NODE=S032

D^0

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

D^0 MASS

NODE=S032M

The fit includes $D^\pm$, D^0, $D_s^\pm$, $D^{*\pm}$, D^{*0}, $D_s^{*\pm}$, $D_1(2420)^0$, $D_2^*(2460)^0$, and $D_{s1}(2536)^\pm$ mass and mass difference measurements.

NODE=S032M

Given the recent addition of much more precise measurements, we have omitted all those masses published up through 1990. See any Review before 2015 for those earlier results.

NODE=S032M

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
1864.84 ±0.04 OUR FIT					
[1864.84 ± 0.05 MeV OUR 2025 FIT]					
1864.85 ±0.04 OUR AVERAGE					
[1864.84 ± 0.05 MeV OUR 2025 AVERAGE]					
1865.100±0.210±0.046	0.34k	ANASHIN	25A	KEDR	e^+e^- at $\psi(3770)$
1864.845±0.025±0.057	63k	[1] TOMARADZE	14		$D^0 \to K^- 2\pi^+\pi^-$
1864.75 ±0.15 ±0.11		AAIJ	13V	LHCB	$D^0 \to K^+ 2K^- \pi^+$
1864.841±0.048±0.063	4.3k	[2] LEES	13S	BABR	e^+e^- at $\Upsilon(4S)$
1864.847±0.150±0.095	0.3k	CAWLFIELD	07	CLEO	$D^0 \to K_S^0 \phi$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1865.100±0.210±0.039	0.25k	ANASHIN	25	KEDR	Superseded by ANASHIN 25A
1865.30 ±0.33 ±0.23	0.1k	ANASHIN	10A	KEDR	Superseded by ANASHIN 25

NEW

NEW

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration. The largest source of error in the TOMARADZE 14 value is from the uncertainties in the K^- and K_S^0 masses. The systematic error given above is the addition in quadrature of $\pm 0.022 \pm 0.053$ MeV, where the second error is from those mass uncertainties.

NODE=S032M;LINKAGE=B

[2] The largest source of error in the LEES 13S value is from the uncertainty of the K^+ mass. The quoted systematic error is in fact $\pm 0.043 + 3\,(m_{K^+} - 493.677)$, in MeV.

NODE=S032M;LINKAGE=LE

$m_{D^\pm} - m_{D^0}$

NODE=S032DM

The fit includes $D^\pm$, D^0, $D_s^\pm$, $D^{*\pm}$, D^{*0}, $D_s^{*\pm}$, $D_1(2420)^0$, $D_2^*(2460)^0$, and $D_{s1}(2536)^\pm$ mass and mass difference measurements.

NODE=S032DM

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
4.822±0.015 OUR FIT				
4.76 ±0.12 ±0.07	AAIJ	13V	LHCB	$D^+ \to K^+ K^- \pi^+$

NODE=S032DM

D^0 MEAN LIFE

NODE=S032T

Measurements with an error $> 10 \times 10^{-15}$ s have been omitted from the average.

NODE=S032T

VALUE (10^{-15} s)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
410.3± 1.0 OUR AVERAGE					
410.5± 1.1± 0.8	171k	[1] ABUDINEN	21A	BEL2	e^+e^- at $\Upsilon(4S)$
409.6± 1.1± 1.5	210k	LINK	02F	FOCS	γ nucleus, ≈ 180 GeV
407.9± 6.0± 4.3	10k	KUSHNIR...	01	SELX	$K^-\pi^+$, $K^-\pi^+\pi^+\pi^-$
413 ± 3 ± 4	35k	AITALA	99E	E791	$K^-\pi^+$
408.5± 4.1$^{+3.5}_{-3.4}$	25k	BONVICINI	99	CLE2	$e^+e^- \approx \Upsilon(4S)$
413 ± 4 ± 3	16k	FRABETTI	94D	E687	$K^-\pi^+$, $K^-\pi^+\pi^+\pi^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
424 ±11 ± 7	5118	FRABETTI	91	E687	$K^-\pi^+$, $K^-\pi^+\pi^+\pi^-$
417 ±18 ±15	890	ALVAREZ	90	NA14	$K^-\pi^+$, $K^-\pi^+\pi^+\pi^-$
388 $^{+23}_{-21}$	641	[2] BARLAG	90C	ACCM	π^- Cu 230 GeV
480 ±40 ±30	776	ALBRECHT	88I	ARG	e^+e^- 10 GeV
422 ± 8 ±10	4212	RAAB	88	E691	Photoproduction
420 ±50	90	BARLAG	87B	ACCM	K^- and π^- 200 GeV

NODE=S032T

[1] ABUDINEN 21A determines the lifetime ratio $\tau(D^+)/\tau(D^0) = 2.510 \pm 0.013 \pm 0.007$. NODE=S032T;LINKAGE=D
[2] BARLAG 90C estimate systematic error to be negligible. NODE=S032T;LINKAGE=BL

See the related review(s):

D^0 — $\overline{D}^0$ Mixing

$\left|m_{D_1^0} - m_{D_2^0}\right| = x\,\Gamma$

NODE=S032D

The D_1^0 and D_2^0 are the mass eigenstates of the D^0 meson, as described in the note on "D^0-$\overline{D}^0$ Mixing,' above. The experiments usually present $x \equiv \Delta m/\Gamma$. Then $\Delta m = x\,\Gamma = x\,\hbar/\tau$. NODE=S032D

NODE=S032D

→ UNCHECKED ←
NEW

VALUE ($10^{10}\,\hbar\,s^{-1}$)	CL%	DOCUMENT ID		TECN	COMMENT
0.997±0.116 OUR EVALUATION		(Produced by HFLAV)			
0.98 ±0.11 OUR AVERAGE					
[$(0.94 \pm 0.11) \times 10^{10}\,\hbar\,s^{-1}$ OUR 2025 AVERAGE]					
		[1] AAIJ	25	LHCB	pp at 13 TeV
$2.07\ ^{+0.37}_{-0.59}$		[2] AAIJ	25AU	LHCB	pp at 13 TeV, $D^0 \to K^-\pi^+\pi^-\pi^+$
		[3] AAIJ	25U	LHCB	pp at 13 TeV
$0.97 \pm 0.41 \pm 0.10$		[4] ADACHI	25J	BEL2	$e^+e^- \approx \Upsilon(4S)$
$1.05 \pm 0.36 \pm 0.06$		[5] AAIJ	23BC	LHCB	pp at 13 TeV
$0.97\ ^{+0.14}_{-0.13}$		[6] AAIJ	21AB	LHCB	pp at 13 TeV
$0.66\ ^{+0.41}_{-0.37}$		[7] AAIJ	19X	LHCB	pp at 7, 8 TeV
		[8] AAIJ	18K	LHCB	pp at 7, 8, 13 TeV
$-2.10 \pm 1.29 \pm 0.41$		[9] AAIJ	16V	LHCB	pp at 7 TeV
$3.7 \pm 2.9 \pm 1.5$		[10] LEES	16D	BABR	e^+e^-, 10.6 GeV
		[11] KO	14	BELL	$e^+e^- \to \Upsilon(nS)$
$1.37 \pm 0.46\ ^{+0.18}_{-0.28}$		[12] PENG	14	BELL	$e^+e^- \to \Upsilon(nS)$
		[13] AALTONEN	13AE	CDF	$p\overline{p}$ at 1.96 TeV
$0.39 \pm 0.56 \pm 0.35$		[14] DEL-AMO-SA...	10D	BABR	e^+e^-, 10.6 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
		[15] AAIJ	17AO	LHCB	Repl. by AAIJ 18K
		[16] AAIJ	13CE	LHCB	Repl. by AAIJ 17AO
		[17] AAIJ	13N	LHCB	Repl. by AAIJ 13CE
$6.4\ ^{+1.4}_{-1.7} \pm 1.0$		[18] AUBERT	09AN	BABR	e^+e^- at 10.58 GeV
$-2\ ^{+7}_{-6}$		[19] LOWREY	09	CLEO	e^+e^- at $\psi(3770)$
$1.98 \pm 0.73\ ^{+0.32}_{-0.41}$		[20] ZHANG	07B	BELL	Repl. by PENG 14
<7	95	[21] ZHANG	06	BELL	e^+e^-
-11 to $+22$		[20] ASNER	05	CLEO	$e^+e^- \approx$ 10 GeV
<11	90	BITENC	05	BELL	
<30	90	CAWLFIELD	05	CLEO	
<7	95	[21] LI	05A	BELL	See ZHANG 06
<22	95	[22] LINK	05H	FOCS	γ nucleus
<23	95	AUBERT	04Q	BABR	
<11	95	[21] AUBERT	03Z	BABR	e^+e^-, 10.6 GeV
<7	95	[23] GODANG	00	CLE2	e^+e^-
<32	90	[24,25] AITALA	98	E791	π^- nucleus, 500 GeV
<24	90	[26] AITALA	96C	E791	π^- nucleus, 500 GeV
<21	90	[25,27] ANJOS	88C	E691	Photoproduction

[1] $D^*(2010)^+$ tag of $D^0 \to K^+\pi^-$. NODE=S032D;LINKAGE=T
[2] AAIJ 25AU result based on analysis of 440k events. Measures also the CP violating parameters $\Delta x = (-0.02 \pm 0.04) \times 10^{-2}$ and $\Delta y = (0.02^{+0.04}_{-0.03}) \times 10^{-2}$ taking hadronic parameters as external inputs. And performs an alternative fit extracting the hadronic parameters, fixing the mixing parameters. NODE=S032D;LINKAGE=U
[3] Doubly-tagged $D^0 \to K^\pm\pi^\mp$ from preceding $B \to D^*(2010)^+\mu X$ with $D^*(2010)^+ \to D^0\pi^+$. NODE=S032D;LINKAGE=S
[4] ADACHI 25J result is based on $D^0 \to K_S^0\pi^+\pi^-$ decays collected by Belle and Belle II experiments. NODE=S032D;LINKAGE=R
[5] AAIJ 23BC analysis of $D^0 \to K_S^0\pi^+\pi^-$ from $B \to D^0\mu\nu X$ events allows for CP violation (none seen). NODE=S032D;LINKAGE=Q

[6] AAIJ 21AB analysis of $D^0 \rightarrow K^0_S \pi^+ \pi^-$ decays allows for CP violation (none seen). NODE=S032D;LINKAGE=N

[7] AAIJ 19X D^0 come from D^{*+} and $\overline{B} \rightarrow D^0 \mu^- X$ decays (and c.c.). Analysis of $D^0 \rightarrow K^0_S \pi^+ \pi^-$ decays allows for CP violation (none seen). NODE=S032D;LINKAGE=M

[8] The result was established with D^0 from prompt and secondary D^*. Based on 5 fb^{-1} of data collected at $\sqrt{s}$ = 7, 8, 13 TeV. Assumes no CP violation. Reported $x'^2 = (3.9 \pm 2.7) \times 10^{-5}$ and $y' = (5.28 \pm 0.52) \times 10^{-3}$, where $x' = x \cos(\delta) + y \sin(\delta)$, $y' = y$ NODE=S032D;LINKAGE=L

[9] Model-independent measurement of the charm mixing parameters in the decay $D^0 \rightarrow K^0_S \pi^+ \pi^-$ using 1.0 fb^{-1} of LHCb data at $\sqrt{s}$ = 7 TeV. NODE=S032D;LINKAGE=I

[10] Time-dependent amplitude analysis of $D^0 \rightarrow \pi^+ \pi^- \pi^0$. NODE=S032D;LINKAGE=J

[11] Based on 976 fb^{-1} of data collected at Υ(nS) resonances. Assumes no CP violation. Reported $x'^2 = (0.09 \pm 0.22) \times 10^{-3}$ and $y' = (4.6 \pm 3.4) \times 10^{-3}$, where $x' = x\cos(\delta) + y\sin(\delta)$, $y' = y\cos(\delta) - x\sin(\delta)$ and δ is the strong phase between $D^0 \rightarrow K^+ \pi^-$ and $\overline{D}^0 \rightarrow K^+ \pi^-$. NODE=S032D;LINKAGE=G

[12] The time-dependent Dalitz-plot analysis of $D^0 \rightarrow K^0_S \pi^+ \pi^-$ is emplored. Decay-time information and interference on the Dalitz plot are used to distinguish doubly Cabibbo-suppressed decays from mixing and to measure the relative phase between $D^0 \rightarrow K^{*+} \pi^-$ and $\overline{D}^0 \rightarrow K^{*+} \pi^-$. This value allows CP violation and is sensitive to the sign of Δm. NODE=S032D;LINKAGE=H

[13] Based on 9.6 fb^{-1} of data collected at the Tevatron. Assumes no CP violation. Reported $x'^2 = (0.08 \pm 0.18) \times 10^{-3}$ and $y' = (4.3 \pm 4.3) \times 10^{-3}$, where $x' = x \cos(\delta) + y \sin(\delta)$, $y' = y \cos(\delta) - x \sin(\delta)$ and δ is the strong phase between the $D^0 \rightarrow K^+ \pi^-$ and $\overline{D}^0 \rightarrow K^+ \pi^-$. NODE=S032D;LINKAGE=A

[14] DEL-AMO-SANCHEZ 10D uses 540,800$\pm$800 $K^0_S \pi^+ \pi^-$ and 79,900$\pm$300 $K^0_S K^+ K^-$ events in a time-dependent amplitude analysis of the D^0 and $\overline{D}^0$ Dalitz plots. No evidence was found for CP violation, and the values here assume no such violation. NODE=S032D;LINKAGE=DE

[15] The result was established with D^0 from prompt and secondary D^*. Based on 3 fb^{-1} of data collected at $\sqrt{s}$ = 7, 8 TeV. Assumes no CP violation. Reported $x'^2 = (3.6 \pm 4.3) \times 10^{-5}$ and $y' = (5.23 \pm 0.84) \times 10^{-3}$, where $x' = x \cos(\delta) + y \sin(\delta)$, $y' = y \cos(\delta) - x \sin(\delta)$ and δ is the strong phase between the $D^0 \rightarrow K^+ \pi^-$ and $\overline{D}^0 \rightarrow K^+ \pi^-$. NODE=S032D;LINKAGE=K

[16] Based on 3 fb^{-1} of data collected at $\sqrt{s}$ = 7, 8 TeV. Assumes no CP violation. Reported $x'^2 = (5.5 \pm 4.9) \times 10^{-4}$ and $y' = (4.8 \pm 1.0) \times 10^{-3}$, where $x' = x \cos(\delta) + y \sin(\delta)$, $y' = y \cos(\delta) - x \sin(\delta)$ and δ is the strong phase between the $D^0 \rightarrow K^+ \pi^-$ and $\overline{D}^0 \rightarrow K^+ \pi^-$. NODE=S032D;LINKAGE=F

[17] Based on 1 fb^{-1} of data collected at $\sqrt{s}$ = 7 TeV in 2011. Assumes no CP violation. Reported $x'^2 = (-0.9 \pm 1.3) \times 10^{-4}$ and $y' = (7.2 \pm 2.4) \times 10^{-3}$, where $x' = x \cos(\delta) + y \sin(\delta)$, $y' = y \cos(\delta) - x \sin(\delta)$ and δ is the strong phase between the $D^0 \rightarrow K^+ \pi^-$ and $\overline{D}^0 \rightarrow K^+ \pi^-$. NODE=S032D;LINKAGE=AI

[18] The AUBERT 09AN values are inferred from the branching ratio $\Gamma\big(D^0 \rightarrow K^+ \pi^- \pi^0$ via $\overline{D}^0\big)/\Gamma\big(D^0 \rightarrow K^- \pi^+ \pi^0\big)$ given near the end of this Listings. Mixing is distinguished from DCS decays using decay-time information. Interference between mixing and DCS is allowed. The phase between $D^0 \rightarrow K^+ \pi^- \pi^0$ and $\overline{D}^0 \rightarrow K^+ \pi^- \pi^0$ is assumed to be small. The width difference here is y'', which is not the same as y_{CP} in the note on D^0–$\overline{D}^0$ mixing. NODE=S032D;LINKAGE=AR

[19] LOWREY 09 uses quantum correlations in $e^+ e^- \rightarrow D^0 \overline{D}^0$ at the ψ(3770). See below for coherence factors and average relative strong phases for both $D^0 \rightarrow K^- \pi^+ \pi^0$ and $D^0 \rightarrow K^- \pi^- 2\pi^+$. A fit that includes external measurements of charm mixing parameters gets $\Delta m = (2.34 \pm 0.61) \times 10^{10}\ \hbar\,\mathrm{s}^{-1}$. NODE=S032D;LINKAGE=LO

[20] The ASNER 05 and ZHANG 07B values are from the time-dependent Dalitz-plot analysis of $D^0 \rightarrow K^0_S \pi^+ \pi^-$. Decay-time information and interference on the Dalitz plot are used to distinguish doubly Cabibbo-suppressed decays from mixing and to measure the relative phase between $D^0 \rightarrow K^{*+} \pi^-$ and $\overline{D}^0 \rightarrow K^{*+} \pi^-$. This value allows CP violation and is sensitive to the sign of Δm. NODE=S032D;LINKAGE=AS

[21] The AUBERT 03Z, LI 05A, and ZHANG 06 limits are inferred from the D^0-$\overline{D}^0$ mixing ratio $\Gamma(K^+ \pi^-$ (via $\overline{D}^0))/\Gamma(K^- \pi^+)$ given near the end of this D^0 Listings. Decay-time information is used to distinguish DCS decays from D^0-$\overline{D}^0$ mixing. The limit allows interference between the DCS and mixing ratios, and also allows CP violation. AUBERT 03Z assumes the strong phase between $D^0 \rightarrow K^+ \pi^-$ and $\overline{D}^0 \rightarrow K^+ \pi^-$ amplitudes is small; if an arbitrary phase is allowed, the limit degrades by 20%. The LI 05A and ZHANG 06 limits are valid for an arbitrary strong phase. NODE=S032D;LINKAGE=AU

[22] This LINK 05H limit is inferred from the D^0-$\overline{D}^0$ mixing ratio $\Gamma(K^+ \pi^-$ (via $\overline{D}^0))/\Gamma(K^- \pi^+)$ given near the end of this D^0 Listings. Decay-time information is used to distinguish DCS decays from D^0-$\overline{D}^0$ mixing. The limit allows interference between the DCS and mixing ratios, and also allows CP violation. The strong phase between $D^0 \rightarrow K^+ \pi^-$ and $\overline{D}^0 \rightarrow K^+ \pi^-$ is assumed to be small. If an arbitrary relative strong phase is allowed, the limit degrades by 25%. NODE=S032D;LINKAGE=LI

[23] This GODANG 00 limit is inferred from the D^0-$\overline{D}^0$ mixing ratio $\Gamma(K^+\pi^-$ (via $\overline{D}^0$))/$\Gamma(K^-\pi^+)$ given near the end of this D^0 Listings. Decay-time information is used to distinguish DCS decays from D^0-$\overline{D}^0$ mixing. The limit allows interference between the DCS and mixing ratios, and also allows CP violation. The strong phase between $D^0 \rightarrow K^+\pi^-$ and $\overline{D}^0 \rightarrow K^+\pi^-$ is assumed to be small. If an arbitrary relative strong phase is allowed, the limit degrades by a factor of two. NODE=S032D;LINKAGE=GD

[24] AITALA 98 allows interference between the doubly Cabibbo-suppressed and mixing amplitudes, and also allows CP violation in this term, but assumes that A_D=A_R=0. See the note on "D^0-$\overline{D}^0$ Mixing," above. NODE=S032D;LINKAGE=AT

[25] This limit is inferred from R_M for $f = K^+\pi^-$ and $f = K^+\pi^-\pi^+\pi^-$. See the note on "D^0-$\overline{D}^0$ Mixing," above. Decay-time information is used to distinguish doubly Cabibbo-suppressed decays from D^0-$\overline{D}^0$ mixing. NODE=S032D;LINKAGE=C

[26] This limit is inferred from R_M for $f = K^+\ell^-\overline{\nu}_\ell$. See the note on "$D^0$-$\overline{D}^0$ Mixing," above. NODE=S032D;LINKAGE=FG

[27] ANJOS 88C assumes that $y = 0$. See the note on "D^0-$\overline{D}^0$ Mixing," above. Without this assumption, the limit degrades by about a factor of two. NODE=S032D;LINKAGE=DC

$(\Gamma_{D^0_1} - \Gamma_{D^0_2})/\Gamma = 2y$

NODE=S032DT

The D^0_1 and D^0_2 are the mass eigenstates of the D^0 meson, as described in the note on "D^0-$\overline{D}^0$ Mixing," above.

NODE=S032DT

Due to the strong phase difference between $D^0 \rightarrow K^+\pi^-$ and $\overline{D}^0 \rightarrow K^+\pi^-$, we exclude from the average those measurements of y' that are inferred from the D^0-$\overline{D}^0$ mixing ratio $\Gamma(K^+\pi^-$ via $\overline{D}^0$) / $\Gamma(K^+\pi^-)$ given near the end of this D^0 Listings. OUR AVERAGE assumes CP conservation, though this is disfavored by data.

In the absence of CP violation, the experimental measurement of the observable y_{CP} corresponds to y. In the presence of CP violation, y_{CP} is approximately equal to y up to a CP-violating weak phase cosine, that is very close to unity, and higher order CP-violating effects. Many experiments measure y_{CP} with respect to a reference channel, such that the quoted results below are often $y_{CP} \pm y_{CP}$(reference). We denote the actual observable and the reference channel below for those experiments with sufficient sensitivity such that y_{CP}(reference) cannot be neglected.

Some early results have been omitted. See our 2006 *Review* (Journal of Physics **G33** 1 (2006)).

NODE=S032DT

→ UNCHECKED ←
NEW

1.394± 0.056 OUR EVALUATION (Produced by HFLAV)

1.32 ± 0.09 OUR AVERAGE Error includes scale factor of 1.7. See the ideogram below. [$(1.35 \pm 0.08) \times 10^{-2}$ OUR 2025 AVERAGE Scale factor = 1.5]

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
		[1] AAIJ	25	LHCB	pp at 13 TeV
$0.42\ ^{+0.58}_{-0.54}$	440k	[2] AAIJ	25AU	LHCB	pp at 13 TeV, $D^0 \rightarrow K^-\pi^+\pi^-\pi^+$
		[3] AAIJ	25U	LHCB	pp at 13 TeV
$0.58 \pm 0.28 \pm 0.06$		[4] ADACHI	25J	BEL2	$e^+e^- \approx \Upsilon(4S)$
$2.52 \pm 0.62 \pm 0.17$		[5] AAIJ	23BC	LHCB	pp at 13 TeV
$1.392 \pm 0.052 \pm 0.026$		[6] AAIJ	22O	LHCB	pp at 13 TeV
$0.92\ ^{+0.30}_{-0.28}$	30.6M	[7] AAIJ	21AB	LHCB	pp at 13 TeV
$1.92 \pm 1.82\ ^{+1.29}_{-1.24}$	91k	[8] NAYAK	20	BELL	$D^0 \rightarrow K^0_S\omega$
$1.14 \pm 0.26 \pm 0.18$		[9] AAIJ	19	LHCB	pp at 7, 8 TeV
1.48 ± 0.74	2.3M	[10] AAIJ	19X	LHCB	$D^0 \rightarrow K^0_S\pi^+\pi^-$
		[11] AAIJ	18K	LHCB	pp at 7, 8, 13 TeV
$0.06 \pm 0.92 \pm 0.26$		[12] AAIJ	16V	LHCB	pp at 7 TeV
$0.4 \pm 1.8 \pm 1.0$		[13] LEES	16D	BABR	e^+e^-, 10.6 GeV
$2.22 \pm 0.44 \pm 0.18$		[14] STARIC	16	BELL	$e^+e^- \rightarrow \Upsilon$(nS)
$-4.0 \pm 2.6 \pm 1.4$		[15] ABLIKIM	15D	BES3	e^+e^- at $\psi(3770)$
		[16] KO	14	BELL	$e^+e^- \rightarrow \Upsilon$(nS)
$0.60 \pm 0.30\ ^{+0.10}_{-0.17}$		[17] PENG	14	BELL	$e^+e^- \rightarrow \Upsilon$(nS)
		[18] AALTONEN	13AE	CDF	$p\overline{p}$ at 1.96 TeV
$1.44 \pm 0.36 \pm 0.24$		[19] LEES	13	BABR	$e^+e^- \rightarrow \Upsilon(4S)$
$0.55 \pm 0.63 \pm 0.41$		[20] AAIJ	12K	LHCB	pp at 7 TeV

$1.14 \pm 0.40 \pm 0.30$		[21] DEL-AMO-SA...	10D	BABR	e^+e^-, 10.6 GeV		
$0.22 \pm 1.22 \pm 1.04$		[22] ZUPANC	09	BELL	$e^+e^- \approx \Upsilon(4S)$		
$-1.0 \pm 2.0 {}^{+1.4}_{-1.6}$	18k	[23] ABE	02I	BELL	$e^+e^- \approx \Upsilon(4S)$		
$-2.4 \pm 5.0 \pm 2.8$	3393	[24] CSORNA	02	CLE2	$e^+e^- \approx \Upsilon(4S)$		
$6.84 \pm 2.78 \pm 1.48$	10k	[23] LINK	00	FOCS	γ nucleus		
$+1.6 \pm 5.8 \pm 2.1$		[23] AITALA	99E	E791	$K^-\pi^+$, K^+K^-		

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

		[25] AAIJ	17AO	LHCB	Repl. by AAIJ 18K
		[26] AAIJ	13CE	LHCB	Repl. by AAIJ 17AO
		[27] AAIJ	13N	LHCB	Repl. by AAIJ 13CE
$2.32 \pm 0.44 \pm 0.36$		[28] AUBERT	09AI	BABR	See LEES 13
$-0.12 {}^{+1.10}_{-1.28} \pm 0.68$		[29] AUBERT	09AN	BABR	e^+e^- at 10.58 GeV
$1.4 {}^{+4.8}_{-5.4}$		[30] LOWREY	09	CLEO	e^+e^- at $\psi(3770)$
1.70 ± 1.52	13k	[31] AALTONEN	08E	CDF	$p\overline{p}$, $\sqrt{s} = 1.96$ TeV
$2.06 \pm 0.66 \pm 0.38$		[32] AUBERT	08U	BABR	See AUBERT 09AI
$1.94 \pm 0.88 \pm 0.62$	4k	[31] AUBERT	07W	BABR	$e^+e^- \approx 10.6$ GeV
$2.62 \pm 0.64 \pm 0.50$	160k	[33] STARIC	07	BELL	Repl. by STARIC 16
$0.74 \pm 0.50 {}^{+0.20}_{-0.31}$	534k	[34] ZHANG	07B	BELL	Repl. by PENG 14
-0.7 ± 4.9	4k	[31,35] ZHANG	06	BELL	e^+e^-
$-3.0 {}^{+5.0}_{-4.8} {}^{+1.6}_{-0.8}$		[34] ASNER	05	CLEO	$e^+e^- \approx 10$ GeV
-0.3 ± 5.7		[31,35] LI	05A	BELL	See ZHANG 06
$-5.2 {}^{+18.4}_{-16.8}$		[31,35] LINK	05H	FOCS	γ nucleus
$1.6 \pm 0.8 {}^{+1.0}_{-0.8}$	450k	[36] AUBERT	03P	BABR	See AUBERT 08U
$1.6 {}^{+6.2}_{-12.8}$		[31,35] AUBERT	03Z	BABR	e^+e^-, 10.6 GeV
$-5.0 {}^{+2.8}_{-3.2} \pm 0.6$		[31] GODANG	00	CLE2	e^+e^-

[1] $D^*(2010)^+$ tag of $D^0 \to K^+\pi^-$. NODE=S032DT;LINKAGE=V

[2] AAIJ 25AU measures also the CP violating parameters $\Delta x = (-0.02 \pm 0.04) \times 10^{-2}$ and $\Delta y = (0.02^{+0.04}_{-0.03}) \times 10^{-2}$ taking hadronic parameters as external inputs. Also performs an alternative fit extracting the hadronic parameters, fixing the mixing parameters. NODE=S032DT;LINKAGE=W

[3] Doubly-tagged $D^0 \to K^\pm\pi^\mp$ from preceding $B \to D^*(2010)^+ \mu X$ with $D^*(2010)^+ \to D^0\pi^+$. NODE=S032DT;LINKAGE=U

[4] ADACHI 25J result is based on $D^0 \to K^0_S\pi^+\pi^-$ decays collected by Belle and Belle II experiments. NODE=S032DT;LINKAGE=T

[5] AAIJ 23BC analysis of $D^0 \to K^0_S\pi^+\pi^-$ from $B \to D^0\mu\nu X$ events allows for CP violation (none seen). NODE=S032DT;LINKAGE=S

[6] AAIJ 22O is the combination of the measurement in the $D^0 \to \pi^-\pi^+$ channel and the one in the $D^0 \to K^-K^+$ channel, that are $(1.314 \pm 0.106 \pm 0.032)\%$ and $(1.416 \pm 0.060 \pm 0.028)\%$ respectively, assuming fully correlated systematics except those related to peaking backgrounds. Uses $y_{CP} - y_{CP}(K\pi)$. NODE=S032DT;LINKAGE=R

[7] AAIJ 21AB analysis of $D^0 \to K^0_S\pi^+\pi^-$ events allows for CP violation (none seen). NODE=S032DT;LINKAGE=Q

[8] NAYAK 20 reports $(1.92 \pm 1.82 \pm 1.24^{+0.34}_{-0.00}) \times 10^{-2}$ where the last uncertainty is due to possible presence of CP-even decays in the data sample. Extracts $y_{CP}=(\Gamma_{CP+} - \Gamma_{CP-}) / (\Gamma_{CP+} + \Gamma_{CP-})$ in $D^0 \to K^0_S\omega$ versus $\overline{D}^0 \to K^0_S\omega$, by measuring the decay lifetime of $D^0 \to K^0_S\omega$ with $\omega \to \pi^+\pi^-\pi^0$ versus $D^0 \to K^-\pi^+$. We list $2y_{CP} = 2y$ $(= \Delta\Gamma/\Gamma)$ in the absence of CP violation. NODE=S032DT;LINKAGE=P

[9] Based on 3 fb^{-1} of data collected at $\sqrt{s} = 7$, 8 TeV. Measures the lifetime difference between $D^0 \to K^-K^+$ and $D^0 \to \pi^-\pi^+$ (CP even) decays and $D^0 \to K^-\pi^+$ (CP mixed) decays, or $y_{CP}=(\Gamma_{CP+} - \Gamma_{CP-}) / (\Gamma_{CP+} + \Gamma_{CP-})$. The D^0 mesons are required to originate from semimuonic decays of B mesons. We list $2y_{CP} = \Delta\Gamma/\Gamma$. NODE=S032DT;LINKAGE=N

[10] AAIJ 19X D^0 come from D^{*+} and $\overline{B} \to D^0\mu^- X$ decays (and c.c.) in pp collisions at 7 and 8 TeV. Measurement allows for CP violation (none seen). NODE=S032DT;LINKAGE=O

[11] The result was established with D^0 from prompt and secondary D^*. Based on 5 fb^{-1} of data collected at $\sqrt{s} = 7$, 8, 13 TeV. Assumes no CP violation. Reported $x'^2 = (3.9 \pm 2.7) \times 10^{-5}$ and $y' = (5.28 \pm 0.52) \times 10^{-3}$, where $x' = x\cos(\delta) + y\sin(\delta)$, $y' = y\cos(\delta) - x\sin(\delta)$ and δ is the strong phase between the $D^0 \to K^+\pi^-$ and $\overline{D}^0 \to K^+\pi^-$. NODE=S032DT;LINKAGE=M

[12] Model-independent measurement of the charm mixing parameters in the decay $D^0 \to K^0_S\pi^+\pi^-$ using 1.0 fb^{-1} of LHCb data at $\sqrt{s} = 7$ TeV. NODE=S032DT;LINKAGE=J

[13] Time-dependent amplitude analysis of $D^0 \to \pi^+\pi^-\pi^0$. NODE=S032DT;LINKAGE=K

[14] An improved measurement of $\overline{D}^0 - D^0$ mixing and a search for CP violation in D^0 decays to CP-even final states K^+K^- and $\pi^+\pi^-$ using the final Belle data sample of 976 fb^{-1}. NODE=S032DT;LINKAGE=I

[15] ABLIKIM 15D uses quantum correlations in $e^+e^- \to D^0\overline{D}^0$ at the $\psi(3770)$. NODE=S032DT;LINKAGE=H

[16] Based on 976 fb^{-1} of data collected at Y(nS) resonances. Assumes no CP violation. Reported $x'^2 = (0.09 \pm 0.22) \times 10^{-3}$ and $y' = (4.6 \pm 3.4) \times 10^{-3}$, where $x' = x\cos(\delta) + y\sin(\delta)$, $y' = y\cos(\delta) - x\sin(\delta)$ and δ is the strong phase between $D^0 \to K^+\pi^-$ and $\overline{D}^0 \to K^+\pi^-$. NODE=S032DT;LINKAGE=A

[17] The time-dependent Dalitz-plot analysis of $D^0 \to K^0_S\pi^+\pi^-$ is emplored. Decay-time information and interference on the Dalitz plot are used to distinguish doubly Cabibbo-suppressed decays from mixing and to measure the relative phase between $D^0 \to K^{*+}\pi^-$ and $\overline{D}^0 \to K^{*+}\pi^-$. This value allows CP violation and is sensitive to the sign of Δm. NODE=S032DT;LINKAGE=G

[18] Based on 9.6 fb^{-1} of data collected at the Tevatron. Assumes no CP violation. Reported $x'^2 = (0.08 \pm 0.18) \times 10^{-3}$ and $y' = (4.3 \pm 4.3) \times 10^{-3}$, where $x' = x\cos(\delta) + y\sin(\delta)$, $y' = y\cos(\delta) - x\sin(\delta)$ and δ is the strong phase between the $D^0 \to K^+\pi^-$ and $\overline{D}^0 \to K^+\pi^-$. NODE=S032DT;LINKAGE=D

[19] Obtained $y_{CP} = (0.72 \pm 0.18 \pm 0.12)\%$ based on three effective D^0 lifetimes measured in $K^\mp\pi^\pm$, K^-K^+, and $\pi^-\pi^+$. We list $2y_{CP} = \Delta\Gamma/\Gamma$. NODE=S032DT;LINKAGE=LE

[20] Compared the lifetimes of D^0 decay to the CP eigenstate K^+K^- with D^0 decay to π^+K^-. The values here assume no CP violation. NODE=S032DT;LINKAGE=AA

[21] DEL-AMO-SANCHEZ 10D uses 540,800$\pm$800 $K^0_S\pi^+\pi^-$ and 79,900$\pm$300 $K^0_SK^+K^-$ events in a time-dependent amplitude analyses of the D^0 and $\overline{D}^0$ Dalitz plots. No evidence was found for CP violation, and the values here assume no such violation. NODE=S032DT;LINKAGE=DE

[22] ZUPANC 09 uses a method based on measuring the mean decay time of $D^0 \to K^0_SK^+K^-$ events for different K^+K^- mass intervals. NODE=S032DT;LINKAGE=ZU

[23] LINK 00, AITALA 99E, and ABE 02I measure the lifetime difference between $D^0 \to K^-K^+$ (CP even) decays and $D^0 \to K^-\pi^+$ (CP mixed) decays, or y_{CP}= $[\Gamma(CP+)-\Gamma(CP-)]/[\Gamma(CP+)+\Gamma(CP-)]$. We list $2y_{CP}$=$\Delta\Gamma/\Gamma$. NODE=S032DT;LINKAGE=LK

[24] CSORNA 02 measures the lifetime difference between $D^0 \to K^-K^+$ and $\pi^-\pi^+$ (CP even) decays and $D^0 \to K^-\pi^+$ (CP mixed) decays, or y_{CP}= $[\Gamma(CP+)-\Gamma(CP-)]/[\Gamma(CP+)+\Gamma(CP-)]$. We list $2y_{CP}$=$\Delta\Gamma/\Gamma$. NODE=S032DT;LINKAGE=CK

[25] The result was established with D^0 from prompt and secondary D^*. Based on 3 fb^{-1} of data collected at $\sqrt{s}$ = 7, 8 TeV. Assumes no CP violation. Reported $x'^2 = (3.6 \pm 4.3) \times 10^{-5}$ and $y' = (5.23 \pm 0.84) \times 10^{-3}$, where $x' = x\cos(\delta) + y\sin(\delta)$, $y' = y\cos(\delta) - x\sin(\delta)$ and δ is the strong phase between the $D^0 \to K^+\pi^-$ and $\overline{D}^0 \to K^+\pi^-$. NODE=S032DT;LINKAGE=L

[26] Based on 3 fb^{-1} of data collected at $\sqrt{s}$ = 7, 8 TeV. Assumes no CP violation. Reported $x'^2 = (5.5 \pm 4.9) \times 10^{-4}$ and $y' = (4.8 \pm 1.0) \times 10^{-3}$, where $x' = x\cos(\delta) + y\sin(\delta)$, $y' = y\cos(\delta) - x\sin(\delta)$ and δ is the strong phase between the $D^0 \to K^+\pi^-$ and $\overline{D}^0 \to K^+\pi^-$. NODE=S032DT;LINKAGE=E

[27] Based on 1 fb^{-1} of data collected at $\sqrt{s}$ = 7 TeV in 2011. Assumes no CP violation. Reported $x'^2 = (-0.9 \pm 1.3) \times 10^{-4}$ and $y' = (7.2 \pm 2.4) \times 10^{-3}$, where $x' = x\cos(\delta) + y\sin(\delta)$, $y' = y\cos(\delta) - x\sin(\delta)$ and δ is the strong phase between the $D^0 \to K^+\pi^-$ and $\overline{D}^0 \to K^+\pi^-$. NODE=S032DT;LINKAGE=AI

[28] This combines the $y_{CP} = (\tau_{K\pi}/\tau_{KK})-1$ using untagged $K^-\pi^+$ and K^-K^+ events of AUBERT 09AI with the disjoint y_{CP} using tagged $K^-\pi^+$, K^-K^+, and $\pi^-\pi^+$ events of AUBERT 08U. NODE=S032DT;LINKAGE=AE

[29] The AUBERT 09AN values are inferred from the branching ratio $\Gamma(D^0 \to K^+\pi^-\pi^0$ via $\overline{D}^0)/\Gamma(D^0 \to K^-\pi^+\pi^0)$ given near the end of this Listings. Mixing is distinguished from DCS decays using decay-time information. Interference between mixing and DCS is allowed. The phase between $D^0 \to K^+\pi^-\pi^0$ and $\overline{D}^0 \to K^+\pi^-\pi^0$ is assumed to be small. The width difference here is y'', which is not the same as y_{CP} in the note on D^0–$\overline{D}^0$ mixing. NODE=S032DT;LINKAGE=AR

[30] LOWREY 09 uses quantum correlations in $e^+e^- \to D^0\overline{D}^0$ at the $\psi(3770)$. See below for coherence factors and average relative strong phases for both $D^0 \to K^-\pi^+\pi^0$ and $D^0 \to K^-\pi^-2\pi^+$. A fit that includes external measurements of charm mixing parameters gets $2y = (1.62 \pm 0.32) \times 10^{-2}$. NODE=S032DT;LINKAGE=LO

[31] The GODANG 00, AUBERT 03Z, LINK 05H, LI 05A, ZHANG 06, AUBERT 07W, and AALTONEN 08E limits are inferred from the D^0-$\overline{D}^0$ mixing ratio $\Gamma(K^+\pi^-$ (via $\overline{D}^0))/\Gamma(K^-\pi^+)$ given near the end of this D^0 Listings. Decay-time information is used to distinguish DCS decays from D^0-$\overline{D}^0$ mixing. The limits allow interference between the DCS and mixing ratios, and all except AUBERT 07W and AALTONEN 08E also allow CP violation. The phase between $D^0 \to K^+\pi^-$ and $\overline{D}^0 \to K^+\pi^-$ is assumed to be small. This is a measurement of y' and is not the same as the y_{CP} of our note above on "D^0-$\overline{D}^0$ Mixing." NODE=S032DT;LINKAGE=GD

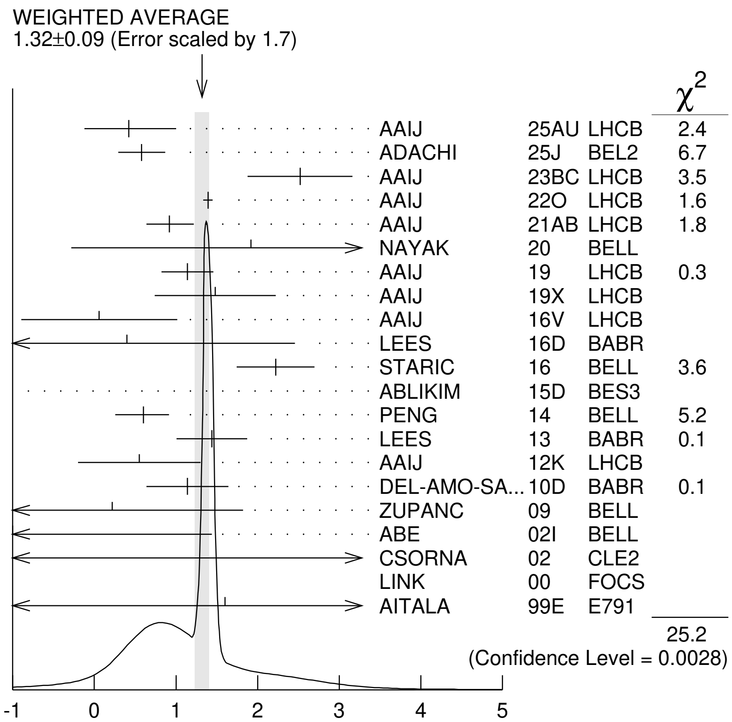
[32] This value combines the results of AUBERT 08U and AUBERT 03P. NODE=S032DT;LINKAGE=BE

[33] STARIC 07 compares the lifetimes of D^0 decay to the CP eigenstates K^+K^- and $\pi^+\pi^-$ with D^0 decay to $K^-\pi^+$. NODE=S032DT;LINKAGE=ST

[34] The ASNER 05 and ZHANG 07B values are from the time-dependent Dalitz-plot analysis of $D^0 \rightarrow K^0_S\pi^+\pi^-$. Decay-time information and interference on the Dalitz plot are used to distinguish doubly Cabibbo-suppressed decays from mixing and to measure the relative phase between $D^0 \rightarrow K^{*+}\pi^-$ and $\overline{D}^0 \rightarrow K^{*+}\pi^-$. This limit allows CP violation. NODE=S032DT;LINKAGE=AS

[35] The ranges of AUBERT 03Z, LINK 05H, LI 05A, and ZHANG 06 measurements are for 95% confidence level. NODE=S032DT;LINKAGE=AB

[36] AUBERT 03P measures $\mathrm{Y} \equiv 2\,\tau^0\,/\,(\tau^+ + \tau^-) - 1$, where τ^0 is the $D^0 \rightarrow K^-\pi^+$ (and $\overline{D}^0 \rightarrow K^+\pi^-$) lifetime, and τ^+ and τ^- are the D^0 and $\overline{D}^0$ lifetimes to CP-even states (here K^-K^+ and $\pi^-\pi^+$). In the limit of CP conservation, $\mathrm{Y} = \mathrm{y} \equiv \Delta\Gamma\,/\,2\,\Gamma$ (we list $2\mathrm{y} = \Delta\Gamma/\Gamma$). AUBERT 03P also uses $\tau^+ - \tau^-$ to get $\Delta\mathrm{Y} = -0.008 \pm 0.006 \pm 0.002$. NODE=S032DT;LINKAGE=AU



$(\Gamma_1 - \Gamma_2)/\Gamma = 2y$

|q/p|

NODE=S032QP

The mass eigenstates D^0_1 and D^0_2 are related to the $C = \pm1$ states by $|D_{1,2}> = \mathrm{p}\,|D^0> + \mathrm{q}\,|\overline{D}^0>$. See the note on "$D^0$–$\overline{D}^0$ Mixing" above. NODE=S032QP

NODE=S032QP

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.995±0.016 OUR EVALUATION		(Produced by HFLAV) see the note on "D^0-$\overline{D}^0$ Mixing."		
0.99 ±0.05 OUR AVERAGE				
		[1] AAIJ 25	LHCB	pp at 13 TeV
0.996±0.052	30.6M	[2] AAIJ 21AB	LHCB	pp at 13 TeV
1.05 $^{+0.22}_{-0.17}$	2.3M	[3] AAIJ 19X	LHCB	pp at 7, 8 TeV
		[4] AAIJ 18K	LHCB	pp at 7, 8, 13 TeV
0.90 $^{+0.16}_{-0.15}$ $^{+0.08}_{-0.06}$		[5] PENG 14	BELL	$e^+e^- \rightarrow \Upsilon(\mathrm{nS})$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
		[6] AAIJ 13CE	LHCB	Repl. by AAIJ 18K
0.86 $^{+0.30}_{-0.29}$ $^{+0.10}_{-0.08}$		[7] ZHANG 07B	BELL	Repl. by PENG 14

→ UNCHECKED ←

OCCUR=2

[1] $D^*(2010)^+$ tag of $D^0 \rightarrow K^+\pi^-$. NODE=S032QP;LINKAGE=F

[2] AAIJ 21AB result comes form analysis of $D^0 \rightarrow K^0_S\pi^+\pi^-$ events. NODE=S032QP;LINKAGE=E

[3] AAIJ 19X measurement comes form analysis of $D^0 \rightarrow K^0_S\pi^+\pi^-$ decays. D^0 come from D^{*+} and $\overline{B} \rightarrow D^0\mu^-X$ decays (and c.c.) in pp collisions at 7 and 8 TeV. NODE=S032QP;LINKAGE=D

[4] Based on 5 fb^{-1} of data collected at $\sqrt{s} = 7, 8, 13$ TeV. Allowing for CP violation, the direct CP violation in mixing is reported $1.00 < |\mathrm{q/p}| < 1.35$ at the 68.3% CL for the $D^0 \rightarrow K^+\pi^-$ and $\overline{D}^0 \rightarrow K^+\pi^-$. NODE=S032QP;LINKAGE=C

[5] The time-dependent Dalitz-plot analysis of $D^0 \to K^0_S \pi^+ \pi^-$ is employed. Decay-time information and interference on the Dalitz plot are used to distinguish doubly Cabibbo-suppressed decays from mixing and to measure the relative phase between $D^0 \to K^{*+} \pi^-$ and $\overline{D}^0 \to K^{*+} \pi^-$. This value allows CP violation and is sensitive to the sign of Δm. NODE=S032QP;LINKAGE=B

[6] Based on 3 fb^{-1} of data collected at $\sqrt{s}$ = 7, 8 TeV. Allowing for CP violation, the direct CP violation in mixing is reported $0.75 < |q/p| < 1.24$ at the 68.3% CL for the $D^0 \to K^+ \pi^-$ and $\overline{D}^0 \to K^+ \pi^-$. NODE=S032QP;LINKAGE=A

[7] The phase of p/q is $(-14^{+16}_{-18} \pm 5)^\circ$. The ZHANG 07B value is from the time-dependent Dalitz-plot analysis of $D^0 \to K^0_S \pi^+ \pi^-$. Decay-time information and interference on the Dalitz plot are used to distinguish doubly Cabibbo-suppressed decays from mixing and to measure the relative phase between $D^0 \to K^{*+} \pi^-$ and $\overline{D}^0 \to K^{*+} \pi^-$. This value allows CP violation. NODE=S032QP;LINKAGE=ZH

A_Γ

NODE=S032AG

A_Γ is the decay-rate asymmetry for CP-even final states $A_\Gamma = (\overline{\tau}_+ - \tau_+) / (\overline{\tau}_+ + \tau_+)$. See the note on "$D^0$–$\overline{D}^0$ Mixing" above. NODE=S032AG

NODE=S032AG

VALUE (units 10^{-4})	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*	
0.89± 1.13 OUR EVALUATION						→ UNCHECKED ←
0.9 ± 1.1 OUR AVERAGE						
1.3 ± 6.3 ± 2.4	3.8M	[1] AAIJ	24AF	LHCB	$D^0 \to \pi^+ \pi^- \pi^0$	
1.0 ± 1.1 ± 0.3		[2] AAIJ	21AI	LHCB	$D^0 \to K^+ K^-$, $\pi^+ \pi^-$	OCCUR=3
−3 ±20 ± 7		[3] STARIC	16	BELL	$e^+ e^- \to \Upsilon$(nS)	
−12 ±12	1.8M	[4] AALTONEN	14Q	CDF	$p\overline{p}$, $\sqrt{s}$ = 1.96 TeV	
9 ±26 ± 6	0.7M	LEES	13	BABR	$e^+ e^- \to \Upsilon(4S)$	
−59 ±59 ±21		[5] AAIJ	12K	LHCB	$p p$ at 7 TeV, 2010 data.	
• • • We do not use the following data for averages, fits, limits, etc. • • •						
2.3 ± 1.5 ± 0.3		[1] AAIJ	21AI	LHCB	$D^0 \to K^+ K^-$	
4.0 ± 2.8 ± 0.4		[1] AAIJ	21AI	LHCB	$D^0 \to \pi^+ \pi^-$	OCCUR=2
−4.4 ± 2.3 ± 0.6	21M	[6] AAIJ	20	LHCB	$D^0 \to K^+ K^-$	
2.5 ± 4.3 ± 0.7	7M	[7] AAIJ	20	LHCB	$D^0 \to \pi^+ \pi^-$	OCCUR=2
−3.0 ± 3.2 ± 1.0	9.6M	[5] AAIJ	17AK	LHCB	Repl. by AAIJ 20	
4.6 ± 5.8 ± 1.2	3.0M	[8] AAIJ	17AK	LHCB	Repl. by AAIJ 20	OCCUR=2
$-13.4 \pm 7.7 {}^{+2.6}_{-3.4}$	2.3M	[9] AAIJ	15AA	LHCB	Repl. by AAIJ 20	
$-9.2 \pm 14.5 {}^{+2.5}_{-3.3}$	0.8M	[10] AAIJ	15AA	LHCB	Repl. by AAIJ 20	OCCUR=2
−3.5 ± 6.2 ± 1.2		[5] AAIJ	14AL	LHCB	Repl. by AAIJ 17AK	
3.3 ±10.6 ± 1.4		[8] AAIJ	14AL	LHCB	Repl. by AAIJ 17AK	OCCUR=2
26 ±36 ± 8		AUBERT	08U	BABR	See LEES 13	
1 ±30 ±25		STARIC	07	BELL	Repl. by STARIC 16	
80 ±60 ±20		AUBERT	03P	BABR	$e^+ e^- \approx \Upsilon(4S)$	

[1] Requires D^0 to originate from $D^*(2010)^+ \to D^0 \pi^+$. Measures the parameter $\Delta Y_f \simeq -A^f_\Gamma$ up to 1% corrections from y^f_{CP}. NODE=S032AG;LINKAGE=H

[2] A combination of $D^0 \to K^+ K^-$ and $D^0 \to \pi^+ \pi^-$ from AAIJ 21AI, AAIJ 20, AAIJ 17AK and AAIJ 15AA NODE=S032AG;LINKAGE=I

[3] An improved measurement of $\overline{D}^0 - D^0$ mixing and a search for CP violation in D^0 decays to CP-even final states $K^+ K^-$ and $\pi^+ \pi^-$ using the final Belle data sample of 976 fb^{-1}. NODE=S032AG;LINKAGE=E

[4] Combined result from $D^0 \to K^+ K^-$ and $D^0 \to \pi^+ \pi^-$, with D^0 from $D^{*+} \to D^0 \pi^+$ (and cc). NODE=S032AG;LINKAGE=AA

[5] Measured using $D^{*+} \to D^0 \pi^+$, $D^0 \to K^+ K^-$ decays (and cc). NODE=S032AG;LINKAGE=A

[6] Measured using $D^0 \to K^+ K^-$ decays, combines measurements with D^0 either from partially reconstructed semileptonic B hadron decays or from $D^{*+} \to D^0 \pi^+$. NODE=S032AG;LINKAGE=F

[7] Measured using $D^0 \to \pi^+ \pi^-$ decays, combines measurements with D^0 either from partially reconstructed semileptonic B hadron decays or from $D^{*+} \to D^0 \pi^+$. NODE=S032AG;LINKAGE=G

[8] Measured using $D^{*+} \to D^0 \pi^+$, $D^0 \to \pi^+ \pi^-$ decays (and cc). NODE=S032AG;LINKAGE=B

[9] Measured using $D^0 \to K^+ K^-$ decays, with D^0 from partially reconstructed semileptonic B hadron decays. NODE=S032AG;LINKAGE=C

[10] Measured using $D^0 \to \pi^+ \pi^-$ decays, with D^0 from partially reconstructed semileptonic B hadron decays. NODE=S032AG;LINKAGE=D

$\phi^{K^0_S \pi\pi}$ NODE=S032D03

Parametrizes CP violation in the interference between D^0 mixing and decay. The mass eigenstates D^0_1 and D^0_2 are related to the $C = \pm1$ states by $|D_{1,2}> = \mathrm{p}\,|D^0> + \mathrm{q}\,|\overline{D}^0>$. In the absence of CP violation in the decay, and using the usual phase convention where CP conservation implies q/p is real, $\phi^{K^0_S\pi\pi}$ is identical to the decay-mode-independent parameter $\phi = \arg(\mathrm{q/p})$. NODE=S032D03

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
$0.02^{+0.04}_{-0.05}$ OUR AVERAGE				
$0.056^{+0.047}_{-0.051}$	30.6M	[1] AAIJ 21AB	LHCB	pp at 13 TeV
$-0.09^{+0.11}_{-0.16}$	2.3M	[2] AAIJ 19X	LHCB	pp at 7, 8 TeV
$-0.10 \pm 0.19 ^{+0.07}_{-0.09}$	1.2M	[3] PENG 14	BELL	e^+e^- at $\Upsilon(4S,5S)$

NODE=S032D03

[1] AAIJ 21AB result comes form analysis of $D^0 \to K^0_S\pi^+\pi^-$ events. NODE=S032D03;LINKAGE=C

[2] AAIJ 19X result comes form analysis of $D^0 \to K^0_S\pi^+\pi^-$ events. D^0 come from D^{*+} and $\overline{B} \to D^0\mu^- X$ decays (and c.c.) in pp collisions at 7 and 8 TeV. NODE=S032D03;LINKAGE=A

[3] PENG 14 reports $-0.10 \pm 0.19 \pm 0.05^{+0.05}_{-0.07}$ value where the last uncertainty is due to the amplitude model. We have added the systematic uncertainties in quadrature. NODE=S032D03;LINKAGE=B

$\delta(K\pi)$ - relative strong phase NODE=S032DPH

$\delta(K\pi)$ is the $D^0 \to K^+\pi^-$ relative strong phase between DCS and CF decays, with the convention $CP\,|D^0> = |\overline{D}^0>$. NODE=S032DPH

VALUE (degrees)	DOCUMENT ID	TECN	COMMENT
191^{+6}_{-7} OUR AVERAGE			
$189.2^{+6.9}_{-7.4}{}^{+3.4}_{-3.8}$	[1] ABLIKIM 25CM	BES3	$e^+e^- \to D^0\overline{D}^0$, 4.13–4.23 GeV and 3.773 GeV
198^{+11}_{-17}	[2,3] ASNER 12	CLEO	$e^+e^- \to D^0\overline{D}^0$, 3.77 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$192.8^{+11.0}_{-12.4}{}^{+1.9}_{-2.4}$	[4] ABLIKIM 25CM	BES3	$e^+e^- \to D^0\overline{D}^0$, 4.13–4.23 GeV
$187.6^{+8.9}_{-9.7}{}^{+5.4}_{-6.4}$	[5] ABLIKIM 22BM	BES3	$e^+e^- \to D^0\overline{D}^0$, 3.77 GeV
	[3,6] ABLIKIM 14C	BES3	$e^+e^- \to D^0\overline{D}^0$, 3.77 GeV
$202^{+11}_{-12}{}^{+9}_{-11}$	[3,7] ASNER 08	CLEO	Repl. by ASNER 12

NODE=S032DPH

OCCUR=2

[1] The reported value is a combination with that in ABLIKIM 22BM. NODE=S032DPH;LINKAGE=C

[2] Uses quantum correlations in $e^+e^- \to D^0\overline{D}^0$ at the $\psi(3770)$, where decay rates of CP-tagged $K\pi$ final states depend on the strong phases between the decays of $D^0 \to K^+\pi^-$ and $\overline{D}^0 \to K^+\pi^-$. The measurements obtained $\sin(\delta) = -0.01 \pm 0.41 \pm 0.04$ and $|\delta| = (10^{+28}_{-53}{}^{+13}_{-0})^\circ$ as well. A fit that includes external measurements of charm mixing parameters finds $\cos(\delta) = 1.15^{+0.19}_{-0.17}{}^{+0.00}_{-0.08}$, $\sin(\delta) = 0.56^{+0.32}_{-0.31}{}^{+0.21}_{-0.20}$, and $|\delta| = (18^{+11}_{-17})^\circ$. NODE=S032DPH;LINKAGE=AN

[3] The value reported here has been rotated by 180 deg with respect to the value quoted in the paper, where the convention $CP\,|D^0> = -|\overline{D}^0>$ is used. NODE=S032DPH;LINKAGE=D

[4] Uses quantum correlations in $D\overline{D}$ produced in $e^+e^- \to D\overline{D}$, $e^+e^- \to D^*\overline{D}$ and $e^+e^- \to D^*\overline{D}^*$ to measure the asymmetry of the branching fraction of $D^0 \to K^-\pi^+$ in CP-odd and CP-even eigenstates. The fit includes external measurements of charm mixing parameters. NODE=S032DPH;LINKAGE=E

[5] Uses quantum correlations in $e^+e^- \to D^0\overline{D}^0$ at the $\psi(3770)$ to measure the asymmetry of the branching fraction of $D^0 \to K^-\pi^+$ in CP-odd and CP-even eigenstates to be $(13.2 \pm 1.1 \pm 0.7)\%$ and $(13.0 \pm 1.2 \pm 0.8)\%$ when using the predominantly CP-even tag $D^0 \to \pi^+\pi^-\pi^0$. A fit that includes external measurements of charm mixing parameters finds the value quoted above. NODE=S032DPH;LINKAGE=B

[6] Uses quantum correlations in $e^+e^- \to D^0\overline{D}^0$ at the $\psi(3770)$ to measure the asymmetry of the branching fraction of $D^0 \to K^-\pi^+$ in CP-odd and CP-even eigenstates to be $(12.7 \pm 1.3 \pm 0.7)\%$. A fit that includes external measurements of charm mixing parameters finds the value of $\cos(\delta) = 1.02 \pm 0.11 \pm 0.06 \pm 0.01$ where the third uncertainty is due to errors introduced by external inputs. NODE=S032DPH;LINKAGE=A

[7] ASNER 08 uses quantum correlations in $e^+e^- \to D^0\overline{D}^0$ at the $\psi(3770)$, where decay rates of CP-tagged $K\pi$ final states depend on $\cos\delta$ because of interfering amplitudes. The above measurement implies $|\delta| < 75^\circ$ with a confidence level of 95%. A fit that includes external measurements of charm mixing parameters finds $\cos\delta = 1.10 \pm 0.35 \pm 0.07$. See also the note on "$D^0$– $\overline{D}^0$ Mixing" p. 783 in our 2008 Review (PDG 08). NODE=S032DPH;LINKAGE=AS

$D^0 \to K^-\pi^+\pi^0$ COHERENCE FACTOR $R_{K\pi\pi^0}$

NODE=S032CF1

See the note on 'D^0-$\overline{D}^0$ Mixing' for the definition. $R_{K\pi\pi^0}$ can have any value between 0 and 1. A value near 1 indicates the decay is dominated by a few intermediate states with limited interference.

NODE=S032CF1

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.792±0.033 OUR AVERAGE					
0.78 ±0.04	62.4k	[1] ABLIKIM	21AA	BES3	$e^+e^- \to D^0\overline{D}^0$ at $\psi(3770)$
0.82 ±0.06		[1,2,3] EVANS	16		$e^+e^- \to D^0\overline{D}^0$ at $\psi(3770)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.82 ±0.07		[1,3] LIBBY	14		Repl. by EVANS 16
0.78 $^{+0.11}_{-0.25}$		[4] LOWREY	09	CLEO	Repl. by LIBBY 14

NODE=S032CF1

[1] Uses quantum correlations in $e^+e^- \to D^0\overline{D}^0$ at the $\psi(3770)$, where the decay rates of CP-tagged $K^-\pi^+\pi^0$ final states depend on $R_{K\pi\pi^0}$ and $\delta^{K\pi\pi^0}$. NODE=S032CF1;LINKAGE=A

[2] A combined fit with a recent LHCb $D^0\overline{D}^0$ mixing results in AAIJ 16F is also reported to be 0.81 ± 0.06. NODE=S032CF1;LINKAGE=C

[3] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration. NODE=S032CF1;LINKAGE=D

[4] LOWREY 09 uses quantum correlations in $e^+e^- \to D^0\overline{D}^0$ at the $\psi(3770)$, where the decay rates of CP-tagged $K^-\pi^+\pi^0$ final states depend on $R_{K\pi\pi^0}$ and $\delta^{K\pi\pi^0}$. A fit that includes external measurements of charm mixing parameters gets $R_{K\pi\pi^0}$ = 0.84 ± 0.07. NODE=S032CF1;LINKAGE=LO

$D^0 \to K^-\pi^+\pi^0$ AVERAGE RELATIVE STRONG PHASE $\delta^{K\pi\pi^0}$

NODE=S032SP1

The quoted value of δ is based on the same sign CP phase of D^0 and $\overline{D}^0$ convention.

NODE=S032SP1
NODE=S032SP1

VALUE (°)	EVTS	DOCUMENT ID		TECN	COMMENT
198±10 OUR AVERAGE					
196^{+14}_{-15}	62.4k	[1] ABLIKIM	21AA	BES3	$e^+e^- \to D^0\overline{D}^0$ at $\psi(3770)$
199^{+13}_{-14}		[1,2,3] EVANS	16		$e^+e^- \to D^0\overline{D}^0$ at $\psi(3770)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
164^{+20}_{-14}		[1,3] LIBBY	14		Repl. by EVANS 16
239^{+32}_{-28}		[4] LOWREY	09	CLEO	Repl. by LIBBY 14

[1] Uses quantum correlations in $e^+e^- \to D^0\overline{D}^0$ at the $\psi(3770)$, where the decay rates of CP-tagged $K^-\pi^+\pi^0$ final states depend on $R_{K\pi\pi^0}$ and $\delta^{K\pi\pi^0}$. NODE=S032SP1;LINKAGE=A

[2] A combined fit with a recent LHCB $D^0\overline{D}^0$ mixing results in AAIJ 16F is also reported to be 198^{+14}_{-15} degree. NODE=S032SP1;LINKAGE=C

[3] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration. NODE=S032SP1;LINKAGE=D

[4] LOWREY 09 uses quantum correlations in $e^+e^- \to D^0\overline{D}^0$ at the $\psi(3770)$, where the decay rates of CP-tagged $K^-\pi^+\pi^0$ final states depend on $R_{K\pi\pi^0}$ and $\delta^{K\pi\pi^0}$. A fit that includes external measurements of charm mixing parameters gets $\delta^{K\pi\pi^0}$ = $(227^{+14}_{-17})^\circ$. NODE=S032SP1;LINKAGE=LO

$D^0 \to K^-\pi^-2\pi^+$ COHERENCE FACTOR $R_{K3\pi}$

NODE=S032CF2

See the note on 'D^0-$\overline{D}^0$ Mixing' for the definition. $R_{K3\pi}$ can have any value between 0 and 1. A value near 1 indicates the decay is dominated by a few intermediate states with limited interference.

NODE=S032CF2

NODE=S032CF2

NEW

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
45 ± 4 OUR AVERAGE					
[$0.52^{+0.10}_{-0.09}$ OUR 2025 AVERAGE]					
$43.0^{+4.3}_{-3.9}$	440k	AAIJ	25AU	LHCB	pp at 13 TeV
52 $^{+12}_{-10}$	8.6k	[1] ABLIKIM	21AA	BES3	$e^+e^- \to D^0\overline{D}^0$ at $\psi(3770)$
53 $^{+18}_{-21}$		[1,2,3] EVANS	16		$e^+e^- \to D^0\overline{D}^0$ at $\psi(3770)$, pp at 7,8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
45.8± 1.0±2.3	0.9M,3k	[4] AAIJ	18AI	LHCB	amplitude models
32 $^{+20}_{-28}$		[1,3] LIBBY	14		Repl. by EVANS 16
36 $^{+24}_{-30}$		[5] LOWREY	09	CLEO	Repl. by LIBBY 14

NODE=S032CF2;LINKAGE=A

[1] Uses quantum correlations in $e^+ e^- \rightarrow D^0 \overline{D}{}^0$ at the $\psi(3770)$, where the decay rates of *CP*-tagged $K^- \pi^- 2\pi^+$ final states depend on $R_{K3\pi}$ and $\delta^{K3\pi}$.

NODE=S032CF2;LINKAGE=D

[2] A combined fit with a recent LHCB $D^0 \overline{D}{}^0$ mixing results in AAIJ 16F is also reported, to be $0.43^{+0.17}_{-0.13}$.

NODE=S032CF2;LINKAGE=F

[3] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.

NODE=S032CF2;LINKAGE=E

[4] Calculated from amplitude models to $D^0 \rightarrow K^- \pi^- 2\pi^+$ and $D^0 \rightarrow K^+ \pi^+ 2\pi^-$ and cc. Reports $0.458 \pm 0.010 \pm 0.012 \pm 0.020$ value where the 3rd uncertainty is the model uncertainty. We combined both systematic uncertainties in quadrature. Because of the importance of model independence in the practical use of the coherence factor, we do not include model-derived results in the average.

NODE=S032CF2;LINKAGE=LO

[5] LOWREY 09 uses quantum correlations in $e^+ e^- \rightarrow D^0 \overline{D}{}^0$ at the $\psi(3770)$, where the decay rates of *CP*-tagged $K^- \pi^- 2\pi^+$ final states depend on $R_{K3\pi}$ and $\delta^{K3\pi}$. A fit that includes external measurements of charm mixing parameters gets $R_{K3\pi} = 0.33^{+0.26}_{-0.23}$.

$D^0 \rightarrow K^- \pi^- 2\pi^+$ AVERAGE RELATIVE STRONG PHASE $\delta^{K3\pi}$

NODE=S032SP2

The quoted value of δ is based on the same sign *CP* phase of D^0 and $\overline{D}{}^0$ convention.

NODE=S032SP2
NODE=S032SP2

VALUE (°)	EVTS	DOCUMENT ID	TECN	COMMENT
$156\ ^{+12}_{-10}$ OUR AVERAGE Error includes scale factor of 1.1. $[(149^{+26}_{-16})^\circ$ OUR 2025 AVERAGE Scale factor = 1.4]				
$163.3^{+13.8}_{-14.8}$	440k	AAIJ 25AU	LHCB	pp at 13 TeV
$167\ ^{+31}_{-19}$	8.6k	[1] ABLIKIM 21AA	BES3	$e^+ e^- \rightarrow D^0 \overline{D}{}^0$ at $\psi(3770)$
$125\ ^{+22}_{-14}$		[1,2,3] EVANS 16		$e^+ e^- \rightarrow D^0 \overline{D}{}^0$ at $\psi(3770)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$255\ ^{+21}_{-78}$		[1,3] LIBBY 14		Repl. by EVANS 16
$118\ ^{+62}_{-53}$		[4] LOWREY 09	CLEO	Repl. by LIBBY 14

NEW

NODE=S032SP2;LINKAGE=A

[1] Uses quantum correlations in $e^+ e^- \rightarrow D^0 \overline{D}{}^0$ at the $\psi(3770)$, where the decay rates of *CP*-tagged $K^- \pi^- 2\pi^+$ final states depend on $R_{K3\pi}$ and $\delta^{K3\pi}$.

NODE=S032SP2;LINKAGE=C

[2] A combined fit with a recent LHCb $D^0 \overline{D}{}^0$ mixing results in AAIJ 16F is also reported to be $(128^{+28}_{-17})^\circ$.

NODE=S032SP2;LINKAGE=D

[3] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.

NODE=S032SP2;LINKAGE=LO

[4] LOWREY 09 uses quantum correlations in $e^+ e^- \rightarrow D^0 \overline{D}{}^0$ at the $\psi(3770)$, where the decay rates of *CP*-tagged $K^- \pi^- 2\pi^+$ final states depend on $R_{K3\pi}$ and $\delta^{K3\pi}$. A fit that includes external measurements of charm mixing parameters gets $\delta^{K3\pi} = (114^{+26}_{-23})^\circ$.

$D^0 \rightarrow K^- \pi^- 2\pi^+$, $R_{K3\pi}$ (y cos$\delta^{K3\pi}$ − x sin$\delta^{K3\pi}$)

NODE=S032A82
NODE=S032A82

VALUE (10^{-3} TeV^{-1})	EVTS	DOCUMENT ID	TECN	COMMENT
-3.0 ± 0.7	42.5k	[1] AAIJ 16F	LHCB	pp at 7, 8 TeV

NODE=S032A82;LINKAGE=A

[1] From a time-dependent analysis of D mixing in $D^0 \rightarrow K^+ \pi^- \pi^+ \pi^-$. This result uses external constraints on $R_M = 1/2\ (x^2 + y^2)$. Without such constraints, AAIJ 16F measure $(0.3 \pm 1.8) \times 10^{-3}$, with a large correlation coefficient to R_M.

$D^0 \rightarrow K^0_S K^+ \pi^-$ COHERENCE FACTOR $R_{K^0_S K\pi}$

NODE=S032CF3
NODE=S032CF3

VALUE	DOCUMENT ID	TECN	COMMENT
0.70 ± 0.08	[1] INSLER 12	CLEO	$e^+ e^- \rightarrow D^0 \overline{D}{}^0$ at 3.77 GeV

NODE=S032CF3;LINKAGE=IN

[1] Uses quantum correlations in $e^+ e^- \rightarrow D^0 \overline{D}{}^0$ at the $\psi(3770)$, where the signal side D decays to $K^0_S K \pi$ and the tag-side D decays to $K\pi$, $K\pi\pi\pi$, $K\pi\pi^0$, and 10 additional *CP*-even, *CP*-odd, and mixed *CP* modes involving K^0_S or K^0_L.

$D^0 \rightarrow K^0_S K^+ \pi^-$ AVERAGE RELATIVE STRONG PHASE $\delta^{K^0_S K\pi}$

NODE=S032SP3

The quoted value of δ is based on the same sign *CP* phase of D^0 and $\overline{D}{}^0$ convention.

NODE=S032SP3
NODE=S032SP3

VALUE (°)	DOCUMENT ID	TECN	COMMENT
0.1 ± 15.7	[1] INSLER 12	CLEO	$e^+ e^- \rightarrow D^0 \overline{D}{}^0$ at 3.77 GeV

NODE=S032SP3;LINKAGE=IN

[1] Uses quantum correlations in $e^+ e^- \rightarrow D^0 \overline{D}{}^0$ at the $\psi(3770)$, where the signal side D decays to $K^0_S K \pi$ and the tag-side D decays to $K\pi$, $K\pi\pi\pi$, $K\pi\pi^0$, and 10 additional *CP*-even, *CP*-odd, and mixed *CP* modes involving K^0_S or K^0_L.

$D^0 \rightarrow K^* K$ COHERENCE FACTOR $R_{K^* K}$

NODE=S032CF4

VALUE	DOCUMENT ID	TECN	COMMENT
0.94±0.12	[1] INSLER 12	CLEO	$e^+ e^- \rightarrow D^0 \overline{D}^0$ at 3.77 GeV

[1] Uses quantum correlations in $e^+ e^- \rightarrow D^0 \overline{D}^0$ at the $\psi(3770)$, where the signal side D decays to $K^0_S K \pi$ and the tag-side D decays to $K\pi$, $K\pi\pi\pi$, $K\pi\pi^0$., and 10 additional CP-even, CP-odd, and mixed CP modes involving K^0_S or K^0_L.

