$B^{\pm}$

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

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.

$B^{\pm}$ MASS

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.

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
5279.0±0.5 OUR FIT					
5279.1±0.5 OUR AVERAGE					
5279.1±0.4 ±0.4	526	[1] CSORNA	00	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
5279.1±1.7 ±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±0.54±2.0	362	ALAM	94	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
5278.3±0.4 ±2.0		BORTOLETTO	92	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$
5280.5±1.0 ±2.0		[2] ALBRECHT	90J	ARG	$e^+e^- \rightarrow \Upsilon(4S)$
5275.8±1.3 ±3.0	32	ALBRECHT	87C	ARG	$e^+e^- \rightarrow \Upsilon(4S)$
5278.2±1.8 ±3.0	12	[3] ALBRECHT	87D	ARG	$e^+e^- \rightarrow \Upsilon(4S)$
5278.6±0.8 ±2.0		BEBEK	87	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$

[1] CSORNA 00 uses fully reconstructed 526 $B^+ \rightarrow J/\psi^{(\prime)} K^+$ events and invariant masses without beam constraint.

[2] ALBRECHT 90J assumes 10580 for $\Upsilon(4S)$ mass. Supersedes ALBRECHT 87C and ALBRECHT 87D.

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

$B^{\pm}$ MEAN LIFE

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.

"OUR EVALUATION" is an average using rescaled values of the data listed below. The average and rescaling were performed by the Heavy Flavor Averaging Group (HFAG) and are described at http://www.slac.stanford.edu/xorg/hfag/. The averaging/rescaling procedure takes into account corrections between the measurements and asymmetric lifetime errors.

VALUE (10^{-12} s)	EVTS	DOCUMENT ID		TECN	COMMENT
1.671±0.018 OUR EVALUATION					
1.695±0.026±0.015		[4] ABE	02H	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
1.636±0.058±0.025		[5] ACOSTA	02C	CDF	$p\overline{p}$ at 1.8 TeV
1.673±0.032±0.023		[4] AUBERT	01F	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
1.648±0.049±0.035		[6] BARATE	00R	ALEP	$e^+e^- \rightarrow Z$
1.643±0.037±0.025		[7] ABBIENDI	99J	OPAL	$e^+e^- \rightarrow Z$
$1.637\pm0.058^{+0.045}_{-0.043}$		[6] ABE	98Q	CDF	$p\overline{p}$ at 1.8 TeV

1.66 ±0.06 ±0.03		[7] ACCIARRI	98S	L3	$e^+e^- \to Z$
1.66 ±0.06 ±0.05		[7] ABE	97J	SLD	$e^+e^- \to Z$
1.58 $^{+0.21}_{-0.18}$ $^{+0.04}_{-0.03}$	94	[5] BUSKULIC	96J	ALEP	$e^+e^- \to Z$
1.61 ±0.16 ±0.12		[6,8] ABREU	95Q	DLPH	$e^+e^- \to Z$
1.72 ±0.08 ±0.06		[9] ADAM	95	DLPH	$e^+e^- \to Z$
1.52 ±0.14 ±0.09		[6] AKERS	95T	OPAL	$e^+e^- \to Z$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.68 ±0.07 ±0.02		[5] ABE	98B	CDF	Repl. by ACOSTA 02C
1.56 ±0.13 ±0.06		[6] ABE	96C	CDF	Repl. by ABE 98Q
1.58 ±0.09 ±0.03		[10] BUSKULIC	96J	ALEP	$e^+e^- \to Z$
1.58 ±0.09 ±0.04		[6] BUSKULIC	96J	ALEP	Repl. by BARATE 00R
1.70 ±0.09		[11] ADAM	95	DLPH	$e^+e^- \to Z$
1.61 ±0.16 ±0.05	148	[5] ABE	94D	CDF	Repl. by ABE 98B
1.30 $^{+0.33}_{-0.29}$ ±0.16	92	[6] ABREU	93D	DLPH	Sup. by ABREU 95Q
1.56 ±0.19 ±0.13	134	[9] ABREU	93G	DLPH	Sup. by ADAM 95
1.51 $^{+0.30}_{-0.28}$ $^{+0.12}_{-0.14}$	59	[6] ACTON	93C	OPAL	Sup. by AKERS 95T
1.47 $^{+0.22}_{-0.19}$ $^{+0.15}_{-0.14}$	77	[6] BUSKULIC	93D	ALEP	Sup. by BUSKULIC 96J

[4] Events are selected in which one B meson is fully reconstructed while the second B meson is reconstructed inclusively.
[5] Measured mean life using fully reconstructed decays.
[6] Data analyzed using $D\,/\,D^*\,\ell X$ event vertices.
[7] Data analyzed using charge of secondary vertex.
[8] ABREU 95Q assumes B($B^0 \to D^{**-}\ell^+\nu_\ell$) = 3.2 ± 1.7%.
[9] Data analyzed using vertex-charge technique to tag B charge.
[10] Combined result of $D/D^*\ell X$ analysis and fully reconstructed B analysis.
[11] Combined ABREU 95Q and ADAM 95 result.

B^+ DECAY MODES

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.

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., $B \to D^\pm$ anything, 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

Γ_1	$\ell^+ \nu_\ell$ anything	[a]	(10.2 ± 0.9) %	
Γ_2	$\overline{D}^0 \ell^+ \nu_\ell$	[a]	(2.15 ± 0.22) %	
Γ_3	$\overline{D}^*(2007)^0 \ell^+ \nu_\ell$	[a]	(6.5 ± 0.5) %	
Γ_4	$\overline{D}_1(2420)^0 \ell^+ \nu_\ell$		$(5.6 \pm 1.6) \times 10^{-3}$	
Γ_5	$\overline{D}_2^*(2460)^0 \ell^+ \nu_\ell$		$< 8 \times 10^{-3}$	CL=90%
Γ_6	$\pi^0 e^+ \nu_e$		$(9.0 \pm 2.8) \times 10^{-5}$	
Γ_7	$\eta \ell^+ \nu_\ell$		$(8 \pm 4) \times 10^{-5}$	
Γ_8	$\omega \ell^+ \nu_\ell$	[a]	$< 2.1 \times 10^{-4}$	CL=90%
Γ_9	$\omega \mu^+ \nu_\mu$			
Γ_{10}	$\rho^0 \ell^+ \nu_\ell$	[a]	$(1.34^{+0.32}_{-0.35}) \times 10^{-4}$	
Γ_{11}	$p \overline{p} e^+ \nu_e$		$< 5.2 \times 10^{-3}$	CL=90%
Γ_{12}	$e^+ \nu_e$		$< 1.5 \times 10^{-5}$	CL=90%
Γ_{13}	$\mu^+ \nu_\mu$		$< 2.1 \times 10^{-5}$	CL=90%
Γ_{14}	$\tau^+ \nu_\tau$		$< 5.7 \times 10^{-4}$	CL=90%
Γ_{15}	$e^+ \nu_e \gamma$		$< 2.0 \times 10^{-4}$	CL=90%
Γ_{16}	$\mu^+ \nu_\mu \gamma$		$< 5.2 \times 10^{-5}$	CL=90%

D, *D**, or D_s modes

Γ_{17}	$\overline{D}^0 \pi^+$		$(4.98 \pm 0.29) \times 10^{-3}$	
Γ_{18}	$D_{CP(+1)} \pi^+$	[b]		
Γ_{19}	$D_{CP(-1)} \pi^+$	[b]		
Γ_{20}	$\overline{D}^0 \rho^+$		(1.34 ± 0.18) %	
Γ_{21}	$\overline{D}^0 K^+$		$(3.7 \pm 0.6) \times 10^{-4}$	S=1.1
Γ_{22}	$D_{CP(+1)} K^+$	[b]		
Γ_{23}	$D_{CP(-1)} K^+$	[b]		
Γ_{24}	$\overline{D}^0 K^*(892)^+$		$(6.1 \pm 2.3) \times 10^{-4}$	
Γ_{25}	$\overline{D}^0 K^+ \overline{K}^0$		$(5.5 \pm 1.6) \times 10^{-4}$	
Γ_{26}	$\overline{D}^0 K^+ \overline{K}^*(892)^0$		$(7.5 \pm 1.7) \times 10^{-4}$	
Γ_{27}	$\overline{D}^0 \pi^+ \pi^+ \pi^-$		(1.1 ± 0.4) %	
Γ_{28}	$\overline{D}^0 \pi^+ \pi^+ \pi^-$ nonresonant		$(5 \pm 4) \times 10^{-3}$	
Γ_{29}	$\overline{D}^0 \pi^+ \rho^0$		$(4.2 \pm 3.0) \times 10^{-3}$	
Γ_{30}	$\overline{D}^0 a_1(1260)^+$		$(5 \pm 4) \times 10^{-3}$	
Γ_{31}	$\overline{D}^0 \omega \pi^+$		$(4.1 \pm 0.9) \times 10^{-3}$	
Γ_{32}	$D^*(2010)^- \pi^+ \pi^+$		$(2.1 \pm 0.6) \times 10^{-3}$	
Γ_{33}	$D^- \pi^+ \pi^+$		$< 1.4 \times 10^{-3}$	CL=90%
Γ_{34}	$\overline{D}^*(2007)^0 \pi^+$		$(4.6 \pm 0.4) \times 10^{-3}$	
Γ_{35}	$\overline{D}^*(2007)^0 \omega \pi^+$		$(4.5 \pm 1.2) \times 10^{-3}$	
Γ_{36}	$\overline{D}^*(2007)^0 \rho^+$		$(9.8 \pm 1.7) \times 10^{-3}$	
Γ_{37}	$\overline{D}^*(2007)^0 K^+$		$(3.6 \pm 1.0) \times 10^{-4}$	
Γ_{38}	$\overline{D}^*(2007)^0 K^*(892)^+$		$(7.2 \pm 3.4) \times 10^{-4}$	
Γ_{39}	$\overline{D}^*(2007)^0 K^+ \overline{K}^0$		$< 1.06 \times 10^{-3}$	CL=90%
Γ_{40}	$\overline{D}^*(2007)^0 K^+ K^*(892)^0$		$(1.5 \pm 0.4) \times 10^{-3}$	

Γ_{41}	$\overline{D}^*(2007)^0 \pi^+ \pi^+ \pi^-$	$(9.4 \pm 2.6) \times 10^{-3}$	
Γ_{42}	$\quad \overline{D}^*(2007)^0 a_1(1260)^+$	(1.9 ± 0.5) %	
Γ_{43}	$\overline{D}^*(2007)^0 \pi^- \pi^+ \pi^+ \pi^0$	(1.8 ± 0.4) %	
Γ_{44}	$D^*(2010)^+ \pi^0$	$< 1.7 \times 10^{-4}$	CL=90%
Γ_{45}	$\overline{D}^*(2010)^+ K^0$	$< 9.5 \times 10^{-5}$	CL=90%
Γ_{46}	$D^*(2010)^- \pi^+ \pi^+ \pi^0$	(1.5 ± 0.7) %	
Γ_{47}	$D^*(2010)^- \pi^+ \pi^+ \pi^+ \pi^-$	< 1 %	CL=90%
Γ_{48}	$\overline{D}_1^*(2420)^0 \pi^+$	$(1.5 \pm 0.6) \times 10^{-3}$	S=1.3
Γ_{49}	$\overline{D}_1^*(2420)^0 \rho^+$	$< 1.4 \times 10^{-3}$	CL=90%
Γ_{50}	$\overline{D}_2^*(2460)^0 \pi^+$	$< 1.3 \times 10^{-3}$	CL=90%
Γ_{51}	$\overline{D}_2^*(2460)^0 \rho^+$	$< 4.7 \times 10^{-3}$	CL=90%
Γ_{52}	$\overline{D}^0 D_s^+$	(1.3 ± 0.4) %	
Γ_{53}	$\overline{D}^0 D_{sJ}(2317)^+$	seen	
Γ_{54}	$\overline{D}^0 D_{sJ}(2457)^+$	seen	
Γ_{55}	$\overline{D}^0 D_{sJ}(2536)^+$	not seen	
Γ_{56}	$\overline{D}^*(2007)^0 D_{sJ}(2536)^+$	not seen	
Γ_{57}	$\overline{D}^0 D_{sJ}(2573)^+$	not seen	
Γ_{58}	$\overline{D}^*(2007)^0 D_{sJ}(2573)^+$	not seen	
Γ_{59}	$\overline{D}^0 D_s^{*+}$	$(9 \pm 4) \times 10^{-3}$	
Γ_{60}	$\overline{D}^*(2007)^0 D_s^+$	(1.2 ± 0.5) %	
Γ_{61}	$\overline{D}^*(2007)^0 D_s^{*+}$	(2.7 ± 1.0) %	
Γ_{62}	$D_s^{(*)+} \overline{D}^{**0}$	(2.7 ± 1.2) %	
Γ_{63}	$\overline{D}^*(2007)^0 D^*(2010)^+$	< 1.1 %	CL=90%
Γ_{64}	$\overline{D}^0 D^*(2010)^+ + \overline{D}^*(2007)^0 D^+$	< 1.3 %	CL=90%
Γ_{65}	$\overline{D}^0 D^+$	$< 6.7 \times 10^{-3}$	CL=90%
Γ_{66}	$\overline{D}^0 D^+ K^0$	$< 2.8 \times 10^{-3}$	CL=90%
Γ_{67}	$\overline{D}^*(2007)^0 D^+ K^0$	$< 6.1 \times 10^{-3}$	CL=90%
Γ_{68}	$\overline{D}^0 \overline{D}^*(2010)^+ K^0$	$(5.2 \pm 1.2) \times 10^{-3}$	
Γ_{69}	$\overline{D}^*(2007)^0 D^*(2010)^+ K^0$	$(7.8 \pm 2.6) \times 10^{-3}$	
Γ_{70}	$\overline{D}^0 D^0 K^+$	$(1.9 \pm 0.4) \times 10^{-3}$	
Γ_{71}	$\overline{D}^*(2010)^0 D^0 K^+$	$< 3.8 \times 10^{-3}$	CL=90%
Γ_{72}	$\overline{D}^0 D^*(2007)^0 K^+$	$(4.7 \pm 1.0) \times 10^{-3}$	
Γ_{73}	$\overline{D}^*(2007)^0 D^*(2007)^0 K^+$	$(5.3 \pm 1.6) \times 10^{-3}$	
Γ_{74}	$D^- D^+ K^+$	$< 4 \times 10^{-4}$	CL=90%
Γ_{75}	$D^- D^*(2010)^+ K^+$	$< 7 \times 10^{-4}$	CL=90%
Γ_{76}	$D^*(2010)^- D^+ K^+$	$(1.5 \pm 0.4) \times 10^{-3}$	
Γ_{77}	$D^*(2010)^- D^*(2010)^+ K^+$	$< 1.8 \times 10^{-3}$	CL=90%
Γ_{78}	$(\overline{D}+\overline{D}^*)(D+D^*)K$	(3.5 ± 0.6) %	
Γ_{79}	$D_s^+ \pi^0$	$< 2.0 \times 10^{-4}$	CL=90%
Γ_{80}	$D_s^{*+} \pi^0$	$< 3.3 \times 10^{-4}$	CL=90%
Γ_{81}	$D_s^+ \eta$	$< 5 \times 10^{-4}$	CL=90%
Γ_{82}	$D_s^{*+} \eta$	$< 8 \times 10^{-4}$	CL=90%

Γ_{83}	$D_s^+ \rho^0$	$<$ 4	$\times 10^{-4}$	CL=90%
Γ_{84}	$D_s^{*+} \rho^0$	$<$ 5	$\times 10^{-4}$	CL=90%
Γ_{85}	$D_s^+ \omega$	$<$ 5	$\times 10^{-4}$	CL=90%
Γ_{86}	$D_s^{*+} \omega$	$<$ 7	$\times 10^{-4}$	CL=90%
Γ_{87}	$D_s^+ a_1(1260)^0$	$<$ 2.2	$\times 10^{-3}$	CL=90%
Γ_{88}	$D_s^{*+} a_1(1260)^0$	$<$ 1.6	$\times 10^{-3}$	CL=90%
Γ_{89}	$D_s^+ \phi$	$<$ 3.2	$\times 10^{-4}$	CL=90%
Γ_{90}	$D_s^{*+} \phi$	$<$ 4	$\times 10^{-4}$	CL=90%
Γ_{91}	$D_s^+ \overline{K}^0$	$<$ 1.1	$\times 10^{-3}$	CL=90%
Γ_{92}	$D_s^{*+} \overline{K}^0$	$<$ 1.1	$\times 10^{-3}$	CL=90%
Γ_{93}	$D_s^+ \overline{K}^*(892)^0$	$<$ 5	$\times 10^{-4}$	CL=90%
Γ_{94}	$D_s^{*+} \overline{K}^*(892)^0$	$<$ 4	$\times 10^{-4}$	CL=90%
Γ_{95}	$D_s^- \pi^+ K^+$	$<$ 8	$\times 10^{-4}$	CL=90%
Γ_{96}	$D_s^{*-} \pi^+ K^+$	$<$ 1.2	$\times 10^{-3}$	CL=90%
Γ_{97}	$D_s^- \pi^+ K^*(892)^+$	$<$ 6	$\times 10^{-3}$	CL=90%
Γ_{98}	$D_s^{*-} \pi^+ K^*(892)^+$	$<$ 8	$\times 10^{-3}$	CL=90%

Charmonium modes

Γ_{99}	$\eta_c K^+$	(9.0 $\pm$2.7)	$\times 10^{-4}$	
Γ_{100}	$J/\psi(1S) K^+$	(1.00$\pm$0.04)	$\times 10^{-3}$	
Γ_{101}	$J/\psi(1S) K^+ \pi^+ \pi^-$	(7.7 $\pm$2.0)	$\times 10^{-4}$	
Γ_{102}	$X(3872) K^+$	seen		
Γ_{103}	$J/\psi(1S) K^*(892)^+$	(1.35$\pm$0.10)	$\times 10^{-3}$	
Γ_{104}	$J/\psi(1S) K(1270)^+$	(1.8 $\pm$0.5)	$\times 10^{-3}$	
Γ_{105}	$J/\psi(1S) K(1400)^+$	$<$ 5	$\times 10^{-4}$	CL=90%
Γ_{106}	$J/\psi(1S) \phi K^+$	(5.2 $\pm$1.7)	$\times 10^{-5}$	S=1.2
Γ_{107}	$J/\psi(1S) \pi^+$	(4.0 $\pm$0.5)	$\times 10^{-5}$	
Γ_{108}	$J/\psi(1S) \rho^+$	$<$ 7.7	$\times 10^{-4}$	CL=90%
Γ_{109}	$J/\psi(1S) a_1(1260)^+$	$<$ 1.2	$\times 10^{-3}$	CL=90%
Γ_{110}	$J/\psi(1S) p \overline{\Lambda}$	(1.2 $^{+0.9}_{-0.6}$)	$\times 10^{-5}$	
Γ_{111}	$\psi(2S) K^+$	(6.8 $\pm$0.4)	$\times 10^{-4}$	
Γ_{112}	$\psi(2S) K^*(892)^+$	(9.2 $\pm$2.2)	$\times 10^{-4}$	
Γ_{113}	$\psi(2S) K^+ \pi^+ \pi^-$	(1.9 $\pm$1.2)	$\times 10^{-3}$	
Γ_{114}	$\chi_{c0}(1P) K^+$	(6.0 $^{+2.4}_{-2.1}$)	$\times 10^{-4}$	
Γ_{115}	$\chi_{c1}(1P) K^+$	(6.8 $\pm$1.2)	$\times 10^{-4}$	
Γ_{116}	$\chi_{c1}(1P) K^*(892)^+$	$<$ 2.1	$\times 10^{-3}$	CL=90%

K or *K** modes

Γ_{117}	$K^0 \pi^+$	(1.88$\pm$0.21)	$\times 10^{-5}$	
Γ_{118}	$K^+ \pi^0$	(1.29$\pm$0.12)	$\times 10^{-5}$	
Γ_{119}	$\eta' K^+$	(7.8 $\pm$0.5)	$\times 10^{-5}$	
Γ_{120}	$\eta' K^*(892)^+$	$<$ 3.5	$\times 10^{-5}$	CL=90%

Γ_{121}	ηK^+	$< 6.9 \times 10^{-6}$	CL=90%
Γ_{122}	$\eta K^*(892)^+$	$(2.6 {}^{+1.0}_{-0.9}) \times 10^{-5}$	
Γ_{123}	ωK^+	$(9.2 {}^{+2.8}_{-2.5}) \times 10^{-6}$	
Γ_{124}	$\omega K^*(892)^+$	$< 8.7 \times 10^{-5}$	CL=90%
Γ_{125}	$K^*(892)^0 \pi^+$	$(1.9 {}^{+0.6}_{-0.8}) \times 10^{-5}$	
Γ_{126}	$K^*(892)^+ \pi^0$	$< 3.1 \times 10^{-5}$	CL=90%
Γ_{127}	$K^+ \pi^- \pi^+$	$(5.7 \pm 0.4) \times 10^{-5}$	
Γ_{128}	$K^+ \pi^- \pi^+$ nonresonant	$< 2.8 \times 10^{-5}$	CL=90%
Γ_{129}	$K^+ f_0(980)$		
Γ_{130}	$K^+ \rho^0$	$< 1.2 \times 10^{-5}$	CL=90%
Γ_{131}	$K_2^*(1430)^0 \pi^+$	$< 6.8 \times 10^{-4}$	CL=90%
Γ_{132}	$K^- \pi^+ \pi^+$	$< 1.8 \times 10^{-6}$	CL=90%
Γ_{133}	$K^- \pi^+ \pi^+$ nonresonant	$< 5.6 \times 10^{-5}$	CL=90%
Γ_{134}	$K_1(1400)^0 \pi^+$	$< 2.6 \times 10^{-3}$	CL=90%
Γ_{135}	$K^0 \pi^+ \pi^0$	$< 6.6 \times 10^{-5}$	CL=90%
Γ_{136}	$K^0 \rho^+$	$< 4.8 \times 10^{-5}$	CL=90%
Γ_{137}	$K^*(892)^+ \pi^+ \pi^-$	$< 1.1 \times 10^{-3}$	CL=90%
Γ_{138}	$K^*(892)^+ \rho^0$	$(1.1 \pm 0.4) \times 10^{-5}$	
Γ_{139}	$K^*(892)^+ K^*(892)^0$	$< 7.1 \times 10^{-5}$	CL=90%
Γ_{140}	$K_1(1400)^+ \rho^0$	$< 7.8 \times 10^{-4}$	CL=90%
Γ_{141}	$K_2^*(1430)^+ \rho^0$	$< 1.5 \times 10^{-3}$	CL=90%
Γ_{142}	$K^+ \overline{K}^0$	$< 2.0 \times 10^{-6}$	CL=90%
Γ_{143}	$\overline{K}^0 K^+ \pi^0$	$< 2.4 \times 10^{-5}$	CL=90%
Γ_{144}	$K^+ K_S^0 K_S^0$	$(1.34 \pm 0.24) \times 10^{-5}$	
Γ_{145}	$K_S^0 K_S^0 \pi^+$	$< 3.2 \times 10^{-6}$	CL=90%
Γ_{146}	$K^+ K^- \pi^+$	$< 6.3 \times 10^{-6}$	CL=90%
Γ_{147}	$K^+ K^- \pi^+$ nonresonant	$< 7.5 \times 10^{-5}$	CL=90%
Γ_{148}	$K^+ K^+ \pi^-$	$< 1.3 \times 10^{-6}$	CL=90%
Γ_{149}	$K^+ K^+ \pi^-$ nonresonant	$< 8.79 \times 10^{-5}$	CL=90%
Γ_{150}	$K^+ K^*(892)^0$	$< 5.3 \times 10^{-6}$	CL=90%
Γ_{151}	$K^+ f_J(2220)$		
Γ_{152}	$K^+ K^- K^+$	$(3.08 \pm 0.21) \times 10^{-5}$	
Γ_{153}	$K^+ \phi$	$(9.3 \pm 1.0) \times 10^{-6}$	S=1.3
Γ_{154}	$K^+ K^- K^+$ nonresonant	$< 3.8 \times 10^{-5}$	CL=90%
Γ_{155}	$K^*(892)^+ K^+ K^-$	$< 1.6 \times 10^{-3}$	CL=90%
Γ_{156}	$K^*(892)^+ \phi$	$(9.6 \pm 3.0) \times 10^{-6}$	S=1.9
Γ_{157}	$K_1(1400)^+ \phi$	$< 1.1 \times 10^{-3}$	CL=90%
Γ_{158}	$K_2^*(1430)^+ \phi$	$< 3.4 \times 10^{-3}$	CL=90%
Γ_{159}	$K^+ \phi \phi$	$(2.6 {}^{+1.1}_{-0.9}) \times 10^{-6}$	
Γ_{160}	$K^*(892)^+ \gamma$	$(3.8 \pm 0.5) \times 10^{-5}$	
Γ_{161}	$K_1(1270)^+ \gamma$	$< 9.9 \times 10^{-5}$	CL=90%

