87C measured $\chi = (\overline{B}^0 \rightarrow B^0 \rightarrow \mu^+ X)$ divided by the average production weighted semileptonic branching fraction for B hadrons at 546 and 630 GeV. NODE=S051CB;LINKAGE=E
[26] Limit is average probability for hadron containing B quark to produce a positive lepton. NODE=S051CB;LINKAGE=BB

CP VIOLATION PARAMETERS in semileptonic *b*-hadron decays.

NODE=S051240

Re(ϵ_b) / (1 + $|\epsilon_b|^2$)

NODE=S051EPS

CP impurity in semileptonic b-hadron decays.

NODE=S051EPS
NODE=S051EPS

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-6.2 \pm 5.2 \pm 4.7$	[1] AABOUD	17E	ATLS	pp at 8 TeV
$-1.24 \pm 0.38 \pm 0.18$	[2] ABAZOV	14	D0	$p\overline{p}$ at 1.96 TeV
$-1.97 \pm 0.43 \pm 0.23$	[3] ABAZOV	11U	D0	Repl. by ABAZOV 14
$-2.39 \pm 0.63 \pm 0.37$	[4] ABAZOV	10H	D0	Repl. by ABAZOV 11U

[1] AABOUD 17E reports a measurement of charge asymmetry of $A^b_{SL} = (-25 \pm 21 \pm 19) \times 10^{-3}$ in lepton + jets $t\overline{t}$ events in which a b-hadron decays semileptonically to a soft muon. NODE=S051EPS;LINKAGE=C
[2] ABAZOV 14 reports a measurement of like-sign dimuon charge asymmetry of $A^b_{SL} = (-4.96 \pm 1.53 \pm 0.72) \times 10^{-3}$ in semileptonic b-hadron decays. NODE=S051EPS;LINKAGE=A
[3] ABAZOV 11U reports a measurement of like-sign dimuon charge asymmetry of $A^b_{SL} = (-7.87 \pm 1.72 \pm 0.93) \times 10^{-3}$ in semileptonic b-hadron decays. NODE=S051EPS;LINKAGE=AO
[4] ABAZOV 10H reports a measurement of like-sign dimuon charge asymmetry of $A^b_{SL} = (-9.57 \pm 2.51 \pm 1.46) \times 10^{-3}$ in semileptonic b-hadron decays. Using the measured production ratio of B^0_d and B^0_s, and the asymmetry of B^0_d $A^d_{SL} = (-4.7 \pm 4.6) \times 10^{-3}$ measured from B-factories, they obtain the asymmetry for B^0_s as $A^s_{SL} = (-14.6 \pm 7.5) \times 10^{-3}$. NODE=S051EPS;LINKAGE=AB

B-HADRON PRODUCTION FRACTIONS IN $p\overline{p}$ COLLISIONS AT Tevatron

NODE=S051FPP

NODE=S051FPP

The production fractions for b-hadrons in $p\overline{p}$ collisions at the Tevatron have been calculated from the best values of mean lifetimes, mixing parameters, and branching fractions in this edition by the Heavy Flavor Averaging Group (HFLAV) (see https://hflav.web.cern.ch/).

The values reported below assume:

$f(\overline{b} \rightarrow B^+) = f(\overline{b} \rightarrow B^0)$

$f(\overline{b} \rightarrow B^+) + f(\overline{b} \rightarrow B^0) + f(\overline{b} \rightarrow B^0_s) + f(b \rightarrow b\text{-baryon}) = 1$

The values are:

$f(\overline{b} \rightarrow B^+) = f(\overline{b} \rightarrow B^0) = 0.344 \pm 0.021$

$f(\overline{b} \rightarrow B^0_s) = 0.115 \pm 0.013$

$f(b \rightarrow b\text{-baryon}) = 0.198 \pm 0.046$

$f(\overline{b} \rightarrow B^0_s) \ / \ f(\overline{b} \rightarrow B^0_d) = 0.334 \pm 0.041$

and their correlation coefficients are:

$cor(B^0_s, b\text{-baryon}) = -0.429$

$cor(B^0_s, B^+{=}B^0) = +0.159$

$cor(b\text{-baryon}, B^+{=}B^0) = -0.960$

as obtained with the Tevatron average of time-integrated mixing parameter $\overline{\chi} = 0.147 \pm 0.011$.

PRODUCTION ASYMMETRIES

NODE=S051225

$A_C^{b\overline{b}}$

NODE=S051PAY

$A_C^{b\overline{b}} = [N(\Delta y > 0) - N(\Delta y < 0)] / [N(\Delta y > 0) + N(\Delta y < 0)]$ with $\Delta y = |y_b| - |y_{\overline{b}}|$ where $y_{b/\overline{b}}$ is rapidity of b or $\overline{b}$ quarks.

NODE=S051PAY

VALUE (units 10^{-2})	*DOCUMENT ID*		*TECN*	*COMMENT*	
Average is meaningless.					NODE=S051PAY
$0.4 \pm 0.4 \pm 0.3$	[1] AAIJ	14AS	LHCB	pp at 7 TeV	
$2.0 \pm 0.9 \pm 0.6$	[2] AAIJ	14AS	LHCB	pp at 7 TeV	OCCUR=2
$1.6 \pm 1.7 \pm 0.6$	[3] AAIJ	14AS	LHCB	pp at 7 TeV	OCCUR=3

[1] Measured for $40 < M(b\overline{b}) < 75$ GeV/c^2. NODE=S051PAY;LINKAGE=A

[2] Measured for $75 < M(b\overline{b}) < 105$ GeV/c^2. NODE=S051PAY;LINKAGE=B

[3] Measured for $M(b\overline{b}) > 105$ GeV/c^2. NODE=S051PAY;LINKAGE=C

$B^{\pm}/B^0/B_s^0/b$-baryon ADMIXTURE REFERENCES

NODE=S051

AAIJ	24AP	EPJ C84 1274	R. Aaij *et al.*	(LHCb Collab.)	REFID=63208
AAIJ	21Y	PR D104 032005	R. Aaij *et al.*	(LHCb Collab.)	REFID=61375
AAIJ	20G	EPJ C80 185	R. Aaij *et al.*	(LHCb Collab.)	REFID=60417
AAIJ	20H	EPJ C80 191	R. Aaij *et al.*	(LHCb Collab.)	REFID=60419
AAIJ	20V	PRL 124 122002	R. Aaij *et al.*	(LHCb Collab.)	REFID=60545
AAIJ	19AB	PR D99 052006	R. Aaij *et al.*	(LHCb Collab.)	REFID=59843
AAIJ	19AD	PR D100 031102	R. Aaij *et al.*	(LHCb Collab.)	REFID=59907
AAIJ	19AI	PR D100 112006	R. Aaij *et al.*	(LHCb Collab.)	REFID=60040
AABOUD	17E	JHEP 1702 071	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=57793
AAIJ	17BB	EPJ C77 609	R. Aaij *et al.*	(LHCb Collab.)	REFID=58191
AAD	15CM	PRL 115 262001	G. Aad *et al.*	(ATLAS Collab.)	REFID=57003
AAIJ	14AS	PRL 113 082003	R. Aaij *et al.*	(LHCb Collab.)	REFID=56071
ABAZOV	14	PR D89 012002	V.M. Abazov *et al.*	(D0 Collab.)	REFID=55621
AAIJ	13P	JHEP 1304 001	R. Aaij *et al.*	(LHCb Collab.)	REFID=54975
AAIJ	12BD	EPJ C72 2100	R. Aaij *et al.*	(LHCb Collab.)	REFID=54850
Also		EPJ C80 49 (errat.)	R. Aaij *et al.*	(LHCb Collab.)	REFID=60672
AAIJ	12J	PR D85 032008	R. Aaji *et al.*	(LHCb Collab.)	REFID=54064
CHATRCHYAN	12AK	JHEP 1202 011	S. Chatrchyan *et al.*	(CMS Collab.)	REFID=54566
AAIJ	11F	PRL 107 211801	R. Aaij *et al.*	(LHCb Collab.)	REFID=53857
ABAZOV	11U	PR D84 052007	V.M. Abazov *et al.*	(D0 Collab.)	REFID=53796
ABAZOV	10H	PRL 105 081801	V.M. Abazov *et al.*	(D0 Collab.)	REFID=53366
Also		PR D82 032001	V.M. Abazov *et al.*	(D0 Collab.)	REFID=53365
PDG	10	JP G37 075021	K. Nakamura *et al.*	(PDG Collab.)	REFID=53229
AALTONEN	09E	PR D79 032001	T. Aaltonen *et al.*	(CDF Collab.)	REFID=52701
AALTONEN	08N	PR D77 072003	T. Aaltonen *et al.*	(CDF Collab.)	REFID=52342
ABAZOV	06S	PR D74 092001	V.M. Abazov *et al.*	(D0 Collab.)	REFID=51499
LEP-SLC	06	PRPL 427 257	ALEPH, DELPHI, L3, OPAL, SLD and working groups		REFID=51219;ERROR=5;ERROR=6
ABBIENDI	04I	EPJ C35 149	G. Abbiendi *et al.*	(OPAL Collab.)	REFID=49967
ABDALLAH	04E	EPJ C33 307	J. Abdallah *et al.*	(DELPHI Collab.)	REFID=49917
ACOSTA	04A	PR D69 012002	D. Acosta *et al.*	(CDF Collab.)	REFID=49854
ABBIENDI	03M	EPJ C30 467	G. Abbiendi *et al.*	(OPAL Collab.)	REFID=49553
ABBIENDI	03P	PL B577 18	G. Abbiendi *et al.*	(OPAL Collab.)	REFID=49606
ABDALLAH	03E	PL B561 26	J. Abdallah *et al.*	(DELPHI Collab.)	REFID=49370
ABDALLAH	03K	PL B576 29	J. Abdallah *et al.*	(DELPHI Collab.)	REFID=49645
HEISTER	02G	EPJ C22 613	A. Heister *et al.*	(ALEPH Collab.)	REFID=48605
ABBIENDI	01Q	PL B520 1	G. Abbiendi *et al.*	(OPAL Collab.)	REFID=48401
ABBIENDI	01R	EPJ C21 399	G. Abbiendi *et al.*	(OPAL Collab.)	REFID=48461
ABREU	01L	EPJ C20 455	P. Abreu *et al.*	(DELPHI Collab.)	REFID=48197
BARATE	01E	EPJ C19 213	R. Barate *et al.*	(ALEPH Collab.)	REFID=48135
ABBIENDI	00E	EPJ C13 225	G. Abbiendi *et al.*	(OPAL Collab.)	REFID=47478
ABBIENDI	00Z	PL B492 13	G. Abbiendi *et al.*	(OPAL Collab.)	REFID=47795
ABREU	00	EPJ C12 225	P. Abreu *et al.*	(DELPHI Collab.)	REFID=47374
ABREU	00C	PL B496 43	P. Abreu *et al.*	(DELPHI Collab.)	REFID=47434
ABREU	00D	PL B478 14	P. Abreu *et al.*	(DELPHI Collab.)	REFID=47470
ABREU	00R	PL B475 407	P. Abreu *et al.*	(DELPHI Collab.)	REFID=47657
ACCIARRI	00	EPJ C13 47	M. Acciarri *et al.*	(L3 Collab.)	REFID=47433
AFFOLDER	00E	PRL 84 1663	T. Affolder *et al.*	(CDF Collab.)	REFID=47436
ABBIENDI	99J	EPJ C12 609	G. Abbiendi *et al.*	(OPAL Collab.)	REFID=46738
ABE	99P	PR D60 092005	F. Abe *et al.*	(CDF Collab.)	REFID=47232
ACCIARRI	99D	PL B448 152	M. Acciarri *et al.*	(L3 Collab.)	REFID=46733
BARATE	99G	EPJ C6 555	R. Barate *et al.*	(ALEPH Collab.)	REFID=46720
ABBOTT	98B	PL B423 419	B. Abbott *et al.*	(D0 Collab.)	REFID=45868
ABE	98B	PR D57 5382	F. Abe *et al.*	(CDF Collab.)	REFID=45880
ABREU	98D	PL B426 193	P. Abreu *et al.*	(DELPHI Collab.)	REFID=45876
ABREU	98H	PL B425 399	P. Abreu *et al.*	(DELPHI Collab.)	REFID=45933
ACCIARRI	98	PL B416 220	M. Acciarri *et al.*	(L3 Collab.)	REFID=45831
ACCIARRI	98K	PL B436 174	M. Acciarri *et al.*	(L3 Collab.)	REFID=46158
ACKERSTAFF	98E	EPJ C1 439	K. Ackerstaff *et al.*	(OPAL Collab.)	REFID=45837
BARATE	98I	PL B429 169	R. Barate *et al.*	(ALEPH Collab.)	REFID=46061
BARATE	98Q	EPJ C4 387	R. Barate *et al.*	(ALEPH Collab.)	REFID=46146
BARATE	98V	EPJ C5 205	R. Barate *et al.*	(ALEPH Collab.)	REFID=46151
GLENN	98	PRL 80 2289	S. Glenn *et al.*	(CLEO Collab.)	REFID=45869
ABE	97I	PR D55 2546	F. Abe *et al.*	(CDF Collab.)	REFID=45362
ACKERSTAFF	97F	ZPHY C73 397	K. Ackerstaff *et al.*	(OPAL Collab.)	REFID=45414
ACKERSTAFF	97N	ZPHY C74 423	K. Ackerstaff *et al.*	(OPAL Collab.)	REFID=45488
ACKERSTAFF	97W	ZPHY C76 425	K. Ackerstaff *et al.*	(OPAL Collab.)	REFID=45788
ABREU	96E	PL B377 195	P. Abreu *et al.*	(DELPHI Collab.)	REFID=44701
ACCIARRI	96C	ZPHY C71 379	M. Acciarri *et al.*	(L3 Collab.)	REFID=44826
ADAM	96	ZPHY C69 561	W. Adam *et al.*	(DELPHI Collab.)	REFID=44627
ADAM	96D	ZPHY C72 207	W. Adam *et al.*	(DELPHI Collab.)	REFID=45276
ALEXANDER	96	ZPHY C70 357	G. Alexander *et al.*	(OPAL Collab.)	REFID=44628
BUSKULIC	96F	PL B369 151	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=44690
BUSKULIC	96V	PL B384 471	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=44909
BUSKULIC	96Y	PL B388 648	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=44963