NODE=S032CF4;LINKAGE=IN

$D^0 \rightarrow K^* K$ AVERAGE RELATIVE STRONG PHASE $\delta^{K^* K}$

NODE=S032SP4

The quoted value of δ is based on the same sign CP phase of D^0 and $\overline{D}^0$ convention.

VALUE (°)	DOCUMENT ID	TECN	COMMENT
−16.6±18.4	[1] INSLER 12	CLEO	$e^+ e^- \rightarrow D^0 \overline{D}^0$ at 3.77 GeV

[1] Uses quantum correlations in $e^+ e^- \rightarrow D^0 \overline{D}^0$ at the $\psi(3770)$, where the signal side D decays to $K^0_S K \pi$ and the tag-side D decays to $K\pi$, $K\pi\pi\pi$, $K\pi\pi^0$, and 10 additional CP-even, CP-odd, and mixed CP modes involving K^0_S or K^0_L.

NODE=S032SP4;LINKAGE=IN

D^0 DECAY MODES

NODE=S032235;NODE=S032

Most decay modes (other than the semileptonic modes) that involve a neutral K meson are now given as K^0_S modes, not as $\overline{K}^0$ modes. Nearly always it is a K^0_S that is measured, and interference between Cabibbo-allowed and doubly Cabibbo-suppressed modes can invalidate the assumption that $2\,\Gamma(K^0_S) = \Gamma(\overline{K}^0)$.

NODE=S032

	Mode		Fraction (Γ_i/Γ)	Scale factor/ Confidence level	
	Topological modes				NODE=S032;CLUMP=P
Γ_1	0-prongs	[a]	(15 ± 6) %		DESIG=332
Γ_2	2-prongs		(71 ± 6) %		DESIG=333
Γ_3	4-prongs	[b]	(14.6 ± 0.5) %		DESIG=334
Γ_4	6-prongs	[c]	(6.5 ± 1.3) $\times 10^{-4}$		DESIG=335
	Inclusive modes				NODE=S032;CLUMP=A
Γ_5	e^+ anything	[d]	(6.49 ± 0.11) %		DESIG=10
Γ_6	μ^+ anything		(6.8 ± 0.6) %		DESIG=27
Γ_7	K^- anything		(54.7 ± 2.8) %	S=1.3	DESIG=11
Γ_8	K^0_S anything		(20.75 ± 0.23) %		DESIG=13
Γ_9	K^+ anything		(3.4 ± 0.4) %		DESIG=12
Γ_{10}	$K^*(892)^-$ anything		(15 ± 9) %		DESIG=340
Γ_{11}	$\overline{K}^*(892)^0$ anything		(9 ± 4) %		DESIG=312
Γ_{12}	$K^*(892)^+$ anything		$<$ 3.6 %	CL=90%	DESIG=341
Γ_{13}	$K^*(892)^0$ anything		(2.8 ± 1.3) %		DESIG=313
Γ_{14}	η anything		(9.5 ± 0.9) %		DESIG=21
Γ_{15}	η' anything		(2.48 ± 0.27) %		DESIG=342
Γ_{16}	ϕ anything		(1.08 ± 0.04) %		DESIG=249
Γ_{17}	$\pi^+\pi^+\pi^-$ anything		(17.60 ± 0.25) %		DESIG=589
Γ_{18}	invisibles		$<$ 9.4 $\times 10^{-5}$	CL=90%	DESIG=433
	Semileptonic modes				NODE=S032;CLUMP=B
Γ_{19}	$K^- \ell^+ \nu_\ell$				DESIG=196
Γ_{20}	$K^- e^+ \nu_e$		(3.537± 0.017) %	S=1.1	DESIG=46
Γ_{21}	$K^- \mu^+ \nu_\mu$		(3.418± 0.019) %		DESIG=77
Γ_{22}	$K^*(892)^- e^+ \nu_e$		(2.16 ± 0.16) %		DESIG=129
Γ_{23}	$K^*(892)^- \mu^+ \nu_\mu$		(2.01 ± 0.06) %	S=1.7	DESIG=307
Γ_{24}	$K^- \pi^0 e^+ \nu_e$		(1.6 $^{+1.3}_{-0.5}$) %		DESIG=127
Γ_{25}	$\overline{K}^0 \pi^- e^+ \nu_e$		(1.447± 0.033) %		DESIG=128
Γ_{26}	$(\overline{K}^0 \pi^-)_{S-wave} e^+ \nu_e$		(8.5 ± 0.6) $\times 10^{-4}$		DESIG=550
Γ_{27}	$K^- \pi^0 \mu^+ \nu_\mu$		(7.10 ± 0.21) $\times 10^{-3}$	S=1.7	DESIG=602
Γ_{28}	$(K^- \pi^0)_{S-wave} \mu^+ \nu_\mu$		(4.09 ± 0.35) $\times 10^{-4}$		DESIG=600
Γ_{29}	$\overline{K}^0 \pi^- \mu^+ \nu_\mu$		(1.40 ± 0.04) %	S=1.7	DESIG=610
Γ_{30}	$(\overline{K}^0 \pi^-)_{S-wave} \mu^+ \nu_\mu$		(7.5 ± 1.6) $\times 10^{-4}$		DESIG=611
Γ_{31}	$K^- \eta e^+ \nu_e$		(8 ± 4) $\times 10^{-5}$		DESIG=601

Γ_{32}	$K^- \pi^+ \pi^- e^+ \nu_e$		$(2.8 \, ^{+1.4}_{-1.1}) \times 10^{-4}$		DESIG=360
Γ_{33}	$K_1(1270)^- e^+ \nu_e$, $K_1^- \to K^- \pi^+ \pi^-$		$(3.23 \pm 0.25) \times 10^{-4}$		DESIG=361
Γ_{34}	$K_1(1270)^- e^+ \nu_e$, $K_1^- \to K^0_S \pi^- \pi^0$		$(1.7 \, ^{+0.6}_{-0.5}) \times 10^{-4}$		DESIG=599
Γ_{35}	$K^- \pi^+ \pi^- \mu^+ \nu_\mu$		$< 1.3 \times 10^{-3}$	CL=90%	DESIG=183
Γ_{36}	$(\overline{K}^*(892) \pi)^- \mu^+ \nu_\mu$		$< 1.5 \times 10^{-3}$	CL=90%	DESIG=184
Γ_{37}	$K_1(1270)^- \mu^+ \nu_\mu$, $K_1^- \to K^- \pi^+ \pi^-$		$(2.6 \, ^{+0.4}_{-0.5}) \times 10^{-4}$		DESIG=605
Γ_{38}	$K_1(1400)^- e^+ \nu_e$		$< 7 \times 10^{-5}$	CL=90%	DESIG=606
Γ_{39}	$\pi^- e^+ \nu_e$		$(2.91 \pm 0.04) \times 10^{-3}$		DESIG=49
Γ_{40}	$\pi^- \mu^+ \nu_\mu$		$(2.67 \pm 0.12) \times 10^{-3}$	S=1.3	DESIG=308
Γ_{41}	$\pi^- \pi^0 e^+ \nu_e$		$(1.45 \pm 0.07) \times 10^{-3}$		DESIG=549
Γ_{42}	$\rho^- e^+ \nu_e$		$(1.46 \pm 0.08) \times 10^{-3}$	S=2.0	DESIG=320
Γ_{43}	$\rho^- \mu^+ \nu_\mu$		$(1.35 \pm 0.13) \times 10^{-3}$		DESIG=570
Γ_{44}	$a(980)^- e^+ \nu_e$, $a^- \to \eta \pi^-$		$(8.6 \pm 1.8) \times 10^{-5}$		DESIG=495
Γ_{45}	$K^0_S K^- e^+ \nu_e$		$< 2.13 \times 10^{-5}$	CL=90%	DESIG=590
Γ_{46}	$b_1(1235)^- e^+ \nu_e$, $b_1^- \to \omega \pi^-$		$< 1.12 \times 10^{-4}$	CL=90%	DESIG=561
	Hadronic modes with one $\overline{K}$				NODE=S032;CLUMP=C
Γ_{47}	$K^- \pi^+$		(3.936 ± 0.030) %	S=1.3	DESIG=1
Γ_{48}	$K^0_S \pi^0$		(1.239 ± 0.022) %		DESIG=9
Γ_{49}	$K^0_L \pi^0$		$(9.76 \pm 0.32) \times 10^{-3}$		DESIG=363
Γ_{50}	$K^0_L \eta$		$(4.34 \pm 0.16) \times 10^{-3}$		DESIG=579
Γ_{51}	$K^0_L \eta'$		$(8.12 \pm 0.35) \times 10^{-3}$	S=1.3	DESIG=581
Γ_{52}	$K^0_L \omega$		(1.16 ± 0.04) %		DESIG=580
Γ_{53}	$K^0_S \pi^+ \pi^-$	[e]	(2.84 ± 0.16) %	S=1.1	DESIG=3
Γ_{54}	$K^0_S \rho^0$		$(6.3 \, ^{+0.6}_{-0.8}) \times 10^{-3}$		DESIG=17
Γ_{55}	$K^0_S \omega$, $\omega \to \pi^+ \pi^-$		$(2.1 \pm 0.6) \times 10^{-4}$		DESIG=285
Γ_{56}	$K^0_S (\pi^+ \pi^-)_{S-wave}$		$(3.4 \pm 0.8) \times 10^{-3}$		DESIG=384
Γ_{57}	$K^0_S f_0(980)$, $f_0 \to \pi^+ \pi^-$		$(1.22 \, ^{+0.40}_{-0.23}) \times 10^{-3}$		DESIG=199
Γ_{58}	$K^0_S f_0(1370)$, $f_0 \to \pi^+ \pi^-$		$(2.8 \, ^{+0.9}_{-1.3}) \times 10^{-3}$		DESIG=201
Γ_{59}	$K^0_S f_2(1270)$, $f_2 \to \pi^+ \pi^-$		$(9 \, ^{+10}_{-6}) \times 10^{-5}$		DESIG=200
Γ_{60}	$K^*(892)^- \pi^+$, $K^{*-} \to K^0_S \pi^-$		$(1.67 \, ^{+0.13}_{-0.16})$ %		DESIG=81
Γ_{61}	$K^*_0(1430)^- \pi^+$, $K^{*-}_0 \to K^0_S \pi^-$		$(2.71 \, ^{+0.40}_{-0.32}) \times 10^{-3}$		DESIG=203
Γ_{62}	$K^*_2(1430)^- \pi^+$, $K^{*-}_2 \to K^0_S \pi^-$		$(3.4 \, ^{+1.9}_{-1.0}) \times 10^{-4}$		DESIG=286
Γ_{63}	$K^*(1680)^- \pi^+$, $K^{*-} \to K^0_S \pi^-$		$(4 \pm 4) \times 10^{-4}$		DESIG=279
Γ_{64}	$K^*(892)^+ \pi^-$, $K^{*+} \to K^0_S \pi^+$	[f]	$(1.14 \, ^{+0.60}_{-0.34}) \times 10^{-4}$		DESIG=179
Γ_{65}	$K^*_0(1430)^+ \pi^-$, $K^{*+}_0 \to K^0_S \pi^+$	[f]	$< 1.4 \times 10^{-5}$	CL=95%	DESIG=382
Γ_{66}	$K^*_2(1430)^+ \pi^-$, $K^{*+}_2 \to K^0_S \pi^+$	[f]	$< 3.4 \times 10^{-5}$	CL=95%	DESIG=383
Γ_{67}	$K^0_S \pi^+ \pi^-$ nonresonant		$(2.6 \, ^{+6.0}_{-1.6}) \times 10^{-4}$		DESIG=33
Γ_{68}	$K^- \pi^+ \pi^0$	[e]	(14.4 ± 0.5) %	S=2.0	DESIG=8
Γ_{69}	$K^- \rho^+$		(11.2 ± 0.7) %		DESIG=16
Γ_{70}	$K^- \rho(1700)^+$, $\rho^+ \to \pi^+ \pi^0$		$(8.2 \pm 1.8) \times 10^{-3}$		DESIG=271

Γ_{71}	$K^*(892)^- \pi^+$, $K^*(892)^- \to K^- \pi^0$		$(2.30 {}^{+0.40}_{-0.20})$ %		DESIG=83
Γ_{72}	$\overline{K}^*(892)^0 \pi^0$, $\overline{K}^*(892)^0 \to K^- \pi^+$		(1.95 ± 0.24) %		DESIG=82
Γ_{73}	$K_0^*(1430)^- \pi^+$, $K_0^{*-} \to K^- \pi^0$		$(4.7 \pm 2.2) \times 10^{-3}$		DESIG=272
Γ_{74}	$\overline{K}_0^*(1430)^0 \pi^0$, $\overline{K}_0^{*0} \to K^- \pi^+$		$(5.9 {}^{+5.0}_{-1.6}) \times 10^{-3}$		DESIG=273
Γ_{75}	$K^*(1680)^- \pi^+$, $K^{*-} \to K^- \pi^0$		$(1.9 \pm 0.7) \times 10^{-3}$		DESIG=274
Γ_{76}	$K^- \pi^+ \pi^0$ nonresonant		$(1.15 {}^{+0.60}_{-0.20})$ %		DESIG=32
Γ_{77}	$K_S^0 2\pi^0$		$(9.1 \pm 1.1) \times 10^{-3}$	S=2.2	DESIG=185
Γ_{78}	$K_L^0 \pi^0 \pi^0$		(1.26 ± 0.06) %		DESIG=588
Γ_{79}	$K_S^0 (2\pi^0)_{S-wave}$		$(2.6 \pm 0.7) \times 10^{-3}$		DESIG=390
Γ_{80}	$\overline{K}^*(892)^0 \pi^0$, $\overline{K}^{*0} \to K_S^0 \pi^0$		$(6.0 \pm 0.9) \times 10^{-3}$		DESIG=202
Γ_{81}	$\overline{K}^*(1430)^0 \pi^0$, $\overline{K}^{*0} \to K_S^0 \pi^0$		$(4 \pm 23) \times 10^{-5}$		DESIG=391
Γ_{82}	$\overline{K}^*(1680)^0 \pi^0$, $\overline{K}^{*0} \to K_S^0 \pi^0$		$(1.0 \pm 0.4) \times 10^{-3}$		DESIG=392
Γ_{83}	$K_S^0 f_2(1270)$, $f_2 \to 2\pi^0$		$(2.3 \pm 1.1) \times 10^{-4}$		DESIG=393
Γ_{84}	$2K_S^0$, one $K_S^0 \to 2\pi^0$		$(3.2 \pm 1.1) \times 10^{-4}$		DESIG=394
Γ_{85}	$K_S^0 2\pi^0$ nonresonant				DESIG=186
Γ_{86}	$K_S^0 3\pi^0$		$(7.6 \pm 0.4) \times 10^{-3}$		DESIG=574
Γ_{87}	$K^- 2\pi^+ \pi^-$	[e]	(8.20 ± 0.14) %	S=1.2	DESIG=2
Γ_{88}	$K^- \pi^+ \rho^0$ total		(6.85 ± 0.31) %		DESIG=116
Γ_{89}	$K^- \pi^+ \rho^0$ 3-body		$(6.1 \pm 1.6) \times 10^{-3}$		DESIG=23
Γ_{90}	$\overline{K}^*(892)^0 \rho^0$, $\overline{K}^{*0} \to K^- \pi^+$		(1.01 ± 0.05) %		DESIG=86
Γ_{91}	$\overline{K}^*(892)^0 \rho^0$ transverse, $\overline{K}^{*0} \to K^- \pi^+$		(1.2 ± 0.4) %		DESIG=73
Γ_{92}	$K^- a_1(1260)^+$, $a_1^+ \to \rho^0 \pi^+$		(4.31 ± 0.32) %		DESIG=181
Γ_{93}	$K_1(1270)^- \pi^+$, $K_1^- \to K^- \pi^+ \pi^-$ total		$(3.9 \pm 0.4) \times 10^{-3}$		DESIG=475
Γ_{94}	$\overline{K}^*(892)^0 \pi^+ \pi^-$ total, $\overline{K}^*(892)^0 \to K^- \pi^+$				DESIG=168
Γ_{95}	$\overline{K}^*(892)^0 \pi^+ \pi^-$ 3-body, $\overline{K}^{*0} \to K^- \pi^+$				DESIG=85
Γ_{96}	$K_1(1270)^- \pi^+$, $K_1^- \to \overline{K}^*(892)^0 \pi^-$, $\overline{K}^{*0} \to K^- \pi^+$		$(6.6 \pm 2.3) \times 10^{-4}$		DESIG=182
Γ_{97}	$K^- 2\pi^+ \pi^-$ nonresonant		(1.80 ± 0.07) %		DESIG=68
Γ_{98}	$K_S^0 \pi^+ \pi^- \pi^0$	[g]	(5.2 ± 0.6) %		DESIG=143
Γ_{99}	$K_S^0 \eta$, $\eta \to \pi^+ \pi^- \pi^0$		$(1.17 \pm 0.03) \times 10^{-3}$		DESIG=135;OUR EVAL;→ UNCHECKED ←
Γ_{100}	$K_S^0 \omega$, $\omega \to \pi^+ \pi^- \pi^0$		$(9.9 \pm 0.6) \times 10^{-3}$		DESIG=110;OUR EVAL;→ UNCHECKED ←
Γ_{101}	$K^- \pi^+ 2\pi^0$		(8.86 ± 0.23) %		DESIG=20
Γ_{102}	$K^- \pi^+ 3\pi^0$		$(9.5 \pm 0.4) \times 10^{-3}$		DESIG=575
Γ_{103}	$K_S^0 \pi^+ \pi^- 2\pi^0$		(1.27 ± 0.06) %		DESIG=576
Γ_{104}	$K^- 2\pi^+ \pi^- \pi^0$		(4.3 ± 0.4) %		DESIG=41
Γ_{105}	$\overline{K}^*(892)^0 \pi^+ \pi^- \pi^0$, $\overline{K}^{*0} \to K^- \pi^+$		(1.3 ± 0.6) %		DESIG=55
Γ_{106}	$\overline{K}^*(892)^0 \omega$, $\overline{K}^{*0} \to K^- \pi^+$, $\omega \to \pi^+ \pi^- \pi^0$		$(6.5 \pm 3.0) \times 10^{-3}$		DESIG=207;OUR EVAL;→ UNCHECKED ←
Γ_{107}	$K^- \pi^+ \omega$		(3.39 ± 0.10) %		DESIG=197
Γ_{108}	$\overline{K}^*(892)^0 \omega$		(1.1 ± 0.5) %		DESIG=57
Γ_{109}	$K_S^0 \pi^0 \omega$		$(8.5 \pm 0.6) \times 10^{-3}$		DESIG=572
Γ_{110}	$K_S^0 \eta \pi^0$		(1.01 ± 0.05) %		DESIG=292
Γ_{111}	$K_S^0 a_0(980)$, $a_0 \to \eta \pi^0$		(1.20 ± 0.28) %		DESIG=293
Γ_{112}	$\overline{K}^*(892)^0 \eta$, $\overline{K}^{*0} \to K_S^0 \pi^0$		$(2.9 \pm 0.7) \times 10^{-3}$		DESIG=294

Γ_{113}	$K^- \pi^+ \eta$	(1.88 ± 0.05) %	S=1.4	DESIG=553
Γ_{114}	$K^*(892)^0 \eta$, $K^{*0} \to K^- \pi^+$	$(8.9 {}^{+0.8}_{-0.6}) \times 10^{-3}$		DESIG=566
Γ_{115}	$a_0(980)^+ K^-$, $a_0^+ \to \eta \pi^+$	$(7.4 {}^{+0.9}_{-0.7}) \times 10^{-3}$		DESIG=567
Γ_{116}	$K_2^*(1980)^- \pi^+$, $K_2^{*-} \to K^- \eta$	$(2.2 {}^{+1.7}_{-1.9}) \times 10^{-4}$		DESIG=560
Γ_{117}	$K^- \pi^+ \pi^0 \eta$	$(4.49 \pm 0.27) \times 10^{-3}$		DESIG=556
Γ_{118}	$K_S^0 \pi^+ \pi^- \eta$	$(2.80 \pm 0.21) \times 10^{-3}$		DESIG=557
Γ_{119}	$K_S^0 2\pi^0 \eta$	$(1.76 \pm 0.26) \times 10^{-3}$		DESIG=558
Γ_{120}	$K_S^0 2\pi^+ 2\pi^-$	$(2.70 \pm 0.29) \times 10^{-3}$		DESIG=97
Γ_{121}	$K_S^0 \rho^0 \pi^+ \pi^-$, no $K^*(892)^-$	$(1.1 \pm 0.7) \times 10^{-3}$		DESIG=174
Γ_{122}	$K^*(892)^- 2\pi^+ \pi^-$, $K^*(892)^- \to K_S^0 \pi^-$, no ρ^0	$(5 \pm 8) \times 10^{-4}$		DESIG=175
Γ_{123}	$K^*(892)^- \rho^0 \pi^+$, $K^*(892)^- \to K_S^0 \pi^-$	$(1.6 \pm 0.6) \times 10^{-3}$		DESIG=176
Γ_{124}	$K_S^0 2\pi^+ 2\pi^-$ nonresonant	$< 1.2 \times 10^{-3}$	CL=90%	DESIG=177
Γ_{125}	$\overline{K}^0 \pi^+ \pi^- 2\pi^0 (\pi^0)$			DESIG=43
Γ_{126}	$K^- 3\pi^+ 2\pi^-$	$(1.48 \pm 0.32) \times 10^{-4}$	S=1.4	DESIG=288
Γ_{127}	$K^- 2\pi^+ \pi^- 2\pi^0$	$(1.90 \pm 0.19) \times 10^{-3}$		DESIG=609

Fractions of some of the following modes with resonances have already appeared above as submodes of particular charged-particle modes. These nine modes below are all corrected for unseen decays of the resonances. CLUMP=D;NODE=S032

Γ_{128}	$K_S^0 \eta$	$(5.08 \pm 0.13) \times 10^{-3}$		DESIG=65
Γ_{129}	$K_S^0 \omega$	(1.11 ± 0.06) %		DESIG=64
Γ_{130}	$K_S^0 \eta'(958)$	$(9.49 \pm 0.32) \times 10^{-3}$		DESIG=187
Γ_{131}	$\overline{K}^*(892)^0 \pi^+ \pi^- \pi^0$	(1.9 ± 0.9) %		DESIG=56
Γ_{132}	$\overline{K}^*(892)^0 \eta$	(1.41 ± 0.12) %		DESIG=66
Γ_{133}	$K^- \pi^+ \eta'(958)$	$(6.43 \pm 0.34) \times 10^{-3}$		DESIG=189
Γ_{134}	$K_S^0 \eta'(958) \pi^0$	$(2.52 \pm 0.27) \times 10^{-3}$		DESIG=501
Γ_{135}	$\overline{K}^*(892)^0 \eta'(958)$	$< 1.0 \times 10^{-3}$	CL=90%	DESIG=190

Hadronic modes with three K's

NODE=S032;CLUMP=S

Γ_{136}	$K_S^0 K^+ K^-$	$(4.49 \pm 0.29) \times 10^{-3}$		DESIG=31
Γ_{137}	$K_S^0 a_0(980)^0$, $a_0^0 \to K^+ K^-$	$(3.0 \pm 0.4) \times 10^{-3}$		DESIG=321
Γ_{138}	$K^- a_0(980)^+$, $a_0^+ \to K^+ K_S^0$	$(6.0 \pm 1.8) \times 10^{-4}$		DESIG=322
Γ_{139}	$K^+ a_0(980)^-$, $a_0^- \to K^- K_S^0$	$< 1.1 \times 10^{-4}$	CL=95%	DESIG=323
Γ_{140}	$K_S^0 f_0(980)$, $f_0 \to K^+ K^-$	$< 9 \times 10^{-5}$	CL=95%	DESIG=324
Γ_{141}	$K_S^0 \phi$, $\phi \to K^+ K^-$	$(2.06 \pm 0.14) \times 10^{-3}$		DESIG=114
Γ_{142}	$K_L^0 \phi$	$(4.06 \pm 0.23) \times 10^{-3}$		DESIG=578
Γ_{143}	$K_S^0 f_0(1370)$, $f_0 \to K^+ K^-$	$(1.7 \pm 1.1) \times 10^{-4}$		DESIG=325
Γ_{144}	$3K_S^0$	$(7.6 \pm 0.7) \times 10^{-4}$	S=1.4	DESIG=58
Γ_{145}	$K^+ 2K^- \pi^+$	$(2.24 \pm 0.32) \times 10^{-4}$		DESIG=219
Γ_{146}	$K^+ K^- \overline{K}^*(892)^0$, $\overline{K}^{*0} \to K^- \pi^+$	$(4.5 \pm 1.8) \times 10^{-5}$		DESIG=283
Γ_{147}	$K^- \pi^+ \phi$, $\phi \to K^+ K^-$	$(4.0 \pm 1.7) \times 10^{-5}$		DESIG=275
Γ_{148}	$\phi \overline{K}^*(892)^0$, $\phi \to K^+ K^-$, $\overline{K}^{*0} \to K^- \pi^+$	$(1.08 \pm 0.20) \times 10^{-4}$		DESIG=284
Γ_{149}	$K^+ 2K^- \pi^+$ nonresonant	$(3.4 \pm 1.5) \times 10^{-5}$		DESIG=282
Γ_{150}	$2K_S^0 K^\pm \pi^\mp$	$(6.0 \pm 1.3) \times 10^{-4}$		DESIG=309

Pionic modes

NODE=S032;CLUMP=E

Γ_{151}	$\pi^+\pi^-$	$(1.451 \pm 0.024) \times 10^{-3}$	S=1.4	DESIG=5
Γ_{152}	$2\pi^0$	$(8.25 \pm 0.25) \times 10^{-4}$		DESIG=173
Γ_{153}	$\pi^+\pi^-\pi^0$	(1.49 ± 0.06) %	S=2.1	DESIG=29
Γ_{154}	$\rho^+\pi^-$	(1.01 ± 0.04) %		DESIG=326
Γ_{155}	$\rho^0\pi^0$	$(3.85 \pm 0.23) \times 10^{-3}$		DESIG=327
Γ_{156}	$\rho^-\pi^+$	$(5.14 \pm 0.25) \times 10^{-3}$		DESIG=328
Γ_{157}	$\rho(1450)^+\pi^-$, $\rho^+ \to \pi^+\pi^0$	$(1.6 \pm 2.1) \times 10^{-5}$		DESIG=367
Γ_{158}	$\rho(1450)^0\pi^0$, $\rho^0 \to \pi^+\pi^-$	$(4.5 \pm 1.9) \times 10^{-5}$		DESIG=368
Γ_{159}	$\rho(1450)^-\pi^+$, $\rho^- \to \pi^-\pi^0$	$(2.7 \pm 0.4) \times 10^{-4}$		DESIG=369
Γ_{160}	$\rho(1700)^+\pi^-$, $\rho^+ \to \pi^+\pi^0$	$(6.1 \pm 1.5) \times 10^{-4}$		DESIG=370
Γ_{161}	$\rho(1700)^0\pi^0$, $\rho^0 \to \pi^+\pi^-$	$(7.4 \pm 1.8) \times 10^{-4}$		DESIG=371
Γ_{162}	$\rho(1700)^-\pi^+$, $\rho^- \to \pi^-\pi^0$	$(4.8 \pm 1.1) \times 10^{-4}$		DESIG=372
Γ_{163}	$f_0(980)\pi^0$, $f_0 \to \pi^+\pi^-$	$(3.7 \pm 0.9) \times 10^{-5}$		DESIG=330
Γ_{164}	$f_0(500)\pi^0$, $f_0 \to \pi^+\pi^-$	$(1.22 \pm 0.22) \times 10^{-4}$		DESIG=329
Γ_{165}	$f_0(1370)\pi^0$, $f_0 \to \pi^+\pi^-$	$(5.5 \pm 2.1) \times 10^{-5}$		DESIG=373
Γ_{166}	$f_0(1500)\pi^0$, $f_0 \to \pi^+\pi^-$	$(5.8 \pm 1.6) \times 10^{-5}$		DESIG=374
Γ_{167}	$f_0(1710)\pi^0$, $f_0 \to \pi^+\pi^-$	$(4.6 \pm 1.6) \times 10^{-5}$		DESIG=375
Γ_{168}	$f_2(1270)\pi^0$, $f_2 \to \pi^+\pi^-$	$(1.96 \pm 0.21) \times 10^{-4}$		DESIG=376
Γ_{169}	$\pi^+\pi^-\pi^0$ nonresonant	$(1.2 \pm 0.4) \times 10^{-4}$		DESIG=377
Γ_{170}	$3\pi^0$	$(2.0 \pm 0.5) \times 10^{-4}$		DESIG=314
Γ_{171}	$2\pi^+2\pi^-$	$(7.15 \pm 0.25) \times 10^{-3}$	S=2.2	DESIG=18
Γ_{172}	$a_1(1260)^+\pi^-$, $a_1^+ \to 2\pi^+\pi^-$ total	$(4.37 \pm 0.31) \times 10^{-3}$		DESIG=348
Γ_{173}	$a_1(1260)^+\pi^-$, $a_1^+ \to \rho^0\pi^+$ *S*-wave	$(2.97 \pm 0.21) \times 10^{-3}$		DESIG=349
Γ_{174}	$a_1(1260)^+\pi^-$, $a_1^+ \to \rho^0\pi^+$ *D*-wave	$(1.8 \pm 0.5) \times 10^{-4}$		DESIG=350
Γ_{175}	$a_1(1260)^+\pi^-$, $a_1^+ \to \sigma\pi^+$	$(6.0 \pm 0.7) \times 10^{-4}$		DESIG=351
Γ_{176}	$a_1(1260)^-\pi^+$, $a_1^- \to 2\pi^-\pi^+$ total	$(7.4 \pm 2.1) \times 10^{-4}$		DESIG=612
Γ_{177}	$a_1(1260)^-\pi^+$, $a_1^- \to \rho^0\pi^-$ *S*-wave	$(2.2 \pm 0.8) \times 10^{-4}$		DESIG=445
Γ_{178}	$a_1(1260)^-\pi^+$, $a_1^- \to \sigma\pi^-$	$(5.7 \pm 3.2) \times 10^{-5}$		DESIG=447
Γ_{179}	$\pi(1300)^+\pi^-$, $\pi(1300)^+ \to 2\pi^+\pi^-$ total	$(2.3 \pm 0.4) \times 10^{-3}$		DESIG=618
Γ_{180}	$\pi(1300)^+\pi^-$, $\pi(1300)^+ \to \sigma\pi^+$	$(4.9 \pm 2.5) \times 10^{-4}$		DESIG=448
Γ_{181}	$\pi(1300)^-\pi^+$, $\pi(1300)^- \to 2\pi^-\pi^+$ total	$(1.68 \pm 0.33) \times 10^{-3}$		DESIG=619
Γ_{182}	$\pi(1300)^-\pi^+$, $\pi(1300)^- \to \sigma\pi^-$	$(2.1 \pm 2.0) \times 10^{-4}$		DESIG=449
Γ_{183}	$a_2(1320)^+\pi^-$, $a_2^+ \to \rho^0\pi^+$ *D*-wave	$(1.4 \pm 1.0) \times 10^{-5}$		DESIG=616
Γ_{184}	$a_2(1320)^-\pi^+$, $a_2^- \to \rho^0\pi^-$ *D*-wave	$(2.9 \pm 1.0) \times 10^{-5}$		DESIG=617
Γ_{185}	$a_1(1420)^+\pi^-$, $a_1^+ \to f_0(980)\pi^+$ *P*-wave, $f_0 \to \pi^+\pi^-$	$(4.3 \pm 2.0) \times 10^{-5}$		DESIG=613
Γ_{186}	$a_1(1640)^+\pi^-$, $a_1^+ \to \rho^0\pi^+$ *S*-wave	$(1.2 \pm 0.7) \times 10^{-4}$		DESIG=614
Γ_{187}	$a_1(1640)^+\pi^-$, $a_1^+ \to \rho^0\pi^+$ *D*-wave	$(3.0 \pm 1.5) \times 10^{-4}$		DESIG=450
Γ_{188}	$a_1(1640)^+\pi^-$, $a_1^+ \to \sigma\pi^+$	$(1.7 \pm 1.3) \times 10^{-4}$		DESIG=451
Γ_{189}	$a_1(1640)^-\pi^+$, $a_1^- \to \rho^0\pi^-$ *S*-wave	$(4 \pm 4) \times 10^{-5}$		DESIG=615
Γ_{190}	$\pi_2(1670)^+\pi^-$, $\pi_2^+ \to f_2(1270)^0\pi^+$, $f_2^0 \to \pi^+\pi^-$	$(1.9 \pm 0.9) \times 10^{-4}$		DESIG=452
Γ_{191}	$\pi_2(1670)^+\pi^-$, $\pi_2^+ \to \sigma\pi^+$	$(2.5 \pm 1.0) \times 10^{-4}$		DESIG=453

Γ_{192}	$2\rho(770)^0$ total	$(1.79 \pm 0.12) \times 10^{-3}$	DESIG=352
Γ_{193}	$2\rho^0$, parallel helicities	$(7.9 \pm 3.0) \times 10^{-5}$	DESIG=353
Γ_{194}	$2\rho^0$, perpendicular helicities	$(4.6 \pm 0.6) \times 10^{-4}$	DESIG=354
Γ_{195}	$2\rho^0$, longitudinal helicities	$(1.20 \pm 0.10) \times 10^{-3}$	DESIG=355
Γ_{196}	$2\rho(770)^0$, S-wave	$(1.3 \pm 0.5) \times 10^{-4}$	DESIG=456
Γ_{197}	$2\rho(770)^0$, P-wave	$(6.2 \pm 1.0) \times 10^{-4}$	DESIG=457
Γ_{198}	$2\rho(770)^0$, D-wave	$(1.2 \pm 0.5) \times 10^{-3}$	DESIG=458
Γ_{199}	$\rho(770)^0 \rho(1450)^0$, $\rho(1450)^0 \to \pi^+\pi^-$	$(1.8 \pm 1.1) \times 10^{-4}$	DESIG=621
Γ_{200}	$\rho(770)^0 \rho(1450)^0$ P-wave, $\rho(1450)^0 \to \pi^+\pi^-$	$(7 \pm 5) \times 10^{-5}$	DESIG=622
Γ_{201}	$\rho(770)^0 \rho(1450)^0$ D-wave, $\rho(1450)^0 \to \pi^+\pi^-$	$(1.1 \pm 1.0) \times 10^{-4}$	DESIG=623
Γ_{202}	Resonant $(\pi^+\pi^-)\pi^+\pi^-$ 3-body total	$(1.43 \pm 0.12) \times 10^{-3}$	DESIG=356
Γ_{203}	$(\pi^+\pi^-)_{S-wave}$ $(\pi^+\pi^-)_{S-wave}$	$(4.5 \pm 0.8) \times 10^{-3}$	DESIG=624
Γ_{204}	$\sigma\pi^+\pi^-$	$(5.9 \pm 0.8) \times 10^{-4}$	DESIG=357
Γ_{205}	$f_0(980)\pi^+\pi^-$, $f_0 \to \pi^+\pi^-$	$(1.7 \pm 0.5) \times 10^{-4}$	DESIG=358
Γ_{206}	$\rho(770)^0 (\pi^+\pi^-)_{S-wave}$	$(1.9 \pm 1.3) \times 10^{-4}$	DESIG=620
Γ_{207}	$\sigma\rho(770)^0$	$(4.7 \pm 2.4) \times 10^{-4}$	DESIG=455
Γ_{208}	$f_2(1270)\pi^+\pi^-$, $f_2 \to \pi^+\pi^-$	$(3.5 \pm 0.6) \times 10^{-4}$	DESIG=359
Γ_{209}	$f_2(1270)^0 (\pi^+\pi^-)_{S-wave}$, $f_2(1270)^0 \to \pi^+\pi^-$	$(1.3 \pm 1.0) \times 10^{-4}$	DESIG=625
Γ_{210}	$f_2(1270) f_2(1270)$, $f_2 \to \pi^+\pi^-$	$(1.5 \pm 1.7) \times 10^{-4}$	DESIG=459
Γ_{211}	$f_0(1370)\sigma$, $f_0 \to \pi^+\pi^-$	$(1.5 \pm 0.5) \times 10^{-3}$	DESIG=454
Γ_{212}	$\pi^+\pi^- 2\pi^0$	(1.002 ± 0.031) %	DESIG=315
Γ_{213}	$\pi^+\pi^- 2\pi^0$ (non-η)	$(9.51 \pm 0.33) \times 10^{-3}$	DESIG=650
Γ_{214}	$a_1(1260)^+\pi^-$, $a_1^+ \to \pi^+ 2\pi^0$ total	$(5.8 \pm 0.8) \times 10^{-3}$	DESIG=626
Γ_{215}	$a_1(1260)^-\pi^+$, $a_1^- \to \pi^- 2\pi^0$ total	$(7.2 \pm 2.5) \times 10^{-4}$	DESIG=627
Γ_{216}	$a_1(1260)^0\pi^0$, $a_1^0 \to \pi^+\pi^-\pi^0$ total	$(3.3 \pm 0.9) \times 10^{-3}$	DESIG=628
Γ_{217}	$a_1(1420)^+\pi^-$, $a_1^+ \to f_0(980)\pi^+$ P-wave, $f_0 \to \pi^0\pi^0$	$(3.0 \pm 1.4) \times 10^{-5}$	DESIG=629
Γ_{218}	$a_1(1640)^-\pi^+$, $a_1^- \to \rho^-\pi^0$ S-wave	$(3.0 \pm 2.8) \times 10^{-5}$	DESIG=630
Γ_{219}	$a_1(1640)^+\pi^-$, $a_1^+ \to \rho^+\pi^0$ S-wave	$(1.1 \pm 0.7) \times 10^{-4}$	DESIG=631
Γ_{220}	$a_2(1320)^+\pi^-$, $a_2^+ \to \rho^+\pi^0$ D-wave	$(2.0 \pm 1.4) \times 10^{-5}$	DESIG=632
Γ_{221}	$a_2(1320)^-\pi^+$, $a_2^- \to \rho^-\pi^0$ D-wave	$(3.0 \pm 1.4) \times 10^{-5}$	DESIG=633
Γ_{222}	$h_1(1170)^0\pi^0$, $h_1^0 \to \rho\pi$	$(1.3 \pm 1.3) \times 10^{-4}$	DESIG=634
Γ_{223}	$\pi(1300)^-\pi^+$, $\pi(1300)^- \to \pi^- 2\pi^0$ total	$(1.14 \pm 0.27) \times 10^{-3}$	DESIG=635
Γ_{224}	$\pi(1300)^+\pi^-$, $\pi(1300)^+ \to \pi^+ 2\pi^0$ total	$(1.56 \pm 0.30) \times 10^{-3}$	DESIG=636
Γ_{225}	$\pi(1300)^0\pi^0$, $\pi(1300)^0 \to \pi^+\pi^-\pi^0$ total	$(2.3 \pm 0.4) \times 10^{-3}$	DESIG=637
Γ_{226}	$\pi_2(1670)^0\pi^0$, $\pi_2(1670)^0 \to \pi^+\pi^-\pi^0$ total	$(1.1 \pm 0.4) \times 10^{-4}$	DESIG=638
Γ_{227}	$\rho(770)^+\rho(770)^-$	$(9.1 \pm 0.9) \times 10^{-3}$	DESIG=639
Γ_{228}	$\rho(770)^+\rho(770)^-$ S-wave	$(1.3 \pm 0.4) \times 10^{-3}$	DESIG=645
Γ_{229}	$\rho(770)^+\rho(770)^-$ P-wave	$(1.96 \pm 0.23) \times 10^{-3}$	DESIG=646
Γ_{230}	$\rho(770)^+\rho(770)^-$ D-wave	$(3.6 \pm 0.4) \times 10^{-3}$	DESIG=647

Γ_{231}	$\rho(770)^+\rho(1450)^-$ D-wave, $\rho(1450)^- \to \pi^-\pi^0$		$(1.7 \pm 2.0) \times 10^{-4}$		DESIG=640
Γ_{232}	$\rho(770)^0(\pi^0\pi^0)_{S-wave}$		$(1.0 \pm 0.4) \times 10^{-4}$		DESIG=641
Γ_{233}	$(\pi^+\pi^-)_{S-wave}$ $(\pi^0\pi^0)_{S-wave}$		$(3.7 \pm 0.6) \times 10^{-3}$		DESIG=642
Γ_{234}	$f_2(1270)(\pi^0\pi^0)_{S-wave}$, $f_2 \to \pi^+\pi^-$				DESIG=643
Γ_{235}	$f_2(1270)(\pi^+\pi^-)_{S-wave}$, $f_2 \to \pi^0\pi^0$				DESIG=644
Γ_{236}	$\omega(782)\pi^0$, $\omega \to \pi^+\pi^-\pi^0$		$(9 \pm 4) \times 10^{-5}$		DESIG=648
Γ_{237}	$\phi(1020)\pi^0$, $\phi(1020) \to \pi^+\pi^-\pi^0$		$(1.5 \pm 0.5) \times 10^{-4}$		DESIG=649
Γ_{238}	$4\pi^0$		$(7.6 \pm 1.1) \times 10^{-4}$		DESIG=583
Γ_{239}	$\eta\pi^0$	[h]	$(6.3 \pm 0.5) \times 10^{-4}$	S=1.1	DESIG=316
Γ_{240}	$\omega\pi^0$	[h]	$(1.17 \pm 0.35) \times 10^{-4}$		DESIG=317
Γ_{241}	$\omega\eta$		$(1.98 \pm 0.18) \times 10^{-3}$	S=1.1	DESIG=496
Γ_{242}	$2\pi^+2\pi^-\pi^0$		$(3.46 \pm 0.21) \times 10^{-3}$		DESIG=95
Γ_{243}	$\pi^+\pi^-3\pi^0$		$(1.53 \pm 0.21) \times 10^{-3}$		DESIG=586
Γ_{244}	$2\pi^+2\pi^-2\pi^0$		$(4.8 \pm 0.4) \times 10^{-3}$		DESIG=587
Γ_{245}	$\eta\pi^+\pi^-$	[h]	$(1.16 \pm 0.07) \times 10^{-3}$		DESIG=318
Γ_{246}	$\rho(770)^0\eta$, $\rho^0 \to \pi^+\pi^-$		$(1.77 \pm 0.25) \times 10^{-4}$		DESIG=593
Γ_{247}	$a_0(980)^-\pi^+$, $a_0^- \to \pi^-\eta$		$(6.9 \pm 1.9) \times 10^{-5}$		DESIG=594
Γ_{248}	$a_0(980)^+\pi^-$, $a_0^+ \to \pi^+\eta$		$(5.1 \pm 0.8) \times 10^{-4}$		DESIG=595
Γ_{249}	$a_2(1320)^+\pi^-$, $a_2^+ \to \pi^+\eta$		$(2.4 \pm 1.4) \times 10^{-5}$		DESIG=596
Γ_{250}	$a_2(1700)^+\pi^-$, $a_2^+ \to \pi^+\eta$		$(6 \pm 4) \times 10^{-5}$		DESIG=597
Γ_{251}	$(\pi^+\pi^-)_{S-wave}\eta$		$(4.5 \pm 3.2) \times 10^{-5}$		DESIG=598
Γ_{252}	$\omega\pi^+\pi^-$	[h]	$(1.33 \pm 0.20) \times 10^{-3}$		DESIG=319
Γ_{253}	$\omega\pi^0\pi^0$		$< 1.10 \times 10^{-3}$	CL=90%	DESIG=562
Γ_{254}	$\eta 2\pi^0$		$(3.8 \pm 1.3) \times 10^{-4}$		DESIG=498
Γ_{255}	$\pi^+\pi^-\pi^0\eta$		$(3.23 \pm 0.22) \times 10^{-3}$		DESIG=559
Γ_{256}	$\eta 3\pi^0$		$(2.36 \pm 0.28) \times 10^{-3}$		DESIG=584
Γ_{257}	$\eta 2\pi^+2\pi^-$		$(6.0 \pm 1.2) \times 10^{-4}$		DESIG=585
Γ_{258}	$3\pi^+3\pi^-$		$(4.3 \pm 1.2) \times 10^{-4}$		DESIG=96
Γ_{259}	$\eta'(958)\pi^0$		$(9.2 \pm 1.0) \times 10^{-4}$		DESIG=378
Γ_{260}	$\eta'(958)\pi^+\pi^-$		$(4.5 \pm 1.7) \times 10^{-4}$		DESIG=379
Γ_{261}	2η		$(2.11 \pm 0.19) \times 10^{-3}$	S=2.3	DESIG=380
Γ_{262}	$2\eta\pi^0$		$(7.3 \pm 2.2) \times 10^{-4}$		DESIG=499
Γ_{263}	$2\eta\pi^+\pi^-$		$(8.5 \pm 1.4) \times 10^{-4}$		DESIG=582
Γ_{264}	3η		$< 1.3 \times 10^{-4}$	CL=90%	DESIG=500
Γ_{265}	$\eta\eta'(958)$		$(1.01 \pm 0.19) \times 10^{-3}$		DESIG=381

Hadronic modes with a $K\overline{K}$ pair

NODE=S032;CLUMP=F

Γ_{266}	K^+K^-		$(4.07 \pm 0.06) \times 10^{-3}$	S=1.6	DESIG=7
Γ_{267}	$2K_S^0$		$(1.41 \pm 0.05) \times 10^{-4}$	S=1.1	DESIG=35
Γ_{268}	$K_S^0K^-\pi^+$		$(3.4 \pm 0.5) \times 10^{-3}$	S=1.1	DESIG=93
Γ_{269}	$\overline{K}^*(892)^0K_S^0$, $\overline{K}^{*0} \to K^-\pi^+$		$(8.3 \pm 1.6) \times 10^{-5}$		DESIG=91
Γ_{270}	$K^*(892)^+K^-$, $K^{*+} \to K_S^0\pi^+$		$(1.91 \pm 0.30) \times 10^{-3}$		DESIG=412
Γ_{271}	$\overline{K}^*(1410)^0K_S^0$, $\overline{K}^{*0} \to K^-\pi^+$		$(1.3 \pm 1.9) \times 10^{-4}$		DESIG=417
Γ_{272}	$K^*(1410)^+K^-$, $K^{*+} \to K_S^0\pi^+$		$(3.2 \pm 1.9) \times 10^{-4}$		DESIG=414
Γ_{273}	$(K^-\pi^+)_{S-wave}K_S^0$		$(6.0 \pm 2.9) \times 10^{-4}$		DESIG=420
Γ_{274}	$(K_S^0\pi^+)_{S-wave}K^-$		$(3.9 \pm 1.0) \times 10^{-4}$		DESIG=419
Γ_{275}	$a_0(980)^-\pi^+$, $a_0^- \to K_S^0K^-$		$(1.3 \pm 1.4) \times 10^{-4}$		DESIG=423
Γ_{276}	$a_0(1450)^-\pi^+$, $a_0^- \to K_S^0K^-$		$(2.5 \pm 2.0) \times 10^{-5}$		DESIG=424

Γ_{277}	$a_2(1320)^-\pi^+$, $a_2^- \to K_S^0 K^-$	$(5 \pm 5) \times 10^{-6}$		DESIG=429
Γ_{278}	$\rho(1450)^-\pi^+$, $\rho^- \to K_S^0 K^-$	$(4.7 \pm 2.5) \times 10^{-5}$		DESIG=425
Γ_{279}	$K_S^0 K^+ \pi^-$	$(2.19 \pm 0.34) \times 10^{-3}$	S=1.1	DESIG=123
Γ_{280}	$K^*(892)^0 K_S^0$, $K^{*0} \to K^+\pi^-$	$(1.13 \pm 0.21) \times 10^{-4}$		DESIG=124
Γ_{281}	$K^*(892)^- K^+$, $K^{*-} \to K_S^0 \pi^-$	$(6.3 \pm 1.0) \times 10^{-4}$		DESIG=413
Γ_{282}	$K^*(1410)^0 K_S^0$, $K^{*0} \to K^+\pi^+$	$(5 \pm 8) \times 10^{-5}$		DESIG=418
Γ_{283}	$K^*(1410)^- K^+$, $K^{*-} \to K_S^0 \pi^-$	$(2.6 \pm 2.1) \times 10^{-4}$		DESIG=415
Γ_{284}	$(K^+\pi^-)_{S-wave} K_S^0$	$(3.7 \pm 1.9) \times 10^{-4}$		DESIG=421
Γ_{285}	$(K_S^0\pi^-)_{S-wave} K^+$	$(1.4 \pm 0.6) \times 10^{-4}$		DESIG=422
Γ_{286}	$a_0(980)^+\pi^-$, $a_0^+ \to K_S^0 K^+$	$(6 \pm 4) \times 10^{-4}$		DESIG=426
Γ_{287}	$a_0(1450)^+\pi^-$, $a_0^+ \to K_S^0 K^+$	$(3.3 \pm 2.6) \times 10^{-5}$		DESIG=427
Γ_{288}	$\rho(1700)^+\pi^-$, $\rho^+ \to K_S^0 K^+$	$(1.2 \pm 0.6) \times 10^{-5}$		DESIG=428
Γ_{289}	$K^+K^-\pi^0$	$(3.41 \pm 0.14) \times 10^{-3}$		DESIG=243
Γ_{290}	$K^*(892)^+ K^-$, $K^*(892)^+ \to K^+\pi^0$	$(1.51 \pm 0.07) \times 10^{-3}$		DESIG=344
Γ_{291}	$K^*(892)^- K^+$, $K^*(892)^- \to K^-\pi^0$	$(5.4 \pm 0.4) \times 10^{-4}$		DESIG=345
Γ_{292}	$(K^+\pi^0)_{S-wave} K^-$	$(2.42 \pm 0.17) \times 10^{-3}$		DESIG=364
Γ_{293}	$(K^-\pi^0)_{S-wave} K^+$	$(1.3 \pm 0.5) \times 10^{-4}$		DESIG=365
Γ_{294}	$f_0(980)\pi^0$, $f_0 \to K^+K^-$	$(3.6 \pm 0.6) \times 10^{-4}$		DESIG=366
Γ_{295}	$\phi\pi^0$, $\phi \to K^+K^-$	$(6.6 \pm 0.4) \times 10^{-4}$		DESIG=346
Γ_{296}	$K^+K^-\pi^0$ nonresonant			DESIG=347
Γ_{297}	$2K_S^0\pi^0$	$< 1.45 \times 10^{-4}$	CL=90%	DESIG=242
Γ_{298}	$K^+K^-\eta$	$(5.9 \pm 1.9) \times 10^{-5}$		DESIG=554
Γ_{299}	$\phi(1020)\eta$	$(1.80 \pm 0.12) \times 10^{-4}$		DESIG=569
Γ_{300}	$K^+K^-\eta$ nonresonant	$(9.9 {}^{+0.9}_{-0.8}) \times 10^{-5}$		DESIG=568
Γ_{301}	$2K_S^0\eta$	$(1.3 \pm 0.6) \times 10^{-4}$		DESIG=555
Γ_{302}	$K^+K^-\pi^0\pi^0$	$(6.9 \pm 0.8) \times 10^{-4}$		DESIG=563
Γ_{303}	$K^+K^-\pi^+\pi^-$	$(2.78 \pm 0.17) \times 10^{-3}$	S=3.6	DESIG=63
Γ_{304}	$\phi(\pi^+\pi^-)_{S-wave}$, $\phi \to K^+K^-$	$(1.1 \pm 0.6) \times 10^{-4}$		DESIG=115
Γ_{305}	$(\phi\rho^0)_{S-wave}$, $\phi \to K^+K^-$	$(7.8 \pm 0.8) \times 10^{-4}$		DESIG=134
Γ_{306}	$(\phi\rho^0)_{P-wave}$, $\phi \to K^+K^-$	$(4.4 \pm 2.1) \times 10^{-5}$		DESIG=461
Γ_{307}	$(\phi\rho^0)_{D-wave}$, $\phi \to K^+K^-$	$(4.7 \pm 1.6) \times 10^{-5}$		DESIG=395
Γ_{308}	$K^*(892)^0 \overline{K}^*(892)^0$, $K^{*0} \to K^\pm\pi^\mp$			DESIG=137
Γ_{309}	$K^+K^-\rho^0$ 3-body			DESIG=220
Γ_{310}	$f_0(980)\pi^+\pi^-$, $f_0 \to K^+K^-$			DESIG=338
Γ_{311}	$(K^*(892)^0 \overline{K}^*(892)^0)_{S-wave}$, $K^{*0} \to K^\pm\pi^\mp$	$(2.52 \pm 0.18) \times 10^{-4}$		DESIG=396
Γ_{312}	$(K^*(892)^0 \overline{K}^*(892)^0)_{P-wave}$, $K^* \to K^\pm\pi^\mp$	$(1.35 \pm 0.11) \times 10^{-4}$		DESIG=462
Γ_{313}	$(K^*(892)^0 \overline{K}^*(892)^0)_{D-wave}$, $K^* \to K^\pm\pi^\mp$	$(5.3 \pm 0.5) \times 10^{-5}$		DESIG=463
Γ_{314}	$K^*(892)^0 K^\mp\pi^\pm$ 3-body, $K^{*0} \to K^\pm\pi^\mp$			DESIG=208
Γ_{315}	$K^*(892)^0 (K^-\pi^+)_{S-wave}$ 3-body, $K^{*0} \to K^+\pi^-$	$(1.6 \pm 0.7) \times 10^{-4}$		DESIG=470
Γ_{316}	$(K^-\pi^+)_{P-wave}$, $(K^+\pi^-)_{S-wave}$			DESIG=397
Γ_{317}	$K_1(1270)^\pm K^\mp$, $K_1^\pm \to K^\pm\pi^+\pi^-$			DESIG=336

Γ_{318}	$K_1(1270)^+ K^-$, $K_1^+ \to K^{*0}\pi^+$		$(1.5 \pm 1.0) \times 10^{-4}$		DESIG=398
Γ_{319}	$K_1(1270)^+ K^-$, $K_1^+ \to K^*(1430)^0\pi^+$, $K^{*0} \to K^+\pi^-$		$(1.7 \pm 0.6) \times 10^{-4}$		DESIG=466
Γ_{320}	$K_1(1270)^+ K^-$, $K_1^+ \to \rho^0 K^+$		$(2.5 \pm 0.7) \times 10^{-4}$		DESIG=399
Γ_{321}	$K_1(1270)^+ K^-$, $K_1^+ \to \omega(782) K^+$, $\omega \to \pi^+\pi^-$		$(1.7 \pm 1.4) \times 10^{-5}$		DESIG=467
Γ_{322}	$K_1(1270)^- K^+$, $K_1^- \to \overline{K}^{*0}\pi^-$				DESIG=400
Γ_{323}	$K_1(1270)^- K^+$, $K_1^- \to \rho^0 K^-$		$(1.5 \pm 0.4) \times 10^{-4}$		DESIG=401
Γ_{324}	$K_1(1400)^\pm K^\mp$, $K_1^\pm \to K^\pm\pi^+\pi^-$				DESIG=337
Γ_{325}	$K_1(1400)^+ K^-$, $K_1^+ \to K^*(892)^0\pi^+$, $K^{*0} \to K^+\pi^-$		$(5.2 \pm 0.5) \times 10^{-4}$		DESIG=465
Γ_{326}	$K^*(1410)^+ K^-$, $K^{*+} \to K^{*0}\pi^+$				DESIG=402
Γ_{327}	$K^*(1410)^- K^+$, $K^{*-} \to \overline{K}^{*0}\pi^-$		$(7.8 \pm 1.3) \times 10^{-5}$		DESIG=403
Γ_{328}	$K_1(1680)^+ K^-$, $K_1^+ \to K^{*0}\pi^+$, $K^{*0} \to K^+\pi^-$		$(1.0 \pm 0.4) \times 10^{-4}$		DESIG=468
Γ_{329}	$K^+K^-\pi^+\pi^-$ non-resonant		$(3.1 \pm 0.7) \times 10^{-4}$		DESIG=469
Γ_{330}	$2K_S^0\pi^+\pi^-$		$(5.3 \pm 0.9) \times 10^{-4}$		DESIG=215
Γ_{331}	$K_S^0 K^-\pi^+\pi^0$		$(1.32 \pm 0.16) \times 10^{-3}$		DESIG=564
Γ_{332}	$K_S^0 K^+\pi^-\pi^0$		$(6.5 \pm 0.7) \times 10^{-4}$		DESIG=565
Γ_{333}	$K_S^0 K^- 2\pi^+\pi^-$		$< 1.5 \times 10^{-4}$	CL=90%	DESIG=178
Γ_{334}	$K^+K^-\pi^+\pi^-\pi^0$		$(3.1 \pm 2.0) \times 10^{-3}$		DESIG=131
	Other $K\overline{K}X$ modes. They include all decay modes of the ϕ, η, and ω.				CLUMP=G;NODE=S032
Γ_{335}	$\phi\pi^0$		$(1.17 \pm 0.04) \times 10^{-3}$		DESIG=212
Γ_{336}	$\phi\eta$		$(1.8 \pm 0.5) \times 10^{-4}$		DESIG=213
Γ_{337}	$\phi\omega$		$(6.5 \pm 1.0) \times 10^{-4}$		DESIG=214
	Radiative modes				NODE=S032;CLUMP=I
Γ_{338}	$\rho^0\gamma$		$(1.81 \pm 0.31) \times 10^{-5}$		DESIG=245
Γ_{339}	$\omega\gamma$		$< 2.4 \times 10^{-4}$	CL=90%	DESIG=246
Γ_{340}	$\phi\gamma$		$(2.80 \pm 0.19) \times 10^{-5}$		DESIG=247
Γ_{341}	$\overline{K}^*(892)^0\gamma$		$(4.1 \pm 0.7) \times 10^{-4}$		DESIG=248
	Doubly Cabibbo suppressed (*DC*) modes or $\Delta C = 2$ forbidden via mixing (*C2M*) modes				NODE=S032;CLUMP=T
Γ_{342}	$K^+\ell^-\overline{\nu}_\ell$ via $\overline{D}^0$		[i] $< 2.2 \times 10^{-5}$	CL=90%	DESIG=241;OUR EVAL;→ UNCHECKED ←
Γ_{343}	K^+ or $K^*(892)^+ e^-\overline{\nu}_e$ via $\overline{D}^0$		$< 6 \times 10^{-5}$	CL=90%	DESIG=311;OUR EVAL;→ UNCHECKED ←
Γ_{344}	$K^+\pi^-$	*DC*	$(1.48 \pm 0.07) \times 10^{-4}$	S=3.1	DESIG=50
Γ_{345}	$K^+\pi^-$ via DCS		$(1.359 \pm 0.025) \times 10^{-4}$		DESIG=362
Γ_{346}	$K^+\pi^-$ via $\overline{D}^0$		$< 1.6 \times 10^{-5}$	CL=95%	DESIG=6
Γ_{347}	$K_S^0\pi^+\pi^-$ in $D^0 \to \overline{D}^0$		$< 1.8 \times 10^{-4}$	CL=95%	DESIG=339
Γ_{348}	$K^*(892)^+\pi^-$, $K^{*+} \to K_S^0\pi^+$	*DC*	$(1.14 {}^{+0.60}_{-0.34}) \times 10^{-4}$		DESIG=287;OUR EVAL;→ UNCHECKED ←
Γ_{349}	$K_0^*(1430)^+\pi^-$, $K_0^{*+} \to K_S^0\pi^+$	*DC*	$< 1.4 \times 10^{-5}$		DESIG=385;OUR EVAL;→ UNCHECKED ←
Γ_{350}	$K_2^*(1430)^+\pi^-$, $K_2^{*+} \to K_S^0\pi^+$	*DC*	$< 3.4 \times 10^{-5}$		DESIG=386;OUR EVAL;→ UNCHECKED ←

Γ_{351}	$K^+\pi^-\pi^0$	DC		$(3.05 \pm 0.13) \times 10^{-4}$	S=1.3		DESIG=277
Γ_{352}	$K^+\pi^-\pi^0$ via $\overline{D}^0$			$(7.6 \pm 0.5) \times 10^{-4}$			DESIG=343
Γ_{353}	$K^+\pi^-\eta$			$(1.04 \pm 0.18) \times 10^{-4}$			DESIG=607
Γ_{354}	$K^+\pi^-2\pi^0$			$(1.40 \pm 0.28) \times 10^{-4}$			DESIG=577
Γ_{355}	$K^+\pi^+2\pi^-$ via DCS			$(2.48 \pm 0.07) \times 10^{-4}$			DESIG=432
Γ_{356}	$K^+\pi^+2\pi^-$	DC		$(2.64 \pm 0.06) \times 10^{-4}$	S=1.1		DESIG=51
Γ_{357}	$K^+\pi^+2\pi^-$ via $\overline{D}^0$			$(7.9 \pm 3.0) \times 10^{-6}$			DESIG=222
Γ_{358}	$K^+\pi^-\pi^0\eta$			$< 7 \times 10^{-5}$	CL=90%		DESIG=608
Γ_{359}	$K^+\pi^-$ or $K^+\pi^+2\pi^-$ via $\overline{D}^0$						DESIG=244
Γ_{360}	μ^- anything via $\overline{D}^0$			$< 4 \times 10^{-4}$	CL=90%		DESIG=26

$\Delta C = 1$ weak neutral current (*C1*) modes, Lepton Family number (*LF*) violating modes, Lepton (*L*) or Baryon (*B*) number violating modes

NODE=S032;CLUMP=H

Γ_{361}	$\gamma\gamma$	C1		$< 8.5 \times 10^{-7}$	CL=90%	DESIG=45
Γ_{362}	e^+e^-	C1		$< 7.9 \times 10^{-8}$	CL=90%	DESIG=39
Γ_{363}	$\mu^+\mu^-$	C1		$< 2.1 \times 10^{-9}$	CL=90%	DESIG=28
Γ_{364}	$\pi^0 e^+e^-$	C1		$< 4 \times 10^{-6}$	CL=90%	DESIG=225
Γ_{365}	$\pi^0\mu^+\mu^-$	C1		$< 1.8 \times 10^{-4}$	CL=90%	DESIG=216
Γ_{366}	$\pi^0\nu\overline{\nu}$			$< 2.1 \times 10^{-4}$	CL=90%	DESIG=571
Γ_{367}	ηe^+e^-	C1		$< 3 \times 10^{-6}$	CL=90%	DESIG=226
Γ_{368}	$\eta\mu^+\mu^-$	C1		$< 5.3 \times 10^{-4}$	CL=90%	DESIG=227
Γ_{369}	$\pi^+\pi^-e^+e^-$	C1		$< 7 \times 10^{-6}$	CL=90%	DESIG=262
Γ_{370}	$\rho^0 e^+e^-$	C1		$< 1.0 \times 10^{-4}$	CL=90%	DESIG=52
Γ_{371}	$\pi^+\pi^-\mu^+\mu^-$	C1		$(9.6 \pm 1.2) \times 10^{-7}$		DESIG=263
Γ_{372}	$\pi^+\pi^-\mu^+\mu^-$ (non-res)			$< 5.5 \times 10^{-7}$	CL=90%	DESIG=471
Γ_{373}	$\rho^0\mu^+\mu^-$	C1		$< 2.2 \times 10^{-5}$	CL=90%	DESIG=53
Γ_{374}	ωe^+e^-	C1		$< 6 \times 10^{-6}$	CL=90%	DESIG=228
Γ_{375}	$\omega\mu^+\mu^-$	C1		$< 8.3 \times 10^{-4}$	CL=90%	DESIG=229
Γ_{376}	$K^-K^+e^+e^-$	C1		$< 1.1 \times 10^{-5}$	CL=90%	DESIG=266
Γ_{377}	ϕe^+e^-	C1		$< 5.2 \times 10^{-5}$	CL=90%	DESIG=230
Γ_{378}	$K^-K^+\mu^+\mu^-$	C1		$(1.54 \pm 0.32) \times 10^{-7}$		DESIG=267
Γ_{379}	$K^-K^+\mu^+\mu^-$ (non-res)			$< 3.3 \times 10^{-5}$	CL=90%	DESIG=473
Γ_{380}	$\phi\mu^+\mu^-$	C1		$< 3.1 \times 10^{-5}$	CL=90%	DESIG=231
Γ_{381}	$\overline{K}^0 e^+e^-$		[j]	$< 2.4 \times 10^{-5}$	CL=90%	DESIG=67
Γ_{382}	$\overline{K}^0\mu^+\mu^-$		[j]	$< 2.6 \times 10^{-4}$	CL=90%	DESIG=217
Γ_{383}	$K^-\pi^+e^+e^-$					DESIG=264
Γ_{384}	$K^-\pi^+e^+e^-$, $675 < m_{ee} < 875$ MeV			$(4.0 \pm 0.4) \times 10^{-6}$		DESIG=551
Γ_{385}	$K^-\pi^+e^+e^-$, $1.005 < m_{ee} < 1.035$ GeV			$< 5 \times 10^{-7}$	CL=90%	DESIG=552
Γ_{386}	$\overline{K}^*(892)^0 e^+e^-$		[j]	$< 4.7 \times 10^{-5}$	CL=90%	DESIG=232
Γ_{387}	$K^-\pi^+\mu^+\mu^-$	C1		$< 3.59 \times 10^{-4}$	CL=90%	DESIG=265
Γ_{388}	$K^-\pi^+\mu^+\mu^-$, $675 < m_{\mu\mu} < 875$ MeV			$(4.2 \pm 0.4) \times 10^{-6}$		DESIG=434
Γ_{389}	$\overline{K}^*(892)^0\mu^+\mu^-$		[j]	$< 2.4 \times 10^{-5}$	CL=90%	DESIG=233
Γ_{390}	$\pi^+\pi^-\pi^0\mu^+\mu^-$	C1		$< 8.1 \times 10^{-4}$	CL=90%	DESIG=218
Γ_{391}	$\mu^\pm e^\mp$	LF	[k]	$< 1.3 \times 10^{-8}$	CL=90%	DESIG=40
Γ_{392}	$\pi^0 e^\pm\mu^\mp$	LF	[k]	$< 8.0 \times 10^{-7}$	CL=90%	DESIG=234
Γ_{393}	$\eta e^\pm\mu^\mp$	LF	[k]	$< 2.25 \times 10^{-6}$	CL=90%	DESIG=235
Γ_{394}	$\pi^+\pi^-e^\pm\mu^\mp$	LF	[k]	$< 1.71 \times 10^{-6}$	CL=90%	DESIG=268
Γ_{395}	$\rho^0 e^\pm\mu^\mp$	LF	[k]	$< 5.0 \times 10^{-7}$	CL=90%	DESIG=236
Γ_{396}	$\omega e^\pm\mu^\mp$	LF	[k]	$< 1.71 \times 10^{-6}$	CL=90%	DESIG=237
Γ_{397}	$K^-K^+e^\pm\mu^\mp$	LF	[k]	$< 1.00 \times 10^{-6}$	CL=90%	DESIG=270
Γ_{398}	$\phi e^\pm\mu^\mp$	LF	[k]	$< 5.1 \times 10^{-7}$	CL=90%	DESIG=238
Γ_{399}	$\overline{K}^0 e^\pm\mu^\mp$	LF	[k]	$< 1.74 \times 10^{-6}$	CL=90%	DESIG=239

Γ_{400}	$K^- \pi^+ e^\pm \mu^\mp$	LF	[k] $<$	1.90	$\times 10^{-6}$	CL=90%	DESIG=269
Γ_{401}	$\overline{K}^*(892)^0 e^\pm \mu^\mp$	LF	[k] $<$	1.25	$\times 10^{-6}$	CL=90%	DESIG=240
Γ_{402}	$2\pi^- 2e^+$	L	$<$	9.1	$\times 10^{-7}$	CL=90%	DESIG=253
Γ_{403}	$2\pi^- 2\mu^+$	L	$<$	1.52	$\times 10^{-6}$	CL=90%	DESIG=254
Γ_{404}	$K^- \pi^- 2e^+$	L	$<$	5.0	$\times 10^{-7}$	CL=90%	DESIG=255
Γ_{405}	$K^- \pi^- 2\mu^+$	L	$<$	5.3	$\times 10^{-7}$	CL=90%	DESIG=256
Γ_{406}	$2K^- 2e^+$	L	$<$	3.4	$\times 10^{-7}$	CL=90%	DESIG=257
Γ_{407}	$2K^- 2\mu^+$	L	$<$	1.0	$\times 10^{-7}$	CL=90%	DESIG=258
Γ_{408}	$\pi^- \pi^- e^+ \mu^+$	L	$<$	3.06	$\times 10^{-6}$	CL=90%	DESIG=259
Γ_{409}	$K^- \pi^- e^+ \mu^+$	L	$<$	2.10	$\times 10^{-6}$	CL=90%	DESIG=260
Γ_{410}	$2K^- e^+ \mu^+$	L	$<$	5.8	$\times 10^{-7}$	CL=90%	DESIG=261
Γ_{411}	$p e^-$	L,B	$<$	5.5	$\times 10^{-7}$	CL=90%	DESIG=387
Γ_{412}	$\overline{p} e^+$	L,B	$<$	6.9	$\times 10^{-7}$	CL=90%	DESIG=388
Γ_{413}	$p \mu^-$	L,B	$<$	5.1	$\times 10^{-7}$	CL=90%	DESIG=591
Γ_{414}	$\overline{p} \mu^+$	L,B	$<$	6.3	$\times 10^{-7}$	CL=90%	DESIG=592
	Exotic modes						NODE=S032;CLUMP=O
Γ_{415}	$\gamma \gamma_D$		[l] $<$	2.0	$\times 10^{-6}$	CL=90%	DESIG=603
Γ_{416}	$\omega \gamma_D$		[l] $<$	1.1	$\times 10^{-5}$	CL=90%	DESIG=604
							NODE=S032;CLUMP=Z
Γ_{417}	Unaccounted decay modes						DESIG=19

[a] This value is obtained by subtracting the branching fractions for 2-, 4- and 6-prongs from unity. LINKAGE=TP0

[b] This is the sum of our $K^- 2\pi^+ \pi^-$, $K^- 2\pi^+ \pi^- \pi^0$, $\overline{K}^0 2\pi^+ 2\pi^-$, $K^+ 2K^- \pi^+$, $2\pi^+ 2\pi^-$, $2\pi^+ 2\pi^- \pi^0$, $K^+ K^- \pi^+ \pi^-$, and $K^+ K^- \pi^+ \pi^- \pi^0$, branching fractions. LINKAGE=TP4

[c] This is the sum of our $K^- 3\pi^+ 2\pi^-$ and $3\pi^+ 3\pi^-$ branching fractions. LINKAGE=TP6

[d] The branching fractions for the $K^- e^+ \nu_e$, $K^*(892)^- e^+ \nu_e$, $\pi^- e^+ \nu_e$, and $\rho^- e^+ \nu_e$ modes add up to 6.17 ± 0.17 %. LINKAGE=EAN

[e] The branching fraction for this mode may differ from the sum of the submodes that contribute to it, due to interference effects. See the relevant papers. LINKAGE=SDQ

[f] This is a doubly Cabibbo-suppressed mode. LINKAGE=DCS

[g] Submodes of the $D^0 \rightarrow K^0_S \pi^+ \pi^- \pi^0$ mode with a K^* and/or ρ were studied by COFFMAN 92B, but with only 140 events. With nothing new for 18 years, we refer to our 2008 edition, Physics Letters **B667** 1 (2008), for those results. LINKAGE=DKP

[h] This branching fraction includes all the decay modes of the resonance in the final state. LINKAGE=ADC

[i] This limit assumes the average of B($D^0 \rightarrow K^- e^+ \nu_e$) and B($D^0 \rightarrow K^- \mu^+ \nu_\mu$) for the B($D^0 \rightarrow K^- \ell^+ \nu_\ell$) value. LINKAGE=DLN

[j] This mode is not a useful test for a ΔC=1 weak neutral current because both quarks must change flavor in this decay. LINKAGE=FIX

[k] The value is for the sum of the charge states or particle/antiparticle states indicated. LINKAGE=SG

[l] Here γ_D stands for massless dark photon. LINKAGE=DGM

FIT INFORMATION

An overall fit to 81 branching ratios uses 153 measurements to determine 39 parameters. The overall fit has a $\chi^2 = 183.0$ for 114 degrees of freedom.