Γ_{162}	$\phi K^+ \gamma$	$(3.4 \pm 1.0) \times 10^{-6}$		
Γ_{163}	$K^+ \pi^- \pi^+ \gamma$	$(2.4 {}^{+0.6}_{-0.5}) \times 10^{-5}$		
Γ_{164}	$K^*(892)^0 \pi^+ \gamma$	$(2.0 {}^{+0.7}_{-0.6}) \times 10^{-5}$		
Γ_{165}	$K^+ \rho^0 \gamma$	$< 2.0 \times 10^{-5}$	CL=90%	
Γ_{166}	$K^+ \pi^- \pi^+ \gamma$ nonresonant	$< 9.2 \times 10^{-6}$	CL=90%	
Γ_{167}	$K_1(1400)^+ \gamma$	$< 5.0 \times 10^{-5}$	CL=90%	
Γ_{168}	$K_2^*(1430)^+ \gamma$	$< 1.4 \times 10^{-3}$	CL=90%	
Γ_{169}	$K^*(1680)^+ \gamma$	$< 1.9 \times 10^{-3}$	CL=90%	
Γ_{170}	$K_3^*(1780)^+ \gamma$	$< 5.5 \times 10^{-3}$	CL=90%	
Γ_{171}	$K_4^*(2045)^+ \gamma$	$< 9.9 \times 10^{-3}$	CL=90%	

Light unflavored meson modes

Γ_{172}	$\rho^+ \gamma$	$< 2.1 \times 10^{-6}$	CL=90%
Γ_{173}	$\pi^+ \pi^0$	$(5.6 {}^{+0.9}_{-1.1}) \times 10^{-6}$	
Γ_{174}	$\pi^+ \pi^+ \pi^-$	$(1.1 \pm 0.4) \times 10^{-5}$	
Γ_{175}	$\rho^0 \pi^+$	$(8.6 \pm 2.0) \times 10^{-6}$	
Γ_{176}	$\pi^+ f_0(980)$	$< 1.4 \times 10^{-4}$	CL=90%
Γ_{177}	$\pi^+ f_2(1270)$	$< 2.4 \times 10^{-4}$	CL=90%
Γ_{178}	$\pi^+ \pi^- \pi^+$ nonresonant	$< 4.1 \times 10^{-5}$	CL=90%
Γ_{179}	$\pi^+ \pi^0 \pi^0$	$< 8.9 \times 10^{-4}$	CL=90%
Γ_{180}	$\rho^+ \pi^0$	$< 4.3 \times 10^{-5}$	CL=90%
Γ_{181}	$\pi^+ \pi^- \pi^+ \pi^0$	$< 4.0 \times 10^{-3}$	CL=90%
Γ_{182}	$\rho^+ \rho^0$	$(2.6 \pm 0.6) \times 10^{-5}$	
Γ_{183}	$a_1(1260)^+ \pi^0$	$< 1.7 \times 10^{-3}$	CL=90%
Γ_{184}	$a_1(1260)^0 \pi^+$	$< 9.0 \times 10^{-4}$	CL=90%
Γ_{185}	$\omega \pi^+$	$(6.4 {}^{+1.8}_{-1.6}) \times 10^{-6}$	S=1.3
Γ_{186}	$\omega \rho^+$	$< 6.1 \times 10^{-5}$	CL=90%
Γ_{187}	$\eta \pi^+$	$< 5.7 \times 10^{-6}$	CL=90%
Γ_{188}	$\eta' \pi^+$	$< 7.0 \times 10^{-6}$	CL=90%
Γ_{189}	$\eta' \rho^+$	$< 3.3 \times 10^{-5}$	CL=90%
Γ_{190}	$\eta \rho^+$	$< 1.5 \times 10^{-5}$	CL=90%
Γ_{191}	$\phi \pi^+$	$< 4.1 \times 10^{-7}$	CL=90%
Γ_{192}	$\phi \rho^+$	$< 1.6 \times 10^{-5}$	
Γ_{193}	$\pi^+ \pi^+ \pi^+ \pi^- \pi^-$	$< 8.6 \times 10^{-4}$	CL=90%
Γ_{194}	$\rho^0 a_1(1260)^+$	$< 6.2 \times 10^{-4}$	CL=90%
Γ_{195}	$\rho^0 a_2(1320)^+$	$< 7.2 \times 10^{-4}$	CL=90%
Γ_{196}	$\pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^0$	$< 6.3 \times 10^{-3}$	CL=90%
Γ_{197}	$a_1(1260)^+ a_1(1260)^0$	< 1.3 %	CL=90%

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

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

Γ_{198}	$h^+ \pi^0$			$(1.6 \, ^{+0.7}_{-0.6}) \times 10^{-5}$	
Γ_{199}	ωh^+			$(1.38 \, ^{+0.27}_{-0.24}) \times 10^{-5}$	
Γ_{200}	$h^+ X^0$ (Familon)			$< 4.9 \times 10^{-5}$	CL=90%

Baryon modes

Γ_{201}	$p \overline{p} \pi^+$			$< 3.7 \times 10^{-6}$	CL=90%
Γ_{202}	$p \overline{p} \pi^+$ nonresonant			$< 5.3 \times 10^{-5}$	CL=90%
Γ_{203}	$p \overline{p} \pi^+ \pi^+ \pi^-$			$< 5.2 \times 10^{-4}$	CL=90%
Γ_{204}	$p \overline{p} K^+$			$(4.3 \, ^{+1.2}_{-1.0}) \times 10^{-6}$	
Γ_{205}	$p \overline{p} K^+$ nonresonant			$< 8.9 \times 10^{-5}$	CL=90%
Γ_{206}	$p \overline{\Lambda}$			$< 1.5 \times 10^{-6}$	CL=90%
Γ_{207}	$p \overline{\Lambda} \gamma$				
Γ_{208}	$p \overline{\Sigma} \gamma$				
Γ_{209}	$p \overline{\Lambda} \pi^+ \pi^-$			$< 2.0 \times 10^{-4}$	CL=90%
Γ_{210}	$\overline{\Delta}^0 p$			$< 3.8 \times 10^{-4}$	CL=90%
Γ_{211}	$\Delta^{++} \overline{p}$			$< 1.5 \times 10^{-4}$	CL=90%
Γ_{212}	$D^+ p \overline{p}$			$< 1.5 \times 10^{-5}$	CL=90%
Γ_{213}	$D^*(2010)^+ p \overline{p}$			$< 1.5 \times 10^{-5}$	CL=90%
Γ_{214}	$\overline{\Lambda}_c^- p \pi^+$			$(2.1 \pm 0.7) \times 10^{-4}$	
Γ_{215}	$\overline{\Lambda}_c^- p \pi^+ \pi^0$			$(1.8 \pm 0.6) \times 10^{-3}$	
Γ_{216}	$\overline{\Lambda}_c^- p \pi^+ \pi^+ \pi^-$			$(2.3 \pm 0.7) \times 10^{-3}$	
Γ_{217}	$\overline{\Lambda}_c^- p \pi^+ \pi^+ \pi^- \pi^0$			< 1.34 %	CL=90%
Γ_{218}	$\overline{\Sigma}_c(2455)^0 p$			$< 8 \times 10^{-5}$	CL=90%
Γ_{219}	$\overline{\Sigma}_c(2520)^0 p$			$< 4.6 \times 10^{-5}$	CL=90%
Γ_{220}	$\overline{\Sigma}_c(2455)^0 p \pi^0$			$(4.4 \pm 1.8) \times 10^{-4}$	
Γ_{221}	$\overline{\Sigma}_c(2455)^0 p \pi^- \pi^+$			$(4.4 \pm 1.7) \times 10^{-4}$	
Γ_{222}	$\overline{\Sigma}_c(2455)^{--} p \pi^+ \pi^+$			$(2.8 \pm 1.2) \times 10^{-4}$	
Γ_{223}	$\overline{\Lambda}_c(2593)^- / \overline{\Lambda}_c(2625)^- p \pi^+$			$< 1.9 \times 10^{-4}$	CL=90%

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

Γ_{224}	$\pi^+ e^+ e^-$	*B1*		$< 3.9 \times 10^{-3}$	CL=90%
Γ_{225}	$\pi^+ \mu^+ \mu^-$	*B1*		$< 9.1 \times 10^{-3}$	CL=90%
Γ_{226}	$K^+ e^+ e^-$	*B1*		$(6.3 \, ^{+1.9}_{-1.7}) \times 10^{-7}$	
Γ_{227}	$K^+ \mu^+ \mu^-$	*B1*		$(4.5 \, ^{+1.4}_{-1.2}) \times 10^{-7}$	
Γ_{228}	$K^+ \ell^+ \ell^-$	*B1*	[a]	$(5.3 \pm 1.1) \times 10^{-7}$	
Γ_{229}	$K^+ \overline{\nu} \nu$	*B1*		$< 2.4 \times 10^{-4}$	CL=90%
Γ_{230}	$K^*(892)^+ e^+ e^-$	*B1*		$< 4.6 \times 10^{-6}$	CL=90%
Γ_{231}	$K^*(892)^+ \mu^+ \mu^-$	*B1*		$< 2.2 \times 10^{-6}$	CL=90%

Γ_{232}	$K^*(892)^+ \ell^+ \ell$	B1	[a] $<$	2.2	$\times 10^{-6}$	CL=90%
Γ_{233}	$\pi^+ e^+ \mu^-$	LF	$<$	6.4	$\times 10^{-3}$	CL=90%
Γ_{234}	$\pi^+ e^- \mu^+$	LF	$<$	6.4	$\times 10^{-3}$	CL=90%
Γ_{235}	$K^+ e^+ \mu^-$	LF	$<$	8	$\times 10^{-7}$	CL=90%
Γ_{236}	$K^+ e^- \mu^+$	LF	$<$	6.4	$\times 10^{-3}$	CL=90%
Γ_{237}	$K^*(892)^+ e^\pm \mu^\mp$	LF	$<$	7.9	$\times 10^{-6}$	CL=90%
Γ_{238}	$\pi^- e^+ e^+$	L	$<$	1.6	$\times 10^{-6}$	CL=90%
Γ_{239}	$\pi^- \mu^+ \mu^+$	L	$<$	1.4	$\times 10^{-6}$	CL=90%
Γ_{240}	$\pi^- e^+ \mu^+$	L	$<$	1.3	$\times 10^{-6}$	CL=90%
Γ_{241}	$\rho^- e^+ e^+$	L	$<$	2.6	$\times 10^{-6}$	CL=90%
Γ_{242}	$\rho^- \mu^+ \mu^+$	L	$<$	5.0	$\times 10^{-6}$	CL=90%
Γ_{243}	$\rho^- e^+ \mu^+$	LF	$<$	3.3	$\times 10^{-6}$	CL=90%
Γ_{244}	$K^- e^+ e^+$	L	$<$	1.0	$\times 10^{-6}$	CL=90%
Γ_{245}	$K^- \mu^+ \mu^+$	L	$<$	1.8	$\times 10^{-6}$	CL=90%
Γ_{246}	$K^- e^+ \mu^+$	L	$<$	2.0	$\times 10^{-6}$	CL=90%
Γ_{247}	$K^*(892)^- e^+ e^+$	L	$<$	2.8	$\times 10^{-6}$	CL=90%
Γ_{248}	$K^*(892)^- \mu^+ \mu^+$	L	$<$	8.3	$\times 10^{-6}$	CL=90%
Γ_{249}	$K^*(892)^- e^+ \mu^+$	LF	$<$	4.4	$\times 10^{-6}$	CL=90%

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

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

CONSTRAINED FIT INFORMATION

An overall fit to 3 branching ratios uses 9 measurements and one constraint to determine 3 parameters. The overall fit has a χ^2 = 1.1 for 7 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, $x_i \equiv \Gamma_i/\Gamma_{\text{total}}$. The fit constrains the x_i whose labels appear in this array to sum to one.

x_{107}	16
	x_{100}

B^+ BRANCHING RATIOS

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

VALUE	DOCUMENT ID		TECN	COMMENT
0.1025±0.0057±0.0065	[12] ARTUSO	97	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.101 ±0.018 ±0.015	ATHANAS	94	CLE2	Sup. by ARTUSO 97

[12] ARTUSO 97 uses partial reconstruction of $B \rightarrow D^* \ell \nu_\ell$ and inclusive semileptonic branching ratio from BARISH 96B (0.1049 ± 0.0017 ± 0.0043).

$\Gamma(\overline{D}^0 \ell^+ \nu_\ell)/\Gamma_{total}$ — Γ_2/Γ

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

VALUE	DOCUMENT ID		TECN	COMMENT
0.0215±0.0022 OUR AVERAGE				
0.0221±0.0013±0.0019	[13] BARTELT	99	CLE2	$e^+e^- \to \Upsilon(4S)$
0.016 ±0.006 ±0.003	[14] FULTON	91	CLEO	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.0194±0.0015±0.0034	[15] ATHANAS	97	CLE2	Repl. by BARTELT 99

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

[14] FULTON 91 assumes equal production of $B^0\overline{B}^0$ and B^+B^- at the $\Upsilon(4S)$.

[15] ATHANAS 97 uses missing energy and missing momentum to reconstruct neutrino.

$\Gamma(\overline{D}^*(2007)^0 \ell^+ \nu_\ell)/\Gamma_{total}$ — Γ_3/Γ

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

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.065 ±0.005 OUR AVERAGE					
0.0650±0.0020±0.0043		[16] ADAM	03	CLE2	$e^+e^- \to \Upsilon(4S)$
0.066 ±0.016 ±0.015		[17] ALBRECHT	92C	ARG	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.0650±0.0020±0.0043		[18] BRIERE	02	CLE2	$e^+e^- \to \Upsilon(4S)$
0.0513±0.0054±0.0064	302	[19] BARISH	95	CLE2	Repl. by ADAM 03
seen	398	[20] SANGHERA	93	CLE2	$e^+e^- \to \Upsilon(4S)$
0.041 ±0.008 $^{+0.008}_{-0.009}$		[21] FULTON	91	CLEO	$e^+e^- \to \Upsilon(4S)$
0.070 ±0.018 ±0.014		[22] ANTREASYAN	90B	CBAL	$e^+e^- \to \Upsilon(4S)$

[16] Simultaneous measurements of both $B^0 \to D^*(2010)^- \ell \nu$ and $B^+ \to \overline{D}(2007)^0 \ell \nu$.

[17] 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 $\Upsilon(4S)$.

[18] The results are based on the same analysis and data sample reported in ADAM 03.

[19] 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)%.

[20] 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.

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

[22] ANTREASYAN 90B is average over B and $\overline{D}^*(2010)$ charge states.

$\Gamma(\overline{D}_1(2420)^0 \ell^+ \nu_\ell)/\Gamma_{total}$ — Γ_4/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
0.0056±0.0013±0.0009	[23] ANASTASSOV	98	CLE2	$e^+e^- \to \Upsilon(4S)$

[23] ANASTASSOV 98 result is derived from the measurement of B($B^+ \to \overline{D}_1^0 \ell^+\nu_\ell$)×B($\overline{D}_1^0 \to D^{*+}\pi^-$) = (0.373 ± 0.085 ± 0.052 ± 0.024)% by assuming B($\overline{D}_1^0 \to D^{*+}\pi^-$) = 67%, where the third error includes theoretical uncertainties.

$\Gamma(\overline{D}_2^*(2460)^0 \ell^+ \nu_\ell)/\Gamma_{total}$ — Γ_5/Γ

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<8 \times 10^{-3}$	90	[24] ANASTASSOV 98	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

[24] ANASTASSOV 98 result is derived from the measurement of B($B^+ \rightarrow \overline{D}_2^{*0} \ell^+ \nu_\ell$)×B($\overline{D}_2^{*0} \rightarrow D^{*+} \pi^-$) $<$ 0.16% at 90% CL by assuming B($\overline{D}_2^{*0} \rightarrow D^{*+} \pi^-$) $=$ 20%.

$\Gamma(\pi^0 e^+ \nu_e)/\Gamma_{total}$ — Γ_6/Γ

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
$0.9 \pm 0.2 \pm 0.2$		[25] ALEXANDER 96T	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<$22	90	ANTREASYAN 90B	CBAL	$e^+ e^- \rightarrow \Upsilon(4S)$

[25] Derived based in the reported B^0 result by assuming isospin symmetry: $\Gamma(B^0 \rightarrow \pi^- \ell^+ \nu) = 2\Gamma(B^+ \rightarrow \pi^0 \ell^+ \nu)$.

$\Gamma(\eta \ell^+ \nu_\ell)/\Gamma_{total}$ — Γ_7/Γ

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
$0.84 \pm 0.31 \pm 0.18$	[26] ATHAR 03	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

[26] ATHAR 03 reports systematic errors 0.16 ± 0.09, which are experimental systematic and systematic due to model dependence. We combine these in quadrature.

$\Gamma(\omega \ell^+ \nu_\ell)/\Gamma_{total}$ — Γ_8/Γ

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

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<2.1 \times 10^{-4}$	90	[27] BEAN 93B	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

[27] 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) $\times 10^{-4}$ at 90% CL for $B^+ \rightarrow \omega \ell^+ \nu_\ell$. 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.

$\Gamma(\omega \mu^+ \nu_\mu)/\Gamma_{total}$ — Γ_9/Γ

VALUE	DOCUMENT ID	TECN
• • • We do not use the following data for averages, fits, limits, etc. • • •		
seen	[28] ALBRECHT 91C	ARG

[28] In ALBRECHT 91C, one event is fully reconstructed providing evidence for the $b \rightarrow u$ transition.

$\Gamma(\rho^0 \ell^+ \nu_\ell)/\Gamma_{total}$ — Γ_{10}/Γ

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

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
$1.34 \pm 0.15 {}^{+0.28}_{-0.32}$		[29] BEHRENS 00	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1.40 \pm 0.21 {}^{+0.32}_{-0.33}$		[29] BEHRENS 00	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
$1.2 \pm 0.2 {}^{+0.3}_{-0.4}$		[29] ALEXANDER 96T	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
$<$2.1	90	[30] BEAN 93B	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

[29] Derived based in the reported B^0 result by assuming isospin symmetry: $\Gamma(B^0 \to \rho^- \ell^+ \nu) = 2\Gamma(B^+ \to \rho^0 \ell^+ \nu) \approx 2\Gamma(B^+ \to \omega \ell^+ \nu)$.

[30] 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 $B^+ \to \rho^0 \ell^+ \nu_\ell$. 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.

$\Gamma(p\overline{p}e^+\nu_e)/\Gamma_{\text{total}}$ — Γ_{11}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5.2 \times 10^{-3}$	90	[31] ADAM	03B	CLE2	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(e^+\nu_e)/\Gamma_{\text{total}}$ — Γ_{12}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.5 \times 10^{-5}$	90	ARTUSO	95	CLE2	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\mu^+\nu_\mu)/\Gamma_{\text{total}}$ — Γ_{13}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.1 \times 10^{-5}$	90	ARTUSO	95	CLE2	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\tau^+\nu_\tau)/\Gamma_{\text{total}}$ — Γ_{14}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5.7 \times 10^{-4}$	90	[32] ACCIARRI	97F	L3	$e^+e^- \to Z$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<8.3 \times 10^{-4}$	90	[33] BARATE	01E	ALEP	$e^+e^- \to Z$
$<8.4 \times 10^{-4}$	90	[34] BROWDER	01	CLE2	$e^+e^- \to \Upsilon(4S)$
$<1.04 \times 10^{-2}$	90	[35] ALBRECHT	95D	ARG	$e^+e^- \to \Upsilon(4S)$
$<2.2 \times 10^{-3}$	90	ARTUSO	95	CLE2	$e^+e^- \to \Upsilon(4S)$
$<1.8 \times 10^{-3}$	90	[36] BUSKULIC	95	ALEP	$e^+e^- \to Z$

[32] ACCIARRI 97F uses missing-energy technique and $f(b \to B^-) = (38.2 \pm 2.5)\%$.

[33] The energy-flow and b-tagging algorithms were used.

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

[35] ALBRECHT 95D use full reconstruction of one B decay as tag.

[36] 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.

$\Gamma(e^+\nu_e\gamma)/\Gamma_{\text{total}}$ — Γ_{15}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.0 \times 10^{-4}$	90	[37] BROWDER	97	CLE2	$e^+e^- \to \Upsilon(4S)$

[37] BROWDER 97 uses the hermiticity of the CLEO II detector to reconstruct the neutrino energy and momentum.

$\Gamma(\mu^+\nu_\mu\gamma)/\Gamma_{\text{total}}$ — Γ_{16}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5.2 \times 10^{-5}$	90	[38] BROWDER	97	CLE2	$e^+e^- \to \Upsilon(4S)$

[38] BROWDER 97 uses the hermiticity of the CLEO II detector to reconstruct the neutrino energy and momentum.

$\Gamma(\overline{D}^0\pi^+)/\Gamma_{total}$ Γ_{17}/Γ

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.00498±0.00029 OUR AVERAGE					
0.00497±0.00012±0.00029		[39,40] AHMED	02B	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
0.0050 ±0.0007 ±0.0006	54	[41] BORTOLETTO	92	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$
0.0054 $^{+0.0018}_{-0.0015}$ $^{+0.0012}_{-0.0009}$	14	[42] BEBEK	87	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.0055 ±0.0004 ±0.0005	304	[43] ALAM	94	CLE2	Repl. by AHMED 02B
0.0020 ±0.0008 ±0.0006	12	[41] ALBRECHT	90J	ARG	$e^+e^- \rightarrow \Upsilon(4S)$
0.0019 ±0.0010 ±0.0006	7	[44] ALBRECHT	88K	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

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

[40] 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.

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

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

[43] 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($D^0 \rightarrow K^-\pi^+\pi^+\pi^-$)/B($D^0 \rightarrow K^-\pi^+$).

[44] ALBRECHT 88K assumes $B^0\overline{B}^0$:B^+B^- ratio is 45:55. Superseded by ALBRECHT 90J.

$\Gamma(\overline{D}^0\rho^+)/\Gamma_{total}$ Γ_{20}/Γ

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.0134±0.0018 OUR AVERAGE					
0.0135±0.0012±0.0015	212	[45] ALAM	94	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
0.013 ±0.004 ±0.004	19	[46] ALBRECHT	90J	ARG	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.021 ±0.008 ±0.009	10	[47] ALBRECHT	88K	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[45] 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($D^0 \rightarrow K^-\pi^+\pi^+\pi^-$)/B($D^0 \rightarrow K^-\pi^+$).

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

[47] ALBRECHT 88K assumes $B^0\overline{B}^0$:B^+B^- ratio is 45:55.

$\Gamma(\overline{D}^0K^+)/\Gamma_{total}$ Γ_{21}/Γ

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
3.7 ±0.6 OUR AVERAGE Error includes scale factor of 1.1.				
4.19±0.57±0.40	[48] ABE	01I	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
2.92±0.80±0.28	[49] ATHANAS	98	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[48] ABE 01I reports B($B^+ \rightarrow \overline{D}^0K^+$)/B($B^+ \rightarrow \overline{D}^0\pi^+$)= 0.079 ± 0.009 ± 0.006. We multiply by our best value B($B^+ \rightarrow \overline{D}^0\pi^+$)= (5.3 ± 0.5) × 10^{-3}. Our first error is their experiment's error and the second error is systematic error from using our best value.

[49] ATHANAS 98 reports [B($B^+ \rightarrow \overline{D}^0K^+$)]/[B($B^+ \rightarrow \overline{D}^0\pi^+$)] =0.055±0.014±0.005. We multiply by our best value B($B^+ \rightarrow \overline{D}^0\pi^+$)= (5.3 ± 0.5) × 10^{-3}. Our first error is their experiment's error and our second error is the systematic error from using our best value.

$\Gamma(\overline{D}^0 K^+)/\Gamma(\overline{D}^0 \pi^+)$ — Γ_{21}/Γ_{17}

VALUE	DOCUMENT ID	TECN	COMMENT
0.083±0.010 OUR AVERAGE Error includes scale factor of 1.4.			
$0.099^{+0.014}_{-0.012}{}^{+0.007}_{-0.006}$	[50] BORNHEIM 03	CLE2	$e^+e^- \to \Upsilon(4S)$
0.077±0.005±0.006	[51] SWAIN 03	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.094±0.009±0.007	[51] ABE 03D	BELL	Repl. by SWAIN 03

[50] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[51] Flavor specific D^0 meson is reconstructed via $D^0 \to K^-\pi^+$.

$\Gamma(D_{CP(+1)} K^+)/\Gamma(D_{CP(+1)} \pi^+)$ — Γ_{22}/Γ_{18}

VALUE	DOCUMENT ID	TECN	COMMENT
0.093±0.018±0.008	[52] SWAIN 03	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.125±0.036±0.010	[52] ABE 03D	BELL	Repl. by SWAIN 03

[52] CP=+1 eigenstate of $D^0\overline{D}^0$ system is reconstructed via K^+K^- and $\pi^+\pi^-$.

$\Gamma(D_{CP(-1)} K^+)/\Gamma(D_{CP(-1)} \pi^+)$ — Γ_{23}/Γ_{19}

VALUE	DOCUMENT ID	TECN	COMMENT
0.108±0.019±0.007	[53] SWAIN 03	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.119±0.028±0.006	[53] ABE 03D	BELL	Repl. by SWAIN 03

[53] 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 $K^0_S\eta'$.