GROSSMAN	96	NP B465 369	Y. Grossman, Z. Ligeti, E. Nardi	(REHO, CIT)	REFID=44692
Also		NP B480 753 (errat.)	Y. Grossman, Z. Ligeti, E. Nardi		REFID=45344
PDG	96	PR D54 1	R. M. Barnett *et al.*	(PDG Collab.)	REFID=44495
UENO	96	PL B381 365	K. Ueno *et al.*	(AMY Collab.)	REFID=44850
ABE,K	95B	PRL 75 3624	K. Abe *et al.*	(SLD Collab.)	REFID=44550
ABREU	95C	PL B347 447	P. Abreu *et al.*	(DELPHI Collab.)	REFID=44210
ABREU	95D	ZPHY C66 323	P. Abreu *et al.*	(DELPHI Collab.)	REFID=44261
ADAM	95	ZPHY C68 363	W. Adam *et al.*	(DELPHI Collab.)	REFID=44465
AKERS	95Q	ZPHY C67 57	R. Akers *et al.*	(OPAL Collab.)	REFID=44367
BUSKULIC	95	PL B343 444	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=44119
ABREU	94F	PL B322 459	P. Abreu *et al.*	(DELPHI Collab.)	REFID=43740
ABREU	94J	PL B332 488	P. Abreu *et al.*	(DELPHI Collab.)	REFID=43901
ABREU	94L	ZPHY C63 3	P. Abreu *et al.*	(DELPHI Collab.)	REFID=43995
ABREU	94P	PL B341 109	P. Abreu *et al.*	(DELPHI Collab.)	REFID=44067
ACCIARRI	94C	PL B332 201	M. Acciarri *et al.*	(L3 Collab.)	REFID=43897
ACCIARRI	94D	PL B335 542	M. Acciarri *et al.*	(L3 Collab.)	REFID=43963
ALBAJAR	94	ZPHY C61 41	C. Albajar *et al.*	(UA1 Collab.)	REFID=43909
BUSKULIC	94G	ZPHY C62 179	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=43911
ABE	93E	PL B313 288	K. Abe *et al.*	(VENUS Collab.)	REFID=43491
ABE	93J	PRL 71 3421	F. Abe *et al.*	(CDF Collab.)	REFID=43576
ABREU	93C	PL B301 145	P. Abreu *et al.*	(DELPHI Collab.)	REFID=43236
ABREU	93D	ZPHY C57 181	P. Abreu *et al.*	(DELPHI Collab.)	REFID=43267
ABREU	93G	PL B312 253	P. Abreu *et al.*	(DELPHI Collab.)	REFID=43443
ACTON	93C	PL B307 247	P.D. Acton *et al.*	(OPAL Collab.)	REFID=43352
ACTON	93L	ZPHY C60 217	P.D. Acton *et al.*	(OPAL Collab.)	REFID=43595
ADRIANI	93J	PL B317 467	O. Adriani *et al.*	(L3 Collab.)	REFID=43583
ADRIANI	93K	PL B317 474	O. Adriani *et al.*	(L3 Collab.)	REFID=43578
ADRIANI	93L	PL B317 637	O. Adriani *et al.*	(L3 Collab.)	REFID=43593
AKERS	93B	ZPHY C60 199	R. Akers *et al.*	(OPAL Collab.)	REFID=43594
BUSKULIC	93B	PL B298 479	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=43287
BUSKULIC	93O	PL B314 459	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=43533
ABREU	92	ZPHY C53 567	P. Abreu *et al.*	(DELPHI Collab.)	REFID=41870
ACTON	92	PL B274 513	D.P. Acton *et al.*	(OPAL Collab.)	REFID=41927
ACTON	92C	PL B276 379	D.P. Acton *et al.*	(OPAL Collab.)	REFID=41981
ADEVA	92C	PL B288 395	B. Adeva *et al.*	(L3 Collab.)	REFID=42153
ADRIANI	92	PL B288 412	O. Adriani *et al.*	(L3 Collab.)	REFID=42150
BUSKULIC	92B	PL B284 177	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=42157
BUSKULIC	92F	PL B295 174	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=43136
BUSKULIC	92G	PL B295 396	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=43142
ABE	91G	PRL 67 3351	F. Abe *et al.*	(CDF Collab.)	REFID=41872
ADEVA	91C	PL B261 177	B. Adeva *et al.*	(L3 Collab.)	REFID=41533
ADEVA	91H	PL B270 111	B. Adeva *et al.*	(L3 Collab.)	REFID=41873
ALBAJAR	91C	PL B262 163	C. Albajar *et al.*	(UA1 Collab.)	REFID=41551
ALBAJAR	91D	PL B262 171	C. Albajar *et al.*	(UA1 Collab.)	REFID=41552
ALEXANDER	91G	PL B266 485	G. Alexander *et al.*	(OPAL Collab.)	REFID=41772
DECAMP	91	PL B258 236	D. Decamp *et al.*	(ALEPH Collab.)	REFID=41485
DECAMP	91C	PL B257 492	D. Decamp *et al.*	(ALEPH Collab.)	REFID=41527
ADEVA	90P	PL B252 703	B. Adeva *et al.*	(L3 Collab.)	REFID=41431
BEHREND	90D	ZPHY C47 333	H.J. Behrend *et al.*	(CELLO Collab.)	REFID=41735
HAGEMANN	90	ZPHY C48 401	J. Hagemann *et al.*	(JADE Collab.)	REFID=41436
LYONS	90	PR D41 982	L. Lyons, A.J. Martin, D.H. Saxon	(OXF, BRIS+)	REFID=41240
WEIR	90	PL B240 289	A.J. Weir *et al.*	(Mark II Collab.)	REFID=41213
BRAUNSCH...	89B	ZPHY C44 1	R. Braunschweig *et al.*	(TASSO Collab.)	REFID=40859
ONG	89	PRL 62 1236	R.A. Ong *et al.*	(Mark II Collab.)	REFID=40782
BAND	88	PL B200 221	H.R. Band *et al.*	(MAC Collab.)	REFID=40478
KLEM	88	PR D37 41	D.E. Klem *et al.*	(DELCO Collab.)	REFID=40399
ONG	88	PRL 60 2587	R.A. Ong *et al.*	(Mark II Collab.)	REFID=40607
ALBAJAR	87C	PL B186 247	C. Albajar *et al.*	(UA1 Collab.)	REFID=40390
ASH	87	PRL 58 640	W.W. Ash *et al.*	(MAC Collab.)	REFID=40378
BARTEL	87	ZPHY C33 339	W. Bartel *et al.*	(JADE Collab.)	REFID=40359
BROM	87	PL B195 301	J.M. Brom *et al.*	(HRS Collab.)	REFID=40385
PAL	86	PR D33 2708	T. Pal *et al.*	(DELCO Collab.)	REFID=11479
AIHARA	85	ZPHY C27 39	H. Aihara *et al.*	(TPC Collab.)	REFID=11469
BARTEL	85J	PL 163B 277	W. Bartel *et al.*	(JADE Collab.)	REFID=11473
SCHAAD	85	PL 160B 188	T. Schaad *et al.*	(Mark II Collab.)	REFID=11575
ALTHOFF	84G	ZPHY C22 219	M. Althoff *et al.*	(TASSO Collab.)	REFID=11464
ALTHOFF	84J	PL 146B 443	M. Althoff *et al.*	(TASSO Collab.)	REFID=11599
KOOP	84	PRL 52 970	D.E. Koop *et al.*	(DELCO Collab.)	REFID=11468
ADEVA	83	PRL 50 799	B. Adeva *et al.*	(Mark-J Collab.)	REFID=11585
ADEVA	83B	PRL 51 443	B. Adeva *et al.*	(Mark-J Collab.)	REFID=10610
BARTEL	83B	PL 132B 241	W. Bartel *et al.*	(JADE Collab.)	REFID=11588
FERNANDEZ	83D	PRL 50 2054	E. Fernandez *et al.*	(MAC Collab.)	REFID=11590
MATTEUZZI	83	PL 129B 141	C. Matteuzzi *et al.*	(Mark II Collab.)	REFID=11595
NELSON	83	PRL 50 1542	M.E. Nelson *et al.*	(Mark II Collab.)	REFID=11596