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

	x_6	x_{20}	x_{21}	x_{22}	x_{23}	x_{27}	x_{29}	x_{39}	x_{40}	x_{47}
x_{20}	0									
x_{21}	3	0								
x_{22}	0	0	0							
x_{23}	0	0	0	2						
x_{27}	0	0	0	2	96					
x_{29}	0	0	0	1	79	76				
x_{39}	0	0	0	0	0	0	0			
x_{40}	0	0	0	0	0	0	0	0		
x_{47}	0	2	0	1	1	1	0	4	0	
x_{48}	0	0	0	1	1	1	1	1	0	15
x_{53}	0	0	0	12	14	13	11	0	0	4
x_{68}	0	0	0	0	0	0	0	1	0	19
x_{87}	0	1	0	0	0	0	0	2	0	44
x_{98}	0	0	0	4	5	4	4	0	0	1
x_{104}	0	0	0	0	0	0	0	0	0	8
x_{113}	0	0	0	0	0	0	0	0	0	6
x_{126}	0	0	0	0	0	0	0	0	0	1
x_{128}	0	0	0	0	0	0	0	0	0	5
x_{129}	0	0	0	1	1	1	1	0	0	0
x_{130}	0	0	0	1	1	1	1	0	0	8
x_{144}	0	0	0	2	2	2	2	0	0	1
x_{151}	0	1	0	0	0	0	0	2	0	40
x_{152}	0	0	0	0	0	0	0	0	0	7
x_{153}	0	0	0	0	0	0	0	1	0	16
x_{171}	0	0	0	0	0	0	0	1	0	17
x_{239}	0	0	0	0	0	0	0	0	0	4
x_{259}	0	0	0	0	0	0	0	0	0	3
x_{261}	0	0	0	0	0	0	0	0	0	2
x_{265}	0	0	0	0	0	0	0	0	0	2
x_{266}	0	1	0	0	0	0	0	2	0	49
x_{267}	0	0	0	0	0	0	0	0	0	7
x_{268}	0	0	0	3	4	4	3	0	0	2
x_{279}	0	0	0	3	4	4	3	0	0	2
x_{303}	0	0	0	0	0	0	0	0	0	2
x_{340}	0	0	0	0	0	0	0	0	0	11
x_{344}	0	0	0	0	0	0	0	1	0	16
x_{351}	0	0	0	0	0	0	0	1	0	13
x_{356}	0	1	0	0	0	0	0	1	0	34

	x_{48}	x_{53}	x_{68}	x_{87}	x_{98}	x_{104}	x_{113}	x_{126}	x_{128}	x_{129}
x_{53}	6									
x_{68}	3	1								
x_{87}	7	2	8							
x_{98}	2	33	0	1						
x_{104}	1	0	1	11	0					
x_{113}	1	0	1	3	0	0				
x_{126}	0	0	0	1	0	0	0			
x_{128}	1	0	1	2	0	0	0	0		
x_{129}	1	8	0	0	13	0	0	0	0	
x_{130}	2	10	2	4	3	1	0	0	0	1
x_{144}	1	18	0	0	6	0	0	0	0	1
x_{151}	6	2	8	18	1	3	2	0	2	0
x_{152}	1	0	1	3	0	1	0	0	0	0
x_{153}	2	1	80	7	0	1	1	0	1	0
x_{171}	2	1	3	24	0	3	1	0	1	0
x_{239}	1	0	1	2	0	0	0	0	0	0
x_{259}	1	0	1	2	0	0	0	0	0	0
x_{261}	0	0	0	1	0	0	0	0	0	0
x_{265}	0	0	0	1	0	0	0	0	0	0
x_{266}	7	2	9	22	1	4	3	0	3	0
x_{267}	47	3	1	3	1	1	0	0	0	0
x_{268}	2	29	0	1	10	0	0	0	0	2
x_{279}	2	29	0	1	10	0	0	0	0	2
x_{303}	0	0	0	5	0	1	0	0	0	0
x_{340}	2	0	2	5	0	1	1	0	1	0
x_{344}	3	1	3	7	0	1	1	0	1	0
x_{351}	2	1	67	6	0	1	1	0	1	0
x_{356}	5	2	6	77	0	9	2	1	2	0

	x_{130}	x_{144}	x_{151}	x_{152}	x_{153}	x_{171}	x_{239}	x_{259}	x_{261}	x_{265}
x_{144}	2									
x_{151}	3	0								
x_{152}	1	0	3							
x_{153}	1	0	6	1						
x_{171}	1	0	7	1	3					
x_{239}	0	0	2	0	1	1				
x_{259}	0	0	1	0	1	1	0			
x_{261}	0	0	1	0	0	0	0	0		
x_{265}	0	0	1	0	0	0	0	0	0	
x_{266}	4	0	20	3	8	8	2	2	1	1
x_{267}	1	1	3	0	1	1	0	0	0	0
x_{268}	3	5	1	0	0	0	0	0	0	0
x_{279}	3	5	1	0	0	0	0	0	0	0
x_{303}	0	0	1	0	0	1	0	0	0	0
x_{340}	1	0	4	1	2	2	0	0	0	0
x_{344}	2	0	7	1	3	3	1	1	0	0
x_{351}	1	0	5	1	53	2	1	0	0	0
x_{356}	3	0	14	2	5	19	1	1	1	1

x_{267}	3							
x_{268}	1	1						
x_{279}	1	1	100					
x_{303}	1	0	0	0				
x_{340}	18	1	0	0	0			
x_{344}	8	1	0	0	0	2		
x_{351}	6	1	0	0	0	1	2	
x_{356}	17	2	1	1	4	4	5	4
	x_{266}	x_{267}	x_{268}	x_{279}	x_{303}	x_{340}	x_{344}	x_{351}

CONSTRAINED FIT INFORMATION

An overall fit to 3 branching ratios uses 3 measurements and one constraint to determine 4 parameters. The overall fit has a $\chi^2 =$ 0.0 for 0 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_2	−100		
x_3	−46	39	
x_4	0	0	0
	x_1	x_2	x_3

D^0 BRANCHING RATIOS

NODE=S032240

Some older now obsolete results have been omitted from these Listings.

NODE=S032240

——— Topological modes ———

NODE=S032305

Γ(0-prongs)/Γ_{total} — Γ_1/Γ

NODE=S032S37

This value is obtained by subtracting the branching fractions for 2-, 4-, and 6-prongs from unity.

NODE=S032S37

VALUE	*DOCUMENT ID*
0.15±0.06 OUR FIT	

NODE=S032S37

Γ(4-prongs)/Γ(2-prongs) — Γ_3/Γ_2

NODE=S032S35

NODE=S032S35

VALUE	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
0.207±0.016 OUR FIT					
0.207±0.016±0.004	226	ONENGUT	05	CHRS	ν_μ emulsion, $\overline{E}_\nu \approx 27$ GeV

Γ(4-prongs)/Γ_{total} — Γ_3/Γ

NODE=S032S34

This is the sum of our $K^- 2\pi^+ \pi^-$, $K^- 2\pi^+ \pi^- \pi^0$, $\overline{K}^0 2\pi^+ 2\pi^-$, $K^+ 2K^- \pi^+$, $2\pi^+ 2\pi^-$, $2\pi^+ 2\pi^- \pi^0$, $K^+ K^- \pi^+ \pi^-$, and $K^+ K^- \pi^+ \pi^- \pi^0$ branching fractions.

NODE=S032S34

VALUE	*DOCUMENT ID*	
0.146±0.005 OUR FIT		
0.146±0.005	PDG	19

NODE=S032S34

Γ(6-prongs)/Γ_{total} — Γ_4/Γ

NODE=S032S36

This is the sum of our $K^- 3\pi^+ 2\pi^-$ and $3\pi^+ 3\pi^-$ branching fractions.

NODE=S032S36

NODE=S032S36

VALUE (units 10^{-4})	*DOCUMENT ID*	
6.5±1.3 OUR FIT		
6.5±1.3	PDG	19

——— Inclusive modes ———

NODE=S032310

$\Gamma(e^+ \text{anything})/\Gamma_{\text{total}}$ — Γ_5/Γ

NODE=S032R5

The branching fractions for the $K^- e^+ \nu_e$, $K^*(892)^- e^+ \nu_e$, $\pi^- e^+ \nu_e$, and $\rho^- e^+ \nu_e$ modes add up to 6.17 ± 0.17 %.

NODE=S032R5

VALUE (%)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
6.49±0.11 OUR AVERAGE					
6.46±0.09±0.11	6584 ± 96	[1] ASNER	10	CLEO	$e^+ e^-$ at 3774 MeV
6.3 ±0.7 ±0.4	290 ± 32	ABLIKIM	07G	BES2	$e^+ e^- \approx \psi(3770)$
6.46±0.17±0.13	2246 ± 57	ADAM	06A	CLEO	See ASNER 10
6.9 ±0.3 ±0.5	1670	ALBRECHT	96C	ARG	$e^+ e^- \approx$ 10 GeV
6.64±0.18±0.29	4609	KUBOTA	96B	CLE2	$e^+ e^- \approx \Upsilon(4S)$

NODE=S032R5

[1] Using the D^+ and D^0 lifetimes, ASNER 10 finds that the ratio of the D^+ and D^0 semileptonic widths is 0.985 ± 0.015 ± 0.024. NODE=S032R5;LINKAGE=AS

$\Gamma(\mu^+ \text{anything})/\Gamma_{\text{total}}$ Γ_6/Γ

NODE=S032S60
NODE=S032S60

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
6.8±0.6 OUR FIT				
6.4±0.8 OUR AVERAGE				
6.8±1.5±0.8	79 ± 10	[1] ABLIKIM 08L	BES2	$e^+e^- \approx \psi(3772)$
6.5±1.2±0.3	36	KAYIS-TOPAK..05	CHRS	ν_μ emulsion
6.0±0.7±1.2	310	ALBRECHT 96C	ARG	$e^+e^- \approx$ 10 GeV

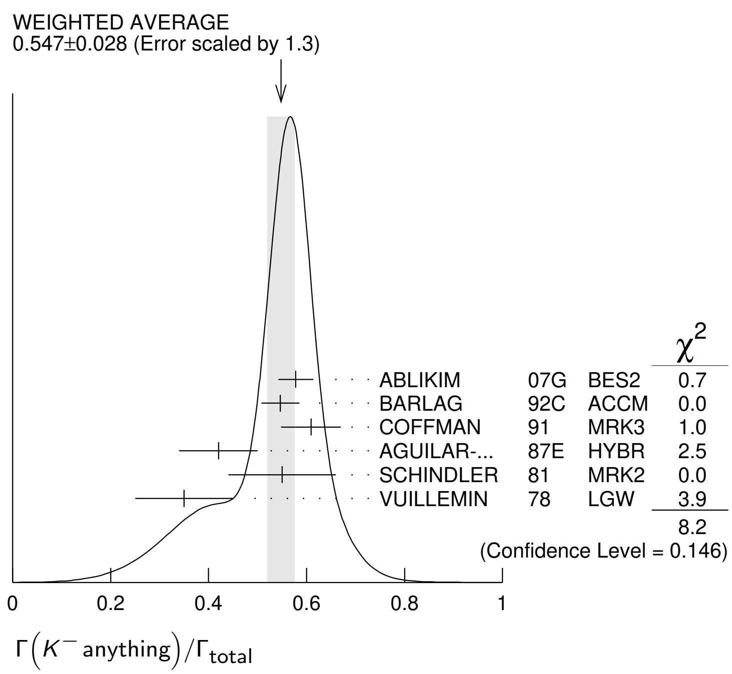
[1] ABLIKIM 08L finds the ratio of $D^+ \to \mu^+ X$ and $D^0 \to \mu^+ X$ branching fractions to be 2.59 ± 0.70 ± 0.25, in accord with the ratio of D^+ and D^0 lifetimes, 2.54 ± 0.02. NODE=S032S60;LINKAGE=AB

$\Gamma(K^- \text{anything})/\Gamma_{\text{total}}$ Γ_7/Γ

NODE=S032R1
NODE=S032R1

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.547±0.028 OUR AVERAGE	Error includes scale factor of 1.3. See the ideogram below.			
0.578±0.016±0.032	2098 ± 59	ABLIKIM 07G	BES2	$e^+e^- \approx \psi(3770)$
$0.546^{+0.039}_{-0.038}$		[1] BARLAG 92C	ACCM	π^- Cu 230 GeV
0.609±0.032±0.052		COFFMAN 91	MRK3	e^+e^- 3.77 GeV
0.42 ±0.08		AGUILAR-... 87E	HYBR	πp, pp 360, 400 GeV
0.55 ±0.11	121	SCHINDLER 81	MRK2	e^+e^- 3.771 GeV
0.35 ±0.10	19	VUILLEMIN 78	LGW	e^+e^- 3.772 GeV

[1] BARLAG 92C computes the branching fraction using topological normalization. NODE=S032R1;LINKAGE=BD



$\Gamma(K^0_S \text{anything})/\Gamma_{\text{total}}$ Γ_8/Γ

NODE=S032R3
NODE=S032R3

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
20.75±0.12±0.20	37.8k	ABLIKIM 23AO	BES3	e^+e^- at 3.773 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
23.8 ±2.4 ±1.5	250	[1] ABLIKIM 06U	BES2	e^+e^- at 3773 MeV
22.8 ±2.5 ±1.6		[2] COFFMAN 91	MRK3	e^+e^- 3.77 GeV

[1] ABLIKIM 06U reports B($D^0 \to K^0 X$ or $\overline{K}^0 X$) = 0.476 ± 0.048 ± 0.030 which we take as twice the branching fraction for $D^0 \to K^0_S X$. NODE=S032R3;LINKAGE=B

[2] COFFMAN 91 reports B($D^0 \to K^0 X$ or $\overline{K}^0 X$) = 0.455 ± 0.050 ± 0.032 which we take as twice the branching fraction for $D^0 \to K^0_S X$. NODE=S032R3;LINKAGE=C

$\Gamma(K^+ \text{anything})/\Gamma_{total}$ — Γ_9/Γ

NODE=S032R2
NODE=S032R2

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.034±0.004 OUR AVERAGE					
0.035±0.007±0.003	119 ± 23	ABLIKIM	07G	BES2	$e^+ e^- \approx \psi(3770)$
$0.034^{+0.007}_{-0.005}$		[1] BARLAG	92C	ACCM	π^- Cu 230 GeV
0.028±0.009±0.004		COFFMAN	91	MRK3	$e^+ e^-$ 3.77 GeV
$0.03\ ^{+0.05}_{-0.02}$		AGUILAR-...	87E	HYBR	πp, $p p$ 360, 400 GeV
0.08 ±0.03	25	SCHINDLER	81	MRK2	$e^+ e^-$ 3.771 GeV

[1] BARLAG 92C computes the branching fraction using topological normalization.

NODE=S032R2;LINKAGE=BD

$\Gamma(K^*(892)^- \text{anything})/\Gamma_{total}$ — Γ_{10}/Γ

NODE=S032R4
NODE=S032R4

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.153±0.083±0.019	28 ± 15	ABLIKIM	06U	BES2	$e^+ e^-$ at 3773 MeV

$\Gamma(\overline{K}^*(892)^0 \text{anything})/\Gamma_{total}$ — Γ_{11}/Γ

NODE=S032C27
NODE=S032C27

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.087±0.040±0.012	96 ± 44	ABLIKIM	05P	BES	$e^+ e^- \approx$ 3773 MeV

$\Gamma(K^*(892)^+ \text{anything})/\Gamma_{total}$ — Γ_{12}/Γ

NODE=S032R52
NODE=S032R52

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.036	90	ABLIKIM	06U	BES2	$e^+ e^-$ at 3773 MeV

$\Gamma(K^*(892)^0 \text{anything})/\Gamma_{total}$ — Γ_{13}/Γ

NODE=S032C28
NODE=S032C28

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.028±0.012±0.004	31 ± 12	ABLIKIM	05P	BES	$e^+ e^- \approx$ 3773 MeV

$\Gamma(\eta \text{ anything})/\Gamma_{total}$ — Γ_{14}/Γ

NODE=S032R6

This ratio includes η particles from η' decays.

NODE=S032R6
NODE=S032R6

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
9.5±0.4±0.8	4463±197	HUANG	06B	CLEO	$e^+ e^-$ at $\psi(3770)$

$\Gamma(\eta' \text{ anything})/\Gamma_{total}$ — Γ_{15}/Γ

NODE=S032R01
NODE=S032R01

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
2.48±0.17±0.21	299 ± 21	HUANG	06B	CLEO	$e^+ e^-$ at $\psi(3770)$

$\Gamma(\phi \text{ anything})/\Gamma_{total}$ — Γ_{16}/Γ

NODE=S032S65
NODE=S032S65

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
1.08 ±0.04 OUR AVERAGE					
1.091±0.027±0.035	4.1k	ABLIKIM	19AY	BES3	$e^+ e^-$ at 3773 MeV
1.05 ±0.08 ±0.07	368 ± 24	HUANG	06B	CLEO	$e^+ e^-$ at $\psi(3770)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$1.71\ ^{+0.76}_{-0.71}\ \pm 0.17$	9	BAI	00C	BES	$e^+ e^- \to D \overline{D}^*$, $D^* \overline{D}^*$

$\Gamma(\pi^+ \pi^+ \pi^- \text{anything})/\Gamma_{total}$ — Γ_{17}/Γ

NODE=S032D56
NODE=S032D56

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
17.60±0.11±0.22	95k	ABLIKIM	23AI	BES3	2.93 fb^{-1}, $e^+ e^-$ at $\psi(3770)$

$\Gamma(\text{invisibles})/\Gamma_{total}$ — Γ_{18}/Γ

NODE=S032P24
NODE=S032P24

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<9.4 × 10^{-5}	90	LAI	17	BELL	$e^+ e^-$ at Υ(nS), n=4,5

Semileptonic modes

NODE=S032315

$\Gamma(K^- e^+ \nu_e)/\Gamma_{total}$ — Γ_{20}/Γ

NODE=S032R57
NODE=S032R57

3.537±0.017 OUR FIT Error includes scale factor of 1.1. [(3.538 ± 0.017)% OUR 2025 FIT Scale factor = 1.1]

NEW

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
3.526±0.016 OUR AVERAGE					
3.521±0.009±0.016	191k	ABLIKIM	24CN	BES3	$e^+ e^-$ at 3.773 GeV
3.567±0.031±0.025	4040	ABLIKIM	21BA	BES3	$e^+ e^-$ at 3.773 GeV
3.50 ±0.03 ±0.04	14.1k	[1] BESSON	09	CLEO	$e^+ e^-$ at $\psi(3770)$
3.45 ±0.10 ±0.19	1.3k	[2] WIDHALM	06	BELL	$e^+ e^- \approx \Upsilon(4S)$
3.82 ±0.40 ±0.27	104	ABLIKIM	04C	BES	$e^+ e^-$, 3.773 GeV
3.4 ±0.5 ±0.4	55	ADLER	89	MRK3	$e^+ e^-$ 3.77 GeV

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

3.505±0.014±0.033	71k	[1,3] ABLIKIM	15X	BES3	2.92 fb^{-1}, 3.773 GeV
3.56 ±0.03 ±0.09		[4] DOBBS	08	CLEO	See BESSON 09
3.44 ±0.10 ±0.10	1.3k	COAN	05	CLEO	See DOBBS 08

[1] See the form-factor parameters near the end of this D^0 Listing. NODE=S032R57;LINKAGE=BE

[2] The $\pi^- e^+ \nu_e$ and $K^- e^+ \nu_e$ results of WIDHALM 06 give $|\frac{V_{cd}}{V_{cs}} \cdot \frac{f_+^\pi(0)}{f_+^K(0)}|^2 = 0.042 \pm 0.003 \pm 0.003$. NODE=S032R57;LINKAGE=WI

[3] Superseded by ABLIKIM 24CN. NODE=S032R57;LINKAGE=A

[4] DOBBS 08 establishes $|\frac{V_{cd}}{V_{cs}} \cdot \frac{f_+^\pi(0)}{f_+^K(0)}| = 0.188 \pm 0.008 \pm 0.002$ from the D^+ and D^0 decays to $\overline{K} e^+ \nu_e$ and $\pi e^+ \nu_e$. NODE=S032R57;LINKAGE=DO

$\Gamma(K^- e^+ \nu_e)/\Gamma(K^- \pi^+)$ Γ_{20}/Γ_{47}

NODE=S032R66
NODE=S032R66

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.899±0.008 OUR FIT Error includes scale factor of 1.3. [0.897 ± 0.008 OUR 2025 FIT Scale factor = 1.3]					
0.930±0.013 OUR AVERAGE					
0.927±0.007±0.012	76k±323	[1] AUBERT	07BG	BABR	$e^+ e^- \approx \Upsilon(4S)$
0.978±0.027±0.044	2510	[2] BEAN	93C	CLE2	$e^+ e^- \approx \Upsilon(4S)$
0.90 ±0.06 ±0.06	584	[3] CRAWFORD	91B	CLEO	$e^+ e^- \approx$ 10.5 GeV
0.91 ±0.07 ±0.11	250	[4] ANJOS	89F	E691	Photoproduction

NEW

[1] The event samples in this AUBERT 07BG result include radiative photons. The $D^0 \to K^- e^+ \nu_e$ form factor at $q^2 = 0$ is $f_+(0) = 0.727 \pm 0.007 \pm 0.005 \pm 0.007$. NODE=S032R66;LINKAGE=AU

[2] BEAN 93C uses $K^- \mu^+ \nu_\mu$ as well as $K^- e^+ \nu_e$ events and makes a small phase-space adjustment to the number of the μ^+ events to use them as e^+ events. A pole mass of $2.00 \pm 0.12 \pm 0.18$ GeV/c^2 is obtained from the q^2 dependence of the decay rate. NODE=S032R66;LINKAGE=A

[3] CRAWFORD 91B uses $K^- e^+ \nu_e$ and $K^- \mu^+ \nu_\mu$ candidates to measure a pole mass of $2.1^{+0.4}_{-0.2}{}^{+0.3}_{-0.2}$ GeV/c^2 from the q^2 dependence of the decay rate. NODE=S032R66;LINKAGE=B

[4] ANJOS 89F measures a pole mass of $2.1^{+0.4}_{-0.2} \pm 0.2$ GeV/c^2 from the q^2 dependence of the decay rate. NODE=S032R66;LINKAGE=C

$\Gamma(K^- \mu^+ \nu_\mu)/\Gamma_{\text{total}}$ Γ_{21}/Γ

NODE=S032R30
NODE=S032R30

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
3.418±0.019 OUR FIT					
3.419±0.019 OUR AVERAGE					
3.419±0.011±0.016	148k	ABLIKIM	24CN	BES3	$e^+ e^-$ at 3.773 GeV
3.45 ±0.10 ±0.21	1249 ± 43	WIDHALM	06	BELL	$e^+ e^- \approx \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
3.413±0.019±0.035	47k	[1] ABLIKIM	19B	BES3	$e^+ e^-$, 3773 MeV

[1] Superseded by ABLIKIM 24CN. NODE=S032R30;LINKAGE=A

$\Gamma(K^- \mu^+ \nu_\mu)/\Gamma(\mu^+ \text{anything})$ Γ_{21}/Γ_6

NODE=S032B17
NODE=S032B17

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.50 ±0.04 OUR FIT					
0.472±0.051±0.040	232	KODAMA	94	E653	π^- emulsion 600 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.32 ±0.05 ±0.05	124	KODAMA	91	EMUL	pA 800 GeV

$\Gamma(K^- \mu^+ \nu_\mu)/\Gamma(K^- \pi^+)$ Γ_{21}/Γ_{47}

NODE=S032B29
NODE=S032B29

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.868±0.008 OUR FIT Error includes scale factor of 1.2. [0.866 ± 0.008 OUR 2025 FIT Scale factor = 1.2]					
0.84 ±0.04 OUR AVERAGE					
0.852±0.034±0.028	1897	[1] FRABETTI	95G	E687	γ Be $\overline{E}_\gamma$= 220 GeV
0.82 ±0.13 ±0.13	338	[2] FRABETTI	93I	E687	γ Be $\overline{E}_\gamma$= 221 GeV
0.79 ±0.08 ±0.09	231	[3] CRAWFORD	91B	CLEO	$e^+ e^- \approx$ 10.5 GeV

NEW

[1] FRABETTI 95G extracts the ratio of form factors $f_-(0)/f_+(0) = -1.3^{+3.6}_{-3.4} \pm 0.6$, and measures a pole mass of $1.87^{+0.11}_{-0.08}{}^{+0.07}_{-0.06}$ GeV/c^2 from the q^2 dependence of the decay rate. NODE=S032B29;LINKAGE=A

[2] FRABETTI 93I measures a pole mass of $2.1^{+0.7}_{-0.3}{}^{+0.7}_{-0.3}$ GeV/c^2 from the q^2 dependence of the decay rate. NODE=S032B29;LINKAGE=B

[3] CRAWFORD 91B measures a pole mass of $2.00 \pm 0.12 \pm 0.18$ GeV/c^2 from the q^2 dependence of the decay rate. NODE=S032B29;LINKAGE=C

$\Gamma(K^*(892)^- e^+ \nu_e)/\Gamma_{total}$ Γ_{22}/Γ

NODE=S032C38

Both decay modes of the $K^*(892)^-$ are included.

NODE=S032C38
NODE=S032C38

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
2.16±0.16 OUR FIT				
2.16±0.15±0.08	219 ± 16	[1] COAN 05	CLEO	$e^+ e^-$ at $\psi(3770)$

[1] COAN 05 uses both $K^- \pi^0$ and $K^0_S \pi^-$ events.

NODE=S032C38;LINKAGE=CO

$\Gamma(K^*(892)^- e^+ \nu_e)/\Gamma(\overline{K}^0 \pi^- e^+ \nu_e)$ Γ_{22}/Γ_{25}

NODE=S032Q81
NODE=S032Q81

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
94.2 ±0.4 OUR AVERAGE [$(94.5 \pm 1.2) \times 10^{-2}$ OUR 2025 AVERAGE]				
94.15±0.32±0.16	8.8k	ABLIKIM 25BD	BES3	$K^0_S \pi^- e^+ \nu_e$ events
• • • We do not use the following data for averages, fits, limits, etc. • • •				
94.52±0.97±0.62	3.1k	[1] ABLIKIM 19G	BES3	$K^0_S \pi^- e^+ \nu_e$ events

NEW

[1] Superseded by ABLIKIM 25BD.

NODE=S032Q81;LINKAGE=A

$\Gamma(K^*(892)^- e^+ \nu_e)/\Gamma(K^0_S \pi^+ \pi^-)$ Γ_{22}/Γ_{53}

NODE=S032B81

Unseen decay modes of the $K^*(892)^-$ are included.

NODE=S032B81
NODE=S032B81

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.76±0.06 OUR FIT				
0.76±0.12±0.06	152	[1] BEAN 93C	CLE2	$e^+ e^- \approx \Upsilon(4S)$

[1] BEAN 93C uses $K^{*-} \mu^+ \nu_\mu$ as well as $K^{*-} e^+ \nu_e$ events and makes a small phase-space adjustment to the number of the μ^+ events to use them as e^+ events.

NODE=S032B81;LINKAGE=A

$\Gamma(K^*(892)^- \mu^+ \nu_\mu)/\Gamma(K^- \pi^0 \mu^+ \nu_\mu)$ Γ_{23}/Γ_{27}

NODE=S032D72
NODE=S032D72

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
2.824 ±0.024 OUR FIT Error includes scale factor of 1.7. [2.827 ± 0.014 OUR 2025 FIT]				
2.8272±0.0105±0.0087	6.4k	[1] ABLIKIM 25	BES3	$e^+ e^-$ at 3.773 GeV

NEW

[1] An amplitude analysis of $D^0 \to K^- \pi^0 \mu^+ \nu_\mu$ with two components. ABLIKIM 25 measures B($D^0 \to K^*(892)^- \mu^+ \nu_\mu$, $K^{*-} \to K^- \pi^0$)/B($D^0 \to K^- \pi^0 \mu^+ \nu_\mu$) = $(94.24 \pm 0.35 \pm 0.29) \times 10^{-2}$, from which we determine the reported ratio assuming B($K^{*-} \to K^- \pi^0$) = 1/3. With the same assumption, ABLIKIM 25 reports B($D^0 \to K^{*-} \mu^+ \nu_\mu$) = $(2.073 \pm 0.039 \pm 0.032) \times 10^{-2}$.

NODE=S032D72;LINKAGE=A

$\Gamma(K^*(892)^- \mu^+ \nu_\mu)/\Gamma(\overline{K}^0 \pi^- \mu^+ \nu_\mu)$ Γ_{23}/Γ_{29}

NODE=S032D92
NODE=S032D92

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
1.428±0.027 OUR FIT Error includes scale factor of 1.7.				
1.419±0.013±0.011	6.8k	[1] ABLIKIM 25BO	BES3	$e^+ e^-$ at $\sqrt{s} = 3.773$ GeV

[1] An amplitude analysis of $D^0 \to \overline{K}^0 \pi^- \mu^+ \nu_\mu$ with two components. ABLIKIM 25BO measures B($D^0 \to K^*(892)^- \mu^+ \nu_\mu$, $K^{*-} \to \overline{K}^0 \pi^-$)/B($D^0 \to \overline{K}^0 \pi^- \mu^+ \nu_\mu$) = $(94.60 \pm 0.87 \pm 0.71) \times 10^{-2}$, from which we determine the reported ratio assuming B($K^{*-} \to \overline{K}^0 \pi^-$) = 2/3. With the same assumption, ABLIKIM 25BO reports B($D^0 \to K^{*-} \mu^+ \nu_\mu$) = $(1.948 \pm 0.033 \pm 0.036) \times 10^{-2}$.

NODE=S032D92;LINKAGE=A

$\Gamma(K^*(892)^- \mu^+ \nu_\mu)/\Gamma(K^0_S \pi^+ \pi^-)$ Γ_{23}/Γ_{53}

NODE=S032Q01

Unseen decay modes of the $K^*(892)^-$ are included.

NODE=S032Q01
NODE=S032Q01

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.71 ±0.04 OUR FIT Error includes scale factor of 1.1. [0.72 ± 0.04 OUR 2025 FIT]				
0.674±0.068±0.026	175 ± 17	[1] LINK 05B	FOCS	γ A, $\overline{E}_\gamma \approx$ 180 GeV

NEW

[1] LINK 05B finds that in $D^0 \to \overline{K}^0 \pi^- \mu^+ \nu_\mu$ the $\overline{K}^0 \pi^-$ system is 6% in S-wave.

NODE=S032Q01;LINKAGE=LI

$\Gamma(K^- \pi^0 e^+ \nu_e)/\Gamma_{total}$ Γ_{24}/Γ

NODE=S032B27
NODE=S032B27

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
$0.016^{+0.013}_{-0.005}\pm0.002$	4	[1] BAI 91	MRK3	$e^+ e^- \approx$ 3.77 GeV

[1] BAI 91 finds that a fraction $0.79^{+0.15}_{-0.17}{}^{+0.09}_{-0.03}$ of combined D^+ and D^0 decays to $\overline{K} \pi e^+ \nu_e$ (24 events) are $\overline{K}^*(892) e^+ \nu_e$. BAI 91 uses 56 $K^- e^+ \nu_e$ events to measure a pole mass of $1.8 \pm 0.3 \pm 0.2$ GeV/c^2 from the q^2 dependence of the decay rate.

NODE=S032B27;LINKAGE=A

$\Gamma(\overline{K}^0\pi^- e^+\nu_e)/\Gamma_{total}$ — Γ_{25}/Γ

NODE=S032B28

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
1.447±0.033 OUR AVERAGE [(1.44 ± 0.04)% OUR 2025 AVERAGE]					
1.444±0.022±0.024	8.8k	ABLIKIM	25BD	BES3	e^+e^- at 3.773 GeV
2.61 ±1.04 ±0.28	9 ± 3	ABLIKIM	06O	BES2	e^+e^- at 3773 MeV
2.8 $^{+1.7}_{-0.8}$ ±0.3	6	[1] BAI	91	MRK3	$e^+e^- \approx$ 3.77 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.434±0.029±0.032	3.1k	[2] ABLIKIM	19G	BES3	e^+e^- at 3773 MeV

[1] BAI 91 finds that a fraction $0.79^{+0.15}_{-0.17}{}^{+0.09}_{-0.03}$ of combined D^+ and D^0 decays to $\overline{K}\pi e^+\nu_e$ (24 events) are $\overline{K}^*(892)e^+\nu_e$.

[2] Superseded by ABLIKIM 25BD.

$\Gamma((\overline{K}^0\pi^-)_{S-wave}e^+\nu_e)/\Gamma(\overline{K}^0\pi^- e^+\nu_e)$ — Γ_{26}/Γ_{25}

NODE=S032Q82

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
5.9 ±0.4 OUR AVERAGE [(5.5 ± 1.2) × 10^{-2} OUR 2025 AVERAGE]					
5.87±0.32±0.16	8.8k	ABLIKIM	25BD	BES3	$K^0_S\pi^-e^+\nu_e$ events
• • • We do not use the following data for averages, fits, limits, etc. • • •					
5.51±0.97±0.62	3.1k	[1] ABLIKIM	19G	BES3	$K^0_S\pi^-e^+\nu_e$ events

[1] Superseded by ABLIKIM 25BD.

$\Gamma(K^-\pi^0\mu^+\nu_\mu)/\Gamma_{total}$ — Γ_{27}/Γ

NODE=S032D73

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
7.10±0.21 OUR FIT Error includes scale factor of 1.7. [(7.30 ± 0.17) × 10^{-3} OUR 2025 FIT]					
7.33±0.14±0.11	6.4k	ABLIKIM	25	BES3	e^+e^- at 3.773 GeV

$\Gamma((K^-\pi^0)_{S-wave}\mu^+\nu_\mu)/\Gamma(K^-\pi^0\mu^+\nu_\mu)$ — Γ_{28}/Γ_{27}

NODE=S032D71

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
5.76±0.35±0.29	6.4k	[1] ABLIKIM	25	BES3	e^+e^- at 3.773 GeV

[1] An amplitude analysis of $D^0 \to K^-\pi^0\mu^+\nu_\mu$ with two components. ABLIKIM 25 reports B($D^0 \to (K^-\pi^0)_{S-wave}\mu^+\nu_\mu$) = (4.223 ± 0.268 ± 0.222) × 10^{-4}.

$\Gamma(\overline{K}^0\pi^-\mu^+\nu_\mu)/\Gamma_{total}$ — Γ_{29}/Γ

NODE=S032D90

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
1.40 ±0.04 OUR FIT Error includes scale factor of 1.7.					
1.373±0.020±0.023	6.8k	ABLIKIM	25BO	BES3	e^+e^- at $\sqrt{s}$ = 3.773 GeV

$\Gamma((\overline{K}^0\pi^-)_{S-wave}\mu^+\nu_\mu)/\Gamma(\overline{K}^0\pi^-\mu^+\nu_\mu)$ — Γ_{30}/Γ_{29}

NODE=S032D91

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
5.35±0.87±0.71	6.8k	[1] ABLIKIM	25BO	BES3	e^+e^- at $\sqrt{s}$ = 3.773 GeV

[1] An amplitude analysis of $D^0 \to \overline{K}^0\pi^-\mu^+\nu_\mu$ with two components. ABLIKIM 25BO reports B($D^0 \to (\overline{K}^0\pi^-)_{S-wave}\mu^+\nu_\mu$) = (0.073 ± 0.012 ± 0.010) × 10^{-2}.

$\Gamma(K^-\eta e^+\nu_e)/\Gamma_{total}$ — Γ_{31}/Γ

NODE=S032D75

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
0.84$^{+0.34}_{-0.29}$±0.22	11	ABLIKIM	24CM	BES3	e^+e^- at $\sqrt{s}$ = 3.773 GeV

$\Gamma(K^-\pi^+\pi^-e^+\nu_e)/\Gamma_{total}$ — Γ_{32}/Γ

NODE=S032R06

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
2.8$^{+1.4}_{-1.1}$±0.3	8	ARTUSO	07A	CLEO	e^+e^- at Υ(3770)

$\Gamma(K_1(1270)^-e^+\nu_e,\ K_1^- \to K^-\pi^+\pi^-)/\Gamma_{total}$ — Γ_{33}/Γ

NODE=S032R07

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
3.23±0.25 OUR AVERAGE [(10.1 ± 1.8) × 10^{-4} OUR 2025 AVERAGE]					
3.2 ±0.2 ±0.2	0.73k	[1] ABLIKIM	25AM	BES3	e^+e^- at 3.773 GeV
3.59±0.41$^{+0.31}_{-0.52}$	109	[2] ABLIKIM	21AY	BES3	e^+e^- at 3.773 GeV
2.5 $^{+1.3}_{-1.0}$ ±0.2	8	[3] ARTUSO	07A	CLEO	e^+e^- at Υ(3770)

[1] ABLIKIM 25AM quotes B($D^0 \to K_1(1270)^- e^+ \nu_e$) = $(1.02 \pm 0.06 \pm 0.06 \pm 0.03) \times 10^{-3}$, where the last uncertainty is due to B($\overline{K}_1(1270)^0 \to K^- \pi^+ \pi^0$) = (31.3 ± 0.9)%. This amplitude analysis with several substructures includes $K_1(1270) \to \rho K^-$ (S-wave) and $K_1(1270) \to \pi \overline{K}^*(892)$ (S- and D-wave). NODE=S032R07;LINKAGE=B

[2] ABLIKIM 21AY quotes B($D^0 \to K_1(1270)^- e^+ \nu_e$) = $(1.09 \pm 0.13^{+0.09}_{-0.16} \pm 0.12) \times 10^{-3}$ using B($K_1(1270)^- \to K^- \pi^+ \pi^-$) = (32.9 ± 3.6)%, which is the source of the third uncertainty. NODE=S032R07;LINKAGE=A

[3] ARTUSO 07A quotes B($D^0 \to K_1(1270)^- e^+ \nu_e$) = $(7.6^{+4.1}_{-3.0} \pm 0.9) \times 10^{-4}$ using B($K_1(1270)^- \to K^- \pi^+ \pi^-$) = (33 ± 3)%, which is the source of the third uncertainty. NODE=S032R07;LINKAGE=AR

$\Gamma(K_1(1270)^- e^+ \nu_e,\ K_1^- \to K_S^0 \pi^- \pi^0)/\Gamma_{total}$ — Γ_{34}/Γ

NODE=S032D70
NODE=S032D70

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
$1.69^{+0.53}_{-0.46} \pm 0.15$	17	[1] ABLIKIM	24CR	BES3	$e^+ e^-$ at $\sqrt{s}$ = 3.773 GeV

[1] ABLIKIM 24CR reconstructs $D^0 \to K_S^0 \pi^- \pi^0 e^+ \nu_e$ and assumes that all come from $\overline{K}_1^- \to K_S^0 \pi^- \pi^0$ decays. NODE=S032D70;LINKAGE=A

$\Gamma(K^- \pi^+ \pi^- \mu^+ \nu_\mu)/\Gamma(K^- \mu^+ \nu_\mu)$ — Γ_{35}/Γ_{21}

NODE=S032B74
NODE=S032B74

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.037	90	KODAMA	93B	E653	π^- emulsion 600 GeV

$\Gamma((\overline{K}^*(892)\pi)^- \mu^+ \nu_\mu)/\Gamma(K^- \mu^+ \nu_\mu)$ — Γ_{36}/Γ_{21}

NODE=S032B75
NODE=S032B75

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.043	90	[1] KODAMA	93B	E653	π^- emulsion 600 GeV

[1] KODAMA 93B searched in $K^- \pi^+ \pi^- \mu^+ \nu_\mu$, but the limit includes other $(\overline{K}^*(892)\pi)^-$ charge states. NODE=S032B75;LINKAGE=A

$\Gamma(K_1(1270)^- \mu^+ \nu_\mu,\ K_1^- \to K^- \pi^+ \pi^-)/\Gamma_{total}$ — Γ_{37}/Γ

NODE=S032D81
NODE=S032D81

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
$2.62 \pm 0.38^{+0.17}_{-0.29}$	180	ABLIKIM	25AU	BES3	$e^+ e^-$ at 3.773 GeV

$\Gamma(K_1(1400)^- e^+ \nu_e)/\Gamma_{total}$ — Γ_{38}/Γ

NODE=S032D82
NODE=S032D82

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<0.7 \times 10^{-4}$	90	ABLIKIM	25AM	BES3	$e^+ e^-$ at 3.773 GeV

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

NODE=S032R60
NODE=S032R60

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.291±0.004 OUR FIT					
0.293±0.004 OUR AVERAGE					
0.295±0.004±0.003	6.3k	[1] ABLIKIM	15X	BES3	2.92 fb^{-1}, 3.773 GeV
0.288±0.008±0.003	1.3k	[1] BESSON	09	CLEO	$e^+ e^-$ at $\psi(3770)$
0.279±0.027±0.016	126	[2] WIDHALM	06	BELL	$e^+ e^- \approx \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.299±0.011±0.009		[3] DOBBS	08	CLEO	See BESSON 09
0.262±0.025±0.008	117	COAN	05	CLEO	See DOBBS 08

[1] See the form-factor parameters near the end of this D^0 Listing. NODE=S032R60;LINKAGE=BE

[2] The $\pi^- e^+ \nu_e$ and $K^- e^+ \nu_e$ results of WIDHALM 06 give $\left|\frac{V_{cd}}{V_{cs}} \cdot \frac{f_+^\pi(0)}{f_+^K(0)}\right|^2 = 0.042 \pm 0.003 \pm 0.003$. NODE=S032R60;LINKAGE=WI

[3] DOBBS 08 establishes $\left|\frac{V_{cd}}{V_{cs}} \cdot \frac{f_+^\pi(0)}{f_+^K(0)}\right| = 0.188 \pm 0.008 \pm 0.002$ from the D^+ and D^0 decays to $\overline{K} e^+ \nu_e$ and $\pi e^+ \nu_e$. NODE=S032R60;LINKAGE=DO

$\Gamma(\pi^- e^+ \nu_e)/\Gamma(K^- e^+ \nu_e)$ — Γ_{39}/Γ_{20}

NODE=S032S25
NODE=S032S25

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.0823±0.0012 OUR FIT Error includes scale factor of 1.1.					
0.085 ±0.007 OUR AVERAGE					
0.082 ±0.006 ±0.005		[1] HUANG	05	CLEO	$e^+ e^- \approx \Upsilon(4S)$
0.101 ±0.020 ±0.003	91	[2] FRABETTI	96B	E687	γ Be, $\overline{E}_\gamma \approx$ 200 GeV
0.103 ±0.039 ±0.013	87	[3] BUTLER	95	CLE2	< 0.156 (90% CL)

[1] HUANG 05 uses both e and μ events, and makes a small correction to the μ events to make them effectively e events. This result gives $|\frac{V_{cd}}{V_{cs}} \cdot \frac{f_+^\pi(0)}{f_+^K(0)}|^2 = 0.038^{+0.006}_{-0.007}{}^{+0.005}_{-0.003}$.

NODE=S032S25;LINKAGE=HU

[2] FRABETTI 96B uses both e and μ events, and makes a small correction to the μ events to make them effectively e events. This result gives $|\frac{V_{cd}}{V_{cs}} \cdot \frac{f_+^\pi(0)}{f_+^K(0)}|^2 = 0.050 \pm 0.011 \pm 0.002$.

NODE=S032S25;LINKAGE=B

[3] BUTLER 95 has 87 ± 33 $\pi^- e^+ \nu_e$ events. The result gives $|\frac{V_{cd}}{V_{cs}} \cdot \frac{f_+^\pi(0)}{f_+^K(0)}|^2 = 0.052 \pm 0.020 \pm 0.007$.

NODE=S032S25;LINKAGE=A

$\Gamma(\pi^- e^+ \nu_e)/\Gamma(K^- \pi^+)$ — Γ_{39}/Γ_{47}

NODE=S032C06
NODE=S032C06

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
7.40±0.12 OUR FIT	Error includes scale factor of 1.1. [(7.38 ± 0.12) × 10^{-2} OUR 2025 FIT Scale factor = 1.1]				
7.02±0.17±0.23	375k	[1] LEES	15F	BABR	347 fb^{-1}, 10.58 GeV

NEW

[1] See the form-factor parameters near the end of the D^0 Listing.

NODE=S032C06;LINKAGE=A

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

NODE=S032R45
NODE=S032R45

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.267±0.012 OUR FIT	Error includes scale factor of 1.3.				
0.268±0.012 OUR AVERAGE	Error includes scale factor of 1.2.				
0.272±0.008±0.006	2.3k	ABLIKIM	18AE	BES3	$e^+ e^-$, 3773 MeV
0.231±0.026±0.019	106 ± 13	WIDHALM	06	BELL	$e^+ e^- \approx \Upsilon(4S)$

$\Gamma(\pi^- \mu^+ \nu_\mu)/\Gamma(K^- \mu^+ \nu_\mu)$ — Γ_{40}/Γ_{21}

NODE=S032S96
NODE=S032S96

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.0782±0.0034 OUR FIT	Error includes scale factor of 1.3.				
0.074 ±0.008 ±0.007	288 ± 29	[1] LINK	05	FOCS	γ A, $\overline{E}_\gamma \approx$ 180 GeV

[1] LINK 05 finds the form-factor ratio $|f_0^\pi(0)/f_0^K(0)|$ to be 0.85 ± 0.04 ± 0.04 ± 0.01.

NODE=S032S96;LINKAGE=LI

$\Gamma(\pi^- \pi^0 e^+ \nu_e)/\Gamma_{total}$ — Γ_{41}/Γ

NODE=S032Q80
NODE=S032Q80

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
1.445±0.058±0.039	1.1k	[1] ABLIKIM	19C	BES3	$e^+ e^-$ at 3773 MeV

[1] Seen 100% via $D^0 \to \rho(770)^- e^+ \nu_e$, and also reported as the branching fraction for $D^0 \to \rho(770)^- e^+ \nu_e$.

NODE=S032Q80;LINKAGE=A

$\Gamma(\rho^- e^+ \nu_e)/\Gamma_{total}$ — Γ_{42}/Γ

NODE=S032C39
NODE=S032C39

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
1.46 ±0.08 OUR AVERAGE	Error includes scale factor of 2.0.				
1.439±0.033±0.027	3.3k	ABLIKIM	24CP	BES3	$e^+ e^-$ at 3.773 GeV
1.77 ±0.12 ±0.10	305	[1,2] DOBBS	13	CLEO	$e^+ e^-$ at $\psi(3770)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.445±0.058±0.039	1.1k	[3] ABLIKIM	19C	BES3	$e^+ e^-$ at 3773 MeV
1.94 ±0.39 ±0.13	31	COAN	05	CLEO	See DOBBS 13

[1] DOBBS 13 finds $\Gamma(D^0 \to \rho^- e^+ \nu_e)$ / 2 $\Gamma(D^+ \to \rho^0 e^+ \nu_e) = 1.03 \pm 0.09^{+0.08}_{-0.02}$; isospin invariance predicts the ratio is 1.0.

NODE=S032C39;LINKAGE=CL

[2] See the D^+ Listings for $D \to \rho e^+ \nu_e$ form factors.

NODE=S032C39;LINKAGE=DO

[3] This result is the same as the one reported for $D^0 \to \pi^- \pi^0 e^+ \nu_e$ which ABLIKIM 19C found to proceed 100% via $D^0 \to \rho(770)^- e^+ \nu_e$. Superseded by ABLIKIM 24CP.

NODE=S032C39;LINKAGE=A

$\Gamma(\rho^- \mu^+ \nu_\mu)/\Gamma_{total}$ — Γ_{43}/Γ

NODE=S032D22
NODE=S032D22

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
1.35±0.09±0.09	570	ABLIKIM	21BC	BES3	$e^+ e^-$ at 3.773 GeV

$\Gamma(a(980)^- e^+ \nu_e,\ a^- \to \eta \pi^-)/\Gamma_{total}$ — Γ_{44}/Γ

NODE=S032P95
NODE=S032P95

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
0.86±0.18 OUR AVERAGE	[$(1.33^{+0.34}_{-0.30}) \times 10^{-4}$ OUR 2025 AVERAGE]				
0.86±0.17±0.05	52	[1] ABLIKIM	25AW	BES3	$e^+ e^-$ at 3.773 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$1.33^{+0.33}_{-0.29}$±0.09	26	[2] ABLIKIM	18F	BES3	$e^+ e^-$ at 3.773 GeV

NEW

[1] ABLIKIM 25AW obtain $f_{+}^{a_0}(0)|V_{cd}| = 0.126 \pm 0.013 \pm 0.003$ using a single-pole parametrization for the form factor and a_0 branching fractions deduced from the analysis of ABLIKIM 17K. NODE=S032P95;LINKAGE=B

[2] ABLIKIM 18F signal observed at 6.4 σ C.L. Superseded by ABLIKIM 25AW. NODE=S032P95;LINKAGE=A

$\Gamma(K^0_S K^- e^+ \nu_e)/\Gamma_{\text{total}}$ — Γ_{45}/Γ

NODE=S032D59
NODE=S032D59

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<2.13 × 10^{-5}	90	[1] ABLIKIM	24AZ	BES3	7.9 fb^{-1}, e^+e^- at 3.773 GeV

[1] Includes $D^0 \to a_0(980)^- e^+ \nu_e$, $a_0(980)^- \to K^0_S K^-$ resonant contribution. NODE=S032D59;LINKAGE=A

$\Gamma(b_1(1235)^- e^+ \nu_e,\ b_1^- \to \omega\pi^-)/\Gamma_{\text{total}}$ — Γ_{46}/Γ

NODE=S032Q99
NODE=S032Q99

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.12 × 10^{-4}	90	ABLIKIM	20AF	BES3	e^+e^-, 3773 MeV

Hadronic modes with a single $\overline{K}$

NODE=S032320

$\Gamma(K^-\pi^+)/\Gamma_{\text{total}}$ — Γ_{47}/Γ

NODE=S032R12
NODE=S032R12

3.936±0.030 OUR FIT Error includes scale factor of 1.3. [(3.945 ± 0.030)% OUR 2025 FIT Scale factor = 1.2] NEW

3.909±0.034 OUR AVERAGE

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
3.883±0.006±0.051	0.5M	[1] ABLIKIM	18W	BES3	e^+e^-, 3773 MeV
3.934±0.021±0.061		BONVICINI	14	CLEO	All CLEO-c runs
4.007±0.037±0.072	33.8k	AUBERT	08L	BABR	e^+e^- at $\Upsilon(4S)$
3.82 ±0.07 ±0.12		[2] ARTUSO	98	CLE2	CLEO average (OCCUR=3)
3.90 ±0.09 ±0.12	5.4k	[3] BARATE	97C	ALEP	From Z decays
3.41 ±0.12 ±0.28	1.2k	[3] ALBRECHT	94F	ARG	$e^+e^- \approx \Upsilon(4S)$
3.62 ±0.34 ±0.44		[3] DECAMP	91J	ALEP	From Z decays
• • • We do not use the following data for averages, fits, limits, etc. • • •					
3.891±0.035±0.069		[4] DOBBS	07	CLEO	See BONVICINI 14
3.91 ±0.08 ±0.09	10.3k	[4] HE	05	CLEO	See DOBBS 07
3.81 ±0.15 ±0.16	1.2k	[5] ARTUSO	98	CLE2	e^+e^- at $\Upsilon(4S)$ (OCCUR=2)
3.69 ±0.11 ±0.16		[6] COAN	98	CLE2	See ARTUSO 98
4.5 ±0.6 ±0.4		[7] ALBRECHT	94	ARG	$e^+e^- \approx \Upsilon(4S)$
3.95 ±0.08 ±0.17	4.2k	[3,8] AKERIB	93	CLE2	See ARTUSO 98
4.5 ±0.8 ±0.5	56	[3] ABACHI	88	HRS	e^+e^- 29 GeV
4.2 ±0.4 ±0.4	0.9k	ADLER	88C	MRK3	e^+e^- 3.77 GeV
4.1 ±0.6	0.3k	[9] SCHINDLER	81	MRK2	e^+e^- 3.771 GeV
4.3 ±1.0	130	[10] PERUZZI	77	LGW	e^+e^- 3.77 GeV

[1] ABLIKIM 18W measured the combined $K^{\mp}\pi^{\pm}$ branching fraction to be 3.898%. We have subtracted off the doubly Cabibbo-suppressed branching fraction B($D^0 \to K^+\pi^-$) = (1.48 ± 0.07) × 10^{-4}, even though it is less than one-third of the uncertainty of the combined measurement, in order to treat this as a measurement of B($D^0 \to K^-\pi^+$). NODE=S032R12;LINKAGE=AB

[2] This combines the CLEO results of ARTUSO 98, COAN 98, and AKERIB 93. NODE=S032R12;LINKAGE=KL

[3] ABACHI 88, DECAMP 91J, AKERIB 93, ALBRECHT 94F, and BARATE 97C use $D^*(2010)^+ \to D^0\pi^+$ decays. The π^+ is both slow and of low p_T with respect to the event thrust axis or nearest jet ($\approx D^{*+}$ direction). The excess number of such π^+'s over background gives the number of $D^*(2010)^+ \to D^0\pi^+$ events, and the fraction with $D^0 \to K^-\pi^+$ gives the $D^0 \to K^-\pi^+$ branching fraction. NODE=S032R12;LINKAGE=C

[4] DOBBS 07 and HE 05 use single- and double-tagged events in an overall fit. DOBBS 07 supersedes HE 05. NODE=S032R12;LINKAGE=HE

[5] ARTUSO 98, following ALBRECHT 94, uses D^0 mesons from $\overline{B}^0 \to D^*(2010)^+ X \ell^- \overline{\nu}_\ell$ decays. Our average uses the CLEO average of this value with the values of COAN 98 and AKERIB 93. NODE=S032R12;LINKAGE=KA

[6] COAN 98 assumes that $\Gamma(B \to \overline{D} X \ell^+ \nu)/\Gamma(B \to X \ell^+ \nu) = 1.0 - 3|V_{ub}/V_{cb}|^2 - 0.010 \pm 0.005$, the last term accounting for $\overline{B} \to D_s^+ K X \ell^- \overline{\nu}$. COAN 98 is included in the CLEO average in ARTUSO 98. NODE=S032R12;LINKAGE=KC

[7] ALBRECHT 94 uses D^0 mesons from $\overline{B}^0 \to D^{*+}\ell^-\overline{\nu}_\ell$ decays. This is a different set of events than used by ALBRECHT 94F. NODE=S032R12;LINKAGE=D

[8] This AKERIB 93 value includes radiative corrections; without them, the value is 0.0391 ± 0.0008 ± 0.0017. AKERIB 93 is included in the CLEO average in ARTUSO 98. NODE=S032R12;LINKAGE=B

[9] SCHINDLER 81 (MARK-2) measures $\sigma(e^+e^- \to \psi(3770))$ × branching fraction to be 0.24 ± 0.02 nb. We use the MARK-3 (ADLER 88C) value of σ = 5.8 ± 0.5 ± 0.6 nb. NODE=S032R12;LINKAGE=SP

[10] PERUZZI 77 (MARK-1) measures $\sigma(e^+e^- \to \psi(3770))$ × branching fraction to be 0.25 ± 0.05 nb. We use the MARK-3 (ADLER 88C) value of σ = 5.8 ± 0.5 ± 0.6 nb. NODE=S032R12;LINKAGE=PS

$\Gamma(K^0_S \pi^0)/\Gamma_{total}$ Γ_{48}/Γ

NODE=S032S06
NODE=S032S06

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
1.239±0.022 OUR FIT [(1.240 ± 0.022)% OUR 2025 FIT]					
1.239±0.006±0.027	67k	ABLIKIM	18W	BES3	e^+e^-, 3773 MeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.240±0.017±0.056	614	HE	08	CLEO	See MENDEZ 10

NEW

$\Gamma(K^0_S \pi^0)/[\Gamma(K^- \pi^+) + \Gamma(K^+ \pi^-)]$ $\Gamma_{48}/(\Gamma_{47}+\Gamma_{344})$

NODE=S032S18
NODE=S032S18

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
31.4±0.6 OUR FIT [(31.3 ± 0.6) × 10^{-2} OUR 2025 FIT]					
30.4±0.3±0.9	20k	MENDEZ	10	CLEO	e^+e^- at 3774 MeV

NEW

$\Gamma(K^0_S \pi^0)/\Gamma(K^0_S \pi^+ \pi^-)$ Γ_{48}/Γ_{53}

NODE=S032B14
NODE=S032B14

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.436±0.023 OUR FIT [0.433 ± 0.023 OUR 2025 FIT]					
0.44 ±0.02 ±0.05	1942 ± 64	PROCARIO	93B	CLE2	e^+e^- 10.36–10.7 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.34 ±0.04 ±0.02	92	[1] ALBRECHT	92P	ARG	$e^+e^- \approx$ 10 GeV
0.36 ±0.04 ±0.08	104	KINOSHITA	91	CLEO	$e^+e^- \sim$ 10.7 GeV

NEW

[1] This value is calculated from numbers in Table 1 of ALBRECHT 92P. NODE=S032B14;LINKAGE=AP

$\Gamma(K^0_L \pi^0)/\Gamma_{total}$ Γ_{49}/Γ

NODE=S032S07
NODE=S032S07

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.976±0.032 OUR AVERAGE					
0.97 ±0.03 ±0.02	2590	ABLIKIM	22BM	BES3	e^+e^- at $\psi(3770)$
0.998±0.049±0.048	1116	[1] HE	08	CLEO	e^+e^- at $\psi(3770)$

[1] The difference of HE 08 $D^0 \to K^0_S \pi^0$ and $K^0_L \pi^0$ branching fractions over the sum is 0.108 ± 0.025 ± 0.024. This is consistent with U-spin symmetry and the Cabibbo angle. NODE=S032S07;LINKAGE=HE

$\Gamma(K^0_L \eta)/\Gamma_{total}$ Γ_{50}/Γ

NODE=S032D33
NODE=S032D33

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
4.34±0.16 OUR AVERAGE					
4.39±0.24±0.15	543	[1] ABLIKIM	22W	BES3	e^+e^- at 3.773 GeV
4.31±0.14±0.13	2.1k	[2] ABLIKIM	22W	BES3	e^+e^- at 3.773 GeV

OCCUR=2

[1] Uses $\eta \to \pi^+ \pi^- \pi^0$ with branching fraction (23.02 ± 0.25) × 10^{-2}. NODE=S032D33;LINKAGE=A

[2] Uses $\eta \to \gamma\gamma$ with branching fraction (39.36 ± 0.18) × 10^{-2}. NODE=S032D33;LINKAGE=B

$\Gamma(K^0_L \eta')/\Gamma_{total}$ Γ_{51}/Γ

NODE=S032D35
NODE=S032D35

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
8.12±0.35 OUR AVERAGE Error includes scale factor of 1.3.					
8.57±0.37±0.22	684	[1] ABLIKIM	22W	BES3	e^+e^- at 3.773 GeV
7.85±0.24±0.23	2k	[2] ABLIKIM	22W	BES3	e^+e^- at 3.773 GeV

OCCUR=2

[1] Uses $\eta' \to \pi^+ \pi^- \eta$ with branching fraction 0.425 ± 0.005. NODE=S032D35;LINKAGE=A

[2] Uses $\eta' \to \rho^0 \gamma$ with branching fraction 0.295 ± 0.004. NODE=S032D35;LINKAGE=B

$\Gamma(K^0_L \omega)/\Gamma_{total}$ Γ_{52}/Γ

NODE=S032D34
NODE=S032D34

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.164±0.022±0.028	6.1k	ABLIKIM	22W	BES3	e^+e^- at 3.773 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.09 ±0.06 ±0.03	1360	ABLIKIM	22BM	BES3	e^+e^- at $\psi(3770)$

$\Gamma(K^0_S \pi^+ \pi^-)/\Gamma_{total}$ Γ_{53}/Γ

NODE=S032R21
NODE=S032R21

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2.52±0.20±0.25	284 ± 22	[1] ALBRECHT	94F	ARG	$e^+e^- \approx \Upsilon(4S)$
3.2 ±0.3 ±0.5		ADLER	87	MRK3	e^+e^- 3.77 GeV
2.6 ±0.8	32 ± 8	[2] SCHINDLER	81	MRK2	e^+e^- 3.771 GeV
4.0 ±1.2	28	[3] PERUZZI	77	LGW	e^+e^- 3.77 GeV

[1] See the footnote on the ALBRECHT 94F measurement of $\Gamma(K^- \pi^+)/\Gamma_{total}$ for the method used. NODE=S032R21;LINKAGE=E

[2] SCHINDLER 81 (MARK-2) measures $\sigma(e^+e^- \to \psi(3770))$ × branching fraction to be 0.30 ± 0.08 nb. We use the MARK-3 (ADLER 88C) value of σ = 5.8 ± 0.5 ± 0.6 nb. NODE=S032R21;LINKAGE=SP

[3] PERUZZI 77 (MARK-1) measures $\sigma(e^+e^- \to \psi(3770))$ × branching fraction to be 0.46 ± 0.12 nb. We use the MARK-3 (ADLER 88C) value of σ = 5.8 ± 0.5 ± 0.6 nb. NODE=S032R21;LINKAGE=PS

$\Gamma(K^0_S\pi^+\pi^-)/\Gamma(K^-\pi^+)$ Γ_{53}/Γ_{47}

NODE=S032R28

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.72±0.04 OUR FIT Error includes scale factor of 1.1. [0.73 ± 0.04 OUR 2025 FIT Scale factor = 1.1]					
0.81±0.05±0.08	856 ± 35	FRABETTI	94J	E687	γ Be $\overline{E}_\gamma$=220 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.85±0.40	35	AVERY	80	SPEC	$\gamma N \rightarrow D^{*+}$
1.4 ±0.5	116	PICCOLO	77	MRK1	e^+e^- 4.03, 4.41 GeV

NODE=S032R28
NEW

$\Gamma(K^0_S\rho^0)/\Gamma(K^0_S\pi^+\pi^-)$ Γ_{54}/Γ_{53}

NODE=S032B59

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032B59
NODE=S032B59

VALUE	DOCUMENT ID		TECN	COMMENT
$0.224^{+0.017}_{-0.023}$ OUR AVERAGE Error includes scale factor of 1.7.				
0.210±0.016	[1] AUBERT	08AL	BABR	Dalitz fit, ≈ 487 k evts
$0.264\pm0.009^{+0.010}_{-0.026}$	MURAMATSU	02	CLE2	Dalitz fit, 5299 evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.267\pm0.011^{+0.009}_{-0.028}$	ASNER	04A	CLEO	See MURAMATSU 02
0.350±0.028±0.067	FRABETTI	94G	E687	Dalitz fit, 597 evts
0.227±0.032±0.009	ALBRECHT	93D	ARG	Dalitz fit, 440 evts
0.215±0.051±0.037	ANJOS	93	E691	γ Be 90–260 GeV
0.20 ±0.06 ±0.03	FRABETTI	92B	E687	γ Be, $\overline{E}_\gamma$= 221 GeV
0.12 ±0.01 ±0.07	ADLER	87	MRK3	e^+e^- 3.77 GeV

[1] The error on this AUBERT 08AL value includes both statistical and systematic uncertainties; the latter dominates.

NODE=S032B59;LINKAGE=AU

$\Gamma(K^0_S\omega,\ \omega\rightarrow\pi^+\pi^-)/\Gamma(K^0_S\pi^+\pi^-)$ Γ_{55}/Γ_{53}

NODE=S032S95

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032S95
NODE=S032S95

VALUE	DOCUMENT ID		TECN	COMMENT
0.0073±0.0020 OUR AVERAGE				
0.009 ±0.010	[1] AUBERT	08AL	BABR	Dalitz fit, ≈ 487 k evts
$0.0072\pm0.0018^{+0.0010}_{-0.0009}$	MURAMATSU	02	CLE2	Dalitz fit, 5299 evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.0081\pm0.0019^{+0.0018}_{-0.0010}$	ASNER	04A	CLEO	See MURAMATSU 02

[1] The error on this AUBERT 08AL value includes both statistical and systematic uncertainties; the latter dominates.

NODE=S032S95;LINKAGE=AU

$\Gamma(K^0_S(\pi^+\pi^-)_{S-wave})/\Gamma(K^0_S\pi^+\pi^-)$ Γ_{56}/Γ_{53}

NODE=S032C74

This is the "fit fraction" from the Dalitz-plot analysis. The $(\pi^+\pi^-)_{S-wave}$ includes what in isobar models are the $f_0(980)$ and $f_0(1370)$; see the following two data blocks.

NODE=S032C74
NODE=S032C74

VALUE	DOCUMENT ID		TECN	COMMENT
0.119±0.026	[1] AUBERT	08AL	BABR	Dalitz fit, ≈ 487 k evts

[1] The error on this AUBERT 08AL value includes both statistical and systematic uncertainties; the latter dominates.

NODE=S032C74;LINKAGE=AU

$\Gamma(K^0_S f_0(980),\ f_0\rightarrow\pi^+\pi^-)/\Gamma(K^0_S\pi^+\pi^-)$ Γ_{57}/Γ_{53}

NODE=S032B76

Fit fraction from the Dalitz plot analyses.

NODE=S032B76
NODE=S032B76

VALUE	DOCUMENT ID		TECN	COMMENT
$0.043\pm0.005^{+0.012}_{-0.006}$	MURAMATSU	02	CLE2	Dalitz fit, 5299 evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.042\pm0.005^{+0.011}_{-0.005}$	ASNER	04A	CLEO	See MURAMATSU 02
0.068±0.016±0.018	FRABETTI	94G	E687	Dalitz fit, 597 evts
0.046±0.018±0.006	ALBRECHT	93D	ARG	Dalitz fit, 440 evts

$\Gamma(K^0_S f_0(1370),\ f_0\rightarrow\pi^+\pi^-)/\Gamma(K^0_S\pi^+\pi^-)$ Γ_{58}/Γ_{53}

NODE=S032B78

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032B78
NODE=S032B78

VALUE	DOCUMENT ID		TECN	COMMENT
$0.099\pm0.011^{+0.028}_{-0.044}$	MURAMATSU	02	CLE2	Dalitz fit, 5299 evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.098\pm0.014^{+0.026}_{-0.036}$	ASNER	04A	CLEO	See MURAMATSU 02
0.077±0.022±0.031	FRABETTI	94G	E687	Dalitz fit, 597 evts
0.082±0.028±0.013	ALBRECHT	93D	ARG	Dalitz fit, 440 evts

$\Gamma(K^0_S f_2(1270),\ f_2 \to \pi^+\pi^-)/\Gamma(K^0_S\pi^+\pi^-)$ Γ_{59}/Γ_{53}

NODE=S032B77

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032B77
NODE=S032B77

VALUE	DOCUMENT ID		TECN	COMMENT
$0.0032^{+0.0035}_{-0.0022}$ OUR AVERAGE				
0.006 ± 0.007	[1] AUBERT	08AL	BABR	Dalitz fit, ≈ 487 k evts
$0.0027 \pm 0.0015^{+0.0037}_{-0.0017}$	MURAMATSU	02	CLE2	Dalitz fit, 5299 evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.0036 \pm 0.0022^{+0.0032}_{-0.0019}$	ASNER	04A	CLEO	See MURAMATSU 02
$0.037 \pm 0.014 \pm 0.017$	FRABETTI	94G	E687	Dalitz fit, 597 evts
$0.050 \pm 0.021 \pm 0.008$	ALBRECHT	93D	ARG	Dalitz fit, 440 evts

[1] The error on this AUBERT 08AL value includes both statistical and systematic uncertainties; the latter dominates.

NODE=S032B77;LINKAGE=AU

$\Gamma(K^*(892)^-\pi^+,\ K^{*-} \to K^0_S\pi^-)/\Gamma(K^0_S\pi^+\pi^-)$ Γ_{60}/Γ_{53}

NODE=S032B58

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032B58
NODE=S032B58

VALUE	DOCUMENT ID		TECN	COMMENT
$0.588^{+0.034}_{-0.050}$ OUR AVERAGE Error includes scale factor of 2.0.				
0.557 ± 0.028	[1] AUBERT	08AL	BABR	Dalitz fit, ≈ 487 k evts
$0.657 \pm 0.013^{+0.018}_{-0.040}$	MURAMATSU	02	CLE2	Dalitz fit, 5299 evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.663 \pm 0.013^{+0.024}_{-0.043}$	ASNER	04A	CLEO	See MURAMATSU 02
$0.625 \pm 0.036 \pm 0.026$	FRABETTI	94G	E687	Dalitz fit, 597 evts
$0.718 \pm 0.042 \pm 0.030$	ALBRECHT	93D	ARG	Dalitz fit, 440 evts
0.480 ± 0.097	ANJOS	93	E691	γ Be 90–260 GeV
$0.56 \pm 0.04 \pm 0.05$	ADLER	87	MRK3	e^+e^- 3.77 GeV

[1] The error on this AUBERT 08AL value includes both statistical and systematic uncertainties; the latter dominates.

NODE=S032B58;LINKAGE=AU

$\Gamma(K^*_0(1430)^-\pi^+,\ K^{*-}_0 \to K^0_S\pi^-)/\Gamma(K^0_S\pi^+\pi^-)$ Γ_{61}/Γ_{53}

NODE=S032B79

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032B79
NODE=S032B79

VALUE	DOCUMENT ID		TECN	COMMENT
$0.095^{+0.014}_{-0.010}$ OUR AVERAGE				
0.102 ± 0.015	[1] AUBERT	08AL	BABR	Dalitz fit, ≈ 487 k evts
$0.073 \pm 0.007^{+0.031}_{-0.011}$	MURAMATSU	02	CLE2	Dalitz fit, 5299 evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.072 \pm 0.007^{+0.014}_{-0.013}$	ASNER	04A	CLEO	See MURAMATSU 02
$0.109 \pm 0.027 \pm 0.029$	FRABETTI	94G	E687	Dalitz fit, 597 evts
$0.129 \pm 0.034 \pm 0.021$	ALBRECHT	93D	ARG	Dalitz fit, 440 evts

[1] The error on this AUBERT 08AL value includes both statistical and systematic uncertainties; the latter dominates.

NODE=S032B79;LINKAGE=AU

$\Gamma(K^*_2(1430)^-\pi^+,\ K^{*-}_2 \to K^0_S\pi^-)/\Gamma(K^0_S\pi^+\pi^-)$ Γ_{62}/Γ_{53}

NODE=S032B80

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032B80
NODE=S032B80

VALUE	DOCUMENT ID		TECN	COMMENT
$0.0120^{+0.0070}_{-0.0035}$ OUR AVERAGE				
0.022 ± 0.016	[1] AUBERT	08AL	BABR	Dalitz fit, ≈ 487 k evts
$0.011 \pm 0.002^{+0.007}_{-0.003}$	MURAMATSU	02	CLE2	Dalitz fit, 5299 evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.011 \pm 0.002^{+0.005}_{-0.003}$	ASNER	04A	CLEO	See MURAMATSU 02

[1] The error on this AUBERT 08AL value includes both statistical and systematic uncertainties; the latter dominates.