$\Gamma(\overline{D}^0 K^*(892)^+)/\Gamma_{total}$ — Γ_{24}/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
(6.1±1.6±1.7) × 10^{-4}	[54] MAHAPATRA 02	CLE2	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(\overline{D}^0 K^+ \overline{K}^0)/\Gamma_{total}$ — Γ_{25}/Γ

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
5.5±1.4±0.8	[55] DRUTSKOY 02	BELL	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(\overline{D}^0 K^+ \overline{K}^*(892)^0)/\Gamma_{total}$ — Γ_{26}/Γ

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
7.5±1.3±1.1	[56] DRUTSKOY 02	BELL	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(\overline{D}^0 \pi^+\pi^+\pi^-)/\Gamma_{total}$ — Γ_{27}/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
0.0115±0.0029±0.0021	[57] BORTOLETTO 92	CLEO	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(\overline{D}^0 \pi^+ \pi^+ \pi^- \text{nonresonant})/\Gamma_{total}$ — Γ_{28}/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
0.0051±0.0034±0.0023	[58] BORTOLETTO92	CLEO	$e^+ e^- \to \Upsilon(4S)$

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

$\Gamma(\overline{D}^0 \pi^+ \rho^0)/\Gamma_{total}$ — Γ_{29}/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
0.0042±0.0023±0.0020	[59] BORTOLETTO92	CLEO	$e^+ e^- \to \Upsilon(4S)$

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

$\Gamma(\overline{D}^0 a_1(1260)^+)/\Gamma_{total}$ — Γ_{30}/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
0.0045±0.0019±0.0031	[60] BORTOLETTO92	CLEO	$e^+ e^- \to \Upsilon(4S)$

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

$\Gamma(\overline{D}^0 \omega \pi^+)/\Gamma_{total}$ — Γ_{31}/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
0.0041±0.0007±0.0006	[61] ALEXANDER 01B	CLE2	$e^+ e^- \to \Upsilon(4S)$

[61] 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.

$\Gamma(D^*(2010)^- \pi^+ \pi^+)/\Gamma_{total}$ — Γ_{32}/Γ

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
0.0021±0.0006 OUR AVERAGE					
0.0019±0.0007±0.0003		14	[62] ALAM 94	CLE2	$e^+ e^- \to \Upsilon(4S)$
0.0026±0.0014±0.0007		11	[63] ALBRECHT 90J	ARG	$e^+ e^- \to \Upsilon(4S)$
$0.0024^{+0.0017}_{-0.0016}{}^{+0.0010}_{-0.0006}$		3	[64] BEBEK 87	CLEO	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.004	90		[65] BORTOLETTO92	CLEO	$e^+ e^- \to \Upsilon(4S)$
0.005 ±0.002 ±0.003		7	[66] ALBRECHT 87C	ARG	$e^+ e^- \to \Upsilon(4S)$

[62] 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 $B(D^0 \to K^- \pi^+ \pi^+ \pi^-)/B(D^0 \to K^- \pi^+)$.

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

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

[65] 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 $D^{**} \rightarrow D^*(2010)\pi$ to be $0.0014^{+0.0008}_{-0.0006} \pm 0.0003$ where D^{**} represents all orbitally excited D mesons.

[66] 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.

$\Gamma(D^- \pi^+ \pi^+)/\Gamma_{total}$ — Γ_{33}/Γ

VALUE	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
<0.0014	90		[67] ALAM	94	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<0.007	90		[68] BORTOLETTO	92	CLEO	$e^+ e^- \rightarrow \Upsilon(4S)$
$0.0025^{+0.0041}_{-0.0023}{}^{+0.0024}_{-0.0008}$		1	[69] BEBEK	87	CLEO	$e^+ e^- \rightarrow \Upsilon(4S)$

[67] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the Mark III B($D^+ \rightarrow K^- \pi^+ \pi^+$).

[68] 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 $D_0^*(2340) \rightarrow D\pi$ is < 0.005 at 90%CL and into $D_2^*(2460)$ followed by $D_2^*(2460) \rightarrow D\pi$ is < 0.004 at 90%CL.

[69] BEBEK 87 assume the $\Upsilon(4S)$ decays 43% to $B^0 \overline{B}^0$. B($D^- \rightarrow K^+ \pi^- \pi^-$) = (9.1 ± 1.3 ± 0.4)% is assumed.

$\Gamma(\overline{D}^*(2007)^0 \pi^+)/\Gamma_{total}$ — Γ_{34}/Γ

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.0046 ±0.0004 OUR AVERAGE					
0.00434±0.00047±0.00018		[70] BRANDENB...	98	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
0.0052 ±0.0007 ±0.0007	71	[71] ALAM	94	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
0.0072 ±0.0018 ±0.0016		[72] BORTOLETTO	92	CLEO	$e^+ e^- \rightarrow \Upsilon(4S)$
0.0040 ±0.0014 ±0.0012	9	[72] ALBRECHT	90J	ARG	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.0027 ±0.0044		[73] BEBEK	87	CLEO	$e^+ e^- \rightarrow \Upsilon(4S)$

[70] 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($D^* \rightarrow D\pi$).

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

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

[73] 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 $B^0 \overline{B}^0$.

$\Gamma(\overline{D}^*(2007)^0 \omega\pi^+)/\Gamma_{total}$ — Γ_{35}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
0.0045±0.0010±0.0007	[74] ALEXANDER	01B	CLE2	$e^+e^- \to \Upsilon(4S)$

[74] 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.

$\Gamma(\overline{D}^*(2007)^0 \rho^+)/\Gamma_{total}$ — Γ_{36}/Γ

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.0098±0.0017 OUR AVERAGE					
0.0098±0.0006±0.0017		[75] CSORNA	03	CLE2	$e^+e^- \to \Upsilon(4S)$
0.010 ±0.006 ±0.004	7	[76] 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	[77] ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$

[75] 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.

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

[77] 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 $B(D^0 \to K^-\pi^+\pi^+\pi^-)/B(D^0 \to K^-\pi^+)$. The nonresonant $\pi^+\pi^0$ contribution under the ρ^+ is negligible.

$\Gamma(\overline{D}^*(2007)^0 K^+)/\Gamma_{total}$ — Γ_{37}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
$(3.59\pm0.97\pm0.31) \times 10^{-4}$	[78] ABE	01I	BELL	$e^+e^- \to \Upsilon(4S)$

[78] ABE 01I reports $B(B^+ \to \overline{D}^*(2007)^0 K^+)/B(B^+ \to \overline{D}^*(2007)^0\pi^+) = 0.078 \pm 0.019 \pm 0.009$. We multiply by our best value $B(B^+ \to \overline{D}^*(2007)^0\pi^+) = (4.6 \pm 0.4) \times 10^{-3}$. Our first error is their experiment's error and the second error is systematic error from using our best value.

$\Gamma(\overline{D}^*(2007)^0 K^*(892)^+)/\Gamma_{total}$ — Γ_{38}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
$(7.2\pm2.2\pm2.6) \times 10^{-4}$	[79] MAHAPATRA	02	CLE2	$e^+e^- \to \Upsilon(4S)$

[79] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$ and an unpolarized final state.

$\Gamma(\overline{D}^*(2007)^0 K^+\overline{K}^0)/\Gamma_{total}$ — Γ_{39}/Γ

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
<10.6	90	[80] DRUTSKOY	02	BELL	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(\overline{D}^*(2007)^0 K^+ K^*(892)^0)/\Gamma_{total}$ — Γ_{40}/Γ

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
15.3±3.1±2.9	[81] DRUTSKOY	02	BELL	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(\overline{D}^*(2007)^0 \pi^+ \pi^+ \pi^-)/\Gamma_{total}$ — Γ_{41}/Γ

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.0094±0.0020±0.0017	48	[82,83] ALAM	94	CLE2	$e^+ e^- \to \Upsilon(4S)$

[82] 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 $B(D^0 \to K^- \pi^+ \pi^+ \pi^-)/B(D^0 \to K^- \pi^+)$.

[83] 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 $\overline{D}^{*0} \pi^+ \pi^+ \pi^-$.)

$\Gamma(\overline{D}^*(2007)^0 a_1(1260)^+)/\Gamma_{total}$ — Γ_{42}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
0.0188±0.0040±0.0034	[84,85] ALAM	94	CLE2	$e^+ e^- \to \Upsilon(4S)$

[84] 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.

[85] 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 $B(D^0 \to K^- \pi^+ \pi^+ \pi^-)/B(D^0 \to K^- \pi^+)$.

$\Gamma(\overline{D}^*(2007)^0 \pi^- \pi^+ \pi^+ \pi^0)/\Gamma_{total}$ — Γ_{43}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
0.0180±0.0024±0.0027	[86] ALEXANDER	01B	CLE2	$e^+ e^- \to \Upsilon(4S)$

[86] 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.

$\Gamma(D^*(2010)^+ \pi^0)/\Gamma_{total}$ — Γ_{44}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.00017	90	[87] BRANDENB...	98	CLE2	$e^+ e^- \to \Upsilon(4S)$

[87] 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 $B(D^* \to D \pi)$.

$\Gamma(\overline{D}^*(2010)^+ K^0)/\Gamma_{total}$ — Γ_{45}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<9.5 × 10^{-5}	90	[88] GRITSAN	01	CLE2	$e^+ e^- \to \Upsilon(4S)$

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

$\Gamma(D^*(2010)^- \pi^+ \pi^+ \pi^0)/\Gamma_{total}$ — Γ_{46}/Γ

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.0152±0.0071±0.0001	26	[89] ALBRECHT	90J	ARG	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.043 ±0.013 ±0.026	24	[90] ALBRECHT	87C	ARG	$e^+ e^- \to \Upsilon(4S)$

[89] ALBRECHT 90J reports $0.018 \pm 0.007 \pm 0.005$ for $B(D^*(2010)^+ \to D^0 \pi^+) = 0.57 \pm 0.06$. 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.

[90] 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.

$\Gamma(D^*(2010)^- \pi^+ \pi^+ \pi^+ \pi^-)/\Gamma_{total}$ — Γ_{47}/Γ

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.01	90	[91] ALBRECHT 90J	ARG	$e^+ e^- \to \Upsilon(4S)$

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

$\Gamma(\overline{D}^*_1(2420)^0 \pi^+)/\Gamma_{total}$ — Γ_{48}/Γ

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	[92] ALAM 94	CLE2	$e^+ e^- \to \Upsilon(4S)$
0.0025±0.0007±0.0006		[93] ALBRECHT 94D	ARG	$e^+ e^- \to \Upsilon(4S)$

[92] 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 assuming $B(D_1(2420)^0 \to D^*(2010)^+ \pi^-) = 67\%$.

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

$\Gamma(\overline{D}^*_1(2420)^0 \rho^+)/\Gamma_{total}$ — Γ_{49}/Γ

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

[94] 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 $B(D_1(2420)^0 \to D^*(2010)^+ \pi^-) = 67\%$.

$\Gamma(\overline{D}^*_2(2460)^0 \pi^+)/\Gamma_{total}$ — Γ_{50}/Γ

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.0013	90	[95] ALAM 94	CLE2	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<0.0028	90	[96] ALAM 94	CLE2	$e^+ e^- \to \Upsilon(4S)$
<0.0023	90	[97] ALBRECHT 94D	ARG	$e^+ e^- \to \Upsilon(4S)$

[95] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the Mark III $B(D^+ \to K^- \pi^+ \pi^+)$ and $B(D^*_2(2460)^0 \to D^+ \pi^-) = 30\%$.

[96] ALAM 94 assume equal production of B^+ and B^0 at the $\Upsilon(4S)$ and use the Mark III $B(D^+ \to K^- \pi^+ \pi^+)$, the CLEO II $B(D^*(2010)^+ \to D^0 \pi^+)$ and $B(D^*_2(2460)^0 \to D^*(2010)^+ \pi^-) = 20\%$.

[97] 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 $B(D^*_2(2460)^0 \to D^*(2010)^+ \pi^-) = 30\%$.

$\Gamma(\overline{D}{}_2^*(2460)^0 \rho^+)/\Gamma_{total}$ Γ_{51}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0047	90	[98] ALAM	94	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
<0.005	90	[99] ALAM	94	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

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

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

$\Gamma(\overline{D}{}^0 D_s^+)/\Gamma_{total}$ Γ_{52}/Γ

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.013 ±0.004 OUR AVERAGE					
$0.0122 \pm 0.0032 {}^{+0.0029}_{-0.0030}$		[100] GIBAUT	96	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
$0.018 \pm 0.009 \pm 0.004$		[101] ALBRECHT	92G	ARG	$e^+ e^- \rightarrow \Upsilon(4S)$
$0.016 \pm 0.007 \pm 0.004$	5	[102] BORTOLETTO	90	CLEO	$e^+ e^- \rightarrow \Upsilon(4S)$

[100] GIBAUT 96 reports $0.0126 \pm 0.0022 \pm 0.0025$ for $B(D_s^+ \rightarrow \phi \pi^+) = 0.035$. We rescale to our best value $B(D_s^+ \rightarrow \phi \pi^+) = (3.6 \pm 0.9) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

[101] ALBRECHT 92G reports $0.024 \pm 0.012 \pm 0.004$ for $B(D_s^+ \rightarrow \phi \pi^+) = 0.027$. We rescale to our best value $B(D_s^+ \rightarrow \phi \pi^+) = (3.6 \pm 0.9) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes PDG 1990 D^0 branching ratios, e.g., $B(D^0 \rightarrow K^- \pi^+) = 3.71 \pm 0.25\%$.

[102] BORTOLETTO 90 reports 0.029 ± 0.013 for $B(D_s^+ \rightarrow \phi \pi^+) = 0.02$. We rescale to our best value $B(D_s^+ \rightarrow \phi \pi^+) = (3.6 \pm 0.9) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

$\Gamma(\overline{D}{}^0 D_{sJ}(2317)^+)/\Gamma_{total}$ Γ_{53}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	[103] KROKOVNY	03B	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$

[103] The product branching ratio for $B(B^+ \rightarrow \overline{D}{}^0 D_{sJ}(2317)^+) \times B(D_{sJ}(2317)^+ \rightarrow D_s \pi^0)$ is measured to be $(8.1^{+3.0}_{-2.7} \pm 2.4) \times 10^{-4}$.

$\Gamma(\overline{D}{}^0 D_{sJ}(2457)^+)/\Gamma_{total}$ Γ_{54}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	[104] KROKOVNY	03B	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$

[104] The product branching ratio for $B(B^+ \rightarrow \overline{D}{}^0 D_{sJ}(2457)^+) \times B(D_{sJ}(2457)^+) \times B(D_{sJ}(2457)^+ \rightarrow D_s^{*+} \pi^0, D_s^+ \gamma)$ are measured to be $(11.9^{+6.1}_{-4.9} \pm 3.6) \times 10^{-4}$ and $(5.6^{+1.6}_{-1.5} \pm 1.7) \times 10^{-4}$, respectively.

$\Gamma(\overline{D}{}^0 D_{sJ}(2536)^+)/\Gamma_{total}$ Γ_{55}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	[105] AUBERT	03X	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$

[105] No evidence is found for such decay and set a limit on $B(B \rightarrow \overline{D}{}^0 D_{sJ}(2536)^+) \times B(D_{sJ}(2536)^+ \rightarrow D^*(2007)^0 K^+) < 2 \times 10^{-4}$ at 90%CL.

$\Gamma(\overline{D}^*(2007)^0 D_{sJ}(2536)^+)/\Gamma_{total}$ — Γ_{56}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	[106] AUBERT	03X	BABR	$e^+e^- \to \Upsilon(4S)$

[106] No evidence is found for such decay and set a limit on $B(B \to \overline{D}^*(2007)^0 D_{sJ}(2536)^+) \times B(D_{sJ}(2536)^+ \to D^*(2007)^0 K^+) < 7 \times 10^{-4}$ at 90%CL.

$\Gamma(\overline{D}^0 D_{sJ}(2573)^+)/\Gamma_{total}$ — Γ_{57}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	[107] AUBERT	03X	BABR	$e^+e^- \to \Upsilon(4S)$

[107] No evidence is found for such decay and set a limit on $B(B \to \overline{D}^0 D_{sJ}(2573)^+) \times B(D_{sJ}(2573)^+ \to D^0 K^+) < 2 \times 10^{-4}$ at 90%CL.

$\Gamma(\overline{D}^*(2007)^0 D_{sJ}(2573)^+)/\Gamma_{total}$ — Γ_{58}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	[108] AUBERT	03X	BABR	$e^+e^- \to \Upsilon(4S)$

[108] No evidence is found for such decay and set a limit on $B(B \to \overline{D}^*(2007)^0 D_{sJ}(2536)^+) \times B(D_{sJ}(2536)^+ \to D^0 K^+) < 5 \times 10^{-4}$ at 90%CL.

$\Gamma(\overline{D}^0 D_s^{*+})/\Gamma_{total}$ — Γ_{59}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
0.009 ±0.004 OUR AVERAGE				
$0.0084 \pm 0.0031 {}^{+0.0020}_{-0.0021}$	[109] GIBAUT	96	CLE2	$e^+e^- \to \Upsilon(4S)$
$0.012 \pm 0.009 \pm 0.003$	[110] ALBRECHT	92G	ARG	$e^+e^- \to \Upsilon(4S)$

[109] GIBAUT 96 reports $0.0087 \pm 0.0027 \pm 0.0017$ for $B(D_s^+ \to \phi\pi^+) = 0.035$. We rescale to our best value $B(D_s^+ \to \phi\pi^+) = (3.6 \pm 0.9) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

[110] ALBRECHT 92G reports $0.016 \pm 0.012 \pm 0.003$ for $B(D_s^+ \to \phi\pi^+) = 0.027$. We rescale to our best value $B(D_s^+ \to \phi\pi^+) = (3.6 \pm 0.9) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes PDG 1990 D^0 branching ratios, e.g., $B(D^0 \to K^-\pi^+) = 3.71 \pm 0.25\%$.

$\Gamma(\overline{D}^*(2007)^0 D_s^+)/\Gamma_{total}$ — Γ_{60}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
0.012±0.005 OUR AVERAGE				
$0.014 \pm 0.005 \pm 0.003$	[111] GIBAUT	96	CLE2	$e^+e^- \to \Upsilon(4S)$
$0.010 \pm 0.007 \pm 0.002$	[112] ALBRECHT	92G	ARG	$e^+e^- \to \Upsilon(4S)$

[111] GIBAUT 96 reports $0.0140 \pm 0.0043 \pm 0.0035$ for $B(D_s^+ \to \phi\pi^+) = 0.035$. We rescale to our best value $B(D_s^+ \to \phi\pi^+) = (3.6 \pm 0.9) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

[112] ALBRECHT 92G reports $0.013 \pm 0.009 \pm 0.002$ for $B(D_s^+ \to \phi\pi^+) = 0.027$. We rescale to our best value $B(D_s^+ \to \phi\pi^+) = (3.6 \pm 0.9) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. 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 $B(D^*(2007)^0 \to D^0\pi^0) = 55 \pm 6\%$.

$\Gamma(\overline{D}^*(2007)^0 D_s^{*+})/\Gamma_{total}$ — Γ_{61}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
0.027±0.010 OUR AVERAGE				
0.030±0.011±0.007	[113] GIBAUT	96	CLE2	$e^+e^- \to \Upsilon(4S)$
0.023±0.013±0.006	[114] ALBRECHT	92G	ARG	$e^+e^- \to \Upsilon(4S)$

[113] GIBAUT 96 reports $0.0310 \pm 0.0088 \pm 0.0065$ for $B(D_s^+ \to \phi\pi^+) = 0.035$. We rescale to our best value $B(D_s^+ \to \phi\pi^+) = (3.6 \pm 0.9) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

[114] ALBRECHT 92G reports $0.031 \pm 0.016 \pm 0.005$ for $B(D_s^+ \to \phi\pi^+) = 0.027$. We rescale to our best value $B(D_s^+ \to \phi\pi^+) = (3.6 \pm 0.9) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. 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 $B(D^*(2007)^0 \to D^0\pi^0) = 55 \pm 6\%$.

$\Gamma(D_s^{(*)+}\overline{D}^{**0})/\Gamma_{total}$ — Γ_{62}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
$(2.73 \pm 0.93 \pm 0.68) \times 10^{-2}$	[115] AHMED	00B	CLE2	$e^+e^- \to \Upsilon(4S)$

[115] AHMED 00B reports their experiment's uncertainties $(\pm0.78 \pm 0.48 \pm 0.68)\%$, 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.

$\Gamma(\overline{D}^*(2007)^0 D^*(2010)^+)/\Gamma_{total}$ — Γ_{63}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.011	90	BARATE	98Q	ALEP	$e^+e^- \to Z$

$[\Gamma(\overline{D}^0 D^*(2010)^+) + \Gamma(\overline{D}^*(2007)^0 D^+)]/\Gamma_{total}$ — Γ_{64}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.013	90	BARATE	98Q	ALEP	$e^+e^- \to Z$

$\Gamma(\overline{D}^0 D^+)/\Gamma_{total}$ — Γ_{65}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0067	90	BARATE	98Q	ALEP	$e^+e^- \to Z$

$\Gamma(\overline{D}^0 D^+ K^0)/\Gamma_{total}$ — Γ_{66}/Γ

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
<2.8	90	[116] AUBERT	03X	BABR	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(\overline{D}^*(2007)^0 D^+ K^0)/\Gamma_{total}$ — Γ_{67}/Γ

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
<6.1	90	[117] AUBERT	03X	BABR	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(\overline{D}^0 \overline{D}^*(2010)^+ K^0)/\Gamma_{total}$ — Γ_{68}/Γ

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
$5.2^{+1.0}_{-0.9} \pm 0.7$	[118] AUBERT	03X	BABR	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(\overline{D}^*(2007)^0 D^*(2010)^+ K^0)/\Gamma_{total}$ — Γ_{69}/Γ

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
$\mathbf{7.8^{+2.3}_{-2.1}\pm1.4}$	[119] AUBERT 03X	BABR	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(\overline{D}^0 D^0 K^+)/\Gamma_{total}$ — Γ_{70}/Γ

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
1.9±0.3±0.3	[120] AUBERT 03X	BABR	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(\overline{D}^*(2010)^0 D^0 K^+)/\Gamma_{total}$ — Γ_{71}/Γ

VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT
<3.8	90	[121] AUBERT 03X	BABR	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(\overline{D}^0 D^*(2007)^0 K^+)/\Gamma_{total}$ — Γ_{72}/Γ

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
4.7±0.7±0.7	[122] AUBERT 03X	BABR	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(\overline{D}^*(2007)^0 D^*(2007)^0 K^+)/\Gamma_{total}$ — Γ_{73}/Γ

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
$\mathbf{5.3^{+1.1}_{-1.0}\pm1.2}$	[123] AUBERT 03X	BABR	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(D^- D^+ K^+)/\Gamma_{total}$ — Γ_{74}/Γ

VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT
<0.4	90	[124] AUBERT 03X	BABR	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(D^- D^*(2010)^+ K^+)/\Gamma_{total}$ — Γ_{75}/Γ

VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT
<0.7	90	[125] AUBERT 03X	BABR	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(D^*(2010)^- D^+ K^+)/\Gamma_{total}$ — Γ_{76}/Γ

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
1.5±0.3±0.2	[126] AUBERT 03X	BABR	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(D^*(2010)^- D^*(2010)^+ K^+)/\Gamma_{total}$ — Γ_{77}/Γ

VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT
<1.8	90	[127] AUBERT 03X	BABR	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma((\overline{D}+\overline{D}^*)(D+D^*)K)/\Gamma_{total}$ — Γ_{78}/Γ

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
3.5±0.3±0.5	[128] AUBERT	03X	BABR	$e^+e^- \rightarrow \Upsilon(4S)$

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

$\Gamma(D_s^+\pi^0)/\Gamma_{total}$ — Γ_{79}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.00020	90	[129] ALEXANDER	93B	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[129] ALEXANDER 93B reports $< 2.0 \times 10^{-4}$ for $B(D_s^+ \rightarrow \phi\pi^+) = 0.037$. We rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 0.036$.

$[\Gamma(D_s^+\pi^0) + \Gamma(D_s^{*+}\pi^0)]/\Gamma_{total}$ — $(\Gamma_{79}+\Gamma_{80})/\Gamma$

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0007	90	[130] ALBRECHT	93E	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[130] ALBRECHT 93E reports $< 0.9 \times 10^{-3}$ for $B(D_s^+ \rightarrow \phi\pi^+) = 0.027$. We rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 0.036$.

$\Gamma(D_s^{*+}\pi^0)/\Gamma_{total}$ — Γ_{80}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.00033	90	[131] ALEXANDER	93B	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[131] ALEXANDER 93B reports $< 3.2 \times 10^{-4}$ for $B(D_s^+ \rightarrow \phi\pi^+) = 0.037$. We rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 0.036$.

$\Gamma(D_s^+\eta)/\Gamma_{total}$ — Γ_{81}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0005	90	[132] ALEXANDER	93B	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[132] ALEXANDER 93B reports $< 4.6 \times 10^{-4}$ for $B(D_s^+ \rightarrow \phi\pi^+) = 0.037$. We rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 0.036$.

$\Gamma(D_s^{*+}\eta)/\Gamma_{total}$ — Γ_{82}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0008	90	[133] ALEXANDER	93B	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[133] ALEXANDER 93B reports $< 7.5 \times 10^{-4}$ for $B(D_s^+ \rightarrow \phi\pi^+) = 0.037$. We rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 0.036$.

$\Gamma(D_s^+\rho^0)/\Gamma_{total}$ — Γ_{83}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0004	90	[134] ALEXANDER	93B	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[134] ALEXANDER 93B reports $< 3.7 \times 10^{-4}$ for $B(D_s^+ \rightarrow \phi\pi^+) = 0.037$. We rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 0.036$.