V_{cb} and V_{ub} CKM Matrix Elements

NODE=S052

OMITTED FROM SUMMARY TABLE

See the related review(s):

Semileptonic B Hadron Decays, Determination of V_{cb} and V_{ub}

V_{cb} MEASUREMENTS

NODE=S052220

NODE=S052220

For the discussion of V_{cb} measurements, which is not repeated here, see the review on "Determination of $|V_{cb}|$ and $|V_{ub}|$."

The CKM matrix element $|V_{cb}|$ can be determined by studying the rate of the semileptonic decay $B \to D^{(*)}\ell\nu$ as a function of the recoil kinematics of $D^{(*)}$ mesons. Taking advantage of theoretical constraints on the normalization and a linear ω dependence of the form factors ($F(\omega)$, $G(\omega)$) provided by Heavy Quark Effective Theory (HQET), the $|V_{cb}|\times F(\omega)$ and ρ^2 can be simultaneously extracted from data, where ω is the scalar product of the two-meson four velocities, $F(1)$ is the form factor at zero recoil (ω=1) and ρ^2 is the slope. Using the theoretical input of $F(1)$, a value of $|V_{cb}|$ can be obtained.

$|V_{cb}| \times F(1)$ (from $B^0 \to D^{*-}\ell^+\nu$)

NODE=S052CB1
NODE=S052CB1

3.522±0.037 OUR EVALUATION (Produced by HFLAV) with ρ^2=1.139 ± 0.020 and a correlation 0.268. The fitted χ^2 is 63.2 for 27 degrees of freedom. → UNCHECKED ←

3.62 ±0.05 OUR AVERAGE Error includes scale factor of 1.6. See the ideogram below. [(3.60 ± 0.06) × 10^{-2} OUR 2024 AVERAGE Scale factor = 1.5] NEW

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
3.66 ±0.05	[1] PRIM	24	BELL	$e^+e^- \to \Upsilon(4S)$
3.676±0.028±0.086	[2] ADACHI	23J	BELL	$e^+e^- \to \Upsilon(4S)$
3.506±0.015±0.056	[3] WAHEED	21	BELL	$e^+e^- \to \Upsilon(4S)$
3.59 ±0.02 ±0.12	[4] AUBERT	09A	BABR	$e^+e^- \to \Upsilon(4S)$
3.92 ±0.18 ±0.23	[5] ABDALLAH	04D	DLPH	$e^+e^- \to Z^0$
4.31 ±0.13 ±0.18	[6] ADAM	03	CLE2	$e^+e^- \to \Upsilon(4S)$
3.55 ±0.14 $^{+0.23}_{-0.24}$	[7] ABREU	01H	DLPH	$e^+e^- \to Z$
3.71 ±0.10 ±0.20	[8] ABBIENDI	00Q	OPAL	$e^+e^- \to Z$
3.19 ±0.18 ±0.19	[9] BUSKULIC	97	ALEP	$e^+e^- \to Z$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3.64 ±0.09	[10] PRIM	23	BELL	$e^+e^- \to \Upsilon(4S)$, Repl. by PRIM 24
3.483±0.015±0.056	[3] WAHEED	19	BELL	Repl. by WAHEED 21
3.46 ±0.02 ±0.10	[11] DUNGEL	10	BELL	Rep. by WAHEED 19
3.59 ±0.06 ±0.14	[12] AUBERT	08AT	BABR	Repl. by AUBERT 09A
3.44 ±0.03 ±0.11	[13] AUBERT	08R	BABR	Repl. by AUBERT 09A
3.55 ±0.03 ±0.16	[14] AUBERT	05E	BABR	Repl. by AUBERT 08R
3.77 ±0.11 ±0.19	[15] ABDALLAH	04D	DLPH	$e^+e^- \to Z^0$
3.54 ±0.19 ±0.18	[16] ABE	02F	BELL	Repl. by DUNGEL 10
4.31 ±0.13 ±0.18	[17] BRIERE	02	CLE2	$e^+e^- \to \Upsilon(4S)$
3.28 ±0.19 ±0.22	ACKERSTAFF	97G	OPAL	Repl. by ABBIENDI 00Q
3.50 ±0.19 ±0.23	[18] ABREU	96P	DLPH	Repl. by ABREU 01H
3.51 ±0.19 ±0.20	[19] BARISH	95	CLE2	Repl. by ADAM 03
3.14 ±0.23 ±0.25	BUSKULIC	95N	ALEP	Repl. by BUSKULIC 97

OCCUR=2

[1] PRIM 24 value established from a complete set of angular coefficients for exclusive $B \to \overline{D}^*\ell^+\nu_\ell$ decays with hadronic tag-side reconstruction. The $|V_{cb}|\times F(1)$ is derived from the extracted the BGL and CNL form factor parameters: $|V_{cb}|_{\rm BGL}$ = (40.7 ± 0.7) × 10^{-3} with the zero-recoil lattice QCD point $F(1)$ = 0.900 ± 0.009 and $|V_{cb}|_{\rm CNL}$ = (40.3 ± 0.6) × 10^{-3}. NODE=S052CB1;LINKAGE=H

[2] Measured from differential shapes of exclusive $B \to D^*\ell^-\nu_\ell$ ($\ell = e$ or μ) decays. Using CNL form factor parametrization and the zero-recoil lattice QCD point $F(1)$ = 0.906 ± 0.013 ADACHI 23J finds $|V_{cb}|_{\rm CNL}$ = (40.57 ± 0.31 ± 0.95 ± 0.58) × 10^{-3} where the last uncertainty is due to the prediction of $F(1)$. Also reports a measurement of $|V_{cb}|_{\rm BGL}$ = (40.13±0.27±0.93±0.58)×10^{-3} using BGL form factors parametrization. NODE=S052CB1;LINKAGE=G

[3] WAHEED 21 uses fully reconstructed $D^{*-}\ell^+\nu$ events ($\ell = e$ or μ) and η_{EW} = 1.0066. NODE=S052CB1;LINKAGE=E

[4] Obtained from a global fit to $B \to D^{(*)} \ell \nu_\ell$ events, with reconstructed $D^0 \ell$ and $D^+ \ell$ final states and $\rho^2 = 1.22 \pm 0.02 \pm 0.07$. NODE=S052CB1;LINKAGE=BE

[5] Measurement using fully reconstructed D^* sample with a $\rho^2 = 1.32 \pm 0.15 \pm 0.33$. NODE=S052CB1;LINKAGE=AB

[6] Average of the $B^0 \to D^*(2010)^- \ell^+ \nu$ and $B^+ \to \overline{D}^*(2007))\ell^+ \nu$ modes with $\rho^2 = 1.61 \pm 0.09 \pm 0.21$ and $f_{+-} = 0.521 \pm 0.012$. NODE=S052CB1;LINKAGE=BR

[7] ABREU 01H measured using about 5000 partial reconstructed D^* sample with a ρ^2=1.34 $\pm$ 0.14$^{+0.24}_{-0.22}$. NODE=S052CB1;LINKAGE=BU

[8] ABBIENDI 00Q: measured using both inclusively and exclusively reconstructed $D^{*\pm}$ samples with a ρ^2=1.21 $\pm$ 0.12 $\pm$ 0.20. The statistical and systematic correlations between $|V_{cb}| \times F(1)$ and ρ^2 are 0.90 and 0.54 respectively. NODE=S052CB1;LINKAGE=A

[9] BUSKULIC 97: measured using exclusively reconstructed $D^{*\pm}$ with a a^2=0.31 $\pm$ 0.17 $\pm$ 0.08. The statistical correlation is 0.92. NODE=S052CB1;LINKAGE=B

[10] Measured from differential shapes of exclusive $B \to D^* \ell^- \nu_\ell$ decays with hadronic tag-side reconstruction and extracting the CNL and BGL form factor parameters. PRIM 23 finds $|V_{cb}|_{CNL} = (40.2 \pm 0.9) \times 10^{-3}$ with the zero-recoil lattice QCD point $F(1) = 0.906 \pm 0.013$. PRIM 23 provides also a measurement of $|V_{cb}|_{BGL} = (40.7 \pm 1.0) \times 10^{-3}$. NODE=S052CB1;LINKAGE=F

[11] Uses fully reconstructed $D^{*-} \ell^+ \nu$ events ($\ell = e$ or μ). NODE=S052CB1;LINKAGE=DU

[12] Measured using the dependence of $B^- \to D^{*0} e^- \overline{\nu}_e$ decay differential rate and the form factor description by CAPRINI 98 with $\rho^2 = 1.16 \pm 0.06 \pm 0.08$. NODE=S052CB1;LINKAGE=ER

[13] Measured using fully reconstructed D^* sample and a simultaneous fit to the Caprini-Lellouch-Neubert form factor parameters: $\rho^2 = 1.191 \pm 0.048 \pm 0.028$, $R_1(1) = 1.429 \pm 0.061 \pm 0.044$, and $R_2(1) = 0.827 \pm 0.038 \pm 0.022$. NODE=S052CB1;LINKAGE=UB

[14] Measurement using fully reconstructed D^* sample with a $\rho^2 = 1.29 \pm 0.03 \pm 0.27$. NODE=S052CB1;LINKAGE=AU