NODE=S032B80;LINKAGE=AU

$\Gamma(K^*(1680)^-\pi^+,\ K^{*-}\to K^0_S\pi^-)/\Gamma(K^0_S\pi^+\pi^-)$ Γ_{63}/Γ_{53}

NODE=S032C26

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032C26
NODE=S032C26

VALUE		DOCUMENT ID		TECN	COMMENT
0.016±0.013 OUR AVERAGE					
0.007±0.019	[1]	AUBERT	08AL	BABR	Dalitz fit, ≈ 487 k evts
$0.022\pm0.004{}^{+0.018}_{-0.015}$		MURAMATSU	02	CLE2	Dalitz fit, 5299 evts
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$0.023\pm0.005{}^{+0.007}_{-0.014}$		ASNER	04A	CLEO	See MURAMATSU 02

[1] The error on this AUBERT 08AL value includes both statistical and systematic uncertainties; the latter dominates.

NODE=S032C26;LINKAGE=AU

$\Gamma(K^*(892)^+\pi^-,\ K^{*+}\to K^0_S\pi^+)/\Gamma(K^0_S\pi^+\pi^-)$ Γ_{64}/Γ_{53}

NODE=S032S94

This is the "fit fraction" from the Dalitz-plot analysis. This is a doubly Cabibbo-suppressed mode.

NODE=S032S94

NODE=S032S94

VALUE (units 10^{-3})		DOCUMENT ID		TECN	COMMENT
$4.0^{+2.0}_{-1.2}$ OUR AVERAGE					
4.6±2.3	[1]	AUBERT	08AL	BABR	Dalitz fit, ≈ 487 k evts
$3.4\pm1.3{}^{+4.1}_{-0.4}$		MURAMATSU	02	CLE2	Dalitz fit, 5299 evts
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$3.4\pm1.3{}^{+3.6}_{-0.5}$		ASNER	04A	CLEO	See MURAMATSU 02

[1] The error on this AUBERT 08AL value includes both statistical and systematic uncertainties; the latter dominates.

NODE=S032S94;LINKAGE=AU

$\Gamma(K^*_0(1430)^+\pi^-,\ K^{*+}_0\to K^0_S\pi^+)/\Gamma(K^0_S\pi^+\pi^-)$ Γ_{65}/Γ_{53}

NODE=S032C72

This is the "fit fraction" from the Dalitz-plot analysis. This is a doubly Cabibbo-suppressed mode.

NODE=S032C72

NODE=S032C72

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5\times10^{-4}$	95	AUBERT	08AL	BABR	Dalitz fit, ≈ 487 k evts

$\Gamma(K^*_2(1430)^+\pi^-,\ K^{*+}_2\to K^0_S\pi^+)/\Gamma(K^0_S\pi^+\pi^-)$ Γ_{66}/Γ_{53}

NODE=S032C73

This is the "fit fraction" from the Dalitz-plot analysis. This is a doubly Cabibbo-suppressed mode.

NODE=S032C73

NODE=S032C73

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.2\times10^{-3}$	95	AUBERT	08AL	BABR	Dalitz fit, ≈ 487 k evts

$\Gamma(K^0_S\pi^+\pi^-$ nonresonant$)/\Gamma(K^0_S\pi^+\pi^-)$ Γ_{67}/Γ_{53}

NODE=S032B57

This is the "fit fraction" from the Dalitz-plot analysis. Neither FRABETTI 94G nor ALBRECHT 93D (quoted in many of the earlier submodes of $K^0_S\pi^+\pi^-$) sees evidence for a nonresonant component.

NODE=S032B57

NODE=S032B57

VALUE	DOCUMENT ID		TECN	COMMENT
$0.009\pm0.004{}^{+0.020}_{-0.004}$	MURAMATSU	02	CLE2	Dalitz fit, 5299 evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.007\pm0.007{}^{+0.021}_{-0.006}$	ASNER	04A	CLEO	See MURAMATSU 02
0.263±0.024±0.041	ANJOS	93	E691	γ Be 90–260 GeV
0.26 ±0.08 ±0.05	FRABETTI	92B	E687	γ Be, $\overline{E}_\gamma$= 221 GeV
0.33 ±0.05 ±0.10	ADLER	87	MRK3	e^+e^- 3.77 GeV

$\Gamma(K^-\pi^+\pi^0)/\Gamma_{total}$ Γ_{68}/Γ

NODE=S032R19
NODE=S032R19

VALUE (%)	EVTS		DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •						
14.57±0.12±0.38		[1]	DOBBS	07	CLEO	See BONVICINI 14
14.9 ±0.3 ±0.5	19k ±150	[1]	HE	05	CLEO	See DOBBS 07
13.3 ±1.2 ±1.3	931		ADLER	88C	MRK3	e^+e^- 3.77 GeV
11.7 ±4.3	37	[2]	SCHINDLER	81	MRK2	e^+e^- 3.771 GeV

[1] DOBBS 07 and HE 05 use single- and double-tagged events in an overall fit. DOBBS 07 supersedes HE 05.

NODE=S032R19;LINKAGE=HE

[2] SCHINDLER 81 (MARK-2) measures $\sigma(e^+e^-\to\ \psi(3770))\times$ branching fraction to be 0.68 ± 0.23 nb. We use the MARK-3 (ADLER 88C) value of σ = 5.8 ± 0.5 ± 0.6 nb.

NODE=S032R19;LINKAGE=SP

$\Gamma(K^-\pi^+\pi^0)/\Gamma(K^-\pi^+)$ Γ_{68}/Γ_{47}

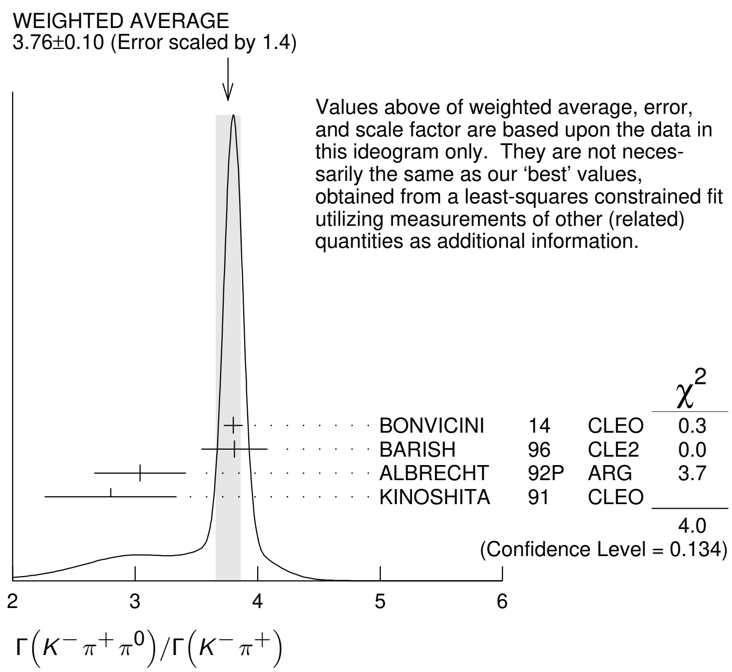
NODE=S032R47
NODE=S032R47

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
3.66 ±0.12 OUR FIT Error includes scale factor of 2.0. [3.65 ± 0.14 OUR 2025 FIT Scale factor = 2.3]					
3.76 ±0.10 OUR AVERAGE Error includes scale factor of 1.4. See the ideogram below.					
3.802±0.022±0.073		BONVICINI	14	CLEO	All CLEO-c runs
3.81 ±0.07 ±0.26	10k	BARISH	96	CLE2	$e^+e^- \approx \Upsilon(4S)$
3.04 ±0.16 ±0.34	931	[1] ALBRECHT	92P	ARG	$e^+e^- \approx$ 10 GeV
2.8 ±0.14 ±0.52	1050	KINOSHITA	91	CLEO	$e^+e^- \sim$ 10.7 GeV

NEW

[1] This value is calculated from numbers in Table 1 of ALBRECHT 92P.

NODE=S032R47;LINKAGE=AP



$\Gamma(K^-\rho^+)/\Gamma(K^-\pi^+\pi^0)$ Γ_{69}/Γ_{68}

NODE=S032R48

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032R48
NODE=S032R48

VALUE	DOCUMENT ID		TECN	COMMENT
0.78 ±0.04 OUR AVERAGE				
0.788±0.019±0.048	KOPP	01	CLE2	Dalitz fit, ≈ 7,000 evts
0.765±0.041±0.054	FRABETTI	94G	E687	Dalitz fit, 530 evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.647±0.039±0.150	ANJOS	93	E691	γBe 90–260 GeV
0.81 ±0.03 ±0.06	ADLER	87	MRK3	e^+e^- 3.77 GeV

$\Gamma(K^-\rho(1700)^+,\ \rho^+ \to \pi^+\pi^0)/\Gamma(K^-\pi^+\pi^0)$ Γ_{70}/Γ_{68}

NODE=S032C1

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032C1
NODE=S032C1

VALUE	DOCUMENT ID		TECN	COMMENT
0.057±0.008±0.009	KOPP	01	CLE2	Dalitz fit, ≈ 7,000 evts

$\Gamma(K^*(892)^-\pi^+,\ K^*(892)^- \to K^-\pi^0)/\Gamma(K^-\pi^+\pi^0)$ Γ_{71}/Γ_{68}

NODE=S032S16

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032S16
NODE=S032S16

VALUE	DOCUMENT ID		TECN	COMMENT
$0.160^{+0.025}_{-0.013}$ OUR AVERAGE				
$0.161\pm0.007^{+0.027}_{-0.011}$	KOPP	01	CLE2	Dalitz fit, ≈ 7,000 evts
0.148±0.028±0.049	FRABETTI	94G	E687	Dalitz fit, 530 evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.084±0.011±0.012	ANJOS	93	E691	γBe 90–260 GeV
0.12 ±0.02 ±0.03	ADLER	87	MRK3	e^+e^- 3.77 GeV

$\Gamma(\overline{K}^*(892)^0\pi^0,\ \overline{K}^*(892)^0 \to K^-\pi^+)/\Gamma(K^-\pi^+\pi^0)$ Γ_{72}/Γ_{68}

NODE=S032S17

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032S17
NODE=S032S17

VALUE	DOCUMENT ID		TECN	COMMENT
0.135±0.016 OUR AVERAGE				
0.127±0.009±0.016	KOPP	01	CLE2	Dalitz fit, ≈ 7,000 evts
0.165±0.031±0.015	FRABETTI	94G	E687	Dalitz fit, 530 evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.142±0.018±0.024	ANJOS	93	E691	γBe 90–260 GeV
0.13 ±0.02 ±0.03	ADLER	87	MRK3	e^+e^- 3.77 GeV

$\Gamma(K_0^*(1430)^-\pi^+,\ K_0^{*-} \to K^-\pi^0)/\Gamma(K^-\pi^+\pi^0)$ Γ_{73}/Γ_{68}

NODE=S032C2

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032C2
NODE=S032C2

VALUE	DOCUMENT ID		TECN	COMMENT
0.033±0.006±0.014	KOPP	01	CLE2	Dalitz fit, ≈ 7,000 evts

$\Gamma(\overline{K}_0^*(1430)^0\pi^0,\ \overline{K}_0^{*0} \to K^-\pi^+)/\Gamma(K^-\pi^+\pi^0)$ Γ_{74}/Γ_{68}

NODE=S032C3

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032C3
NODE=S032C3

VALUE	DOCUMENT ID		TECN	COMMENT
$0.041\pm0.006^{+0.032}_{-0.009}$	KOPP	01	CLE2	Dalitz fit, ≈ 7,000 evts

$\Gamma(K^*(1680)^-\pi^+,\ K^{*-} \to K^-\pi^0)/\Gamma(K^-\pi^+\pi^0)$ Γ_{75}/Γ_{68}

NODE=S032C4

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032C4
NODE=S032C4

VALUE	DOCUMENT ID		TECN	COMMENT
0.013±0.003±0.004	KOPP	01	CLE2	Dalitz fit, ≈ 7,000 evts

$\Gamma(K^-\pi^+\pi^0$ nonresonant$)/\Gamma(K^-\pi^+\pi^0)$ Γ_{76}/Γ_{68}

NODE=S032R51

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032R51
NODE=S032R51

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
$0.080^{+0.040}_{-0.014}$ OUR AVERAGE					
$0.075\pm0.009^{+0.056}_{-0.011}$		KOPP	01	CLE2	Dalitz fit, ≈ 7,000 evts
0.101±0.033±0.040		FRABETTI	94G	E687	Dalitz fit, 530 evts
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.036±0.004±0.018		ANJOS	93	E691	γBe 90–260 GeV
0.09 ±0.02 ±0.04		ADLER	87	MRK3	e^+e^- 3.77 GeV
0.51 ±0.22	21	SUMMERS	84	E691	Photoproduction

$\Gamma(K_S^0 2\pi^0)/\Gamma_{total}$ Γ_{77}/Γ

NODE=S032C01
NODE=S032C01

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
9.1 ±1.1 OUR AVERAGE Error includes scale factor of 2.2.					
10.58±0.38±0.73	1259	LOWREY	11	CLEO	e^+e^- ≈ 3.77 GeV
8.34±0.45±0.42		ASNER	08	CLEO	$e^+e^- \to D^0\overline{D}^0$, 3.77 GeV

$\Gamma(K_L^0\pi^0\pi^0)/\Gamma_{total}$ Γ_{78}/Γ

NODE=S032D53
NODE=S032D53

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
1.26±0.05±0.03	1300	ABLIKIM	22BM	BES3	e^+e^- at $\psi(3770)$

$\Gamma(K_S^0(2\pi^0)_{S-wave})/\Gamma(K_S^0 2\pi^0)$ Γ_{79}/Γ_{77}

NODE=S032Q10

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032Q10
NODE=S032Q10

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
28.9±6.3±3.1	LOWREY	11	CLEO	Dalitz analysis, 1259 evts

$\Gamma(\overline{K}^*(892)^0\pi^0,\ \overline{K}^{*0} \to K_S^0\pi^0)/\Gamma(K_S^0 2\pi^0)$ Γ_{80}/Γ_{77}

NODE=S032D69
NODE=S032D69

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
65.6±5.3±2.5	1259	LOWREY	11	CLEO	Dalitz analysis

$\Gamma(\overline{K}^*(892)^0\pi^0,\ \overline{K}^{*0} \to K_S^0\pi^0)/\Gamma(K_S^0\pi^0)$ Γ_{80}/Γ_{48}

NODE=S032B68

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032B68
NODE=S032B68

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
$55^{+13}_{-10}\pm7$	PROCARIO	93B	CLE2	Dalitz plot fit, 122 evts

$\Gamma(\overline{K}^*(1430)^0\pi^0,\ \overline{K}^{*0} \to K^0_S\pi^0)/\Gamma(K^0_S 2\pi^0)$ — Γ_{81}/Γ_{77}

NODE=S032Q11

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032Q11
NODE=S032Q11

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
0.49±0.45±2.51	LOWREY	11	CLEO	Dalitz analysis, 1259 evts

$\Gamma(\overline{K}^*(1680)^0\pi^0,\ \overline{K}^{*0} \to K^0_S\pi^0)/\Gamma(K^0_S 2\pi^0)$ — Γ_{82}/Γ_{77}

NODE=S032Q12

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032Q12
NODE=S032Q12

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
11.2±2.7±2.5	LOWREY	11	CLEO	Dalitz analysis, 1259 evts

$\Gamma(K^0_S f_2(1270),\ f_2 \to 2\pi^0)/\Gamma(K^0_S 2\pi^0)$ — Γ_{83}/Γ_{77}

NODE=S032Q13

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032Q13
NODE=S032Q13

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
2.48±0.91±0.78	LOWREY	11	CLEO	Dalitz analysis, 1259 evts

$\Gamma(2K^0_S,\ \text{one}\ K^0_S \to 2\pi^0)/\Gamma(K^0_S 2\pi^0)$ — Γ_{84}/Γ_{77}

NODE=S032Q14

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032Q14
NODE=S032Q14

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
3.46±0.92±0.66	LOWREY	11	CLEO	Dalitz analysis, 1259 evts

$\Gamma(K^0_S 2\pi^0\ \text{nonresonant})/\Gamma(K^0_S\pi^0)$ — Γ_{85}/Γ_{48}

NODE=S032B70

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032B70
NODE=S032B70

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.37±0.08±0.04	PROCARIO	93B	CLE2	Dalitz plot fit, 122 evts

$\Gamma(K^0_S 3\pi^0)/\Gamma_{\text{total}}$ — Γ_{86}/Γ

NODE=S032D27
NODE=S032D27

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
7.64±0.30±0.29	870	ABLIKIM	22Y	BES3	e^+e^- at 3.773 GeV

$\Gamma(K^- 2\pi^+\pi^-)/\Gamma_{\text{total}}$ — Γ_{87}/Γ

NODE=S032R24
NODE=S032R24

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
8.30±0.07±0.20		[1] DOBBS	07	CLEO	See BONVICINI 14
8.3 ±0.2 ±0.3	15k	[1] HE	05	CLEO	See DOBBS 07
7.9 ±1.5 ±0.9		[2] ALBRECHT	94	ARG	$e^+e^- \approx \Upsilon(4S)$
6.80±0.27±0.57	1.4k	[3] ALBRECHT	94F	ARG	$e^+e^- \approx \Upsilon(4S)$
9.1 ±0.8 ±0.8	992	ADLER	88C	MRK3	e^+e^- 3.77 GeV
11.7 ±2.5	185	[4] SCHINDLER	81	MRK2	e^+e^- 3.771 GeV
6.2 ±1.9	44	[5] PERUZZI	77	LGW	e^+e^- 3.77 GeV

[1] DOBBS 07 and HE 05 use single- and double-tagged events in an overall fit. DOBBS 07 supersedes HE 05. NODE=S032R24;LINKAGE=HE

[2] ALBRECHT 94 uses D^0 mesons from $\overline{B}^0 \to D^{*+}\ell^-\overline{\nu}_\ell$ decays. This is a different set of events than used by ALBRECHT 94F. NODE=S032R24;LINKAGE=D

[3] See the footnote on the ALBRECHT 94F measurement of $\Gamma(K^-\pi^+)/\Gamma_{\text{total}}$ for the method used. NODE=S032R24;LINKAGE=E

[4] SCHINDLER 81 (MARK-2) measures $\sigma(e^+e^- \to \psi(3770)) \times$ branching fraction to be 0.68 ± 0.11 nb. We use the MARK-3 (ADLER 88C) value of $\sigma = 5.8 \pm 0.5 \pm 0.6$ nb. NODE=S032R24;LINKAGE=SP

[5] PERUZZI 77 (MARK-1) measures $\sigma(e^+e^- \to \psi(3770)) \times$ branching fraction to be 0.36 ± 0.10 nb. We use the MARK-3 (ADLER 88C) value of $\sigma = 5.8 \pm 0.5 \pm 0.6$ nb. NODE=S032R24;LINKAGE=PS

$\Gamma(K^- 2\pi^+\pi^-)/\Gamma(K^-\pi^+)$ — Γ_{87}/Γ_{47}

NODE=S032R29
NODE=S032R29
NEW

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
2.084±0.031 OUR FIT Error includes scale factor of 1.1. [2.083 ± 0.031 OUR 2025 FIT]					
2.087±0.032 OUR AVERAGE					
2.106±0.013±0.032		BONVICINI	14	CLEO	All CLEO-c runs
1.94 ±0.07 $^{+0.09}_{-0.11}$		JUN	00	SELX	Σ^- nucleus, 600 GeV
1.7 ±0.2 ±0.2	1745	ANJOS	92C	E691	γ Be 90–260 GeV
1.90 ±0.25 ±0.20	337	ALVAREZ	91B	NA14	Photoproduction
2.12 ±0.16 ±0.09		BORTOLETTO	88	CLEO	e^+e^- 10.55 GeV
2.17 ±0.28 ±0.23		ALBRECHT	85F	ARG	e^+e^- 10 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2.0 ±0.9	48	BAILEY	86	ACCM	π^- Be fixed target
2.0 ±1.0	10	BAILEY	83B	SPEC	π^- Be $\to D^0$
2.2 ±0.8	214	PICCOLO	77	MRK1	e^+e^- 4.03, 4.41 GeV

$\Gamma(K^-\pi^+\rho^0\,\text{total})/\Gamma(K^-2\pi^+\pi^-)$ — Γ_{88}/Γ_{87}

NODE=S032B18

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
83.5±3.5 OUR AVERAGE				
80 ±3 ±5	ANJOS	92C	E691	1745 $K^-2\pi^+\pi^-$ evts
85.5±3.2±3.0	COFFMAN	92B	MRK3	1281 ± 45 $K^-2\pi^+\pi^-$ evts

$\Gamma(K^-\pi^+\rho^0\,\text{3-body})/\Gamma(K^-2\pi^+\pi^-)$ — Γ_{89}/Γ_{87}

NODE=S032R32

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
7.4±2.0 OUR AVERAGE					
8.4±1.1±2.5	16k	ABLIKIM	17O	BES3	$D^0 \to K^-2\pi^+\pi^-$
5 ±3 ±2		ANJOS	92C	E691	1745 $K^-2\pi^+\pi^-$ evts
8.4±2.2±4.0		COFFMAN	92B	MRK3	1281 ± 45 $K^-2\pi^+\pi^-$ evts

$\Gamma(\overline{K}^*(892)^0\rho^0,\ \overline{K}^{*0}\to K^-\pi^+)/\Gamma(K^-2\pi^+\pi^-)$ — Γ_{90}/Γ_{87}

NODE=S032R36

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
12.3±0.6 OUR AVERAGE					
12.3±0.4±0.5	16k	ABLIKIM	17O	BES3	$D^0 \to K^-2\pi^+\pi^-$
13 ±2 ±2		ANJOS	92C	E691	1745 $K^-2\pi^+\pi^-$ evts

$\Gamma(\overline{K}^*(892)^0\rho^0\,\text{transverse},\ \overline{K}^{*0}\to K^-\pi^+)/\Gamma(K^-2\pi^+\pi^-)$ — Γ_{91}/Γ_{87}

NODE=S032B35

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.142±0.016±0.05	1281	COFFMAN	92B	MRK3	$K^-2\pi^+\pi^-$ evts

$\Gamma(K^-a_1(1260)^+,\ a_1^+\to\rho^0\pi^+)/\Gamma(K^-2\pi^+\pi^-)$ — Γ_{92}/Γ_{87}

NODE=S032B38

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
53 ±4 OUR AVERAGE					
54.6±2.8± 3.7	16k	ABLIKIM	17O	BES3	$D^0 \to K^-2\pi^+\pi^-$
47 ±5 ±10	1745	ANJOS	92C	E691	$K^-2\pi^+\pi^-$ evts
49.2±2.4± 8.0	1281	COFFMAN	92B	MRK3	$K^-2\pi^+\pi^-$ evts

OCCUR=2

$\Gamma(K_1(1270)^-\pi^+,\ K_1^-\to K^-\pi^+\pi^-\,\text{total})/\Gamma(K^-2\pi^+\pi^-)$ — Γ_{93}/Γ_{87}

NODE=S032P69

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
4.8 ±0.4 OUR AVERAGE					
4.66±0.05±0.39±0.24	891k	[1] AAIJ	18AI	LHCB	$D^0 \to K^-2\pi^+\pi^-$
6.6 ±1.9 ±0.3	1281	COFFMAN	92B	MRK3	$K^-2\pi^+\pi^-$ evts

[1] The 3rd error is due to the uncertainty in the amplitude model composition.

NODE=S032P69;LINKAGE=A

$\Gamma(K_1(1270)^-\pi^+,\ K_1^-\to\overline{K}^*(892)^0\pi^-,\ \overline{K}^{*0}\to K^-\pi^+)/\Gamma(K^-2\pi^+\pi^-)$ — Γ_{96}/Γ_{87}

NODE=S032B40

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
0.8±0.2±0.2	16k	ABLIKIM	17O	BES3	$D^0 \to K^-2\pi^+\pi^-$

$\Gamma(K^-2\pi^+\pi^-\,\text{nonresonant})/\Gamma(K^-2\pi^+\pi^-)$ — Γ_{97}/Γ_{87}

NODE=S032B43

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
22.0 ±0.8 OUR AVERAGE					
22.04±0.28±2.09±1.51	891k	[1] AAIJ	18AI	LHCB	$D^0 \to K^-2\pi^+\pi^-$
21.9 ±0.6 ±0.6	16k	[2] ABLIKIM	17O	BES3	$D^0 \to K^-2\pi^+\pi^-$
23 ±2 ±3	1.7k	ANJOS	92C	E691	$D^0 \to K^-2\pi^+\pi^-$
24.2 ±2.5 ±6.0	1.2k	COFFMAN	92B	MRK3	$D^0 \to K^-2\pi^+\pi^-$

[1] The 3rd error is due to the uncertainty in the amplitude model composition.

NODE=S032B43;LINKAGE=B

[2] In addition to the 14 ABLIKIM 17O branching ratios we have listed, the paper gives 15 more ratios for mostly non-resonant modes. Four of the 15 have less than 2-standard-deviation significance. Here are some of the omitted modes, with S, P, V, A, and T for scalar, pseudo-scalar, vector, axial-vector, and tensor spin sub-structures: $\pi^+(K^-\rho^0)_P$, $\pi^+(K^-\rho^0)_V$, $\pi^+(\overline{K}^{*0}\pi^-)_P$, $\pi^+(\overline{K}^{*0}\pi^-)_V$, $\pi^+(\pi^-(K^-\pi^+)_{S-wave})_A$, $(K^-\pi^+)_V\ (\pi^+\pi^-)_S$, $(K^-\pi^+)_T\ (\pi^+\pi^-)_S\ldots$

NODE=S032B43;LINKAGE=A

$\Gamma(K_S^0\pi^+\pi^-\pi^0)/\Gamma_{\text{total}}$ — Γ_{98}/Γ

NODE=S032S23

NEW

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
5.2±0.6 OUR FIT					
[(5.3 ± 0.6)% OUR 2025 FIT]					
5.2±1.1±1.2	140	COFFMAN	92B	MRK3	e^+e^- 3.77 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$6.7^{+1.6}_{-1.7}$		[1] BARLAG	92C	ACCM	π^- Cu 230 GeV

[1] BARLAG 92C computes the branching fraction using topological normalization.

NODE=S032S23;LINKAGE=A

$\Gamma(K^0_S\pi^+\pi^-\pi^0)/\Gamma(K^0_S\pi^+\pi^-)$ Γ_{98}/Γ_{53}

NODE=S032B16

NODE=S032B16

Branching fractions for submodes of this mode with narrow resonances (the η, ω, η') are fairly well determined (see below). COFFMAN 92B gives fractions of K^* and ρ submodes, but with only 140 ± 28 events above background could not determine them with much accuracy. We omit those measurements here; they are in our 2008 Review (Physics Letters **B667** 1 (2008)).

NODE=S032B16

NEW

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
1.84±0.20 OUR FIT					
[1.83 ± 0.20 OUR 2025 FIT]					
1.86±0.23 OUR AVERAGE					
1.80±0.20±0.21	190	[1] ALBRECHT	92P	ARG	$e^+e^- \approx$ 10 GeV
2.8 ±0.8 ±0.8	46	ANJOS	92C	E691	γBe 90–260 GeV
1.85±0.26±0.30	158	KINOSHITA	91	CLEO	$e^+e^- \sim$ 10.7 GeV

[1] This value is calculated from numbers in Table 1 of ALBRECHT 92P.

NODE=S032B16;LINKAGE=AP

$\Gamma(K^-\pi^+2\pi^0)/\Gamma_{total}$ Γ_{101}/Γ

NODE=S032R25

NODE=S032R25

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
8.86±0.13±0.19	6.1k	ABLIKIM	19AK	BES3	e^+e^- at 3773 MeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
17.7 ±2.9		[1] BARLAG	92C	ACCM	π^- Cu 230 GeV
14.9 ±3.7 ±3.0	24	[2] ADLER	88C	MRK3	e^+e^- 3.77 GeV
20.9 $^{+7.4}_{-4.3}$ ±1.2	9	[1] AGUILAR-...	87F	HYBR	πp, pp 360, 400 GeV

[1] AGUILAR-BENITEZ 87F and BARLAG 92C compute the branching fraction using topological normalization. They do not distinguish the presence of a third π^0, and thus are not included in the average.

NODE=S032R25;LINKAGE=K

[2] ADLER 88C uses an absolute normalization method finding this decay channel opposite a detected $\overline{D}^0 \rightarrow K^+\pi^-$ in pure $D\overline{D}$ events.

NODE=S032R25;LINKAGE=A

$\Gamma(K^-\pi^+3\pi^0)/\Gamma_{total}$ Γ_{102}/Γ

NODE=S032D28

NODE=S032D28

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
9.54±0.30±0.31	1.6k	ABLIKIM	22Y	BES3	e^+e^- at 3.773 GeV

$\Gamma(K^0_S\pi^+\pi^-2\pi^0)/\Gamma_{total}$ Γ_{103}/Γ

NODE=S032D29

NODE=S032D29

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
12.66±0.45±0.43	1.2k	ABLIKIM	22Y	BES3	e^+e^- at 3.773 GeV

$\Gamma(K^-2\pi^+\pi^-\pi^0)/\Gamma(K^-\pi^+)$ Γ_{104}/Γ_{47}

NODE=S032B85

NODE=S032B85

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
1.09±0.10 OUR FIT					
0.98±0.11±0.11	225	[1] ALBRECHT	92P	ARG	$e^+e^- \approx$ 10 GeV

[1] This value is calculated from numbers in Table 1 of ALBRECHT 92P.

NODE=S032B85;LINKAGE=AP

$\Gamma(K^-2\pi^+\pi^-\pi^0)/\Gamma(K^-2\pi^+\pi^-)$ Γ_{104}/Γ_{87}

NODE=S032R95

NODE=S032R95

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.52±0.05 OUR FIT					
0.56±0.07 OUR AVERAGE					
0.55±0.07$^{+0.12}_{-0.09}$	167	KINOSHITA	91	CLEO	$e^+e^- \sim$ 10.7 GeV
0.57±0.06±0.05	180	ANJOS	90D	E691	Photoproduction

$\Gamma(\overline{K}^*(892)^0\pi^+\pi^-\pi^0,\ \overline{K}^{*0} \rightarrow K^-\pi^+)/\Gamma_{total}$ Γ_{105}/Γ

NODE=S032D36

NODE=S032D36

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
1.3±0.6 OUR EVALUATION				
seen	ALBRECHT	92P	ARG	$e^+e^- \approx$ 10 GeV

→ UNCHECKED ←

OCCUR=2

$\Gamma(\overline{K}^*(892)^0\omega,\ \overline{K}^{*0} \rightarrow K^-\pi^+,\ \omega \rightarrow \pi^+\pi^-\pi^0)/\Gamma_{total}$ Γ_{106}/Γ

NODE=S032D38

NODE=S032D38

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
6.5±3.0	[1] ALBRECHT	92P	ARG	$e^+e^- \approx$ 10 GeV

[1] This value is calculated from numbers in Table 2 of ALBRECHT 92P.

NODE=S032D38;LINKAGE=A

$\Gamma(K^-\pi^+\omega)/\Gamma_{total}$ Γ_{107}/Γ

NODE=S032D26

NODE=S032D26

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
3.392±0.044±0.085	10.1k	[1] ABLIKIM	22U	BES3	e^+e^- at 3.773 GeV

[1] ABLIKIM 22U determines the ratios $B(D^0 \rightarrow K^0_S\pi^0\omega)/B(D^0 \rightarrow K^-\pi^+\omega) = 0.23 \pm 0.01 \pm 0.01$ and $B(D^+ \rightarrow K^0_S\pi^+\omega)/B(D^0 \rightarrow K^-\pi^+\omega) = 0.21 \pm 0.01 \pm 0.01$, in significant tension with statistical isospin model expectations of 0.4 and 0.9 respectively.

NODE=S032D26;LINKAGE=A

$\Gamma(K^-\pi^+\omega)/\Gamma(K^-\pi^+)$ Γ_{107}/Γ_{47}

NODE=S032B87

Unseen decay modes of the ω are included.

NODE=S032B87
NODE=S032B87

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.78\pm0.12\pm0.10$	99	[1] ALBRECHT 92P	ARG	$e^+e^- \approx$ 10 GeV

[1] This value is calculated from numbers in Table 1 of ALBRECHT 92P.

NODE=S032B87;LINKAGE=AP

$\Gamma(\overline{K}^*(892)^0\omega)/\Gamma(K^-\pi^+)$ Γ_{108}/Γ_{47}

NODE=S032B86

Unseen decay modes of the $\overline{K}^*(892)^0$ and ω are included.

NODE=S032B86
NODE=S032B86

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
$0.28\pm0.11\pm0.04$	17	[1] ALBRECHT 92P	ARG	$e^+e^- \approx$ 10 GeV

[1] This value is calculated from numbers in Table 1 of ALBRECHT 92P.

NODE=S032B86;LINKAGE=AP

$\Gamma(K^0_S\pi^0\omega)/\Gamma_{\rm total}$ Γ_{109}/Γ

NODE=S032D24
NODE=S032D24

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
$0.848\pm0.046\pm0.031$	697	[1] ABLIKIM 22U	BES3	e^+e^- at 3.773 GeV

OCCUR=2

[1] ABLIKIM 22U determines the ratio B($D^0 \to K^0_S\pi^0\omega$)/B($D^0 \to K^-\pi^+\omega$) = 0.23 $\pm$ 0.01 $\pm$ 0.01, in significant tension with statistical isospin model expectation of 0.4.

NODE=S032D24;LINKAGE=B

$\Gamma(K^0_S\eta\pi^0)/\Gamma_{\rm total}$ Γ_{110}/Γ

NODE=S032Q88
NODE=S032Q88

VALUE (units 10^{-3})	EVTS	DOCUMENT ID	TECN	COMMENT
$10.06\pm0.34\pm0.30$	1.1k	ABLIKIM 20V	BES3	e^+e^-, 3773 MeV

$\Gamma(K^0_S\eta\pi^0)/\Gamma(K^0_S\pi^0)$ Γ_{110}/Γ_{48}

NODE=S032S03
NODE=S032S03

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
$0.46\pm0.07\pm0.06$	155 ± 22	[1] RUBIN 04	CLEO	$e^+e^- \approx$ 10 GeV

[1] The η here is detected in its $\gamma\gamma$ mode, but other η modes are included in the value given.

NODE=S032S03;LINKAGE=RU

$\Gamma(K^0_S a_0(980),\ a_0\to\eta\pi^0)/\Gamma(K^0_S\eta\pi^0)$ $\Gamma_{111}/\Gamma_{110}$

NODE=S032S04

This is the "fit fraction" from the Dalitz-plot analysis, with interference.

NODE=S032S04
NODE=S032S04

VALUE	DOCUMENT ID	TECN	COMMENT
$1.19\pm0.09\pm0.26$	[1] RUBIN 04	CLEO	Dalitz fit, 155 evts

[1] In addition to $K^0_S a_0(980)$ and $\overline{K}^*(892)^0\eta$ modes, RUBIN 04 finds a fit fraction of 0.246 $\pm$ 0.092 $\pm$ 0.091 for other, undetermined modes.

NODE=S032S04;LINKAGE=RU

$\Gamma(\overline{K}^*(892)^0\eta,\ \overline{K}^{*0}\to K^0_S\pi^0)/\Gamma(K^0_S\eta\pi^0)$ $\Gamma_{112}/\Gamma_{110}$

NODE=S032S05

This is the "fit fraction" from the Dalitz-plot analysis, with interference.

NODE=S032S05
NODE=S032S05

VALUE	DOCUMENT ID	TECN	COMMENT
$0.293\pm0.062\pm0.035$	[1] RUBIN 04	CLEO	Dalitz fit, 155 evts

[1] See the note on RUBIN 04 in the preceding data block.

NODE=S032S05;LINKAGE=RU

$\Gamma(K^-\pi^+\eta)/\Gamma_{\rm total}$ Γ_{113}/Γ

NODE=S032Q89
NODE=S032Q89

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
1.88 $\pm$0.05 OUR FIT Error includes scale factor of 1.4. [$(1.88\pm0.05)\times10^{-2}$ OUR 2025 FIT Scale factor = 1.4]				
$1.853\pm0.025\pm0.031$	6.1k	ABLIKIM 20V	BES3	e^+e^-, 3773 MeV

NEW

$\Gamma(K^-\pi^+\eta)/\Gamma(K^-\pi^+)$ Γ_{113}/Γ_{47}

NODE=S032Q97
NODE=S032Q97

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
47.7$\pm$1.3 OUR FIT Error includes scale factor of 1.4. [$(47.6\pm1.3)\times10^{-2}$ OUR 2025 FIT Scale factor = 1.4]				
$50.1\pm2.0\pm0.2$	116k	[1] CHEN 20A	BELL	e^+e^- at $\Upsilon(4S)$

NEW

[1] CHEN 20A reports 0.500 $\pm$ 0.002 $\pm$ 0.020 $\pm$ 0.003 from a measurement of [$\Gamma(D^0 \to K^-\pi^+\eta)/\Gamma(D^0 \to K^-\pi^+)$] $\times$ [B($\eta \to 2\gamma$)] assuming B($\eta \to 2\gamma$) = $(39.41 \pm 0.20)\times10^{-2}$, which we rescale to our best (shown rounded) value B($\eta \to 2\gamma$) = $(39.36\pm0.18)\times10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value. The third reported uncertainty is the uncertainty from B($\eta \to \gamma\gamma$).

NODE=S032Q97;LINKAGE=A

$\Gamma(K^*(892)^0\eta,\ K^{*0}\to K^-\pi^+)/\Gamma(K^-\pi^+\eta)$ $\Gamma_{114}/\Gamma_{113}$

NODE=S032D13
NODE=S032D13

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
$47.61\pm1.32^{+0.24}_{-0.49}{}^{+3.64}_{-2.71}$	[1] CHEN 20A	BELL	e^+e^- at $\Upsilon(4S)$

[1] The third uncertainty is due to the uncertainty from the Dalitz model.

NODE=S032D13;LINKAGE=A

$\Gamma(a_0(980)^+ K^-,\ a_0^+ \to \eta\pi^+)/\Gamma(K^-\pi^+\eta)$ — $\Gamma_{115}/\Gamma_{113}$

NODE=S032D14

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
$39.28\pm1.50{}^{+1.58}_{-0.51}{}^{+4.38}_{-3.30}$	[1] CHEN	20A	BELL	e^+e^- at $\Upsilon(4S)$

[1] The third uncertainty is due to the uncertainty from the Dalitz model.

NODE=S032D14;LINKAGE=A

$\Gamma(K_2^*(1980)^-\pi^+,\ K_2^{*-} \to K^-\eta)/\Gamma_{\rm total}$ — Γ_{116}/Γ

NODE=S032Q96

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
$2.2^{+1.7}_{-1.9}$	CHEN	20A	BELL	e^+e^- at $\Upsilon(4S)$

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

NODE=S032Q92

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
$4.49\pm0.22\pm0.15$	580	ABLIKIM	20V	BES3	e^+e^-, 3773 MeV

$\Gamma(K_S^0\pi^+\pi^-\eta)/\Gamma_{\rm total}$ — Γ_{118}/Γ

NODE=S032Q93

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
$2.80\pm0.19\pm0.10$	250	ABLIKIM	20V	BES3	e^+e^-, 3773 MeV

$\Gamma(K_S^0 2\pi^0\eta)/\Gamma_{\rm total}$ — Γ_{119}/Γ

NODE=S032Q94

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
$1.76\pm0.23\pm0.13$	65	ABLIKIM	20V	BES3	e^+e^-, 3773 MeV

$\Gamma(K_S^0 2\pi^+ 2\pi^-)/\Gamma(K_S^0\pi^+\pi^-)$ — Γ_{120}/Γ_{53}

NODE=S032R94

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
$0.095\pm0.005\pm0.007$	1283 ± 57	LINK	04D	FOCS	γ A, $\overline{E}_\gamma \approx 180$ GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$0.07\ \pm0.02\ \pm0.01$	11	[1] ALBRECHT	92P	ARG	$e^+e^- \approx$ 10 GeV
0.149 ± 0.026	56	AMMAR	91	CLEO	$e^+e^- \approx$ 10.5 GeV
$0.18\ \pm0.07\ \pm0.04$	6	ANJOS	90D	E691	Photoproduction

[1] This value is calculated from numbers in Table 1 of ALBRECHT 92P.

NODE=S032R94;LINKAGE=AP

$\Gamma(K_S^0\rho^0\pi^+\pi^-$, no $K^*(892)^-)/\Gamma(K_S^0 2\pi^+ 2\pi^-)$ — $\Gamma_{121}/\Gamma_{120}$

NODE=S032S89

VALUE	DOCUMENT ID		TECN	COMMENT
$0.40\pm0.24\pm0.07$	LINK	04D	FOCS	γ A, $\overline{E}_\gamma \approx 180$ GeV

$\Gamma(K^*(892)^- 2\pi^+\pi^-,\ K^*(892)^- \to K_S^0\pi^-$, no $\rho^0)/\Gamma(K_S^0 2\pi^+ 2\pi^-)$ — $\Gamma_{122}/\Gamma_{120}$

NODE=S032S90

VALUE	DOCUMENT ID		TECN	COMMENT
$0.17\pm0.28\pm0.02$	LINK	04D	FOCS	γ A, $\overline{E}_\gamma \approx 180$ GeV

$\Gamma(K^*(892)^-\rho^0\pi^+,\ K^*(892)^- \to K_S^0\pi^-)/\Gamma(K_S^0 2\pi^+ 2\pi^-)$ — $\Gamma_{123}/\Gamma_{120}$

NODE=S032S91

VALUE	DOCUMENT ID		TECN	COMMENT
$0.60\pm0.21\pm0.09$	LINK	04D	FOCS	γ A, $\overline{E}_\gamma \approx 180$ GeV

$\Gamma(K_S^0 2\pi^+ 2\pi^-$ nonresonant$)/\Gamma(K_S^0 2\pi^+ 2\pi^-)$ — $\Gamma_{124}/\Gamma_{120}$

NODE=S032S92

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.46	90	LINK	04D	FOCS	γ A, $\overline{E}_\gamma \approx 180$ GeV

$\Gamma(K^- 3\pi^+ 2\pi^-)/\Gamma_{\rm total}$ — Γ_{126}/Γ

NODE=S032D87

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
1.48 ± 0.32 OUR FIT	Error includes scale factor of 1.4.				
$1.35\pm0.23\pm0.08$	64	ABLIKIM	25BA	BES3	e^+e^- at 3.773 GeV

$\Gamma(K^- 3\pi^+ 2\pi^-)/\Gamma(K^- 2\pi^+\pi^-)$ — Γ_{126}/Γ_{87}

NODE=S032S1

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
$1.8\ \pm0.4$ OUR FIT	Error includes scale factor of 1.4.				
$2.70\pm0.58\pm0.38$	48 ± 10	LINK	04B	FOCS	γA, $\overline{E}_\gamma \approx$ 180 GeV

$\Gamma(K^- 2\pi^+\pi^- 2\pi^0)/\Gamma_{\rm total}$ — Γ_{127}/Γ

NODE=S032D88

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
$19.0\pm1.1\pm1.5$	0.44k	ABLIKIM	25BA	BES3	e^+e^- at 3.773 GeV

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

NODE=S032C03

Unseen decay modes of the η are included.

NODE=S032C03
NODE=S032C03

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
5.08±0.13 OUR FIT					
5.13±0.07±0.12	9.5k	ABLIKIM	18W	BES3	e^+e^-, 3773 MeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
4.42±0.15±0.28		ASNER	08	CLEO	See MENDEZ 10

$\Gamma(K^0_S\eta)/[\Gamma(K^-\pi^+)+\Gamma(K^+\pi^-)]$ — $\Gamma_{128}/(\Gamma_{47}+\Gamma_{344})$

NODE=S032S79

Unseen decay modes of the η are included.

NODE=S032S79
NODE=S032S79

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
12.86±0.33 OUR FIT					
[(12.84 ± 0.33) × 10^{-2} OUR 2025 FIT]					
12.3 ±0.3 ±0.7	2864 ± 65	MENDEZ	10	CLEO	e^+e^- at 3774 MeV

NEW

$\Gamma(K^0_S\eta)/\Gamma(K^0_S\pi^0)$ — Γ_{128}/Γ_{48}

NODE=S032B65

Unseen decay modes of the η are included.

NODE=S032B65
NODE=S032B65

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.32±0.04±0.03	225 ± 30	PROCARIO	93B	CLE2	$\eta \to \gamma\gamma$

$\Gamma(K^0_S\eta)/\Gamma(K^0_S\pi^+\pi^-)$ — Γ_{128}/Γ_{53}

NODE=S032B66

Unseen decay modes of the η are included.

NODE=S032B66
NODE=S032B66

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.14±0.02±0.02	80 ± 12	PROCARIO	93B	CLE2	$\eta \to \pi^+\pi^-\pi^0$

$\Gamma(K^0_S\omega)/\Gamma_{total}$ — Γ_{129}/Γ

NODE=S032C02

Unseen decay modes of the ω are included.

NODE=S032C02
NODE=S032C02

VALUE (%)	DOCUMENT ID		TECN	COMMENT
1.11±0.06 OUR FIT				
1.12±0.04±0.05	ASNER	08	CLEO	$e^+e^- \to D^0\overline{D}^0$, 3.77 GeV

$\Gamma(K^0_S\omega)/\Gamma(K^-\pi^+)$ — Γ_{129}/Γ_{47}

NODE=S032R67

Unseen decay modes of the ω are included.

NODE=S032R67
NODE=S032R67

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.50±0.18±0.10	ALBRECHT	89D	ARG	e^+e^- 10 GeV

$\Gamma(K^0_S\omega)/\Gamma(K^0_S\pi^+\pi^-)$ — Γ_{129}/Γ_{53}

NODE=S032B15

Unseen decay modes of the ω are included.

NODE=S032B15
NODE=S032B15

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.391±0.028 OUR FIT					
[0.388 ± 0.028 OUR 2025 FIT]					
0.33 ±0.09 OUR AVERAGE Error includes scale factor of 1.1.					
0.29 ±0.08 ±0.05	16	[1] ALBRECHT	92P	ARG	$e^+e^- \approx$ 10 GeV
0.54 ±0.14 ±0.16	40	KINOSHITA	91	CLEO	$e^+e^- \sim$ 10.7 GeV

NEW

[1] This value is calculated from numbers in Table 1 of ALBRECHT 92P.

NODE=S032B15;LINKAGE=AP

$\Gamma(K^0_S\omega)/\Gamma(K^0_S\pi^+\pi^-\pi^0)$ — Γ_{129}/Γ_{98}

NODE=S032B49

Unseen decay modes of the ω are included.

NODE=S032B49
NODE=S032B49

VALUE	DOCUMENT ID		TECN	COMMENT
0.213±0.025 OUR FIT				
[0.212 ± 0.025 OUR 2025 FIT]				
0.220±0.048±0.0116	COFFMAN	92B	MRK3	1281 ± 45 $K^-2\pi^+\pi^-$ evts

NEW

$\Gamma(K^0_S\eta'(958))/\Gamma_{total}$ — Γ_{130}/Γ

NODE=S032P98
NODE=S032P98

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
9.49±0.32 OUR FIT					
[(9.51 ± 0.32) × 10^{-3} OUR 2025 FIT]					
9.49±0.20±0.36	3k	ABLIKIM	18W	BES3	e^+e^-, 3773 MeV

NEW

$\Gamma(K^0_S\eta'(958))/[\Gamma(K^-\pi^+)+\Gamma(K^+\pi^-)]$ $\Gamma_{130}/(\Gamma_{47}+\Gamma_{344})$

NODE=S032B01

Unseen decay modes of the $\eta'(958)$ are included.

NODE=S032B01
NODE=S032B01

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
24.0±0.8 OUR FIT					
24.3±0.8±1.1	1321 ± 42	MENDEZ	10	CLEO	e^+e^- at 3774 MeV

$\Gamma(K^0_S\eta'(958))/\Gamma(K^0_S\pi^+\pi^-)$ Γ_{130}/Γ_{53}

NODE=S032B67

Unseen decay modes of the $\eta'(958)$ are included.

NODE=S032B67
NODE=S032B67
NEW

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.334±0.020 OUR FIT					
[0.332 ± 0.019 OUR 2025 FIT]					
0.32 ±0.04 OUR AVERAGE					
0.31 ±0.02 ±0.04	594	PROCARIO	93B	CLE2	$\eta' \to \eta\pi^+\pi^-$, $\rho^0\gamma$
0.37 ±0.13 ±0.06	18	[1] ALBRECHT	92P	ARG	$e^+e^- \approx$ 10 GeV

[1] This value is calculated from numbers in Table 1 of ALBRECHT 92P.

NODE=S032B67;LINKAGE=AP

$\Gamma(\overline{K}^*(892)^0\pi^+\pi^-\pi^0)/\Gamma(K^-2\pi^+\pi^-\pi^0)$ $\Gamma_{131}/\Gamma_{104}$

NODE=S032R96

Unseen decay modes of the $\overline{K}^*(892)^0$ are included.

NODE=S032R96
NODE=S032R96

VALUE	DOCUMENT ID		TECN	COMMENT
0.45±0.15±0.15	ANJOS	90D	E691	Photoproduction

$\Gamma(\overline{K}^*(892)^0\eta)/\Gamma_{total}$ Γ_{132}/Γ

NODE=S032Q98
NODE=S032Q98

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
$1.41^{+0.13}_{-0.12}\pm0.01$	[1] CHEN	20A	BELL	e^+e^- at $\Upsilon(4S)$

[1] CHEN 20A reports $(1.41 \pm 0.04^{+0.12}_{-0.11} \pm 0.01) \times 10^{-2}$ from a measurement of $[\Gamma(D^0 \to \overline{K}^*(892)^0\eta)/\Gamma_{total}] \times [B(\eta \to 2\gamma)]$ assuming $B(\eta \to 2\gamma) = (39.41 \pm 0.20) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\eta \to 2\gamma) = (39.36 \pm 0.18) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value. The third reported uncertainty is the uncertainty from $B(\eta \to \gamma\gamma)$.

NODE=S032Q98;LINKAGE=A

$\Gamma(\overline{K}^*(892)^0\eta)/\Gamma(K^-\pi^+)$ Γ_{132}/Γ_{47}

NODE=S032R69

Unseen decay modes of the $\overline{K}^*(892)^0$ and η are included.

NODE=S032R69
NODE=S032R69

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$0.58\pm0.19^{+0.24}_{-0.28}$	46	KINOSHITA	91	CLEO	$e^+e^- \sim$ 10.7 GeV

$\Gamma(\overline{K}^*(892)^0\eta)/\Gamma(K^-\pi^+\pi^0)$ Γ_{132}/Γ_{68}

NODE=S032B71

Unseen decay modes of the $\overline{K}^*(892)^0$ and η are included.

NODE=S032B71
NODE=S032B71

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.13±0.02±0.03	214	PROCARIO	93B	CLE2	$\overline{K}^{*0}\eta \to K^-\pi^+/\gamma\gamma$

$\Gamma(K^-\pi^+\eta'(958))/\Gamma_{total}$ Γ_{133}/Γ

NODE=S032Q29
NODE=S032Q29

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
6.43±0.15±0.31	2.5k	ABLIKIM	18AC	BES3	e^+e^-, 3773 MeV

$\Gamma(K^-\pi^+\eta'(958))/\Gamma(K^-2\pi^+\pi^-)$ Γ_{133}/Γ_{87}

NODE=S032B72

Unseen decay modes of the $\eta'(958)$ are included.

NODE=S032B72
NODE=S032B72

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.093±0.014±0.019	286	PROCARIO	93B	CLE2	$\eta' \to \eta\pi^+\pi^-$, $\rho^0\gamma$

$\Gamma(K^0_S\eta'(958)\pi^0)/\Gamma_{total}$ Γ_{134}/Γ

NODE=S032Q31
NODE=S032Q31

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
2.52±0.22±0.15	289	ABLIKIM	18AC	BES3	e^+e^-, 3773 MeV

$\Gamma(\overline{K}^*(892)^0\eta'(958))/\Gamma(K^-\pi^+\eta'(958))$ $\Gamma_{135}/\Gamma_{133}$

NODE=S032B73

Unseen decay modes of the $\overline{K}^*(892)^0$ are included.

NODE=S032B73
NODE=S032B73

VALUE	CL%	DOCUMENT ID		TECN
<0.15	90	PROCARIO	93B	CLE2

Hadronic modes with three K's

NODE=S032322

$\Gamma(K^0_S K^+ K^-)/\Gamma(K^0_S \pi^+ \pi^-)$ — Γ_{136}/Γ_{53}

NODE=S032R35
NODE=S032R35

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.158±0.001±0.005	14k±116	AUBERT,B	05J	BABR	$e^+ e^- \approx \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.20 ±0.05 ±0.04	47	FRABETTI	92B	E687	γ Be, $\overline{E}_\gamma$= 221 GeV
0.170±0.022	136	AMMAR	91	CLEO	$e^+ e^- \approx$ 10.5 GeV
0.24 ±0.08		BEBEK	86	CLEO	$e^+ e^-$ near $\Upsilon(4S)$
0.185±0.055	52	ALBRECHT	85B	ARG	$e^+ e^-$ 10 GeV

$\Gamma(K^0_S a_0(980)^0,\ a^0_0 \to K^+ K^-)/\Gamma(K^0_S K^+ K^-)$ — $\Gamma_{137}/\Gamma_{136}$

NODE=S032C40

This is the "fit fraction" from the Dalitz-plot analysis, with interference.

NODE=S032C40
NODE=S032C40

VALUE	DOCUMENT ID		TECN	COMMENT
0.664±0.016±0.070	AUBERT,B	05J	BABR	Dalitz fit, 12540 ± 112 evts

$\Gamma(K^- a_0(980)^+,\ a^+_0 \to K^+ K^0_S)/\Gamma(K^0_S K^+ K^-)$ — $\Gamma_{138}/\Gamma_{136}$

NODE=S032C41

This is the "fit fraction" from the Dalitz-plot analysis, with interference.

NODE=S032C41
NODE=S032C41

VALUE	DOCUMENT ID		TECN	COMMENT
0.134±0.011±0.037	AUBERT,B	05J	BABR	Dalitz fit, 12540 ± 112 evts

$\Gamma(K^+ a_0(980)^-,\ a^-_0 \to K^- K^0_S)/\Gamma(K^0_S K^+ K^-)$ — $\Gamma_{139}/\Gamma_{136}$

NODE=S032C42

This is a doubly Cabibbo-suppressed mode.

NODE=S032C42
NODE=S032C42

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.025	95	AUBERT,B	05J	BABR	Dalitz fit, 12540 ± 112 evts

$\Gamma(K^0_S f_0(980),\ f_0 \to K^+ K^-)/\Gamma(K^0_S K^+ K^-)$ — $\Gamma_{140}/\Gamma_{136}$

NODE=S032C43
NODE=S032C43

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.021	95	AUBERT,B	05J	BABR	Dalitz fit, 12540 ± 112 evts

$\Gamma(K^0_S \phi,\ \phi \to K^+ K^-)/\Gamma(K^0_S K^+ K^-)$ — $\Gamma_{141}/\Gamma_{136}$

NODE=S032C44

This is the "fit fraction" from the Dalitz-plot analysis, with interference.

NODE=S032C44
NODE=S032C44

VALUE	DOCUMENT ID		TECN	COMMENT
0.459±0.007±0.007	AUBERT,B	05J	BABR	Dalitz fit, 12540 ± 112 evts

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

NODE=S032D32
NODE=S032D32

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
4.06±0.23 OUR AVERAGE [(4.07 ± 0.23) × 10^{-3} OUR 2025 AVERAGE]					
4.06±0.22±0.04	904	[1] ABLIKIM	22W	BES3	$e^+ e^-$ at 3.773 GeV

NEW

[1] ABLIKIM 22W reports $(0.414 \pm 0.021 \pm 0.010) \times 10^{-2}$ from a measurement of $[\Gamma(D^0 \to K^0_L \phi)/\Gamma_{total}] \times [B(\phi(1020) \to K^+ K^-)]$ assuming $B(\phi(1020) \to K^+ K^-) = 0.491 \pm 0.005$, which we rescale to our best (shown rounded) value $B(\phi(1020) \to K^+ K^-) = (50.1 \pm 0.6) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

NODE=S032D32;LINKAGE=A

$\Gamma(K^0_S f_0(1370),\ f_0 \to K^+ K^-)/\Gamma(K^0_S K^+ K^-)$ — $\Gamma_{143}/\Gamma_{136}$

NODE=S032C45

This is the "fit fraction" from the Dalitz-plot analysis, with interference.

NODE=S032C45
NODE=S032C45

VALUE	DOCUMENT ID		TECN	COMMENT
0.038±0.007±0.023	[1] AUBERT,B	05J	BABR	Dalitz fit, 12540 ± 112 evts

[1] AUBERT,B 05J calls the mode $K^0_S f_0(1400)$, but insofar as it is seen here at all, it is certainly the same as $f_0(1370)$.

NODE=S032C45;LINKAGE=AU

$\Gamma(3K^0_S)/\Gamma_{total}$ — Γ_{144}/Γ

NODE=S032P23
NODE=S032P23

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
7.6 ±0.7 OUR FIT Error includes scale factor of 1.4. [(7.6 ± 0.7) × 10^{-4} OUR 2025 FIT Scale factor = 1.4]					
7.21±0.33±0.44	597	ABLIKIM	17A	BES3	$e^+ e^- \to \psi(3770)$

NEW

$\Gamma(3K^0_S)/\Gamma(K^0_S\pi^+\pi^-)$ — Γ_{144}/Γ_{53}

NODE=S032B26

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
2.66±0.25 OUR FIT Error includes scale factor of 1.2. [$(2.65 \pm 0.26) \times 10^{-2}$ OUR 2025 FIT Scale factor = 1.2]					
3.2 ±0.4 OUR AVERAGE					
3.58±0.54±0.52	170 ± 26	LINK	05A	FOCS	γBe, $\overline{E}_\gamma \approx$ 180 GeV
2.78±0.38±0.48	61	ASNER	96B	CLE2	$e^+e^- \approx \Upsilon(4S)$
7.0 ±2.4 ±1.2	10 ± 3	FRABETTI	94J	E687	γBe, $\overline{E}_\gamma$=220 GeV
3.2 ±1.0	22	AMMAR	91	CLEO	$e^+e^- \approx$ 10.5 GeV
3.4 ±1.4 ±1.0	5	ALBRECHT	90C	ARG	$e^+e^- \approx$ 10 GeV

NEW

$\Gamma(K^+2K^-\pi^+)/\Gamma(K^-2\pi^+\pi^-)$ — Γ_{145}/Γ_{87}

NODE=S032B98

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.0027 ±0.0004 OUR AVERAGE Error includes scale factor of 1.1.					
0.00257±0.00034±0.00024	143	LINK	03G	FOCS	γ A, $\overline{E}_\gamma \approx$ 180 GeV
0.0054 ±0.0016 ±0.0008	18	AITALA	01D	E791	π^- A, 500 GeV
0.0028 ±0.0007 ±0.0001	20	FRABETTI	95C	E687	γ Be, $\overline{E}_\gamma \approx$ 200 GeV

$\Gamma(K^+K^-\overline{K}^*(892)^0,\ \overline{K}^{*0} \to K^-\pi^+)/\Gamma(K^+2K^-\pi^+)$ — $\Gamma_{146}/\Gamma_{145}$

NODE=S032S86

VALUE	DOCUMENT ID		TECN	COMMENT
0.20±0.07±0.02	LINK	03G	FOCS	γ A, $\overline{E}_\gamma \approx$ 180 GeV

$\Gamma(K^-\pi^+\phi,\ \phi \to K^+K^-)/\Gamma(K^+2K^-\pi^+)$ — $\Gamma_{147}/\Gamma_{145}$

NODE=S032C23

VALUE	DOCUMENT ID		TECN	COMMENT
0.18±0.06±0.04	LINK	03G	FOCS	γ A, $\overline{E}_\gamma \approx$ 180 GeV

$\Gamma(\phi\overline{K}^*(892)^0,\ \phi \to K^+K^-,\ \overline{K}^{*0} \to K^-\pi^+)/\Gamma(K^+2K^-\pi^+)$ — $\Gamma_{148}/\Gamma_{145}$

NODE=S032S85

VALUE	DOCUMENT ID		TECN	COMMENT
0.48±0.06±0.01	LINK	03G	FOCS	γ A, $\overline{E}_\gamma \approx$ 180 GeV

$\Gamma(K^+2K^-\pi^+ \text{ nonresonant})/\Gamma(K^+2K^-\pi^+)$ — $\Gamma_{149}/\Gamma_{145}$

NODE=S032S87

VALUE	DOCUMENT ID		TECN	COMMENT
0.15±0.06±0.02	LINK	03G	FOCS	γ A, $\overline{E}_\gamma \approx$ 180 GeV

$\Gamma(2K^0_S K^\pm\pi^\mp)/\Gamma(K^0_S\pi^+\pi^-)$ — Γ_{150}/Γ_{53}

NODE=S032S97

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
2.12±0.38±0.20	57 ± 10	LINK	05A	FOCS	γ Be, $\overline{E}_\gamma \approx$ 180 GeV

Pionic modes

NODE=S032325

$\Gamma(\pi^+\pi^-)/\Gamma_{\text{total}}$ — Γ_{151}/Γ

NODE=S032P99

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
1.451±0.024 OUR FIT Error includes scale factor of 1.4. [$(1.453 \pm 0.024) \times 10^{-3}$ OUR 2025 FIT Scale factor = 1.4]					
1.508±0.018±0.022	21k	ABLIKIM	18W	BES3	e^+e^-, 3773 MeV

NEW

$\Gamma(\pi^+\pi^-)/\Gamma(K^-\pi^+)$ — Γ_{151}/Γ_{47}

NODE=S032R26

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
3.69 ±0.06 OUR FIT Error includes scale factor of 1.3. [$(3.68 \pm 0.06) \times 10^{-2}$ OUR 2025 FIT Scale factor = 1.3]					
3.59 ±0.06 OUR AVERAGE					
3.594±0.054±0.040	7334 ± 97	ACOSTA	05C	CDF	$p\overline{p}$, $\sqrt{s}$ = 1.96 TeV
3.53 ±0.12 ±0.06	3453	LINK	03	FOCS	γ A, $\overline{E}_\gamma \approx$ 180 GeV
3.51 ±0.16 ±0.17	710	CSORNA	02	CLE2	$e^+e^- \approx \Upsilon(4S)$
4.0 ±0.2 ±0.3	2043	AITALA	98C	E791	π^- A, 500 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
3.62 ±0.10 ±0.08	2085 ± 54	RUBIN	06	CLEO	See MENDEZ 10
3.4 ±0.7 ±0.1	76 ± 15	ABLIKIM	05F	BES	$e^+e^- \approx \psi(3770)$
4.3 ±0.7 ±0.3	177	FRABETTI	94C	E687	γBe $\overline{E}_\gamma$= 220 GeV
3.48 ±0.30 ±0.23	227	SELEN	93	CLE2	$e^+e^- \approx \Upsilon(4S)$
5.5 ±0.8 ±0.5	120	ANJOS	91D	E691	Photoproduction
5.0 ±0.7 ±0.5	110	ALEXANDER	90	CLEO	e^+e^- 10.5–11 GeV

NEW

$\Gamma(\pi^+\pi^-)/[\Gamma(K^-\pi^+)+\Gamma(K^+\pi^-)]$ $\Gamma_{151}/(\Gamma_{47}+\Gamma_{344})$

NODE=S032B02

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
3.67±0.06 OUR FIT Error includes scale factor of 1.3. [(3.67 ± 0.06) × 10^{-2} OUR 2025 FIT Scale factor = 1.3]					
3.70±0.06±0.09	6210 ± 93	MENDEZ	10	CLEO	e^+e^- at 3774 MeV

NEW

$\Gamma(2\pi^0)/\Gamma_{total}$ Γ_{152}/Γ

NODE=S032Q15

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
8.25±0.25 OUR FIT [(8.26 ± 0.25) × 10^{-4} OUR 2025 FIT]					
8.29±0.30 OUR AVERAGE					
8.24±0.21±0.30	6k	ABLIKIM	15F	BES3	e^+e^- at 3.773GeV
8.4 ±0.1 ±0.5	26k	LEES	12L	BABR	$e^+e^-\approx$ 10.58 GeV

NEW

$\Gamma(2\pi^0)/\Gamma(K^-\pi^+)$ Γ_{152}/Γ_{47}

NODE=S032B83

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2.05±0.13±0.16	499 ± 32	RUBIN	06	CLEO	See MENDEZ 10
2.2 ±0.4 ±0.4	40	SELEN	93	CLE2	$e^+e^-\to\Upsilon(4S)$

$\Gamma(2\pi^0)/[\Gamma(K^-\pi^+)+\Gamma(K^+\pi^-)]$ $\Gamma_{152}/(\Gamma_{47}+\Gamma_{344})$

NODE=S032B03

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
2.09±0.07 OUR FIT [(2.08 ± 0.07) × 10^{-2} OUR 2025 FIT]					
2.06±0.07±0.10	1567 ± 54	MENDEZ	10	CLEO	e^+e^- at 3774 MeV

NEW

$\Gamma(\pi^+\pi^-\pi^0)/\Gamma(K^-\pi^+)$ Γ_{153}/Γ_{47}

NODE=S032C29

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
37.7±1.6 OUR FIT Error includes scale factor of 2.2. [(37.7 ± 1.7) × 10^{-2} OUR 2025 FIT Scale factor = 2.4]					
34.4±0.5±1.2	11k±164	RUBIN	06	CLEO	e^+e^- at $\psi(3770)$

NEW

$\Gamma(\pi^+\pi^-\pi^0)/\Gamma(K^-\pi^+\pi^0)$ Γ_{153}/Γ_{68}

NODE=S032C52

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
10.32±0.25 OUR FIT Error includes scale factor of 2.3.					
10.41±0.23 OUR AVERAGE Error includes scale factor of 2.0.					
10.12±0.04±0.18	123k±490	ARINSTEIN	08	BELL	$e^+e^-\approx\Upsilon(4S)$
10.59±0.06±0.13	60k±343	AUBERT,B	06X	BABR	$e^+e^-\approx\Upsilon(4S)$

$\Gamma(\pi^+\pi^-\pi^0)/\Gamma_{total}$ Γ_{153}/Γ

NODE=S032D39

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
134.3±1.3±1.6	12.8k	ABLIKIM	22BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(\rho^+\pi^-)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{154}/\Gamma_{153}$

NODE=S032C46

This is the "fit fraction" from the Dalitz-plot analysis, with interference. See GASPERO 08 and BHATTACHARYA 10A for isospin decompositions of the $D^0\to\pi^+\pi^0\pi^-$ Dalitz plot, both based on the amplitudes of AUBERT 07BJ. They quantify the conclusion that the final state is dominantly isospin 0.

NODE=S032C46

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
68.1±0.6 OUR AVERAGE				
67.8±0.0±0.6	AUBERT	07BJ	BABR	Dalitz fit, 45k events
76.3±1.9±2.5	CRONIN-HEN...	05	CLEO	$e^+e^-\approx$ 10 GeV

NODE=S032C46

$\Gamma(\rho^0\pi^0)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{155}/\Gamma_{153}$

NODE=S032C47

This is the "fit fraction" from the Dalitz-plot analysis, with interference.

NODE=S032C47

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
25.9±1.1 OUR AVERAGE				
26.2±0.5±1.1	AUBERT	07BJ	BABR	Dalitz fit, 45k events
24.4±2.0±2.1	CRONIN-HEN...	05	CLEO	$e^+e^-\approx$ 10 GeV

NODE=S032C47

$\Gamma(\rho^-\pi^+)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{156}/\Gamma_{153}$

NODE=S032C48

This is the "fit fraction" from the Dalitz-plot analysis, with interference.

NODE=S032C48

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
34.6±0.8 OUR AVERAGE				
34.6±0.8±0.3	AUBERT	07BJ	BABR	Dalitz fit, 45k events
34.5±2.4±1.3	CRONIN-HEN...	05	CLEO	$e^+e^-\approx$ 10 GeV

NODE=S032C48

$\Gamma(\rho(1450)^+\pi^-,\ \rho^+\to\pi^+\pi^0)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{157}/\Gamma_{153}$

NODE=S032S02

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032S02
NODE=S032S02

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
0.11±0.07±0.12	AUBERT	07BJ	BABR	Dalitz fit, 45k events

$\Gamma(\rho(1450)^0\pi^0,\ \rho^0\to\pi^+\pi^-)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{158}/\Gamma_{153}$

NODE=S032S10

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032S10
NODE=S032S10

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
0.30±0.11±0.07	AUBERT	07BJ	BABR	Dalitz fit, 45k events

$\Gamma(\rho(1450)^-\pi^+,\ \rho^-\to\pi^-\pi^0)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{159}/\Gamma_{153}$

NODE=S032S29

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032S29
NODE=S032S29

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
1.79±0.22±0.12	AUBERT	07BJ	BABR	Dalitz fit, 45k events

$\Gamma(\rho(1700)^+\pi^-,\ \rho^+\to\pi^+\pi^0)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{160}/\Gamma_{153}$

NODE=S032S30

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032S30
NODE=S032S30

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
4.1±0.7±0.7	AUBERT	07BJ	BABR	Dalitz fit, 45k events

$\Gamma(\rho(1700)^0\pi^0,\ \rho^0\to\pi^+\pi^-)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{161}/\Gamma_{153}$

NODE=S032S32

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032S32
NODE=S032S32

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
5.0±0.6±1.0	AUBERT	07BJ	BABR	Dalitz fit, 45k events

$\Gamma(\rho(1700)^-\pi^+,\ \rho^-\to\pi^-\pi^0)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{162}/\Gamma_{153}$

NODE=S032S66

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032S66
NODE=S032S66

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
3.2±0.4±0.6	AUBERT	07BJ	BABR	Dalitz fit, 45k events

$\Gamma(f_0(980)\pi^0,\ f_0\to\pi^+\pi^-)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{163}/\Gamma_{153}$

NODE=S032C50

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032C50
NODE=S032C50

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
0.25±0.04±0.04	AUBERT	07BJ	BABR	Dalitz fit, 45k events

$\Gamma(f_0(500)\pi^0,\ f_0\to\pi^+\pi^-)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{164}/\Gamma_{153}$

NODE=S032C49

The $f_0(500)$ is the σ. This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032C49
NODE=S032C49

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
0.82±0.10±0.10	AUBERT	07BJ	BABR	Dalitz fit, 45k events

$\Gamma(f_0(1370)\pi^0,\ f_0\to\pi^+\pi^-)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{165}/\Gamma_{153}$

NODE=S032S67

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032S67
NODE=S032S67

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
0.37±0.11±0.09	AUBERT	07BJ	BABR	Dalitz fit, 45k events

$\Gamma(f_0(1500)\pi^0,\ f_0\to\pi^+\pi^-)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{166}/\Gamma_{153}$

NODE=S032S68

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032S68
NODE=S032S68

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
0.39±0.08±0.07	AUBERT	07BJ	BABR	Dalitz fit, 45k events

$\Gamma(f_0(1710)\pi^0,\ f_0\to\pi^+\pi^-)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{167}/\Gamma_{153}$

NODE=S032S69

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032S69
NODE=S032S69

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
0.31±0.07±0.08	AUBERT	07BJ	BABR	Dalitz fit, 45k events

$\Gamma(f_2(1270)\pi^0,\ f_2\to\pi^+\pi^-)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{168}/\Gamma_{153}$

NODE=S032S70

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032S70
NODE=S032S70

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
1.32±0.08±0.10	AUBERT	07BJ	BABR	Dalitz fit, 45k events

$\Gamma(\pi^+\pi^-\pi^0\,\text{nonresonant})/\Gamma(\pi^+\pi^-\pi^0)$ — $\Gamma_{169}/\Gamma_{153}$

NODE=S032S75

This is the "fit fraction" from the Dalitz-plot analysis.