$\left[\Gamma(D_s^+ \rho^0) + \Gamma(D_s^+ \overline{K}^*(892)^0)\right]/\Gamma_{total}$ — $(\Gamma_{83}+\Gamma_{93})/\Gamma$

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0025	90	[135] ALBRECHT	93E	ARG	$e^+ e^- \rightarrow \Upsilon(4S)$

[135] ALBRECHT 93E reports $< 3.4 \times 10^{-3}$ for $B(D_s^+ \rightarrow \phi\pi^+) = 0.027$. We rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 0.036$.

$\Gamma(D_s^{*+} \rho^0)/\Gamma_{total}$ — Γ_{84}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0005	90	[136] ALEXANDER	93B	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

[136] ALEXANDER 93B reports $< 4.8 \times 10^{-4}$ for $B(D_s^+ \rightarrow \phi\pi^+) = 0.037$. We rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 0.036$.

$\left[\Gamma(D_s^{*+} \rho^0) + \Gamma(D_s^{*+} \overline{K}^*(892)^0)\right]/\Gamma_{total}$ — $(\Gamma_{84}+\Gamma_{94})/\Gamma$

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0015	90	[137] ALBRECHT	93E	ARG	$e^+ e^- \rightarrow \Upsilon(4S)$

[137] ALBRECHT 93E reports $< 2.0 \times 10^{-3}$ for $B(D_s^+ \rightarrow \phi\pi^+) = 0.027$. We rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 0.036$.

$\Gamma(D_s^+ \omega)/\Gamma_{total}$ — Γ_{85}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0005	90	[138] ALEXANDER	93B	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.0025	90	[139] ALBRECHT	93E	ARG	$e^+ e^- \rightarrow \Upsilon(4S)$

[138] ALEXANDER 93B reports $< 4.8 \times 10^{-4}$ for $B(D_s^+ \rightarrow \phi\pi^+) = 0.037$. We rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 0.036$.

[139] ALBRECHT 93E reports $< 3.4 \times 10^{-3}$ for $B(D_s^+ \rightarrow \phi\pi^+) = 0.027$. We rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 0.036$.

$\Gamma(D_s^{*+} \omega)/\Gamma_{total}$ — Γ_{86}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0007	90	[140] ALEXANDER	93B	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.0014	90	[141] ALBRECHT	93E	ARG	$e^+ e^- \rightarrow \Upsilon(4S)$

[140] ALEXANDER 93B reports $< 6.8 \times 10^{-4}$ for $B(D_s^+ \rightarrow \phi\pi^+) = 0.037$. We rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 0.036$.

[141] ALBRECHT 93E reports $< 1.9 \times 10^{-3}$ for $B(D_s^+ \rightarrow \phi\pi^+) = 0.027$. We rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 0.036$.

$\Gamma(D_s^+ a_1(1260)^0)/\Gamma_{total}$ — Γ_{87}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0022	90	[142] ALBRECHT	93E	ARG	$e^+ e^- \rightarrow \Upsilon(4S)$

[142] ALBRECHT 93E reports $< 3.0 \times 10^{-3}$ for $B(D_s^+ \rightarrow \phi\pi^+) = 0.027$. We rescale to our best value $B(D_s^+ \rightarrow \phi\pi^+) = 0.036$.

$\Gamma(D_s^{*+} a_1(1260)^0)/\Gamma_{total}$ — Γ_{88}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0016	90	[143] ALBRECHT	93E	ARG	$e^+e^- \to \Upsilon(4S)$

[143] ALBRECHT 93E reports $< 2.2 \times 10^{-3}$ for B($D_s^+ \to \phi\pi^+$) = 0.027. We rescale to our best value B($D_s^+ \to \phi\pi^+$) = 0.036.

$\Gamma(D_s^+ \phi)/\Gamma_{total}$ — Γ_{89}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.00032	90	[144] ALEXANDER	93B	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.0013	90	[145] ALBRECHT	93E	ARG	$e^+e^- \to \Upsilon(4S)$

[144] ALEXANDER 93B reports $< 3.1 \times 10^{-4}$ for B($D_s^+ \to \phi\pi^+$) = 0.037. We rescale to our best value B($D_s^+ \to \phi\pi^+$) = 0.036.

[145] ALBRECHT 93E reports $< 1.7 \times 10^{-3}$ for B($D_s^+ \to \phi\pi^+$) = 0.027. We rescale to our best value B($D_s^+ \to \phi\pi^+$) = 0.036.

$\Gamma(D_s^{*+} \phi)/\Gamma_{total}$ — Γ_{90}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0004	90	[146] ALEXANDER	93B	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.0016	90	[147] ALBRECHT	93E	ARG	$e^+e^- \to \Upsilon(4S)$

[146] ALEXANDER 93B reports $< 4.2 \times 10^{-4}$ for B($D_s^+ \to \phi\pi^+$) = 0.037. We rescale to our best value B($D_s^+ \to \phi\pi^+$) = 0.036.

[147] ALBRECHT 93E reports $< 2.1 \times 10^{-3}$ for B($D_s^+ \to \phi\pi^+$) = 0.027. We rescale to our best value B($D_s^+ \to \phi\pi^+$) = 0.036.

$\Gamma(D_s^+ \overline{K}^0)/\Gamma_{total}$ — Γ_{91}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0011	90	[148] ALEXANDER	93B	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.0019	90	[149] ALBRECHT	93E	ARG	$e^+e^- \to \Upsilon(4S)$

[148] ALEXANDER 93B reports $< 10.3 \times 10^{-4}$ for B($D_s^+ \to \phi\pi^+$) = 0.037. We rescale to our best value B($D_s^+ \to \phi\pi^+$) = 0.036.

[149] ALBRECHT 93E reports $< 2.5 \times 10^{-3}$ for B($D_s^+ \to \phi\pi^+$) = 0.027. We rescale to our best value B($D_s^+ \to \phi\pi^+$) = 0.036.

$\Gamma(D_s^{*+} \overline{K}^0)/\Gamma_{total}$ — Γ_{92}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0011	90	[150] ALEXANDER	93B	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.0023	90	[151] ALBRECHT	93E	ARG	$e^+e^- \to \Upsilon(4S)$

[150] ALEXANDER 93B reports $< 10.9 \times 10^{-4}$ for B($D_s^+ \rightarrow \phi\pi^+$) = 0.037. We rescale to our best value B($D_s^+ \rightarrow \phi\pi^+$) = 0.036.

[151] ALBRECHT 93E reports $< 3.1 \times 10^{-3}$ for B($D_s^+ \rightarrow \phi\pi^+$) = 0.027. We rescale to our best value B($D_s^+ \rightarrow \phi\pi^+$) = 0.036.

$\Gamma(D_s^+ \overline{K}^*(892)^0)/\Gamma_{total}$ Γ_{93}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0005	90	[152] ALEXANDER	93B	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[152] ALEXANDER 93B reports $< 4.4 \times 10^{-4}$ for B($D_s^+ \rightarrow \phi\pi^+$) = 0.037. We rescale to our best value B($D_s^+ \rightarrow \phi\pi^+$) = 0.036.

$\Gamma(D_s^{*+} \overline{K}^*(892)^0)/\Gamma_{total}$ Γ_{94}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0004	90	[153] ALEXANDER	93B	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[153] ALEXANDER 93B reports $< 4.3 \times 10^{-4}$ for B($D_s^+ \rightarrow \phi\pi^+$) = 0.037. We rescale to our best value B($D_s^+ \rightarrow \phi\pi^+$) = 0.036.

$\Gamma(D_s^- \pi^+ K^+)/\Gamma_{total}$ Γ_{95}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0008	90	[154] ALBRECHT	93E	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[154] ALBRECHT 93E reports $< 1.1 \times 10^{-3}$ for B($D_s^+ \rightarrow \phi\pi^+$) = 0.027. We rescale to our best value B($D_s^+ \rightarrow \phi\pi^+$) = 0.036.

$\Gamma(D_s^{*-} \pi^+ K^+)/\Gamma_{total}$ Γ_{96}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0012	90	[155] ALBRECHT	93E	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[155] ALBRECHT 93E reports $< 1.6 \times 10^{-3}$ for B($D_s^+ \rightarrow \phi\pi^+$) = 0.027. We rescale to our best value B($D_s^+ \rightarrow \phi\pi^+$) = 0.036.

$\Gamma(D_s^- \pi^+ K^*(892)^+)/\Gamma_{total}$ Γ_{97}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.006	90	[156] ALBRECHT	93E	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[156] ALBRECHT 93E reports $< 8.6 \times 10^{-3}$ for B($D_s^+ \rightarrow \phi\pi^+$) = 0.027. We rescale to our best value B($D_s^+ \rightarrow \phi\pi^+$) = 0.036.

$\Gamma(D_s^{*-} \pi^+ K^*(892)^+)/\Gamma_{total}$ Γ_{98}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.008	90	[157] ALBRECHT	93E	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[157] ALBRECHT 93E reports $< 1.1 \times 10^{-2}$ for B($D_s^+ \rightarrow \phi\pi^+$) = 0.027. We rescale to our best value B($D_s^+ \rightarrow \phi\pi^+$) = 0.036.

$\Gamma(\eta_c K^+)/\Gamma_{total}$ — Γ_{99}/Γ

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
0.90±0.27 OUR AVERAGE				
$1.25\pm0.14^{+0.39}_{-0.40}$	[158] FANG	03	BELL	$e^+e^- \to \Upsilon(4S)$
$0.69^{+0.26}_{-0.21}\pm0.22$	[159] EDWARDS	01	CLE2	$e^+e^- \to \Upsilon(4S)$

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

[159] 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.

$\Gamma(J/\psi(1S)K^+)/\Gamma_{total}$ — Γ_{100}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
10.0± 0.4 OUR FIT					
10.1± 0.4 OUR AVERAGE					
10.1± 0.2±0.7		[160] ABE	03B	BELL	$e^+e^- \to \Upsilon(4S)$
10.1± 0.3±0.5		[160] AUBERT	02	BABR	$e^+e^- \to \Upsilon(4S)$
10.2± 0.8±0.7		[160] JESSOP	97	CLE2	$e^+e^- \to \Upsilon(4S)$
9.3± 3.1±0.2		[161] BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$
8.1± 3.5±0.1	6	[162] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
11.0± 1.5±0.9	59	[160] ALAM	94	CLE2	Repl. by JESSOP 97
22 ±10 ±2		BUSKULIC	92G	ALEP	$e^+e^- \to Z$
7 ± 4	3	[163] ALBRECHT	87D	ARG	$e^+e^- \to \Upsilon(4S)$
10 ± 7 ±2	3	[164] BEBEK	87	CLEO	$e^+e^- \to \Upsilon(4S)$
9 ± 5	3	[165] ALAM	86	CLEO	$e^+e^- \to \Upsilon(4S)$

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

[161] BORTOLETTO 92 reports 8 ± 2 ± 2 for B($J/\psi(1S) \to e^+e^-$) = 0.069 ± 0.009. We rescale to our best value B($J/\psi(1S) \to e^+e^-$) = $(5.93 \pm 0.10) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

[162] ALBRECHT 90J reports 7 ± 3 ± 1 for B($J/\psi(1S) \to e^+e^-$) = 0.069 ± 0.009. We rescale to our best value B($J/\psi(1S) \to e^+e^-$) = $(5.93 \pm 0.10) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

[163] ALBRECHT 87D assume $B^+B^-/B^0\overline{B}^0$ ratio is 55/45. Superseded by ALBRECHT 90J.

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

[165] ALAM 86 assumes $B^\pm/B^0$ ratio is 60/40.

$\Gamma(J/\psi(1S)K^+\pi^+\pi^-)/\Gamma_{total}$ — Γ_{101}/Γ

VALUE (units 10^{-3})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
0.77±0.20 OUR AVERAGE						
0.69±0.18±0.12			[166] ACOSTA	02F	CDF	$p\overline{p}$ 1.8 TeV
1.40±0.82±0.02			[167] BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$
1.40±0.91±0.02		6	[168] ALBRECHT	87D	ARG	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<1.9	90		[169] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$

[166] 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.

[167] BORTOLETTO 92 reports $1.2 \pm 0.6 \pm 0.4$ for B($J/\psi(1S) \to e^+ e^-$) = 0.069 ± 0.009. We rescale to our best value B($J/\psi(1S) \to e^+ e^-$) = $(5.93 \pm 0.10) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

[168] ALBRECHT 87D reports 1.2 ± 0.8 for B($J/\psi(1S) \to e^+ e^-$) = 0.069 ± 0.009. We rescale to our best value B($J/\psi(1S) \to e^+ e^-$) = $(5.93 \pm 0.10) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. 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 $B^+ \to \psi(2S) K^+$.

[169] ALBRECHT 90J reports < 1.6 for B($J/\psi(1S) \to e^+ e^-$) = 0.069. We rescale to our best value B($J/\psi(1S) \to e^+ e^-$) = 0.0593. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

$\Gamma(X(3872) K^+)/\Gamma_{total}$ Γ_{102}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	[170] CHOI	03	BELL	$e^+ e^- \to \Upsilon(4S)$

[170] CHOI 03 reports B($B^+ \to X(3872) K^+$)×B($X(3872) \to \pi^+ \pi^- J/\psi(1S)$)/B($B^+ \to \psi(2S) K^+$)×B($\psi(2S) \to \pi^+ \pi^0 J/\psi(1S)$) = 0.063 ± 0.012(stat)± 0.007(syst) where the $X(3872)$ is a new meson state with a mass $3872.0 \pm 0.6 \pm 0.5$ MeV and a full width < 2.3 MeV at 90%CL.

$\Gamma(J/\psi(1S) K^*(892)^+)/\Gamma_{total}$ Γ_{103}/Γ

For polarization information see the Listings at the end of the "B^0 Branching Ratios" section.

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
1.35±0.10 OUR AVERAGE					
$1.28 \pm 0.07 \pm 0.14$		[171] ABE	02N	BELL	$e^+ e^- \to \Upsilon(4S)$
$1.37 \pm 0.09 \pm 0.11$		[171] AUBERT	02	BABR	$e^+ e^- \to \Upsilon(4S)$
$1.41 \pm 0.23 \pm 0.24$		[171] JESSOP	97	CLE2	$e^+ e^- \to \Upsilon(4S)$
$1.58 \pm 0.47 \pm 0.27$		[172] ABE	96H	CDF	$p\overline{p}$ at 1.8 TeV
$1.51 \pm 1.09 \pm 0.02$		[173] BORTOLETTO	92	CLEO	$e^+ e^- \to \Upsilon(4S)$
$1.86 \pm 1.30 \pm 0.03$	2	[174] ALBRECHT	90J	ARG	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$1.78 \pm 0.51 \pm 0.23$	13	[171] ALAM	94	CLE2	Sup. by JESSOP 97

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

[172] ABE 96H assumes that B($B^+ \to J/\psi K^+$) = $(1.02 \pm 0.14) \times 10^{-3}$.

[173] BORTOLETTO 92 reports $1.3 \pm 0.9 \pm 0.3$ for B($J/\psi(1S) \to e^+ e^-$) = 0.069 ± 0.009. We rescale to our best value B($J/\psi(1S) \to e^+ e^-$) = $(5.93 \pm 0.10) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

[174] ALBRECHT 90J reports $1.6 \pm 1.1 \pm 0.3$ for B($J/\psi(1S) \to e^+ e^-$) = 0.069 ± 0.009. We rescale to our best value B($J/\psi(1S) \to e^+ e^-$) = $(5.93 \pm 0.10) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

$\Gamma(J/\psi(1S) K^*(892)^+)/\Gamma(J/\psi(1S) K^+)$ — $\Gamma_{103}/\Gamma_{100}$

VALUE	DOCUMENT ID		TECN	COMMENT
1.40±0.11 OUR AVERAGE				
1.37±0.10±0.08	[175] AUBERT	02	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
1.45±0.20±0.17	[176] JESSOP	97	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
1.92±0.60±0.17	ABE	96Q	CDF	$p\overline{p}$

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

[176] 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.

$\Gamma(J/\psi(1S) K(1270)^+)/\Gamma_{total}$ — Γ_{104}/Γ

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
1.80±0.34±0.39	[177] ABE	01L	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

[177] Uses the PDG value of $B(B^+ \rightarrow J/\psi(1S) K^+) = (1.00 \pm 0.10) \times 10^{-3}$.

$\Gamma(J/\psi(1S) K(1400)^+)/\Gamma(J/\psi(1S) K(1270)^+)$ — $\Gamma_{105}/\Gamma_{104}$

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.30	90	ABE	01L	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

$\Gamma(J/\psi(1S)\phi K^+)/\Gamma_{total}$ — Γ_{106}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
(5.2±1.7) × 10^{-5} OUR AVERAGE Error includes scale factor of 1.2.				
$(4.4\pm1.4\pm0.5) \times 10^{-5}$	[178] AUBERT	03O	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$(8.8^{+3.5}_{-3.0}\pm1.3) \times 10^{-5}$	[179] ANASTASSOV	00	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

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

[179] 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 $B(B^+ \rightarrow J/\psi(1S)\phi K^+)= B(B^0 \rightarrow J/\psi(1S)\phi K^0)$.

$\Gamma(J/\psi(1S)\pi^+)/\Gamma_{total}$ — Γ_{107}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
(4.0±0.5) × 10^{-5} OUR FIT				
(3.8±0.6±0.3) × 10^{-5}	[180] ABE	03B	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

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

$\Gamma(J/\psi(1S)\pi^+)/\Gamma(J/\psi(1S) K^+)$ — $\Gamma_{107}/\Gamma_{100}$

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.040 ±0.005 OUR FIT					
0.042 ±0.007 OUR AVERAGE					
0.0391±0.0078±0.0019		AUBERT	02F	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$0.05\ ^{+0.019}_{-0.017}\ \pm0.001$		ABE	96R	CDF	$p\overline{p}$ 1.8 TeV
0.052 ±0.024		BISHAI	96	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.043 ±0.023	5	[181] ALEXANDER	95	CLE2	Sup. by BISHAI 96

[181] Assumes equal production of B^+B^- and $B^0\overline{B}^0$ on $\Upsilon(4S)$.

$\Gamma(J/\psi(1S)\rho^+)/\Gamma_{total}$ Γ_{108}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<7.7 \times 10^{-4}$	90	BISHAI	96	CLE2	$e^+e^- \to \Upsilon(4S)$

$\Gamma(J/\psi(1S)a_1(1260)^+)/\Gamma_{total}$ Γ_{109}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.2 \times 10^{-3}$	90	BISHAI	96	CLE2	$e^+e^- \to \Upsilon(4S)$

$\Gamma(J/\psi(1S)p\overline{\Lambda})/\Gamma_{total}$ Γ_{110}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$(12\ ^{+9}_{-6}) \times 10^{-6}$		[182] AUBERT	03K	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$< 4.1 \times 10^{-5}$	90	ZANG	04	BELL	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(\psi(2S)K^+)/\Gamma_{total}$ Γ_{111}/Γ

VALUE (units 10^{-4})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
6.8± 0.4 OUR AVERAGE						
6.9± 0.6			[183] ABE	03B	BELL	$e^+e^- \to \Upsilon(4S)$
6.4± 0.5±0.8			[183] AUBERT	02	BABR	$e^+e^- \to \Upsilon(4S)$
7.8± 0.7±0.9			[183] RICHICHI	01	CLE2	$e^+e^- \to \Upsilon(4S)$
5.5± 1.0±0.6			[184] ABE	98O	CDF	$p\overline{p}$ 1.8 TeV
18 ± 8 ±4		5	[183] ALBRECHT	90J	ARG	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
6.1± 2.3±0.9		7	[183] ALAM	94	CLE2	Repl. by RICHICHI 01
< 5	90		[183] BORTOLETTO	92	CLEO	$e^+e^- \to \Upsilon(4S)$
22 ±17		3	[185] ALBRECHT	87D	ARG	$e^+e^- \to \Upsilon(4S)$

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

[184] ABE 98O reports $[B(B^+ \to \psi(2S)K^+)]/[B(B^+ \to J/\psi(1S)K^+)] = 0.558 \pm 0.082 \pm 0.056$. 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.

[185] ALBRECHT 87D assume $B^+B^-/B^0\overline{B}^0$ ratio is 55/45. Superseded by ALBRECHT 90J.

$\Gamma(\psi(2S)K^+)/\Gamma(J/\psi(1S)K^+)$ $\Gamma_{111}/\Gamma_{100}$

VALUE	DOCUMENT ID		TECN	COMMENT
0.64±0.06±0.07	[186] AUBERT	02	BABR	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(\psi(2S) K^*(892)^+)/\Gamma_{total}$ — Γ_{112}/Γ

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
9.2±1.9±1.2		[187] RICHICHI	01	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<30	90	[187] ALAM	94	CLE2	Repl. by RICHICHI 01
<35	90	[187] BORTOLETTO	92	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$
<49	90	[187] ALBRECHT	90J	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

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

$\Gamma(\psi(2S) K^+\pi^+\pi^-)/\Gamma_{total}$ — Γ_{113}/Γ

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.0019±0.0011±0.0004	3	[188] ALBRECHT	90J	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

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

$\Gamma(\chi_{c0}(1P) K^+)/\Gamma_{total}$ — Γ_{114}/Γ

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{6.0^{+2.1}_{-1.8}\pm1.1}$		[189] ABE	02B	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<4.8	90	[190] EDWARDS	01	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[189] ABE 02B measures the ratio of $B(B^+ \rightarrow \chi_c^0 K^+)/B(B^+ \rightarrow J/\psi(1S) K^+) = 0.60 + 0.21 - 0.18 \pm 0.05 \pm 0.08$, where the third error is due to the uncertainty in the $B(\chi_c^0 \rightarrow \pi^+\pi^-)$, and uses $B(B^+ \rightarrow J/\psi(1S) K^+) = (10.0 \pm 1.0) \times 10^{-4}$ to obtain the result.

[190] EDWARDS 01 assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$. The correlated uncertainties (28.3)% from $B(J/\psi(1S) \rightarrow \gamma\eta_c)$ in those modes have been accounted for.

$\Gamma(\chi_{c1}(1P) K^+)/\Gamma_{total}$ — Γ_{115}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
6.8± 1.2 OUR AVERAGE					
15.5± 5.4±2.0		[191] ACOSTA	02F	CDF	$p\overline{p}$ 1.8 TeV
6.5± 1.0±0.7		[192] AUBERT	02	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
9.7± 4.0±0.9	6	[193] ALAM	94	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
19 ±13 ±6		[194] ALBRECHT	92E	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[191] ACOSTA 02F uses as reference of $B(B \rightarrow J/\psi(1S) K^+) = (10.1 \pm 0.6) \times 10^{-4}$. The second error includes the systematic error and the uncertainties of the branching ratio.

[192] AUBERT 02 reports $7.5 \pm 0.9 \pm 0.8$ for $B(\chi_{c1}(1P) \rightarrow \gamma J/\psi(1S)) = 0.273 \pm 0.016$. We rescale to our best value $B(\chi_{c1}(1P) \rightarrow \gamma J/\psi(1S)) = (31.6 \pm 3.3) \times 10^{-2}$. 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 $\Upsilon(4S)$.

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

[194] ALBRECHT 92E assumes no $\chi_{c2}(1P)$ production and $B(\Upsilon(4S) \rightarrow B^+B^-) = 50\%$.

$\Gamma(\chi_{c1}(1P)K^+)/\Gamma(J/\psi(1S)K^+)$ — $\Gamma_{115}/\Gamma_{100}$

VALUE	DOCUMENT ID		TECN	COMMENT
0.65±0.07±0.07	[195] AUBERT	02	BABR	$e^+e^- \to \Upsilon(4S)$

[195] AUBERT 02 reports $0.75 \pm 0.08 \pm 0.05$ for $B(\chi_{c1}(1P) \to \gamma J/\psi(1S)) = 0.273 \pm 0.016$. We rescale to our best value $B(\chi_{c1}(1P) \to \gamma J/\psi(1S)) = (31.6 \pm 3.3) \times 10^{-2}$. 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 $\Upsilon(4S)$.

$\Gamma(\chi_{c1}(1P)K^*(892)^+)/\Gamma_{total}$ — Γ_{116}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0021	90	[196] ALAM	94	CLE2	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(K^0\pi^+)/\Gamma_{total}$ — Γ_{117}/Γ

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
1.88±0.21 OUR AVERAGE					
$1.88^{+0.37}_{-0.33}{}^{+0.21}_{-0.18}$		[197] BORNHEIM	03	CLE2	$e^+e^- \to \Upsilon(4S)$
$1.94^{+0.31}_{-0.30}\pm0.16$		[197] CASEY	02	BELL	$e^+e^- \to \Upsilon(4S)$
$1.82^{+0.33}_{-0.30}\pm0.20$		[197] AUBERT	01E	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$1.37^{+0.57}_{-0.48}{}^{+0.19}_{-0.18}$		[197] ABE	01H	BELL	Repl. by CASEY 02
$1.82^{+0.46}_{-0.40}\pm0.16$		[197] CRONIN-HEN...	00	CLE2	Repl. by BORNHEIM 03
$2.3\ ^{+1.1}_{-1.0}\ \pm0.36$		GODANG	98	CLE2	Repl. by CRONIN-HENNESSY 00
< 4.8	90	ASNER	96	CLE2	Repl. by GODANG 98
<19	90	ALBRECHT	91B	ARG	$e^+e^- \to \Upsilon(4S)$
<10	90	[198] AVERY	89B	CLEO	$e^+e^- \to \Upsilon(4S)$
<68	90	AVERY	87	CLEO	$e^+e^- \to \Upsilon(4S)$

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

[198] AVERY 89B reports $< 9 \times 10^{-5}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.