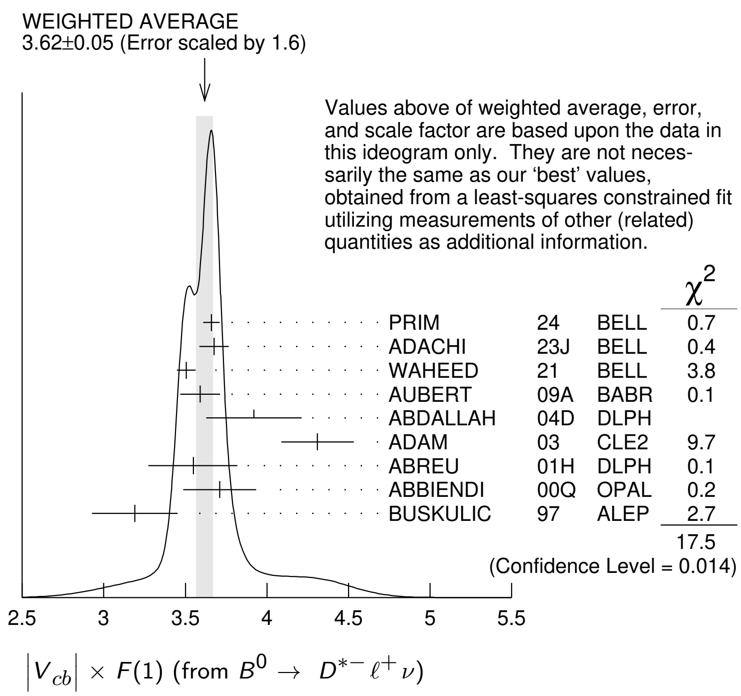
[15] Combines with previous partial reconstructed D^* measurement with a $\rho^2 = 1.39 \pm 0.10 \pm 0.33$. NODE=S052CB1;LINKAGE=AD

[16] Measured using exclusive $B^0 \to D^*(892)^- e^+ \nu$ decays with ρ^2= 1.35 $\pm$ 0.17 $\pm$ 0.19 and a correlation of 0.91. NODE=S052CB1;LINKAGE=CF

[17] BRIERE 02 result is based on the same analysis and data sample reported in ADAM 03. NODE=S052CB1;LINKAGE=DM

[18] ABREU 96P: measured using both inclusively and exclusively reconstructed $D^{*\pm}$ samples. NODE=S052CB1;LINKAGE=C

[19] BARISH 95: measured using both exclusive reconstructed $B^0 \to D^{*-} \ell^+ \nu$ and $B^+ \to D^{*0} \ell^+ \nu$ samples. They report their experiment's uncertainties $\pm 0.0019 \pm 0.0018 \pm 0.0008$, where the first error is statistical, the second is systematic, and the third is the uncertainty in the lifetimes. We combine the last two in quadrature. NODE=S052CB1;LINKAGE=D



$|V_{cb}| \times F(1)$ (from $B^0 \to D^{*-} \ell^+ \nu$)

$|V_{cb}| \times G(1)$ (from $B \to D^- \ell^+ \nu$)

NODE=S052CB2
NODE=S052CB2

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT

4.121±0.100 OUR EVALUATION (Produced by HFLAV) with ρ^2=1.128 $\pm$ 0.033 and a correlation 0.747. The fitted χ^2 is 4.8 for 8 degrees of freedom. → UNCHECKED ←

4.17 ±0.08 OUR AVERAGE NEW

[(4.22 ± 0.10) × 10^{-2} OUR 2024 AVERAGE]

4.109±0.116	[1] LEES	24	BABR	$e^+e^- \to \Upsilon(4S)$	
4.229±0.137	[2] GLATTAUER	16	BELL	$e^+e^- \to \Upsilon(4S)$	
4.23 ±0.19 ±0.14	[3] AUBERT	10	BABR	$e^+e^- \to \Upsilon(4S)$	
4.31 ±0.08 ±0.23	[4] AUBERT	09A	BABR	$e^+e^- \to \Upsilon(4S)$	
4.16 ±0.47 ±0.37	[5] BARTELT	99	CLE2	$e^+e^- \to \Upsilon(4S)$	
2.78 ±0.68 ±0.65	[6] BUSKULIC	97	ALEP	$e^+e^- \to Z$	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
4.11 ±0.44 ±0.52	[7] ABE	02E	BELL	Repl. by GLATTAUER 16	
3.37 ±0.44 $^{+0.72}_{-0.49}$	[8] ATHANAS	97	CLE2	Repl. by BARTELT 99	

[1] Obtained from a 2D fit to the combined $B \to \overline{D}\ell^+\nu_\ell$ sample with a model-independent parametrization according to Boyd-Grinstein-Lebed (BGL), in which a hadronic decay of the second B meson is fully reconstructed. NODE=S052CB2;LINKAGE=C

[2] Obtained from a fit to the combined partially reconstructed $B \to \overline{D}\ell\nu_\ell$ sample while tagged by the other fully reconstructed B meson in the event. Also reports fitted ρ^2 = 1.09 ± 0.05. NODE=S052CB2;LINKAGE=A

[3] Obtained from a fit to the combined $B \to \overline{D}\ell^+\nu_\ell$ sample in which a hadronic decay of the second B meson is fully reconstructed and ρ^2 = 1.20 ± 0.09 ± 0.04. NODE=S052CB2;LINKAGE=AU

[4] Obtained from a global fit to $B \to D^{(*)}\ell\nu_\ell$ events, with reconstructed $D^0\ell$ and $D^+\ell$ final states and ρ^2 = 1.20 ± 0.04 ± 0.07. NODE=S052CB2;LINKAGE=BE

[5] BARTELT 99: measured using both exclusive reconstructed $B^0 \to D^-\ell^+\nu$ and $B^+ \to D^0\ell^+\nu$ samples. NODE=S052CB2;LINKAGE=F

[6] BUSKULIC 97: measured using exclusively reconstructed $D^\pm$ with a a^2=−0.05 ± 0.53 ± 0.38. The statistical correlation is 0.99. NODE=S052CB2;LINKAGE=B

[7] Using the missing energy and momentum to extract kinematic information about the undetected neutrino in the $B^0 \to D^-\ell^+\nu$ decay. NODE=S052CB2;LINKAGE=CE

[8] ATHANAS 97: measured using both exclusive reconstructed $B^0 \to D^-\ell^+\nu$ and $B^+ \to D^0\ell^+\nu$ samples with a ρ^2=0.59 ± 0.22 ± 0.12$^{+0.59}_{-0}$. They report their experiment's uncertainties ±0.0044 ± 0.0048$^{+0.0053}_{-0.0012}$, where the first error is statistical, the second is systematic, and the third is the uncertainty due to the form factor model variations. We combine the last two in quadrature. NODE=S052CB2;LINKAGE=E

$|V_{cb}|$ (from $D_s^{*-}\mu^+\nu_\mu$)

NODE=S052A00
NODE=S052A00

VALUE (units 10^{-3})	*DOCUMENT ID*		*TECN*	*COMMENT*
41.4±0.6±0.9±1.2	[1] AAIJ	20E	LHCB	pp at 7, 8 TeV

[1] Measured from an inclusive sample of $D_s^-\mu^+$ candidates using CNL parameterization of the form factor. AAIJ 20E provides also measurement of $|V_{cb}|$ = (42.3 ± 0.8 ± 0.9 ± 1.2) × 10^{-3} using BGL parameterization of the form factor. The third uncertainty is due to the external inputs used in the measurement. NODE=S052A00;LINKAGE=A

V_{ub} MEASUREMENTS

NODE=S052230

For the discussion of V_{ub} measurements, which is not repeated here, see the review on "Determination of $|V_{cb}|$ and $|V_{ub}|$." NODE=S052230

The CKM matrix element $|V_{ub}|$ can be determined by studying the rate of the charmless semileptonic decay $b \to u\ell\nu$. The relevant branching ratio measurements based on exclusive and inclusive decays can be found in the B Listings, and are not repeated here.

V_{cb} and V_{ub} CKM Matrix Elements REFERENCES

NODE=S052

LEES	24	PR D110 032018	J.P. Lees *et al.*	(BABAR Collab.)	REFID=62937
PRIM	24	PRL 133 131801	M.T. Prim *et al.*	(BELLE Collab.)	REFID=63050
ADACHI	23J	PR D108 092013	I. Adachi *et al.*	(BELLE II Collab.)	REFID=62502
PRIM	23	PR D108 012002	M.T. Prim *et al.*	(BELLE Collab.)	REFID=62303
WAHEED	21	PR D103 079901	E. Waheed *et al.*	(BELLE Collab.)	REFID=61232
AAIJ	20E	PR D101 072004	R. Aaij *et al.*	(LHCb Collab.)	REFID=60289
WAHEED	19	PR D100 052007	E. Waheed *et al.*	(BELLE Collab.)	REFID=59994
GLATTAUER	16	PR D93 032006	R. Glattauer *et al.*	(BELLE Collab.)	REFID=57132
AUBERT	10	PRL 104 011802	B. Aubert *et al.*	(BABAR Collab.)	REFID=53189
DUNGEL	10	PR D82 112007	W. Dungel *et al.*	(BELLE Collab.)	REFID=53579
AUBERT	09A	PR D79 012002	B. Aubert *et al.*	(BABAR Collab.)	REFID=52640
AUBERT	08AT	PRL 100 231803	B. Aubert *et al.*	(BABAR Collab.)	REFID=52368
AUBERT	08R	PR D77 032002	B. Aubert *et al.*	(BABAR Collab.)	REFID=52226
AUBERT	05E	PR D71 051502	B. Aubert *et al.*	(BABAR Collab.)	REFID=50510
ABDALLAH	04D	EPJ C33 213	J. Abdallah *et al.*	(DELPHI Collab.)	REFID=49916

ADAM	03	PR D67 032001	N.E. Adam et al.	(CLEO Collab.)	REFID=49204
ABE	02E	PL B526 258	K. Abe et al.	(BELLE Collab.)	REFID=48601
ABE	02F	PL B526 247	K. Abe et al.	(BELLE Collab.)	REFID=48602
BRIERE	02	PRL 89 081803	R. Briere et al.	(CLEO Collab.)	REFID=48758
ABREU	01H	PL B510 55	P. Abreu et al.	(DELPHI Collab.)	REFID=48075
ABBIENDI	00Q	PL B482 15	G. Abbiendi et al.	(OPAL Collab.)	REFID=47640
BARTELT	99	PRL 82 3746	J. Bartelt et al.	(CLEO Collab.)	REFID=47004
CAPRINI	98	NP B530 153	I. Caprini, L. Lellouch, M. Neubert	(BCIP, CERN)	REFID=52699
ACKERSTAFF	97G	PL B395 128	K. Ackerstaff et al.	(OPAL Collab.)	REFID=45260
ATHANAS	97	PRL 79 2208	M. Athanas et al.	(CLEO Collab.)	REFID=45598
BUSKULIC	97	PL B395 373	D. Buskulic et al.	(ALEPH Collab.)	REFID=45291
ABREU	96P	ZPHY C71 539	P. Abreu et al.	(DELPHI Collab.)	REFID=44932
BARISH	95	PR D51 1014	B.C. Barish et al.	(CLEO Collab.)	REFID=44139
BUSKULIC	95N	PL B359 236	D. Buskulic et al.	(ALEPH Collab.)	REFID=44475

NODE=S085

B^*

$I(J^P) = \frac{1}{2}(1^-)$
I, J, P need confirmation.