NODE=S032S75
NODE=S032S75

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
0.84±0.21±0.12	AUBERT	07BJ	BABR	Dalitz fit, 45k events

$\Gamma(3\pi^0)/\Gamma_{total}$ — Γ_{170}/Γ

NODE=S032C32
NODE=S032C32

VALUE (units 10^{-4})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
2.0±0.4±0.3		60	[1] ABLIKIM	18X	BES3	e^+e^-, 3773 MeV
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<3.5	90		RUBIN	06	CLEO	e^+e^- at $\psi(3770)$

[1] Significance of signal reported by ABLIKIM 18X is 4.8σ.

NODE=S032C32;LINKAGE=A

$\Gamma(2\pi^+2\pi^-)/\Gamma_{total}$ — Γ_{171}/Γ

NODE=S032E32
NODE=S032E32

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
0.715±0.025 OUR FIT	Error includes scale factor of 2.2.				
0.688±0.010±0.010	5.8k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(2\pi^+2\pi^-)/\Gamma(K^-\pi^+)$ — Γ_{171}/Γ_{47}

NODE=S032C30
NODE=S032C30

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
18.2±0.6 OUR FIT	Error includes scale factor of 2.1. [(19.1 ± 0.5) × 10^{-2} OUR 2025 FIT]				
19.1±0.4±0.6	7331 ± 130	RUBIN	06	CLEO	e^+e^- at $\psi(3770)$

NEW

$\Gamma(2\pi^+2\pi^-)/\Gamma(K^-2\pi^+\pi^-)$ — Γ_{171}/Γ_{87}

NODE=S032R37
NODE=S032R37

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
8.72±0.30 OUR FIT	Error includes scale factor of 1.9. [(9.19 ± 0.22) × 10^{-2} OUR 2025 FIT]				
9.20±0.26 OUR AVERAGE					
9.14±0.18±0.22	6360±115	LINK	07A	FOCS	γBe, $\overline{E}_\gamma \approx$ 180 GeV
7.9 ±1.8 ±0.5	162	ABLIKIM	05F	BES	$e^+e^- \approx \psi(3770)$
9.5 ±0.7 ±0.2	814	FRABETTI	95C	E687	γBe, $\overline{E}_\gamma \approx$ 200 GeV
10.2 ±1.3	345	AMMAR	91	CLEO	$e^+e^- \approx$ 10.5 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
11.5 ±2.3 ±1.6	64	ADAMOVICH	92	OMEG	π^- 340 GeV
10.8 ±2.4 ±0.8	79	FRABETTI	92	E687	γBe
9.6 ±1.8 ±0.7	66	ANJOS	91	E691	γBe 80–240 GeV

NEW

$\Gamma(a_1(1260)^+\pi^-,\ a_1^+\to 2\pi^+\pi^-\,\text{total})/\Gamma(2\pi^+2\pi^-)$ — $\Gamma_{172}/\Gamma_{171}$

NODE=S032C53

This is the fit fraction from the coherent amplitude analysis.

NODE=S032C53
NODE=S032C53

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
61 ±4 OUR AVERAGE [(60 ± 4) × 10^{-2} OUR 2025 AVERAGE]					
82.2±3.3±16.0	5.8k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV
60.0±3.0± 2.4	5.7k	LINK	07A	FOCS	$D^0 \to 4\pi$

NEW

$\Gamma(a_1(1260)^+\pi^-,\ a_1^+\to \rho^0\pi^+\,S\text{-wave})/\Gamma(2\pi^+2\pi^-)$ — $\Gamma_{173}/\Gamma_{171}$

NODE=S032C54

This is the fit fraction from the coherent amplitude analysis.

NODE=S032C54
NODE=S032C54

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
41.5±2.5 OUR AVERAGE				
38.1±2.3±3.6	[1,2] DARGENT	17		4-body fit, 7.3k 4π evts
43.3±2.5±1.9	[2] LINK	07A	FOCS	4-body fit, ≈ 5.7k evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.
[2] See also ABLIKIM 24BG.

NODE=S032C54;LINKAGE=A
NODE=S032C54;LINKAGE=B

$\Gamma(a_1(1260)^+\pi^-,\ a_1^+\to \rho^0\pi^+\,D\text{-wave})/\Gamma(2\pi^+2\pi^-)$ — $\Gamma_{174}/\Gamma_{171}$

NODE=S032C55

This is the fit fraction from the coherent amplitude analysis.

NODE=S032C55
NODE=S032C55

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
2.5±0.5±0.4	[1,2] LINK	07A	FOCS	4-body fit, ≈ 5.7k evts

[1] DARGENT 17 using 7.3k events find this contribution negligible.
[2] See also ABLIKIM 24BG.

NODE=S032C55;LINKAGE=A
NODE=S032C55;LINKAGE=B

$\Gamma(a_1(1260)^+\pi^-,\ a_1^+ \to \sigma\pi^+)/\Gamma(2\pi^+2\pi^-)$ $\Gamma_{175}/\Gamma_{171}$ NODE=S032C56

This is the fit fraction from the coherent amplitude analysis. NODE=S032C56

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
8.4±0.9 OUR AVERAGE				
10.2±1.4±3.3	[1,2] DARGENT	17		7.3k 4-body fit, 4π evts
8.3±0.7±0.6	[2] LINK	07A	FOCS	4-body fit, ≈ 5.7k evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration. NODE=S032C56;LINKAGE=A
[2] See also ABLIKIM 24BG. NODE=S032C56;LINKAGE=B

$\Gamma(a_1(1260)^-\pi^+,\ a_1^- \to 2\pi^-\pi^+\,\text{total})/\Gamma(2\pi^+2\pi^-)$ $\Gamma_{176}/\Gamma_{171}$ NODE=S032D93

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
10.3±1.5±2.5	5.8k	[1] ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

[1] See also DARGENT 17. NODE=S032D93;LINKAGE=A

$\Gamma(a_1(1260)^-\pi^+,\ a_1^- \to \rho^0\pi^-\ S\text{-wave})/\Gamma(2\pi^+2\pi^-)$ $\Gamma_{177}/\Gamma_{171}$ NODE=S032P36

This is the fit fraction from a coherent amplitude analysis. NODE=S032P36

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		COMMENT
3.1±0.6±1.0	7.3k	[1,2] DARGENT	17	4-body fit, 4π evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration. NODE=S032P36;LINKAGE=A
[2] See also ABLIKIM 24BG. NODE=S032P36;LINKAGE=B

$\Gamma(a_1(1260)^-\pi^+,\ a_1^- \to \sigma\pi^-)/\Gamma(2\pi^+2\pi^-)$ $\Gamma_{178}/\Gamma_{171}$ NODE=S032P38

This is the fit fraction from a coherent amplitude analysis. NODE=S032P38

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		COMMENT
0.8±0.2±0.4	7.3k	[1,2] DARGENT	17	4-body fit, 4π evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration. NODE=S032P38;LINKAGE=A
[2] See also ABLIKIM 24BG. NODE=S032P38;LINKAGE=B

$\Gamma(\pi(1300)^+\pi^-,\ \pi(1300)^+ \to 2\pi^+\pi^-\,\text{total})/\Gamma(2\pi^+2\pi^-)$ $\Gamma_{179}/\Gamma_{171}$ NODE=S032D99

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
32.3±2.6±4.5	5.8k	[1] ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

[1] See also DARGENT 17. NODE=S032D99;LINKAGE=A

$\Gamma(\pi(1300)^+\pi^-,\ \pi(1300)^+ \to \sigma\pi^+)/\Gamma(2\pi^+2\pi^-)$ $\Gamma_{180}/\Gamma_{171}$ NODE=S032P39

This is the fit fraction from a coherent amplitude analysis. NODE=S032P39

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		COMMENT
6.8±0.9±3.4	7.3k	[1,2] DARGENT	17	4-body fit, 4π evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration. NODE=S032P39;LINKAGE=A
[2] See also ABLIKIM 24BG. NODE=S032P39;LINKAGE=B

$\Gamma(\pi(1300)^-\pi^+,\ \pi(1300)^- \to 2\pi^-\pi^+\,\text{total})/\Gamma(2\pi^+2\pi^-)$ $\Gamma_{181}/\Gamma_{171}$ NODE=S032E00

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
23.5±2.3±3.9	5.8k	[1] ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

[1] See also DARGENT 17. NODE=S032E00;LINKAGE=A

$\Gamma(\pi(1300)^-\pi^+,\ \pi(1300)^- \to \sigma\pi^-)/\Gamma(2\pi^+2\pi^-)$ $\Gamma_{182}/\Gamma_{171}$ NODE=S032P41

This is the fit fraction from a coherent amplitude analysis. NODE=S032P41

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		COMMENT
3.0±0.6±2.8	7.3k	[1,2] DARGENT	17	4-body fit, 4π evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration. NODE=S032P41;LINKAGE=A
[2] See also ABLIKIM 24BG. NODE=S032P41;LINKAGE=B

$\Gamma(a_2(1320)^+\pi^-,\ a_2^+ \to \rho^0\pi^+\ D\text{-wave})/\Gamma(2\pi^+2\pi^-)$ $\Gamma_{183}/\Gamma_{171}$ NODE=S032D97

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
0.2±0.1±0.1	5.8k	[1] ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

[1] Evidence with 4.6 σ significance. NODE=S032D97;LINKAGE=A

$\Gamma(a_2(1320)^-\pi^+,\ a_2^- \to \rho^0\pi^-\ D\text{-wave})/\Gamma(2\pi^+2\pi^-)$ $\Gamma_{184}/\Gamma_{171}$ NODE=S032D98

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
0.4±0.1±0.1	5.8k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma\big(a_1(1420)^+\pi^-,\ a_1^+ \to f_0(980)\pi^+\ P\text{-wave},\ f_0 \to \pi^+\pi^-\big)/\Gamma\big(2\pi^+2\pi^-\big)$ $\Gamma_{185}/\Gamma_{171}$

NODE=S032D94
NODE=S032D94

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
0.6±0.2±0.2	5.8k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma\big(a_1(1640)^+\pi^-,\ a_1^+ \to \rho^0\pi^+\ S\text{-wave}\big)/\Gamma\big(2\pi^+2\pi^-\big)$ $\Gamma_{186}/\Gamma_{171}$

NODE=S032D95
NODE=S032D95

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.7±0.5±0.9	5.8k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma\big(a_1(1640)^+\pi^-,\ a_1^+ \to \rho^0\pi^+\ D\text{-wave}\big)/\Gamma\big(2\pi^+2\pi^-\big)$ $\Gamma_{187}/\Gamma_{171}$

NODE=S032P42

This is the fit fraction from a coherent amplitude analysis.

NODE=S032P42
NODE=S032P42

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		COMMENT
4.2±0.6±2.0	7.3k	[1,2] DARGENT	17	4-body fit, 4π evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.
[2] See also ABLIKIM 24BG.

NODE=S032P42;LINKAGE=A
NODE=S032P42;LINKAGE=C

$\Gamma\big(a_1(1640)^+\pi^-,\ a_1^+ \to \sigma\pi^+\big)/\Gamma\big(2\pi^+2\pi^-\big)$ $\Gamma_{188}/\Gamma_{171}$

NODE=S032P46

This is the fit fraction from a coherent amplitude analysis.

NODE=S032P46
NODE=S032P46

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		COMMENT
2.4±0.7±1.7	7.3k	[1,2] DARGENT	17	4-body fit, 4π evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.
[2] See also ABLIKIM 24BG.

NODE=S032P46;LINKAGE=A
NODE=S032P46;LINKAGE=B

$\Gamma\big(a_1(1640)^-\pi^+,\ a_1^- \to \rho^0\pi^-\ S\text{-wave}\big)/\Gamma\big(2\pi^+2\pi^-\big)$ $\Gamma_{189}/\Gamma_{171}$

NODE=S032D96
NODE=S032D96

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
0.5±0.3±0.4	5.8k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma\big(\pi_2(1670)^+\pi^-,\ \pi_2^+ \to f_2(1270)^0\pi^+,\ f_2^0 \to \pi^+\pi^-\big)/\Gamma\big(2\pi^+2\pi^-\big)$ $\Gamma_{190}/\Gamma_{171}$

NODE=S032P47

This is the fit fraction from a coherent amplitude analysis.

NODE=S032P47
NODE=S032P47

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		COMMENT
2.7±0.6±1.1	7.3k	[1] DARGENT	17	4-body fit, 4π evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.

NODE=S032P47;LINKAGE=A

$\Gamma\big(\pi_2(1670)^+\pi^-,\ \pi_2^+ \to \sigma\pi^+\big)/\Gamma\big(2\pi^+2\pi^-\big)$ $\Gamma_{191}/\Gamma_{171}$

NODE=S032P48

This is the fit fraction from a coherent amplitude analysis.

NODE=S032P48
NODE=S032P48

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		COMMENT
3.5±0.6±1.2	7.3k	[1] DARGENT	17	4-body fit, 4π evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.

NODE=S032P48;LINKAGE=A

$\Gamma\big(2\rho(770)^0\ \text{total}\big)/\Gamma\big(2\pi^+2\pi^-\big)$ $\Gamma_{192}/\Gamma_{171}$

NODE=S032C57

This is the fit fraction from the coherent amplitude analysis.

NODE=S032C57
NODE=S032C57

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
25.1±1.5 OUR AVERAGE					
[(24.5 ± 1.6) × 10^{-2} OUR 2025 AVERAGE]					
28.0±1.9±3.1	5.8k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV
24.5±1.3±1.0		LINK	07A	FOCS	4-body fit, ≈ 5.7k evts

NEW

$\Gamma\big(2\rho^0,\ \text{parallel helicities}\big)/\Gamma\big(2\pi^+2\pi^-\big)$ $\Gamma_{193}/\Gamma_{171}$

NODE=S032C58

This is the fit fraction from the coherent amplitude analysis.

NODE=S032C58
NODE=S032C58

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
1.1±0.3±0.3	LINK	07A	FOCS	4-body fit, ≈ 5.7k evts

$\Gamma\big(2\rho^0,\ \text{perpendicular helicities}\big)/\Gamma\big(2\pi^+2\pi^-\big)$ $\Gamma_{194}/\Gamma_{171}$

NODE=S032C59

This is the fit fraction from the coherent amplitude analysis.

NODE=S032C59
NODE=S032C59

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
6.4±0.6±0.5	LINK	07A	FOCS	4-body fit, ≈ 5.7k evts

$\Gamma\big(2\rho^0,\ \text{longitudinal helicities}\big)/\Gamma\big(2\pi^+2\pi^-\big)$ $\Gamma_{195}/\Gamma_{171}$

NODE=S032C60

This is the fit fraction from the coherent amplitude analysis.

NODE=S032C60
NODE=S032C60

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
16.8±1.0±0.8	LINK	07A	FOCS	4-body fit, ≈ 5.7k evts

$\Gamma(2\rho(770)^0,\ S\text{-wave})/\Gamma(2\pi^+2\pi^-)$ $\Gamma_{196}/\Gamma_{171}$

NODE=S032P51

This is the fit fraction from a coherent amplitude analysis.

NODE=S032P51
NODE=S032P51

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.8±0.7 OUR AVERAGE					
[(2.4 ± 1.7) × 10^{-2} OUR 2025 AVERAGE]					
1.7±0.6±0.5	5.8k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV
2.4±0.7±1.5	7.3k	[1] DARGENT	17		4-body fit, 4π evts

NEW

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.

NODE=S032P51;LINKAGE=A

$\Gamma(2\rho(770)^0,\ P\text{-wave})/\Gamma(2\pi^+2\pi^-)$ $\Gamma_{197}/\Gamma_{171}$

NODE=S032P52

This is the fit fraction from a coherent amplitude analysis.

NODE=S032P52
NODE=S032P52

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
8.7±1.4 OUR AVERAGE Error includes scale factor of 1.3. [(7.0 ± 1.7) × 10^{-2} OUR 2025 AVERAGE]					
9.8±1.0±0.9	5.8k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV
7.0±0.5±1.6	7.3k	[1] DARGENT	17		4-body fit, 4π evts

NEW

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.

NODE=S032P52;LINKAGE=A

$\Gamma(2\rho(770)^0,\ D\text{-wave})/\Gamma(2\pi^+2\pi^-)$ $\Gamma_{198}/\Gamma_{171}$

NODE=S032P53

This is the fit fraction from a coherent amplitude analysis.

NODE=S032P53
NODE=S032P53

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
17 ±7 OUR AVERAGE Error includes scale factor of 2.9. [(8 ± 4) × 10^{-2} OUR 2025 AVERAGE]					
23.1±2.1±2.4	5.8k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV
8.2±1.0±3.9	7.3k	[1] DARGENT	17		4-body fit, 4π evts

NEW

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.

NODE=S032P53;LINKAGE=A

$\Gamma(\rho(770)^0\rho(1450)^0,\ \rho(1450)^0 \to \pi^+\pi^-)/\Gamma(2\pi^+2\pi^-)$ $\Gamma_{199}/\Gamma_{171}$

NODE=S032E02
NODE=S032E02

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
2.5±0.9±1.2	5.8k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(\rho(770)^0\rho(1450)^0\ P\text{-wave},\ \rho(1450)^0 \to \pi^+\pi^-)/\Gamma(2\pi^+2\pi^-)$ $\Gamma_{200}/\Gamma_{171}$

NODE=S032E03
NODE=S032E03

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.0±0.4±0.6	5.8k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(\rho(770)^0\rho(1450)^0\ D\text{-wave},\ \rho(1450)^0 \to \pi^+\pi^-)/\Gamma(2\pi^+2\pi^-)$ $\Gamma_{201}/\Gamma_{171}$

NODE=S032E04
NODE=S032E04

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.5±0.9±1.1	5.8k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(\text{Resonant }(\pi^+\pi^-)\pi^+\pi^-\text{ 3-body total})/\Gamma(2\pi^+2\pi^-)$ $\Gamma_{202}/\Gamma_{171}$

NODE=S032C61

This is the fit fraction from the coherent amplitude analysis.

NODE=S032C61
NODE=S032C61

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
20.0±1.2±1.0	LINK	07A	FOCS	4-body fit, ≈ 5.7k evts

$\Gamma((\pi^+\pi^-)_{S-wave}(\pi^+\pi^-)_{S-wave})/\Gamma(2\pi^+2\pi^-)$ $\Gamma_{203}/\Gamma_{171}$

NODE=S032E05
NODE=S032E05

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
62.8±4.6±9.7	5.8k	[1] ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

[1] The $\pi\pi$ S-wave is parametrized by a K-matrix with five coupled channels (2π, $2K$, 4π, 2η, $\eta\eta'$) and five poles, as in DEANDREA 08.

NODE=S032E05;LINKAGE=A

$\Gamma(\sigma\pi^+\pi^-)/\Gamma(2\pi^+2\pi^-)$ $\Gamma_{204}/\Gamma_{171}$

NODE=S032C62

This is the fit fraction from the coherent amplitude analysis.

NODE=S032C62
NODE=S032C62

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
8.2±0.9±0.7	LINK	07A	FOCS	4-body fit, ≈ 5.7k evts

$\Gamma(f_0(980)\pi^+\pi^-,\ f_0 \to \pi^+\pi^-)/\Gamma(2\pi^+2\pi^-)$ $\Gamma_{205}/\Gamma_{171}$

NODE=S032C63

This is the fit fraction from the coherent amplitude analysis.

NODE=S032C63
NODE=S032C63

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
2.4±0.5±0.4	LINK	07A	FOCS	4-body fit, ≈ 5.7k evts

$\Gamma(\rho(770)^0(\pi^+\pi^-)_{S-wave})/\Gamma(2\pi^+2\pi^-)$ — $\Gamma_{206}/\Gamma_{171}$

NODE=S032E01

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
2.7±0.6±1.7	5.8k	[1] ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

[1] The $\pi\pi$ S-wave is parametrized by a K-matrix with five coupled channels (2π, $2K$, 4π, 2η, $\eta\eta'$) and five poles, as in DEANDREA 08.

NODE=S032E01;LINKAGE=A

$\Gamma(\sigma\rho(770)^0)/\Gamma(2\pi^+2\pi^-)$ — $\Gamma_{207}/\Gamma_{171}$

NODE=S032P49

This is the fit fraction from a coherent amplitude analysis.

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		COMMENT
6.6±1.0±3.2	7.3k	[1] DARGENT	17	4-body fit, 4π evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.

NODE=S032P49;LINKAGE=A

$\Gamma(f_2(1270)\pi^+\pi^-,\ f_2\to\pi^+\pi^-)/\Gamma(2\pi^+2\pi^-)$ — $\Gamma_{208}/\Gamma_{171}$

NODE=S032C64

This is the fit fraction from the coherent amplitude analysis.

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
4.9±0.6±0.5	LINK	07A	FOCS	4-body fit, ≈ 5.7k evts

$\Gamma(f_2(1270)^0(\pi^+\pi^-)_{S-wave},\ f_2(1270)^0\to\pi^+\pi^-)/\Gamma(2\pi^+2\pi^-)$ — $\Gamma_{209}/\Gamma_{171}$

NODE=S032E06

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.8±0.4±1.3	5.8k	[1] ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

[1] The $\pi\pi$ S-wave is parametrized by a K-matrix with five coupled channels (2π, $2K$, 4π, 2η, $\eta\eta'$) and five poles, as in DEANDREA 08.

NODE=S032E06;LINKAGE=A

$\Gamma(f_2(1270)f_2(1270),\ f_2\to\pi^+\pi^-)/\Gamma(2\pi^+2\pi^-)$ — $\Gamma_{210}/\Gamma_{171}$

NODE=S032P55

This is the fit fraction from a coherent amplitude analysis.

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		COMMENT
2.1±0.5±2.3	7.3k	[1] DARGENT	17	4-body fit, 4π evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.

NODE=S032P55;LINKAGE=A

$\Gamma(f_0(1370)\sigma,\ f_0\to\pi^+\pi^-)/\Gamma(2\pi^+2\pi^-)$ — $\Gamma_{211}/\Gamma_{171}$

NODE=S032P50

This is the fit fraction from a coherent amplitude analysis.

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		COMMENT
21.2±1.8±6.7	7.3k	[1] DARGENT	17	4-body fit, 4π evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.

NODE=S032P50;LINKAGE=A

$\Gamma(\pi^+\pi^-2\pi^0)/\Gamma_{total}$ — Γ_{212}/Γ

NODE=S032D43

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
10.02±0.19±0.24	3.8k	ABLIKIM	22BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(\pi^+\pi^-2\pi^0)/\Gamma(K^-\pi^+)$ — Γ_{212}/Γ_{47}

NODE=S032C33

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
25.8±1.5±1.8	2724 ± 166	RUBIN	06	CLEO	e^+e^- at $\psi(3770)$

$\Gamma(\pi^+\pi^-2\pi^0(\text{non-}\eta))/\Gamma_{total}$ — Γ_{213}/Γ

NODE=S032E31

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
0.951±0.025±0.021	2.2k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(a_1(1260)^+\pi^-,\ a_1^+\to\pi^+2\pi^0\ \text{total})/\Gamma(\pi^+\pi^-2\pi^0)$ — $\Gamma_{214}/\Gamma_{212}$

NODE=S032E07

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
57.4±2.7±7.2	2.2k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(a_1(1260)^-\pi^+,\ a_1^-\to\pi^-2\pi^0\ \text{total})/\Gamma(\pi^+\pi^-2\pi^0)$ — $\Gamma_{215}/\Gamma_{212}$

NODE=S032E08

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
7.2±1.1±2.2	2.2k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(a_1(1260)^0\pi^0,\ a_1^0\to\pi^+\pi^-\pi^0\ \text{total})/\Gamma(\pi^+\pi^-2\pi^0)$ — $\Gamma_{216}/\Gamma_{212}$

NODE=S032E09

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
32.9±3.2±8.5	2.2k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(a_1(1420)^+\pi^-,\ a_1^+ \to f_0(980)\pi^+$ P-wave, $f_0 \to \pi^0\pi^0)/\Gamma(\pi^+\pi^-2\pi^0)$ **$\Gamma_{217}/\Gamma_{212}$**

NODE=S032E10
NODE=S032E10

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
0.3±0.1±0.1	2.2k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(a_1(1640)^-\pi^+,\ a_1^- \to \rho^-\pi^0$ S-wave$)/\Gamma(\pi^+\pi^-2\pi^0)$ **$\Gamma_{218}/\Gamma_{212}$**

NODE=S032E12
NODE=S032E12

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
0.3±0.2±0.2	2.2k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(a_1(1640)^+\pi^-,\ a_1^+ \to \rho^+\pi^0$ S-wave$)/\Gamma(\pi^+\pi^-2\pi^0)$ **$\Gamma_{219}/\Gamma_{212}$**

NODE=S032E11
NODE=S032E11

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.1±0.3±0.6	2.2k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(a_2(1320)^+\pi^-,\ a_2^+ \to \rho^+\pi^0$ D-wave$)/\Gamma(\pi^+\pi^-2\pi^0)$ **$\Gamma_{220}/\Gamma_{212}$**

NODE=S032E13
NODE=S032E13

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
0.2±0.1±0.1	8k	[1] ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

[1] Seen with 4.6 σ significance in a combined fit to 2.2k $D^0 \to \pi^+\pi^-2\pi^0$ and 5.8k $D^0 \to 2\pi^+2\pi^-$ events.

NODE=S032E13;LINKAGE=A

$\Gamma(a_2(1320)^-\pi^+,\ a_2^- \to \rho^-\pi^0$ D-wave$)/\Gamma(\pi^+\pi^-2\pi^0)$ **$\Gamma_{221}/\Gamma_{212}$**

NODE=S032E14
NODE=S032E14

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
0.3±0.1±0.1	2.2k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(h_1(1170)^0\pi^0,\ h_1^0 \to \rho\pi)/\Gamma(\pi^+\pi^-2\pi^0)$ **$\Gamma_{222}/\Gamma_{212}$**

NODE=S032E15
NODE=S032E15

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.3±0.6±1.1	2.2k	[1] ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

[1] This comprises h_1^0 decays to $\rho^+\pi^-$, $\rho^0\pi^0$, and $\rho^-\pi^+$, with relative rates constrained to obey isospin symmetry.

NODE=S032E15;LINKAGE=A

$\Gamma(\pi(1300)^-\pi^+,\ \pi(1300)^- \to \pi^-2\pi^0$ total$)/\Gamma(\pi^+\pi^-2\pi^0)$ **$\Gamma_{223}/\Gamma_{212}$**

NODE=S032E16
NODE=S032E16

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
11.4±1.1±2.4	2.2k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(\pi(1300)^+\pi^-,\ \pi(1300)^+ \to \pi^+2\pi^0$ total$)/\Gamma(\pi^+\pi^-2\pi^0)$ **$\Gamma_{224}/\Gamma_{212}$**

NODE=S032E17
NODE=S032E17

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
15.6±1.4±2.6	2.2k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(\pi(1300)^0\pi^0,\ \pi(1300)^0 \to \pi^+\pi^-\pi^0$ total$)/\Gamma(\pi^+\pi^-2\pi^0)$ **$\Gamma_{225}/\Gamma_{212}$**

NODE=S032E18
NODE=S032E18

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
23.2±2.8±3.4	2.2k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(\pi_2(1670)^0\pi^0,\ \pi_2(1670)^0 \to \pi^+\pi^-\pi^0$ total$)/\Gamma(\pi^+\pi^-2\pi^0)$ **$\Gamma_{226}/\Gamma_{212}$**

NODE=S032E19
NODE=S032E19

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.1±0.2±0.4	2.2k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(\rho(770)^+\rho(770)^-)/\Gamma(\pi^+\pi^-2\pi^0)$ **$\Gamma_{227}/\Gamma_{212}$**

NODE=S032E20
NODE=S032E20

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
90.9±3.9±7.5	2.2k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(\rho(770)^+\rho(770)^-$ S-wave$)/\Gamma(\pi^+\pi^-2\pi^0)$ **$\Gamma_{228}/\Gamma_{212}$**

NODE=S032E21
NODE=S032E21

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
13.0±2.0±3.4	2.2k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(\rho(770)^+\rho(770)^-$ P-wave$)/\Gamma(\pi^+\pi^-2\pi^0)$ **$\Gamma_{229}/\Gamma_{212}$**

NODE=S032E22
NODE=S032E22

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
19.6±1.3±1.8	2.2k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(\rho(770)^+\rho(770)^-$ D-wave$)/\Gamma(\pi^+\pi^-2\pi^0)$ **$\Gamma_{230}/\Gamma_{212}$**

NODE=S032E23
NODE=S032E23

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
36.0±3.0±2.5	2.2k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(\rho(770)^+\rho(1450)^-$ D-wave, $\rho(1450)^- \to \pi^-\pi^0)/\Gamma(\pi^+\pi^-2\pi^0)$ $\Gamma_{231}/\Gamma_{212}$

NODE=S032E24
NODE=S032E24

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.7±0.8±1.8	2.2k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(\rho(770)^0(\pi^0\pi^0)_{S-wave})/\Gamma(\pi^+\pi^-2\pi^0)$ $\Gamma_{232}/\Gamma_{212}$

NODE=S032E25
NODE=S032E25

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.0±0.2±0.4	2.2k	[1] ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

[1] The $\pi\pi$ S-wave is parametrized by a K-matrix with five coupled channels (2π, $2K$, 4π, 2η, $\eta\eta'$) and five poles, as in DEANDREA 08.

NODE=S032E25;LINKAGE=A

$\Gamma((\pi^+\pi^-)_{S-wave}(\pi^0\pi^0)_{S-wave})/\Gamma(\pi^+\pi^-2\pi^0)$ $\Gamma_{233}/\Gamma_{212}$

NODE=S032E26
NODE=S032E26

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
37.4±3.0±5.2	2.2k	[1] ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

[1] The $\pi\pi$ S-wave is parametrized by a K-matrix with five coupled channels (2π, $2K$, 4π, 2η, $\eta\eta'$) and five poles, as in DEANDREA 08.

NODE=S032E26;LINKAGE=A

$[\Gamma(f_2(1270)(\pi^0\pi^0)_{S-wave},\ f_2 \to \pi^+\pi^-) + \Gamma(f_2(1270)(\pi^+\pi^-)_{S-wave},\ f_2 \to \pi^0\pi^0)]/\Gamma(\pi^+\pi^-2\pi^0)$ $(\Gamma_{234}+\Gamma_{235})/\Gamma_{212}$

NODE=S032E27
NODE=S032E27

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.1±0.2±0.7	2.2k	[1] ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

[1] The relative size of the $D^0 \to f_2(\pi^+\pi^-)$, $f_2 \to \pi^0\pi^0$ and $D^0 \to f_2(\pi^0\pi^0)$, $f_2 \to \pi^+\pi^-$ amplitudes is constrained to obey isospin symmetry.

NODE=S032E27;LINKAGE=A

$\Gamma(\omega(782)\pi^0,\ \omega \to \pi^+\pi^-\pi^0)/\Gamma(\pi^+\pi^-2\pi^0)$ $\Gamma_{236}/\Gamma_{212}$

NODE=S032E28
NODE=S032E28

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
0.9±0.4±0.2	2.2k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(\phi(1020)\pi^0,\ \phi(1020) \to \pi^+\pi^-\pi^0)/\Gamma(\pi^+\pi^-2\pi^0)$ $\Gamma_{237}/\Gamma_{212}$

NODE=S032E29
NODE=S032E29

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.5±0.4±0.3	2.2k	ABLIKIM	24BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(4\pi^0)/\Gamma_{total}$ Γ_{238}/Γ

NODE=S032D41
NODE=S032D41

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
7.6±0.9±0.7	96	ABLIKIM	22BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(\eta\pi^0)/\Gamma_{total}$ Γ_{239}/Γ

NODE=S032C65

Unseen decay modes of the η are included.

NODE=S032C65
NODE=S032C65

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
6.3±0.5 OUR FIT Error includes scale factor of 1.1. [($6.3 \pm 0.6) \times 10^{-4}$ OUR 2025 FIT Scale factor = 1.1]					
5.8±0.5±0.5	1.7k	ABLIKIM	18L	BES3	e^+e^-, 3773 MeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
6.5±0.9±0.4	75	ABLIKIM	16D	BES3	See ABLIKIM 18L
6.4±1.0±0.4	156 ± 24	ARTUSO	08	CLEO	See MENDEZ 10

NEW

$\Gamma(\eta\pi^0)/\Gamma(K^-\pi^+)$ Γ_{239}/Γ_{47}

NODE=S032C34

Unseen decay modes of the η are included.

NODE=S032C34
NODE=S032C34

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.47±0.34±0.11	62 ± 14	RUBIN	06	CLEO	See ARTUSO 08

$\Gamma(\eta\pi^0)/[\Gamma(K^-\pi^+) + \Gamma(K^+\pi^-)]$ $\Gamma_{239}/(\Gamma_{47}+\Gamma_{344})$

NODE=S032B04

Unseen decay modes of the η are included.

NODE=S032B04
NODE=S032B04

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.60±0.14 OUR FIT Error includes scale factor of 1.1.					
1.74±0.15±0.11	481 ± 40	MENDEZ	10	CLEO	e^+e^- at 3774 MeV

$\Gamma(\omega\pi^0)/\Gamma_{total}$ Γ_{240}/Γ

NODE=S032C35

Unseen decay modes of the ω are included.

NODE=S032C35
NODE=S032C35

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
1.17±0.34±0.07	45	ABLIKIM	16D	BES3	e^+e^-, 3773 MeV

$\Gamma(\omega\eta)/\Gamma_{total}$ — Γ_{241}/Γ

NODE=S032P96

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
1.98±0.18 OUR AVERAGE	Error includes scale factor of 1.1.				
2.15±0.17±0.15	2.2k	ABLIKIM	18L	BES3	e^+e^-, 3773 MeV
1.78±0.19±0.15	600	[1] SMITH	18		e^+e^-, 3773 MeV

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.

NODE=S032P96;LINKAGE=A

$\Gamma(2\pi^+2\pi^-\pi^0)/\Gamma_{total}$ — Γ_{242}/Γ

NODE=S032D44

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
34.6±1.5±1.5	940	ABLIKIM	22BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(2\pi^+2\pi^-\pi^0)/\Gamma(K^-\pi^+)$ — Γ_{242}/Γ_{47}

NODE=S032C31

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
10.7±1.2±0.5	1614 ± 171	RUBIN	06	CLEO	e^+e^- at $\psi(3770)$

$\Gamma(\pi^+\pi^-3\pi^0)/\Gamma_{total}$ — Γ_{243}/Γ

NODE=S032D46

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
15.3±1.7±1.3	180	ABLIKIM	22BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(2\pi^+2\pi^-2\pi^0)/\Gamma_{total}$ — Γ_{244}/Γ

NODE=S032D47

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
47.7±3.1±2.1	350	ABLIKIM	22BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(\eta\pi^+\pi^-)/\Gamma_{total}$ — Γ_{245}/Γ

NODE=S032C36

Unseen decay modes of the η are included.

NODE=S032C36

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
11.6±0.7 OUR AVERAGE					
10.6±1.8±0.7	96	ABLIKIM	20AA	BES3	e^+e^-, 3773 MeV
12.0±0.7±0.4	450	ABLIKIM	20G	BES3	e^+e^-, 3773 MeV
10.9±1.3±0.9	257	ARTUSO	08	CLEO	e^+e^- at $\psi(3770)$

$\Gamma(\eta\pi^+\pi^-)/\Gamma(K^-\pi^+\eta)$ — $\Gamma_{245}/\Gamma_{113}$

NODE=S032D15

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
6.49±0.09±0.12	13k	LI	21G	BELL	e^+e^- at Υ(nS)

$\Gamma(\rho(770)^0\eta,\ \rho^0\to\pi^+\pi^-)/\Gamma(\eta\pi^+\pi^-)$ — $\Gamma_{246}/\Gamma_{245}$

NODE=S032D62

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
15.2±1.7±1.0	[1] ABLIKIM	24CL	BES3	e^+e^- at 3.773 GeV

[1] Amplitude analysis involving six modes.

NODE=S032D62;LINKAGE=A

$\Gamma(a_0(980)^-\pi^+,\ a_0^-\to\pi^-\eta)/\Gamma(\eta\pi^+\pi^-)$ — $\Gamma_{247}/\Gamma_{245}$

NODE=S032D63

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
5.9±1.3±1.0	[1] ABLIKIM	24CL	BES3	e^+e^- at 3.773 GeV

[1] Amplitude analysis involving six modes.

NODE=S032D63;LINKAGE=A

$\Gamma(a_0(980)^+\pi^-,\ a_0^+\to\pi^+\eta)/\Gamma(\eta\pi^+\pi^-)$ — $\Gamma_{248}/\Gamma_{245}$

NODE=S032D64

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
44.0±4.0±5.3	[1] ABLIKIM	24CL	BES3	e^+e^- at 3.773 GeV

[1] Amplitude analysis involving six modes.

NODE=S032D64;LINKAGE=A

$\Gamma(a_2(1320)^+\pi^-,\ a_2^+\to\pi^+\eta)/\Gamma(\eta\pi^+\pi^-)$ — $\Gamma_{249}/\Gamma_{245}$

NODE=S032D65

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
2.1±0.9±0.8	[1] ABLIKIM	24CL	BES3	e^+e^- at 3.773 GeV

[1] Amplitude analysis involving six modes.

NODE=S032D65;LINKAGE=A

$\Gamma(a_2(1700)^+\pi^-,\ a_2^+\to\pi^+\eta)/\Gamma(\eta\pi^+\pi^-)$ — $\Gamma_{250}/\Gamma_{245}$

NODE=S032D66

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
5.5±1.8±2.7	[1] ABLIKIM	24CL	BES3	e^+e^- at 3.773 GeV

[1] Amplitude analysis involving six modes.

NODE=S032D66;LINKAGE=A

$\Gamma((\pi^+\pi^-)_{S-wave}\eta)/\Gamma(\eta\pi^+\pi^-)$ — $\Gamma_{251}/\Gamma_{245}$

NODE=S032D67

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
3.9±1.8±2.1	[1] ABLIKIM	24CL	BES3	e^+e^- at 3.773 GeV

[1] Amplitude analysis involving six modes.

NODE=S032D67;LINKAGE=A

$\Gamma(\omega\pi^+\pi^-)/\Gamma_{total}$ — Γ_{252}/Γ

NODE=S032S00

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
1.33±0.16±0.12	411	ABLIKIM	20AA	BES3	e^+e^-, 3773 MeV

$\Gamma(\omega\pi^+\pi^-)/\Gamma(K^-\pi^+)$ — Γ_{252}/Γ_{47}

NODE=S032C37

Unseen decay modes of the ω are included.

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
4.1±1.2±0.4	472 ± 132	RUBIN	06	CLEO	e^+e^- at $\psi(3770)$

$\Gamma(\omega\pi^0\pi^0)/\Gamma_{total}$ — Γ_{253}/Γ

NODE=S032B00

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.10 × 10⁻³	90	ABLIKIM	20AA	BES3	e^+e^-, 3773 MeV

$\Gamma(\eta 2\pi^0)/\Gamma_{total}$ — Γ_{254}/Γ

NODE=S032Q00

VALUE (units 10^{-4})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
3.8±1.1±0.7		42	[1] ABLIKIM	18X	BES3	e^+e^-, 3773 MeV
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<23.8	90		ABLIKIM	20AA	BES3	e^+e^-, 3773 MeV

[1] Significance of signal reported by ABLIKIM 18X is 3.8σ.

NODE=S032Q00;LINKAGE=A

$\Gamma(\pi^+\pi^-\pi^0\eta)/\Gamma_{total}$ — Γ_{255}/Γ

NODE=S032Q95

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
3.23±0.17±0.14	510	ABLIKIM	20V	BES3	e^+e^-, 3773 MeV

$\Gamma(\eta 3\pi^0)/\Gamma_{total}$ — Γ_{256}/Γ

NODE=S032D42

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
23.6±2.2±1.7	155	ABLIKIM	22BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(\eta 2\pi^+ 2\pi^-)/\Gamma_{total}$ — Γ_{257}/Γ

NODE=S032D45

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
6.0±1.0±0.6	49	ABLIKIM	22BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(3\pi^+3\pi^-)/\Gamma(K^-2\pi^+\pi^-)$ — Γ_{258}/Γ_{87}

NODE=S032S2

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
5.23±0.59±1.35	149 ± 17	LINK	04B	FOCS	γA, $\overline{E}_\gamma \approx$ 180 GeV

$\Gamma(3\pi^+3\pi^-)/\Gamma(K^-3\pi^+2\pi^-)$ — $\Gamma_{258}/\Gamma_{126}$

NODE=S032R79

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.93±047±0.48	[1] LINK	04B	FOCS	γA, $\overline{E}_\gamma \approx$ 180 GeV

[1] This LINK 04B result is not independent of other results in these Listings.

NODE=S032R79;LINKAGE=LI

$\Gamma(\eta'(958)\pi^0)/\Gamma_{total}$ — Γ_{259}/Γ

NODE=S032C66

Unseen decay modes of the $\eta'(958)$ are included.

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
9.2±1.0 OUR FIT					
9.3±1.1±0.9	469 ± 56	ABLIKIM	18L	BES3	e^+e^-, 3773 MeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
8.1±1.5±0.6	50 ± 9	ARTUSO	08	CLEO	See MENDEZ 10

$\Gamma(\eta'(958)\pi^0)/[\Gamma(K^-\pi^+)+\Gamma(K^+\pi^-)]$ — $\Gamma_{259}/(\Gamma_{47}+\Gamma_{344})$

NODE=S032B05

Unseen decay modes of the $\eta'(958)$ are included.

NEW

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
2.33±0.26 OUR FIT					
[(2.32 ± 0.25) × 10^{-2} OUR 2025 FIT]					
2.3 ±0.3 ±0.2	159 ± 19	MENDEZ	10	CLEO	e^+e^- at 3774 MeV

$\Gamma(\eta'(958)\pi^+\pi^-)/\Gamma_{total}$ Γ_{260}/Γ

NODE=S032C67

Unseen decay modes of the $\eta'(958)$ are included.

NODE=S032C67
NODE=S032C67

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
4.5±1.6±0.5	21 ± 8	ARTUSO	08	CLEO	e^+e^- at $\psi(3770)$

$\Gamma(2\eta)/\Gamma_{total}$ Γ_{261}/Γ

NODE=S032C68

Unseen decay modes of the η are included.

NODE=S032C68
NODE=S032C68

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
21.1±1.9 OUR FIT Error includes scale factor of 2.3. [(21.1 ± 1.9) × 10^{-4} OUR 2025 FIT Scale factor = 2.3]					
22.0±0.7±0.6	3.4k	ABLIKIM	18L	BES3	e^+e^-, 3773 MeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
16.7±1.4±1.3	255 ± 22	ARTUSO	08	CLEO	See MENDEZ 10

NEW

$\Gamma(2\eta)/[\Gamma(K^-\pi^+)+\Gamma(K^+\pi^-)]$ $\Gamma_{261}/(\Gamma_{47}+\Gamma_{344})$

NODE=S032B06

Unseen decay modes of the η are included.

NODE=S032B06
NODE=S032B06

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
5.3±0.5 OUR FIT Error includes scale factor of 2.3.					
4.3±0.3±0.4	430 ± 29	MENDEZ	10	CLEO	e^+e^- at 3774 MeV

$\Gamma(2\eta\pi^0)/\Gamma_{total}$ Γ_{262}/Γ

NODE=S032Q27
NODE=S032Q27

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
7.3±1.6±1.5	27	[1] ABLIKIM	18X	BES3	e^+e^-, 3773 MeV

[1] Significance of signal reported by ABLIKIM 18X is 5.5σ.

NODE=S032Q27;LINKAGE=A

$\Gamma(2\eta\pi^+\pi^-)/\Gamma_{total}$ Γ_{263}/Γ

NODE=S032D40
NODE=S032D40

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
8.5±1.3±0.4	43	ABLIKIM	22BG	BES3	e^+e^- at 3.773 GeV

$\Gamma(3\eta)/\Gamma_{total}$ Γ_{264}/Γ

NODE=S032Q28
NODE=S032Q28

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.3 × 10^{-4}	90	ABLIKIM	18X	BES3	e^+e^-, 3773 MeV

$\Gamma(\eta\eta'(958))/\Gamma_{total}$ Γ_{265}/Γ

NODE=S032C69

Unseen decay modes of the η and $\eta'(958)$ are included.

NODE=S032C69
NODE=S032C69

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
10.1±1.9 OUR FIT					
9.4±2.5±1.1	158 ± 41	ABLIKIM	18L	BES3	e^+e^-, 3773 MeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
12.6±2.5±1.1	46 ± 9	ARTUSO	08	CLEO	See MENDEZ 10

$\Gamma(\eta\eta'(958))/[\Gamma(K^-\pi^+)+\Gamma(K^+\pi^-)]$ $\Gamma_{265}/(\Gamma_{47}+\Gamma_{344})$

NODE=S032B07

Unseen decay modes of the η and $\eta'(958)$ are included.

NODE=S032B07
NODE=S032B07

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
2.5±0.5 OUR FIT					
2.7±0.6±0.3	66 ± 15	MENDEZ	10	CLEO	e^+e^- at 3774 MeV

Hadronic modes with a $K\overline{K}$ pair

NODE=S032330

$\Gamma(K^+K^-)/\Gamma_{total}$ Γ_{266}/Γ

NODE=S032C70
NODE=S032C70

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
4.07 ±0.06 OUR FIT Error includes scale factor of 1.6. [(4.08 ± 0.06) × 10^{-3} OUR 2025 FIT Scale factor = 1.6]					
4.233±0.021±0.064	56k	ABLIKIM	18W	BES3	e^+e^-, 3773 MeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
4.08 ±0.08 ±0.09	4.7k	BONVICINI	08	CLEO	See MENDEZ 10

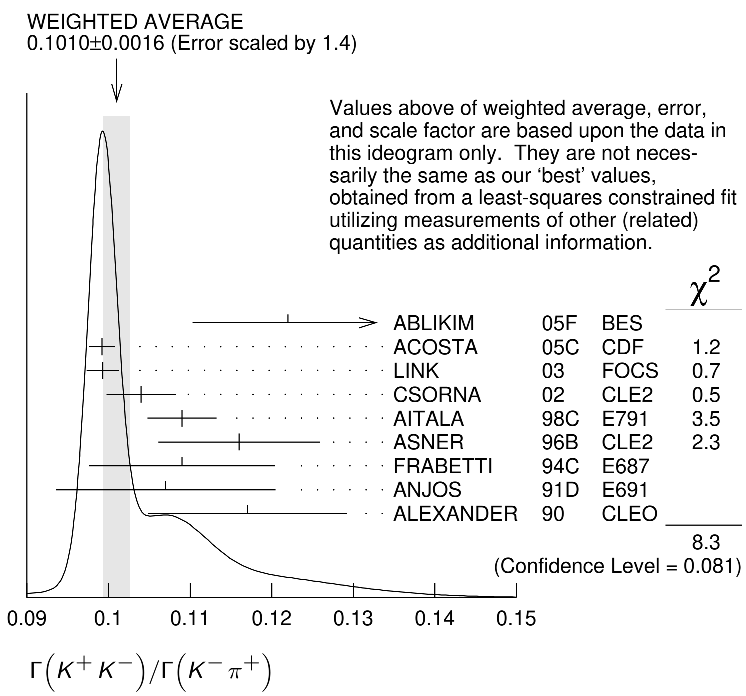
NEW

$\Gamma(K^+K^-)/\Gamma(K^-\pi^+)$ Γ_{266}/Γ_{47}

NODE=S032R27
NODE=S032R27

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.1034±0.0013 OUR FIT Error includes scale factor of 1.6. [0.1033 ± 0.0013 OUR 2025 FIT Scale factor = 1.6]				
0.1010±0.0016 OUR AVERAGE Error includes scale factor of 1.4. See the ideogram below.				
0.122 ±0.011 ±0.004	242 ± 20	ABLIKIM 05F	BES	$e^+e^- \approx \psi(3770)$
0.0992±0.0011±0.0012	16k±200	ACOSTA 05C	CDF	$p\overline{p}$, $\sqrt{s}$=1.96 TeV
0.0993±0.0014±0.0014	11k	LINK 03	FOCS	γ nucleus, $\overline{E}_\gamma \approx$ 180 GeV
0.1040±0.0033±0.0027	1900	CSORNA 02	CLE2	$e^+e^- \approx \Upsilon(4S)$
0.109 ±0.003 ±0.003	3317	AITALA 98C	E791	π^- nucleus, 500 GeV
0.116 ±0.007 ±0.007	1102	ASNER 96B	CLE2	$e^+e^- \approx \Upsilon(4S)$
0.109 ±0.007 ±0.009	581	FRABETTI 94C	E687	γBe $\overline{E}_\gamma$= 220 GeV
0.107 ±0.010 ±0.009	193	ANJOS 91D	E691	Photoproduction
0.117 ±0.010 ±0.007	249	ALEXANDER 90	CLEO	e^+e^- 10.5–11 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.107 ±0.029 ±0.015	103	ADAMOVICH 92	OMEG	π^- 340 GeV
0.138 ±0.027 ±0.010	155	FRABETTI 92	E687	γBe
0.16 ±0.05	34	ALVAREZ 91B	NA14	Photoproduction
0.10 ±0.02 ±0.01	131	ALBRECHT 90C	ARG	$e^+e^- \approx$ 10 GeV
0.122 ±0.018 ±0.012	118	BALTRUSAIT...85E	MRK3	e^+e^- 3.77 GeV
0.113 ±0.030		ABRAMS 79D	MRK2	e^+e^- 3.77 GeV

NEW



$\Gamma(K^+K^-)/[\Gamma(K^-\pi^+)+\Gamma(K^+\pi^-)]$ $\Gamma_{266}/(\Gamma_{47}+\Gamma_{344})$

NODE=S032B08
NODE=S032B08

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
10.30±0.13 OUR FIT Error includes scale factor of 1.6. [(10.29 ± 0.13) × 10^{-2} OUR 2025 FIT Scale factor = 1.6]				
10.41±0.11±0.12	13.8k	MENDEZ 10	CLEO	e^+e^- at 3774 MeV

NEW

$\Gamma(K^+K^-)/\Gamma(\pi^+\pi^-)$ $\Gamma_{266}/\Gamma_{151}$

NODE=S032R91

The unused results here are redundant with $\Gamma(K^+K^-)/\Gamma(K^-\pi^+)$ and $\Gamma(\pi^+\pi^-)/\Gamma(K^-\pi^+)$ measurements by the same experiments.

NODE=S032R91

NODE=S032R91

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2.760±0.040±0.034	7334	ACOSTA 05C	CDF	$p\overline{p}$, $\sqrt{s}$=1.96 TeV
2.81 ±0.10 ±0.06		LINK 03	FOCS	γ nucleus, $\overline{E}_\gamma \approx$ 180 GeV
2.96 ±0.16 ±0.15	710	CSORNA 02	CLE2	$e^+e^- \approx \Upsilon(4S)$
2.75 ±0.15 ±0.16		AITALA 98C	E791	π^- nucleus, 500 GeV
2.53 ±0.46 ±0.19		FRABETTI 94C	E687	γBe $\overline{E}_\gamma$= 220 GeV

2.23 ±0.81 ±0.46		ADAMOVICH	92	OMEG	π^- 340 GeV
1.95 ±0.34 ±0.22		ANJOS	91D	E691	Photoproduction
2.5 ±0.7		ALBRECHT	90C	ARG	$e^+e^- \approx$ 10 GeV
2.35 ±0.37 ±0.28		ALEXANDER	90	CLEO	e^+e^- 10.5–11 GeV

$\Gamma(2K^0_S)/\Gamma_{\rm total}$ — Γ_{267}/Γ

NODE=S032C71
NODE=S032C71

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
1.41±0.05 OUR FIT Error includes scale factor of 1.1.					
1.67±0.11±0.11	576	ABLIKIM	17A	BES3	$e^+e^- \rightarrow \psi(3770)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.46±0.32±0.09	68 ± 15	BONVICINI	08	CLEO	See MENDEZ 10

$\Gamma(2K^0_S)/[\Gamma(K^-\pi^+)+\Gamma(K^+\pi^-)]$ — $\Gamma_{267}/(\Gamma_{47}+\Gamma_{344})$

NODE=S032B09
NODE=S032B09

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
0.358±0.013 OUR FIT Error includes scale factor of 1.1. [$(0.357 \pm 0.013) \times 10^{-2}$ OUR 2025 FIT Scale factor = 1.1]					
0.41 ±0.04 ±0.02	215 ± 23	MENDEZ	10	CLEO	e^+e^- at 3774 MeV

NEW

$\Gamma(2K^0_S)/\Gamma(K^0_S\pi^0)$ — Γ_{267}/Γ_{48}

NODE=S032P66
NODE=S032P66

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.14 ±0.04 OUR FIT Error includes scale factor of 1.1.					
1.101±0.023±0.030	4.8k	DASH	17	BELL	At/near $\Upsilon(4S)$, $\Upsilon(5S)$

$\Gamma(2K^0_S)/\Gamma(K^0_S\pi^+\pi^-)$ — Γ_{267}/Γ_{53}

NODE=S032R90

This is the same as $\Gamma(K^0\overline{K}^0)$ / $\Gamma(\overline{K}^0\pi^+\pi^-)$ because $D^0 \rightarrow K^0_S K^0_L$ is forbidden by CP conservation.

NODE=S032R90

NODE=S032R90

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
0.498±0.030 OUR FIT [$(0.494 \pm 0.030) \times 10^{-2}$ OUR 2025 FIT]					
1.20 ±0.22 OUR AVERAGE					
1.44 ±0.32 ±0.16	79 ± 17	LINK	05A	FOCS	γ Be, $\overline{E}_\gamma \approx$ 180 GeV
1.01 ±0.22 ±0.16	26	ASNER	96B	CLE2	$e^+e^- \approx \Upsilon(4S)$
3.9 ±1.3 ±1.3	20 ± 7	FRABETTI	94J	E687	γBe $\overline{E}_\gamma$=220 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2.1 $^{+1.1}_{-0.8}$ ±0.2	5	ALEXANDER	90	CLEO	e^+e^- 10.5–11 GeV

NEW

$\Gamma(K^0_S K^-\pi^+)/\Gamma(K^-\pi^+)$ — Γ_{268}/Γ_{47}

NODE=S032B1
NODE=S032B1

VALUE	DOCUMENT ID		TECN	COMMENT
0.085±0.013 OUR FIT Error includes scale factor of 1.1. [0.086 ± 0.013 OUR 2025 FIT Scale factor = 1.1]				
0.08 ±0.03	[1] ANJOS	91	E691	γBe 80–240 GeV

NEW

[1] The factor 100 at the top of column 2 of Table I of ANJOS 91 should be omitted.

NODE=S032B1;LINKAGE=AJ

$\Gamma(K^0_S K^-\pi^+)/\Gamma(K^0_S\pi^+\pi^-)$ — Γ_{268}/Γ_{53}

NODE=S032B20
NODE=S032B20

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.118±0.017 OUR FIT Error includes scale factor of 1.1.					
0.119±0.021 OUR AVERAGE Error includes scale factor of 1.3.					
0.108±0.019	61	AMMAR	91	CLEO	$e^+e^- \approx$ 10.5 GeV
0.16 ±0.03 ±0.02	39	ALBRECHT	90C	ARG	$e^+e^- \approx$ 10 GeV

$\Gamma(\overline{K}^*(892)^0 K^0_S,\ \overline{K}^{*0} \rightarrow K^-\pi^+)/\Gamma(K^0_S K^-\pi^+)$ — $\Gamma_{269}/\Gamma_{268}$

NODE=S032P00

Fit fraction from Dalitz plot analyses. The fraction for the $K^0_S\pi^+$ mass between 792 and 992 MeV is 0.370 ± 0.003 ± 0.012.

NODE=S032P00

NODE=S032P00

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
2.47±0.15±0.23	113k	[1] AAIJ	16N	LHCB	Dalitz plot fit

[1] AAIJ 16N gives results for two S-wave parameterisations. We take the values from the model with LASS parametrization, and the difference as a systematic uncertainty.

NODE=S032P00;LINKAGE=A

$\Gamma(K^*(892)^+ K^-,\ K^{*+} \rightarrow K^0_S\pi^+)/\Gamma(K^0_S K^-\pi^+)$ — $\Gamma_{270}/\Gamma_{268}$

NODE=S032P01

Fit fraction from Dalitz plot analyses.

NODE=S032P01
NODE=S032P01

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
56.9±0.6±1.1	113k	[1] AAIJ	16N	LHCB	Dalitz plot fit

[1] AAIJ 16N gives results for two S-wave parameterisations. We take the values from the model with LASS parametrization, and the difference as a systematic uncertainty.

NODE=S032P01;LINKAGE=A

$\Gamma\big(\overline{K}^*(1410)^0 K^0_S,\ \overline{K}^{*0} \to K^- \pi^+\big)/\Gamma\big(K^0_S K^- \pi^+\big)$ $\Gamma_{271}/\Gamma_{268}$

NODE=S032P02

Fit fraction from Dalitz plot analyses.

NODE=S032P02
NODE=S032P02

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
3.8±0.5±5.6	113k	[1] AAIJ	16N	LHCB	Dalitz plot fit

[1] AAIJ 16N gives results for two S-wave parameterisations. We take the values from the model with LASS parametrization, and the difference as a uncertainty (which in this case dominates)

NODE=S032P02;LINKAGE=A

$\Gamma\big(K^*(1410)^+ K^-,\ K^{*+} \to K^0_S \pi^+\big)/\Gamma\big(K^0_S K^- \pi^+\big)$ $\Gamma_{272}/\Gamma_{268}$

NODE=S032P03

Fit fraction from Dalitz plot analyses.

NODE=S032P03
NODE=S032P03

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
9.6±1.1±5.4	113k	[1] AAIJ	16N	LHCB	Dalitz plot fit

[1] AAIJ 16N gives results for two S-wave parameterisations. We take the values from the model with LASS parametrization, and the difference as a systematic uncertainty (which in this case dominates).

NODE=S032P03;LINKAGE=A

$\Gamma\big((K^- \pi^+)_{S-wave} K^0_S\big)/\Gamma\big(K^0_S K^- \pi^+\big)$ $\Gamma_{273}/\Gamma_{268}$

NODE=S032P04

Fit fraction from Dalitz plot analyses.

NODE=S032P04
NODE=S032P04

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
18±2±8	113k	[1] AAIJ	16N	LHCB	Dalitz plot fit

[1] AAIJ 16N gives results for two S-wave parameterisations. We take the values from the model with LASS parametrization, and the difference as a systematic uncertainty (which in this case dominates).

NODE=S032P04;LINKAGE=A

$\Gamma\big((K^0_S \pi^+)_{S-wave} K^-\big)/\Gamma\big(K^0_S K^- \pi^+\big)$ $\Gamma_{274}/\Gamma_{268}$

NODE=S032P05

Fit fraction from Dalitz plot analyses.

NODE=S032P05
NODE=S032P05

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
11.7±1.0±2.3	113k	[1] AAIJ	16N	LHCB	Dalitz plot fit

[1] AAIJ 16N gives results for two S-wave parameterisations. We take the values from the model with LASS parametrization, and the difference as a systematic uncertainty.

NODE=S032P05;LINKAGE=A

$\Gamma\big(a_0(980)^- \pi^+,\ a_0^- \to K^0_S K^-\big)/\Gamma\big(K^0_S K^- \pi^+\big)$ $\Gamma_{275}/\Gamma_{268}$

NODE=S032P06

Fit fraction from Dalitz plot analyses.

NODE=S032P06
NODE=S032P06

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
4.0±0.7±4.1	113k	[1] AAIJ	16N	LHCB	Dalitz plot fit

[1] AAIJ 16N gives results for two S-wave parameterisations. We take the values from the model with LASS parametrization, and the difference as a systematic uncertainty (which in this case dominates).

NODE=S032P06;LINKAGE=A

$\Gamma\big(a_0(1450)^- \pi^+,\ a_0^- \to K^0_S K^-\big)/\Gamma\big(K^0_S K^- \pi^+\big)$ $\Gamma_{276}/\Gamma_{268}$

NODE=S032P07

Fit fraction from Dalitz plot analyses.

NODE=S032P07
NODE=S032P07

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
0.74±0.15±0.57	113k	[1] AAIJ	16N	LHCB	Dalitz plot fit

[1] AAIJ 16N gives results for two S-wave parameterisations. We take the values from the model with LASS parametrization, and the difference as a systematic uncertainty (which in this case dominates).

NODE=S032P07;LINKAGE=A

$\Gamma\big(a_2(1320)^- \pi^+,\ a_2^- \to K^0_S K^-\big)/\Gamma\big(K^0_S K^- \pi^+\big)$ $\Gamma_{277}/\Gamma_{268}$

NODE=S032P19
NODE=S032P19

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
0.15±0.06±0.14	113k	[1] AAIJ	16N	LHCB	Dalitz plot fit

[1] AAIJ 16N gives results for two S-wave parameterisations. We take the values from the model with LASS parametrization, and the difference as a systematic uncertainty.

NODE=S032P19;LINKAGE=A

$\Gamma\big(\rho(1450)^- \pi^+,\ \rho^- \to K^0_S K^-\big)/\Gamma\big(K^0_S K^- \pi^+\big)$ $\Gamma_{278}/\Gamma_{268}$

NODE=S032P08

Fit fraction from Dalitz plot analyses.

NODE=S032P08
NODE=S032P08

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.4±0.2±0.7	113k	[1] AAIJ	16N	LHCB	Dalitz plot fit

[1] AAIJ 16N gives results for two S-wave parameterisations. We take the values from the model with LASS parametrization, and the difference as a systematic uncertainty.

NODE=S032P08;LINKAGE=A

$\Gamma\big(K^0_S K^+ \pi^-\big)/\Gamma\big(K^- \pi^+\big)$ Γ_{279}/Γ_{47}

NODE=S032B5
NODE=S032B5

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.05±0.025	[1] ANJOS	91	E691	γ Be 80–240 GeV

[1] The factor 100 at the top of column 2 of Table I of ANJOS 91 should be omitted.

NODE=S032B5;LINKAGE=AJ

$\Gamma(K^0_S K^+ \pi^-)/\Gamma(K^0_S \pi^+ \pi^-)$ Γ_{279}/Γ_{53}

NODE=S032B21
NODE=S032B21

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.098±0.020	55	AMMAR	91	CLEO	$e^+ e^- \approx$ 10.5 GeV

$\Gamma(K^0_S K^+ \pi^-)/\Gamma(K^0_S K^- \pi^+)$ $\Gamma_{279}/\Gamma_{268}$

NODE=S032Q26
NODE=S032Q26

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.654±0.007 OUR FIT					
0.654±0.007 OUR AVERAGE					
0.655±0.004±0.006	76k,113k	AAIJ	16N	LHCB	pp at 7, 8 TeV
0.592±0.044±0.018		INSLER	12	CLEO	$e^+ e^- \rightarrow D^0 \overline{D}^0$ at 3.77 GeV

$\Gamma(K^*(892)^0 K^0_S,\ K^{*0} \rightarrow K^+ \pi^-)/\Gamma(\overline{K}^*(892)^0 K^0_S,\ \overline{K}^{*0} \rightarrow K^- \pi^+)$ $\Gamma_{280}/\Gamma_{269}$

NODE=S032B24
NODE=S032B24

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
0.356±0.034±0.007		[1] INSLER	12	CLEO	$e^+ e^- \rightarrow D^0 \overline{D}^0$, 3.77 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.010	90	AMMAR	91	CLEO	$e^+ e^- \approx$ 10.5 GeV

[1] Uses quantum correlations in $e^+ e^- \rightarrow D^0 \overline{D}^0$ at the $\psi(3770)$, where the signal side D decays to $K^0_S K \pi$ and the tag-side D decays to $K\pi$, $K\pi\pi\pi$, $K\pi\pi^0$, and 10 additional CP-even, CP-odd, and mixed CP modes involving K^0_S or K^0_L.

NODE=S032B24;LINKAGE=IN

$\Gamma(K^*(892)^0 K^0_S,\ K^{*0} \rightarrow K^+ \pi^-)/\Gamma(K^0_S K^+ \pi^-)$ $\Gamma_{280}/\Gamma_{279}$

NODE=S032P09

Fit fraction from Dalitz plot analyses.

NODE=S032P09
NODE=S032P09

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
5.17±0.21±0.47	76k	[1] AAIJ	16N	LHCB	Dalitz plot fit

[1] AAIJ 16N gives results for two S-wave parameterisations. We take the values from the model with LASS parametrization, and the difference as a systematic uncertainty.

NODE=S032P09;LINKAGE=A

$\Gamma(K^*(892)^- K^+,\ K^{*-} \rightarrow K^0_S \pi^-)/\Gamma(K^0_S K^+ \pi^-)$ $\Gamma_{281}/\Gamma_{279}$

NODE=S032P10

Fit fraction from Dalitz plot analyses.

NODE=S032P10
NODE=S032P10

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
28.8±0.4±1.5	76k	[1] AAIJ	16N	LHCB	Dalitz plot fit

[1] AAIJ 16N gives results for two S-wave parameterisations. We take the values from the model with LASS parametrization, and the difference as a systematic uncertainty.

NODE=S032P10;LINKAGE=A

$\Gamma(K^*(1410)^0 K^0_S,\ K^{*0} \rightarrow K^+ \pi^+)/\Gamma(K^0_S K^+ \pi^-)$ $\Gamma_{282}/\Gamma_{279}$

NODE=S032P11

Fit fraction from Dalitz plot analyses.

NODE=S032P11
NODE=S032P11

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
2.2±0.6±3.7	76k	[1] AAIJ	16N	LHCB	Dalitz plot fit

[1] AAIJ 16N gives results for two S-wave parameterisations. We take the values from the model with LASS parametrization, and the difference as a systematic uncertainty (which in this case dominates).

NODE=S032P11;LINKAGE=A

$\Gamma(K^*(1410)^- K^+,\ K^{*-} \rightarrow K^0_S \pi^-)/\Gamma(K^0_S K^+ \pi^-)$ $\Gamma_{283}/\Gamma_{279}$

NODE=S032P12

Fit fraction from Dalitz plot analyses.

NODE=S032P12
NODE=S032P12

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
11.9±1.5±9.1	76k	[1] AAIJ	16N	LHCB	Dalitz plot fit

[1] AAIJ 16N gives results for two S-wave parameterisations. We take the values from the model with LASS parametrization, and the difference as a systematic uncertainty (which in this case dominates).

NODE=S032P12;LINKAGE=A

$\Gamma((K^+ \pi^-)_{S-wave} K^0_S)/\Gamma(K^0_S K^+ \pi^-)$ $\Gamma_{284}/\Gamma_{279}$

NODE=S032P13

Fit fraction from Dalitz plot analyses.

NODE=S032P13
NODE=S032P13

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
17±2±8	76k	[1] AAIJ	16N	LHCB	Dalitz plot fit

[1] AAIJ 16N gives results for two S-wave parameterisations. We take the values from the model with LASS parametrization, and the difference as a systematic uncertainty.

NODE=S032P13;LINKAGE=A

$\Gamma((K^0_S \pi^-)_{S-wave} K^+)/\Gamma(K^0_S K^+ \pi^-)$ $\Gamma_{285}/\Gamma_{279}$

NODE=S032P14

Fit fraction from Dalitz plot analyses.

NODE=S032P14
NODE=S032P14

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
6.3±0.9±2.3	76k	[1] AAIJ	16N	LHCB	Dalitz plot fit

[1] AAIJ 16N gives results for two S-wave parameterisations. We take the values from the model with LASS parametrization, and the difference as a systematic uncertainty.

NODE=S032P14;LINKAGE=A

$\Gamma\big(a_0(980)^+\pi^-,\ a_0^+ \to K^0_S K^+\big)/\Gamma\big(K^0_S K^+\pi^-\big)$ $\Gamma_{286}/\Gamma_{279}$

NODE=S032P15

Fit fraction from Dalitz plot analyses.

NODE=S032P15
NODE=S032P15

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
26±2±18	76k	[1] AAIJ	16N	LHCB	Dalitz plot fit

[1] AAIJ 16N gives results for two S-wave parameterisations. We take the values from the model with LASS parametrization, and the difference as a systematic uncertainty (which in this case dominates).

NODE=S032P15;LINKAGE=A

$\Gamma\big(a_0(1450)^+\pi^-,\ a_0^+ \to K^0_S K^+\big)/\Gamma\big(K^0_S K^+\pi^-\big)$ $\Gamma_{287}/\Gamma_{279}$

NODE=S032P16

Fit fraction from Dalitz plot analyses.

NODE=S032P16
NODE=S032P16

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.5±0.3±1.1	76k	[1] AAIJ	16N	LHCB	Dalitz plot fit

[1] AAIJ 16N gives results for two S-wave parameterisations. We take the values from the model with LASS parametrization, and the difference as a systematic uncertainty (which in this case dominates).

NODE=S032P16;LINKAGE=A

$\Gamma\big(\rho(1700)^+\pi^-,\ \rho^+ \to K^0_S K^+\big)/\Gamma\big(K^0_S K^+\pi^-\big)$ $\Gamma_{288}/\Gamma_{279}$

NODE=S032P17

Fit fraction from Dalitz plot analyses.

NODE=S032P17
NODE=S032P17

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
0.53±0.11±0.23	76k	[1] AAIJ	16N	LHCB	Dalitz plot fit

[1] AAIJ 16N gives results for two S-wave parameterisations. We take the values from the model with LASS parametrization, and the difference as a systematic uncertainty.

NODE=S032P17;LINKAGE=A

$\Gamma\big(K^+K^-\pi^0\big)/\Gamma\big(K^-\pi^+\pi^0\big)$ Γ_{289}/Γ_{68}

NODE=S032S28
NODE=S032S28

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
2.37±0.03±0.04	11k±122	AUBERT,B	06X	BABR	$e^+e^- \approx \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.95±0.26	151	ASNER	96B	CLE2	$e^+e^- \approx \Upsilon(4S)$

$\Gamma\big(K^*(892)^+K^-,\ K^*(892)^+ \to K^+\pi^0\big)/\Gamma\big(K^+K^-\pi^0\big)$ $\Gamma_{290}/\Gamma_{289}$

NODE=S032R02

This is the "fit fraction" from the Dalitz-plot analysis with interference.

NODE=S032R02
NODE=S032R02

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
44.4±0.8±0.6	AUBERT	07T	BABR	Dalitz fit II, 11k evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
46.1±3.1	[1] CAWLFIELD	06A	CLEO	Dalitz fit, 627 ± 30 evts

[1] The error on this CAWLFIELD 06A result is statistical only.

NODE=S032R02;LINKAGE=CA

$\Gamma\big(K^*(892)^-K^+,\ K^*(892)^- \to K^-\pi^0\big)/\Gamma\big(K^+K^-\pi^0\big)$ $\Gamma_{291}/\Gamma_{289}$

NODE=S032R03

This is the "fit fraction" from the Dalitz-plot analysis with interference.

NODE=S032R03
NODE=S032R03

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
15.9±0.7±0.6	AUBERT	07T	BABR	Dalitz fit II, 11k evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
12.3±2.2	[1] CAWLFIELD	06A	CLEO	Dalitz fit, 627 ± 30 evts

[1] The error on this CAWLFIELD 06A result is statistical only.

NODE=S032R03;LINKAGE=CA

$\Gamma\big((K^+\pi^0)_{S-wave}K^-\big)/\Gamma\big(K^+K^-\pi^0\big)$ $\Gamma_{292}/\Gamma_{289}$

NODE=S032S08

This is the "fit fraction" from the Dalitz-plot analysis with interference.

NODE=S032S08
NODE=S032S08

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
71.1±3.7±1.9	[1] AUBERT	07T	BABR	Dalitz fit II, 11k evts

[1] The only major difference between fits I and II in the AUBERT 07T analysis is in this mode, where the fit-I fraction is (16.3 ± 3.4 ± 2.1)%.