$\Gamma(K^+\pi^0)/\Gamma_{total}$ — Γ_{118}/Γ

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
1.29±0.12 OUR AVERAGE					
$1.28^{+0.12}_{-0.11}\pm0.10$		[199] AUBERT	03L	BABR	$e^+e^- \to \Upsilon(4S)$
$1.29^{+0.24}_{-0.22}{}^{+0.12}_{-0.11}$		[199] BORNHEIM	03	CLE2	$e^+e^- \to \Upsilon(4S)$
$1.3\ ^{+0.25}_{-0.24}\pm0.13$		[199] CASEY	02	BELL	$e^+e^- \to \Upsilon(4S)$

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

$1.63^{+0.35}_{-0.33}{}^{+0.16}_{-0.18}$		[199] ABE	01H	BELL	Repl. by CASEY 02
$1.08^{+0.21}_{-0.19}\pm0.10$		[199] AUBERT	01E	BABR	Repl. by AUBERT 03L
$1.16^{+0.30}_{-0.27}{}^{+0.14}_{-0.13}$		[199] CRONIN-HEN...	00	CLE2	Repl. by BORNHEIM 03
<1.6	90	GODANG	98	CLE2	Repl. by CRONIN-HENNESSY 00
<1.4	90	ASNER	96	CLE2	Repl. by GODANG 98

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

$\Gamma(K^+\pi^0)/\Gamma(K^0\pi^+)$ — $\Gamma_{118}/\Gamma_{117}$

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
$\mathbf{2.38^{+0.98}_{-1.10}{}^{+0.39}_{-0.26}}$	[200] ABE	01H	BELL	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(\eta' K^+)/\Gamma_{total}$ — Γ_{119}/Γ

VALUE (units 10^{-5})	*DOCUMENT ID*		*TECN*	*COMMENT*
7.8 ±0.5 OUR AVERAGE				
$7.69\pm0.35\pm0.44$	[201] AUBERT	03W	BABR	$e^+e^- \to \Upsilon(4S)$
$7.9\ ^{+1.2}_{-1.1}\ \pm0.9$	[201] ABE	01M	BELL	$e^+e^- \to \Upsilon(4S)$
$8.0\ ^{+1.0}_{-0.9}\ \pm0.7$	[201] RICHICHI	00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$7.0\ \pm0.8\ \pm0.5$	[201] AUBERT	01G	BABR	Repl. by AUBERT 03W
$6.5\ ^{+1.5}_{-1.4}\ \pm0.9$	BEHRENS	98	CLE2	Repl. by RICHICHI 00

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

$\Gamma(\eta' K^*(892)^+)/\Gamma_{total}$ — Γ_{120}/Γ

VALUE	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
$\mathbf{<3.5\times10^{-5}}$	90	[202] RICHICHI	00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.3\times10^{-4}$	90	BEHRENS	98	CLE2	Repl. by RICHICHI 00

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

$\Gamma(\eta K^+)/\Gamma_{total}$ — Γ_{121}/Γ

VALUE	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
$\mathbf{<6.9\times10^{-6}}$	90	[203] RICHICHI	00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.4\times10^{-5}$	90	BEHRENS	98	CLE2	Repl. by RICHICHI 00

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

$\Gamma(\eta K^*(892)^+)/\Gamma_{total}$ — Γ_{122}/Γ

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{2.64^{+0.96}_{-0.82} \pm 0.33}$		[204] RICHICHI	00	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<3.0	90	BEHRENS	98	CLE2	Repl. by RICHICHI 00

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

$\Gamma(\omega K^+)/\Gamma_{total}$ — Γ_{123}/Γ

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.92^{+0.26}_{-0.23} \pm 0.10}$		[205] LU	02	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.4	90	[205] AUBERT	01G	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
<0.79	90	[205] JESSOP	00	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
$1.5\ ^{+0.7}_{-0.6}\ \pm 0.2$		[205] BERGFELD	98	CLE2	Repl. by JESSOP 00

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

$\Gamma(\omega K^*(892)^+)/\Gamma_{total}$ — Γ_{124}/Γ

VALUE	CL%	DOCUMENT ID		TECN
$\mathbf{<8.7 \times 10^{-5}}$	90	[206] BERGFELD	98	CLE2

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

$\Gamma(K^*(892)^0\pi^+)/\Gamma_{total}$ — Γ_{125}/Γ

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{1.94^{+0.42}_{-0.39}{}^{+0.41}_{-0.71}}$		[207] GARMASH	02	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<11.9	90	[208] ABE	00C	SLD	$e^+e^- \rightarrow Z$
$<\ 1.6$	90	[209] JESSOP	00	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
<39	90	[210] ADAM	96D	DLPH	$e^+e^- \rightarrow Z$
$<\ 4.1$	90	ASNER	96	CLE2	Repl. by JESSOP 00
<48	90	[211] ABREU	95N	DLPH	Sup. by ADAM 96D
<17	90	ALBRECHT	91B	ARG	$e^+e^- \rightarrow \Upsilon(4S)$
<15	90	[212] AVERY	89B	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$
<26	90	AVERY	87	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$

[207] Uses a reference decay mode $B^+ \rightarrow \overline{D}^0\pi^+$ and $\overline{D}^0 \rightarrow K^+\pi^-$ with $B(B^+ \rightarrow \overline{D}^0\pi^+) \cdot B(\overline{D}^0 \rightarrow K^+\pi^-) = (20.3 \pm 2.0) \times 10^{-5}$.

[208] ABE 00C assumes $B(Z \rightarrow b\overline{b})=(21.7 \pm 0.1)\%$ and the B fractions $f_{B^0}=f_{B^+}=(39.7^{+1.8}_{-2.2})\%$ and $f_{B_s}=(10.5^{+1.8}_{-2.2})\%$.

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

[210] ADAM 96D assumes $f_{B^0} = f_{B^-} = 0.39$ and $f_{B_s} = 0.12$.

[211] Assumes a B^0, B^- production fraction of 0.39 and a B_s production fraction of 0.12.

[212] AVERY 89B reports $< 1.3 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.

$\Gamma(K^*(892)^+\pi^0)/\Gamma_{total}$ Γ_{126}/Γ

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<3.1 \times 10^{-5}$	90	[213] JESSOP 00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<9.9 \times 10^{-5}$	90	ASNER 96	CLE2	Repl. by JESSOP 00

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

$\Gamma(K^+\pi^-\pi^+)/\Gamma_{total}$ Γ_{127}/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
$(5.7 \pm 0.4) \times 10^{-5}$ OUR AVERAGE			
$(5.36 \pm 0.31 \pm 0.51) \times 10^{-5}$	[214] GARMASH 04	BELL	$e^+e^- \to \Upsilon(4S)$
$(5.91 \pm 0.38 \pm 0.32) \times 10^{-5}$	[215] AUBERT 03M	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$(5.56 \pm 0.58 \pm 0.77) \times 10^{-5}$	[216] GARMASH 02	BELL	Repl. by GARMASH 04

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

[215] Assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$; charm and charmonium contributions are subtracted, otherwise no assumptions about intermediate resonances.

[216] Uses a reference decay mode $B^+ \to \overline{D}^0\pi^+$ and $\overline{D}^0 \to K^+\pi^-$ with $B(B^+ \to \overline{D}^0\pi^+)\cdot B(\overline{D}^0 \to K^+\pi^-) = (20.3 \pm 2.0) \times 10^{-5}$.

$\Gamma(K^+\pi^-\pi^+ \text{nonresonant})/\Gamma_{total}$ Γ_{128}/Γ

VALUE (units 10^{-5})	CL%	DOCUMENT ID	TECN	COMMENT
<2.8	90	BERGFELD 96B	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<33	90	[217] ADAM 96D	DLPH	$e^+e^- \to Z$
<40	90	[218] ABREU 95N	DLPH	Sup. by ADAM 96D
<33	90	ALBRECHT 91E	ARG	$e^+e^- \to \Upsilon(4S)$
<19	90	[219] AVERY 89B	CLEO	$e^+e^- \to \Upsilon(4S)$

[217] ADAM 96D assumes $f_{B^0} = f_{B^-} = 0.39$ and $f_{B_s} = 0.12$.

[218] Assumes a B^0, B^- production fraction of 0.39 and a B_s production fraction of 0.12.

[219] AVERY 89B reports $< 1.7 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.

$\Gamma(K^+ f_0(980))/\Gamma_{total}$ Γ_{129}/Γ

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
seen		[220] GARMASH 02	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<80	90	[221] AVERY 89B	CLEO	$e^+e^- \to \Upsilon(4S)$

[220] Uses a reference decay mode $B^+ \to \overline{D}^0\pi^+$ and $\overline{D}^0 \to K^+\pi^-$ with $B(B^+ \to \overline{D}^0\pi^+)\cdot B(\overline{D}^0 \to K^+\pi^-) = (20.3 \pm 2.0) \times 10^{-5}$ and reports $B(B^+ \to K^+ f_0(980))$ $B(f_0(980) \to \pi\pi) = (9.6^{+2.5}_{-2.3}{}^{+3.7}_{-1.7}) \times 10^{-6}$. Only charged pions from the $f_0(980)$ are used.

[221] AVERY 89B reports $< 7 \times 10^{-5}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.

$\Gamma(K^+\rho^0)/\Gamma_{\rm total}$ — Γ_{130}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.2\times10^{-5}$	90	[222] GARMASH	02	BELL	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<8.6\times10^{-5}$	90	[223] ABE	00C	SLD	$e^+e^-\to Z$
$<1.7\times10^{-5}$	90	[224] JESSOP	00	CLE2	$e^+e^-\to\Upsilon(4S)$
$<1.2\times10^{-4}$	90	[225] ADAM	96D	DLPH	$e^+e^-\to Z$
$<1.9\times10^{-5}$	90	ASNER	96	CLE2	Repl. by JESSOP 00
$<1.9\times10^{-4}$	90	[226] ABREU	95N	DLPH	Sup. by ADAM 96D
$<1.8\times10^{-4}$	90	ALBRECHT	91B	ARG	$e^+e^-\to\Upsilon(4S)$
$<8\times10^{-5}$	90	[227] AVERY	89B	CLEO	$e^+e^-\to\Upsilon(4S)$
$<2.6\times10^{-4}$	90	AVERY	87	CLEO	$e^+e^-\to\Upsilon(4S)$

[222] Uses a reference decay mode $B^+\to\overline{D}^0\pi^+$ and $\overline{D}^0\to K^+\pi^-$ with $B(B^+\to\overline{D}^0\pi^+)\cdot B(\overline{D}^0\to K^+\pi^-) = (20.3\pm2.0)\times10^{-5}$.

[223] 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 $f_{B_s}=(10.5^{+1.8}_{-2.2})$%.

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

[225] ADAM 96D assumes $f_{B^0}=f_{B^-}=0.39$ and $f_{B_s}=0.12$.

[226] Assumes a B^0, B^- production fraction of 0.39 and a B_s production fraction of 0.12.

[227] AVERY 89B reports $<7\times10^{-5}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.

$\Gamma(K_2^*(1430)^0\pi^+)/\Gamma_{\rm total}$ — Γ_{131}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<6.8\times10^{-4}$	90	ALBRECHT	91B	ARG	$e^+e^-\to\Upsilon(4S)$

$\Gamma(K^-\pi^+\pi^+)/\Gamma_{\rm total}$ — Γ_{132}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.8\times10^{-6}$	90	[228] AUBERT	03M	BABR	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<4.5\times10^{-6}$	90	[229] GARMASH	04	BELL	$e^+e^-\to\Upsilon(4S)$
$<7.0\times10^{-6}$	90	[230] GARMASH	02	BELL	$e^+e^-\to\Upsilon(4S)$

[228] Assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$; charm and charmonium contributions are subtracted, otherwise no assumptions about intermediate resonances.

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

[230] Uses a reference decay mode $B^+\to\overline{D}^0\pi^+$ and $\overline{D}^0\to K^+\pi^-$ with $B(B^+\to\overline{D}^0\pi^+)\cdot B(\overline{D}^0\to K^+\pi^-) = (20.3\pm2.0)\times10^{-5}$.

$\Gamma(K^-\pi^+\pi^+\,\text{nonresonant})/\Gamma_{\rm total}$ — Γ_{133}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5.6\times10^{-5}$	90	BERGFELD	96B	CLE2	$e^+e^-\to\Upsilon(4S)$

$\Gamma(K_1(1400)^0\pi^+)/\Gamma_{\rm total}$ — Γ_{134}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.6\times10^{-3}$	90	ALBRECHT	91B	ARG	$e^+e^-\to\Upsilon(4S)$

$\Gamma(K^0\pi^+\pi^0)/\Gamma_{total}$ — Γ_{135}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<66\times10^{-6}$	90	[231] ECKHART	02	CLE2	$e^+e^-\to\Upsilon(4S)$

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

$\Gamma(K^0\rho^+)/\Gamma_{total}$ — Γ_{136}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<4.8\times10^{-5}$	90	ASNER	96	CLE2	$e^+e^-\to\Upsilon(4S)$

$\Gamma(K^*(892)^+\pi^+\pi^-)/\Gamma_{total}$ — Γ_{137}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.1\times10^{-3}$	90	ALBRECHT	91E	ARG	$e^+e^-\to\Upsilon(4S)$

$\Gamma(K^*(892)^+\rho^0)/\Gamma_{total}$ — Γ_{138}/Γ

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$10.6^{+3.0}_{-2.6}\pm2.4$		[232] AUBERT	03V	BABR	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<74	90	[233] GODANG	02	CLE2	$e^+e^-\to\Upsilon(4S)$
<900	90	ALBRECHT	91B	ARG	$e^+e^-\to\Upsilon(4S)$

[232] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[233] Assumes a helicity 00 configuration. For a helicity 11 configuration, the limit decreases to 4.9×10^{-5}.

$\Gamma(K^*(892)^+K^*(892)^0)/\Gamma_{total}$ — Γ_{139}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<7.1\times10^{-5}$	90	[234] GODANG	02	CLE2	$e^+e^-\to\Upsilon(4S)$

[234] Assumes a helicity 00 configuration. For a helicity 11 configuration, the limit decreases to 4.8×10^{-5}.

$\Gamma(K_1(1400)^+\rho^0)/\Gamma_{total}$ — Γ_{140}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<7.8\times10^{-4}$	90	ALBRECHT	91B	ARG	$e^+e^-\to\Upsilon(4S)$

$\Gamma(K_2^*(1430)^+\rho^0)/\Gamma_{total}$ — Γ_{141}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.5\times10^{-3}$	90	ALBRECHT	91B	ARG	$e^+e^-\to\Upsilon(4S)$

$\Gamma(K^+\overline{K}^0)/\Gamma_{total}$ — Γ_{142}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.0\times10^{-6}$	90	[235] CASEY	02	BELL	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<3.3\times10^{-6}$	90	[235] BORNHEIM	03	CLE2	$e^+e^-\to\Upsilon(4S)$
$<5.0\times10^{-6}$	90	[235] ABE	01H	BELL	$e^+e^-\to\Upsilon(4S)$
$<2.4\times10^{-6}$	90	[235] AUBERT	01E	BABR	$e^+e^-\to\Upsilon(4S)$
$<5.1\times10^{-6}$	90	[235] CRONIN-HEN...	00	CLE2	$e^+e^-\to\Upsilon(4S)$
$<2.1\times10^{-5}$	90	GODANG	98	CLE2	Repl. by CRONIN-HENNESSY 00

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

$\Gamma(\overline{K}^0 K^+ \pi^0)/\Gamma_{total}$ — Γ_{143}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<24 × 10^−6	90	[236] ECKHART	02	CLE2	$e^+ e^- \to \Upsilon(4S)$

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

$\Gamma(K^+ K^0_S K^0_S)/\Gamma_{total}$ — Γ_{144}/Γ

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
13.4±1.9±1.5	[237] GARMASH	04	BELL	$e^+ e^- \to \Upsilon(4S)$

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

$\Gamma(K^0_S K^0_S \pi^+)/\Gamma_{total}$ — Γ_{145}/Γ

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<3.2	90	[238] GARMASH	04	BELL	$e^+ e^- \to \Upsilon(4S)$

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

$\Gamma(K^+ K^- \pi^+)/\Gamma_{total}$ — Γ_{146}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
< 6.3 × 10^−6	90	[239] AUBERT	03M	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<13 \times 10^{-6}$	90	[240] GARMASH	04	BELL	$e^+ e^- \to \Upsilon(4S)$
$< 1.2 \times 10^{-5}$	90	[241] GARMASH	02	BELL	$e^+ e^- \to \Upsilon(4S)$

[239] Assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$; charm and charmonium contributions are subtracted, otherwise no assumptions about intermediate resonances.
[240] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[241] Uses a reference decay mode $B^+ \to \overline{D}^0 \pi^+$ and $\overline{D}^0 \to K^+ \pi^-$ with $B(B^+ \to \overline{D}^0 \pi^+) \cdot B(\overline{D}^0 \to K^+ \pi^-) = (20.3 \pm 2.0) \times 10^{-5}$.

$\Gamma(K^+ K^- \pi^+ \text{nonresonant})/\Gamma_{total}$ — Γ_{147}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<7.5 × 10^−5	90	BERGFELD	96B	CLE2	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(K^+ K^+ \pi^-)/\Gamma_{total}$ — Γ_{148}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.3 × 10^−6	90	[242] AUBERT	03M	BABR	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<2.4 \times 10^{-6}$	90	[243] GARMASH	04	BELL	$e^+ e^- \to \Upsilon(4S)$
$<3.2 \times 10^{-6}$	90	[244] GARMASH	02	BELL	$e^+ e^- \to \Upsilon(4S)$

[242] Assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$; charm and charmonium contributions are subtracted, otherwise no assumptions about intermediate resonances.
[243] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[244] Uses a reference decay mode $B^+ \to \overline{D}^0 \pi^+$ and $\overline{D}^0 \to K^+ \pi^-$ with $B(B^+ \to \overline{D}^0 \pi^+) \cdot B(\overline{D}^0 \to K^+ \pi^-) = (20.3 \pm 2.0) \times 10^{-5}$.

$\Gamma(K^+ K^+ \pi^- \text{nonresonant})/\Gamma_{total}$ — Γ_{149}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<8.79 × 10^−5	90	ABBIENDI	00B	OPAL	$e^+ e^- \to Z$

$\Gamma(K^+ K^*(892)^0)/\Gamma_{total}$ — Γ_{150}/Γ

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<5.3 × 10^−6	90	[245] JESSOP 00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<1.29 \times 10^{-4}$	90	ABBIENDI 00B	OPAL	$e^+e^- \to Z$
$<1.38 \times 10^{-4}$	90	[246] ABE 00C	SLD	$e^+e^- \to Z$

[245] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[246] 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 $f_{B_s}=(10.5^{+1.8}_{-2.2})$%.

$\Gamma(K^+ f_J(2220))/\Gamma_{total}$ — Γ_{151}/Γ

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
not seen	[247] HUANG 03	BELL	$e^+e^- \to \Upsilon(4S)$

[247] No evidence is found for such decay and set a limit on B($B^+ \to f_J(2220)$)×B($f_J(2220) \to \phi\phi$) $< 1.2 \times 10^{-6}$ at 90%CL where the $f_J(2220)$ is a possible glueball state.

$\Gamma(K^+ K^- K^+)/\Gamma_{total}$ — Γ_{152}/Γ

VALUE (units 10^{-5})	CL%	DOCUMENT ID	TECN	COMMENT
3.08±0.21 OUR AVERAGE				
3.28±0.18±0.28		[248] GARMASH 04	BELL	$e^+e^- \to \Upsilon(4S)$
2.96±0.21±0.16		[249] AUBERT 03M	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3.53±0.37±0.45		[250] GARMASH 02	BELL	Repl. by GARMASH 04
<20	90	[251] ADAM 96D	DLPH	$e^+e^- \to Z$
<32	90	[252] ABREU 95N	DLPH	Sup. by ADAM 96D
<35	90	ALBRECHT 91E	ARG	$e^+e^- \to \Upsilon(4S)$

[248] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[249] Assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$; charm and charmonium contributions are subtracted, otherwise no assumptions about intermediate resonances.
[250] 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}.
[251] ADAM 96D assumes $f_{B^0} = f_{B^-} = 0.39$ and $f_{B_s} = 0.12$.
[252] Assumes a B^0, B^- production fraction of 0.39 and a B_s production fraction of 0.12.

$\Gamma(K^+ \phi)/\Gamma_{total}$ — Γ_{153}/Γ

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
9.3±1.0 OUR AVERAGE		Error includes scale factor of 1.3. See the ideogram below.		
$10.0^{+0.9}_{-0.8}\pm0.5$		[253] AUBERT 04A	BABR	$e^+e^- \to \Upsilon(4S)$
9.4±1.1±0.7		[254] CHEN 03B	BELL	$e^+e^- \to \Upsilon(4S)$
$5.5^{+2.1}_{-1.8}\pm0.6$		[254] BRIERE 01	CLE2	$e^+e^- \to \Upsilon(4S)$

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

$14.6^{+3.0}_{-2.8}\pm2.0$		[255] GARMASH	02	BELL	Repl. by CHEN 03B
$7.7^{+1.6}_{-1.4}\pm0.8$		[254] AUBERT	01D	BABR	$e^+e^- \to \Upsilon(4S)$
<144	90	[256] ABE	00C	SLD	$e^+e^- \to Z$
< 5	90	[254] BERGFELD	98	CLE2	
<280	90	[257] ADAM	96D	DLPH	$e^+e^- \to Z$
< 12	90	ASNER	96	CLE2	$e^+e^- \to \Upsilon(4S)$
<440	90	[258] ABREU	95N	DLPH	Sup. by ADAM 96D
<180	90	ALBRECHT	91B	ARG	$e^+e^- \to \Upsilon(4S)$
< 90	90	[259] AVERY	89B	CLEO	$e^+e^- \to \Upsilon(4S)$
<210	90	AVERY	87	CLEO	$e^+e^- \to \Upsilon(4S)$

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

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

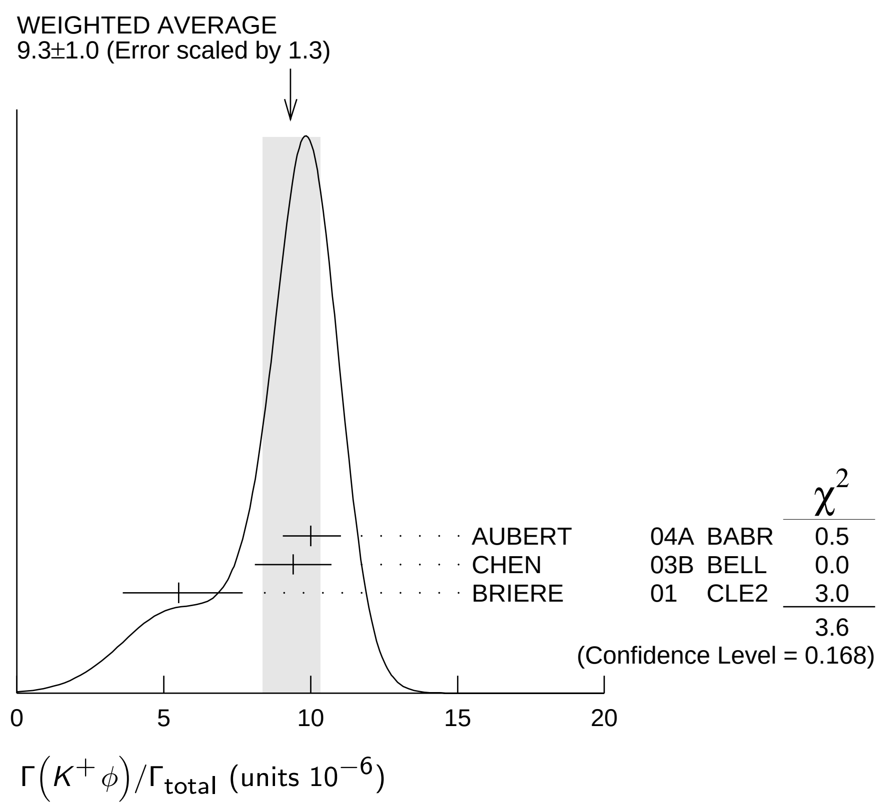
[255] Uses a reference decay mode $B^+ \to \overline{D}^0\pi^+$ and $\overline{D}^0 \to K^+\pi^-$ with $B(B^+ \to \overline{D}^0\pi^+)\cdot B(\overline{D}^0 \to K^+\pi^-) = (20.3 \pm 2.0) \times 10^{-5}$.

[256] 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 $f_{B_s}=(10.5^{+1.8}_{-2.2})\%$.

[257] ADAM 96D assumes $f_{B^0} = f_{B^-} = 0.39$ and $f_{B_s} = 0.12$.

[258] Assumes a B^0, B^- production fraction of 0.39 and a B_s production fraction of 0.12.

[259] AVERY 89B reports $< 8 \times 10^{-5}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.