Quantum numbers shown are quark-model predictions. NODE=S085

B^* MASS NODE=S085M

From mass difference below and the average of our B masses $(m_{B^\pm}+m_{B^0})/2$. NODE=S085M

VALUE (MeV)	DOCUMENT ID
5324.75±0.20 OUR FIT	

NODE=S085M

$m_{B^*} - m_B$ NODE=S085DM

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
45.18±0.20 OUR FIT					
45.42±0.26 OUR AVERAGE	Includes data from the datablock that follows this one.				
46.2 ±0.3 ±0.8		[1] ACKERSTAFF	97M	OPAL	$e^+e^- \to Z$
45.3 ±0.35±0.87	4227	[1] BUSKULIC	96D	ALEP	E^{ee}_{cm}= 88–94 GeV
45.5 ±0.3 ±0.8		[1] ABREU	95R	DLPH	E^{ee}_{cm}= 88–94 GeV
46.3 ±1.9	1378	[1] ACCIARRI	95B	L3	E^{ee}_{cm}= 88–94 GeV
46.4 ±0.3 ±0.8		[2] AKERIB	91	CLE2	$e^+e^- \to \gamma X$
45.6 ±0.8		[2] WU	91	CSB2	$e^+e^- \to \gamma X$, $\gamma \ell X$
45.4 ±1.0		[3] LEE-FRANZINI	90	CSB2	$e^+e^- \to \Upsilon(5S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
52 ±2 ±4	1400	[4] HAN	85	CUSB	$e^+e^- \to \gamma e X$

NODE=S085DM

[1] u, d, s flavor averaged. NODE=S085DM;LINKAGE=F

[2] These papers report E_γ in the B^* center of mass. The $m_{B^*} - m_B$ is 0.2 MeV higher. E_{cm} = 10.61–10.7 GeV. Admixture of B^0 and B^+ mesons, but not B_s. NODE=S085DM;LINKAGE=1F

[3] LEE-FRANZINI 90 value is for an admixture of B^0 and B^+. They measure 46.7 ± 0.4 ± 0.2 MeV for an admixture of B^0, B^+, and B_s, and use the shape of the photon line to separate the above value. NODE=S085DM;LINKAGE=C

[4] HAN 85 is for E_{cm} = 10.6–11.2 GeV, giving an admixture of B^0, B^+, and B_s. NODE=S085DM;LINKAGE=E

$m_{B^{*+}} - m_{B^+}$ NODE=S085DM+

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
The data in this block is included in the average printed for a previous datablock.				
45.34±0.20 OUR FIT				
45.01±0.30±0.23	[5] AAIJ	13O	LHCB	pp at 7 TeV

NODE=S085DM+

[5] Obtained the mass difference between $B^{*+}K^-$ and B^+K^- from $B^*_{s2}(5840)^0$ decay. NODE=S085DM+;LINKAGE=AI

$|(m_{B^{*+}} - m_{B^+}) - (m_{B^{*0}} - m_{B^0})|$ NODE=S085MD

VALUE (MeV)	CL%	DOCUMENT ID		TECN	COMMENT
<6	95	ABREU	95R	DLPH	E^{ee}_{cm}= 88–94 GeV

NODE=S085MD

$m_{B^{*0}} - m_{B^{*+}}$ NODE=S085D0+

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
0.91±0.24±0.09	[6] SIRUNYAN	18DF	CMS	pp at 8 TeV

NODE=S085D0+

[6] Uses exclusively reconstructed final states containing a $J/\psi \to \mu^+\mu^-$ decay. NODE=S085D0+;LINKAGE=A

B^* DECAY MODES

NODE=S085215;NODE=S085

	Mode	Fraction (Γ_i/Γ)
Γ_1	$B\gamma$	seen

DESIG=1;OUR EST;→ UNCHECKED ←

B^* REFERENCES

NODE=S085

SIRUNYAN	18DF	EPJ C78 939	A.M. Sirunyan *et al.*	(CMS Collab.)
AAIJ	13O	PRL 110 151803	R. Aaij *et al.*	(LHCb Collab.)
ACKERSTAFF	97M	ZPHY C74 413	K. Ackerstaff *et al.*	(OPAL Collab.)
BUSKULIC	96D	ZPHY C69 393	D. Buskulic *et al.*	(ALEPH Collab.)
ABREU	95R	ZPHY C68 353	P. Abreu *et al.*	(DELPHI Collab.)
ACCIARRI	95B	PL B345 589	M. Acciarri *et al.*	(L3 Collab.)
AKERIB	91	PRL 67 1692	D.S. Akerib *et al.*	(CLEO Collab.)
WU	91	PL B273 177	Q.W. Wu *et al.*	(CUSB II Collab.)
LEE-FRANZINI	90	PRL 65 2947	J. Lee-Franzini *et al.*	(CUSB II Collab.)
HAN	85	PRL 55 36	K. Han *et al.*	(COLU, LSU, MPIM, STON)

REFID=59328
REFID=54968
REFID=45487
REFID=44677
REFID=44464
REFID=44130
REFID=41710
REFID=42045
REFID=41398
REFID=22888

NODE=M244

$B_1(5721)$

$I(J^P) = \frac{1}{2}(1^+)$
I, J, P need confirmation.

Quantum numbers shown are quark-model predictions.

NODE=M244

$B_1(5721)$ MASS

NODE=M244205

$B_1(5721)^+$ mass

NODE=M244M+

OUR FIT uses $m_{B^{*0}}$ and $m_{B_1^+} - m_{B^{*0}}$ to determine $m_{B_1(5721)^+}$.

NODE=M244M+
NODE=M244M+

VALUE (MeV)	*DOCUMENT ID*
$5726.0^{+2.5}_{-2.7}$ OUR FIT	

$m_{B_1^+} - m_{B^{*0}}$

NODE=M244DM+
NODE=M244DM+

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
$401.2^{+2.4}_{-2.7}$ OUR FIT					
$401.2^{+2.4}_{-2.7}$ OUR AVERAGE					
$400.5\pm1.8\pm3.1$	8k	[1] AAIJ	15AB	LHCB	pp at 7, 8 TeV
$402\ \pm3\ ^{+1}_{-3}$		[2] AALTONEN	14I	CDF	$p\overline{p}$ at 1.96 TeV

[1] AAIJ 15AB reports $[m_{B_1^+} - m_{B^0}] - (m_{B^{*0}} - m_{B^0}) - m_{\pi^+} = 260.9 \pm 1.8 \pm 3.1$ MeV which we adjust by the π^+ mass and assume $(m_{B^{*0}} - m_{B^0}) = (m_{B^{*+}} - m_{B^+}) = 45.01 \pm 0.30 \pm 0.23$ MeV. The masses inside the square brackets were measured for each candidate event.

NODE=M244DM+;LINKAGE=A

[2] AALTONEN 14I reports $m_{B_1(5721)^+} - m_{B^{*0}} - m_{\pi^+} = 262 \pm 3^{+1}_{-3}$ MeV which we adjusted by the π^+ mass.

NODE=M244DM+;LINKAGE=AA

$B_1(5721)^0$ mass

NODE=M244M0
NODE=M244M0

OUR FIT uses mass differences measurements listed below to determine the mass $m_{B_1(5721)^0}$.

NODE=M244M0

VALUE (MeV)	*DOCUMENT ID*
5726.1 ± 1.2 OUR FIT Error includes scale factor of 1.2.	

$m_{B_1^0} - m_{B^+}$

NODE=M244DM0
NODE=M244DM0

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
446.7 ± 1.2 OUR FIT Error includes scale factor of 1.2.				
$441.5\pm2.4\pm1.3$	[1] ABAZOV	07T	D0	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$446.2^{+1.9}_{-2.1}{}^{+1.0}_{-1.2}$	[1] AALTONEN	09D	CDF	Repl. by AALTONEN 14I

[1] Observed in $B_1^0 \to B^{*+}\pi^-$.

NODE=M244DM0;LINKAGE=AA

$m_{B_1^0} - m_{B^{*+}}$

NODE=M244DM1
NODE=M244DM1

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
401.4±1.2 OUR FIT Error includes scale factor of 1.2.					
402.8±1.1 OUR AVERAGE					
403.4±0.7±1.5	35k	[1] AAIJ	15AB	LHCB	pp at 7, 8 TeV
$402.3\pm0.9^{+1.1}_{-1.2}$		[2] AALTONEN	14I	CDF	$p\overline{p}$ at 1.96 TeV

[1] AAIJ 15AB reports $[m_{B_1^0} - m_{B^+}] - (m_{B^{*+}} - m_{B^+}) - m_{\pi^-} = 263.9 \pm 0.7 \pm 1.4$ MeV which we adjust by the π^- mass and $(m_{B^{*+}} - m_{B^+}) = 45.01 \pm 0.30 \pm 0.23$ MeV. The masses inside the square brackets were measured for each candidate event. NODE=M244DM1;LINKAGE=B

[2] AALTONEN 14I reports $m_{B_1(5721)^0} - m_{B^{*+}} - m_{\pi^-} = 262.7 \pm 0.9^{+1.1}_{-1.2}$ MeV which we adjusted by the π^- mass. NODE=M244DM1;LINKAGE=AA

$B_1(5721)$ WIDTH

NODE=M244210

$B_1(5721)^+$ width

NODE=M244W+
NODE=M244W+

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
31 ± 6 OUR AVERAGE Error includes scale factor of 1.1.					
29.1± 3.6± 4.3	8k	AAIJ	15AB	LHCB	pp at 7, 8 TeV
$49\ ^{+12}_{-10}\ ^{+2}_{-13}$		AALTONEN	14I	CDF	$p\overline{p}$ at 1.96 TeV

$B_1(5721)^0$ width

NODE=M244W0
NODE=M244W0

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
27.5±3.4 OUR AVERAGE Error includes scale factor of 1.1.					
30.1±1.5±3.5	35k	AAIJ	15AB	LHCB	pp at 7, 8 TeV
23 ±3 ±4		AALTONEN	14I	CDF	$p\overline{p}$ at 1.96 TeV