NODE=S032S08;LINKAGE=AU

$\Gamma\big((K^-\pi^0)_{S-wave}K^+\big)/\Gamma\big(K^+K^-\pi^0\big)$ $\Gamma_{293}/\Gamma_{289}$

NODE=S032S09

This is the "fit fraction" from the Dalitz-plot analysis with interference.

NODE=S032S09
NODE=S032S09

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
3.9±0.9±1.0	AUBERT	07T	BABR	Dalitz fit II, 11k evts

$\Gamma\big(f_0(980)\pi^0,\ f_0 \to K^+K^-\big)/\Gamma\big(K^+K^-\pi^0\big)$ $\Gamma_{294}/\Gamma_{289}$

NODE=S032S11

This is the "fit fraction" from the Dalitz-plot analysis with interference.

NODE=S032S11
NODE=S032S11

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
10.5±1.1±1.2	[1] AUBERT	07T	BABR	Dalitz fit II, 11k evts

[1] When AUBERT 07T replace the $f_0(980)\pi^0$ mode with $a_0(980)\pi^0$, the fit fraction is a negligibly different (11.0 ± 1.5 ± 1.2)%.

NODE=S032S11;LINKAGE=AU

$\Gamma(\phi\pi^0,\ \phi\to K^+K^-)/\Gamma(K^+K^-\pi^0)$ $\Gamma_{295}/\Gamma_{289}$

NODE=S032R04

This is the "fit fraction" from the Dalitz-plot analysis with interference.

NODE=S032R04
NODE=S032R04

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
19.4±0.6±0.5	AUBERT	07T	BABR	Dalitz fit II, 11k evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
14.9±1.6	[1] CAWLFIELD	06A	CLEO	Dalitz fit, 627 ± 30 evts

[1] The error on this CAWLFIELD 06A result is statistical only.

NODE=S032R04;LINKAGE=CA

$\Gamma(K^+K^-\pi^0\,\text{nonresonant})/\Gamma(K^+K^-\pi^0)$ $\Gamma_{296}/\Gamma_{289}$

NODE=S032R05

This is the "fit fraction" from the Dalitz-plot analysis with interference.

NODE=S032R05
NODE=S032R05

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.360±0.037	[1] CAWLFIELD	06A	CLEO	Dalitz fit, 627 ± 30 evts

[1] The error is statistical only. CAWLFIELD 06A also fits the Dalitz plot replacing this flat nonresonant background with broad S–wave $\kappa^\pm \to K^\pm\pi^0$ resonances. There is no significant improvement in the fit, and $K^{*\pm}K^\mp$ and $\phi\pi^0$ results are not much changed.

NODE=S032R05;LINKAGE=CW

$\Gamma(2K^0_S\pi^0)/\Gamma_{\text{total}}$ Γ_{297}/Γ

NODE=S032S27
NODE=S032S27

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.45\times10^{-4}$	90	ABLIKIM	22Y	BES3	e^+e^- at 3.773 GeV
$<5.9\times10^{-4}$	90	ASNER	96B	CLE2	$e^+e^-\approx\ \Upsilon(4S)$

$\Gamma(K^+K^-\eta)/\Gamma_{\text{total}}$ Γ_{298}/Γ

NODE=S032Q90
NODE=S032Q90

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
0.59±0.18±0.05	13	ABLIKIM	20V	BES3	e^+e^-, 3773 MeV

$\Gamma(K^+K^-\eta)/\Gamma(K^-\pi^+\eta)$ $\Gamma_{298}/\Gamma_{113}$

NODE=S032D16
NODE=S032D16

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
$9.57^{+0.36}_{-0.33}\pm0.20$	1.4k	LI	21G	BELL	e^+e^- at Υ(nS)

$\Gamma(\phi(1020)\eta)/\Gamma(K^-\pi^+\eta)$ $\Gamma_{299}/\Gamma_{113}$

NODE=S032D18
NODE=S032D18

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
9.6±0.6 OUR AVERAGE [$(9.7\pm0.6)\times10^{-3}$ OUR 2025 AVERAGE]					
9.6±0.6±0.1	1.4k	[1] LI	21G	BELL	e^+e^- at Υ(nS)

NEW

[1] LI 21G reports $[\Gamma(D^0\to\ \phi(1020)\eta)/\Gamma(D^0\to\ K^-\pi^+\eta)]\times[B(\phi(1020)\to\ K^+K^-)] = (4.82\pm0.23\pm0.16)\times10^{-3}$ which we divide by our best (shown rounded) value $B(\phi(1020)\to\ K^+K^-) = (50.1\pm0.6)\times10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

NODE=S032D18;LINKAGE=A

$\Gamma(K^+K^-\eta\,\text{nonresonant})/\Gamma(K^-\pi^+\eta)$ $\Gamma_{300}/\Gamma_{113}$

NODE=S032D17
NODE=S032D17

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
$5.26^{+0.45}_{-0.38}\pm0.11$	1.4k	LI	21G	BELL	e^+e^- at Υ(nS)

$\Gamma(2K^0_S\eta)/\Gamma_{\text{total}}$ Γ_{301}/Γ

NODE=S032Q91
NODE=S032Q91

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
1.33±0.59±0.18	7	ABLIKIM	20V	BES3	e^+e^-, 3773 MeV

$\Gamma(K^+K^-\pi^0\pi^0)/\Gamma_{\text{total}}$ Γ_{302}/Γ

NODE=S032D08
NODE=S032D08

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
6.9±0.7±0.4	132	ABLIKIM	20AC	BES3	e^+e^- at 3.773 GeV

$\Gamma(K^+K^-\pi^+\pi^-)/\Gamma_{\text{total}}$ Γ_{303}/Γ

NODE=S032D89
NODE=S032D89

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
2.78 ±0.17 OUR FIT Error includes scale factor of 3.6.				
2.863±0.028±0.045	ABLIKIM	25AZ	BES3	e^+e^- at 3.770 GeV

$\Gamma(K^+K^-\pi^+\pi^-)/\Gamma(K^-2\pi^+\pi^-)$ — Γ_{303}/Γ_{87}

NODE=S032B9
NODE=S032B9

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
3.39±0.21 OUR FIT	Error includes scale factor of 3.1.	[0.032 ± 0.005 OUR 1992 FIT]			
3.00±0.13 OUR AVERAGE					
2.95±0.11±0.08	2669 ± 101	[1] LINK	05G	FOCS	γBe, $\overline{E}_\gamma \approx$ 180 GeV
3.13±0.37±0.36	136 ± 15	AITALA	98D	E791	π^- nucleus, 500 GeV
3.5 ±0.4 ±0.2	244 ± 26	FRABETTI	95C	E687	γBe, $\overline{E}_\gamma \approx$ 200 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
4.4 ±1.8 ±0.5	19 ± 8	ABLIKIM	05F	BES	$e^+e^- \approx \psi(3770)$
4.1 ±0.7 ±0.5	114 ± 20	ALBRECHT	94I	ARG	$e^+e^- \approx$ 10 GeV
3.14±1.0	89 ± 29	AMMAR	91	CLEO	$e^+e^- \approx$ 10.5 GeV
2.8 $^{+0.8}_{-0.7}$		ANJOS	91	E691	γBe 80–240 GeV

NEW

[1] LINK 05G uses a smaller, cleaner subset of 1279 ± 48 events for the amplitude analysis that gives the results in the next data blocks. NODE=S032B9;LINKAGE=LI

$\Gamma(\phi(\pi^+\pi^-)_{S-wave},\ \phi\to K^+K^-)/\Gamma(K^+K^-\pi^+\pi^-)$ — $\Gamma_{304}/\Gamma_{303}$

NODE=S032Q02

This is the fraction from a coherent amplitude analysis.

NODE=S032Q02
NODE=S032Q02

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
4.0±0.6±2.1	3k	[1] DARGENT	17		4-body fit, $KK\pi\pi$ events
• • • We do not use the following data for averages, fits, limits, etc. • • •					
10.3±1.0±0.8	3k	[2] ARTUSO	12	CLEO	4-body fit, $KK\pi\pi$ events
1 ±1	1.3k	LINK	05G	FOCS	4-body fit, $KK\pi\pi$ events

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration. NODE=S032Q02;LINKAGE=C
[2] See DARGENT 17 NODE=S032Q02;LINKAGE=A

$\Gamma((\phi\rho^0)_{S-wave},\ \phi\to K^+K^-)/\Gamma(K^+K^-\pi^+\pi^-)$ — $\Gamma_{305}/\Gamma_{303}$

NODE=S032Q03

This is the fraction from a coherent amplitude analysis.

NODE=S032Q03
NODE=S032Q03

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
28.1±1.3±1.7	2.9k	[1,2] DARGENT	17		4-body fit, $KK\pi\pi$ evts
• • • We do not use the following data for averages, fits, limits, etc. • • •					
38.3±2.5±3.8		[1,3] ARTUSO	12	CLEO	Fitting 2959 evts.
29 ±2 ±1		LINK	05G	FOCS	Fits 1279 ± 48 evts.

[1] ARTUSO 12 and DARGENT 17 use the same dataset, but ARTUSO 12 uses a formulation for the D-wave component that is in fact a mix of S- and D-wave, while DARGENT 17 uses a pure D-wave. This explains the discrepancy in their $\rho\phi$ S- and D-wave components. NODE=S032Q03;LINKAGE=A
[2] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration. NODE=S032Q03;LINKAGE=C
[3] See DARGENT 17 NODE=S032Q03;LINKAGE=B

$\Gamma((\phi\rho^0)_{P-wave},\ \phi\to K^+K^-)/\Gamma(K^+K^-\pi^+\pi^-)$ — $\Gamma_{306}/\Gamma_{303}$

NODE=S032P56

This is the fit fraction from a coherent amplitude analysis.

NODE=S032P56
NODE=S032P56

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		COMMENT
1.6±0.3±0.7	2.9k	[1] DARGENT	17	4-body fit, $KK\pi\pi$ evts

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration. NODE=S032P56;LINKAGE=A

$\Gamma((\phi\rho^0)_{D-wave},\ \phi\to K^+K^-)/\Gamma(K^+K^-\pi^+\pi^-)$ — $\Gamma_{307}/\Gamma_{303}$

NODE=S032Q16
NODE=S032Q16

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.7±0.4±0.4	2.9k	[1,2] DARGENT	17		4-body fit, $KK\pi\pi$ evts
• • • We do not use the following data for averages, fits, limits, etc. • • •					
3.4±0.7±0.6		[1,3] ARTUSO	12	CLEO	Fitting 2959 evts.

[1] ARTUSO 12 use a formulation for the D-wave component that is in fact a mix of S- and D-wave, while DARGENT 17 uses a pure D-wave. NODE=S032Q16;LINKAGE=A
[2] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration. NODE=S032Q16;LINKAGE=C
[3] See DARGENT 17 NODE=S032Q16;LINKAGE=B

$\Gamma(K^*(892)^0\overline{K}^*(892)^0,\ K^{*0}\to K^\pm\pi^\mp)/\Gamma(K^+K^-\pi^+\pi^-)$ — $\Gamma_{308}/\Gamma_{303}$

NODE=S032Q07

This is the fraction from a coherent amplitude analysis.

NODE=S032Q07
NODE=S032Q07

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3±2±1	LINK	05G	FOCS	Fits 1279 ± 48 evts.

$\Gamma(K^+ K^- \rho^0 \text{ 3-body})/\Gamma(K^+ K^- \pi^+ \pi^-)$ — $\Gamma_{309}/\Gamma_{303}$

NODE=S032Q04

This is the fraction from a coherent amplitude analysis.

NODE=S032Q04
NODE=S032Q04

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$2 \pm 2 \pm 2$	LINK	05G	FOCS	Fits 1279 ± 48 evts.

$\Gamma(f_0(980)\pi^+\pi^-,\ f_0 \to K^+ K^-)/\Gamma(K^+ K^- \pi^+ \pi^-)$ — $\Gamma_{310}/\Gamma_{303}$

NODE=S032Q05

This is the fraction from a coherent amplitude analysis.

NODE=S032Q05
NODE=S032Q05

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$15 \pm 3 \pm 2$	LINK	05G	FOCS	Fits 1279 ± 48 evts.

$\Gamma((K^*(892)^0 \overline{K}^*(892)^0)_{S-wave},\ K^{*0} \to K^\pm \pi^\mp)/\Gamma(K^+ K^- \pi^+ \pi^-)$ — $\Gamma_{311}/\Gamma_{303}$

NODE=S032Q17
NODE=S032Q17

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
9.06±0.35 OUR AVERAGE					
$9.18 \pm 0.21 \pm 0.28$	163k	AAIJ	19C	LHCB	4-body fit, $K K \pi \pi$ evts
$4.5 \pm 0.8 \pm 2.0$	3k	[1] DARGENT	17		4-body fit, $K K \pi \pi$ evts
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$6.1 \pm 0.8 \pm 0.9$	3k	[2] ARTUSO	12	CLEO	4-body fit, $K K \pi \pi$ evts

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration. NODE=S032Q17;LINKAGE=B
[2] See DARGENT 17 NODE=S032Q17;LINKAGE=A

$\Gamma((K^*(892)^0 \overline{K}^*(892)^0)_{P-wave},\ K^* \to K^\pm \pi^\mp)/\Gamma(K^+ K^- \pi^+ \pi^-)$ — $\Gamma_{312}/\Gamma_{303}$

NODE=S032P62

This is the fit fraction from a coherent amplitude analysis.

NODE=S032P62
NODE=S032P62

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
4.87±0.24 OUR AVERAGE					
$4.90 \pm 0.16 \pm 0.18$	163k	AAIJ	19C	LHCB	4-body fit, $K K \pi \pi$ evts
$3.6 \pm 0.7 \pm 1.5$	2.9k	[1] DARGENT	17		4-body fit, $K K \pi \pi$ evts

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration. NODE=S032P62;LINKAGE=A

$\Gamma((K^*(892)^0 \overline{K}^*(892)^0)_{D-wave},\ K^* \to K^\pm \pi^\mp)/\Gamma(K^+ K^- \pi^+ \pi^-)$ — $\Gamma_{313}/\Gamma_{303}$

NODE=S032P63

This is the fit fraction from a coherent amplitude analysis.

NODE=S032P63
NODE=S032P63

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.89±0.13 OUR AVERAGE					
$1.85 \pm 0.09 \pm 0.10$	163k	AAIJ	19C	LHCB	4-body fit, $K K \pi \pi$ evts
$4.0 \pm 0.6 \pm 0.7$	2.9k	[1] DARGENT	17		4-body fit, $K K \pi \pi$ evts

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration. NODE=S032P63;LINKAGE=A

$\Gamma(K^*(892)^0 K^\mp \pi^\pm \text{ 3-body}, K^{*0} \to K^\pm \pi^\mp)/\Gamma(K^+ K^- \pi^+ \pi^-)$ — $\Gamma_{314}/\Gamma_{303}$

NODE=S032Q06

This is the fraction from a coherent amplitude analysis.

NODE=S032Q06
NODE=S032Q06

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$11 \pm 2 \pm 1$	LINK	05G	FOCS	Fits 1279 ± 48 evts.

$\Gamma(K^*(892)^0 (K^- \pi^+)_{S-wave} \text{ 3-body},\ K^{*0} \to K^+ \pi^-)/\Gamma(K^+ K^- \pi^+ \pi^-)$ — $\Gamma_{315}/\Gamma_{303}$

NODE=S032P65

This is the fit fraction from a coherent amplitude analysis.

NODE=S032P65
NODE=S032P65

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		COMMENT
5.8±1.2±2.1	2.9k	[1] DARGENT	17	4-body fit, $K K \pi \pi$ evts

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration. NODE=S032P65;LINKAGE=A

$\Gamma((K^- \pi^+)_{P-wave},\ (K^+ \pi^-)_{S-wave})/\Gamma(K^+ K^- \pi^+ \pi^-)$ — $\Gamma_{316}/\Gamma_{303}$

NODE=S032Q18
NODE=S032Q18

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$10.9 \pm 1.2 \pm 1.7$	[1] ARTUSO	12	CLEO	Fitting 2959 evts.

[1] See DARGENT 17 NODE=S032Q18;LINKAGE=A

$\Gamma(K_1(1270)^{\pm} K^{\mp},\ K_1^{\pm} \to K^{\pm}\pi^+\pi^-)/\Gamma(K^+K^-\pi^+\pi^-)$ $\Gamma_{317}/\Gamma_{303}$

NODE=S032Q08

This is the fraction from a coherent amplitude analysis.

NODE=S032Q08
NODE=S032Q08

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
33±6±4	[1] LINK	05G	FOCS	Fits 1279 ± 48 evts.

[1] This LINK 05G value includes $K_1(1270)^{\pm} \to \rho^0 K^{\pm}$, $\to K_0^*(1430)^0\pi^{\pm}$, and $K^*(892)^0\pi^{\pm}$.

NODE=S032Q08;LINKAGE=LI

$\Gamma(K_1(1270)^+ K^-,\ K_1^+ \to K^{*0}\pi^+)/\Gamma(K^+K^-\pi^+\pi^-)$ $\Gamma_{318}/\Gamma_{303}$

NODE=S032Q19
NODE=S032Q19

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
5.5±1.4±3.4	3k	[1] DARGENT	17		4-body fit, $KK\pi\pi$ evts
• • • We do not use the following data for averages, fits, limits, etc. • • •					
7.3±0.8±1.9	3k	[2] ARTUSO	12	CLEO	4-body fit, $KK\pi\pi$ events

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration.
[2] See DARGENT 17

NODE=S032Q19;LINKAGE=B
NODE=S032Q19;LINKAGE=A

$\Gamma(K_1(1270)^+ K^-,\ K_1^+ \to K^*(1430)^0\pi^+,\ K^{*0} \to K^+\pi^-)/\Gamma(K^+K^-\pi^+\pi^-)$ $\Gamma_{319}/\Gamma_{303}$

NODE=S032P58

This is the fit fraction from a coherent amplitude analysis.

NODE=S032P58
NODE=S032P58

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		COMMENT
6.1±1.2±1.8	2.9k	[1] DARGENT	17	4-body fit, $KK\pi\pi$ evts

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration.

NODE=S032P58;LINKAGE=A

$\Gamma(K_1(1270)^+ K^-,\ K_1^+ \to \rho^0 K^+)/\Gamma(K^+K^-\pi^+\pi^-)$ $\Gamma_{320}/\Gamma_{303}$

NODE=S032Q20
NODE=S032Q20

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
9.1±1.5±1.9	2.9k	[1] DARGENT	17		4-body fit, $KK\pi\pi$ evts
• • • We do not use the following data for averages, fits, limits, etc. • • •					
4.7±0.7±0.8		[2] ARTUSO	12	CLEO	Fitting 2959 evts.

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration.
[2] see DARGENT 17

NODE=S032Q20;LINKAGE=B
NODE=S032Q20;LINKAGE=A

$\Gamma(K_1(1270)^+ K^-,\ K_1^+ \to \omega(782) K^+,\ \omega \to \pi^+\pi^-)/\Gamma(K^+K^-\pi^+\pi^-)$ $\Gamma_{321}/\Gamma_{303}$

NODE=S032P59

This is the fit fraction from a coherent amplitude analysis.

NODE=S032P59
NODE=S032P59

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		COMMENT
0.6±0.3±0.4	2.9k	[1] DARGENT	17	4-body fit, $KK\pi\pi$ evts

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration.

NODE=S032P59;LINKAGE=A

$\Gamma(K_1(1270)^- K^+,\ K_1^- \to \overline{K}^{*0}\pi^-)/\Gamma(K^+K^-\pi^+\pi^-)$ $\Gamma_{322}/\Gamma_{303}$

NODE=S032Q21
NODE=S032Q21

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.9±0.3±0.4	[1] ARTUSO	12	CLEO	Fitting 2959 evts.

[1] See DARGENT 17

NODE=S032Q21;LINKAGE=A

$\Gamma(K_1(1270)^- K^+,\ K_1^- \to \rho^0 K^-)/\Gamma(K^+K^-\pi^+\pi^-)$ $\Gamma_{323}/\Gamma_{303}$

NODE=S032Q22
NODE=S032Q22

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
5.4±0.7±1.3	2.9k	[1] DARGENT	17		4-body fit, $KK\pi\pi$ evts
• • • We do not use the following data for averages, fits, limits, etc. • • •					
6.0±0.8±0.6		[2] ARTUSO	12	CLEO	Fitting 2959 evts.

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration.
[2] See DARGENT 17

NODE=S032Q22;LINKAGE=B
NODE=S032Q22;LINKAGE=A

$\Gamma(K_1(1400)^{\pm} K^{\mp},\ K_1^{\pm} \to K^{\pm}\pi^+\pi^-)/\Gamma(K^+K^-\pi^+\pi^-)$ $\Gamma_{324}/\Gamma_{303}$

NODE=S032Q09

This is the fraction from a coherent amplitude analysis.

NODE=S032Q09
NODE=S032Q09

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
22±3±4	LINK	05G	FOCS	Fits 1279 ± 48 evts.

$\Gamma(K_1(1400)^+ K^-,\ K_1^+ \to K^*(892)^0 \pi^+,\ K^{*0} \to K^+ \pi^-)/\Gamma(K^+ K^- \pi^+ \pi^-)$ $\Gamma_{325}/\Gamma_{303}$

NODE=S032P60

This is the fit fraction from a coherent amplitude analysis.

NODE=S032P60
NODE=S032P60

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
18.7 ±1.5 OUR AVERAGE					
19.08±0.60±1.46	163k	AAIJ	19C	LHCB	4-body fit, $KK\pi\pi$ evts
12.4 ±2.6 ±6.3	2.9k	[1] DARGENT	17		4-body fit, $KK\pi\pi$ evts

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration.

NODE=S032P60;LINKAGE=A

$\Gamma(K^*(1410)^+ K^-,\ K^{*+} \to K^{*0} \pi^+)/\Gamma(K^+ K^- \pi^+ \pi^-)$ $\Gamma_{326}/\Gamma_{303}$

NODE=S032Q23
NODE=S032Q23

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
4.2±0.7±0.8	[1,2] ARTUSO	12	CLEO	Fitting 2959 evts.

[1] DARGENT 17 find $K^*(1410)^+\pi^-$ and $K^*(1680)^+\pi^-$, which both peak outside the $D^0 \to KK\pi\pi$ kinematic range, effectively indistinguishable; we list their result under $K^*(1680)^+\pi^-$.

NODE=S032Q23;LINKAGE=A

[2] See DARGENT 17

NODE=S032Q23;LINKAGE=B

$\Gamma(K^*(1410)^- K^+,\ K^{*-} \to \overline{K}^{*0} \pi^-)/\Gamma(K^+ K^- \pi^+ \pi^-)$ $\Gamma_{327}/\Gamma_{303}$

NODE=S032Q24
NODE=S032Q24

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
2.82±0.19±0.39	163k	AAIJ	19C	LHCB	4-body fit, $KK\pi\pi$ evts
• • • We do not use the following data for averages, fits, limits, etc. • • •					
4.7 ±0.7 ±0.7	3k	[1] ARTUSO	12	CLEO	4-body fit, $KK\pi\pi$ evts

[1] See DARGENT 17.

NODE=S032Q24;LINKAGE=A

$\Gamma(K_1(1680)^+ K^-,\ K_1^+ \to K^{*0} \pi^+,\ K^{*0} \to K^+ \pi^-)/\Gamma(K^+ K^- \pi^+ \pi^-)$ $\Gamma_{328}/\Gamma_{303}$

NODE=S032P61

This is the fit fraction from a coherent amplitude analysis.

NODE=S032P61
NODE=S032P61

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		COMMENT
3.6±0.8±1.0	2.9k	[1,2] DARGENT	17	4-body fit, $KK\pi\pi$ evts

[1] DARGENT 17 find $K^*(1410)^+\pi^-$ and $K^*(1680)^+\pi^-$, which both peak outside the $D^0 \to KK\pi\pi$ kinematic range, effectively indistinguishable.

NODE=S032P61;LINKAGE=A

[2] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration.

NODE=S032P61;LINKAGE=B

$\Gamma(K^+ K^- \pi^+ \pi^-\ \text{non-resonant})/\Gamma(K^+ K^- \pi^+ \pi^-)$ $\Gamma_{329}/\Gamma_{303}$

NODE=S032P64

This is the fit fraction from a coherent amplitude analysis.

NODE=S032P64
NODE=S032P64

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		COMMENT
11.1±1.2±2.2	2.9k	[1] DARGENT	17	4-body fit, $KK\pi\pi$ evts

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration.

NODE=S032P64;LINKAGE=A

$\Gamma(2K_S^0 \pi^+ \pi^-)/\Gamma_{\text{total}}$ Γ_{330}/Γ

NODE=S032D09
NODE=S032D09

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
5.3±0.9±0.3	63	ABLIKIM	20AC	BES3	$e^+ e^-$ at 3.773 GeV

$\Gamma(2K_S^0 \pi^+ \pi^-)/\Gamma(K_S^0 \pi^+ \pi^-)$ Γ_{330}/Γ_{53}

NODE=S032B94
NODE=S032B94

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.72±0.05 OUR AVERAGE					
1.71±0.03±0.04	6095	SANGAL	23	BELL	$e^+ e$ at $\Upsilon(4S,5S)$, 10.520 GeV
4.16±0.70±0.42	113	LINK	05A	FOCS	γ Be, $\overline{E}_\gamma \approx$ 180 GeV
6.2 ±2.0 ±1.6	25	ALBRECHT	94I	ARG	$e^+ e^- \approx$ 10 GeV

$\Gamma(K_S^0 K^- \pi^+ \pi^0)/\Gamma_{\text{total}}$ Γ_{331}/Γ

NODE=S032D11
NODE=S032D11

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
1.32±0.14±0.07	195	ABLIKIM	20AC	BES3	$e^+ e^-$ at 3.773 GeV

$\Gamma(K_S^0 K^+ \pi^- \pi^0)/\Gamma_{\text{total}}$ Γ_{332}/Γ

NODE=S032D12
NODE=S032D12

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
6.5±0.7±0.2	119	ABLIKIM	20AC	BES3	$e^+ e^-$ at 3.773 GeV

$\Gamma(K_S^0 K^- 2\pi^+ \pi^-)/\Gamma(K_S^0 2\pi^+ 2\pi^-)$ $\Gamma_{333}/\Gamma_{120}$

NODE=S032S93
NODE=S032S93

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.054	90	LINK	04D	FOCS	γ A, $\overline{E}_\gamma \approx$ 180 GeV

$\Gamma(K^+K^-\pi^+\pi^-\pi^0)/\Gamma_{total}$ — Γ_{334}/Γ

NODE=S032B32

VALUE	DOCUMENT ID		TECN	COMMENT
0.0031±0.0020	[1] BARLAG	92C	ACCM	π^- Cu 230 GeV

[1] BARLAG 92C computes the branching fraction using topological normalization.

NODE=S032B32;LINKAGE=BD

$\Gamma(\phi\pi^0)/\Gamma_{total}$ — Γ_{335}/Γ

NODE=S032Q83

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
1.168±0.028±0.028	3.3k	ABLIKIM	19BI	BES3	e^+e^- at 3773 MeV

$\Gamma(\phi\pi^0)/\Gamma(K^+K^-)$ — $\Gamma_{335}/\Gamma_{266}$

NODE=S032C99

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.194±0.006±0.009	1254	TAJIMA	04	BELL	e^+e^- at $\Upsilon(4S)$

$\Gamma(\phi\eta)/\Gamma_{total}$ — Γ_{336}/Γ

NODE=S032Q85

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
1.81±0.46±0.06	102	ABLIKIM	19BI	BES3	e^+e^- at 3773 MeV

$\Gamma(\phi\eta)/\Gamma(K^+K^-)$ — $\Gamma_{336}/\Gamma_{266}$

NODE=S032C98

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
3.59±1.14±0.18	31	TAJIMA	04	BELL	e^+e^- at $\Upsilon(4S)$

$\Gamma(\phi\omega)/\Gamma_{total}$ — Γ_{337}/Γ

NODE=S032B93

VALUE (units 10^{-4})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
6.48±0.96±0.40		196	[1] ABLIKIM	22	BES3	e^+e^- at 3.773 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<21	90		ALBRECHT	94I	ARG	$e^+e^- \approx 10$ GeV

[1] ABLIKIM 22 determines the longitudinal polarization fraction of the ϕ and ω, f_L = 0.00 ± 0.10 ± 0.08, corresponding to $f_L < 0.24$ at 95% CL.

NODE=S032B93;LINKAGE=A

Radiative modes

NODE=S032333

$\Gamma(\rho^0\gamma)/\Gamma(\pi^+\pi^-)$ — $\Gamma_{338}/\Gamma_{151}$

NODE=S032P26

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.25±0.21±0.05	500	NANUT	17	BELL	e^+e^- at Υ(nS), n=2,3,4,5

$\Gamma(\omega\gamma)/\Gamma_{total}$ — Γ_{339}/Γ

NODE=S032S62

VALUE	CL%	DOCUMENT ID		TECN
$<2.4 \times 10^{-4}$	90	ASNER	98	CLE2

$\Gamma(\phi\gamma)/\Gamma(K^-\pi^+)$ — Γ_{340}/Γ_{47}

NODE=S032S98

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
7.1 ±0.5 OUR FIT					
7.15±0.78±0.69	243 ± 25	AUBERT	08AZ	BABR	$e^+e^- \approx 10.6$ GeV

$\Gamma(\phi\gamma)/\Gamma(K^+K^-)$ — $\Gamma_{340}/\Gamma_{266}$

NODE=S032S88

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
6.9 ±0.5 OUR FIT					
6.88±0.47±0.21	524	NANUT	17	BELL	e^+e^- at Υ(nS), n=2,3,4,5
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$6.31^{+1.70}_{-1.48}{}^{+0.30}_{-0.36}$	28	TAJIMA	04	BELL	See NANUT 17

$\Gamma(\overline{K}^*(892)^0\gamma)/\Gamma(K^-\pi^+)$ — Γ_{341}/Γ_{47}

NODE=S032S99

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
10.5 ±1.7 OUR AVERAGE Error includes scale factor of 3.1.					
11.9 ±0.5 ±0.5	9.1k	NANUT	17	BELL	e^+e^- at Υ(nS), n=2,3,4,5
8.43±0.51±0.70	2.2k	AUBERT	08AZ	BABR	$e^+e^- \approx 10.6$ GeV

Doubly Cabibbo-suppressed / Mixing modes

NODE=S032335

$\Gamma(K^+\ell^-\overline{\nu}_\ell \text{ via } \overline{D}^0)/\Gamma(K^-\ell^+\nu_\ell)$ Γ_{342}/Γ_{19}

NODE=S032S26

This is a limit on R_M without the complications of possible doubly Cabibbo-suppressed decays that occur when using hadronic modes. For the limits on $|m_1 - m_2|$ and $(\Gamma_1 - \Gamma_2)/\Gamma$ that come from the best mixing limit, see near the beginning of these D^0 Listings.

NODE=S032S26

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
< 6.1 × 10⁻⁴	90	[1] BITENC	08	BELL	e^+e^-, 10.58 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<50 \times 10^{-4}$	90	[2] AITALA	96C	E791	π^- nucleus, 500 GeV

NODE=S032S26

[1] The BITENC 08 right-sign sample includes about 15% of $D^0 \to K^-\pi^0\ell^+\nu_\ell$ and other decays.

NODE=S032S26;LINKAGE=BI

[2] AITALA 96C uses $D^{*+} \to D^0\pi^+$ (and charge conjugate) decays to identify the charm at production and $D^0 \to K^-\ell^+\nu_\ell$ (and charge conjugate) decays to identify the charm at decay.

NODE=S032S26;LINKAGE=A

$\Gamma(K^+ \text{ or } K^*(892)^+ e^-\overline{\nu}_e \text{ via } \overline{D}^0)/[\Gamma(K^-e^+\nu_e)+\Gamma(K^*(892)^-e^+\nu_e)]$ $\Gamma_{343}/(\Gamma_{20}+\Gamma_{22})$

NODE=S032S01

This is a limit on R_M without the complications of possible doubly Cabibbo-suppressed decays that occur when using hadronic modes. The experiments use $D^{*+} \to D^0\pi^+$ (and charge conjugate) decays to identify the charm at production and the charge of the e to identify the charm at decay. These limits do not allow CP violation. For the limits on $|m_1 - m_2|$ and $(\Gamma_1 - \Gamma_2)/\Gamma$ that come from the best mixing limit, see near the beginning of these D^0 Listings.

NODE=S032S01

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.001	90	BITENC	05	BELL	$e^+e^- \approx$ 10.6 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$-0.0013 < R < +0.0012$	90	AUBERT	07AB	BABR	$e^+e^- \approx$ 10.58 GeV
<0.0078	90	CAWLFIELD	05	CLEO	$e^+e^- \approx$ 10.6 GeV
<0.0042	90	AUBERT,B	04Q	BABR	See AUBERT 07AB

NODE=S032S01

$\Gamma(K^+\pi^-)/\Gamma_{total}$ Γ_{344}/Γ

NODE=S032D83
NODE=S032D83

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
1.48±0.07 OUR FIT	Error includes scale factor of 3.1.				
1.30±0.09±0.04	0.38k	ABLIKIM	25BI	BES3	e^+e^- at 3.773 GeV

$\Gamma(K^+\pi^-)/\Gamma(K^-\pi^+)$ Γ_{344}/Γ_{47}

NODE=S032R61

This is R, the time-integrated wrong-sign rate compared to the right-sign rate. See the note on "D^0-$\overline{D}^0$ Mixing," near the start of the D^0 Listings.

NODE=S032R61

The experiments here use the charge of the pion in $D^*(2010)^\pm \to (D^0 \text{ or } \overline{D}^0)\,\pi^\pm$ decay to tell whether a D^0 or a $\overline{D}^0$ was born. The $D^0 \to K^+\pi^-$ decay can occur directly by doubly Cabibbo-suppressed (DCS) decay, or indirectly by $D^0 \to \overline{D}^0$ mixing followed by $\overline{D}^0 \to K^+\pi^-$ decay. Some of the experiments can use the decay-time information to disentangle the two mechanisms. Here, we list the experimental branching ratio, which if there is no mixing is the DCS ratio. See the next data block for values of the DCS ratio R_D, and the following data block for limits on the mixing ratio R_M. See the section on CP-violating asymmetries near the end of this D^0 Listing for values of A_D, and the note on "D^0-$\overline{D}^0$ Mixing" for limits on x' and y'.

Some early limits have been omitted from this Listing; see our 1998 edition (The European Physical Journal **C3** 1 (1998)) and our 2006 edition (Journal of Physics **G33** 1 (2006)).

NODE=S032R61

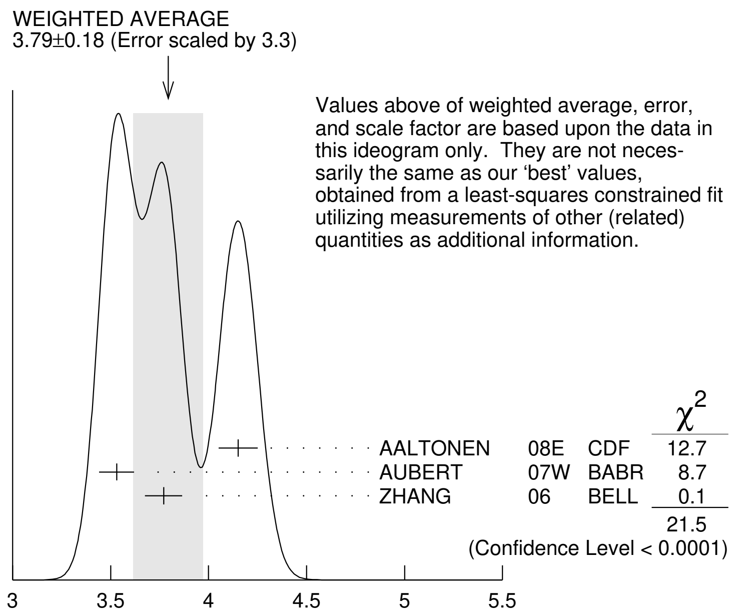
VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
3.77±0.18 OUR FIT	Error includes scale factor of 3.3. [(3.79 ± 0.18) × 10^{-3} OUR 2025 FIT Scale factor = 3.3]				
3.79±0.18 OUR AVERAGE	Error includes scale factor of 3.3. See the ideogram below.				
4.15±0.10	12.7±0.3k	[1] AALTONEN	08E	CDF	$p\overline{p}$, $\sqrt{s}$ = 1.96 TeV
3.53±0.08±0.04	4030 ± 90	[2] AUBERT	07W	BABR	$e^+e^- \approx$ 10.6 GeV
3.77±0.08±0.05	4024 ± 88	[1] ZHANG	06	BELL	e^+e^-

NEW

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

$4.05 \pm 0.21 \pm 0.11$	2.0 ± 0.1k	[3] ABULENCIA	06X	CDF	See AALTONEN 08E
$3.81 \pm 0.17 {}^{+0.08}_{-0.16}$	845 ± 40	[2] LI	05A	BELL	See ZHANG 06
$4.29 {}^{+0.63}_{-0.61} \pm 0.27$	234	[4] LINK	05H	FOCS	γ nucleus
$3.57 \pm 0.22 \pm 0.27$		[5] AUBERT	03Z	BABR	See AUBERT 07W
$4.04 \pm 0.85 \pm 0.25$	149	[6] LINK	01	FOCS	γ nucleus
$3.32 {}^{+0.63}_{-0.65} \pm 0.40$	45	[1] GODANG	00	CLE2	$e^+ e^-$
$6.8 {}^{+3.4}_{-3.3} \pm 0.7$	34	[2] AITALA	98	E791	π^- nucl., 500 GeV

[1] GODANG 00, ZHANG 06, and AALTONEN 08E allow CP violation. NODE=S032R61;LINKAGE=ZH
[2] AITALA 98, LI 05A, and AUBERT 07W assume no CP violation. NODE=S032R61;LINKAGE=AT
[3] This ABULENCIA 06X result assumes no mixing. NODE=S032R61;LINKAGE=AB
[4] This LINK 05H result assumes no mixing but allows CP violation. If neither mixing nor CP violation is allowed, $R = (4.29 \pm 0.63 \pm 0.28) \times 10^{-3}$. NODE=S032R61;LINKAGE=LI
[5] This AUBERT 03Z result allows CP violation. If CP violation is not allowed, $R = 0.00359 \pm 0.00020 \pm 0.00027$. NODE=S032R61;LINKAGE=AU
[6] This LINK 01 result assumes no mixing or CP violation. NODE=S032R61;LINKAGE=KL



$\Gamma\left(K^+\pi^-\right)/\Gamma\left(K^-\pi^+\right)$ (units 10^{-3})

$\Gamma\left(K^+\pi^- \text{ via DCS}\right)/\Gamma\left(K^-\pi^+\right)$ $\quad \Gamma_{345}/\Gamma_{47}$

NODE=S032R08

This is R_D, the doubly Cabibbo-suppressed ratio when mixing is allowed. NODE=S032R08

NODE=S032R08

VALUE (units 10^{-3})	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
3.45 ±0.06 OUR AVERAGE		Error includes scale factor of 1.5. See the ideogram below.			
$3.454 \pm 0.040 \pm 0.020$	722k	[1] AAIJ	18K	LHCB	pp at 7, 8, 13 TeV
3.53 ± 0.13		[2] KO	14	BELL	$e^+ e^- \rightarrow \Upsilon(nS)$
3.51 ± 0.35		[3] AALTONEN	13AE	CDF	$p\overline{p}$ at 1.96 TeV
3.04 ± 0.55	13k	AALTONEN	08E	CDF	$p\overline{p}$, $\sqrt{s}$ =1.96 TeV
$3.03 \pm 0.16 \pm 0.10$	4.0k	[4] AUBERT	07W	BABR	$e^+ e^- \approx 10.6$ GeV
3.64 ± 0.17	4.0k	[5] ZHANG	06	BELL	$e^+ e^-$
$5.17 {}^{+1.47}_{-1.58} \pm 0.76$	234	[6] LINK	05H	FOCS	γ nucleus
$4.8 \pm 1.2 \pm 0.4$	45	[7] GODANG	00	CLE2	$e^+ e^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
3.533 ± 0.054	236k	[8] AAIJ	17AO	LHCB	See AAIJ 18K
3.568 ± 0.066		[9] AAIJ	13CE	LHCB	pp at 7, 8 TeV
3.52 ± 0.15		[10] AAIJ	13N	LHCB	Repl. by AAIJ 13CE
2.87 ± 0.37	0.8k	LI	05A	BELL	See ZHANG 06

[1] This AAIJ 18K value is for direct and indirect CP violation allowed. The value is the same if either one or the other is not allowed, but in each case the error then is $(0.028 \pm 0.014) \times 10^{-3}$. NODE=S032R08;LINKAGE=D

[2] Based on 976 fb^{-1} of data collected at Υ(nS) resonances. Assumes no CP violation. NODE=S032R08;LINKAGE=C

[3] Based on 9.6 fb^{-1} of data collected at the Tevatron. Assumes no CP violation. NODE=S032R08;LINKAGE=AA

[4] Result is the same whether or not CP violation is allowed. NODE=S032R08;LINKAGE=UB

[5] This ZHANG 06 assumes no CP violation. NODE=S032R08;LINKAGE=ZH

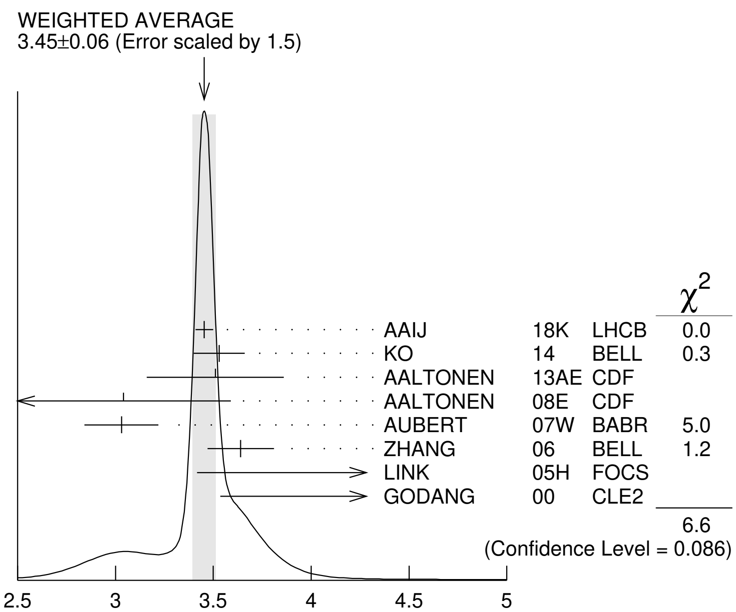
[6] This LINK 05H result allows CP violation. Allowing mixing but not CP violation, $R_D = (3.81^{+1.67}_{-1.63} \pm 0.92) \times 10^{-3}$. NODE=S032R08;LINKAGE=LI

[7] This GODANG 00 result allows CP violation. NODE=S032R08;LINKAGE=GO

[8] The result was established with D^0 from prompt and secondary D^* assuming no CPV or no direct CPV. NODE=S032R08;LINKAGE=A

[9] Based on 3 fb^{-1} of data collected at $\sqrt{s}$ = 7, 8 TeV. Assumes no CP violation. NODE=S032R08;LINKAGE=B

[10] Based on 1 fb^{-1} of data collected at $\sqrt{s}$ = 7 TeV in 2011. Assumes no CP violation. NODE=S032R08;LINKAGE=AI



$\Gamma\left(K^+\pi^- \text{ via DCS}\right)/\Gamma\left(K^-\pi^+\right)$ (units 10^{-3})

$\Gamma(K^+\pi^- \text{ via } \overline{D}^0)/\Gamma(K^-\pi^+)$ Γ_{346}/Γ_{47}

NODE=S032R9

This is R_M in the note on "D^0-$\overline{D}^0$ Mixing" near the start of the D^0 Listings. The experiments here (1) use the charge of the pion in $D^*(2010)^\pm \to (D^0$ or $\overline{D}^0)$ $\pi^\pm$ decay to tell whether a D^0 or a $\overline{D}^0$ was born; and (2) use the decay-time distribution to disentangle doubly Cabibbo-suppressed decay and mixing. For the limits on $|m_1 - m_2|$ and $(\Gamma_1 - \Gamma_2)/\Gamma$ that come from the best mixing limit, see near the beginning of these D^0 Listings. NODE=S032R9

NODE=S032R9

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.00040	95	[1] ZHANG	06	BELL	e^+e^-
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.00046	95	[2] LI	05A	BELL	See ZHANG 06
<0.0063	95	[3] LINK	05H	FOCS	γ nucleus
<0.0013	95	[4] AUBERT	03Z	BABR	e^+e^-, 10.6 GeV
<0.00041	95	[5] GODANG	00	CLE2	e^+e^-
<0.0092	95	[6] BARATE	98W	ALEP	e^+e^- at Z^0
<0.005	90	[7] ANJOS	88C	E691	Photoproduction

[1] This ZHANG 06 result allows CP violation, but the result does not change if CP violation is not allowed. NODE=S032R9;LINKAGE=ZH

[2] This LI 05A result allows CP violation. The limit becomes < 0.00042 (95% CL) if CP violation is not allowed. NODE=S032R9;LINKAGE=LA

[3] LINK 05H obtains the same result whether or not CP violation is allowed. NODE=S032R9;LINKAGE=LI

[4] This AUBERT 03Z result allows CP violation and assumes that the strong phase between $D^0 \to K^+\pi^-$ and $\overline{D}^0 \to K^+\pi^-$ is small, and limits only $D^0 \to \overline{D}^0$ transitions via off-shell intermediate states. The limit on transitions via on-shell intermediate states is 0.0016. NODE=S032R9;LINKAGE=AU

[5] This GODANG 00 result allows CP violation and assumes that the strong phase between $D^0 \to K^+\pi^-$ and $\overline{D}^0 \to K^+\pi^-$ is small, and limits only $D^0 \to \overline{D}^0$ transitions via off-shell intermediate states. The limit on transitions via on-shell intermediate states is 0.0017. NODE=S032R9;LINKAGE=GD

[6] This BARATE 98W result assumes no interference between the DCS and mixing amplitudes ($y' = 0$ in the note on "D^0-$\overline{D}^0$ Mixing" near the start of the D^0 Listings). When interference is allowed, the limit degrades to 0.036 (95%CL). NODE=S032R9;LINKAGE=F

[7] This ANJOS 88C result assumes no interference between the DCS and mixing amplitudes ($y' = 0$ in the note on "D^0-$\overline{D}^0$ Mixing" near the start of the D^0 Listings). When interference is allowed, the limit degrades to 0.019. NODE=S032R9;LINKAGE=AA

$\Gamma(K^0_S\pi^+\pi^-$ in $D^0 \to \overline{D}^0)/\Gamma(K^0_S\pi^+\pi^-)$ — Γ_{347}/Γ_{53}

NODE=S032R75
NODE=S032R75

This is R_M in the note on "D^0-$\overline{D}^0$ Mixing" near the start of the D^0 Listings. The experiments here (1) use the charge of the pion in $D^*(2010)^\pm \to (D^0$ or $\overline{D}^0)$ $\pi^\pm$ decay to tell whether a D^0 or a $\overline{D}^0$ was born; and (2) use the decay-time distribution to disentangle doubly Cabibbo-suppressed decay and mixing. For the limits on $|m_1 - m_2|$ and $(\Gamma_1 - \Gamma_2)/\Gamma$ that come from the best mixing limit, see near the beginning of these D^0 Listings.

NODE=S032R75

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0063	95	[1] ASNER	05	CLEO	$e^+e^- \approx$ 10 GeV

[1] This ASNER 05 limit allows CP violation. If CP violation is not allowed, the limit is 0.0042 at 95% CL. NODE=S032R75;LINKAGE=AS

$\Gamma(K^+\pi^-\pi^0)/\Gamma_{\rm total}$ — Γ_{351}/Γ

NODE=S032D30
NODE=S032D30

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
3.05±0.13 OUR FIT Error includes scale factor of 1.3. [(3.06 ± 0.16) × 10^{-4} OUR 2025 FIT Scale factor = 1.4]					
3.07±0.22 OUR AVERAGE [(3.1 ± 0.6) × 10^{-4} OUR 2025 AVERAGE]					
$3.06\pm0.21\pm0.10$	0.46k	ABLIKIM	25BI	BES3	e^+e^- at 3.773 GeV
$3.13^{+0.60}_{-0.56}\pm0.15$	46	[1] ABLIKIM	22X	BES3	e^+e^- at 3.773 GeV

NEW
NEW

[1] Uses the semileptonic tag method of ABLIKIM 21BB. NODE=S032D30;LINKAGE=A

$\Gamma(K^+\pi^-\pi^0)/\Gamma(K^-\pi^+\pi^0)$ — Γ_{351}/Γ_{68}

NODE=S032C24
NODE=S032C24

The experiments here use the charge of the pion in $D^*(2010)^\pm \to (D^0$ or $\overline{D}^0)$ $\pi^\pm$ decay to tell whether a D^0 or a $\overline{D}^0$ was born. The $D^0 \to K^+\pi^-\pi^0$ decay can occur directly by doubly Cabibbo-suppressed (DCS) decay, or indirectly by $D^0 \to \overline{D}^0$ mixing followed by $\overline{D}^0 \to K^+\pi^-\pi^0$ decay.

NODE=S032C24

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
2.12±0.07 OUR FIT					
2.12±0.07 OUR AVERAGE					
2.01 ± 0.11		[1] EVANS	16	CLEO	$e^+e^- \to D^0\overline{D}^0$ at $\psi(3770)$
$2.14\pm0.08\pm0.08$	763	[2] AUBERT,B	06N	BABR	$e^+e^- \approx \Upsilon(4S)$
$2.29\pm0.15^{+0.13}_{-0.09}$	1.9k	TIAN	05	BELL	$e^+e^- \approx \Upsilon(4S)$
$4.3\ ^{+1.1}_{-1.0}\ \pm0.7$	38	BRANDENB...	01	CLE2	$e^+e^- \approx \Upsilon(4S)$

[1] A combined fit with a recent LHCb $D^0\overline{D}^0$ mixing results in AAIJ 16F is also reported to be $(2.00 \pm 0.11) \times 10^{-3}$. NODE=S032C24;LINKAGE=A

[2] This AUBERT,B 06N result assumes no mixing. NODE=S032C24;LINKAGE=UA

$\Gamma(K^+\pi^-\pi^0$ via $\overline{D}^0)/\Gamma(K^-\pi^+\pi^0)$ — Γ_{352}/Γ_{68}

NODE=S032R00
NODE=S032R00

This is R_M in the note on "D^0-$\overline{D}^0$ Mixing" near the start of the D^0 Listings. The experiments here (1) use the charge of the pion in $D^*(2010)^\pm \to (D^0$ or $\overline{D}^0)$ $\pi^\pm$ decay to tell whether a D^0 or a $\overline{D}^0$ was born; and (2) use the decay-time distribution to disentangle doubly Cabibbo-suppressed decay and mixing. For the limits on $|m_1 - m_2|$ and $(\Gamma_1 - \Gamma_2)/\Gamma$ that come from the best mixing limit, see near the beginning of these D^0 Listings.

NODE=S032R00

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{5.25^{+0.25}_{-0.31}\pm0.12}$		AUBERT	09AN	BABR	e^+e^- at 10.58 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.54	95	[1] AUBERT,B	06N	BABR	$e^+e^- \approx \Upsilon(4S)$

[1] This AUBERT,B 06N limit assumes no CP violation. The measured value corresponding to the limit is $(2.3^{+1.8}_{-1.4} \pm 0.4) \times 10^{-4}$. If CP violation is allowed, this becomes $(1.0^{+2.2}_{-0.7} \pm 0.3) \times 10^{-4}$. NODE=S032R00;LINKAGE=AU

$\Gamma(K^+\pi^-\eta)/\Gamma_{total}$ Γ_{353}/Γ

NODE=S032D85

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
1.04±0.16±0.08	62	ABLIKIM	25BI	BES3	e^+e^- at 3.773 GeV

$\Gamma(K^+\pi^-2\pi^0)/\Gamma_{total}$ Γ_{354}/Γ

NODE=S032D31

VALUE (units 10^{-4})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
1.40±0.27±0.09		85	ABLIKIM	25BI	BES3	e^+e^- at 3.773 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<3.6	90		[1] ABLIKIM	22X	BES3	e^+e^- at 3.773 GeV

[1] Uses the semileptonic tag method of ABLIKIM 21BB.

NODE=S032D31;LINKAGE=A

$\Gamma(K^+\pi^+2\pi^-$ via DCS$)/\Gamma(K^-2\pi^+\pi^-)$ Γ_{355}/Γ_{87}

NODE=S032P22

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
3.03 ±0.07 OUR AVERAGE					
3.025±0.077	42k,11M	[1] AAIJ	16F	LHCB	pp at 7, 8 TeV
3.03 ±0.13		[2] EVANS	16	CLEO	$e^+e^- \rightarrow D^0\overline{D}^0$ at $\psi(3770)$

[1] This result uses external input on the mixing parameters x, y. Without this input, the result is $(3.215 \pm 0.136) \times 10^{-3}$.

NODE=S032P22;LINKAGE=A

[2] A combined fit with a recent LHCb $D^0\overline{D}^0$ mixing results in AAIJ 16F is also reported to be $(3.01 \pm 0.07) \times 10^{-3}$.

NODE=S032P22;LINKAGE=D

$\Gamma(K^+\pi^+2\pi^-)/\Gamma_{total}$ Γ_{356}/Γ

NODE=S032D84

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
2.64±0.06 OUR FIT	Error includes scale factor of 1.1.				
2.38±0.19±0.12	0.34k	ABLIKIM	25BI	BES3	e^+e^- at 3.773 GeV

$\Gamma(K^+\pi^+2\pi^-)/\Gamma(K^-2\pi^+\pi^-)$ Γ_{356}/Γ_{87}

NODE=S032R62

The experiments here use the charge of the pion in $D^*(2010)^\pm \rightarrow (D^0$ or $\overline{D}^0)$ $\pi^\pm$ decay to tell whether a D^0 or a $\overline{D}^0$ was born. The $D^0 \rightarrow K^+\pi^-\pi^+\pi^-$ decay can occur directly by doubly Cabibbo-suppressed (DCS) decay, or indirectly by $D^0 \rightarrow \overline{D}^0$ mixing followed by $\overline{D}^0 \rightarrow K^+\pi^-\pi^+\pi^-$ decay. Some of the experiments can use the decay-time information to disentangle the two mechanisms. Here, we list the experimental branching ratio, which if there is no mixing is the DCS ratio; in the next data block we give the limits on the mixing ratio.

NODE=S032R62

Some early limits have been omitted from this Listing; see our 1998 edition (EPJ **C3** 1).

NODE=S032R62

VALUE (units 10^{-3})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
3.22±0.05 OUR FIT						
3.22±0.05 OUR AVERAGE						
3.22±0.05		42k,11M	[1] AAIJ	16F	LHCB	pp at 7, 8 TeV
3.24±0.08±0.07		3.3k	[2] WHITE	13	BELL	$e^+e^- \approx \Upsilon(4S)$
$4.4\ ^{+1.3}_{-1.2}\ \pm0.4$		54	[2] DYTMAN	01	CLE2	$e^+e^- \approx \Upsilon(4S)$
$2.5\ ^{+3.6}_{-3.4}\ \pm0.3$			[3] AITALA	98	E791	π^- nucl., 500 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •						
$3.20\pm0.18\ ^{+0.18}_{-0.13}$		1.7k	[2] TIAN	05	BELL	See WHITE 13
<18	90		[2] AMMAR	91	CLEO	$e^+e^- \approx$ 10.5 GeV
<18	90		[4] ANJOS	88C	E691	Photoproduction

[1] AAIJ 16F result comes from time-dependent analysis that uses external input on the mixing parameters x, y. Without this input, the result is $(3.29 \pm 0.08) \times 10^{-3}$.

NODE=S032R62;LINKAGE=A

[2] AMMAR 91 cannot and DYTMAN 01, TIAN 05 do not distinguish between doublyCabibbo-suppressed decay and D^0-$\overline{D}^0$ mixing.

NODE=S032R62;LINKAGE=G

[3] This AITALA 98result assumes no D^0-$\overline{D}^0$ mixing (R_M in the note on "D^0-$\overline{D}^0$ Mixing").It becomes $-0.0020^{+0.0117}_{-0.0106} \pm 0.0035$ whenmixing is allowed and decay-time information is used todistinguish doubly Cabibbo-suppressed decays from mixing.

NODE=S032R62;LINKAGE=AT

[4] ANJOS 88C uses decay-time information to distinguish doubly Cabibbo-suppressed (DCS) decays from D^0-$\overline{D}^0$ mixing. However, the result assumes no interference between the DCS and mixing amplitudes ($y' = 0$ in the note on "D^0-$\overline{D}^0$ Mixing" near the start of the D^0 Listings). When interference is allowed, the limit degrades to 0.033.

NODE=S032R62;LINKAGE=F

$\Gamma(K^+\pi^+2\pi^- \text{ via } \overline{D}^0)/\Gamma(K^-2\pi^+\pi^-)$ Γ_{357}/Γ_{87}

NODE=S032S83

This is a D^0-$\overline{D}^0$ mixing limit. The experiments here (1) use the charge of the pion in $D^*(2010)^\pm \to (D^0 \text{ or } \overline{D}^0)\,\pi^\pm$ decay to tell whether a D^0 or a $\overline{D}^0$ was born; and (2) use the decay-time distribution to disentangle doubly Cabibbo-suppressed decay and mixing. For the limits on $|m_{D_1^0} - m_{D_2^0}|$ and $(\Gamma_{D_1^0} - \Gamma_{D_2^0})/\Gamma_{D^0}$ that come from the best mixing limit, see near the beginning of these D^0 Listings.

NODE=S032S83

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
9.6±3.6		[1] AAIJ	16F	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<500	90	[2] ANJOS	88C	E691	Photoproduction

NODE=S032S83

[1] AAIJ 16F result comes from an unconstrained decay-time dependent fit to the wrong-sign to right-sign decay rates ratio as $(x^2 + y^2)/2$.

NODE=S032S83;LINKAGE=B

[2] ANJOS 88C uses decay-time information to distinguish doubly Cabibbo-suppressed (DCS) decays from D^0-$\overline{D}^0$ mixing. However, the result assumes no interference between the DCS and mixing amplitudes ($y' = 0$ in the note on "D^0-$\overline{D}^0$ Mixing" near the start of the D^0 Listings). When interference is allowed, the limit degrades to 0.007.

NODE=S032S83;LINKAGE=A

$\Gamma(K^+\pi^-\pi^0\eta)/\Gamma_{\text{total}}$ Γ_{358}/Γ

NODE=S032D86
NODE=S032D86

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<7 \times 10^{-5}$	90	ABLIKIM	25BI	BES3	e^+e^- at 3.773 GeV

$\Gamma(K^+\pi^- \text{ or } K^+\pi^+2\pi^- \text{ via } \overline{D}^0)/\Gamma(K^-\pi^+ \text{ or } K^-2\pi^+\pi^-)$ Γ_{359}/Γ_0

NODE=S032R99

This is a D^0-$\overline{D}^0$ mixing limit. For the limits on $|m_{D_1^0} - m_{D_2^0}|$ and $(\Gamma_{D_1^0} - \Gamma_{D_2^0})/\Gamma_{D^0}$ that come from the best mixing limit, see near the beginning of these D^0 Listings.

NODE=S032R99

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.0085	90	[1] AITALA	98	E791	π^- nucleus, 500 GeV
<0.0037	90	[2] ANJOS	88C	E691	Photoproduction

NODE=S032R99

[1] AITALA 98 uses decay-time information to distinguish doubly Cabibbo-suppressed decays from D^0-$\overline{D}^0$ mixing. The fit allows interference between the two amplitudes, and also allows CP violation in this term. The central value obtained is $0.0039^{+0.0036}_{-0.0032} \pm 0.0016$. When interference is disallowed, the result becomes $0.0021 \pm 0.0009 \pm 0.0002$.

NODE=S032R99;LINKAGE=AT

[2] This combines results of ANJOS 88C on $K^+\pi^-$ and $K^+\pi^-\pi^+\pi^-$ (via $\overline{D}^0$) reported in the data block above (see footnotes there). It assumes no interference.

NODE=S032R99;LINKAGE=AN

$\Gamma(\mu^- \text{ anything via } \overline{D}^0)/\Gamma(\mu^+ \text{ anything})$ Γ_{360}/Γ_6

NODE=S032R8

This is a D^0-$\overline{D}^0$ mixing limit. See the somewhat better limits above.

NODE=S032R8
NODE=S032R8

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0056	90	LOUIS	86	SPEC	π^- W 225 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.012	90	BENVENUTI	85	CNTR	μC, 200 GeV
<0.044	90	BODEK	82	SPEC	π^-, pFe $\to$ D^0

Rare or forbidden modes

NODE=S032336

$\Gamma(\gamma\gamma)/\Gamma_{\text{total}}$ Γ_{361}/Γ

NODE=S032S84

$D^0 \to \gamma\gamma$ is a flavor-changing neutral-current decay, forbidden in the Standard Model at the tree level.

NODE=S032S84

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<$ **8.5 × 10^{-7}**	90	NISAR	16	BELL	e^+e^- at $\Upsilon(4S)$, $\Upsilon(5S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$< 3.8 \times 10^{-6}$	90	ABLIKIM	15F	BES3	e^+e^- at 3.773 GeV
$< 2.2 \times 10^{-6}$	90	LEES	12L	BABR	$e^+e^- \approx$ 10.58 GeV
$<29 \times 10^{-6}$	90	COAN	03	CLE2	$e^+e^- \approx \Upsilon(4S)$

NODE=S032S84
OCCUR=2

$\Gamma(e^+e^-)/\Gamma_{\text{total}}$ Γ_{362}/Γ

NODE=S032R44

A test for the $\Delta C = 1$ weak neutral current. Allowed by first-order weak interaction combined with electromagnetic interaction.

NODE=S032R44

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<$**7.9 × 10^{-8}**	90	PETRIC	10	BELL	$e^+e^- \approx \Upsilon(4S)$

NODE=S032R44

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

$<1.7 \times 10^{-7}$	90	LEES	12Q	BABR	$e^+e^- \approx$ 10.58 GeV
$<1.2 \times 10^{-6}$	90	AUBERT,B	04Y	BABR	$e^+e^- \approx \Upsilon(4S)$
$<8.19 \times 10^{-6}$	90	PRIPSTEIN	00	E789	p nucleus, 800 GeV
$<6.2 \times 10^{-6}$	90	AITALA	99G	E791	$\pi^- N$ 500 GeV
$<1.3 \times 10^{-5}$	90	FREYBERGER	96	CLE2	$e^+e^- \approx \Upsilon(4S)$
$<1.3 \times 10^{-4}$	90	ADLER	88	MRK3	e^+e^- 3.77 GeV
$<1.7 \times 10^{-4}$	90	ALBRECHT	88G	ARG	e^+e^- 10 GeV
$<2.2 \times 10^{-4}$	90	HAAS	88	CLEO	e^+e^- 10 GeV

$\Gamma(\mu^+\mu^-)/\Gamma_{\rm total}$ — Γ_{363}/Γ

NODE=S032R7

A test for the $\Delta C = 1$ weak neutral current. Allowed by first-order weak interaction combined with electromagnetic interaction.

NODE=S032R7

NODE=S032R7

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.1 \times 10^{-9}$ (CL = 90%)	[$<3.1 \times 10^{-9}$ (CL = 90%) OUR 2025 BEST LIMIT]				
$<2.1 \times 10^{-9}$	90	[1] CHEKHOVSKY	25F	CMS	pp at 13.6 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<3.1 \times 10^{-9}$	90	[2] AAIJ	23R	LHCB	pp at 7, 8, 13 TeV
$<6.2 \times 10^{-9}$	90	[3] AAIJ	13AI	LHCB	pp at 7 TeV
$0.6–8.1 \times 10^{-7}$	90	[4] LEES	12Q	BABR	$e^+e^- \approx$ 10.58 GeV
$<2.1 \times 10^{-7}$	90	AALTONEN	10X	CDF	$p\overline{p}$, $\sqrt{s} = 1.96$ TeV
$<1.4 \times 10^{-7}$	90	PETRIC	10	BELL	$e^+e^- \approx \Upsilon(4S)$
$<2.0 \times 10^{-6}$	90	ABT	04	HERB	pA, 920 GeV
$<1.3 \times 10^{-6}$	90	AUBERT,B	04Y	BABR	$e^+e^- \approx \Upsilon(4S)$
$<2.5 \times 10^{-6}$	90	ACOSTA	03F	CDF	See AALTONEN 10X
$<1.56 \times 10^{-5}$	90	PRIPSTEIN	00	E789	p nucleus, 800 GeV
$<5.2 \times 10^{-6}$	90	AITALA	99G	E791	$\pi^- N$ 500 GeV
$<4.1 \times 10^{-6}$	90	ADAMOVICH	97	BEAT	π^- Cu, W 350 GeV
$<4.2 \times 10^{-6}$	90	ALEXOPOU...	96	E771	p Si, 800 GeV
$<3.4 \times 10^{-5}$	90	FREYBERGER	96	CLE2	$e^+e^- \approx \Upsilon(4S)$
$<7.6 \times 10^{-6}$	90	ADAMOVICH	95	BEAT	See ADAMOVICH 97
$<4.4 \times 10^{-5}$	90	KODAMA	95	E653	π^- emulsion 600 GeV
$<3.1 \times 10^{-5}$	90	[5] MISHRA	94	E789	-4.1 ± 4.8 events
$<7.0 \times 10^{-5}$	90	ALBRECHT	88G	ARG	e^+e^- 10 GeV
$<1.1 \times 10^{-5}$	90	LOUIS	86	SPEC	π^- W 225 GeV
$<3.4 \times 10^{-4}$	90	AUBERT	85	EMC	Deep inelast. $\mu^- N$

[1] CHEKHOVSKY 25F reports a 95% CL limit of $< 2.4 \times 10^{-9}$. NODE=S032R7;LINKAGE=E

[2] AAIJ 23R reports a 95% CL limit of $< 3.5 \times 10^{-9}$. NODE=S032R7;LINKAGE=C

[3] Superseded by AAIJ 23R. NODE=S032R7;LINKAGE=D

[4] LEES 12Q gives a 2-sided range. NODE=S032R7;LINKAGE=LE

[5] Here MISHRA 94 uses "the statistical approach advocated by the PDG." For an alternate approach, giving a limit of 9×10^{-6} at 90% confidence level, see the paper. NODE=S032R7;LINKAGE=B

$\Gamma(\pi^0 e^+e^-)/\Gamma_{\rm total}$ — Γ_{364}/Γ

NODE=S032S44

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

NODE=S032S44

NODE=S032S44

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<4 \times 10^{-6}$	90	ABLIKIM	18P	BES3	e^+e^-, 3773 MeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<4.5 \times 10^{-5}$	90	FREYBERGER	96	CLE2	$e^+e^- \approx \Upsilon(4S)$

$\Gamma(\pi^0 \mu^+\mu^-)/\Gamma_{\rm total}$ — Γ_{365}/Γ

NODE=S032B95

A test for the ΔC=1 weak neutral current. Allowed by higher-order electroweak interactions.