$\Gamma(K^+ K^- K^+ \text{nonresonant})/\Gamma_{total}$ — Γ_{154}/Γ

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
<3.8	90	BERGFELD	96B	CLE2	$e^+e^- \to \Upsilon(4S)$

$\Gamma(K^*(892)^+ K^+ K^-)/\Gamma_{total}$ — Γ_{155}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.6 \times 10^{-3}$	90	ALBRECHT	91E	ARG	$e^+e^- \to \Upsilon(4S)$

$\Gamma(K^*(892)^+ \phi)/\Gamma_{total}$ — Γ_{156}/Γ

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
9.6±3.0 OUR AVERAGE		Error includes scale factor of 1.9.			
$12.7^{+2.2}_{-2.0}\pm1.1$		[260] AUBERT	03V	BABR	$e^+e^- \to \Upsilon(4S)$
$6.7^{+2.1+0.7}_{-1.9-1.0}$		[260] CHEN	03B	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$9.7^{+4.2}_{-3.4}\pm1.7$		[260] AUBERT	01D	BABR	Repl. by AUBERT 03V
< 22.5	90	[260] BRIERE	01	CLE2	$e^+e^- \to \Upsilon(4S)$
< 41	90	[260] BERGFELD	98	CLE2	
< 70	90	ASNER	96	CLE2	$e^+e^- \to \Upsilon(4S)$
<1300	90	ALBRECHT	91B	ARG	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(K_1(1400)^+ \phi)/\Gamma_{total}$ — Γ_{157}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.1 \times 10^{-3}$	90	ALBRECHT	91B	ARG	$e^+e^- \to \Upsilon(4S)$

$\Gamma(K_2^*(1430)^+ \phi)/\Gamma_{total}$ — Γ_{158}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.4 \times 10^{-3}$	90	ALBRECHT	91B	ARG	$e^+e^- \to \Upsilon(4S)$

$\Gamma(K^+ \phi\phi)/\Gamma_{total}$ — Γ_{159}/Γ

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$2.6^{+1.1}_{-0.9}\pm0.3$	[261] HUANG	03	BELL	$e^+e^- \to \Upsilon(4S)$

[261] Assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$ and for a $\phi\phi$ invariant mass below 2.85 GeV/c^2.

$\Gamma(K^*(892)^+ \gamma)/\Gamma_{total}$ — Γ_{160}/Γ

VALUE (units 10^{-5})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
3.8 ±0.5 OUR AVERAGE						
3.83±0.62±0.22			[262] AUBERT	02C	BABR	$e^+e^- \to \Upsilon(4S)$
$3.76^{+0.89}_{-0.83}\pm0.28$			[262] COAN	00	CLE2	$e^+e^- \to \Upsilon(4S)$

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

5.7 ±3.1 ±1.1		5	[263] AMMAR	93	CLE2	Repl. by COAN 00
< 55	90		[264] ALBRECHT	89G	ARG	$e^+e^- \to \Upsilon(4S)$
< 55	90		[265] AVERY	89B	CLEO	$e^+e^- \to \Upsilon(4S)$
<180	90		AVERY	87	CLEO	$e^+e^- \to \Upsilon(4S)$

[262] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[263] AMMAR 93 observed 4.1 ± 2.3 events above background.
[264] Assumes the $\Upsilon(4S)$ decays 45% to $B^0 \overline{B}^0$.
[265] Assumes the $\Upsilon(4S)$ decays 43% to $B^0 \overline{B}^0$.

$\Gamma(K_1(1270)^+\gamma)/\Gamma_{\text{total}}$ — Γ_{161}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<9.9 × 10^{-5}	90	[266] NISHIDA	02	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.0073	90	[267] ALBRECHT	89G	ARG	$e^+e^- \to \Upsilon(4S)$

[266] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[267] ALBRECHT 89G reports < 0.0066 assuming the $\Upsilon(4S)$ decays 45% to $B^0 \overline{B}^0$. We rescale to 50%.

$\Gamma(\phi K^+\gamma)/\Gamma_{\text{total}}$ — Γ_{162}/Γ

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
3.4±0.9±0.4	[268] DRUTSKOY	04	BELL	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(K^+\pi^-\pi^+\gamma)/\Gamma_{\text{total}}$ — Γ_{163}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
$(2.4\pm0.5^{+0.4}_{-0.2}) \times 10^{-5}$	[269,270] NISHIDA	02	BELL	$e^+e^- \to \Upsilon(4S)$

[269] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[270] $M_{K\pi\pi} < 2.4$ GeV/c^2.

$\Gamma(K^*(892)^0\pi^+\gamma)/\Gamma_{\text{total}}$ — Γ_{164}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
$(2.0^{+0.7}_{-0.6}\pm0.2) \times 10^{-5}$	[271,272] NISHIDA	02	BELL	$e^+e^- \to \Upsilon(4S)$

[271] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[272] $M_{K\pi\pi} < 2.4$ GeV/c^2.

$\Gamma(K^+\rho^0\gamma)/\Gamma_{\text{total}}$ — Γ_{165}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<2.0 × 10^{-5}	90	[273,274] NISHIDA	02	BELL	$e^+e^- \to \Upsilon(4S)$

[273] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[274] $M_{K\pi\pi} < 2.4$ GeV/c^2.

$\Gamma(K^+\pi^-\pi^+\gamma$ nonresonant$)/\Gamma_{total}$ — Γ_{166}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<9.2\times10^{-6}$	90	[275,276] NISHIDA	02	BELL	$e^+e^-\to\Upsilon(4S)$

[275] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[276] $M_{K\pi\pi} < 2.4$ GeV/c^2.

$\Gamma(K_1(1400)^+\gamma)/\Gamma_{total}$ — Γ_{167}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5.0\times10^{-5}$	90	[277] NISHIDA	02	BELL	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.0022	90	[278] ALBRECHT	89G	ARG	$e^+e^-\to\Upsilon(4S)$

[277] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[278] ALBRECHT 89G reports <0.0020 assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%.

$\Gamma(K_2^*(1430)^+\gamma)/\Gamma_{total}$ — Γ_{168}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0014	90	[279] ALBRECHT	89G	ARG	$e^+e^-\to\Upsilon(4S)$

[279] ALBRECHT 89G reports <0.0013 assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%.

$\Gamma(K^*(1680)^+\gamma)/\Gamma_{total}$ — Γ_{169}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0019	90	[280] ALBRECHT	89G	ARG	$e^+e^-\to\Upsilon(4S)$

[280] ALBRECHT 89G reports <0.0017 assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%.

$\Gamma(K_3^*(1780)^+\gamma)/\Gamma_{total}$ — Γ_{170}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0055	90	[281] ALBRECHT	89G	ARG	$e^+e^-\to\Upsilon(4S)$

[281] ALBRECHT 89G reports <0.005 assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%.

$\Gamma(K_4^*(2045)^+\gamma)/\Gamma_{total}$ — Γ_{171}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0099	90	[282] ALBRECHT	89G	ARG	$e^+e^-\to\Upsilon(4S)$

[282] ALBRECHT 89G reports <0.0090 assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%.

$\Gamma(\rho^+\gamma)/\Gamma_{total}$ — Γ_{172}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.1\times10^{-6}$	90	[283] AUBERT	04C	BABR	$e^+e^-\to\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.3\times10^{-5}$	90	[284] COAN	00	CLE2	$e^+e^-\to\Upsilon(4S)$

[283] Assumes equal production of B^+ and B^0 at $\Upsilon(4S)$.
[284] 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.

$\Gamma(\pi^+\pi^0)/\Gamma_{total}$ — Γ_{173}/Γ

VALUE (units 10^{-5})	CL%	DOCUMENT ID	TECN	COMMENT
$0.56^{+0.09}_{-0.11}$ OUR AVERAGE				
$0.55^{+0.10}_{-0.19}\pm0.06$		[285] AUBERT 03L	BABR	$e^+e^- \to \Upsilon(4S)$
$0.46^{+0.18}_{-0.16}{}^{+0.06}_{-0.07}$		[285] BORNHEIM 03	CLE2	$e^+e^- \to \Upsilon(4S)$
$0.74^{+0.23}_{-0.22}\pm0.09$		[285] CASEY 02	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<$ 1.34	90	[285] ABE 01H	BELL	$e^+e^- \to \Upsilon(4S)$
$<$ 0.96	90	[285] AUBERT 01E	BABR	$e^+e^- \to \Upsilon(4S)$
$<$ 1.27	90	[285] CRONIN-HEN...00	CLE2	$e^+e^- \to \Upsilon(4S)$
$<$ 2.0	90	GODANG 98	CLE2	Repl. by CRONIN-HENNESSY 00
$<$ 1.7	90	ASNER 96	CLE2	Repl. by GODANG 98
$<$ 24	90	[286] ALBRECHT 90B	ARG	$e^+e^- \to \Upsilon(4S)$
$<$230	90	[287] BEBEK 87	CLEO	$e^+e^- \to \Upsilon(4S)$

[285] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[286] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$.
[287] BEBEK 87 assume the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$.

$\Gamma(\pi^+\pi^+\pi^-)/\Gamma_{total}$ — Γ_{174}/Γ

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
10.9±3.3±1.6		[288] AUBERT 03M	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<$130	90	[289] ADAM 96D	DLPH	$e^+e^- \to Z$
$<$220	90	[290] ABREU 95N	DLPH	Sup. by ADAM 96D
$<$450	90	[291] ALBRECHT 90B	ARG	$e^+e^- \to \Upsilon(4S)$
$<$190	90	[292] BORTOLETTO89	CLEO	$e^+e^- \to \Upsilon(4S)$

[288] Assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$; charm and charmonium contributions are subtracted, otherwise no assumptions about intermediate resonances.
[289] ADAM 96D assumes $f_{B^0} = f_{B^-} = 0.39$ and $f_{B_s} = 0.12$.
[290] Assumes a B^0, B^- production fraction of 0.39 and a B_s production fraction of 0.12.
[291] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$.
[292] BORTOLETTO 89 reports $< 1.7\times10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.

$\Gamma(\rho^0\pi^+)/\Gamma_{total}$ — Γ_{175}/Γ

VALUE (units 10^{-5})	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
0.86±0.20 OUR AVERAGE					
$0.80^{+0.23}_{-0.20}\pm0.07$			[293] GORDON 02	BELL	$e^+e^- \to \Upsilon(\mathrm{rS})$
$1.04^{+0.33}_{-0.34}\pm0.21$			[293] JESSOP 00	CLE2	$e^+e^- \to \Upsilon(4S)$

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

$<$ 8.3	90		[294] ABE	00C	SLD	$e^+e^- \to Z$
$<$16	90		[295] ADAM	96D	DLPH	$e^+e^- \to Z$
$<$ 4.3	90		ASNER	96	CLE2	Repl. by JESSOP 00
$<$26	90		[296] ABREU	95N	DLPH	Sup. by ADAM 96D
$<$15	90		[297] ALBRECHT	90B	ARG	$e^+e^- \to \Upsilon(4S)$
$<$17	90		[298] BORTOLETTO	89	CLEO	$e^+e^- \to \Upsilon(4S)$
$<$23	90		[298] BEBEK	87	CLEO	$e^+e^- \to \Upsilon(4S)$
$<$60	90	0	GILES	84	CLEO	Repl. by BEBEK 87

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

[294] 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}=$(10.5^{+1.8}_{-2.2})$%.

[295] ADAM 96D assumes $f_{B^0} = f_{B^-} = 0.39$ and $f_{B_s} = 0.12$.

[296] Assumes a B^0, B^- production fraction of 0.39 and a B_s production fraction of 0.12.

[297] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$.

[298] Papers assume the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.

$\left[\Gamma(K^*(892)^0\pi^+) + \Gamma(\rho^0\pi^+)\right]/\Gamma_{total}$ $\qquad(\Gamma_{125}+\Gamma_{175})/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
$(17\ ^{+12}_{-8}\ \pm2)\times10^{-5}$	[299] ADAM	96D	DLPH	$e^+e^- \to Z$

[299] ADAM 96D assumes $f_{B^0} = f_{B^-} = 0.39$ and $f_{B_s} = 0.12$.

$\Gamma(\pi^+ f_0(980))/\Gamma_{total}$ $\qquad\Gamma_{176}/\Gamma$

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.4\times10^{-4}$	90	[300] BORTOLETTO	89	CLEO	$e^+e^- \to \Upsilon(4S)$

[300] BORTOLETTO 89 reports $< 1.2 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.

$\Gamma(\pi^+ f_2(1270))/\Gamma_{total}$ $\qquad\Gamma_{177}/\Gamma$

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.4\times10^{-4}$	90	[301] BORTOLETTO	89	CLEO	$e^+e^- \to \Upsilon(4S)$

[301] BORTOLETTO 89 reports $< 2.1 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.

$\Gamma(\pi^+\pi^-\pi^+ \text{ nonresonant})/\Gamma_{total}$ $\qquad\Gamma_{178}/\Gamma$

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<4.1\times10^{-5}$	90	BERGFELD	96B	CLE2	$e^+e^- \to \Upsilon(4S)$

$\Gamma(\pi^+\pi^0\pi^0)/\Gamma_{total}$ $\qquad\Gamma_{179}/\Gamma$

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<8.9\times10^{-4}$	90	[302] ALBRECHT	90B	ARG	$e^+e^- \to \Upsilon(4S)$

[302] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$.

$\Gamma(\rho^+\pi^0)/\Gamma_{total}$ — Γ_{180}/Γ

VALUE	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
<4.3 × 10^−5	90	[303] JESSOP	00	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<7.7\times10^{-5}$	90	ASNER	96	CLE2	Repl. by JESSOP 00
$<5.5\times10^{-4}$	90	[304] ALBRECHT	90B	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[303] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$. Assumes no nonresonant contributions of $B^+ \rightarrow \pi^+\pi^0\pi^0$.
[304] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$.

$\Gamma(\pi^+\pi^-\pi^+\pi^0)/\Gamma_{total}$ — Γ_{181}/Γ

VALUE	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
<4.0 × 10^−3	90	[305] ALBRECHT	90B	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[305] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$.

$\Gamma(\rho^+\rho^0)/\Gamma_{total}$ — Γ_{182}/Γ

VALUE (units 10^{-5})	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
2.6 ±0.6 OUR AVERAGE					
$2.25^{+0.57}_{-0.54}\pm0.58$		[306] AUBERT	03V	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$3.17\pm0.71^{+0.38}_{-0.67}$		[307] ZHANG	03B	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<100	90	[308] ALBRECHT	90B	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[306] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[307] Assumes equal production of B^0 and B^+ at the $\Upsilon(4S)$ and the systematic error includes the error associated with the helicity-mix uncertainty.
[308] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$.

$\Gamma(a_1(1260)^+\pi^0)/\Gamma_{total}$ — Γ_{183}/Γ

VALUE	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
<1.7 × 10^−3	90	[309] ALBRECHT	90B	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[309] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$.

$\Gamma(a_1(1260)^0\pi^+)/\Gamma_{total}$ — Γ_{184}/Γ

VALUE	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
<9.0 × 10^−4	90	[310] ALBRECHT	90B	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

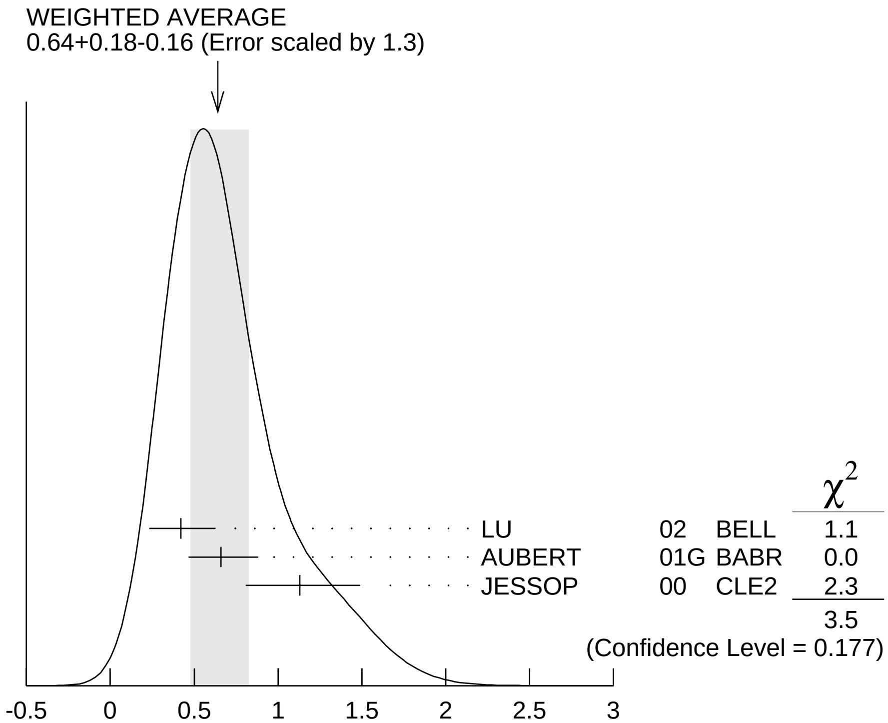
[310] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$.

$\Gamma(\omega\pi^+)/\Gamma_{total}$ — Γ_{185}/Γ

VALUE (units 10^{-5})	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
$0.64^{+0.18}_{-0.16}$ OUR AVERAGE Error includes scale factor of 1.3. See the ideogram below.					
$0.42^{+0.20}_{-0.18}\pm0.05$		[311] LU	02	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
$0.66^{+0.21}_{-0.18}\pm0.07$		[311] AUBERT	01G	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$1.13^{+0.33}_{-0.29}\pm0.14$		[311] JESSOP	00	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					

<2.3	90	[311] BERGFELD	98	CLE2	Repl. by JESSOP 00
<40	90	[312] ALBRECHT	90B	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[311] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[312] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$.



$\Gamma(\omega\pi^+)/\Gamma_{total}$ Γ_{185}/Γ

$\Gamma(\omega\rho^+)/\Gamma_{total}$ Γ_{186}/Γ

VALUE	CL%	DOCUMENT ID		TECN
$<6.1\times10^{-5}$	90	[313] BERGFELD	98	CLE2

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

$\Gamma(\eta\pi^+)/\Gamma_{total}$ Γ_{187}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5.7\times10^{-6}$	90	[314] RICHICHI	00	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.5\times10^{-5}$	90	BEHRENS	98	CLE2	Repl. by RICHICHI 00
$<7.0\times10^{-4}$	90	[315] ALBRECHT	90B	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[314] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[315] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$.

$\Gamma(\eta'\pi^+)/\Gamma_{total}$ Γ_{188}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<7.0\times10^{-6}$	90	[316] ABE	01M	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

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

$<1.2 \times 10^{-5}$	90	[316] AUBERT	01G	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
$<1.2 \times 10^{-5}$	90	[316] RICHICHI	00	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
$<3.1 \times 10^{-5}$	90	BEHRENS	98	CLE2	Repl. by RICHICHI 00

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

$\Gamma(\eta' \rho^+)/\Gamma_{total}$ — Γ_{189}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.3 \times 10^{-5}$	90	[317] RICHICHI	00	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<4.7 \times 10^{-5}$	90	BEHRENS	98	CLE2	Repl. by RICHICHI 00

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

$\Gamma(\eta \rho^+)/\Gamma_{total}$ — Γ_{190}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.5 \times 10^{-5}$	90	[318] RICHICHI	00	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<3.2 \times 10^{-5}$	90	BEHRENS	98	CLE2	Repl. by RICHICHI 00

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

$\Gamma(\phi \pi^+)/\Gamma_{total}$ — Γ_{191}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<4.1 \times 10^{-7}$	90	[319] AUBERT	04A	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.4 \times 10^{-6}$	90	[320] AUBERT	01D	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
$<1.53 \times 10^{-4}$	90	[321] ABE	00C	SLD	$e^+ e^- \rightarrow Z$
$<0.5 \times 10^{-5}$	90	[320] BERGFELD	98	CLE2	

[319] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[320] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[321] 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 $f_{B_s}=(10.5^{+1.8}_{-2.2})$%.

$\Gamma(\phi \rho^+)/\Gamma_{total}$ — Γ_{192}/Γ

VALUE	DOCUMENT ID		TECN
$<1.6 \times 10^{-5}$	[322] BERGFELD	98	CLE2

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

$\Gamma(\pi^+ \pi^+ \pi^+ \pi^- \pi^-)/\Gamma_{total}$ — Γ_{193}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<8.6 \times 10^{-4}$	90	[323] ALBRECHT	90B	ARG	$e^+ e^- \rightarrow \Upsilon(4S)$

[323] ALBRECHT 90B limit assumes equal production of $B^0 \overline{B}^0$ and $B^+ B^-$ at $\Upsilon(4S)$.

$\Gamma(\rho^0 a_1(1260)^+)/\Gamma_{total}$ — Γ_{194}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<6.2 × 10^−4	90	[324] BORTOLETTO	89	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<6.0 \times 10^{-4}$	90	[325] ALBRECHT	90B	ARG	$e^+e^- \rightarrow \Upsilon(4S)$
$<3.2 \times 10^{-3}$	90	[324] BEBEK	87	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$

[324] BORTOLETTO 89 reports $< 5.4 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.

[325] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$.

$\Gamma(\rho^0 a_2(1320)^+)/\Gamma_{total}$ — Γ_{195}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<7.2 × 10^−4	90	[326] BORTOLETTO	89	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<2.6 \times 10^{-3}$	90	[327] BEBEK	87	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$

[326] BORTOLETTO 89 reports $< 6.3 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.

[327] BEBEK 87reports $< 2.3 \times 10^{-3}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.

$\Gamma(\pi^+\pi^+\pi^+\pi^-\pi^-\pi^0)/\Gamma_{total}$ — Γ_{196}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<6.3 × 10^−3	90	[328] ALBRECHT	90B	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[328] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$.

$\Gamma(a_1(1260)^+ a_1(1260)^0)/\Gamma_{total}$ — Γ_{197}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.3 × 10^−2	90	[329] ALBRECHT	90B	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[329] ALBRECHT 90B limit assumes equal production of $B^0\overline{B}^0$ and B^+B^- at $\Upsilon(4S)$.

$\Gamma(h^+\pi^0)/\Gamma_{total}$ — Γ_{198}/Γ

$h^+ = K^+$ or π^+

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{(1.6^{+0.6}_{-0.5} \pm 0.36) \times 10^{-5}}$	GODANG	98	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

$\Gamma(\omega h^+)/\Gamma_{total}$ — Γ_{199}/Γ

$h^+ = K^+$ or π^+

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
$\mathbf{1.38^{+0.27}_{-0.24}}$ **OUR AVERAGE**				
$1.34^{+0.33}_{-0.29} \pm 0.11$	[330] LU	02	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
$1.43^{+0.36}_{-0.32} \pm 0.20$	[330] JESSOP	00	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$2.5\ ^{+0.8}_{-0.7}\ \pm 0.3$	[330] BERGFELD	98	CLE2	Repl. by JESSOP 00

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

$\Gamma(h^+ X^0 (\text{Familon}))/\Gamma_{\text{total}}$ Γ_{200}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<4.9 \times 10^{-5}$	90	[331] AMMAR	01B	CLE2	$e^+ e^- \to \Upsilon(4S)$

[331] 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.

$\Gamma(p\overline{p}\pi^+)/\Gamma_{\text{total}}$ Γ_{201}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$< 3.7 \times 10^{-6}$	90	[332,333] ABE	02K	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$< 5.0 \times 10^{-4}$	90	[334] ABREU	95N	DLPH	Sup. by ADAM 96D
$< 1.6 \times 10^{-4}$	90	[335] BEBEK	89	CLEO	$e^+ e^- \to \Upsilon(4S)$
$(5.7 \pm 1.5 \pm 2.1) \times 10^{-4}$		[336] ALBRECHT	88F	ARG	$e^+ e^- \to \Upsilon(4S)$

[332] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[333] Explicitly vetoes resonant production of $p\overline{p}$ from Charmonium states.
[334] Assumes a B^0, B^- production fraction of 0.39 and a B_s production fraction of 0.12.
[335] BEBEK 89 reports $< 1.4 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0 \overline{B}^0$. We rescale to 50%.
[336] 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%.

$\Gamma(p\overline{p}\pi^+ \text{nonresonant})/\Gamma_{\text{total}}$ Γ_{202}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5.3 \times 10^{-5}$	90	BERGFELD	96B	CLE2	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(p\overline{p}\pi^+\pi^+\pi^-)/\Gamma_{\text{total}}$ Γ_{203}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5.2 \times 10^{-4}$	90	[337] ALBRECHT	88F	ARG	$e^+ e^- \to \Upsilon(4S)$

[337] ALBRECHT 88F reports $< 4.7 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 45% to $B^0 \overline{B}^0$. We rescale to 50%.

$\Gamma(p\overline{p}K^+)/\Gamma_{\text{total}}$ Γ_{204}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
$(4.3^{+1.1}_{-0.9} \pm 0.5) \times 10^{-6}$	[338,339] ABE	02K	BELL	$e^+ e^- \to \Upsilon(4S)$

[338] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[339] Explicitly vetoes resonant production of $p\overline{p}$ from Charmonium states.

$\Gamma(p\overline{p}K^+ \text{nonresonant})/\Gamma_{\text{total}}$ Γ_{205}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<8.9 \times 10^{-5}$	90	BERGFELD	96B	CLE2	$e^+ e^- \to \Upsilon(4S)$

$\Gamma(p\overline{\Lambda})/\Gamma_{\text{total}}$ Γ_{206}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.5 \times 10^{-6}$	90	[340] BORNHEIM	03	CLE2	$e^+ e^- \to \Upsilon(4S)$

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

$<2.2 \times 10^{-6}$	90	[340] ABE	02O	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
$<2.6 \times 10^{-6}$	90	[341] COAN	99	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
$<6 \times 10^{-5}$	90	[342] AVERY	89B	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$
$<9.3 \times 10^{-5}$	90	[343] ALBRECHT	88F	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[340] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[341] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[342] AVERY 89B reports $< 5 \times 10^{-5}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.
[343] ALBRECHT 88F reports $< 8.5 \times 10^{-5}$ assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%.