$B_1(5721)$ DECAY MODES

NODE=M244215;NODE=M244

	Mode	Fraction (Γ_i/Γ)
Γ_1	$B^*\pi$	seen

DESIG=1

$B_1(5721)$ BRANCHING RATIOS

NODE=M244220

$\Gamma(B^*\pi)/\Gamma_{total}$ — Γ_1/Γ

NODE=M244R01
NODE=M244R01

VALUE	DOCUMENT ID		TECN	CHG	COMMENT
seen	AAIJ	15AB	LHCB	±0	pp at 7, 8 TeV
seen	AALTONEN	14I	CDF	±	$p\overline{p}$ at 1.96 TeV
seen	AALTONEN	09D	CDF	0	$p\overline{p}$ at 1.96 TeV
seen	[1] ABAZOV	07T	D0	0	$p\overline{p}$ at 1.96 TeV

OCCUR=2

[1] Observed in $B_1^0 \to B^{*+}\pi^-$ with $B^{*+} \to B^+\gamma$ and $B^+ \to J/\psi\pi^+$. NODE=M244R01;LINKAGE=AB

$B_1(5721)$ REFERENCES

NODE=M244

AAIJ	15AB	JHEP 1504 024	R. Aaij *et al.*	(LHCb Collab.)	REFID=56628
AALTONEN	14I	PR D90 012013	T. Aaltonen *et al.*	(CDF Collab.)	REFID=56029
AALTONEN	09D	PRL 102 102003	T. Aaltonen *et al.*	(CDF Collab.)	REFID=52700
ABAZOV	07T	PRL 99 172001	V.M. Abazov *et al.*	(D0 Collab.)	REFID=52014

NODE=M151

$B_J^*(5732)$

$I(J^P) = ?(?^?)$

OMITTED FROM SUMMARY TABLE

Signal can be interpreted as stemming from several narrow and broad resonances.

NODE=M151

$B_J^*(5732)$ MASS

NODE=M151M

NODE=M151M

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
5698± 8 OUR AVERAGE Error includes scale factor of 1.2.					
5710±20		[1] AFFOLDER	01F	CDF	$p\overline{p}$ at 1.8 TeV
5695^{+17}_{-19}		[2] BARATE	98L	ALEP	$e^+e^- \to Z$
5704± 4±10	1944	[3] BUSKULIC	96D	ALEP	E^{ee}_{cm}= 88–94 GeV
5732± 5±20	2157	ABREU	95B	DLPH	E^{ee}_{cm}= 88–94 GeV
5681±11	1738	AKERS	95E	OPAL	E^{ee}_{cm}= 88–94 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
5713± 2		[4] ACCIARRI	99N	L3	$e^+e^- \to Z$

[1] AFFOLDER 01F uses the reconstructed B meson through semileptonic decay channels. The fraction of light B mesons that are produced at L=1 B^{**} states is measured to be 0.28 ± 0.06 ± 0.03. NODE=M151M;LINKAGE=MF

[2] BARATE 98L uses fully reconstructed B mesons to search for B^{**} production in the $B\pi^\pm$ system. In the framework of heavy quark symmetry (HQS), they also measured the mass of B_2^* to be $5739^{+8}_{-11}{}^{+6}_{-4}$ MeV/c^2 and the relative production rate of B($b \to B_2^* \to B^{(*)}\pi$)/B($b \to B_{u,d}$) = $(31 \pm 9^{+6}_{-5})$%. NODE=M151M;LINKAGE=B

[3] Using $m_{B\pi} - m_B$ = 424 ± 4 ± 10 MeV. NODE=M151M;LINKAGE=A

[4] ACCIARRI 99N uses inclusive reconstructed B mesons to search for B^{**} production in the $B^{(*)}\pi^\pm$ system. In the framework of HQET, they measured the mass of B_1^* and B_2^* to be 5670 ± 10 ± 13 MeV and 5768 ± 5 ± 6 with the B($b \to B^{**}$)= $(32 \pm 3 \pm 6) \times 10^{-2}$. They also reported the evidence for the existence of an excited B-meson state or mixture of states in the region 5.9–6.0 GeV. NODE=M151M;LINKAGE=N

$B_J^*(5732)$ WIDTH

NODE=M151W

NODE=M151W

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
128±18 OUR AVERAGE					
145±28	2157	ABREU	95B	DLPH	E^{ee}_{cm}= 88–94 GeV
116±24	1738	AKERS	95E	OPAL	E^{ee}_{cm}= 88–94 GeV

$B_J^*(5732)$ DECAY MODES

NODE=M151215;NODE=M151

	Mode	Fraction (Γ_i/Γ)	
Γ_1	$B^*\pi + B\pi$	seen	DESIG=1;OUR EST;→ UNCHECKED ←
Γ_2	$B^*\pi$(X)	[a] (85±29) %	DESIG=2

[a] X refers to decay modes with or without additional accompanying decay particles. LINKAGE=151

$B_J^*(5732)$ BRANCHING RATIOS

NODE=M151220

X refers to decay modes with or without additional accompanying decay particles.

NODE=M151220

$\Gamma(B^*\pi(X))/\Gamma_{total}$ Γ_2/Γ

NODE=M151R1
NODE=M151R1

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.85^{+0.26}_{-0.27} \pm 0.12}$	ABBIENDI	02E	OPAL	$e^+e^- \to Z$

$B_J^*(5732)$ REFERENCES

NODE=M151

ABBIENDI	02E	EPJ C23 437	G. Abbiendi *et al.*	(OPAL Collab.)	REFID=48742
AFFOLDER	01F	PR D64 072002	T. Affolder *et al.*	(CDF Collab.)	REFID=48369
ACCIARRI	99N	PL B465 323	M. Acciarri *et al.*	(L3 Collab.)	REFID=47247
BARATE	98L	PL B425 215	R. Barate *et al.*	(ALEPH Collab.)	REFID=46082
BUSKULIC	96D	ZPHY C69 393	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=44677
ABREU	95B	PL B345 598	P. Abreu *et al.*	(DELPHI Collab.)	REFID=44131
AKERS	95E	ZPHY C66 19	R. Akers *et al.*	(OPAL Collab.)	REFID=44182

NODE=M245

$B_2^*(5747)$

$I(J^P) = \frac{1}{2}(2^+)$
I, J, P need confirmation.

Quantum numbers shown are quark-model predictions.

NODE=M245

$B_2^*(5747)$ MASS

NODE=M245205

$B_2^*(5747)^+$ mass

NODE=M245M+

OUR FIT uses m_{B^0} and $m_{B_2^{*+}} - m_{B^0}$ to determine $m_{B_2^*(5747)^+}$.

NODE=M245M+
NODE=M245M+

VALUE (MeV)	*DOCUMENT ID*
5737.3±0.7 OUR FIT	

$m_{B_2^{*+}} - m_{B^0}$

NODE=M245DM+
NODE=M245DM+

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
457.5 ±0.7 OUR FIT					
457.5 ±0.7 OUR AVERAGE					
457.62±0.72±0.40	4k	[1] AAIJ	15AB	LHCB	pp at 7, 8 TeV
457.3 ±1.3 $^{+0.3}_{-0.9}$		[2] AALTONEN	14I	CDF	$p\overline{p}$ at 1.96 TeV

[1] AAIJ 15AB reports $[m_{B_2^{*+}} - m_{B^0}] - m_{\pi^+} = 318.1 \pm 0.7 \pm 0.4$ MeV which we adjust by the π^+ mass. The masses inside the square brackets were measured for each candidate event.

NODE=M245DM+;LINKAGE=B

[2] AALTONEN 14I reports $m_{B_2^*(5747)^+} - m_{B^0} - m_{\pi^+} = 317.7 \pm 1.2^{+0.3}_{-0.9}$ MeV which we adjusted by the π^+ mass.

NODE=M245DM+;LINKAGE=A

$B_2^*(5747)^0$ mass

NODE=M245M0

OUR FIT uses m_{B^+}, $m_{B_1^0} - m_{B^+}$, and mass differences below to determine $m_{B_2^*(5747)^0}$. The −0.659 correlation between statistical uncertainties of $m_{B_1^0} - m_{B^+}$ and $m_{B_2^{*0}} - m_{B_1^0}$ measurements reported by ABAZOV 07T is taken into account.

NODE=M245M0

NODE=M245M0

VALUE (MeV)	*DOCUMENT ID*
5739.6±0.7 OUR FIT Error includes scale factor of 1.4.	

$m_{B_2^{*0}} - m_{B_1^0}$

NODE=M245DM0
NODE=M245DM0

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
13.5±1.4 OUR FIT Error includes scale factor of 1.3.				
26.2±3.1±0.9	[1] ABAZOV	07T	D0	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$14.9^{+2.2}_{-2.5}{}^{+1.2}_{-1.4}$	[1] AALTONEN	09D	CDF	Repl. by AALTONEN 14I

[1] Observed in $B_2^{*0} \to B^{*+}\pi^-$ and $B_2^{*0} \to B^+\pi^-$.

NODE=M245DM0;LINKAGE=AB

$m_{B_2^{*0}} - m_{B^+}$

NODE=M245DM2
NODE=M245DM2

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
460.2 ±0.6 OUR FIT Error includes scale factor of 1.4.					
459.9 ±0.8 OUR AVERAGE Error includes scale factor of 1.8.					
460.18±0.37±0.33	17k	[1] AAIJ	15AB	LHCB	pp at 7, 8 TeV
457.5 ±1.2 $^{+0.8}_{-0.9}$		[2] AALTONEN	14I	CDF	$p\overline{p}$ at 1.96 TeV

[1] AAIJ 15AB reports $[m_{B_2^{*0}} - m_{B^+}] - m_{\pi^-} = 320.6 \pm 0.4 \pm 0.3$ MeV which we adjust by the π^- mass. The masses inside the square brackets were measured for each candidate event.

NODE=M245DM2;LINKAGE=A

[2] AALTONEN 14I reports $m_{B_2^*(5747)^0} - m_{B^+} - m_{\pi^-} = 317.9 \pm 1.2^{+0.8}_{-0.9}$ MeV which we adjusted by the π^- mass.