NODE=S032B95

NODE=S032B95

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.8 \times 10^{-4}$	90	KODAMA	95	E653	π^- emulsion 600 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<5.4 \times 10^{-4}$	90	FREYBERGER	96	CLE2	$e^+e^- \approx \Upsilon(4S)$

$\Gamma(\pi^0 \nu\overline{\nu})/\Gamma_{\rm total}$ — Γ_{366}/Γ

NODE=S032D23

NODE=S032D23

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.1 \times 10^{-4}$	90	[1] ABLIKIM	22V	BES3	e^+e^- at 3773 MeV

[1] ABLIKIM 22V easurement comes from a sample of 10.6×10^6 $D^0\overline{D}^0$ pairs . NODE=S032D23;LINKAGE=A

$\Gamma(\eta e^+ e^-)/\Gamma_{total}$ Γ_{367}/Γ

NODE=S032S45

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<3 × 10^{-6}	90	ABLIKIM	18P	BES3	$e^+ e^-$, 3773 MeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.1 \times 10^{-4}$	90	FREYBERGER	96	CLE2	$e^+ e^- \approx \Upsilon(4S)$

$\Gamma(\eta \mu^+ \mu^-)/\Gamma_{total}$ Γ_{368}/Γ

NODE=S032S46

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<5.3 × 10^{-4}	90	FREYBERGER	96	CLE2	$e^+ e^- \approx \Upsilon(4S)$

$\Gamma(\pi^+ \pi^- e^+ e^-)/\Gamma_{total}$ Γ_{369}/Γ

NODE=S032C14

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE (units 10^{-6})	CL%	DOCUMENT ID		TECN	COMMENT
< 7 (CL = 90%)	[$<7 \times 10^{-6}$ (CL = 90%) OUR 2025 BEST LIMIT]				
< 7	90	ABLIKIM	18P	BES3	$e^+ e^-$, 3773 MeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$1.33 \pm 0.17 \pm 0.25$		[1] AAIJ	25M	LHCB	pp at 13 TeV
not seen		[2] ADACHI	25W	BELL	$e^+ e^-$ near $\Upsilon(4S)$
<373	90	AITALA	01C	E791	π^- nucleus, 500 GeV

[1] AAIJ 25M value measured only in the region $m(e^+ e^-) > 2m_\mu$, for five different dielectron mass intervals. The systematic uncertainty includes a 13.7% relative uncertainty from the normalization mode $D^0 \to K^- \pi^+ (e^+ e^-)_{\rho/\omega}$. NODE=S032C14;LINKAGE=A

[2] ADACHI 25W sets limits at 90% CL of order 10^{-7} to 10^{-6} for four different dielectron mass ranges, $520 < m(e^+ e^-) < 560$ MeV, $675 < m(e^+ e^-) < 875$ MeV, $995 < m(e^+ e^-) < 1035$ MeV, and $m(e^+ e^-) > 200$ MeV excluding resonance regions. NODE=S032C14;LINKAGE=C

$\Gamma(\rho^0 e^+ e^-)/\Gamma_{total}$ Γ_{370}/Γ

NODE=S032R63

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.0 × 10^{-4}	90	[1] FREYBERGER	96	CLE2	$e^+ e^- \approx \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.24 \times 10^{-4}$	90	AITALA	01C	E791	π^- nucleus, 500 GeV
$<4.5 \times 10^{-4}$	90	HAAS	88	CLEO	$e^+ e^-$ 10 GeV

[1] This FREYBERGER 96 limit is obtained using a phase-space model. The limit changes to $< 1.8 \times 10^{-4}$ using a photon pole amplitude model. NODE=S032R63;LINKAGE=FB

$\Gamma(\pi^+ \pi^- \mu^+ \mu^-)/\Gamma_{total}$ Γ_{371}/Γ

NODE=S032C15

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE (units 10^{-7})	EVTS	DOCUMENT ID		TECN	COMMENT
9.64±0.48±1.10	561	[1] AAIJ	17BG	LHCB	pp at 8 TeV

[1] The second AAIJ 17BG error is the systematic 0.51×10^{-7} and normalization 0.97×10^{-7} mode errors added in quadrature. NODE=S032C15;LINKAGE=A

$\Gamma(\pi^+ \pi^- \mu^+ \mu^- \text{(non-res)})/\Gamma_{total}$ Γ_{372}/Γ

NODE=S032P67

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<5.5 × 10^{-7}	90	[1] AAIJ	14B	LHCB	pp at 7 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<3.0 \times 10^{-5}$	90	AITALA	01C	E791	π^- nucleus, 500 GeV

[1] AAIJ 14B measures this branching-fraction limit relative to the $\pi^+ \pi^- \phi$, $\phi \to \mu^+ \mu^-$ fraction. The above limit excludes the resonant ϕ, ω, and ρ regions, and then fills those gaps with a phase-space model. NODE=S032P67;LINKAGE=AA

$\Gamma(\rho^0 \mu^+ \mu^-)/\Gamma_{total}$ Γ_{373}/Γ

NODE=S032R64

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<2.2 × 10^−5	90	AITALA	01C	E791	π^- nucleus, 500 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<4.9 \times 10^{-4}$	90	[1] FREYBERGER	96	CLE2	$e^+ e^- \approx \Upsilon(4S)$
$<2.3 \times 10^{-4}$	90	KODAMA	95	E653	π^- emulsion 600 GeV
$<8.1 \times 10^{-4}$	90	HAAS	88	CLEO	$e^+ e^-$ 10 GeV

[1] This FREYBERGER 96 limit is obtained using a phase-space model. The limit changes to $< 4.5 \times 10^{-4}$ using a photon pole amplitude model. NODE=S032R64;LINKAGE=FB

$\Gamma(\omega e^+ e^-)/\Gamma_{total}$ Γ_{374}/Γ

NODE=S032S47

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<6 × 10^−6	90	ABLIKIM	18P	BES3	$e^+ e^-$, 3773 MeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.8 \times 10^{-4}$	90	[1] FREYBERGER	96	CLE2	$e^+ e^- \approx \Upsilon(4S)$

[1] This FREYBERGER 96 limit is obtained using a phase-space model. The limit changes to $< 2.7 \times 10^{-4}$ using a photon pole amplitude model. NODE=S032S47;LINKAGE=FB

$\Gamma(\omega \mu^+ \mu^-)/\Gamma_{total}$ Γ_{375}/Γ

NODE=S032S48

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<8.3 × 10^−4	90	[1] FREYBERGER	96	CLE2	$e^+ e^- \approx \Upsilon(4S)$

[1] This FREYBERGER 96 limit is obtained using a phase-space model. The limit changes to $< 6.5 \times 10^{-4}$ using a photon pole amplitude model. NODE=S032S48;LINKAGE=FB

$\Gamma(K^- K^+ e^+ e^-)/\Gamma_{total}$ Γ_{376}/Γ

NODE=S032C18

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.1 × 10^−5	90	ABLIKIM	18P	BES3	$e^+ e^-$, 3773 MeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
not seen		[1] AAIJ	25M	LHCB	pp at 13 TeV
not seen		[2] ADACHI	25W	BELL	$e^+ e^-$ near $\Upsilon(4S)$
$<3.15 \times 10^{-4}$	90	AITALA	01C	E791	π^- nucleus, 500 GeV

[1] AAIJ 25M sets limits for three different dielectron mass ranges, $2m_\mu < m(e^+ e^-) <$ 525 MeV, 525 MeV $< m(e^+ e^-) <$ 565 MeV, and $m(e^+ e^-) >$ 565 MeV. NODE=S032C18;LINKAGE=A

[2] ADACHI 25W sets limits at 90% CL of order 10^{-7} to 10^{-6} for three different dielectron mass ranges, 520 $< m(e^+ e^-) <$ 560 MeV, $m(e^+ e^-) >$ 675 MeV, and $m(e^+ e^-) >$ 200 MeV excluding resonance regions. NODE=S032C18;LINKAGE=B

$\Gamma(\phi e^+ e^-)/\Gamma_{total}$ Γ_{377}/Γ

NODE=S032S49

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<5.2 × 10^−5	90	[1] FREYBERGER	96	CLE2	$e^+ e^- \approx \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<5.9 \times 10^{-5}$	90	AITALA	01C	E791	π^- nucleus, 500 GeV

[1] This FREYBERGER 96 limit is obtained using a phase-space model. The limit changes to $< 7.6 \times 10^{-5}$ using a photon pole amplitude model. NODE=S032S49;LINKAGE=FB

$\Gamma(K^- K^+ \mu^+ \mu^-)/\Gamma_{total}$ Γ_{378}/Γ

NODE=S032C19

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE (units 10^{-7})	EVTS	DOCUMENT ID		TECN	COMMENT
1.54±0.27±0.18	34	[1] AAIJ	17BG	LHCB	pp at 8 TeV

[1] The second AAIJ 17BG error is the systematic 0.09×10^{-7} and normalization 0.16×10^{-7} mode errors added in quadrature. NODE=S032C19;LINKAGE=A

$\Gamma(K^- K^+ \mu^+ \mu^- \text{(non-res)})/\Gamma_{total}$ Γ_{379}/Γ

NODE=S032P68

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<3.3 × 10^−5	90	AITALA	01C	E791	π^- nucleus, 500 GeV

$\Gamma(\phi\mu^+\mu^-)/\Gamma_{total}$ Γ_{380}/Γ

NODE=S032S50

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<3.1 × 10^{-5}	90	AITALA	01C	E791	π^- nucleus, 500 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<4.1 \times 10^{-4}$	90	[1] FREYBERGER	96	CLE2	$e^+e^- \approx \Upsilon(4S)$

[1] This FREYBERGER 96 limit is obtained using a phase-space model. The limit changes to $< 2.4 \times 10^{-4}$ using a photon pole amplitude model.

$\Gamma(\overline{K}^0 e^+e^-)/\Gamma_{total}$ Γ_{381}/Γ

NODE=S032R70

Not a useful test for ΔC =1 weak neutral current because both quarks must change flavor.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<2.4 × 10^{-5}	90	[1] ABLIKIM	18P	BES3	e^+e^-, 3773 MeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.1 \times 10^{-4}$	90	FREYBERGER	96	CLE2	$e^+e^- \approx \Upsilon(4S)$
$<1.7 \times 10^{-3}$	90	ADLER	89C	MRK3	e^+e^- 3.77 GeV

[1] ABLIKIM 18P report a 90% C.L. limit on $D^0 \rightarrow K^0_S e^+e^-$ of 1.2×10^{-5} which is here interpreted in terms of $D^0 \rightarrow \overline{K}^0 e^+e^-$.

$\Gamma(\overline{K}^0 \mu^+\mu^-)/\Gamma_{total}$ Γ_{382}/Γ

NODE=S032B96

Not a useful test for ΔC =1 weak neutral current because both quarks must change flavor.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<2.6 × 10^{-4}	90	KODAMA	95	E653	π^- emulsion 600 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<6.7 \times 10^{-4}$	90	FREYBERGER	96	CLE2	$e^+e^- \approx \Upsilon(4S)$

$\Gamma(K^-\pi^+e^+e^-)/\Gamma_{total}$ Γ_{383}/Γ

NODE=S032C16

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<4.1 \times 10^{-5}$	90	ABLIKIM	18P	BES3	see LEES 19A
$<3.85 \times 10^{-4}$	90	AITALA	01C	E791	π^- nucleus, 500 GeV

$\Gamma(K^-\pi^+e^+e^-, 675 < m_{ee} < 875\text{ MeV})/\Gamma_{total}$ Γ_{384}/Γ

NODE=S032Q86

VALUE (units 10^{-6})	EVTS	DOCUMENT ID		TECN	COMMENT
4.0 ±0.4 OUR AVERAGE					
[$(4.0 \pm 0.5) \times 10^{-6}$ OUR 2025 AVERAGE]					
3.96±0.45±0.29	110	[1] ADACHI	25W	BELL	e^+e^- near $\Upsilon(4S)$
4.0 ±0.5 ±0.2 ±0.1	68	[2,3] LEES	19A	BABR	e^+e^- near $\Upsilon(4S)$

NEW

[1] ADACHI 25W also sets upper limits at 90% CL for the $m_{e^+e^-}$ resonant regions around the m_η and m_ϕ, $< 5.6 \times 10^{-7}$ and $< 2.9 \times 10^{-7}$, respectively.

[2] Observation with 9.7 σ significance. The last uncertainty is due to the uncertainty on the branching fraction of the normalization mode, $D^0 \rightarrow K^-\pi^+\pi^+\pi^-$. The second uncertainty is other systematic and is dominated by the model parameterization.

[3] LEES 19A also sets an upper limit for non-resonant regions, where long-distance effects are expected to be small: $< 3.1 \times 10^{-6}$ at 90% CL.

$\Gamma(K^-\pi^+e^+e^-, 1.005 < m_{ee} < 1.035\text{ GeV})/\Gamma_{total}$ Γ_{385}/Γ

NODE=S032Q87

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<5 × 10^{-7}	90	[1] LEES	19A	BABR	e^+e^- near $\Upsilon(4S)$

[1] LEES 19A also sets an upper limit for non-resonant regions, where long-distance effects are expected to be small: $< 3.1 \times 10^{-6}$ at 90% CL.

$\Gamma(\overline{K}^*(892)^0 e^+e^-)/\Gamma_{total}$ Γ_{386}/Γ

NODE=S032S51

Not a useful test for ΔC =1 weak neutral current because both quarks must change flavor.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<4.7 × 10^{-5}	90	AITALA	01C	E791	π^- nucleus, 500 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.4 \times 10^{-4}$	90	[1] FREYBERGER	96	CLE2	$e^+e^- \approx \Upsilon(4S)$

[1] This FREYBERGER 96 limit is obtained using a phase-space model. The limit changes to $< 2.0 \times 10^{-4}$ using a photon pole amplitude model.

$\Gamma(K^-\pi^+\mu^+\mu^-)/\Gamma_{total}$ Γ_{387}/Γ

NODE=S032C17

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<3.59 × 10^{-4}	90	AITALA	01C	E791	π^- nucleus, 500 GeV

$\Gamma(K^-\pi^+\mu^+\mu^-, 675 < m_{\mu\mu} < 875\ \mathrm{MeV})/\Gamma_{total}$ Γ_{388}/Γ

NODE=S032P25

VALUE (units 10^{-6})	EVTS	DOCUMENT ID		TECN	COMMENT
4.17±0.12±0.40	2.4k	[1] AAIJ	16I	LHCB	pp at 8 TeV

[1] AAIJ 16I uses B($D^0 \to K^-\pi^+\pi^+\pi^-$) = (8.287 ± 0.043 ± 0.200) × 10^{-2} value for the normalization mode.

NODE=S032P25;LINKAGE=B

$\Gamma(\overline{K}^*(892)^0\mu^+\mu^-)/\Gamma_{total}$ Γ_{389}/Γ

NODE=S032S52

Not a useful test for ΔC =1 weak neutral current because both quarks must change flavor.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<2.4 × 10^{-5}	90	AITALA	01C	E791	π^- nucleus, 500 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<1.18 × 10^{-3}	90	[1] FREYBERGER	96	CLE2	$e^+e^- \approx \Upsilon(4S)$

[1] This FREYBERGER 96 limit is obtained using a phase-space model. The limit changes to < 1.0 × 10^{-3} using a photon pole amplitude model.

NODE=S032S52;LINKAGE=FB

$\Gamma(\pi^+\pi^-\pi^0\mu^+\mu^-)/\Gamma_{total}$ Γ_{390}/Γ

NODE=S032B97

A test for the ΔC=1 weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<8.1 × 10^{-4}	90	KODAMA	95	E653	π^- emulsion 600 GeV

$\Gamma(\mu^\pm e^\mp)/\Gamma_{total}$ Γ_{391}/Γ

NODE=S032R46

A test of lepton family number conservation.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
< 1.3 × 10^{-8}	90	AAIJ	16H	LHCB	pp at 7, 8 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 3.3 × 10^{-7}	90	LEES	12Q	BABR	$e^+e^- \approx$ 10.58 GeV
< 2.6 × 10^{-7}	90	PETRIC	10	BELL	$e^+e^- \approx \Upsilon(4S)$
< 8.1 × 10^{-7}	90	AUBERT,B	04Y	BABR	$e^+e^- \approx \Upsilon(4S)$
< 1.72 × 10^{-5}	90	PRIPSTEIN	00	E789	p nucleus, 800 GeV
< 8.1 × 10^{-6}	90	AITALA	99G	E791	$\pi^- N$ 500 GeV
< 1.9 × 10^{-5}	90	[1] FREYBERGER	96	CLE2	$e^+e^- \approx \Upsilon(4S)$
< 1.0 × 10^{-4}	90	ALBRECHT	88G	ARG	e^+e^- 10 GeV
< 2.7 × 10^{-4}	90	HAAS	88	CLEO	e^+e^- 10 GeV
< 1.2 × 10^{-4}	90	BECKER	87C	MRK3	e^+e^- 3.77 GeV
< 9 × 10^{-4}	90	PALKA	87	SILI	200 GeV πp
<21 × 10^{-4}	90	[2] RILES	87	MRK2	e^+e^- 29 GeV

[1] This is the corrected result given in the erratum to FREYBERGER 96.

NODE=S032R46;LINKAGE=C

[2] RILES 87 assumes B($D \to K\pi$) = 3.0% and has production model dependency.

NODE=S032R46;LINKAGE=A

$\Gamma(\pi^0 e^\pm\mu^\mp)/\Gamma_{total}$ Γ_{392}/Γ

NODE=S032S53

A test of lepton family number conservation. The value is for the sum of the two charge states.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<8.0 × 10^{-7}	90	LEES	20A	BABR	e^+e^- at $\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<8.6 × 10^{-5}	90	FREYBERGER	96	CLE2	$e^+e^- \approx \Upsilon(4S)$

$\Gamma(\eta e^\pm\mu^\mp)/\Gamma_{total}$ Γ_{393}/Γ

NODE=S032S54

A test of lepton family number conservation. The value is for the sum of the two charge states.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<22.5 × 10^{-7}	90	[1] LEES	20A	BABR	e^+e^- at $\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 1.0 × 10^{-4}	90	FREYBERGER	96	CLE2	$e^+e^- \approx \Upsilon(4S)$

[1] LEES 20A quotes separate limits B($D^0 \to \eta e^\pm\mu^\mp$, $\eta \to \gamma\gamma$) < 24.0 × 10^{-7} and B($D^0 \to \eta e^\pm\mu^\mp$, $\eta \to \pi^+\pi^-\pi^0$) < 43.0 × 10^{-7}.

NODE=S032S54;LINKAGE=A

$\Gamma(\pi^+\pi^- e^\pm\mu^\mp)/\Gamma_{total}$ — Γ_{394}/Γ

NODE=S032C20

A test of lepton family-number conservation.

NODE=S032C20
NODE=S032C20

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.71\times10^{-6}$	90	LEES	20B	BABR	e^+e^- at $\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.5\times10^{-5}$	90	AITALA	01C	E791	π^- nucleus, 500 GeV

$\Gamma(\rho^0 e^\pm\mu^\mp)/\Gamma_{total}$ — Γ_{395}/Γ

NODE=S032S55

A test of lepton family number conservation. The value is for the sum of the two charge states.

NODE=S032S55
NODE=S032S55

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5.0\times10^{-7}$	90	LEES	20A	BABR	e^+e^- at $\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<6.6\times10^{-5}$	90	AITALA	01C	E791	π^- nucleus, 500 GeV
$<4.9\times10^{-5}$	90	[1] FREYBERGER	96	CLE2	$e^+e^-\approx\Upsilon(4S)$

[1] This FREYBERGER 96 limit is obtained using a phase-space model. The limit changes to $<5.0\times10^{-5}$ using a photon pole amplitude model.

NODE=S032S55;LINKAGE=FB

$\Gamma(\omega e^\pm\mu^\mp)/\Gamma_{total}$ — Γ_{396}/Γ

NODE=S032S56

A test of lepton family number conservation. The value is for the sum of the two charge states.

NODE=S032S56
NODE=S032S56

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<17.1\times10^{-7}$	90	LEES	20A	BABR	e^+e^- at $\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.2\times10^{-4}$	90	[1] FREYBERGER	96	CLE2	$e^+e^-\approx\Upsilon(4S)$

[1] This FREYBERGER 96 limit is obtained using a phase-space model. The same limit is obtained using a photon pole amplitude model.

NODE=S032S56;LINKAGE=FB

$\Gamma(K^-K^+e^\pm\mu^\mp)/\Gamma_{total}$ — Γ_{397}/Γ

NODE=S032C22

A test of lepton family-number conservation.

NODE=S032C22
NODE=S032C22

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.00\times10^{-6}$	90	LEES	20B	BABR	e^+e^- at $\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.8\times10^{-4}$	90	AITALA	01C	E791	π^- nucleus, 500 GeV

$\Gamma(\phi e^\pm\mu^\mp)/\Gamma_{total}$ — Γ_{398}/Γ

NODE=S032S57

A test of lepton family number conservation. The value is for the sum of the two charge states.

NODE=S032S57
NODE=S032S57

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5.1\times10^{-7}$	90	LEES	20A	BABR	e^+e^- at $\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<4.7\times10^{-5}$	90	AITALA	01C	E791	π^- nucleus, 500 GeV
$<3.4\times10^{-5}$	90	[1] FREYBERGER	96	CLE2	$e^+e^-\approx\Upsilon(4S)$

[1] This FREYBERGER 96 limit is obtained using a phase-space model. The limit changes to $<3.3\times10^{-5}$ using a photon pole amplitude model.

NODE=S032S57;LINKAGE=FB

$\Gamma(\overline{K}^0 e^\pm\mu^\mp)/\Gamma_{total}$ — Γ_{399}/Γ

NODE=S032S58

A test of lepton family number conservation. The value is for the sum of the two charge states.

NODE=S032S58
NODE=S032S58

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<17.4\times10^{-7}$	90	[1] LEES	20A	BABR	e^+e^- at $\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<1.0\times10^{-4}$	90	FREYBERGER	96	CLE2	$e^+e^-\approx\Upsilon(4S)$

[1] LEES 20A quotes $B(D^0\to K^0_S e^\pm\mu^\mp)<8.7\times10^{-7}$ at 90% CL.

NODE=S032S58;LINKAGE=A

$\Gamma(K^-\pi^+e^\pm\mu^\mp)/\Gamma_{total}$ — Γ_{400}/Γ

NODE=S032C21

A test of lepton family-number conservation.

NODE=S032C21
NODE=S032C21

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.90\times10^{-6}$	90	LEES	20B	BABR	e^+e^- at $\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<5.53\times10^{-4}$	90	AITALA	01C	E791	π^- nucleus, 500 GeV

NODE=S032S59

$\Gamma(\overline{K}^*(892)^0 e^\pm \mu^\mp)/\Gamma_{total}$ Γ_{401}/Γ

NODE=S032S59

A test of lepton family number conservation. The value is for the sum of the two charge states.

NODE=S032S59

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<12.5 × 10^{-7}	90	LEES	20A	BABR	$e^+ e^-$ at $\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<$ 8.3 × 10^{-5}	90	AITALA	01C	E791	π^- nucleus, 500 GeV
$<$ 1.0 × 10^{-4}	90	[1] FREYBERGER	96	CLE2	$e^+ e^- \approx \Upsilon(4S)$

NODE=S032S59;LINKAGE=FB

[1] This FREYBERGER 96 limit is obtained using a phase-space model. The same limit is obtained using a photon pole amplitude model.

NODE=S032C5

$\Gamma(2\pi^- 2e^+)/\Gamma_{total}$ Γ_{402}/Γ

NODE=S032C5

A test of lepton-number conservation.

NODE=S032C5

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<9.1 × 10^{-7}	90	LEES	20B	BABR	$e^+ e^-$ at $\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<1.12 × 10^{-4}	90	[1] AITALA	01C	E791	π^- nucleus, 500 GeV

NODE=S032C5;LINKAGE=A

[1] Value includes decay to the charge conjugate state.

NODE=S032C6

$\Gamma(2\pi^- 2\mu^+)/\Gamma_{total}$ Γ_{403}/Γ

NODE=S032C6

A test of lepton-number conservation.

NODE=S032C6

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.52 × 10^{-6}	90	LEES	20B	BABR	$e^+ e^-$ at $\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<2.9 × 10^{-5}	90	[1] AITALA	01C	E791	π^- nucleus, 500 GeV

NODE=S032C6;LINKAGE=A

[1] Value includes decay to the charge conjugate state.

NODE=S032C7

$\Gamma(K^- \pi^- 2e^+)/\Gamma_{total}$ Γ_{404}/Γ

NODE=S032C7

A test of lepton-number conservation.

NODE=S032C7

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<5.0 × 10^{-7}	90	LEES	20B	BABR	$e^+ e^-$ at $\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<2.8 × 10^{-6}	90	ABLIKIM	19AL	BES3	$e^+ e^-$ at 3773 MeV
<2.06 × 10^{-4}	90	[1] AITALA	01C	E791	π^- nucleus, 500 GeV

NODE=S032C7;LINKAGE=B

[1] Value includes decay to the charge conjugate state.

NODE=S032C8

$\Gamma(K^- \pi^- 2\mu^+)/\Gamma_{total}$ Γ_{405}/Γ

NODE=S032C8

A test of lepton-number conservation.

NODE=S032C8

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<5.3 × 10^{-7}	90	LEES	20B	BABR	$e^+ e^-$ at $\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<3.9 × 10^{-4}	90	[1] AITALA	01C	E791	π^- nucleus, 500 GeV

NODE=S032C8;LINKAGE=A

[1] Value includes decay to the charge conjugate state.

NODE=S032C9

$\Gamma(2K^- 2e^+)/\Gamma_{total}$ Γ_{406}/Γ

NODE=S032C9

A test of lepton-number conservation.

NODE=S032C9

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<3.4 × 10^{-7}	90	LEES	20B	BABR	$e^+ e^-$ at $\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<1.52 × 10^{-4}	90	[1] AITALA	01C	E791	π^- nucleus, 500 GeV

NODE=S032C9;LINKAGE=A

[1] Value includes decay to the charge conjugate state.

NODE=S032C10

$\Gamma(2K^- 2\mu^+)/\Gamma_{total}$ Γ_{407}/Γ

NODE=S032C10

A test of lepton-number conservation.

NODE=S032C10

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.0 × 10^{-7}	90	LEES	20B	BABR	$e^+ e^-$ at $\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<9.4 × 10^{-5}	90	[1] AITALA	01C	E791	π^- nucleus, 500 GeV

NODE=S032C10;LINKAGE=A

[1] Value includes decay to the charge conjugate state.

$\Gamma(\pi^- \pi^- e^+ \mu^+)/\Gamma_{total}$ — Γ_{408}/Γ

NODE=S032C11

A test of lepton-number conservation.

NODE=S032C11
NODE=S032C11

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<3.06 × 10⁻⁶	90	LEES	20B	BABR	$e^+ e^-$ at $\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<7.9 \times 10^{-5}$	90	[1] AITALA	01C	E791	π^- nucleus, 500 GeV

[1] Value includes decay to the charge conjugate state.

NODE=S032C11;LINKAGE=A

$\Gamma(K^- \pi^- e^+ \mu^+)/\Gamma_{total}$ — Γ_{409}/Γ

NODE=S032C12

A test of lepton-number conservation.

NODE=S032C12
NODE=S032C12

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.10 \times 10^{-6}$	90	LEES	20B	BABR	$e^+ e^-$ at $\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<2.18 \times 10^{-4}$	90	[1] AITALA	01C	E791	π^- nucleus, 500 GeV

[1] Value includes decay to the charge conjugate state.

NODE=S032C12;LINKAGE=A

$\Gamma(2K^- e^+ \mu^+)/\Gamma_{total}$ — Γ_{410}/Γ

NODE=S032C13

A test of lepton-number conservation.

NODE=S032C13
NODE=S032C13

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5.8 \times 10^{-7}$	90	LEES	20B	BABR	$e^+ e^-$ at $\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<5.7 \times 10^{-5}$	90	[1] AITALA	01C	E791	π^- nucleus, 500 GeV

[1] Value includes decay to the charge conjugate state.

NODE=S032C13;LINKAGE=A

$\Gamma(p e^-)/\Gamma_{total}$ — Γ_{411}/Γ

NODE=S032C04

A test of baryon- and lepton-number conservation.

NODE=S032C04
NODE=S032C04

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5.5 \times 10^{-7}$	90	MAITY	24	BELL	$e^+ e^-$ at $\Upsilon(4S)$ to $\Upsilon(5S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<7.6 \times 10^{-7}$	90	[1] MAITY	24	BELL	$e^+ e^-$ at $\Upsilon(4S)$ to $\Upsilon(5S)$
$<2.2 \times 10^{-6}$	90	ABLIKIM	22T	BES3	$e^+ e^-$ at 3.773 GeV
$<1.0 \times 10^{-5}$	90	[2] RUBIN	09	CLEO	$e^+ e^-$ at $\psi(3770)$

OCCUR=2

[1] Limit from measurement of the conjugate decay mode $\overline{D}^0 \to \overline{p} e^+$.
[2] This RUBIN 09 limit is for either $D^0 \to p e^-$ or $\overline{D}^0 \to p e^-$ decay.

NODE=S032C04;LINKAGE=A
NODE=S032C04;LINKAGE=RU

$\Gamma(\overline{p} e^+)/\Gamma_{total}$ — Γ_{412}/Γ

NODE=S032C05

A test of baryon- and lepton-number conservation.

NODE=S032C05
NODE=S032C05

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<6.9 \times 10^{-7}$	90	[1] MAITY	24	BELL	$e^+ e^-$ at $\Upsilon(4S)$ to $\Upsilon(5S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<7.2 \times 10^{-7}$	90	MAITY	24	BELL	$e^+ e^-$ at $\Upsilon(4S)$ to $\Upsilon(5S)$
$<1.2 \times 10^{-6}$	90	ABLIKIM	22T	BES3	$e^+ e^-$ at 3.773 GeV
$<1.1 \times 10^{-5}$	90	[2] RUBIN	09	CLEO	$e^+ e^-$ at $\psi(3770)$

OCCUR=2

[1] Limit from measurement of the conjugate decay mode $\overline{D}^0 \to p e^-$.
[2] This RUBIN 09 limit is for either $D^0 \to \overline{p} e^+$ or $\overline{D}^0 \to \overline{p} e^+$ decay.

NODE=S032C05;LINKAGE=A
NODE=S032C05;LINKAGE=RU

$\Gamma(p \mu^-)/\Gamma_{total}$ — Γ_{413}/Γ

NODE=S032D60
NODE=S032D60

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<5.1 \times 10^{-7}$	90	MAITY	24	BELL	$e^+ e^-$ at $\Upsilon(4S)$ to $\Upsilon(5S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<6.5 \times 10^{-7}$	90	[1] MAITY	24	BELL	$e^+ e^-$ at $\Upsilon(4S)$ to $\Upsilon(5S)$

OCCUR=2

[1] Limit from measurement of the conjugate decay mode $\overline{D}^0 \to \overline{p} \mu^+$.

NODE=S032D60;LINKAGE=A

$\Gamma(\overline{p} \mu^+)/\Gamma_{total}$ — Γ_{414}/Γ

NODE=S032D61
NODE=S032D61

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<6.3 \times 10^{-7}$	90	MAITY	24	BELL	$e^+ e^-$ at $\Upsilon(4S)$ to $\Upsilon(5S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<6.5 \times 10^{-7}$	90	[1] MAITY	24	BELL	$e^+ e^-$ at $\Upsilon(4S)$ to $\Upsilon(5S)$

OCCUR=2

[1] Limit from measurement of the conjugate decay mode $\overline{D}^0 \to p \mu^-$.

NODE=S032D61;LINKAGE=A

Exotic modes

NODE=S032338

$\Gamma(\gamma \gamma_D)/\Gamma_{total}$ — Γ_{415}/Γ

NODE=S032D79
NODE=S032D79

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.0 \times 10^{-6}$	90	ABLIKIM	25AP	BES3	$e^+ e^-$ at 3.773 GeV

$\Gamma(\omega \gamma_D)/\Gamma_{total}$ Γ_{416}/Γ

NODE=S032D80
NODE=S032D80

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.1 × 10^{-5}	90	ABLIKIM	25AP	BES3	$e^+ e^-$ at 3.773 GeV

D^0 *CP*-EVEN FRACTIONS

NODE=S032227

The *CP*-even fraction F_+, defined for self-conjugate final states, like the coherence factor is useful for measuring the unitary triangle angle γ in $B \to DK$ decays. A purely *CP*-even state has $F_+ = 1$, a *CP*-odd one has $F_+ = 0$. For details, see NAYAK 15.

NODE=S032227

CP-even fraction in $D^0 \to K^0_S \pi^+ \pi^- \pi^0$ decays

NODE=S032C79
NODE=S032C79

VALUE (%)	DOCUMENT ID		COMMENT
23.6±0.9 OUR AVERAGE			
23.5±1.0±0.2	ABLIKIM	23AW	$e^+ e^-$ at $\psi(3770)$, 2.93 fb^{-1}
23.8±1.2±1.2	[1] RESMI	18	Uses CLEO-c data

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.

NODE=S032C79;LINKAGE=A

CP-even fraction in $D^0 \to \pi^+ \pi^- \pi^0$ decays

NODE=S032EFP
NODE=S032EFP

VALUE (%)	DOCUMENT ID		TECN	COMMENT
94.2 ±0.7 OUR AVERAGE Error includes scale factor of 1.9. [(97.3 ± 1.7)% OUR 2025 AVERAGE]				
94.06±0.36±0.21	ABLIKIM	25AQ	BES3	$e^+ e^-$ at 3.773 GeV
97.3 ±1.7	MALDE	15		Uses CLEO data
• • • We do not use the following data for averages, fits, limits, etc. • • •				
96.8 ±1.7 ±0.6	NAYAK	15		see MALDE 15

NEW

CP-even fraction in $D^0 \to \pi^+ \pi^- \pi^+ \pi^-$ decays

NODE=S032EFL
NODE=S032EFL

VALUE (%)	DOCUMENT ID		TECN	COMMENT
74.6±0.8 OUR AVERAGE				
74.6±1.0±0.4	[1] ABLIKIM	24CO	BES3	$e^+ e^-$ at $\sqrt{s} = 3.773$ GeV
73.5±1.5±0.5	[2] ABLIKIM	22BF	BES	2.93 fb^{-1} in $e^+ e^-$ at 3.773 GeV
76.9±2.1±1.0	[3] HARNEW	18		Uses CLEO-c data
• • • We do not use the following data for averages, fits, limits, etc. • • •				
72.9±0.9±1.8	[3,4] DARGENT	17		from amplitude model
73.7±2.8	MALDE	15	CLEO	amplitude model independent

OCCUR=2

[1] ABLIKIM 24CO also reports the measurement of the strong phase difference between D^0 and $\overline{D}^0$ decays in bins of the phase space.

NODE=S032EFL;LINKAGE=D

[2] A combination of three consistent measurements with *CP*-eigenstate, quasi-*CP*-eigenstate and *CP*-mixed tags.

NODE=S032EFL;LINKAGE=C

[3] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.

NODE=S032EFL;LINKAGE=B

[4] MALDE 15 and DARGENT 17 use different CLEO data sets, so in principle their results could be averaged. However, given the importance that model-independence has in the use of this value, we exclude the amplitude model-derived result from the average.

NODE=S032EFL;LINKAGE=A

CP-even fraction in $D^0 \to \pi^+ \pi^- 2\pi^0$ decays

NODE=S032D48
NODE=S032D48

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.682±0.077	236	ABLIKIM	22BG	BES3	$e^+ e^-$ at 3.773 GeV

CP-even fraction in $D^0 \to 2\pi^+ 2\pi^- \pi^0$ decays

NODE=S032D50
NODE=S032D50

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.438±0.104	73	ABLIKIM	22BG	BES3	$e^+ e^-$ at 3.773 GeV

CP-even fraction in $D^0 \to \pi^+ \pi^- 3\pi^0$ decays

NODE=S032D49
NODE=S032D49

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
$0.520^{+0.338}_{-0.269}$	$12^{+4.9}_{-3.9}$	ABLIKIM	22BG	BES3	$e^+ e^-$ at 3.773 GeV

CP-even fraction in $D^0 \to 2\pi^+ 2\pi^- 2\pi^0$ decays

NODE=S032D51
NODE=S032D51

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
$0.790^{+0.269}_{-0.255}$	19	ABLIKIM	22BG	BES3	$e^+ e^-$ at 3.773 GeV

CP-even fraction in $D^0 \rightarrow K^+ K^- \pi^0$ decays

NODE=S032EFK
NODE=S032EFK

VALUE (%)	DOCUMENT ID	TECN	COMMENT
64.1±3.0 OUR AVERAGE Error includes scale factor of 1.7. [(73 ± 6)% OUR 2025 AVERAGE]			
63.1±1.4±1.1	ABLIKIM 25AQ	BES3	$e^+ e^-$ at 3.773 GeV
73.2±5.5	MALDE 15		Uses CLEO data
• • • We do not use the following data for averages, fits, limits, etc. • • •			
73.1±5.8±2.1	NAYAK 15		see MALDE 15

NEW

CP-even fraction in $D^0 \rightarrow K^+ K^- \pi^+ \pi^-$ decays

NODE=S032A96
NODE=S032A96

VALUE (%)	DOCUMENT ID	TECN	COMMENT
74.1±3.0 OUR AVERAGE			
73.0±3.7±2.1	[1] ABLIKIM 23AJ	BES3	2.93 fb^{-1}, $e^+ e^-$ at $\psi(3770)$
75.3±1.8±3.9	[2] DARGENT 17		from amplitude model

[1] A combined measurement of the *CP*-even fraction using both *CP* tags and $K^0_{S,L} \pi^+ \pi^-$ tags. ABLIKIM 23AJ reports *CP*-even fractions 0.704 ± 0.042 ± 0.028 and 0.798 ± 0.077 ± 0.019 for the former and latter tags, respectively.

NODE=S032A96;LINKAGE=B

[2] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration.

NODE=S032A96;LINKAGE=A

D^0 *CP*-VIOLATING DECAY-RATE ASYMMETRIES

NODE=S032243

This is the difference between D^0 and $\overline{D}^0$ partial widths for the decay to state f, divided by the sum of the widths:
$A_{CP}(f) = [\Gamma(D^0 \rightarrow f) - \Gamma(\overline{D}^0 \rightarrow \overline{f})] \,/\, [\Gamma(D^0 \rightarrow f) + \Gamma(\overline{D}^0 \rightarrow \overline{f})]$.

NODE=S032243

$A_{CP}(K^+ K^-)$ in $D^0, \overline{D}^0 \rightarrow K^+ K^-$

NODE=S032A1
NODE=S032A1

VALUE (units 10^{-4})	EVTS	DOCUMENT ID	TECN	COMMENT
4 ± 5 OUR AVERAGE				
6.8± 5.4± 1.6	37M	[1] AAIJ 23AC	LHCB	pp at 13 TeV
4 ± 12 ± 10	4.56M	AAIJ 17M	LHCB	pp 7, 8 TeV
−24 ± 22 ± 9	476k	[2] AALTONEN 12B	CDF	$p\overline{p}$, $\sqrt{s}$=1.96 TeV
0 ± 34 ± 13	129k	[3] AUBERT 08M	BABR	$e^+ e^- \approx$ 10.6 GeV
−43 ± 30 ± 11	120k	[4] STARIC 08	BELL	$e^+ e^- \approx \Upsilon(4S)$
200 ±120 ± 60		[5] ACOSTA 05C	CDF	$p\overline{p}$, $\sqrt{s}$=1.96 TeV
0 ±220 ± 80	3023	[5] CSORNA 02	CLE2	$e^+ e^- \approx \Upsilon(4S)$
−10 ±220 ±150	3330	[5] LINK 00B	FOCS	
−100 ±490 ±120	609	[5] AITALA 98C	E791	$-0.093 < A_{CP} < +0.073$ (90% CL)
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−6 ± 15 ± 10	1.8M	[2] AAIJ 14AK	LHCB	See AAIJ 17M

[1] AAIJ 23AC result comes from 5.7 fb^{-1} of data. Also reports the values of the direct *CP* asymmetries, $a^{CP}_{\pi\pi} = (23.2 \pm 6.1) \times 10^{-4}$ and $a^{CP}_{KK} = (7.7 \pm 5.7) \times 10^{-4}$, with a correlation of 88%, obtained using previous determinations of $A_{CP}(KK)$, ΔA_{CP}, ΔY, the reconstructed mean decay times of $D^0 \rightarrow \pi\pi$ and $D^0 \rightarrow KK$ in the aforementioned measurements, and the world average of the D^0 lifetime (PDG 22).

NODE=S032A1;LINKAGE=C

[2] See also "D^0 *CP*-violating asymmetry differences" at the end of the *CP*-violating asymmetries.

NODE=S032A1;LINKAGE=AA

[3] AUBERT 08M uses corrected numbers of events directly, not ratios with $K^\mp \pi^\pm$ events.

NODE=S032A1;LINKAGE=AU

[4] STARIC 08 uses $D^0 \rightarrow K^- \pi^+$ and $\overline{D}^0 \rightarrow K^+ \pi^-$ decays to correct for detector-induced asymmetries.

NODE=S032A1;LINKAGE=ST

[5] AITALA 98C, LINK 00B, CSORNA 02, and ACOSTA 05C measure $N(D^0 \rightarrow K^+ K^-)/N(D^0 \rightarrow K^- \pi^+)$, the ratio of numbers of events observed, and similarly for the $\overline{D}^0$.

NODE=S032A1;LINKAGE=A

$A_{CP}(K^0_S K^0_S)$ in $D^0, \overline{D}^0 \rightarrow K^0_S K^0_S$

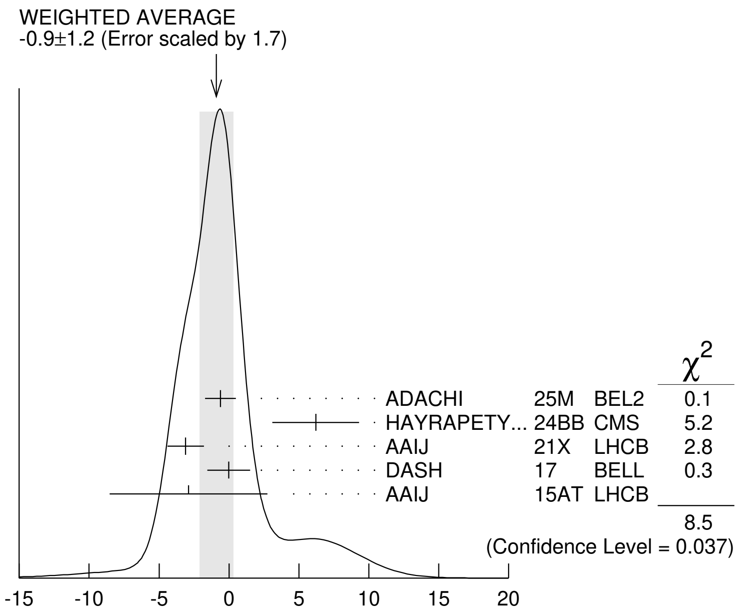
NODE=S032A8
NODE=S032A8

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
−0.9 ± 1.2 OUR AVERAGE Error includes scale factor of 1.7. See the ideogram below. [(−1.1 ± 1.9)% OUR 2025 AVERAGE Scale factor = 2.0]				
−0.6 ± 1.1 ±0.1		[1] ADACHI 25M	BEL2	$e^+ e^-$ at/near $\Upsilon(4S)$
6.2 ± 3.0 ±0.8	2k	[2] HAYRAPETY...24BB	CMS	pp at 13 TeV
−3.1 ± 1.2 ±0.5	8.1k	[3] AAIJ 21X	LHCB	pp at 13 TeV
−0.02± 1.53±0.17	5.4k	[4] DASH 17	BELL	at/near $\Upsilon(4S)$, $\Upsilon(5S)$
−2.9 ± 5.2 ±2.2	630	AAIJ 15AT	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−1.4 ± 1.3 ±0.1	7.1k	[5] ADACHI 25D	BEL2	$e^+ e^-$ at/near $\Upsilon(4S)$
1.3 ± 2.0 ±0.2	19.7k	[6] ADACHI 25M	BEL2	$e^+ e^-$ at/near $\Upsilon(4S)$
2.3 ± 2.8 ±0.9	1.7k	AAIJ 18AV	LHCB	see AAIJ 21X
−23 ±19	65	BONVICINI 01	CLE2	$e^+ e^- \approx$ 10.6 GeV

NEW

OCCUR=2

[1] Combination of ADACHI 25M and ADACHI 25D results. NODE=S032A8;LINKAGE=F
[2] HAYRAPETYAN 24BB reports a value of $(6.3 \pm 3.0 \pm 0.2 \pm 0.8) \times 10^{-2}$ where the third uncertainty is from the world-average value of $A_{CP}(K^0_S \pi^+ \pi^-) = 0.1 \pm 0.8\%$. We have added the systematic uncertainties in quadrature. NODE=S032A8;LINKAGE=C
[3] AAIJ 21X reports a value of $(-3.1 \pm 1.2 \pm 0.4 \pm 0.2) \times 10^{-2}$ where the third uncertainty is from $A_{CP}(K^+ K^-) = 0.04 \pm 0.12 \pm 0.10\%$, as measured by LHCb. We have added the systematic uncertainties in quadrature. Supersedes AAIJ 18AV. NODE=S032A8;LINKAGE=B
[4] The systematic uncertainty is dominated by the uncertainty on A_{CP} in the control channel $D^0 \rightarrow K^0_S \pi^0$. NODE=S032A8;LINKAGE=A
[5] Based on data collected by Belle and Belle II. D^0 flavor determined using $D^*(2010)^+ \rightarrow D^0 \pi^+$ decays. NODE=S032A8;LINKAGE=E
[6] Based on data collected by Belle and Belle II. D^0 flavor inferred using the information from the charged particles of the rest of the event. NODE=S032A8;LINKAGE=D



$A_{CP}(K^0_S K^0_S)$ in D^0, $\overline{D}^0 \rightarrow K^0_S K^0_S$ (%)

$A_{CP}(\pi^+\pi^-)$ in D^0, $\overline{D}^0 \rightarrow \pi^+\pi^-$

NODE=S032A4
NODE=S032A4

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.13±0.14 OUR AVERAGE					
$0.07 \pm 0.14 \pm 0.11$		[1] AAIJ	17M	LHCB	pp 7, 8 TeV
$0.22 \pm 0.24 \pm 0.11$	215k	[2] AALTONEN	12B	CDF	$p\overline{p}$, $\sqrt{s}$=1.96 TeV
$-0.24 \pm 0.52 \pm 0.22$	63.7k	[3] AUBERT	08M	BABR	$e^+e^- \approx$ 10.6 GeV
$0.43 \pm 0.52 \pm 0.12$	51k	[4] STARIC	08	BELL	$e^+e^- \approx \Upsilon(4S)$
$1.0 \pm 1.3 \pm 0.6$		[5] ACOSTA	05C	CDF	$p\overline{p}$, $\sqrt{s}$=1.96 TeV
$1.9 \pm 3.2 \pm 0.8$	1136	[5] CSORNA	02	CLE2	$e^+e^- \approx \Upsilon(4S)$
$4.8 \pm 3.9 \pm 2.5$	1177	[5] LINK	00B	FOCS	
$-4.9 \pm 7.8 \pm 3.0$	343	[5] AITALA	98C	E791	$-0.186 < A_{CP} < +0.088$ (90% CL)

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

$-0.20 \pm 0.19 \pm 0.10$	774k	[2,6] AAIJ	14AK	LHCB	See AAIJ 17M

[1] AAIJ 17M value combines $\Delta A_{CP}(\pi\pi, KK)$ from AAIJ 16D, $A_{CP}(KK)$ from AAIJ 17M, and $A_{CP}(\pi\pi)$ from AAIJ 14AK. NODE=S032A4;LINKAGE=C
[2] See also "D^0 CP-violating asymmetry differences" at the end of the CP-violating asymmetries. NODE=S032A4;LINKAGE=AA
[3] AUBERT 08M uses corrected numbers of events directly, not ratios with $K^\mp \pi^\pm$ events. NODE=S032A4;LINKAGE=AU
[4] STARIC 08 uses $D^0 \rightarrow K^- \pi^+$ and $\overline{D}^0 \rightarrow K^+ \pi^-$ decays to correct for detector-induced asymmetries. NODE=S032A4;LINKAGE=ST
[5] AITALA 98C, LINK 00B, CSORNA 02, and ACOSTA 05C measure $N(D^0 \rightarrow \pi^+\pi^-)/N(D^0 \rightarrow K^-\pi^+)$, the ratio of numbers of events observed, and similarly for the $\overline{D}^0$. NODE=S032A4;LINKAGE=A
[6] AAIJ 14AK uses $\Delta A_{CP}(\pi\pi, KK)$ and $A_{CP}(KK)$ reported in the same paper. NODE=S032A4;LINKAGE=B

$A_{CP}(\pi^0\pi^0)$ in D^0, $\overline{D}^0 \to \pi^0\pi^0$

NODE=S032A7
NODE=S032A7

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.1 ±0.5 OUR AVERAGE					
[(0.0 ± 0.6)% OUR 2025 AVERAGE]					
0.30±0.72±0.20	25.7k	ADACHI	25K	BEL2	e^+e^- at/near $\Upsilon(4S)$
−0.03±0.64±0.10	34k	NISAR	14	BELL	e^+e^- at/near Υ's
0.1 ±4.8	810	BONVICINI	01	CLE2	$e^+e^- \approx$ 10.6 GeV

NEW

$A_{CP}(\rho\gamma)$ in D^0, $\overline{D}^0 \to \rho\gamma$

NODE=S032A00
NODE=S032A00

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
5.6±15.2±0.6	NANUT	17	BELL	e^+e^- at Υ(nS), n=2,3,4,5

$A_{CP}(\phi\gamma)$ in D^0, $\overline{D}^0 \to \phi\gamma$

NODE=S032A83
NODE=S032A83

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
−9.4±6.6±0.1	NANUT	17	BELL	e^+e^- at Υ(nS), n=2,3,4,5

$A_{CP}(\overline{K}^*(892)^0\gamma)$ in D^0, $\overline{D}^0 \to \overline{K}^*(892)^0\gamma$

NODE=S032A84
NODE=S032A84

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
−0.3±2.0±0.0	NANUT	17	BELL	e^+e^- at Υ(nS), n=2,3,4,5

$A_{CP}(\pi^+\pi^-\pi^0)$ in D^0, $\overline{D}^0 \to \pi^+\pi^-\pi^0$

NODE=S032A12
NODE=S032A12

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.4 ±0.4 OUR AVERAGE					
+0.6 ±0.9 ±0.4	12.8k	ABLIKIM	22BG	BES3	e^+e^- at 3.773 GeV
0.43±1.30	123k	ARINSTEIN	08	BELL	$e^+e^- \approx \Upsilon(4S)$
0.31±0.41±0.17	80k	[1] AUBERT	08AO	BABR	$e^+e^- \approx$ 10.6 GeV
1 $^{+9}_{-7}$ ±5		CRONIN-HEN...	05	CLEO	$e^+e^- \approx$ 10 GeV

[1] AUBERT 08AO report their result using a different sign convention.

NODE=S032A12;LINKAGE=AU

$A_{CP}(\eta\pi^+\pi^-)$ in D^0, $\overline{D}^0 \to \eta\pi^+\pi^-$

NODE=S032D19
NODE=S032D19

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
0.9±1.2±0.5	13k	LI	21G	BELL	e^+e^- at Υ(nS)
• • • We do not use the following data for averages, fits, limits, etc. • • •					
9.6±5.4±1.8	450	ABLIKIM	20G	BES3	e^+e^- at 3.773 GeV

$A_{CP}(\rho(770)^+\pi^- \to \pi^+\pi^-\pi^0)$ in $D^0 \to \rho^+\pi^-$, $\overline{D}^0 \to \rho^-\pi^+$

NODE=S032A25
NODE=S032A25

VALUE (%)	DOCUMENT ID		TECN	COMMENT
+1.2±0.8±0.3	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}(\rho(770)^0\pi^0 \to \pi^+\pi^-\pi^0)$ in D^0, $\overline{D}^0 \to \rho^0\pi^0$

NODE=S032A26
NODE=S032A26

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−3.1±2.7±1.2	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}(\rho(770)^-\pi^+ \to \pi^+\pi^-\pi^0)$ in $D^0 \to \rho^-\pi^+$, $\overline{D}^0 \to \rho^+\pi^-$

NODE=S032A27
NODE=S032A27

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−1.0±1.6±0.7	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}(\rho(1450)^+\pi^- \to \pi^+\pi^-\pi^0)$ in $D^0 \to \rho(1450)^+\pi^-$, $\overline{D}^0 \to$ c.c.

NODE=S032A28
NODE=S032A28

VALUE (%)	DOCUMENT ID		TECN	COMMENT
0±50±50	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}(\rho(1450)^0\pi^0 \to \pi^+\pi^-\pi^0)$ in D^0, $\overline{D}^0 \to \rho(1450)^0\pi^0$

NODE=S032A29
NODE=S032A29

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−17±33±17	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}(\rho(1450)^-\pi^+ \to \pi^+\pi^-\pi^0)$ in $D^0 \to \rho(1450)^-\pi^+$, $\overline{D}^0 \to$ c.c.

NODE=S032A30
NODE=S032A30

VALUE (%)	DOCUMENT ID		TECN	COMMENT
+6±8±3	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}(\rho(1700)^+\pi^- \to \pi^+\pi^-\pi^0)$ in $D^0 \to \rho(1700)^+\pi^-$, $\overline{D}^0 \to$ c.c.

NODE=S032A31
NODE=S032A31

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−5±13±5	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}(\rho(1700)^0\pi^0 \to \pi^+\pi^-\pi^0)$ in D^0, $\overline{D}^0 \to \rho(1700)^0\pi^0$

NODE=S032A32
NODE=S032A32

VALUE (%)	DOCUMENT ID		TECN	COMMENT
+13±8±3	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}(\rho(1700)^-\pi^+ \to \pi^+\pi^-\pi^0)$ in $D^0 \to \rho(1700)^-\pi^+$, $\overline{D}^0 \to$ c.c.

NODE=S032A33

VALUE (%)	DOCUMENT ID		TECN	COMMENT
+8±10±5	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}(f_0(980)\pi^0 \to \pi^+\pi^-\pi^0)$ in D^0, $\overline{D}^0 \to f_0(980)\pi^0$

NODE=S032A34

VALUE (%)	DOCUMENT ID		TECN	COMMENT
0±25±25	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}(f_0(1370)\pi^0 \to \pi^+\pi^-\pi^0)$ in D^0, $\overline{D}^0 \to f_0(1370)\pi^0$

NODE=S032A35

VALUE (%)	DOCUMENT ID		TECN	COMMENT
+25±13±13	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}(f_0(1500)\pi^0 \to \pi^+\pi^-\pi^0)$ in D^0, $\overline{D}^0 \to f_0(1500)\pi^0$

NODE=S032A36

VALUE (%)	DOCUMENT ID		TECN	COMMENT
0±13±13	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}(f_0(1710)\pi^0 \to \pi^+\pi^-\pi^0)$ in D^0, $\overline{D}^0 \to f_0(1710)\pi^0$

NODE=S032A37

VALUE (%)	DOCUMENT ID		TECN	COMMENT
0±17±17	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}(f_2(1270)\pi^0 \to \pi^+\pi^-\pi^0)$ in D^0, $\overline{D}^0 \to f_2(1270)\pi^0$

NODE=S032A38

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−4±4±4	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}(\sigma(400)\pi^0 \to \pi^+\pi^-\pi^0)$ in D^0, $\overline{D}^0 \to \sigma(400)\pi^0$

NODE=S032A39

VALUE (%)	DOCUMENT ID		TECN	COMMENT
+6±6±6	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

A_{CP}(nonresonant $\pi^+\pi^-\pi^0$) in D^0, $\overline{D}^0 \to$ nonresonant $\pi^+\pi^-\pi^0$

NODE=S032A40

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−13±19±13	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}(\pi^+\pi^-2\pi^0)$ in D^0, $\overline{D}^0 \to \pi^+\pi^-2\pi^0$

NODE=S032D52

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
−2.5±1.9±0.7	3.8k	ABLIKIM	22BG	BES3	e^+e^- at 3.773 GeV

$A_{CP}(2\pi^+2\pi^-)$ in D^0, $\overline{D}^0 \to 2\pi^+2\pi^-$

NODE=S032A71

VALUE (%)	EVTS	DOCUMENT ID		COMMENT
0.54±1.04±0.51	7.3k	[1,2] DARGENT	17	e^+e^- at $\psi(3770)$

[1] Decay rate asymmetry integrated in decay time and across full 4π phase space. NODE=S032A71;LINKAGE=B

[2] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration. NODE=S032A71;LINKAGE=C

$A_{CP}(a_1(1260)^+\pi^- \to 2\pi^+2\pi^-)$ in $D^0 \to a_1(1260)^+\pi^-$, $\overline{D}^0 \to$ c.c.

NODE=S032A85

VALUE (%)	EVTS	DOCUMENT ID		COMMENT
4.7±2.6±4.9	7.3k	[1] DARGENT	17	4-body fit, 4π evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration. NODE=S032A85;LINKAGE=A

$A_{CP}(a_1(1260)^-\pi^+ \to 2\pi^+2\pi^-)$ in $D^0 \to a_1(1260)^-\pi^+$, $\overline{D}^0 \to$ c.c.

NODE=S032A86

VALUE (%)	EVTS	DOCUMENT ID		COMMENT
13.7±13.8±11.4	7.3k	[1] DARGENT	17	4-body fit, 4π evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration. NODE=S032A86;LINKAGE=A

$A_{CP}(\pi(1300)^+\pi^- \to 2\pi^+2\pi^-)$ in $D^0 \to \pi(1300)^+\pi^-$, $\overline{D}^0 \to$ c.c.

NODE=S032A87

VALUE (%)	EVTS	DOCUMENT ID		COMMENT
−1.6±12.9±6.7	7.3k	[1] DARGENT	17	4-body fit, 4π evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration. NODE=S032A87;LINKAGE=A

$A_{CP}(\pi(1300)^-\pi^+ \to 2\pi^+2\pi^-)$ in $D^0 \to \pi(1300)^-\pi^+$, $\overline{D}^0 \to$ c.c.

NODE=S032A88

VALUE (%)	EVTS	DOCUMENT ID		COMMENT
−5.6±11.9±27.7	7.3k	[1] DARGENT	17	4-body fit, 4π evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration. NODE=S032A88;LINKAGE=A

$A_{CP}(a_1(1640)^+\pi^- \to 2\pi^+2\pi^-)$ in $D^0 \to a_1(1640)^+\pi^-$, $\overline{D}^0 \to$ c.c.

NODE=S032A89

VALUE (%)	EVTS	DOCUMENT ID		COMMENT
8.6±17.8±19.3	7.3k	[1] DARGENT	17	4-body fit, 4π evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration. NODE=S032A89;LINKAGE=A

$A_{CP}(\pi_2(1670)^+\pi^- \to 2\pi^+2\pi^-)$ in $D^0 \to \pi_2(1670)^+\pi^-$, $\overline{D}^0 \to$ c.c.

NODE=S032A91
NODE=S032A91

VALUE (%)	EVTS	DOCUMENT ID		COMMENT
7.3±15.1±10.4	7.3k	[1] DARGENT	17	4-body fit, 4π evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.

NODE=S032A91;LINKAGE=A

$A_{CP}(\sigma f_0(1370) \to 2\pi^+2\pi^-)$ in $D^0,\overline{D}^0 \to \sigma f_0(1370)$

NODE=S032A92
NODE=S032A92

VALUE (%)	EVTS	DOCUMENT ID		COMMENT
−14.6±16.5±9.4	7.3k	[1] DARGENT	17	4-body fit, 4π evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.

NODE=S032A92;LINKAGE=A

$A_{CP}(\sigma\rho(770)^0 \to 2\pi^+2\pi^-)$ in $D^0,\overline{D}^0 \to \sigma\rho(770)^0$

NODE=S032A93
NODE=S032A93

VALUE (%)	EVTS	DOCUMENT ID		COMMENT
2.5±16.8±20.8	7.3k	[1] DARGENT	17	4-body fit, 4π evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.

NODE=S032A93;LINKAGE=A

$A_{CP}(2\rho(770)^0 \to 2\pi^+2\pi^-)$ in $D^0,\overline{D}^0 \to 2\rho(770)^0$

NODE=S032A94
NODE=S032A94

VALUE (%)	EVTS	DOCUMENT ID		COMMENT
−5.6±5.0±2.9	7.3k	[1] DARGENT	17	4-body fit, 4π evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.

NODE=S032A94;LINKAGE=A

$A_{CP}(2f_2(1270) \to 2\pi^+2\pi^-)$ in $D^0,\overline{D}^0 \to 2f_2(1270)$

NODE=S032A95
NODE=S032A95

VALUE (%)	EVTS	DOCUMENT ID		COMMENT
−28.3±12.3±20.9	7.3k	[1] DARGENT	17	4-body fit, 4π evts

[1] Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.

NODE=S032A95;LINKAGE=A

$A_{CP}(\pi^+\pi^-\pi^0\eta)$ in D^0, $\overline{D}^0 \to \pi^+\pi^-\pi^0\eta$

NODE=S032D07
NODE=S032D07

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
−5.5±5.2±2.4	510	ABLIKIM	20V	BES3	e^+e^-, 3773 MeV

$A_{CP}(K^+K^-\pi^0)$ in D^0, $\overline{D}^0 \to K^+K^-\pi^0$

NODE=S032A41
NODE=S032A41

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
−1.00±1.67±0.25	11 ± 0.11k	AUBERT	08AO	BABR	$e^+e^- \approx$ 10.6 GeV

$A_{CP}(K^*(892)^+K^- \to K^+K^-\pi^0)$ in $D^0 \to K^*(892)^+K^-$, $\overline{D}^0 \to$ c.c.

NODE=S032A42
NODE=S032A42

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−0.9±1.2±0.4	[1] AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

[1] AUBERT 08AO report their result using a different sign convention.

NODE=S032A42;LINKAGE=AU

$A_{CP}(K^*(1410)^+K^- \to K^+K^-\pi^0)$ in $D^0 \to K^*(1410)^+K^-$, $\overline{D}^0 \to$ c.c.

NODE=S032A43
NODE=S032A43

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−21±23±8	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}((K^+\pi^0)_{S-wave}K^- \to K^+K^-\pi^0)$ in $D^0 \to (K^+\pi^0)_S K^-$, $\overline{D}^0 \to$ c.c.

NODE=S032A44
NODE=S032A44

VALUE (%)	DOCUMENT ID		TECN	COMMENT
+7±15±3	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}(\phi(1020)\pi^0 \to K^+K^-\pi^0)$ in D^0, $\overline{D}^0 \to \phi(1020)\pi^0$

NODE=S032A45
NODE=S032A45

VALUE (%)	DOCUMENT ID		TECN	COMMENT
+1.1±2.1±0.5	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}(f_0(980)\pi^0 \to K^+K^-\pi^0)$ in D^0, $\overline{D}^0 \to f_0(980)\pi^0$

NODE=S032A46
NODE=S032A46

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−3±19±1	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}(a_0(980)^0\pi^0 \to K^+K^-\pi^0)$ in D^0, $\overline{D}^0 \to a_0(980)^0\pi^0$

NODE=S032A47
NODE=S032A47

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−5±16±2	[1] AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

[1] This AUBERT 08AO value is obtained when the $a_0(980)^0$ replaces the $f_0(980)$ in the fit.

NODE=S032A47;LINKAGE=AU

$A_{CP}(f_2'(1525)\pi^0 \to K^+K^-\pi^0)$ in D^0, $\overline{D}^0 \to f_2'(1525)\pi^0$

NODE=S032A48
NODE=S032A48

VALUE (%)	DOCUMENT ID		TECN	COMMENT
0±50±150	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}(K^*(892)^- K^+ \to K^+ K^- \pi^0)$ in $D^0 \to K^*(892)^- K^+$, $\overline{D}^0 \to$ c.c.

NODE=S032A49
NODE=S032A49

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−5±4±1	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}(K^*(1410)^- K^+ \to K^+ K^- \pi^0)$ in $D^0 \to K^*(1410)^- K^+$, $\overline{D}^0 \to$ c.c.

NODE=S032A50
NODE=S032A50

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−17±28±7	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}((K^- \pi^0)_{S-wave} K^+ \to K^+ K^- \pi^0)$ in $D^0 \to (K^- \pi^0)_S K^+$, $\overline{D}^0 \to$ c.c.

NODE=S032A51
NODE=S032A51

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−7±40±8	AUBERT	08AO	BABR	Table 1, −Col.5/2×Col.2

$A_{CP}(K^+ K^- \eta)$ in D^0, $\overline{D}^0 \to K^+ K^- \eta$

NODE=S032D20
NODE=S032D20

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
−1.4±3.3±1.1	1.4k	LI	21G	BELL	$e^+ e^-$ at Υ(nS)

$A_{CP}(\phi(1020)\eta \to K^+ K^- \eta)$ in D^0, $\overline{D}^0 \to \phi(1020)\eta$

NODE=S032D21
NODE=S032D21

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
−1.9±4.4±0.6	1.4k	LI	21G	BELL	$e^+ e^-$ at Υ(nS)

$A_{CP}(K^0_S \pi^0)$ in D^0, $\overline{D}^0 \to K^0_S \pi^0$

NODE=S032A3
NODE=S032A3

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
−0.20±0.17 OUR AVERAGE					
−0.21±0.16±0.07	467k	[1] NISAR	14	BELL	$e^+ e^-$ at/near Υ's
0.1 ±1.3	9099	BONVICINI	01	CLE2	$e^+ e^- \approx$ 10.6 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
−0.28±0.19±0.10	326k	KO	11	BELL	See NISAR 14
−1.8 ±3.0		BARTELT	95	CLE2	See BONVICINI 01

[1] After subtracting CPV in $K^0 - \overline{K}^0$ mixing, NISAR 14 gets $A_{CP} = (+0.12 \pm 0.16 \pm 0.07)$%.

NODE=S032A3;LINKAGE=A

$A_{CP}(K^0_S \eta)$ in D^0, $\overline{D}^0 \to K^0_S \eta$

NODE=S032A52
NODE=S032A52

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
+0.54±0.51±0.16	46k	KO	11	BELL	$e^+ e^- \approx \Upsilon(4S)$

$A_{CP}(K^0_S \eta')$ in D^0, $\overline{D}^0 \to K^0_S \eta'$

NODE=S032A53
NODE=S032A53

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
+0.98±0.67±0.14	27k	KO	11	BELL	$e^+ e^- \approx \Upsilon(4S)$

$A_{CP}(K^0_S \phi)$ in D^0, $\overline{D}^0 \to K^0_S \phi$

NODE=S032A2
NODE=S032A2

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−2.8±9.4	BARTELT	95	CLE2	$-18.2 < A_{CP} < +12.6$% (90%CL)

$A_{CP}(K^\mp \pi^\pm)$ in $D^0 \to K^- \pi^+$, $\overline{D}^0 \to K^+ \pi^-$

NODE=S032A23
NODE=S032A23

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.2 ±0.5 OUR AVERAGE					
−0.01±0.91		AAIJ	18K	LHCB	pp at 7, 8, 13 TeV
0.3 ±0.3 ±0.6		BONVICINI	14	CLEO	All CLEO-c runs
• • • We do not use the following data for averages, fits, limits, etc. • • •					
+0.5 ±0.4 ±0.9	150k	MENDEZ	10	CLEO	See BONVICINI 14
−0.4 ±0.5 ±0.9		DOBBS	07	CLEO	See BONVICINI 14

$A_{CP}(K^\pm \pi^\mp)$ in $D^0 \to K^+ \pi^-$, $\overline{D}^0 \to K^- \pi^+$

NODE=S032A5
NODE=S032A5

NEW

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
− 0.4 ± 0.7 OUR AVERAGE Error includes scale factor of 1.3. See the ideogram below. [(−0.9 ± 1.4)% OUR 2025 AVERAGE]					
− 0.66± 0.57		[1,2] AAIJ	25	LHCB	pp at 7, 8, 13 TeV
2.3 ± 1.7	20k	[1,3] AAIJ	25U	LHCB	pp at 13 TeV
− 1.7 ± 1.6		[1,3,4] AAIJ	17AO	LHCB	pp at 7,8 TeV
− 2.1 ± 5.2 ±1.5	4.0k	AUBERT	07W	BABR	$e^+ e^- \approx$ 10.6 GeV
+ 2.3 ± 4.7	4.0k	[5] ZHANG	06	BELL	$e^+ e^-$
+18 ±14 ±4		[6] LINK	05H	FOCS	γ nucleus
+ 9.5 ± 6.1 ±8.3		[7] AUBERT	03Z	BABR	$e^+ e^-$, 10.6 GeV
+ 2 $^{+19}_{-20}$ ±1	45	[8] GODANG	00	CLE2	$e^+ e^-$

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

$-$ 0.71 $\pm$ 0.60	1.6M	[1] AAIJ	25	LHCB	pp at 13 TeV
$-$ 0.7 $\pm$ 1.9		[4] AAIJ	13CE	LHCB	Repl. by AAIJ 17AO
$-$ 8.0 $\pm$ 7.7	0.8k	[9] LI	05A	BELL	See ZHANG 06

OCCUR=2

[1] The CPV is derived from $A_{CP} = (\mathrm{R}_D^+ - \mathrm{R}_D^-)/(\mathrm{R}_D^+ + \mathrm{R}_D^-)$. NODE=S032A5;LINKAGE=C

[2] $D^*(2010)^+$ tag of $D^0 \to K^+\pi^-$. NODE=S032A5;LINKAGE=F

[3] Doubly-tagged $D^0 \to K^\pm\pi^\mp$ from preceding $B \to D^*(2010)^+ \mu X$ with $D^*(2010)^+ \to D^0\pi^+$. NODE=S032A5;LINKAGE=D

[4] Based on 3 fb^{-1} of data collected at $\sqrt{s} = 7$, 8 TeV. NODE=S032A5;LINKAGE=B

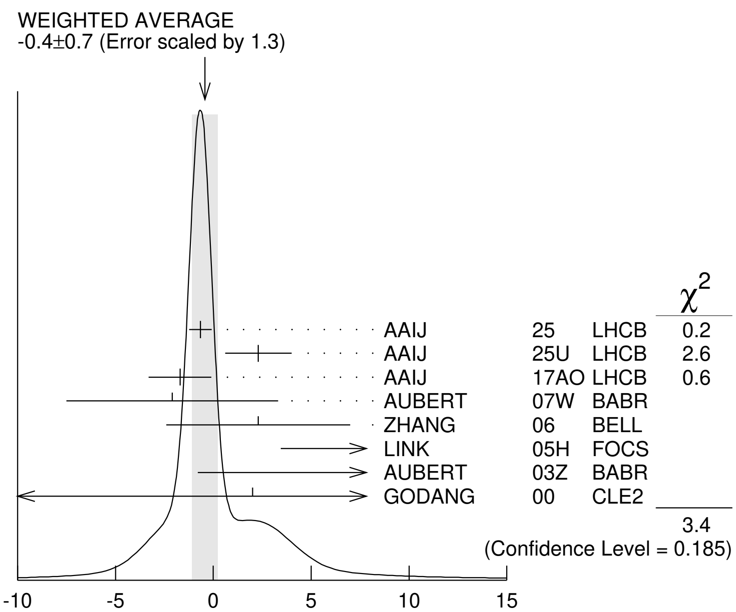
[5] This ZHANG 06 result allows mixing. NODE=S032A5;LINKAGE=ZH

[6] This LINK 05H result assumes no mixing. If mixing is allowed, it becomes $0.13^{+0.33}_{-0.25} \pm 0.10$. NODE=S032A5;LINKAGE=LI

[7] This AUBERT 03Z limit assumes no mixing. If mixing is allowed, the 95% confidence-level interval is $(-2.8 < A_D < 4.9)\times10^{-3}$. NODE=S032A5;LINKAGE=AU

[8] This GODANG 00 result assumes no D^0-$\overline{D}^0$ mixing and becomes $-0.43 < A_{CP} < +0.34$ at 95% CL. If mixing is allowd $A_{CP} = -0.01^{+0.16}_{-0.17} \pm 0.01$. NODE=S032A5;LINKAGE=A

[9] This LI 05A result allows mixing. NODE=S032A5;LINKAGE=LA



$A_{CP}(K^\pm\pi^\mp)$ in $D^0 \to K^+\pi^-$, $\overline{D}^0 \to K^-\pi^+$ (%)

$A_{CP}(K^-\pi^+)$ in $D_{CP(\pm1)} \to K^\mp\pi^\pm$

NODE=S032A72

$A_{CP}(K^-\pi^+) = [\mathrm{B}(D_{CP(-)} \to K^-\pi^+) - \mathrm{B}(D_{CP(+)} \to K^-\pi^+)]$ / Sum

NODE=S032A72
NODE=S032A72

VALUE (%)	DOCUMENT ID		TECN	COMMENT
13.1$\pm$1.0 OUR AVERAGE				
13.2$\pm$1.1$\pm$0.7	[1] ABLIKIM	22BM	BES3	e^+e^- at $\psi(3770)$
13.0$\pm$1.2$\pm$0.8	[2] ABLIKIM	22BM	BES3	$D^0 \to \pi^+\pi^-\pi^0$ reference
• • • We do not use the following data for averages, fits, limits, etc. • • •				
12.7$\pm$1.3$\pm$0.7	[3] ABLIKIM	14C	BES3	$e^+e^- \to D^0\overline{D}^0$, 3.77 GeV

OCCUR=2

[1] ABLIKIM 22B uses quantum correlations in $e^+e^- \to D^0\overline{D}^0$ at the $\psi(3770)$ to measure the asymmetry of the branching fraction of $D^0 \to K^-\pi^+$ in CP-odd and CP-even eigenstates. It then extracts the strong-phase difference $\delta_{K\pi}$. NODE=S032A72;LINKAGE=B

[2] ABLIKIM 22B uses quantum correlations in $e^+e^- \to D^0\overline{D}^0$ at the $\psi(3770)$ to measure the asymmetry of the branching fraction of $D^0 \to K^-\pi^+$ in CP-odd and CP-even eigenstates, using the predominantly CP-even decay $D^0 \to \pi^+\pi^-\pi^0$ mode as reference. It then extracts the strong-phase difference $\delta_{K\pi}$. NODE=S032A72;LINKAGE=C

[3] ABLIKIM 14C uses quantum correlations in $e^+e^- \to D^0\overline{D}^0$ at the $\psi(3770)$ to measure the asymmetry of the branching fraction of $D^0 \to K^-\pi^+$ in CP-odd and CP-even eigenstates. It then extracts the strong-phase difference $\delta_{K\pi}$. Superseded by ABLIKIM 22BM. NODE=S032A72;LINKAGE=A

$A_{CP}(K^{\mp}\pi^{\pm}\pi^0)$ in $D^0 \to K^-\pi^+\pi^0$, $\overline{D}^0 \to K^+\pi^-\pi^0$

NODE=S032A6

VALUE (%)		DOCUMENT ID		TECN	COMMENT
0.1±0.5 OUR AVERAGE					
0.1±0.3±0.4		BONVICINI	14	CLEO	All CLEO-c runs
−3.1±8.6	[1]	KOPP	01	CLE2	$e^+e^- \approx$ 10.6 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.2±0.4±0.8		DOBBS	07	CLEO	See BONVICINI 14

[1] KOPP 01 fits separately the D^0 and $\overline{D}^0$ Dalitz plots and then calculates the integrated difference of normalized densities divided by the integrated sum. NODE=S032A6;LINKAGE=K

$A_{CP}(K^{\pm}\pi^{\mp}\pi^0)$ in $D^0 \to K^+\pi^-\pi^0$, $\overline{D}^0 \to K^-\pi^+\pi^0$

NODE=S032A9

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0 ± 5 OUR AVERAGE					
−0.6± 5.3	1978 ± 104	TIAN	05	BELL	$e^+e^- \approx \Upsilon(4S)$
$+9\ ^{+25}_{-22}$	38	BRANDENB...	01	CLE2	$e^+e^- \approx \Upsilon(4S)$

$A_{CP}(K^0_S\pi^+\pi^-)$ in D^0, $\overline{D}^0 \to K^0_S\pi^+\pi^-$

NODE=S032A10

VALUE (%)	EVTS		DOCUMENT ID		TECN	COMMENT
−0.1 ±0.8 OUR AVERAGE						
−0.05±0.57±0.54	350k	[1]	AALTONEN	12AD	CDF	
$-0.9\ \pm2.1\ ^{+1.6}_{-5.7}$	4854	[2]	ASNER	04A	CLEO	$e^+e^- \approx$ 10 GeV

[1] This is the overall result of AALTONEN 12AD. Following are the 15 *CP* fit-fraction asymmetries from the amplitude analysis of the D^0 and $\overline{D}^0 \to K^0_S\pi^+\pi^-$ Dalitz plots. NODE=S032A10;LINKAGE=AL

[2] This is the overall result of ASNER 04A; *CP*-violating limits are also given below for each of the 10 resonant submodes found in an amplitude analysis of the D^0 and $\overline{D}^0 \to K^0_S\pi^+\pi^-$ Dalitz plots. NODE=S032A10;LINKAGE=AS

$A_{CP}(K^{\mp}\pi^{\pm}\eta)$ in D^0, $\overline{D}^0 \to K^{\mp}\pi^{\pm}\eta$

NODE=S032D04

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
−1.9±1.3±1.0	6.1k	ABLIKIM	20V	BES3	e^+e^-, 3773 MeV

$A_{CP}(K^0_S\pi^0\eta)$ in D^0, $\overline{D}^0 \to K^0_S\pi^0\eta$

NODE=S032D05

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
−3.9±3.2±0.8	1.1k	ABLIKIM	20V	BES3	e^+e^-, 3773 MeV

$A_{CP}(K^{\mp}\pi^{\pm}\pi^0\eta)$ in D^0, $\overline{D}^0 \to K^{\mp}\pi^{\pm}\pi^0\eta$

NODE=S032D06

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
−7.9±4.8±2.5	580	ABLIKIM	20V	BES3	e^+e^-, 3773 MeV

$A_{CP}(K^*(892)^{\mp}\pi^{\pm} \to K^0_S\pi^+\pi^-)$ in $D^0 \to K^{*-}\pi^+$, $\overline{D}^0 \to K^{*+}\pi^-$

NODE=S032A13

VALUE (%)	DOCUMENT ID		TECN	COMMENT
+0.36±0.33±0.40	AALTONEN	12AD	CDF	Dalitz fit, ∼ 350k evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$+2.5\ \pm1.9\ ^{+3.3}_{-0.8}$	ASNER	04A	CLEO	Dalitz fit, 4854 evts

$A_{CP}(K^*(892)^{\pm}\pi^{\mp} \to K^0_S\pi^+\pi^-)$ in $D^0 \to K^{*+}\pi^-$, $\overline{D}^0 \to K^{*-}\pi^+$

NODE=S032A14

This is a doubly Cabibbo-suppressed mode. NODE=S032A14

VALUE (%)	DOCUMENT ID		TECN	COMMENT
+ 1.0± 5.7± 2.1	AALTONEN	12AD	CDF	Dalitz fit, ∼ 350k evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−21 ±42 ±28	ASNER	04A	CLEO	Dalitz fit, 4854 evts

$A_{CP}(K^0_S\rho^0 \to K^0_S\pi^+\pi^-)$ in $D^0 \to \overline{K}^0\rho^0$, $\overline{D}^0 \to K^0\rho^0$

NODE=S032A15

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−0.05±0.50±0.08	AALTONEN	12AD	CDF	Dalitz fit, ∼ 350k evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$+3.1\ \pm3.8\ ^{+2.7}_{-2.2}$	ASNER	04A	CLEO	Dalitz fit, 4854 evts

$A_{CP}(K^0_S\omega \to K^0_S\pi^+\pi^-)$ in $D^0 \to \overline{K}^0\omega$, $\overline{D}^0 \to K^0\omega$

NODE=S032A16

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−12.6± 6.0± 2.6	AALTONEN	12AD	CDF	Dalitz fit, ∼ 350k evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$-26\ \pm24\ ^{+22}_{-\ 4}$	ASNER	04A	CLEO	Dalitz fit, 4854 evts

$A_{CP}(K^0_S f_0(980) \to K^0_S \pi^+\pi^-)$ in $D^0 \to \overline{K}^0 f_0(980)$, $\overline{D}^0 \to K^0 f_0(980)$

NODE=S032A17
NODE=S032A17

VALUE (%)	DOCUMENT ID		TECN	COMMENT
$-0.4\pm\ 2.2\pm\ 1.6$	AALTONEN	12AD	CDF	Dalitz fit, ~ 350k evts

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

$-4.7\pm11.0^{+24.9}_{-\ 8.8}$	ASNER	04A	CLEO	Dalitz fit, 4854 evts

$A_{CP}(K^0_S f_2(1270) \to K^0_S \pi^+\pi^-)$ in $D^0 \to \overline{K}^0 f_2(1270)$, $\overline{D}^0 \to K^0 f_2(1270)$

NODE=S032A18
NODE=S032A18

VALUE (%)	DOCUMENT ID		TECN	COMMENT
$-\ 4.0\pm\ 3.4\pm\ 3.0$	AALTONEN	12AD	CDF	Dalitz fit, ~ 350k evts

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

$+34\ \ \pm51\ \ ^{+33}_{-79}$	ASNER	04A	CLEO	Dalitz fit, 4854 evts

$A_{CP}(K^0_S f_0(1370) \to K^0_S \pi^+\pi^-)$ in $D^0 \to \overline{K}^0 f_0(1370)$, $\overline{D}^0 \to K^0 f_0(1370)$

NODE=S032A19
NODE=S032A19

VALUE (%)	DOCUMENT ID		TECN	COMMENT
$-\ 0.5\pm\ 4.6\pm\ 7.7$	AALTONEN	12AD	CDF	Dalitz fit, ~ 350k evts

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

$+18\ \ \pm10\ \ ^{+13}_{-22}$	ASNER	04A	CLEO	Dalitz fit, 4854 evts

$A_{CP}(K^0_S \rho^0(1450))$ in $D^0 \to \overline{K}^0 \rho^0(1450)$, $\overline{D}^0 \to K^0 \rho^0(1450)$

NODE=S032A55
NODE=S032A55

VALUE (%)	DOCUMENT ID		TECN	COMMENT
$-4.1\pm5.2\pm8.1$	AALTONEN	12AD	CDF	Dalitz fit, ~ 350k evts

$A_{CP}(K^0_S f_0(600))$ in $D^0 \to \overline{K}^0 f_0(600)$, $\overline{D}^0 \to K^0 f_0(600)$

NODE=S032A56
NODE=S032A56

VALUE (%)	DOCUMENT ID		TECN	COMMENT
$-2.7\pm2.7\pm3.6$	AALTONEN	12AD	CDF	Dalitz fit, ~ 350k evts

$A_{CP}(K^*(1410)^\mp \pi^\pm)$ in $D^0 \to K^*(1410)^- \pi^+$, $\overline{D}^0 \to K^*(1410)^+ \pi^-$

NODE=S032A54
NODE=S032A54

VALUE (%)	DOCUMENT ID		TECN	COMMENT
$-2.3\pm5.7\pm6.4$	AALTONEN	12AD	CDF	Dalitz fit, ~ 350k evts

$A_{CP}(K^*_0(1430)^\mp \pi^\pm \to K^0_S \pi^+\pi^-)$ in $D^0 \to K^*_0(1430)^- \pi^+$, $\overline{D}^0 \to$ c.c.