$[\Gamma(p\overline{\Lambda}\gamma) + \Gamma(p\overline{\Sigma}\gamma)]/\Gamma_{total}$ — $(\Gamma_{207}+0.3\Gamma_{208})/\Gamma$

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.9 \times 10^{-6}$	90	[344] EDWARDS	03	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[344] Corresponds to $E_\gamma > 1.5$ GeV. The limit changes to 3.3×10^{-6} for $E_\gamma > 2.0$ GeV.

$[\Gamma(p\overline{\Lambda}\gamma) + \Gamma(p\overline{\Sigma}\gamma)]/\Gamma_{total}$ — $(0.4\Gamma_{207}+\Gamma_{208})/\Gamma$

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<7.9 \times 10^{-6}$	90	[345] EDWARDS	03	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[345] Corresponds to $E_\gamma > 1.5$ GeV. The limit changes to 6.4×10^{-6} for $E_\gamma > 2.0$ GeV.

$\Gamma(p\overline{\Lambda}\pi^+\pi^-)/\Gamma_{total}$ — Γ_{209}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.0 \times 10^{-4}$	90	[346] ALBRECHT	88F	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[346] ALBRECHT 88F reports $< 1.8 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%.

$\Gamma(\overline{\Delta}^0 p)/\Gamma_{total}$ — Γ_{210}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.8 \times 10^{-4}$	90	[347] BORTOLETTO	89	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$

[347] BORTOLETTO 89 reports $< 3.3 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.

$\Gamma(\Delta^{++}\overline{p})/\Gamma_{total}$ — Γ_{211}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.5 \times 10^{-4}$	90	[348] BORTOLETTO	89	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$

[348] BORTOLETTO 89 reports $< 1.3 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.

$\Gamma(D^+ p\overline{p})/\Gamma_{total}$ — Γ_{212}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.5 \times 10^{-5}$	90	[349] ABE	02W	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

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

$\Gamma(D^*(2010)^+ p\overline{p})/\Gamma_{total}$ Γ_{213}/Γ

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<1.5 × 10^{-5}	90	[350] ABE 02W	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

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

$\Gamma(\overline{\Lambda}_c^- p\pi^+)/\Gamma_{total}$ Γ_{214}/Γ

VALUE (units 10^{-4})	DOCUMENT ID	TECN	COMMENT
2.1±0.7 OUR AVERAGE			
2.4±0.6±0.6	[351] DYTMAN 02	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
1.9±0.5±0.5	[352] GABYSHEV 02	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$6.2^{+2.3}_{-2.0}\pm1.6$	[353] FU 97	CLE2	Repl. by DYTMAN 02

[351] DYTMAN 02 reports $2.4^{+0.63}_{-0.62}$ for B($\Lambda_c^+ \rightarrow pK^-\pi^+$) = 0.05. We rescale to our best value B($\Lambda_c^+ \rightarrow pK^-\pi^+$) = $(5.0 \pm 1.3) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.
[352] GABYSHEV 02 reports $1.87^{+0.51}_{-0.49}$ for B($\Lambda_c^+ \rightarrow pK^-\pi^+$) = 0.05. We rescale to our best value B($\Lambda_c^+ \rightarrow pK^-\pi^+$) = $(5.0\pm1.3)\times10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.
[353] FU 97 uses PDG 96 values of Λ_c branching fraction.

$\Gamma(\overline{\Lambda}_c^- p\pi^+\pi^0)/\Gamma_{total}$ Γ_{215}/Γ

VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT
$\mathbf{1.81\pm0.29^{+0.52}_{-0.50}}$		[354,355] DYTMAN 02	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<3.12	90	[356] FU 97	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[354] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[355] DYTMAN 02 measurement uses B($\Lambda_c^- \rightarrow \overline{p}K^+\pi^-$) = 5.0 ± 1.3%. The second error includes the systematic and the uncertainty of the branching ratio.
[356] FU 97 uses PDG 96 values of Λ_c branching ratio.

$\Gamma(\overline{\Lambda}_c^- p\pi^+\pi^+\pi^-)/\Gamma_{total}$ Γ_{216}/Γ

VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT
$\mathbf{2.25\pm0.25^{+0.63}_{-0.61}}$		[357,358] DYTMAN 02	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<1.46	90	[359] FU 97	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[357] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[358] DYTMAN 02 measurement uses B($\Lambda_c^- \rightarrow \overline{p}K^+\pi^-$) = 5.0 ± 1.3%. The second error includes the systematic and the uncertainty of the branching ratio.
[359] FU 97 uses PDG 96 values of Λ_c branching ratio.

$\Gamma(\overline{\Lambda}_c^- p\pi^+\pi^+\pi^-\pi^0)/\Gamma_{total}$ Γ_{217}/Γ

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<1.34 × 10^{-2}	90	[360] FU 97	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

[360] FU 97 uses PDG 96 values of Λ_c branching ratio.

$\Gamma(\overline{\Sigma}_c(2455)^0 p)/\Gamma_{total}$ — Γ_{218}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.8 × 10^{-4}	90	[361,362] DYTMAN	02	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<9.3 \times 10^{-5}$	90	[361,363] GABYSHEV	02	BELL	$e^+e^- \to \Upsilon(4S)$

[361] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[362] 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.
[363] Uses the value for $\Lambda_c \to pK^-\pi^+$ branching ratio (5.0 ± 1.3)%.

$\Gamma(\overline{\Sigma}_c(2520)^0 p)/\Gamma_{total}$ — Γ_{219}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<4.6 × 10^{-5}	90	[364,365] GABYSHEV	02	BELL	$e^+e^- \to \Upsilon(4S)$

[364] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[365] Uses the value for $\Lambda_c \to pK^-\pi^+$ branching ratio (5.0 ± 1.3)%.

$\Gamma(\overline{\Sigma}_c(2455)^0 p\pi^0)/\Gamma_{total}$ — Γ_{220}/Γ

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
4.4±1.4±1.1	[366,367] DYTMAN	02	CLE2	$e^+e^- \to \Upsilon(4S)$

[366] DYTMAN 02 reports 4.4 ± 1.4 for B($\Lambda_c^+ \to pK^-\pi^+$) = 0.05. We rescale to our best value B($\Lambda_c^+ \to pK^-\pi^+$) = (5.0 ± 1.3) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best value.
[367] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

$\Gamma(\overline{\Sigma}_c(2455)^0 p\pi^-\pi^+)/\Gamma_{total}$ — Γ_{221}/Γ

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
4.4±1.3±1.1	[368,369] DYTMAN	02	CLE2	$e^+e^- \to \Upsilon(4S)$

[368] DYTMAN 02 reports 4.4 ± 1.3 for B($\Lambda_c^+ \to pK^-\pi^+$) = 0.05. We rescale to our best value B($\Lambda_c^+ \to pK^-\pi^+$) = (5.0 ± 1.3) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best value.
[369] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

$\Gamma(\overline{\Sigma}_c(2455)^{--} p\pi^+\pi^+)/\Gamma_{total}$ — Γ_{222}/Γ

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
2.8±1.0±0.7	[370,371] DYTMAN	02	CLE2	$e^+e^- \to \Upsilon(4S)$

[370] DYTMAN 02 reports 2.8 ± 1.0 for B($\Lambda_c^+ \to pK^-\pi^+$) = 0.05. We rescale to our best value B($\Lambda_c^+ \to pK^-\pi^+$) = (5.0 ± 1.3) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best value.
[371] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.

$\Gamma(\overline{\Lambda}_c(2593)^- / \overline{\Lambda}_c(2625)^- p\pi^+)/\Gamma_{total}$ — Γ_{223}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.9 × 10^{-4}	90	[372,373] DYTMAN	02	CLE2	$e^+e^- \to \Upsilon(4S)$

[372] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[373] 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.

$\Gamma(\pi^+ e^+ e^-)/\Gamma_{total}$ Γ_{224}/Γ

Test for $\Delta B = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0039	90	[374] WEIR	90B	MRK2	$e^+ e^-$ 29 GeV

[374] WEIR 90B assumes B^+ production cross section from LUND.

$\Gamma(\pi^+ \mu^+ \mu^-)/\Gamma_{total}$ Γ_{225}/Γ

Test for $\Delta B = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0091	90	[375] WEIR	90B	MRK2	$e^+ e^-$ 29 GeV

[375] WEIR 90B assumes B^+ production cross section from LUND.

$\Gamma(K^+ e^+ e^-)/\Gamma_{total}$ Γ_{226}/Γ

Test for $\Delta B = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE (units 10^{-7})	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{6.3^{+1.9}_{-1.7} \pm 0.3}$		[376] ISHIKAWA	03	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<$ 14	90	[377] ABE	02	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
$<$ 9	90	[377] AUBERT	02L	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
$<$ 24	90	[378] ANDERSON	01B	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$
$<$ 990	90	[379] ALBRECHT	91E	ARG	$e^+ e^- \rightarrow \Upsilon(4S)$
$<$68000	90	[380] WEIR	90B	MRK2	$e^+ e^-$ 29 GeV
$<$ 600	90	[381] AVERY	89B	CLEO	$e^+ e^- \rightarrow \Upsilon(4S)$
$<$ 2500	90	[382] AVERY	87	CLEO	$e^+ e^- \rightarrow \Upsilon(4S)$

[376] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. The second error is a total of systematic uncertainties including model dependence.
[377] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[378] The result is for di-lepton masses above 0.5 GeV.
[379] ALBRECHT 91E reports $< 9.0 \times 10^{-5}$ assuming the $\Upsilon(4S)$ decays 45% to $B^0 \overline{B}^0$. We rescale to 50%.
[380] WEIR 90B assumes B^+ production cross section from LUND.
[381] AVERY 89B reports $< 5 \times 10^{-5}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0 \overline{B}^0$. We rescale to 50%.
[382] AVERY 87 reports $< 2.1 \times 10^{-4}$ assuming the $\Upsilon(4S)$ decays 40% to $B^0 \overline{B}^0$. We rescale to 50%.

$\Gamma(K^+ \mu^+ \mu^-)/\Gamma_{total}$ Γ_{227}/Γ

Test for $\Delta B = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.45^{+0.14}_{-0.12} \pm 0.03}$		[383] ISHIKAWA	03	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$

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

$0.98^{+0.46}_{-0.36}\pm0.16$		[384] ABE	02	BELL	Repl. by ISHIKAWA 03
$<$ 1.2	90	[384] AUBERT	02L	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$<$ 3.68	90	[385] ANDERSON	01B	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$
$<$ 5.2	90	[386] AFFOLDER	99B	CDF	$p\overline{p}$ at 1.8 TeV
$<$ 10	90	[387] ABE	96L	CDF	Repl. by AFFOLDER 99B
$<$ 240	90	[388] ALBRECHT	91E	ARG	$e^+e^- \rightarrow \Upsilon(4S)$
$<$6400	90	[389] WEIR	90B	MRK2	e^+e^- 29 GeV
$<$ 170	90	[390] AVERY	89B	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$
$<$ 380	90	[391] AVERY	87	CLEO	$e^+e^- \rightarrow \Upsilon(4S)$

[383] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. The second error is a total of systematic uncertainties including model dependence.
[384] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[385] The result is for di-lepton masses above 0.5 GeV.
[386] AFFOLDER 99B measured relative to $B^+ \rightarrow J/\psi(1S)K^+$.
[387] ABE 96L measured relative to $B^+ \rightarrow J/\psi(1S)K^+$ using PDG 94 branching ratios.
[388] ALBRECHT 91E reports $< 2.2\times10^{-4}$ assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%.
[389] WEIR 90B assumes B^+ production cross section from LUND.
[390] AVERY 89B reports $< 1.5\times10^{-4}$ assuming the $\Upsilon(4S)$ decays 43% to $B^0\overline{B}^0$. We rescale to 50%.
[391] AVERY 87 reports $< 3.2\times10^{-4}$ assuming the $\Upsilon(4S)$ decays 40% to $B^0\overline{B}^0$. We rescale to 50%.

$\Gamma(K^+\ell^+\ell^-)/\Gamma_{total}$ — Γ_{228}/Γ

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
$5.3^{+1.1}_{-1.0}\pm0.3$	[392] ISHIKAWA	03	BELL	$e^+e^- \rightarrow \Upsilon(4S)$

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

$\Gamma(K^+\overline{\nu}\nu)/\Gamma_{total}$ — Γ_{229}/Γ

Test for $\Delta B = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.4\times10^{-4}$	90	[393] BROWDER	01	CLE2	$e^+e^- \rightarrow \Upsilon(4S)$

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

$\Gamma(K^*(892)^+e^+e^-)/\Gamma_{total}$ — Γ_{230}/Γ

Test for $\Delta B = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<4.6\times10^{-6}$	90	[394] ISHIKAWA	03	BELL	$e^+e^- \rightarrow \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<8.9\times10^{-6}$	90	[395] ABE	02	BELL	Repl. by ISHIKAWA 03
$<9.5\times10^{-6}$	90	[395] AUBERT	02L	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$<6.9\times10^{-4}$	90	[396] ALBRECHT	91E	ARG	$e^+e^- \rightarrow \Upsilon(4S)$

[394] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. The second error is a total of systematic uncertainties including model dependence.
[395] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[396] ALBRECHT 91E reports $< 6.3\times10^{-4}$ assuming the $\Upsilon(4S)$ decays 45% to $B^0\overline{B}^0$. We rescale to 50%.

$\Gamma(K^*(892)^+ \mu^+ \mu^-)/\Gamma_{total}$ Γ_{231}/Γ

Test for $\Delta B = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
< 2.2 × 10⁻⁶	90	[397] ISHIKAWA	03	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$< 3.9 \times 10^{-6}$	90	[398] ABE	02	BELL	Repl. by ISHIKAWA 03
$< 17.0 \times 10^{-6}$	90	[398] AUBERT	02L	BABR	$e^+e^- \to \Upsilon(4S)$
$< 1.2 \times 10^{-3}$	90	[399] ALBRECHT	91E	ARG	$e^+e^- \to \Upsilon(4S)$

[397] Assumes equal production of B^0 and B^+ at $\Upsilon(4S)$. The second error is a total of systematic uncertainties including model dependence.

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

[399] ALBRECHT 91E reports $< 1.1 \times 10^{-3}$ assuming the $\Upsilon(4S)$ decays 45% to $B^0 \overline{B}^0$. We rescale to 50%.

$\Gamma(K^*(892)^+ \ell^+ \ell)/\Gamma_{total}$ Γ_{232}/Γ

VALUE (units 10^{-7})	CL%	DOCUMENT ID		TECN	COMMENT
<22	90	[400] ISHIKAWA	03	BELL	$e^+e^- \to \Upsilon(4S)$

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

$\Gamma(\pi^+ e^+ \mu^-)/\Gamma_{total}$ Γ_{233}/Γ

Test of lepton family number conservation.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0064	90	[401] WEIR	90B	MRK2	e^+e^- 29 GeV

[401] WEIR 90B assumes B^+ production cross section from LUND.

$\Gamma(\pi^+ e^- \mu^+)/\Gamma_{total}$ Γ_{234}/Γ

Test of lepton family number conservation.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0064	90	[402] WEIR	90B	MRK2	e^+e^- 29 GeV

[402] WEIR 90B assumes B^+ production cross section from LUND.

$\Gamma(K^+ e^+ \mu^-)/\Gamma_{total}$ Γ_{235}/Γ

Test of lepton family number conservation.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.8 × 10⁻⁶	90	[403] AUBERT	02L	BABR	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.0064	90	[404] WEIR	90B	MRK2	e^+e^- 29 GeV

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

[404] WEIR 90B assumes B^+ production cross section from LUND.

$\Gamma(K^+ e^- \mu^+)/\Gamma_{total}$ Γ_{236}/Γ

Test of lepton family number conservation.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0064	90	[405] WEIR	90B	MRK2	e^+e^- 29 GeV

[405] WEIR 90B assumes B^+ production cross section from LUND.

$\Gamma(K^*(892)^+ e^\pm \mu^\mp)/\Gamma_{total}$ Γ_{237}/Γ

Test of lepton family number conservation.

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<7.9 × 10^{-6}	90	[406] AUBERT 02L	BABR	$e^+ e^- \to \Upsilon(4S)$

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

$\Gamma(\pi^- e^+ e^+)/\Gamma_{total}$ Γ_{238}/Γ

Test of total lepton number conservation.

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<1.6 × 10^{-6}	90	[407] EDWARDS 02B	CLE2	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<0.0039	90	[408] WEIR 90B	MRK2	$e^+ e^-$ 29 GeV

[407] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[408] WEIR 90B assumes B^+ production cross section from LUND.

$\Gamma(\pi^- \mu^+ \mu^+)/\Gamma_{total}$ Γ_{239}/Γ

Test of total lepton number conservation.

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<1.4 × 10^{-6}	90	[409] EDWARDS 02B	CLE2	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<0.0091	90	[410] WEIR 90B	MRK2	$e^+ e^-$ 29 GeV

[409] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[410] WEIR 90B assumes B^+ production cross section from LUND.

$\Gamma(\pi^- e^+ \mu^+)/\Gamma_{total}$ Γ_{240}/Γ

Test of total lepton number conservation.

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<1.3 × 10^{-6}	90	[411] EDWARDS 02B	CLE2	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<0.0064	90	[412] WEIR 90B	MRK2	$e^+ e^-$ 29 GeV

[411] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[412] WEIR 90B assumes B^+ production cross section from LUND.

$\Gamma(\rho^- e^+ e^+)/\Gamma_{total}$ Γ_{241}/Γ

Test of total lepton number conservation.

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<2.6	90	[413] EDWARDS 02B	CLE2	$e^+ e^- \to \Upsilon(4S)$

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

$\Gamma(\rho^- \mu^+ \mu^+)/\Gamma_{total}$ Γ_{242}/Γ

Test of total lepton number conservation.

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<5.0	90	[414] EDWARDS 02B	CLE2	$e^+ e^- \to \Upsilon(4S)$

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

$\Gamma(\rho^- e^+ \mu^+)/\Gamma_{total}$ — Γ_{243}/Γ

Test of lepton family number conservation.

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<3.3	90	[415] EDWARDS	02B	CLE2	$e^+ e^- \to \Upsilon(4S)$

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

$\Gamma(K^- e^+ e^+)/\Gamma_{total}$ — Γ_{244}/Γ

Test of total lepton number conservation.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.0 $\times 10^{-6}$	90	[416] EDWARDS	02B	CLE2	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.0039	90	[417] WEIR	90B	MRK2	$e^+ e^-$ 29 GeV

[416] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[417] WEIR 90B assumes B^+ production cross section from LUND.

$\Gamma(K^- \mu^+ \mu^+)/\Gamma_{total}$ — Γ_{245}/Γ

Test of total lepton number conservation.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.8 $\times 10^{-6}$	90	[418] EDWARDS	02B	CLE2	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.0091	90	[419] WEIR	90B	MRK2	$e^+ e^-$ 29 GeV

[418] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[419] WEIR 90B assumes B^+ production cross section from LUND.

$\Gamma(K^- e^+ \mu^+)/\Gamma_{total}$ — Γ_{246}/Γ

Test of total lepton number conservation.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<2.0 $\times 10^{-6}$	90	[420] EDWARDS	02B	CLE2	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.0064	90	[421] WEIR	90B	MRK2	$e^+ e^-$ 29 GeV

[420] Assumes equal production of B^+ and B^0 at the $\Upsilon(4S)$.
[421] WEIR 90B assumes B^+ production cross section from LUND.

$\Gamma(K^*(892)^- e^+ e^+)/\Gamma_{total}$ — Γ_{247}/Γ

Test of total lepton number conservation.

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<2.8	90	[422] EDWARDS	02B	CLE2	$e^+ e^- \to \Upsilon(4S)$

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

$\Gamma(K^*(892)^- \mu^+ \mu^+)/\Gamma_{total}$ — Γ_{248}/Γ

Test of total lepton number conservation.

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
<8.3	90	[423] EDWARDS	02B	CLE2	$e^+ e^- \to \Upsilon(4S)$

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

$\Gamma(K^*(892)^- e^+ \mu^+)/\Gamma_{total}$ Γ_{249}/Γ

Test of lepton family number conservation.

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<4.4	90	[424] EDWARDS 02B	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

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

POLARIZATION IN B^+ DECAY

Γ_L / Γ in $B^+ \rightarrow \overline{D}^{*0} \rho^+$

VALUE	DOCUMENT ID	TECN	COMMENT
0.892±0.018±0.016	CSORNA 03	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

Γ_L / Γ in $B^+ \rightarrow \phi K^*(892)^+$

VALUE	DOCUMENT ID	TECN	COMMENT
0.46±0.12±0.03	AUBERT 03V	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$

Γ_L / Γ in $B^+ \rightarrow \rho^0 K^*(892)^+$

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{0.96^{+0.04}_{-0.15}\pm0.04}$	AUBERT 03V	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$

Γ_L / Γ in $B^+ \rightarrow \rho^+ \rho^0$

VALUE	DOCUMENT ID	TECN	COMMENT
$\mathbf{0.96^{+0.05}_{-0.06}}$ **OUR AVERAGE**			
$0.97^{+0.03}_{-0.07}\pm0.04$	AUBERT 03V	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
0.948±0.106±0.021	ZHANG 03B	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$

CP VIOLATION

A_{CP} is defined as

$$\frac{B(B^- \rightarrow \overline{f}) - B(B^+ \rightarrow f)}{B(B^- \rightarrow \overline{f}) + B(B^+ \rightarrow f)},$$

the *CP*-violation charge asymmetry of exclusive B^- and B^+ decay.

$A_{CP}(B^+ \rightarrow J/\psi(1S) K^+)$

VALUE	DOCUMENT ID	TECN	COMMENT
−0.007±0.019 OUR AVERAGE			
−0.026±0.022±0.017	ABE 03B	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
0.003±0.030±0.004	AUBERT 02F	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$
0.018±0.043±0.004	[425] BONVICINI 00	CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

[425] A +0.3% correction is applied due to a slightly higher reconstruction efficiency for the positive kaons.

$A_{CP}(B^+ \rightarrow J/\psi(1S) \pi^+)$

VALUE	DOCUMENT ID	TECN	COMMENT
−0.01 ±0.13 OUR AVERAGE			
−0.023±0.164±0.015	ABE 03B	BELL	$e^+ e^- \rightarrow \Upsilon(4S)$
0.01 ±0.22 ±0.01	AUBERT 02F	BABR	$e^+ e^- \rightarrow \Upsilon(4S)$

$A_{CP}(B^+ \to \psi(2S) K^+)$

VALUE	DOCUMENT ID	TECN	COMMENT
-0.037 ± 0.025 OUR AVERAGE			
$-0.042 \pm 0.020 \pm 0.017$	ABE 03B	BELL	$e^+ e^- \to \Upsilon(4S)$
$0.02 \pm 0.091 \pm 0.01$	[426] BONVICINI 00	CLE2	$e^+ e^- \to \Upsilon(4S)$

[426] A $+0.3\%$ correction is applied due to a slightly higher reconstruction efficiency for the positive kaons.

$A_{CP}(B^+ \to \overline{D}^0 K^+)$

VALUE	DOCUMENT ID	TECN	COMMENT
$0.04 \pm 0.06 \pm 0.03$	[427] SWAIN 03	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.003 \pm 0.080 \pm 0.037$	[428] ABE 03D	BELL	Repl. by SWAIN 03

[427] Corresponds to 90% confidence range $-0.07 < A_{CP} < 0.15$.

[428] Corresponds to 90% confidence range $-0.15 < A_{CP} < 0.16$.

$A_{CP}(B^+ \to D_{CP(+1)} K^+)$

VALUE	DOCUMENT ID	TECN	COMMENT
$0.06 \pm 0.19 \pm 0.04$	[429] SWAIN 03	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.29 \pm 0.26 \pm 0.05$	[430] ABE 03D	BELL	Repl. by SWAIN 03

[429] Corresponds to 90% confidence range $-0.26 < A_{CP} < 0.38$.

[430] Corresponds to 90% confidence range $-0.14 < A_{CP} < 0.73$.

$A_{CP}(B^+ \to D_{CP(-1)} K^+)$

VALUE	DOCUMENT ID	TECN	COMMENT
$-0.19 \pm 0.17 \pm 0.05$	[431] SWAIN 03	BELL	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$-0.22 \pm 0.24 \pm 0.04$	[432] ABE 03D	BELL	Repl. by SWAIN 03

[431] Corresponds to 90% confidence range $-0.47 < A_{CP} < 0.11$.

[432] Corresponds to 90% confidence range $-0.62 < A_{CP} < 0.18$.

$A_{CP}(B^+ \to \pi^+ \pi^0)$

VALUE	DOCUMENT ID	TECN	COMMENT
0.05 ± 0.15 OUR AVERAGE			
$-0.03^{+0.18}_{-0.17} \pm 0.02$	[433] AUBERT 03L	BABR	$e^+ e^- \to \Upsilon(4S)$
$0.30 \pm 0.30^{+0.06}_{-0.04}$	[434] CASEY 02	BELL	$e^+ e^- \to \Upsilon(4S)$

[433] Corresponds to 90% confidence range $-0.32 < A_{CP} < 0.27$.