NODE=M245DM2;LINKAGE=AA

$B_2^*(5747)$ WIDTH

NODE=M245210

$B_2^*(5747)^+$ width

NODE=M245W+
NODE=M245W+

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
20 ±5 OUR AVERAGE Error includes scale factor of 2.2.					
$23.6 \pm 2.0 \pm 2.1$	4k	AAIJ	15AB	LHCB	pp at 7, 8 TeV
$11\ ^{+4}_{-3}\ ^{+3}_{-4}$		AALTONEN	14I	CDF	$p\overline{p}$ at 1.96 TeV

$B_2^*(5747)^0$ width

NODE=M245W0
NODE=M245W0

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
24.2±1.7 OUR AVERAGE					
$24.5 \pm 1.0 \pm\ 1.5$	17k	AAIJ	15AB	LHCB	pp at 7, 8 TeV
$22\ ^{+3}_{-2}\ ^{+\ 4}_{-\ 5}$		AALTONEN	14I	CDF	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$22.7^{+3.8}_{-3.2}{}^{+\ 3.2}_{-10.2}$		AALTONEN	09D	CDF	Repl. by AALTONEN 14I

$B_2^*(5747)$ DECAY MODES

NODE=M245215;NODE=M245

	Mode	Fraction (Γ_i/Γ)
Γ_1	$B\pi$	seen
Γ_2	$B^*\pi$	seen

DESIG=1
DESIG=2

$B_2^*(5747)$ BRANCHING RATIOS

NODE=M245220

$\Gamma(B\pi)/\Gamma_{total}$ Γ_1/Γ

NODE=M245R01
NODE=M245R01

VALUE	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
seen	4k,17k	AAIJ	15AB	LHCB	±0	pp at 7, 8 TeV
seen		AALTONEN	14I	CDF	±	$p\overline{p}$ at 1.96 TeV
seen		AALTONEN	09D	CDF	0	$p\overline{p}$ at 1.96 TeV
seen		ABAZOV	07T	D0	0	$p\overline{p}$ at 1.96 TeV

$\Gamma(B^*\pi)/\Gamma_{total}$ Γ_2/Γ

NODE=M245R02
NODE=M245R02

VALUE	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
seen	4k,17k	AAIJ	15AB	LHCB	±0	pp at 7, 8 TeV
seen		AALTONEN	09D	CDF	0	$p\overline{p}$ at 1.96 TeV
seen		ABAZOV	07T	D0	0	$p\overline{p}$ at 1.96 TeV

$\Gamma(B^*\pi)/\Gamma(B\pi)$ Γ_2/Γ_1

NODE=M245R03
NODE=M245R03

VALUE	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
0.84±0.27 OUR AVERAGE						
$0.71 \pm 0.14 \pm 0.30$	17k	AAIJ	15AB	LHCB	0	pp at 7, 8 TeV
$1.0\ \pm 0.5\ \pm 0.8$	4k	AAIJ	15AB	LHCB	±	pp at 7, 8 TeV
$1.10 \pm 0.42 \pm 0.31$		[1] ABAZOV	07T	D0	0	$p\overline{p}$ at 1.96 TeV

OCCUR=2

[1] Converted from measured ratio of R = B($B_2^{*0} \rightarrow B^{*+}\pi^-$) / B($B_2^{*0} \rightarrow B^{(*)+}\pi^-$) = 0.475 ± 0.095 ± 0.069.

NODE=M245R03;LINKAGE=AB

$B_2^*(5747)$ REFERENCES

NODE=M245

AAIJ	15AB	JHEP 1504 024	R. Aaij *et al.*	(LHCb Collab.)
AALTONEN	14I	PR D90 012013	T. Aaltonen *et al.*	(CDF Collab.)
AALTONEN	09D	PRL 102 102003	T. Aaltonen *et al.*	(CDF Collab.)
ABAZOV	07T	PRL 99 172001	V.M. Abazov *et al.*	(D0 Collab.)

REFID=56628
REFID=56029
REFID=52700
REFID=52014

NODE=M246

$B_J(5840)$

$I(J^P) = \frac{1}{2}(?^?)$
I, J, P need confirmation.

OMITTED FROM SUMMARY TABLE

Quantum numbers shown are quark-model predictions.

NODE=M246

$B_J(5840)$ MASS

NODE=M246205

$B_J(5840)^+$ MASS

NODE=M246M+

OUR FIT uses m_{B^0} and $m_{B_J(5840)^+} - m_{B^0}$ to determine $m_{B_J(5840)^+}$.

NODE=M246M+
NODE=M246M+

VALUE (MeV)	DOCUMENT ID
5851±19 OUR FIT	

$m_{B_J(5840)^+} - m_{B^0}$

NODE=M246DM+
NODE=M246DM+

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
571±19 OUR FIT				
571±13±14	7k	[1] AAIJ 15AB	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
595±26±14	7k	[2] AAIJ 15AB	LHCB	pp at 7, 8 TeV

OCCUR=2

[1] AAIJ 15AB reports $[m_{B_J^+} - m_{B^0}] - m_{\pi^+} = 431 \pm 13 \pm 14$ MeV which we adjust by the π^+ mass. The masses inside the square brackets were measured for each candidate event. The result assumes $P = (-1)^J$ and uses two relativistic Breit-Wigner functions in the fit for mass difference.

NODE=M246DM+;LINKAGE=A

[2] AAIJ 15AB reports $[m_{B_J^+} - m_{B^0}] - m_{\pi^+} = 455 \pm 26 \pm 14$ MeV which we adjust by the π^+ mass. The masses inside the square brackets were measured for each candidate event. The result assumes $P = (-1)^J$ and uses three relativistic Breit-Wigner functions in the fit for mass difference.

NODE=M246DM+;LINKAGE=B

$m_{B_J(5840)^+} - m_{B^{*0}}$

NODE=M246DM1
NODE=M246DM1

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
565±15±14	7k	[1] AAIJ 15AB	LHCB	pp at 7, 8 TeV

[1] AAIJ 15AB reports $[m_{B_J^+} - m_{B^0}] - (m_{B^{*+}} - m_{B^+}) - m_{\pi^+} = 425 \pm 15 \pm 14$ MeV which we adjust by the π^+ mass. The masses inside the square brackets were measured for each candidate event. The result assumes $P = -(-1)^J$, $(m_{B^{*0}} - m_{B^0}) = (m_{B^{*+}} - m_{B^+}) = 45.01 \pm 0.30 \pm 0.23$ MeV, and uses three relativistic Breit-Wigner functions in the fit for mass difference.

NODE=M246DM1;LINKAGE=A

$B_J(5840)^0$ MASS

NODE=M246M0

OUR FIT uses m_{B^+} and $m_{B_J(5840)^0} - m_{B^+}$ to determine $m_{B_J(5840)^0}$.

NODE=M246M0
NODE=M246M0

VALUE (MeV)	DOCUMENT ID
5863±9 OUR FIT	

$m_{B_J(5840)^0} - m_{B^+}$

NODE=M246DM0
NODE=M246DM0

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
584± 9 OUR FIT				
584± 5±7	12k	[1] AAIJ 15AB	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
610±22±7	12k	[2] AAIJ 15AB	LHCB	pp at 7, 8 TeV

OCCUR=2

[1] AAIJ 15AB reports $[m_{B_J^0} - m_{B^+}] - m_{\pi^-} = 444 \pm 5 \pm 7$ MeV which we adjust by the π^- mass. The masses inside the square brackets were measured for each candidate event. The result assumes $P = (-1)^J$ and uses two relativistic Breit-Wigner functions in the fit for mass difference.

NODE=M246DM0;LINKAGE=A

[2] AAIJ 15AB reports $[m_{B_J^0} - m_{B^+}] - m_{\pi^-} = 471 \pm 22 \pm 7$ MeV which we adjust by the π^- mass. The masses inside the square brackets were measured for each candidate event. The result assumes $P = (-1)^J$ and uses three relativistic Breit-Wigner functions in the fit for mass difference.

NODE=M246DM0;LINKAGE=B

$m_{B_J(5840)^0} - m_{B^{*+}}$

NODE=M246DM2
NODE=M246DM2

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
584±5±7	12k	[1] AAIJ	15AB LHCB	pp at 7, 8 TeV

[1] AAIJ 15AB reports $[m_{B^0_J} - m_{B^+}] - (m_{B^{*+}} - m_{B^+}) - m_{\pi^-} = 444 \pm 5 \pm 7$ MeV which we adjust by the π^- mass. The masses inside the square brackets were measured for each candidate event. The result assumes $P = -(-1)^J$, $(m_{B^{*+}} - m_{B^+}) = 45.01 \pm 0.30 \pm 0.23$ MeV, and uses three relativistic Breit-Wigner functions in the fit for mass difference. NODE=M246DM2;LINKAGE=A

B_J(5840) WIDTH

NODE=M246210

$B_J(5840)^+$ WIDTH

NODE=M246W+
NODE=M246W+

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT	
224±24±80	7k	[1] AAIJ	15AB LHCB	pp at 7, 8 TeV	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
215±27±80	7k	[2] AAIJ	15AB LHCB	pp at 7, 8 TeV	OCCUR=2
229±27±80	7k	[3] AAIJ	15AB LHCB	pp at 7, 8 TeV	OCCUR=3

[1] Assuming $P = (-1)^J$ and using two relativistic Breit-Wigner functions in the fit for mass difference. NODE=M246W+;LINKAGE=A

[2] Assuming $P = (-1)^J$ and using three relativistic Breit-Wigner functions in the fit for mass difference. NODE=M246W+;LINKAGE=B

[3] Assuming $P = -(-1)^J$ and using three relativistic Breit-Wigner functions in the fit for mass difference. NODE=M246W+;LINKAGE=C

$B_J(5840)^0$ WIDTH

NODE=M246W0
NODE=M246W0

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT	
127±17±34	12k	[1] AAIJ	15AB LHCB	pp at 7, 8 TeV	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
107±20±34	12k	[2] AAIJ	15AB LHCB	pp at 7, 8 TeV	OCCUR=2
119±17±34	12k	[3] AAIJ	15AB LHCB	pp at 7, 8 TeV	OCCUR=3

[1] Assuming $P = (-1)^J$ and using two relativistic Breit-Wigner functions in the fit for mass difference. NODE=M246W0;LINKAGE=A

[2] Assuming $P = (-1)^J$ and using three relativistic Breit-Wigner functions in the fit for mass difference. NODE=M246W0;LINKAGE=B

[3] Assuming $P = -(-1)^J$ and using three relativistic Breit-Wigner functions in the fit for mass difference. NODE=M246W0;LINKAGE=C

B_J(5840) DECAY MODES

NODE=M246215;NODE=M246

	Mode	Fraction (Γ_i/Γ)	
Γ_1	$B^*\pi$	seen	DESIG=1
Γ_2	$B\pi$	possibly seen	DESIG=2

B_J(5840) BRANCHING RATIOS

NODE=M246220

$\Gamma(B^*\pi)/\Gamma_{total}$ — Γ_1/Γ

NODE=M246R01
NODE=M246R01

VALUE	EVTS	DOCUMENT ID	TECN	CHG	COMMENT	
seen	7k	AAIJ	15AB LHCB	±	pp at 7, 8 TeV	
seen	12k	AAIJ	15AB LHCB	0	pp at 7, 8 TeV	OCCUR=2

$\Gamma(B\pi)/\Gamma_{total}$ — Γ_2/Γ

NODE=M246R02
NODE=M246R02

VALUE	EVTS	DOCUMENT ID	TECN	CHG	COMMENT	
possibly seen	7k	[1] AAIJ	15AB LHCB	±	pp at 7, 8 TeV	
possibly seen		[1] AAIJ	15AB LHCB	0	pp at 7, 8 TeV	OCCUR=2

[1] A $B\pi$ decay is forbidden from a $P = -(-1)^J$ parent, whereas $B^*\pi$ is allowed. NODE=M246R02;LINKAGE=A

B_J(5840) REFERENCES

NODE=M246

AAIJ 15AB JHEP 1504 024 R. Aaij *et al.* (LHCb Collab.) REFID=56628

NODE=M248

$B_J(5970)$

$I(J^P) = \frac{1}{2}(?^?)$
I, J, P need confirmation.