[434] Corresponds to 90% confidence range $-0.23 < A_{CP} < +0.86$.

$A_{CP}(B^+ \to K^+ \pi^0)$

VALUE	DOCUMENT ID		TECN	COMMENT
−0.10 ±0.08 OUR AVERAGE				
−0.09 ±0.09 ±0.01	[435] AUBERT	03L	BABR	$e^+ e^- \to \Upsilon(4S)$
−0.02 ±0.19 ±0.02	[436] CASEY	02	BELL	$e^+ e^- \to \Upsilon(4S)$
−0.29 ±0.23	[437] CHEN	00	CLE2	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-0.059^{+0.222}_{-0.196}{}^{+0.055}_{-0.017}$	[438] ABE	01K	BELL	Repl. by CASEY 02
0.00 ±0.18 ±0.04	[439] AUBERT	01E	BABR	Repl. by AUBERT 03L

[435] Corresponds to 90% confidence range $-0.24 < A_{CP} < 0.06$.
[436] Corresponds to 90% confidence range $-0.35 < A_{CP} < +0.30$.
[437] Corresponds to 90% confidence range $-0.67 < A_{CP} < 0.09$.
[438] Corresponds to 90% confidence range $-0.40 < A_{CP} < 0.36$.
[439] Corresponds to 90% confidence range $-0.30 < A_{CP} < +0.30$.

$A_{CP}(B^+ \to K^0_S \pi^+)$

VALUE	DOCUMENT ID		TECN	COMMENT
0.03 ±0.08 OUR AVERAGE Error includes scale factor of 1.1.				
$0.07^{+0.09}_{-0.08}{}^{+0.01}_{-0.03}$	[440] UNNO	03	BELL	$e^+ e^- \to \Upsilon(4S)$
−0.21 ±0.18 ±0.03	[441] AUBERT	01E	BABR	$e^+ e^- \to \Upsilon(4S)$
0.18 ±0.24	[442] CHEN	00	CLE2	$e^+ e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.46 ±0.15 ±0.02	[443] CASEY	02	BELL	Repl. by UNNO 03
$0.098^{+0.430}_{-0.343}{}^{+0.020}_{-0.063}$	[444] ABE	01K	BELL	Repl. by CASEY 02

[440] Corresponds to 90% confidence range $-0.10 < A_{CP} < +0.22$.
[441] Corresponds to 90% confidence range $-0.51 < A_{CP} < 0.09$.
[442] Corresponds to 90% confidence range $-0.22 < A_{CP} < 0.56$.
[443] Corresponds to 90% confidence range $+0.19 < A_{CP} < +0.72$.
[444] Corresponds to 90% confidence range $-0.53 < A_{CP} < 0.82$.

$A_{CP}(B^+ \to \pi^+ \pi^- \pi^+)$

VALUE	DOCUMENT ID		TECN	COMMENT
−0.39±0.33±0.12	AUBERT	03M	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to \rho^+ \rho^0)$

VALUE	DOCUMENT ID		TECN	COMMENT
−0.09±0.16 OUR AVERAGE				
−0.19±0.23±0.03	AUBERT	03V	BABR	$e^+ e^- \to \Upsilon(4S)$
0.00±0.22±0.03	ZHANG	03B	BELL	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to K^+ \pi^- \pi^+)$

VALUE	DOCUMENT ID		TECN	COMMENT
0.01±0.07±0.03	AUBERT	03M	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to K^+ K^- K^+)$

VALUE	DOCUMENT ID		TECN	COMMENT
0.02±0.07±0.03	AUBERT	03M	BABR	$e^+ e^- \to \Upsilon(4S)$

$A_{CP}(B^+ \to K^+ \eta')$

VALUE	DOCUMENT ID	TECN	COMMENT
0.009±0.035 OUR AVERAGE			
0.037±0.045±0.011	[445] AUBERT 03W	BABR	$e^+e^- \to \Upsilon(4S)$
−0.11 ±0.11 ±0.02	[446] AUBERT 02E	BABR	$e^+e^- \to \Upsilon(4S)$
−0.015±0.070±0.009	[447] CHEN 02B	BELL	$e^+e^- \to \Upsilon(4S)$
0.03 ±0.12	[448] CHEN 00	CLE2	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.06 ±0.15 ±0.01	[449] ABE 01M	BELL	Repl. by CHEN 02B

[445] Corresponds to 90% confidence range $-0.04 < A_{CP} < 0.11$.
[446] Corresponds to 90% confidence range $-0.28 < A_{CP} < 0.07$.
[447] Corresponds to 90% confidence range $-0.13 < A_{CP} < 0.10$.
[448] Corresponds to 90% confidence range $-0.17 < A_{CP} < 0.23$.
[449] Corresponds to 90% confidence range $-0.20 < A_{CP} < 0.32$.

$A_{CP}(B^+ \to \omega \pi^+)$

VALUE	DOCUMENT ID	TECN	COMMENT
−0.21±0.19 OUR AVERAGE			
$-0.01^{+0.29}_{-0.31}\pm0.03$	[450] AUBERT 02E	BABR	$e^+e^- \to \Upsilon(4S)$
−0.34±0.25	[451] CHEN 00	CLE2	$e^+e^- \to \Upsilon(4S)$

[450] Corresponds to 90% confidence range $-0.50 < A_{CP} < 0.46$.
[451] Corresponds to 90% confidence range $-0.75 < A_{CP} < 0.07$.

$A_{CP}(B^+ \to \omega K^+)$

VALUE	DOCUMENT ID	TECN	COMMENT
−0.21±0.28±0.03	[452] LU 02	BELL	$e^+e^- \to \Upsilon(4S)$

[452] Corresponds to 90% confidence range $-0.70 < A_{CP} < +0.38$.

$A_{CP}(B^+ \to \phi K^+)$

VALUE	DOCUMENT ID	TECN	COMMENT
0.03±0.07 OUR AVERAGE			
0.04±0.09±0.01	[453] AUBERT 04A	BABR	$e^+e^- \to \Upsilon(4S)$
0.01±0.12±0.05	[454] CHEN 03B	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
−0.05±0.20±0.03	[455] AUBERT 02E	BABR	$e^+e^- \to \Upsilon(4S)$

[453] Corresponds to 90% confidence range $-0.10 < A_{CP} < 0.18$.
[454] Corresponds to 90% confidence range $-0.20 < A_{CP} < 0.22$.
[455] Corresponds to 90% confidence range $-0.37 < A_{CP} < 0.28$.

$A_{CP}(B^+ \to \phi K^*(892)^+)$

VALUE	DOCUMENT ID	TECN	COMMENT
0.09±0.15 OUR AVERAGE			
0.16±0.17±0.03	AUBERT 03V	BABR	$e^+e^- \to \Upsilon(4S)$
$-0.13\pm0.29^{+0.08}_{-0.11}$	[456] CHEN 03B	BELL	$e^+e^- \to \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$-0.43^{+0.36}_{-0.30}\pm0.06$	[457] AUBERT 02E	BABR	Repl. by AUBERT 03V

[456] Corresponds to 90% confidence range $-0.64 < A_{CP} < 0.36$.
[457] Corresponds to 90% confidence range $-0.88 < A_{CP} < 0.18$.

$A_{CP}(B^+ \to \rho^0 K^*(892)^+)$

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.20^{+0.32}_{-0.29} \pm 0.04}$	AUBERT	03V	BABR	$e^+ e^- \to \Upsilon(4S)$

$B^{\pm}$ REFERENCES

AUBERT	04A	PR D69 011102	B. Aubert *et al.*	(BABAR Collab.)
AUBERT	04C	PRL 92 111801	B. Aubert *et al.*	(BaBar Collab.)
DRUTSKOY	04	PRL 92 051801	A. Drutskoy *et al.*	(BELLE Collab.)
GARMASH	04	PR D69 012001	A. Garmash *et al.*	(BELLE Collab.)
ZANG	04	PR D69 017101	S.L. Zang *et al.*	(BELLE Collab.)
ABE	03B	PR D67 032003	K. Abe *et al.*	(BELLE Collab.)
ABE	03D	PRL 90 131803	K. Abe *et al.*	(BELLE Collab.)
ADAM	03	PR D67 032001	N.E. Adam *et al.*	(CLEO Collab.)
ADAM	03B	PR D68 012004	N.E. Adam *et al.*	(CLEO Collab.)
ATHAR	03	PR D68 072003	S.B. Athar *et al.*	(CLEO Collab.)
AUBERT	03K	PRL 90 231801	B. Aubert *et al.*	(BaBar Collab.)
AUBERT	03L	PRL 91 021801	B. Aubert *et al.*	(BaBar Collab.)
AUBERT	03M	PRL 91 051801	B. Aubert *et al.*	(BaBar Collab.)
AUBERT	03O	PRL 91 071801	B. Aubert *et al.*	(BaBar Collab.)
AUBERT	03V	PRL 91 171802	B. Aubert *et al.*	(BaBar Collab.)
AUBERT	03W	PRL 91 161801	B. Aubert *et al.*	(BaBar Collab.)
AUBERT	03X	PR D68 092001	B. Aubert *et al.*	(BaBar Collab.)
BORNHEIM	03	PR D68 052002	A. Bornheim *et al.*	(CLEO Collab.)
CHEN	03B	PRL 91 201801	K.-F. Chen *et al.*	(BELLE Collab.)
CHOI	03	PRL 91 262001	S.-K. Choi *et al.*	(BELLE Collab.)
CSORNA	03	PR D67 112002	S.E. Csorna *et al.*	(CLEO Collab.)
EDWARDS	03	PR D68 011102R	K.W. Edwards *et al.*	(CLEO Collab.)
FANG	03	PRL 90 071801	F. Fang *et al.*	(BELLE Collab.)
HUANG	03	PRL 91 241802	H.-C. Huang *et al.*	(BELLE Collab.)
ISHIKAWA	03	PRL 91 261601	A. Ishikawa *et al.*	(BELLE Collab.)
KROKOVNY	03B	PRL 91 262002	P. Krokovny *et al.*	(BELLE Collab.)
SWAIN	03	PR D68 051101R	S.K. Swain *et al.*	(BELLE Collab.)
UNNO	03	PR D68 011103R	Y. Unno *et al.*	(BELLE Collab.)
ZHANG	03B	PRL 91 221801	J. Zhang *et al.*	(BELLE Collab.)
ABE	02	PRL 88 021801	K. Abe *et al.*	(BELLE Collab.)
ABE	02B	PRL 88 031802	K. Abe *et al.*	(BELLE Collab.)
ABE	02H	PRL 88 171801	K. Abe *et al.*	(BELLE Collab.)
ABE	02K	PRL 88 181803	K. Abe *et al.*	(BELLE Collab.)
ABE	02N	PL B538 11	K. Abe *et al.*	(BELLE Collab.)
ABE	02O	PR D65 091103R	K. Abe *et al.*	(BELLE Collab.)
ABE	02W	PRL 89 151802	K. Abe *et al.*	(BELLE Collab.)
ACOSTA	02C	PR D65 092009	D. Acosta *et al.*	(CDF Collab.)
ACOSTA	02F	PR D66 052005	D. Acosta *et al.*	(CDF Collab.)
AHMED	02B	PR D66 031101R	S. Ahmed *et al.*	(CLEO Collab.)
AUBERT	02	PR D65 032001	B. Aubert *et al.*	(BaBar Collab.)
AUBERT	02C	PRL 88 101805	B. Aubert *et al.*	(BaBar Collab.)
AUBERT	02E	PR D65 051101R	B. Aubert *et al.*	(BaBar Collab.)
AUBERT	02F	PR D65 091101R	B. Aubert *et al.*	(BaBar Collab.)
AUBERT	02L	PRL 88 241801	B. Aubert *et al.*	(BaBar Collab.)
BRIERE	02	PRL 89 081803	R. Briere *et al.*	(CLEO Collab.)
CASEY	02	PR D66 092002	B.C.K. Casey *et al.*	(BELLE Collab.)
CHEN	02B	PL B546 196	K.-F. Chen *et al.*	(BELLE Collab.)
DRUTSKOY	02	PL B542 171	A. Drutskoy *et al.*	(BELLE Collab.)
DYTMAN	02	PR D66 091101R	S.A. Dytman *et al.*	(CLEO Collab.)
ECKHART	02	PRL 89 251801	E. Eckhart *et al.*	(CLEO Collab.)
EDWARDS	02B	PR D65 111102R	K.W. Edwards *et al.*	(CLEO Collab.)
GABYSHEV	02	PR D66 091102R	N. Gabyshev *et al.*	(BELLE Collab.)
GARMASH	02	PR D65 092005	A. Garmash *et al.*	(BELLE Collab.)
GODANG	02	PRL 88 021802	R. Godang *et al.*	(CLEO Collab.)
GORDON	02	PL B542 183	A. Gordon *et al.*	(BELLE Collab.)
LU	02	PRL 89 191801	R.-S. Lu *et al.*	(BELLE Collab.)
MAHAPATRA	02	PRL 88 101803	R. Mahapatra *et al.*	(CLEO Collab.)
NISHIDA	02	PRL 89 231801	S. Nishida *et al.*	(BELLE Collab.)
ABE	01H	PRL 87 101801	K. Abe *et al.*	(BELLE Collab.)
ABE	01I	PRL 87 111801	K. Abe *et al.*	(BELLE Collab.)
ABE	01K	PR D64 071101	K. Abe *et al.*	(BELLE Collab.)

ABE	01L	PRL 87 161601	K. Abe *et al.*	(BELLE Collab.)
ABE	01M	PL B517 309	K. Abe *et al.*	(BELLE Collab.)
ALEXANDER	01B	PR D64 092001	J.P. Alexander *et al.*	(CLEO Collab.)
AMMAR	01B	PRL 87 271801	R. Ammar *et al.*	(CLEO Collab.)
ANDERSON	01B	PRL 87 181803	S. Anderson *et al.*	(CLEO Collab.)
AUBERT	01D	PRL 87 151801	B. Aubert *et al.*	(BaBar Collab.)
AUBERT	01E	PRL 87 151802	B. Aubert *et al.*	(BaBar Collab.)
AUBERT	01F	PRL 87 201803	B. Aubert *et al.*	(BaBar Collab.)
AUBERT	01G	PRL 87 221802	B. Aubert *et al.*	(BaBar Collab.)
BARATE	01E	EPJ C19 213	R. Barate *et al.*	(ALEPH Collab.)
BRIERE	01	PRL 86 3718	R.A. Biere *et al.*	(CLEO Collab.)
BROWDER	01	PRL 86 2950	T.E. Browder *et al.*	(CLEO Collab.)
EDWARDS	01	PRL 86 30	K.W. Edwards *et al.*	(CLEO Collab.)
GRITSAN	01	PR D64 077501	A. Gritsan *et al.*	(CLEO Collab.)
RICHICHI	01	PR D63 031103R	S.J. Richichi *et al.*	(CLEO Collab.)
ABBIENDI	00B	PL B476 233	G. Abbiendi *et al.*	(OPAL Collab.)
ABE	00C	PR D62 071101R	K. Abe *et al.*	(SLD Collab.)
AHMED	00B	PR D62 112003	S. Ahmed *et al.*	(CLEO Collab.)
ANASTASSOV	00	PRL 84 1393	A. Anastassov *et al.*	(CLEO Collab.)
BARATE	00R	PL B492 275	R. Barate *et al.*	(ALEPH Collab.)
BEHRENS	00	PR D61 052001	B.H. Behrens *et al.*	(CLEO Collab.)
BONVICINI	00	PRL 84 5940	G. Bonvicini *et al.*	(CLEO Collab.)
CHEN	00	PRL 85 525	S. Chen *et al.*	(CLEO Collab.)
COAN	00	PRL 84 5283	T.E. Coan *et al.*	(CLEO Collab.)
CRONIN-HEN...	00	PRL 85 515	D. Cronin-Hennessy *et al.*	(CLEO Collab.)
CSORNA	00	PR D61 111101	S.E. Csorna *et al.*	(CLEO Collab.)
JESSOP	00	PRL 85 2881	C.P. Jessop *et al.*	(CLEO Collab.)
RICHICHI	00	PRL 85 520	S.J. Richichi *et al.*	(CLEO Collab.)
ABBIENDI	99J	EPJ C12 609	G. Abbiendi *et al.*	(OPAL Collab.)
AFFOLDER	99B	PRL 83 3378	T. Affolder *et al.*	(CDF Collab.)
BARTELT	99	PRL 82 3746	J. Bartelt *et al.*	(CLEO Collab.)
COAN	99	PR D59 111101	T.E. Coan *et al.*	(CLEO Collab.)
ABE	98B	PR D57 5382	F. Abe *et al.*	(CDF Collab.)
ABE	98O	PR D58 072001	F. Abe *et al.*	(CDF Collab.)
ABE	98Q	PR D58 092002	F. Abe *et al.*	(CDF Collab.)
ACCIARRI	98S	PL B438 417	M. Acciarri *et al.*	(L3 Collab.)
ANASTASSOV	98	PRL 80 4127	A. Anastassov *et al.*	(CLEO Collab.)
ATHANAS	98	PRL 80 5493	M. Athanas *et al.*	(CLEO Collab.)
BARATE	98Q	EPJ C4 387	R. Barate *et al.*	(ALEPH Collab.)
BEHRENS	98	PRL 80 3710	B.H. Behrens *et al.*	(CLEO Collab.)
BERGFELD	98	PRL 81 272	T. Bergfeld *et al.*	(CLEO Collab.)
BRANDENB...	98	PRL 80 2762	G. Brandenbrug *et al.*	(CLEO Collab.)
GODANG	98	PRL 80 3456	R. Godang *et al.*	(CLEO Collab.)
ABE	97J	PRL 79 590	K. Abe *et al.*	(SLD Collab.)
ACCIARRI	97F	PL B396 327	M. Acciarri *et al.*	(L3 Collab.)
ARTUSO	97	PL B399 321	M. Artuso *et al.*	(CLEO Collab.)
ATHANAS	97	PRL 79 2208	M. Athanas *et al.*	(CLEO Collab.)
BROWDER	97	PR D56 11	T. Browder *et al.*	(CLEO Collab.)
FU	97	PRL 79 3125	X. Fu *et al.*	(CLEO Collab.)
JESSOP	97	PRL 79 4533	C.P. Jessop *et al.*	(CLEO Collab.)
ABE	96B	PR D53 3496	F. Abe *et al.*	(CDF Collab.)
ABE	96C	PRL 76 4462	F. Abe *et al.*	(CDF Collab.)
ABE	96H	PRL 76 2015	F. Abe *et al.*	(CDF Collab.)
ABE	96L	PRL 76 4675	F. Abe *et al.*	(CDF Collab.)
ABE	96Q	PR D54 6596	F. Abe *et al.*	(CDF Collab.)
ABE	96R	PRL 77 5176	F. Abe *et al.*	(CDF Collab.)
ADAM	96D	ZPHY C72 207	W. Adam *et al.*	(DELPHI Collab.)
ALEXANDER	96T	PRL 77 5000	J.P. Alexander *et al.*	(CLEO Collab.)
ASNER	96	PR D53 1039	D.M. Asner *et al.*	(CLEO Collab.)
BARISH	96B	PRL 76 1570	B.C. Barish *et al.*	(CLEO Collab.)
BERGFELD	96B	PRL 77 4503	T. Bergfeld *et al.*	(CLEO Collab.)
BISHAI	96	PL B369 186	M. Bishai *et al.*	(CLEO Collab.)
BUSKULIC	96J	ZPHY C71 31	D. Buskulic *et al.*	(ALEPH Collab.)
GIBAUT	96	PR D53 4734	D. Gibaut *et al.*	(CLEO Collab.)
PDG	96	PR D54 1	R. M. Barnett *et al.*	
ABREU	95N	PL B357 255	P. Abreu *et al.*	(DELPHI Collab.)
ABREU	95Q	ZPHY C68 13	P. Abreu *et al.*	(DELPHI Collab.)
ADAM	95	ZPHY C68 363	W. Adam *et al.*	(DELPHI Collab.)
AKERS	95T	ZPHY C67 379	R. Akers *et al.*	(OPAL Collab.)
ALBRECHT	95D	PL B353 554	H. Albrecht *et al.*	(ARGUS Collab.)

ALEXANDER	95	PL B341 435	J. Alexander *et al.*	(CLEO Collab.)
Also	95C	PL B347 469 (erratum)	J. Alexander *et al.*	(CLEO Collab.)
ARTUSO	95	PRL 75 785	M. Artuso *et al.*	(CLEO Collab.)
BARISH	95	PR D51 1014	B.C. Barish *et al.*	(CLEO Collab.)
BUSKULIC	95	PL B343 444	D. Buskulic *et al.*	(ALEPH Collab.)
ABE	94D	PRL 72 3456	F. Abe *et al.*	(CDF Collab.)
ALAM	94	PR D50 43	M.S. Alam *et al.*	(CLEO Collab.)
ALBRECHT	94D	PL B335 526	H. Albrecht *et al.*	(ARGUS Collab.)
ATHANAS	94	PRL 73 3503	M. Athanas *et al.*	(CLEO Collab.)
Also	95	PRL 74 3090 (erratum)	M. Athanas *et al.*	(CLEO Collab.)
PDG	94	PR D50 1173	L. Montanet *et al.*	(CERN, LBL, BOST+)
STONE	94	HEPSY 93-11	S. Stone	
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ABREU	93D	ZPHY C57 181	P. Abreu *et al.*	(DELPHI Collab.)
ABREU	93G	PL B312 253	P. Abreu *et al.*	(DELPHI Collab.)
ACTON	93C	PL B307 247	P.D. Acton *et al.*	(OPAL Collab.)
ALBRECHT	93E	ZPHY C60 11	H. Albrecht *et al.*	(ARGUS Collab.)
ALEXANDER	93B	PL B319 365	J. Alexander *et al.*	(CLEO Collab.)
AMMAR	93	PRL 71 674	R. Ammar *et al.*	(CLEO Collab.)
BEAN	93B	PRL 70 2681	A. Bean *et al.*	(CLEO Collab.)
BUSKULIC	93D	PL B307 194	D. Buskulic *et al.*	(ALEPH Collab.)
Also	94H	PL B325 537 (errata)	D. Buskulic *et al.*	(ALEPH Collab.)
SANGHERA	93	PR D47 791	S. Sanghera *et al.*	(CLEO Collab.)
ALBRECHT	92C	PL B275 195	H. Albrecht *et al.*	(ARGUS Collab.)
ALBRECHT	92E	PL B277 209	H. Albrecht *et al.*	(ARGUS Collab.)
ALBRECHT	92G	ZPHY C54 1	H. Albrecht *et al.*	(ARGUS Collab.)
BORTOLETTO	92	PR D45 21	D. Bortoletto *et al.*	(CLEO Collab.)
BUSKULIC	92G	PL B295 396	D. Buskulic *et al.*	(ALEPH Collab.)
ALBRECHT	91B	PL B254 288	H. Albrecht *et al.*	(ARGUS Collab.)
ALBRECHT	91C	PL B255 297	H. Albrecht *et al.*	(ARGUS Collab.)
ALBRECHT	91E	PL B262 148	H. Albrecht *et al.*	(ARGUS Collab.)
BERKELMAN	91	ARNPS 41 1	K. Berkelman, S. Stone	(CORN, SYRA)
"Decays of *B* Mesons"				
FULTON	91	PR D43 651	R. Fulton *et al.*	(CLEO Collab.)
ALBRECHT	90B	PL B241 278	H. Albrecht *et al.*	(ARGUS Collab.)
ALBRECHT	90J	ZPHY C48 543	H. Albrecht *et al.*	(ARGUS Collab.)
ANTREASYAN	90B	ZPHY C48 553	D. Antreasyan *et al.*	(Crystal Ball Collab.)
BORTOLETTO	90	PRL 64 2117	D. Bortoletto *et al.*	(CLEO Collab.)
Also	92	PR D45 21	D. Bortoletto *et al.*	(CLEO Collab.)
WEIR	90B	PR D41 1384	A.J. Weir *et al.*	(Mark II Collab.)
ALBRECHT	89G	PL B229 304	H. Albrecht *et al.*	(ARGUS Collab.)
AVERY	89B	PL B223 470	P. Avery *et al.*	(CLEO Collab.)
BEBEK	89	PRL 62 8	C. Bebek *et al.*	(CLEO Collab.)
BORTOLETTO	89	PRL 62 2436	D. Bortoletto *et al.*	(CLEO Collab.)
ALBRECHT	88F	PL B209 119	H. Albrecht *et al.*	(ARGUS Collab.)
ALBRECHT	88K	PL B215 424	H. Albrecht *et al.*	(ARGUS Collab.)
ALBRECHT	87C	PL B185 218	H. Albrecht *et al.*	(ARGUS Collab.)
ALBRECHT	87D	PL B199 451	H. Albrecht *et al.*	(ARGUS Collab.)
AVERY	87	PL B183 429	P. Avery *et al.*	(CLEO Collab.)
BEBEK	87	PR D36 1289	C. Bebek *et al.*	(CLEO Collab.)
ALAM	86	PR D34 3279	M.S. Alam *et al.*	(CLEO Collab.)
PDG	86	PL 170B	M. Aguilar-Benitez *et al.*	(CERN, CIT+)
GILES	84	PR D30 2279	R. Giles *et al.*	(CLEO Collab.)