Quantum numbers shown are quark-model predictions.

NODE=M248

$B_J(5970)$ MASS

NODE=M248205

$B_J(5970)^+$ MASS

NODE=M248M+

OUR FIT uses m_{B^0} and $m_{B_J(5970)^+} - m_{B^0}$ to determine $m_{B_J(5970)^+}$.

NODE=M248M+
NODE=M248M+

VALUE (MeV)	DOCUMENT ID
5965±5 OUR FIT	

$m_{B_J(5970)^+} - m_{B^0}$

NODE=M248DM+
NODE=M248DM+

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
685 ±5 OUR FIT				
685 ±5 OUR AVERAGE				
685.3±4.1± 2.5	2k	[1] AAIJ 15AB	LHCB	pp at 7, 8 TeV
681 ±5 ±12	1.4k	[2] AALTONEN 14I	CDF	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
686.8±4.5± 2.5	2k	[3] AAIJ 15AB	LHCB	pp at 7, 8 TeV

OCCUR=2

[1] AAIJ 15AB reports $[m_{B_J^+} - m_{B^0}] - m_{\pi^+} = 545.8 \pm 4.1 \pm 2.5$ MeV which we adjust by the π^+ mass. The masses inside the square brackets were measured for each candidate event. The result assumes $P = (-1)^J$ and uses two relativistic Breit-Wigner functions in the fit for mass difference.

NODE=M248DM+;LINKAGE=B

[2] AALTONEN 14I reports $m_{B_J(5970)^+} - m_{B^0} - m_{\pi^+} = 541 \pm 5 \pm 12$ MeV which we adjusted by the π^+ mass.

NODE=M248DM+;LINKAGE=A

[3] AAIJ 15AB reports $[m_{B_J^+} - m_{B^0}] - m_{\pi^+} = 547 \pm 5 \pm 3$ MeV which we adjust by the π^+ mass. The masses inside the square brackets were measured for each candidate event. The result assumes $P = (-1)^J$ and uses three relativistic Breit-Wigner functions in the fit for mass difference.

NODE=M248DM+;LINKAGE=C

$m_{B_J(5970)^+} - m_{B^{*0}}$

NODE=M248DM1
NODE=M248DM1

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
686.0±4.0±2.5	2k	[1] AAIJ 15AB	LHCB	pp at 7, 8 TeV

[1] AAIJ 15AB reports $[m_{B_J^+} - m_{B^0}] - (m_{B^{*+}} - m_{B^+}) - m_{\pi^+} = 547 \pm 4 \pm 3$ MeV which we adjust by the π^+ mass. The masses inside the square brackets were measured for each candidate event. The result assumes $P = -(-1)^J$, $(m_{B^{*0}} - m_{B^0}) = (m_{B^{*+}} - m_{B^+}) = 45.01 \pm 0.30 \pm 0.23$ MeV, and uses three relativistic Breit-Wigner functions in the fit for mass difference.

NODE=M248DM1;LINKAGE=A

$B_J(5970)^0$ MASS

NODE=M248M0

OUR FIT uses m_{B^+} and $m_{B_J(5970)^0} - m_{B^+}$ to determine $m_{B_J(5970)^0}$.

NODE=M248M0
NODE=M248M0

VALUE (MeV)	DOCUMENT ID
5971±5 OUR FIT	

$m_{B_J(5970)^0} - m_{B^+}$

NODE=M248DM0
NODE=M248DM0

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
691 ±5 OUR FIT				
691 ±5 OUR AVERAGE				
689.9±2.9± 5.1	10k	[1] AAIJ 15AB	LHCB	pp at 7, 8 TeV
698 ±5 ±12	2.6k	[2] AALTONEN 14I	CDF	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
714.3±6.4± 5.1	10k	[3] AAIJ 15AB	LHCB	pp at 7, 8 TeV

OCCUR=2

[1] AAIJ 15AB reports $[m_{B_J^0} - m_{B^+}] - m_{\pi^-} = 550.4 \pm 2.9 \pm 5.1$ MeV which we adjust by the π^- mass. The masses inside the square brackets were measured for each candidate event. The result assumes $P = (-1)^J$ and uses two relativistic Breit-Wigner functions in the fit for mass difference.

NODE=M248DM0;LINKAGE=B

[2] AALTONEN 14I reports $m_{B_J(5970)^0} - m_{B^+} - m_{\pi^-} = 558 \pm 5 \pm 12$ MeV which we adjusted by the π^- mass.

NODE=M248DM0;LINKAGE=A

[3] AAIJ 15AB reports $[m_{B_J^0} - m_{B^+}] - m_{\pi^-} = 575 \pm 6 \pm 5$ MeV which we adjust by the π^- mass. The masses inside the square brackets were measured for each candidate event. The result assumes $P = (-1)^J$ and uses three relativistic Breit-Wigner functions in the fit for mass difference.

NODE=M248DM0;LINKAGE=C

$m_{B_J(5970)^0} - m_{B^{*+}}$

NODE=M248DM2

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$691.6 \pm 3.7 \pm 5.1$	10k	[1] AAIJ	15AB	LHCB	pp at 7, 8 TeV

[1] AAIJ 15AB reports $[m_{B^0_J} - m_{B^+}] - (m_{B^{*+}} - m_{B^+}) - m_{\pi^-} = 552 \pm 4 \pm 5$ MeV which we adjust by the π^- mass. The masses inside the square brackets were measured for each candidate event. The result assumes $P = -(-1)^J$, $(m_{B^{*+}} - m_{B^+}) = 45.01 \pm 0.30 \pm 0.23$ MeV, and uses three relativistic Breit-Wigner functions in the fit for mass difference.

NODE=M248DM2;LINKAGE=A

$B_J(5970)$ WIDTH

NODE=M248210

$B_J(5970)^+$ WIDTH

NODE=M248W+

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
62±20 OUR AVERAGE					
$63 \pm 15 \pm 17$	2k	[1] AAIJ	15AB	LHCB	pp at 7, 8 TeV
$60^{+30}_{-20} \pm 40$	1.4k	AALTONEN	14I	CDF	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$61 \pm 14 \pm 17$	2k	[2] AAIJ	15AB	LHCB	pp at 7, 8 TeV
$61 \pm 15 \pm 17$	2k	[3] AAIJ	15AB	LHCB	pp at 7, 8 TeV

OCCUR=2
OCCUR=3

[1] Assuming $P = (-1)^J$ and using two relativistic Breit-Wigner functions in the fit for mass difference. NODE=M248W+;LINKAGE=A

[2] Assuming $P = (-1)^J$ and using three relativistic Breit-Wigner functions in the fit for mass difference. NODE=M248W+;LINKAGE=B

[3] Assuming $P = -(-1)^J$ and using three relativistic Breit-Wigner functions in the fit for mass difference. NODE=M248W+;LINKAGE=C

$B_J(5970)^0$ WIDTH

NODE=M248W0

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
81±12 OUR AVERAGE					
$82 \pm 8 \pm 9$	10k	[1] AAIJ	15AB	LHCB	pp at 7, 8 TeV
$70^{+30}_{-20} \pm 30$	2.6k	AALTONEN	14I	CDF	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$56 \pm 7 \pm 9$	10k	[2] AAIJ	15AB	LHCB	pp at 7, 8 TeV
$82 \pm 10 \pm 9$	10k	[3] AAIJ	15AB	LHCB	pp at 7, 8 TeV

OCCUR=2
OCCUR=3

[1] Assuming $P = (-1)^J$ and using two relativistic Breit-Wigner functions in the fit for mass difference. NODE=M248W0;LINKAGE=A

[2] Assuming $P = (-1)^J$ and using three relativistic Breit-Wigner functions in the fit for mass difference. NODE=M248W0;LINKAGE=B

[3] Assuming $P = -(-1)^J$ and using three relativistic Breit-Wigner functions in the fit for mass difference. NODE=M248W0;LINKAGE=C

$B_J(5970)$ DECAY MODES

NODE=M248215;NODE=M248

	Mode	Fraction (Γ_i/Γ)	
Γ_1	$B\pi$	possibly seen	DESIG=1
Γ_2	$B^*\pi$	seen	DESIG=2

$B_J(5970)$ BRANCHING RATIOS

NODE=M248220

$\Gamma(B\pi)/\Gamma_{total}$ — Γ_1/Γ

NODE=M248R01

VALUE	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
possibly seen	2k	[1] AAIJ	15AB	LHCB	$\pm$	pp at 7, 8 TeV
possibly seen	10k	[1] AAIJ	15AB	LHCB	0	pp at 7, 8 TeV
possibly seen	2.6k	AALTONEN	14I	CDF	0	$p\overline{p}$ at 1.96 TeV
possibly seen	1.4k	AALTONEN	14I	CDF	$\pm$	$p\overline{p}$ at 1.96 TeV

OCCUR=2
OCCUR=2

[1] A $B\pi$ decay is forbidden from a $P = -(-1)^J$ parent, whereas $B^*\pi$ is allowed. NODE=M248R01;LINKAGE=A

$\Gamma(B^*\pi)/\Gamma_{total}$ — Γ_2/Γ

NODE=M248R02

VALUE	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
seen	10k	AAIJ	15AB	LHCB	0	pp at 7, 8 TeV
seen	2k	AAIJ	15AB	LHCB	$\pm$	pp at 7, 8 TeV
seen	2.6k	AALTONEN	14I	CDF	0	$p\overline{p}$ at 1.96 TeV
seen	1.4k	AALTONEN	14I	CDF	$\pm$	$p\overline{p}$ at 1.96 TeV

OCCUR=2
OCCUR=2

$B_J(5970)$ REFERENCES

NODE=M248

AAIJ 15AB JHEP 1504 024 R. Aaij *et al.* (LHCb Collab.) REFID=56628

AALTONEN 14I PR D90 012013 T. Aaltonen *et al.* (CDF Collab.) REFID=56029