NODE=S032A20
NODE=S032A20

VALUE (%)	DOCUMENT ID		TECN	COMMENT
$4.0\pm\ 2.4\pm3.8$	AALTONEN	12AD	CDF	Dalitz fit, ~ 350k evts

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

$-0.2\pm11.3^{+8.8}_{-5.0}$	ASNER	04A	CLEO	Dalitz fit, 4854 evts

$A_{CP}(K^*_0(1430)^\pm \pi^\mp)$ in $D^0 \to K^*_0(1430)^+ \pi^-$, $\overline{D}^0 \to K^*_0(1430)^- \pi^+$

NODE=S032A58

This is a doubly Cabibbo-suppressed mode.

NODE=S032A58
NODE=S032A58

VALUE (%)	DOCUMENT ID		TECN	COMMENT
$+12\pm11\pm10$	AALTONEN	12AD	CDF	Dalitz fit, ~ 350k evts

$A_{CP}(K^*_2(1430)^\mp \pi^\pm \to K^0_S \pi^+\pi^-)$ in $D^0 \to K^*_2(1430)^- \pi^+$, $\overline{D}^0 \to$ c.c.

NODE=S032A21
NODE=S032A21

VALUE (%)	DOCUMENT ID		TECN	COMMENT
$+2.9\pm\ 4.0\pm\ 4.1$	AALTONEN	12AD	CDF	Dalitz fit, ~ 350k evts

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

$-7\ \ \pm25\ \ ^{+13}_{-26}$	ASNER	04A	CLEO	Dalitz fit, 4854 evts

$A_{CP}(K^*_2(1430)^\pm \pi^\mp)$ in $D^0 \to K^*_2(1430)^+ \pi^-$, $\overline{D}^0 \to K^*_2(1430)^- \pi^+$

NODE=S032A59

This is a doubly Cabibbo-suppressed mode.

NODE=S032A59
NODE=S032A59

VALUE (%)	DOCUMENT ID		TECN	COMMENT
$-10\pm14\pm29$	AALTONEN	12AD	CDF	Dalitz fit, ~ 350k evts

$A_{CP}(K^*(1680)^\mp \pi^\pm \to K^0_S \pi^+\pi^-)$ in $D^0 \to K^*(1680)^- \pi^+$, $\overline{D}^0 \to$ c.c.

NODE=S032A22
NODE=S032A22

VALUE (%)	DOCUMENT ID		TECN	COMMENT

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

$-36\pm19^{+10}_{-35}$	ASNER	04A	CLEO	Dalitz fit, 4854 evts

$A_{CP}(K^-\pi^+\pi^+\pi^-)$ in $D^0 \to K^-\pi^+\pi^+\pi^-$, $\overline{D}^0 \to K^+\pi^-\pi^-\pi^+$ NODE=S032A24

NODE=S032A24

VALUE (%)	DOCUMENT ID		TECN	COMMENT
0.2±0.3±0.4	BONVICINI	14	CLEO	All CLEO-c runs
• • • We do not use the following data for averages, fits, limits, etc. • • •				
+0.7±0.5±0.9	DOBBS	07	CLEO	See BONVICINI 14

$A_{CP}(K^\pm\pi^\mp\pi^+\pi^-)$ in $D^0 \to K^+\pi^-\pi^+\pi^-$, $\overline{D}^0 \to K^-\pi^+\pi^+\pi^-$ NODE=S032A11

NODE=S032A11

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
−1.8±4.4	1721 ± 75	TIAN	05	BELL	$e^+e^- \approx \Upsilon(4S)$

$A_{CP}(K^+K^-\pi^+\pi^-)$ in D^0, $\overline{D}^0 \to K^+K^-\pi^+\pi^-$ NODE=S032CPK

See also AAIJ 13BR for a search for CP violation in $D^0 \to K^+K^-\pi^+\pi^-$ in binned phase space. No evidence of CP violation was found. NODE=S032CPK

NODE=S032CPK

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
1.3 ±1.7 OUR AVERAGE					
1.84±1.74±0.3	2.9k	[1] DARGENT	17		e^+e^-
−8.2 ±5.6 ±4.7	828 ± 46	LINK	05E	FOCS	γ A, $\overline{E}_\gamma \approx$ 180 GeV

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration. NODE=S032CPK;LINKAGE=A

$A_{CP}(2K^0_S\pi^+\pi^-)$ in D^0, $\overline{D}^0 \to 2K^0_S\pi^+\pi^-$ NODE=S032D54

NODE=S032D54

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
$-2.54\pm1.44^{+0.11}_{-0.10}$	6095	[1] SANGAL	23	BELL	e^+e at Υ(4S, 5S), 10.520 GeV

[1] SANGAL 23 also measures the parity asymmetry A_T in the sign of the triple product of momenta between one K^0_S (the one with higher momentum) and the two charged pions, and reports the resulting CP asymmetry between the CP conjugate modes $(A_T - \overline{A}_T)/2 = (-1.95 \pm 1.42^{+0.14}_{-0.12}) \times 10^{-2}$. NODE=S032D54;LINKAGE=A

$A_{CP}(K_1^*(1270)^+K^- \to K^+K^-\pi^+\pi^-)$ in $D^0 \to K_1^*(1270)^+K^-$, $\overline{D}^0 \to$ c.c. NODE=S032A97

Including the full $K_1^*(1270)^+$ phase space accessible in this decay chain, with its various resonance contributions. NODE=S032A97

NODE=S032A97

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
− 2.3±1.7 OUR AVERAGE					
− 2.6±1.7± 0.2	163k	AAIJ	19C	LHCB	4-body fit, $KK\pi\pi$ evts
25.3±9.7±12.7	2.9k	[1] DARGENT	17		4-body fit, $KK\pi\pi$ evts

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration. NODE=S032A97;LINKAGE=A

$A_{CP}(K_1^*(1270)^+K^- \to K^{*0}\pi^+K^-)$ in $D^0 \to K_1^*(1270)^+K^-$, $\overline{D}^0 \to$ c.c. NODE=S032A60

NODE=S032A60

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−0.7±10.4	ARTUSO	12	CLEO	Amplitude fit, 2959 evts.

$A_{CP}(K_1^*(1270)^-K^+ \to \overline{K}^{*0}\pi^-K^+)$ in $D^0 \to K_1^*(1270)^-K^+$, $\overline{D}^0 \to$ c.c. NODE=S032A61

NODE=S032A61

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−10.0±31.5	ARTUSO	12	CLEO	Amplitude fit, 2959 evts.

$A_{CP}(K_1^*(1270)^-K^+ \to K^+K^-\pi^+\pi^-)$ in $D^0 \to K_1^*(1270)^-K^+$, $\overline{D}^0 \to$ c.c. NODE=S032A98

Including the full $K_1^*(1270)^-$ phase space accessible in this decay chain, with its various resonance contributions. NODE=S032A98

NODE=S032A98

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
1.7± 3.5 OUR AVERAGE					
3.3± 3.5± 0.5	163k	AAIJ	19C	LHCB	4-body fit, $KK\pi\pi$ evts
−50.4±12.0±16.1	2.9k	[1] DARGENT	17		4-body fit, $KK\pi\pi$ evts

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration. NODE=S032A98;LINKAGE=A

$A_{CP}(K_1^*(1270)^+K^- \to \rho^0K^+K^-)$ in $D^0 \to K_1^*(1270)^+K^-$, $\overline{D}^0 \to$ c.c. NODE=S032A62

NODE=S032A62

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−6.5±16.9	ARTUSO	12	CLEO	Amplitude fit, 2959 evts.

$A_{CP}(K_1^*(1270)^-K^+ \to \rho^0K^-K^+)$ in $D^0 \to K_1^*(1270)^-K^+$, $\overline{D}^0 \to$ c.c. NODE=S032A63

NODE=S032A63

VALUE (%)	DOCUMENT ID		TECN	COMMENT
+9.6±12.9	ARTUSO	12	CLEO	Amplitude fit, 2959 evts.

$A_{CP}(K_1(1400)^+ K^- \to K^+ K^- \pi^+ \pi^-)$ in $D^0 \to K_1(1400)^+ K^-$, $\overline{D}^0 \to$ c.c. NODE=S032A99

Including the full $K_1(1400)^+$ phase space accessible in this decay chain, with its various resonance contributions. NODE=S032A99

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
−4.4± 2.1 OUR AVERAGE					
−4.5± 2.1± 0.3	163k	AAIJ	19C	LHCB	4-body fit, $KK\pi\pi$ evts
9.2±15.2±20.3	2.9k	[1] DARGENT	17		4-body fit, $KK\pi\pi$ evts

NODE=S032A99

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration. NODE=S032A99;LINKAGE=A

$A_{CP}(K^*(1410)^+ K^- \to K^{*0} \pi^+ K^-)$ in $D^0 \to K^*(1410)^+ K^-$, $\overline{D}^0 \to$ c.c. NODE=S032A64

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−20.0±16.8	ARTUSO	12	CLEO	Amplitude fit, 2959 evts.

NODE=S032A64

$A_{CP}(K^*(1410)^- K^+ \to \overline{K}^{*0} \pi^- K^+)$ in $D^0 \to K^*(1410)^- K^+$, $\overline{D}^0 \to$ c.c. NODE=S032A65

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−1.1±13.7	ARTUSO	12	CLEO	Amplitude fit, 2959 evts.

NODE=S032A65

$A_{CP}(K^*(1680)^+ K^- \to K^+ K^- \pi^+ \pi^-)$ in $D^0 \to K^*(1680)^+ K^-$, $\overline{D}^0 \to$ c.c. NODE=S032C00

Including the full $K^*(1680)^+$ phase space accessible in this decay chain, with its various resonance contributions. NODE=S032C00

VALUE (%)	EVTS	DOCUMENT ID		COMMENT
−17.1±21.8±18.5	2.9k	[1] DARGENT	17	4-body fit, $KK\pi\pi$ evts

NODE=S032C00

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration. NODE=S032C00;LINKAGE=A

$A_{CP}(K^{*0} \overline{K}^{*0})$ in D^0, $\overline{D}^0 \to K^{*0} \overline{K}^{*0}$ NODE=S032C07

Including S, P, D wave NODE=S032C07

VALUE (%)	EVTS	DOCUMENT ID		COMMENT
−4.6±9.0±11.3	2.9k	[1] DARGENT	17	4-body fit, $KK\pi\pi$ evts

NODE=S032C07

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration. NODE=S032C07;LINKAGE=A

$A_{CP}(K^{*0} \overline{K}^{*0}$ S-wave) in D^0, $\overline{D}^0 \to K^{*0} \overline{K}^{*0}$ S-wave NODE=S032A66

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
−3.9± 2.2 OUR AVERAGE					
−4.3± 2.2±0.5	163k	AAIJ	19C	LHCB	4-body fit, $KK\pi\pi$ evts
+9.5±13.5	3k	ARTUSO	12	CLEO	4-body fit, $KK\pi\pi$ evts

NODE=S032A66

$A_{CP}(\phi \rho^0)$ in D^0, $\overline{D}^0 \to \phi \rho^0$ NODE=S032C08

Including S, P, D wave NODE=S032C08

VALUE (%)	EVTS	DOCUMENT ID		COMMENT
1.5±4.6±8.0	2.9k	[1] DARGENT	17	4-body fit, $KK\pi\pi$ evts

NODE=S032C08

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration. NODE=S032C08;LINKAGE=A

$A_{CP}(\phi \rho^0$ S-wave) in D^0, $\overline{D}^0 \to \phi \rho^0$ S-wave NODE=S032A67

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−2.7±5.3	ARTUSO	12	CLEO	Amplitude fit, 2959 evts.

NODE=S032A67

$A_{CP}(\phi \rho^0$ D-wave) in D^0, $\overline{D}^0 \to \phi \rho^0$ D-wave NODE=S032A68

VALUE (%)	DOCUMENT ID		TECN	COMMENT
−37.1±19.0	ARTUSO	12	CLEO	Amplitude fit, 2959 evts.

NODE=S032A68

$A_{CP}(\phi(\pi^+\pi^-)_{S-wave})$ in D^0, $\overline{D}^0 \to \phi(\pi^+\pi^-)_{S-wave}$ NODE=S032A69

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
6 ± 6 OUR AVERAGE					
5.8± 6.1± 0.8	163k	AAIJ	19C	LHCB	4-body fit, $KK\pi\pi$ evts
−4.0±18.0±44.6	3k	[1] DARGENT	17		4-body fit, $KK\pi\pi$ evts
• • • We do not use the following data for averages, fits, limits, etc. • • •					
−8.6±10.4	3k	[2] ARTUSO	12	CLEO	4-body fit, $KK\pi\pi$ evts

NODE=S032A69

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration. NODE=S032A69;LINKAGE=B

[2] see DARGENT 17 NODE=S032A69;LINKAGE=A

$A_{CP}(K^*(892)^0 (K^-\pi^+)_{S-wave})$ in D^0, $\overline{D}^0 \to K^*(892)^0 (K^-\pi^+)_{S-wave}$ NODE=S032C09

VALUE (%)	EVTS	DOCUMENT ID		COMMENT
−13.1±17.9±31.2	2.9k	[1] DARGENT	17	4-body fit, $KK\pi\pi$ evts

NODE=S032C09

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration. NODE=S032C09;LINKAGE=A

$A_{CP}(K^+K^-\pi^+\pi^-$ non-resonant) in D^0, $\overline{D}^0 \to K^+K^-\pi^+\pi^-$ non-resonant

NODE=S032C75
NODE=S032C75

VALUE (%)	DOCUMENT ID		COMMENT
+8.2±10.9±17.1	[1] DARGENT	17	4-body fit, 2.9k $KK\pi\pi$ evts

[1] Obtained by analyzing CLEO data but not authored by the CLEO Collaboration.

NODE=S032C75;LINKAGE=A

$A_{CP}((K^-\pi^+)_{P-wave}\,(K^+\pi^-)_{S-wave})$ in $D^0 \to (K^-\pi^+)_{P-wave}\,(K^+\pi^-)_{S-wave}$, $\overline{D}^0 \to$ c.c.

NODE=S032A70
NODE=S032A70

VALUE (%)	DOCUMENT ID		TECN	COMMENT
+2.7±10.6	ARTUSO	12	CLEO	Amplitude fit, 2959 evts.

$A_{CP}(K^+K^-\mu^+\mu^-)$ in D^0, $\overline{D}^0 \to K^+K^-\mu^+\mu^-$

NODE=S032C77
NODE=S032C77

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
−2.3± 6.3±0.6	318	[1] AAIJ	22L	LHCB	pp at 7, 8, 13TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0 ±11 ±2	110	AAIJ	18I	LHCB	pp at 7, 8, 13TeV

[1] Supersedes AAIJ 18I. This analysis provides the first complete angular analysis of $D^0 \to K^+K^-\mu^+\mu^-$, and measures angular moments for several bins in the dimuon invariant mass. The mass of the dihadron system is required to be less than 1200 MeV.

NODE=S032C77;LINKAGE=A

$A_{CP}(\pi^+\pi^-\mu^+\mu^-)$ in D^0, $\overline{D}^0 \to \pi^+\pi^-\mu^+\mu^-$

NODE=S032C78
NODE=S032C78

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
2.9±2.1±0.4	3.6k	[1] AAIJ	22L	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
4.9±3.8±0.7	1.1k	AAIJ	18I	LHCB	pp at 7, 8, 13TeV

[1] Supersedes AAIJ 18I. This analysis provides the first complete angular analysis of $D^0 \to \pi^+\pi^-\mu^+\mu^-$, and measures angular moments for several bins in the dimuon invariant mass. The mass of the dihadron system is required to be less than 1200 MeV.

NODE=S032C78;LINKAGE=A

D^0 *CP*-VIOLATING ASYMMETRY DIFFERENCES

NODE=S032247

$\Delta A_{CP} = A_{CP}(K^+K^-) - A_{CP}(\pi^+\pi^-)$

NODE=S032DCP

CP violation in these modes can come from the decay amplitudes (direct) and/or from mixing or interference of mixing and decay (indirect). The difference ΔA_{CP} is primarily sensitive to the direct component, and only retains a second-order dependence on the indirect component for measurements where the mean decay time of the K^+K^- and $\pi^+\pi^-$ samples are not identical. The results below are averaged assuming the indirect component can be neglected.

NODE=S032DCP

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
−0.154±0.029	53M,17M	AAIJ	19D	LHCB	Time-integrated
• • • We do not use the following data for averages, fits, limits, etc. • • •					
−0.10 ±0.08 ±0.03	6.5M,2.2M	AAIJ	16D	LHCB	See AAIJ 19D
0.14 ±0.16 ±0.08	2.2M,0.8M	AAIJ	14AK	LHCB	See AAIJ 19D
0.49 ±0.30 ±0.14	0.56M,0.22M	AAIJ	13AD	LHCB	See AAIJ 14AK
−0.82 ±0.21 ±0.11	1.4M,0.4M	AAIJ	12G	LHCB	See AAIJ 16D
−0.46 ±0.31 ±0.12		AALTONEN	12B	CDF	See AALTONEN 12O
−0.62 ±0.21 ±0.10		AALTONEN	12O	CDF	Time-integrated
0.24 ±0.62 ±0.26		[1] AUBERT	08M	BABR	Time-integrated
−0.86 ±0.60 ±0.07	120k	STARIC	08	BELL	Time-integrated

NODE=S032DCP

[1] Calculated from the AUBERT 08M values of $A_{CP}(K^+K^-)$ and $A_{CP}(\pi^+\pi^-)$. The systematic error here combines the systematic errors in quadrature, and therefore somewhat over-estimates it.

NODE=S032DCP;LINKAGE=AU

D^0 TESTS OF LOCAL *CP*-VIOLATION (*CPV*)

NODE=S032241

We list model-independent searches for local *CP* violation in phase-space distributions of multi-body decays.

NODE=S032241

Most of these searches divide phase space (Dalitz plot for 3-body decays, five-dimensional equivalent for 4-body decays) into bins, and perform a χ^2 test comparing normalised yields N_i, $\overline{N}_i$ in *CP*-conjugate bin pairs i: $\chi^2 = \Sigma_i(N_i - \alpha\,\overline{N}_i)/\sigma(N_i - \alpha\,\overline{N}_i)$. The factor $\alpha = (\Sigma_i N_i)/(\Sigma_i \overline{N}_i)$ removes the dependence on phase-space-integrated rate asymmetries. The result is used to obtain the probability (p-value) to obtain the measured χ^2 or larger under the assumption of CP conservation [AUBERT 08AO, BEDIAGA 09]. Alternative methods obtain p-values from other test variables based on unbinned analyses [WILLIAMS 11, AAIJ 14C]. Results can be combined using Fisher's method [MOSTELLER 48].

Local *CP*V in D^0, $\overline{D}^0 \rightarrow \pi^+ \pi^- \pi^0$

NODE=S032L01
NODE=S032L01

p-value (%)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
10.6 OUR EVALUATION					
62	2.5M	AAIJ	23AW	LHCB	unbinned method
2.6	566k	[1] AAIJ	15A	LHCB	unbinned method
32.8	82k	AUBERT	08AO	BABR	χ^2

→ UNCHECKED ←

[1] Unusually, AAIJ 15A assigns an uncertainty on the p value of $\pm 0.5\%$. This results from limited test statistics.

NODE=S032L01;LINKAGE=A

Local *CP*V in D^0, $\overline{D}^0 \rightarrow \pi^+ \pi^- \pi^+ \pi^-$

NODE=S032L02
NODE=S032L02

p-value (%)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
0.6±0.2	1.0M	[1] AAIJ	17AE	LHCB	unbinned, *P*-odd
• • • We do not use the following data for averages, fits, limits, etc. • • •					
4.6±0.5	1.0M	[2,3] AAIJ	17AE	LHCB	unbinned, *P*-even
41	330k	[2,4] AAIJ	13BR	LHCB	χ^2, *P*-even

OCCUR=2

[1] This AAIJ 17AE value tests *CP* Violation in *P*-odd variables.
[2] This value tests *CP* Violation in *P*-even variables.
[3] Not included in average as correlation to *P*-odd measurement using the same data is unclear.
[4] See AAIJ 17AE.

NODE=S032L02;LINKAGE=B
NODE=S032L02;LINKAGE=A
NODE=S032L02;LINKAGE=C
NODE=S032L02;LINKAGE=D

Local *CP*V in D^0, $\overline{D}^0 \rightarrow K^0_S \pi^+ \pi^-$

NODE=S032L03
NODE=S032L03

p-value (%)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
96	350k	AALTONEN	12AD	CDF	χ^2

Local *CP*V in D^0, $\overline{D}^0 \rightarrow K^+ K^- \pi^0$

NODE=S032L04
NODE=S032L04

p-value (%)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
16.6	11k	AUBERT	08AO	BABR	χ^2

Local *CP*V in D^0, $\overline{D}^0 \rightarrow K^+ K^- \pi^+ \pi^-$

NODE=S032L05
NODE=S032L05

p-value (%)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
9.1	57k	AAIJ	13BR	LHCB	χ^2

Local *CP*V in D^0, $\overline{D}^0 \rightarrow K^0_S K^+ \pi^-$

NODE=S032D57
NODE=S032D57

p-value (%)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
66	620k	AAIJ	24J	LHCB	5.4fb^{-1}, pp at 13 TeV

Local *CP*V in D^0, $\overline{D}^0 \rightarrow K^0_S K^- \pi^+$

NODE=S032D58
NODE=S032D58

p-value (%)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
70	950k	AAIJ	24J	LHCB	5.4fb^{-1}, pp at 13 TeV

CP VIOLATING ASYMMETRIES OF *P*-ODD (*T*-ODD) MOMENTS

NODE=S032242

The *CP*-sensitive *P*-odd (*T*-odd) correlation in D^0, $\overline{D}^0$ decays. The D^0 and $\overline{D}^0$ are distinguished by the charge of the parent D^*: $D^{*+} \rightarrow D^0 \pi^+$ and $D^{*-} \rightarrow \overline{D}^0 \pi^-$.

NODE=S032242

$A_{Tviol}(K^+ K^- \pi^+ \pi^-)$ in D^0, $\overline{D}^0 \rightarrow K^+ K^- \pi^+ \pi^-$

NODE=S032TV0

$C_T \equiv \vec{p}_{K^+} \cdot (\vec{p}_{\pi^+} \times \vec{p}_{\pi^-})$ is a parity-odd correlation of the K^+, π^+, and π^- momenta (evaluated in the D^0 rest frame) for the D^0. $\overline{C}_T \equiv \vec{p}_{K^-} \cdot (\vec{p}_{\pi^-} \times \vec{p}_{\pi^+})$ is the corresponding quantity for the $\overline{D}^0$. Then
$A_T \equiv [\Gamma(C_T > 0) - \Gamma(C_T < 0)] \,/\, [\Gamma(C_T > 0) + \Gamma(C_T < 0)]$, and
$\overline{A}_T \equiv [\Gamma(-\overline{C}_T > 0) - \Gamma(-\overline{C}_T < 0)] \,/\, [\Gamma(-\overline{C}_T > 0) + \Gamma(-\overline{C}_T < 0)]$, and
$A_{Tviol} \equiv \frac{1}{2}(A_T - \overline{A}_T)$. C_T and $\overline{C}_T$ are commonly referred to as *T*-odd moments, because they are odd under *T* reversal. However, the *T*-conjugate process $K^+ K^- \pi^+ \pi^- \rightarrow D^0$ is not accessible, while the *CP*-conjugate process is.

NODE=S032TV0

VALUE (units 10^{-3})	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
2.9± 2.2 OUR AVERAGE					
5.2± 3.7± 0.7	110k	[1] KIM	19	BELL	$e^+ e^-$ at $\Upsilon(1S)-\Upsilon(6S)$
1.8± 2.9± 0.4	171k	AAIJ	14BC	LHCB	$B \rightarrow D^0 \mu^- X$
1.0± 5.1± 4.4	47k	DEL-AMO-SA...	10	BABR	$e^+ e^- \approx$ 10.6 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
10 ±57 ±37	0.8k	LINK	05E	FOCS	γ A, $\overline{E}_\gamma \approx$ 180 GeV

NODE=S032TV0

[1] KIM 19 also study *CP*-violating asymmetries in several other kinematic variables. No evidence for *CP* violation is found in any of them.

NODE=S032TV0;LINKAGE=A

$A_{Tviol}(2K^0_S\pi^+\pi^-)$ in D^0, $\overline{D}^0 \rightarrow 2K^0_S\pi^+\pi^-$

NODE=S032D55

NODE=S032D55

$C_T \equiv \vec{p}_{K^0_S} \cdot (\vec{p}_{\pi^+} \times \vec{p}_{\pi^-})$ is a parity-odd correlation of the K^0_S (with higher momentum), π^+, and π^- momenta (evaluated in the D^0 rest frame) for the D^0. $\overline{C}_T \equiv \vec{p}_{K^0_S} \cdot (\vec{p}_{\pi^-} \times \vec{p}_{\pi^+})$ is the corresponding quantity for the $\overline{D}^0$. Then
$A_T \equiv [\Gamma(C_T > 0) - \Gamma(C_T < 0)] / [\Gamma(C_T > 0) + \Gamma(C_T < 0)]$, and
$\overline{A}_T \equiv [\Gamma(-\overline{C}_T > 0) - \Gamma(-\overline{C}_T < 0)] / [\Gamma(-\overline{C}_T > 0) + \Gamma(-\overline{C}_T < 0)]$, and
$A_{Tviol} \equiv \frac{1}{2}(A_T - \overline{A}_T)$. C_T and $\overline{C}_T$ are commonly referred to as *T*-odd moments, because they are odd under *T* reversal. However, the *T*-conjugate process $K^0_S K^0_S \pi^+\pi^- \rightarrow D^0$ is not accessible, while the *CP*-conjugate process is.

NODE=S032D55

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
$\mathbf{-1.95 \pm 1.42^{+0.14}_{-0.12}}$	6095	SANGAL	23	BELL	$e^+ e$ at $\Upsilon(4S,5S)$, 10.520 GeV

$A_{Tviol}(K^0_S\pi^+\pi^-\pi^0)$ in D^0, $\overline{D}^0 \rightarrow K^0_S\pi^+\pi^-\pi^0$

NODE=S032C76

NODE=S032C76

$C_T \equiv \vec{p}_{K^0_S} \cdot (\vec{p}_{\pi^+} \times \vec{p}_{\pi^-})$ is a parity-odd correlation evaluated in the D^0 rest frame. $\overline{C}_T$ is defined as the *CP*-conjugate observable with $\overline{D}^0$ daughter particles. Then
$A_T \equiv [\Gamma(C_T > 0) - \Gamma(C_T < 0)] / [\Gamma(C_T > 0) + \Gamma(C_T < 0)]$, and
$\overline{A}_T \equiv [\Gamma(-\overline{C}_T > 0) - \Gamma(-\overline{C}_T < 0)] / [\Gamma(-\overline{C}_T > 0) + \Gamma(-\overline{C}_T < 0)]$, and
$A_{Tviol} \equiv \frac{1}{2}(A_T - \overline{A}_T)$. C_T and $\overline{C}_T$ are commonly referred to as *T*-odd moments, because they are odd under *T* reversal. However, the *T*-conjugate process $K^0_S\pi^+\pi^-\pi^0 \rightarrow D^0$ is not accessible, while the *CP*-conjugate process is.

NODE=S032C76

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
$\mathbf{-0.28 \pm 1.38^{+0.23}_{-0.76}}$	745k	[1] PRASANTH	17	BELL	$e^+ e^-$ at $\Upsilon(nS)$'s

[1] PRASANTH 17 also measures A_{Tviol} in sub-regions of the $D^0 \rightarrow K^0_S\pi^+\pi^-\pi^0$ phase-space. No evidence of *T* violation is found.

NODE=S032C76;LINKAGE=A

D^0 *CPT*-VIOLATING DECAY-RATE ASYMMETRIES

NODE=S032244

$A_{CPT}(K^\mp\pi^\pm)$ in $D^0 \rightarrow K^-\pi^+$, $\overline{D}^0 \rightarrow K^+\pi^-$

NODE=S032CPT

NODE=S032CPT

A_{CPT}(t) is defined in terms of the time-dependent decay probabilities $P(D^0 \rightarrow K^-\pi^+)$ and $\overline{P}(\overline{D}^0 \rightarrow K^+\pi^-)$ by $A_{CPT}(t) = (\overline{P} - P)/(\overline{P} + P)$. For small mixing parameters $x \equiv \Delta m/\Gamma$ and $y \equiv \Delta\Gamma/2\Gamma$ (as is the case), and times t, A_{CPT}(t) reduces to [y *Re*(z) − x *Im*(z)] Γt, where z is the *CPT*-violating parameter. The following is actually y *Re*(z) − x *Im*(z).

NODE=S032CPT

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{-14.6 \times 10^{-5}}$ **to** $\mathbf{6.6 \times 10^{-5}}$	95	[1] KRZEMIEN	24	RVUE	from LHCb data
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$(8.3 \pm 6.5 \pm 4.1) \times 10^{-3}$		LINK	03B	FOCS	γ nucleus, $\overline{E}_\gamma \approx$ 180 GeV

[1] The constraints are derived by reinterpreting the LHCb measurement of the time-dependent asymmetry in the Cabibbo-favored $D^0 \rightarrow K^-\pi^+$ and $\overline{D}^0 \rightarrow K^+\pi^-$ decay rates. These constraints can be directly translated into the flavor eigenstate decay width difference $\delta\Gamma = \Gamma_{D^0} - \Gamma_{\overline{D}^0}$ by the relation $\delta\Gamma = (y Re(z) - x Im(z)) \times 2\Gamma$, yielding $(-4.7 < \delta\Gamma < 2.1) \times 10^{-16}$ GeV at 95% CL.

NODE=S032CPT;LINKAGE=A

SEMILEPTONIC FORM FACTORS

NODE=S032260

$r_V \equiv V(0)/A_1(0)$ in $D^0 \rightarrow K^*(892)^- \ell^+ \nu_\ell$

NODE=S032FRV
NODE=S032FRV
NEW

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
1.45±0.04 OUR AVERAGE					
[1.43 ± 0.06 OUR 2025 AVERAGE]					
$1.37 \pm 0.09 \pm 0.03$	6.4k	ABLIKIM	25	BES3	$K^*(892)^- \mu^+ \nu_\mu$, $K^{*-} \rightarrow K^-\pi^0$
$1.48 \pm 0.05 \pm 0.02$	8.8k	ABLIKIM	25BD	BES3	$K^*(892)^- e^+ \nu_e$, $K^{*-} \rightarrow \overline{K}^0\pi^-$
$1.46 \pm 0.11 \pm 0.04$	6.8k	ABLIKIM	25BO	BES3	$K^*(892)^- \mu^+ \nu_\mu$, $K^{*-} \rightarrow \overline{K}^0\pi^-$
$1.71 \pm 0.68 \pm 0.34$		LINK	05B	FOCS	$K^*(892)^- \mu^+ \nu_\mu$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$1.46 \pm 0.07 \pm 0.02$	3k	[1] ABLIKIM	19G	BES3	$K^*(892)^- e^+ \nu_e$

[1] Superseded by ABLIKIM 25BD.

NODE=S032FRV;LINKAGE=A

$r_2 \equiv A_2(0)/A_1(0)$ in $D^0 \to K^*(892)^- \ell^+ \nu_\ell$

NODE=S032FR2
NODE=S032FR2

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.720±0.033 OUR AVERAGE					
[0.72 ± 0.04 OUR 2025 AVERAGE]					
0.76 ±0.06 ±0.02	6.4k	ABLIKIM	25	BES3	$K^*(892)^- \mu^+ \nu_\mu$, $K^{*-} \to K^- \pi^0$
0.70 ±0.04 ±0.02	8.8k	ABLIKIM	25BD	BES3	$K^*(892)^- e^+ \nu_e$, $K^{*-} \to \overline{K}^0 \pi^-$
0.71 ±0.08 ±0.03	6.8k	ABLIKIM	25BO	BES3	$K^*(892)^- \mu^+ \nu_\mu$, $K^{*-} \to \overline{K}^0 \pi^-$
0.91 ±0.37 ±0.10		LINK	05B	FOCS	$K^*(892)^- \mu^+ \nu_\mu$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.67 ±0.06 ±0.01	3k	[1] ABLIKIM	19G	BES3	$K^*(892)^- e^+ \nu_e$

NEW

[1] Superseded by ABLIKIM 25BD.

NODE=S032FR2;LINKAGE=B

$r_V \equiv V(0)/A_1(0)$ in $D^0 \to \rho^- \ell^+ \nu_\ell$

NODE=S032RRV

See the D^+ listings for combinations of $D^0 \to \rho^- e^+ \nu_e$ and $D^+ \to \rho^0 e^+ \nu_e$ measurements.

NODE=S032RRV
NODE=S032RRV

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
1.548±0.079±0.041	3.3k	[1] ABLIKIM	24CP	BES3	$D^0 \to \rho^- e^+ \nu_e$

[1] Fit to a single-pole-dominance parametrization.

NODE=S032RRV;LINKAGE=A

$r_2 \equiv A_2(0)/A_1(0)$ in $D^0 \to \rho^- \ell^+ \nu_\ell$

NODE=S032RR2

See the D^+ listings for combinations of $D^0 \to \rho^- e^+ \nu_e$ and $D^+ \to \rho^0 e^+ \nu_e$ measurements.

NODE=S032RR2
NODE=S032RR2

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.823±0.056±0.026	3.3k	[1] ABLIKIM	24CP	BES3	$D^0 \to \rho^- e^+ \nu_e$

[1] Fit to a single-pole-dominance parametrization.

NODE=S032RR2;LINKAGE=A

$f_+(0)$ in $D^0 \to K^- \ell^+ \nu_\ell$

NODE=S032FK3
NODE=S032FK3

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.736 ±0.004 OUR AVERAGE					
0.7368±0.0026±0.0036	71k	ABLIKIM	15X	BES3	ℓ=e, 2-parameter fit
0.727 ±0.007 ±0.009		AUBERT	07BG	BABR	ℓ=e, 2-parameter fit

$f_+(0)\left|V_{cs}\right|$ in $D^0 \to K^- \ell^+ \nu_\ell$

NODE=S032FK0
NODE=S032FK0

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.7176±0.0018 OUR AVERAGE					
0.7179±0.0016±0.0017	191k	ABLIKIM	24CN	BES3	ℓ=e, 2-parameter fit
0.7162±0.0022±0.0019	148k	ABLIKIM	24CN	BES3	ℓ=μ, 2-parameter fit
0.726 ±0.008 ±0.004		BESSON	09	CLEO	ℓ=e, 3-parameter fit
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.7133±0.0038±0.0029	47k	[1] ABLIKIM	19B	BES3	ℓ=μ, 2-parameter fit
0.7172±0.0025±0.0035	71k	[1,2] ABLIKIM	15X	BES3	ℓ=e, 2-parameter fit

OCCUR=2

[1] Superseded by ABLIKIM 24CN.

NODE=S032FK0;LINKAGE=C

[2] The 3-parameter fit yields 0.7195 ± 0.0035 ± 0.0041.

NODE=S032FK0;LINKAGE=A

$r_1 \equiv a_1/a_0$ in $D^0 \to K^- \ell^+ \nu_\ell$

NODE=S032FK1
NODE=S032FK1

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
−2.40±0.16 OUR AVERAGE					
−2.33±0.16±0.08	71k	[1] ABLIKIM	15X	BES3	ℓ=e, 3-parameter fit
−2.65±0.34±0.08		BESSON	09	CLEO	ℓ=e, 3-parameter fit

[1] The 2-parameter fit yields −2.23 ± 0.09 ± 0.06.

NODE=S032FK1;LINKAGE=A

$r_2 \equiv a_2/a_0$ in $D^0 \to K^- \ell^+ \nu_\ell$

NODE=S032FK2
NODE=S032FK2

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
5 ±4 OUR AVERAGE					
3.4±3.9±2.4	71k	ABLIKIM	15X	BES3	ℓ=e, 3-parameter fit
13 ±9 ±1		BESSON	09	CLEO	ℓ=e, 3-parameter fit

$f_+(0)$ in $D^0 \to \pi^- \ell^+ \nu_\ell$

NODE=S032FP3
NODE=S032FP3

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.6372±0.0080±0.0044	6.3k	ABLIKIM	15X	BES3	ℓ=e, 2-parameter fit

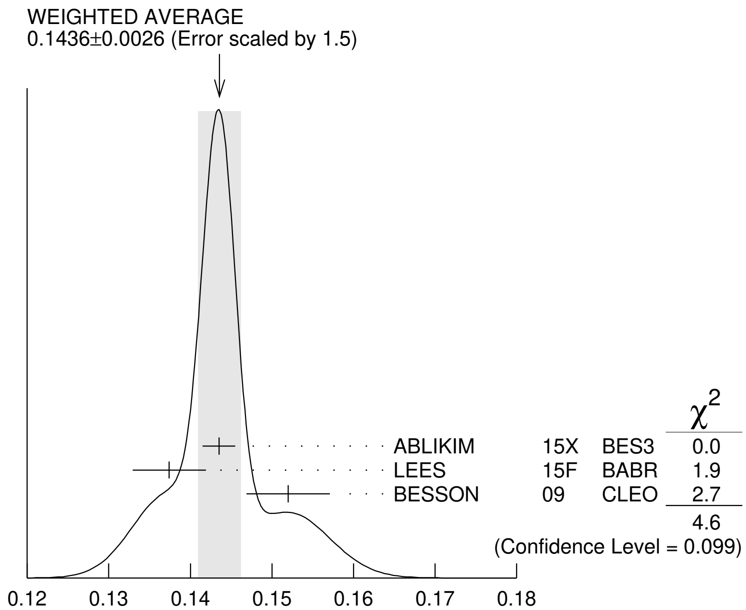
$f_+(0)|V_{cd}|$ in $D^0 \to \pi^- \ell^+ \nu_\ell$

NODE=S032FP0

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.1436±0.0026 OUR AVERAGE Error includes scale factor of 1.5. See the ideogram below.				
0.1435±0.0018±0.0009	6.3k	[1] ABLIKIM 15X	BES3	ℓ=e, 2-parameter fit
0.1374±0.0038±0.0024	5.3k	[2] LEES 15F	BABR	ℓ=e, 3-parameter fit
0.152 ±0.005 ±0.001		BESSON 09	CLEO	ℓ=e, 3-parameter fit

[1] The 3-parameter fit yields 0.1420 ± 0.0024 ± 0.0010. NODE=S032FP0;LINKAGE=A

[2] LEES 15F reports a value 0.1374 ± 0.0038 ± 0.0022 ± 0.0009, where the last uncertainty is due to the uncertainties of the $D^0 \to K^- \pi^+$ branching fraction. NODE=S032FP0;LINKAGE=B



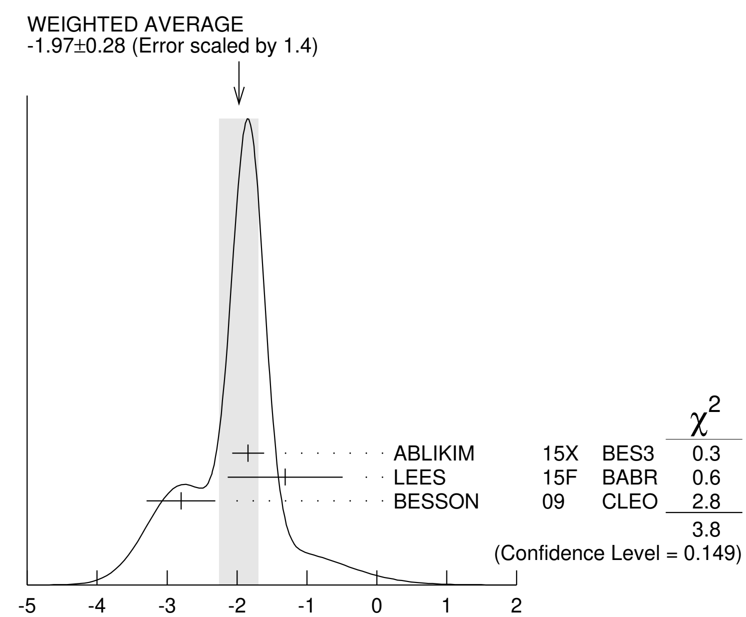
$f_+(0)|V_{cd}|$ in $D^0 \to \pi^- \ell^+ \nu_\ell$

$r_1 \equiv a_1/a_0$ in $D^0 \to \pi^- \ell^+ \nu_\ell$

NODE=S032FP1

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
−1.97±0.28 OUR AVERAGE Error includes scale factor of 1.4. See the ideogram below.				
−1.84±0.22±0.07	6.3k	[1] ABLIKIM 15X	BES3	ℓ=e, 3-parameter fit
−1.31±0.70±0.43	5.3k	LEES 15F	BABR	ℓ=e, 3-parameter fit
−2.80±0.49±0.04		BESSON 09	CLEO	ℓ=e, 3-parameter fit

[1] The 2-parameter fit yields −2.04 ± 0.08 ± 0.03. NODE=S032FP1;LINKAGE=A

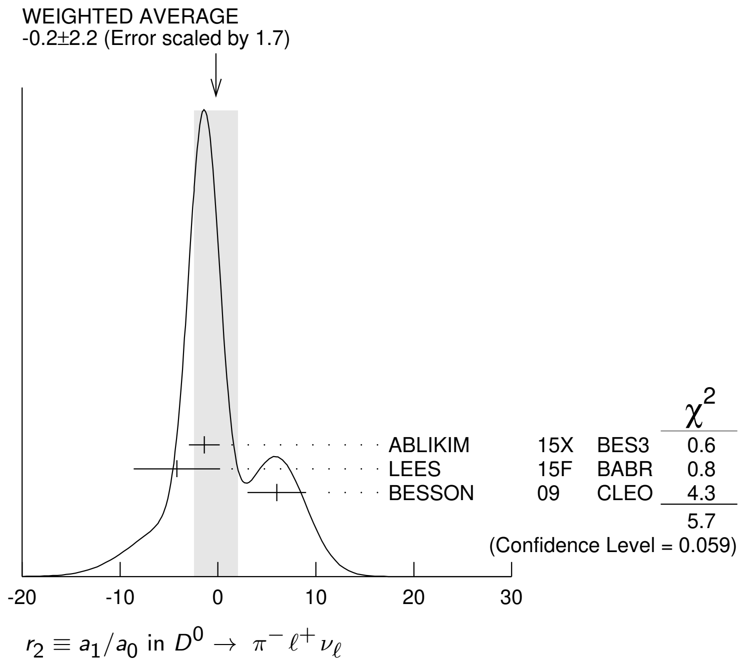


$r_1 \equiv a_1/a_0$ in $D^0 \to \pi^- \ell^+ \nu_\ell$

$r_2 \equiv a_1/a_0$ in $D^0 \to \pi^- \ell^+ \nu_\ell$

NODE=S032FP2
NODE=S032FP2

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
−0.2±2.2 OUR AVERAGE	Error includes scale factor of 1.7. See the ideogram below.				
$-1.4\pm1.5\pm0.5$	6.3k	ABLIKIM	15X	BES3	$\ell{=}e$, 3-parameter fit
$-4.2\pm4.0\pm1.9$	5.3k	LEES	15F	BABR	$\ell{=}e$, 3-parameter fit
$6\ \pm3\ \ \pm0$		BESSON	09	CLEO	$\ell{=}e$, 3-parameter fit



$f_+^{a_0}(0)\left|V_{cd}\right|$ in $D^0 \to a_0(980)^- e^+ \nu_e$

NODE=S032FA0
NODE=S032FA0

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.126±0.013±0.003	52	[1] ABLIKIM	25AW	BES3	$e^+ e^-$ at 3.773 GeV

[1] ABLIKIM 25AW uses a single-pole parametrization for the form factor and a_0 branching fractions deduced from the analysis of ABLIKIM 17K. NODE=S032FA0;LINKAGE=A

Amplitude analyses

NODE=S032265

$D \to K\pi\pi\pi$, $D \to KK\pi\pi$ partial wave analyses

NODE=S032PWA

Amplitude analyses of D^0 decays to a variety of 4-body kaon or pion final states, fitting simultaneously different partial wave components.

NODE=S032PWA

NODE=S032PWA

VALUE	DOCUMENT ID		TECN	COMMENT
	[1] AAIJ	19C	LHCB	$D^0 \to K^+ K^- \pi^+ \pi^-$
	ABLIKIM	19AK	BES3	$D^0 \to K^- \pi^+ \pi^0 \pi^0$
	AAIJ	18AI	LHCB	$D^0 \to K^+ \pi^- \pi^+ \pi^-$ and $D^0 \to K^- \pi^+ \pi^+ \pi^-$
	ABLIKIM	17O	BES3	$D^0 \to K^- \pi^+ \pi^+ \pi^-$

[1] AAIJ 19C also provides measurements of CP violation in $D^0 \to K^+ K^- \pi^+ \pi^-$, with results compatible with CP symmetry. NODE=S032PWA;LINKAGE=A

$D^0 \to \pi^+ \pi^- \eta$ partial wave analyses

NODE=S032D68
NODE=S032D68

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
	1.4k	[1] ABLIKIM	24CL	BES3	$e^+ e^-$ at 3.773 GeV

[1] The amplitude model has six components, including $(\pi^+ \pi^-)_{S-wave}\eta$. NODE=S032D68;LINKAGE=A

$D^0 \to 4\pi$ partial wave analyses

NODE=S032E30

Including $D^0 \to 2\pi^+ 2\pi^-$, $D^0 \to \pi^+ \pi^- 2\pi^0$, $D^0 \to 4\pi^0$.

NODE=S032E30
NODE=S032E30

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
	8k	[1] ABLIKIM	24BG	BES3	$e^+ e^-$ at 3.773 GeV

[1] Joint amplitude analysis of $D^0 \to 2\pi^+ 2\pi^-$ and $D^0 \to \pi^+ \pi^- 2\pi^0$. NODE=S032E30;LINKAGE=A

D^0 REFERENCES

NODE=S032

AAIJ	25	PR D111 012001	R. Aaij *et al.*	(LHCb Collab.)	REFID=63171
AAIJ	25AU	JHEP 2512 153	R. Aaij *et al.*	(LHCb Collab.)	REFID=63772
AAIJ	25M	PR D111 L091101	R. Aaij *et al.*	(LHCb Collab.)	REFID=63394
AAIJ	25U	JHEP 2503 149	R. Aaij *et al.*	(LHCb Collab.)	REFID=63454
ABLIKIM	25	PRL 134 011803	M. Ablikim *et al.*	(BESIII Collab.)	REFID=63164
ABLIKIM	25AM	PRL 135 091801	M. Ablikim *et al.*	(BESIII Collab.)	REFID=63297
ABLIKIM	25AP	PR D111 L011103	M. Ablikim *et al.*	(BESIII Collab.)	REFID=63364
ABLIKIM	25AQ	PR D111 012007	M. Ablikim *et al.*	(BESIII Collab.)	REFID=63366
ABLIKIM	25AU	PR D111 L071101	M. Ablikim *et al.*	(BESIII Collab.)	REFID=63383
ABLIKIM	25AW	PR D111 L091501	M. Ablikim *et al.*	(BESIII Collab.)	REFID=63396
ABLIKIM	25AZ	PR D112 012015	M. Ablikim *et al.*	(BESIII Collab.)	REFID=63420
ABLIKIM	25BA	PR D112 012001	M. Ablikim *et al.*	(BESIII Collab.)	REFID=63424
ABLIKIM	25BD	JHEP 2503 197	M. Ablikim *et al.*	(BESIII Collab.)	REFID=63456
ABLIKIM	25BI	JHEP 2506 220	M. Ablikim *et al.*	(BESIII Collab.)	REFID=63483
ABLIKIM	25BO	PRL 135 111803	M. Ablikim *et al.*	(BESIII Collab.)	REFID=63608
ABLIKIM	25CM	PR D112 072006	M. Ablikim *et al.*	(BESIII Collab.)	REFID=63678
ADACHI	25D	PR D111 012015	I. Adachi *et al.*	(BELLE and BELLE II Collab.)	REFID=63371
ADACHI	25J	PR D111 112011	I. Adachi *et al.*	(BELLE and BELLE II Collab.)	REFID=63409
ADACHI	25K	PR D112 012006	I. Adachi *et al.*	(BELLE II Collab.)	REFID=63415
ADACHI	25M	PR D112 012017	I. Adachi *et al.*	(BELLE II Collab.)	REFID=63422
ADACHI	25W	PR D112 L071101	I. Adachi *et al.*	(BELLE and BELLE II Collab.)	REFID=63675
ANASHIN	25	PPN 56 802	V.V. Anashin *et al.*	(VEPP-4M KEDR Collab.)	REFID=63519
ANASHIN	25A	JHEP 2511 001	V.V. Anashin *et al.*	(VEPP-4M KEDR Collab.)	REFID=63711
CHEKHOVSKY	25F	PRL 135 151803	V. Chekhovsky *et al.*	(CMS Collab.)	REFID=63648
AAIJ	24AF	PRL 133 101803	R. Aaij *et al.*	(LHCb Collab.)	REFID=63042
AAIJ	24J	JHEP 2403 107	R. Aaij *et al.*	(LHCb Collab.)	REFID=62840
ABLIKIM	24AZ	PR D109 072003	M. Ablikim *et al.*	(BESIII Collab.)	REFID=62788
ABLIKIM	24BG	CP C48 083001	M. Ablikim *et al.*	(BESIII Collab.)	REFID=62909
ABLIKIM	24CL	PR D110 L111102	M. Ablikim *et al.*	(BESIII Collab.)	REFID=63102
ABLIKIM	24CM	PR D110 112001	M. Ablikim *et al.*	(BESIII Collab.)	REFID=63103
ABLIKIM	24CN	PR D110 112006	M. Ablikim *et al.*	(BESIII Collab.)	REFID=63107
ABLIKIM	24CO	PR D110 112008	M. Ablikim *et al.*	(BESIII Collab.)	REFID=63108
ABLIKIM	24CP	PR D110 112018	M. Ablikim *et al.*	(BESIII Collab.)	REFID=63112
ABLIKIM	24CR	JHEP 2409 089	M. Ablikim *et al.*	(BESIII Collab.)	REFID=63123
HAYRAPETY...	24BB	EPJ C84 1264	A. Hayrapetyan *et al.*	(CMS Collab.)	REFID=63152
KRZEMIEN	24	PR D110 055021	W. Krzemien *et al.*	(NCBJ)	REFID=63011
MAITY	24	PR D109 L031101	S. Maity	(BELLE Collab.)	REFID=62767
AAIJ	23AC	PRL 131 091802	R. Aaij *et al.*	(LHCb Collab.)	REFID=62326
AAIJ	23AW	JHEP 2309 129	R. Aaij *et al.*	(LHCb Collab.)	REFID=62529
AAIJ	23BC	PR D108 052005	R. Aaij *et al.*	(LHCb Collab.)	REFID=62587
AAIJ	23R	PRL 131 041804	R. Aaij *et al.*	(LHCb Collab.)	REFID=62240
ABLIKIM	23AI	PR D107 032002	M. Ablikim *et al.*	(BESIII Collab.)	REFID=62247
ABLIKIM	23AJ	PR D107 032009	M. Ablikim *et al.*	(BESIII Collab.)	REFID=62249
ABLIKIM	23AO	PR D107 112005	M. Ablikim *et al.*	(BESIII Collab.)	REFID=62278
ABLIKIM	23AW	PR D108 032003	M. Ablikim *et al.*	(BESIII Collab.)	REFID=62343
SANGAL	23	PR D107 052001	A. Sangal *et al.*	(BELLE Collab.)	REFID=62255
AAIJ	22L	PRL 128 221801	R. Aaij *et al.*	(LHCb Collab.)	REFID=61684
AAIJ	22O	PR D105 092013	R. Aaij *et al.*	(LHCb Collab.)	REFID=61745
ABLIKIM	22	PRL 128 011803	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61511
ABLIKIM	22B	PRL 129 022002	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61636
ABLIKIM	22BF	PR D106 092004	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61954
ABLIKIM	22BG	PR D106 092005	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61955
ABLIKIM	22BM	EPJ C82 1009	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61982
ABLIKIM	22T	PR D105 032006	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61719
ABLIKIM	22U	PR D105 032009	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61721
ABLIKIM	22V	PR D105 L071102	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61735
ABLIKIM	22W	PR D105 092010	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61743
ABLIKIM	22X	PR D105 112001	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61750
ABLIKIM	22Y	PR D106 032002	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61764
PDG	22	PTEP 2022 083C01	R.L. Workman *et al.*	(PDG Collab.)	REFID=61634
AAIJ	21AB	PRL 127 111801	R. Aaij *et al.*	(LHCb Collab.)	REFID=61416
AAIJ	21AI	PR D104 072010	R. Aaij *et al.*	(LHCb Collab.)	REFID=61523
AAIJ	21X	PR D104 L031102	R. Aaij *et al.*	(LHCb Collab.)	REFID=61372
ABLIKIM	21AA	JHEP 2105 164	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61302
ABLIKIM	21AY	PRL 127 131801	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61496
ABLIKIM	21BA	PR D104 052008	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61515
ABLIKIM	21BB	PR D104 072005	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61522
ABLIKIM	21BC	PR D104 L091103	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61524
ABUDINEN	21A	PRL 127 211801	F. Abudinen *et al.*	(BELLE II Collab.)	REFID=61505
LI	21G	JHEP 2109 075	L.K. Li *et al.*	(BELLE Collab.)	REFID=61550
AAIJ	20	PR D101 012005	R. Aaij *et al.*	(LHCb Collab.)	REFID=60049
ABLIKIM	20AA	PR D102 052003	M. Ablikim *et al.*	(BESIII Collab.)	REFID=60716
ABLIKIM	20AC	PR D102 052006	M. Ablikim *et al.*	(BESIII Collab.)	REFID=60718
ABLIKIM	20AF	PR D102 112005	M. Ablikim *et al.*	(BESIII Collab.)	REFID=60741
ABLIKIM	20G	PR D101 052009	M. Ablikim *et al.*	(BESIII Collab.)	REFID=60272
ABLIKIM	20V	PRL 124 241803	M. Ablikim *et al.*	(BESIII Collab.)	REFID=60569
CHEN	20A	PR D102 012002	Y.Q. Chen *et al.*	(BELLE Collab.)	REFID=60333
LEES	20A	PR D101 112003	J.P. Lees *et al.*	(BABAR Collab.)	REFID=60314
LEES	20B	PRL 124 071802	J.P. Lees *et al.*	(BABAR Collab.)	REFID=60533
NAYAK	20	PR D102 071102	M. Nayak *et al.*	(BELLE Collab.)	REFID=60724
AAIJ	19	PRL 122 011802	R. Aaij *et al.*	(LHCb Collab.)	REFID=59547
AAIJ	19C	JHEP 1902 126	R. Aaij *et al.*	(LHCb Collab.)	REFID=59636
AAIJ	19D	PRL 122 211803	R. Aaij *et al.*	(LHCb Collab.)	REFID=59644
AAIJ	19X	PRL 122 231802	R. Aaij *et al.*	(LHCb Collab.)	REFID=59793
ABLIKIM	19AK	PR D99 092008	M. Ablikim *et al.*	(BESIII Collab.)	REFID=59878
ABLIKIM	19AL	PR D99 112002	M. Ablikim *et al.*	(BESIII Collab.)	REFID=59885
ABLIKIM	19AY	PR D100 072006	M. Ablikim *et al.*	(BESIII Collab.)	REFID=60013
ABLIKIM	19B	PRL 122 011804	M. Ablikim *et al.*	(BESIII Collab.)	REFID=59549
ABLIKIM	19BI	PL B798 135017	M. Ablikim *et al.*	(BESIII Collab.)	REFID=60140
ABLIKIM	19C	PRL 122 062001	M. Ablikim *et al.*	(BESIII Collab.)	REFID=59591
ABLIKIM	19G	PR D99 011103	M. Ablikim *et al.*	(BESIII Collab.)	REFID=59598
KIM	19	PR D99 011104	J.B. Kim *et al.*	(BELLE Collab.)	REFID=59599
LEES	19A	PRL 122 081802	J.P. Lees *et al.*	(BABAR Collab.)	REFID=59763
PDG	19	RPP 2019 at pdg.lbl.gov	M. Tanabashi *et al.*	(PDG Collab.)	REFID=59587
AAIJ	18AI	EPJ C78 443	R. Aaij *et al.*	(LHCb Collab.)	REFID=59187
AAIJ	18AV	JHEP 1811 048	R. Aaij *et al.*	(LHCb Collab.)	REFID=59359
AAIJ	18I	PRL 121 091801	R. Aaij *et al.*	(LHCb Collab.)	REFID=58868

AAIJ	18K	PR D97 031101	R. Aaij *et al.*	(LHCb Collab.)	REFID=58876
ABLIKIM	18AC	PR D98 092009	M. Ablikim *et al.*	(BESIII Collab.)	REFID=59475
ABLIKIM	18AE	PRL 121 171803	M. Ablikim *et al.*	(BESIII Collab.)	REFID=59528
ABLIKIM	18F	PRL 121 081802	M. Ablikim *et al.*	(BESIII Collab.)	REFID=58867
ABLIKIM	18L	PR D97 052005	M. Ablikim *et al.*	(BESIII Collab.)	REFID=58899
ABLIKIM	18P	PR D97 072015	M. Ablikim *et al.*	(BESIII Collab.)	REFID=58926
ABLIKIM	18W	PR D97 072004	M. Ablikim *et al.*	(BESIII Collab.)	REFID=58992
ABLIKIM	18X	PL B781 368	M. Ablikim *et al.*	(BESIII Collab.)	REFID=59019
HARNEW	18	JHEP 1801 144	S. Harnew *et al.*	(BRIS, PNNL)	REFID=59247
RESMI	18	JHEP 1801 082	P.K. Resmi *et al.*		REFID=58790
SMITH	18	PR D98 051101	M.J. Smith, D. Cinabro, P. Naik	(LTU, WAYN+)	REFID=59435
AAIJ	17AE	PL B769 345	R. Aaij *et al.*	(LHCb Collab.)	REFID=57897
AAIJ	17AK	PRL 118 261803	R. Aaij *et al.*	(LHCb Collab.)	REFID=57940
AAIJ	17AO	PR D95 052004	R. Aaij *et al.*	(LHCb Collab.)	REFID=57968
Also		PR D96 099907 (errat.)	R. Aaij *et al.*	(LHCb Collab.)	REFID=58312
AAIJ	17BG	PRL 119 181805	R. Aaij *et al.*	(LHCb Collab.)	REFID=58272
AAIJ	17M	PL B767 177	R. Aaij *et al.*	(LHCb Collab.)	REFID=57768
ABLIKIM	17A	PL B765 231	M. Ablikim *et al.*	(BESIII Collab.)	REFID=57707
ABLIKIM	17K	PR D95 032002	M. Ablikim *et al.*	(BESIII Collab.)	REFID=57953
ABLIKIM	17O	PR D95 072010	M. Ablikim *et al.*	(BESIII Collab.)	REFID=57982
DARGENT	17	JHEP 1705 143	P. dArgent *et al.*	(HEID, BRIS)	REFID=58121
DASH	17	PRL 119 171801	N. Dash *et al.*	(BELLE Collab.)	REFID=58268
LAI	17	PR D95 011102	Y.-T. Lai *et al.*	(BELLE Collab.)	REFID=57642
NANUT	17	PRL 118 051801	T. Nanut *et al.*	(BELLE Collab.)	REFID=57659
PRASANTH	17	PR D95 091101	K. Prasanth *et al.*	(BELLE Collab.)	REFID=57987
AAIJ	16D	PRL 116 191601	R. Aaij *et al.*	(LHCb Collab.)	REFID=57189
AAIJ	16F	PRL 116 241801	R. Aaij *et al.*	(LHCb Collab.)	REFID=57192
AAIJ	16H	PL B754 167	R. Aaij *et al.*	(LHCb Collab.)	REFID=57205
AAIJ	16I	PL B757 558	R. Aaij *et al.*	(LHCb Collab.)	REFID=57223
AAIJ	16N	PR D93 052018	R. Aaij *et al.*	(LHCb Collab.)	REFID=57273
AAIJ	16V	JHEP 1604 033	R. Aaij *et al.*	(LHCb Collab.)	REFID=57327
ABLIKIM	16D	PRL 116 082001	M. Ablikim *et al.*	(BESIII Collab.)	REFID=57183
EVANS	16	PL B757 520	T. Evans *et al.*	(OXF, BRIS, MDRA)	REFID=57222
Also		PL B765 402 (errat.)	T. Evans *et al.*	(OXF, BRIS, MDRA)	REFID=58065
LEES	16D	PR D93 112014	J.P. Lees *et al.*	(BABAR Collab.)	REFID=57297
NISAR	16	PR D93 051102	N.K. Nisar *et al.*	(BELLE Collab.)	REFID=57260
STARIC	16	PL B753 412	M. Staric *et al.*	(BELLE Collab.)	REFID=57007
AAIJ	15A	PL B740 158	R. Aaij *et al.*	(LHCb Collab.)	REFID=56270
AAIJ	15AA	JHEP 1504 043	R. Aaij *et al.*	(LHCb Collab.)	REFID=56627
AAIJ	15AT	JHEP 1510 055	R. Aaij *et al.*	(LHCb Collab.)	REFID=56859
ABLIKIM	15D	PL B744 339	M. Ablikim *et al.*	(BESIII Collab.)	REFID=56506
ABLIKIM	15F	PR D91 112015	M. Ablikim *et al.*	(BESIII Collab.)	REFID=56589
ABLIKIM	15X	PR D92 072012	M. Ablikiim *et al.*	(BESIII Collab.)	REFID=56897
LEES	15F	PR D91 052022	J.P. Lees *et al.*	(BABAR Collab.)	REFID=56553
MALDE	15	PL B747 9	S. Malde *et al.*	(BRIS, CERN, MDRA, OXF+)	REFID=56515
NAYAK	15	PL B740 1	M. Nayak *et al.*	(MDRA, OXF, CERN, CMU+)	REFID=56271
AAIJ	14AK	JHEP 1407 041	R. Aaij *et al.*	(LHCb Collab.)	REFID=55992
AAIJ	14AL	PRL 112 041801	R. Aaij *et al.*	(LHCb Collab.)	REFID=56432
AAIJ	14B	PL B728 234	R. Aaij *et al.*	(LHCb Collab.)	REFID=55626
AAIJ	14BC	JHEP 1410 005	R. Aaij *et al.*	(LHCb Collab.)	REFID=56172
AAIJ	14C	PL B728 585	R. Aaij *et al.*	(LHCb Collab.)	REFID=55630
AALTONEN	14Q	PR D90 111103	T. Aaltonen *et al.*	(CDF Collab.)	REFID=56326
ABLIKIM	14C	PL B734 227	M. Ablikim *et al.*	(BESIII Collab.)	REFID=55767
BONVICINI	14	PR D89 072002	G. Bonvicini *et al.*	(CLEO Collab.)	REFID=55798
KO	14	PRL 112 111801	B.R. Ko *et al.*	(BELLE Collab.)	REFID=55688
LIBBY	14	PL B731 197	J. Libby *et al.*	(MDRA, OXF, PNL, +)	REFID=55771
NISAR	14	PRL 112 211601	N.K. Nisar *et al.*	(BELLE Collab.)	REFID=55854
PENG	14	PR D89 091103	T. Peng *et al.*	(BELLE Collab.)	REFID=55814
TOMARADZE	14	PR D89 031501	A. Tomaradze *et al.*	(NWES, WAYN)	REFID=55785
AAIJ	13AD	PL B723 33	R. Aaij *et al.*	(LHCb Collab.)	REFID=55081
AAIJ	13AI	PL B725 15	R. Aaij *et al.*	(LHCb Collab.)	REFID=55088
AAIJ	13BR	PL B726 623	R. Aaij *et al.*	(LHCb Collab.)	REFID=55437
AAIJ	13CE	PRL 111 251801	R. Aaij *et al.*	(LHCb Collab.)	REFID=55616
AAIJ	13N	PRL 110 101802	R. Aaij *et al.*	(LHCb Collab.)	REFID=54959
AAIJ	13V	JHEP 1306 065	R. Aaij *et al.*	(LHCb Collab.)	REFID=55034
AALTONEN	13AE	PRL 111 231802	T. Aaltonen *et al.*	(CDF Collab.)	REFID=55638
DOBBS	13	PRL 110 131802	S. Dobbs *et al.*	(CLEO Collab.)	REFID=55201
LEES	13	PR D87 012004	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54803
LEES	13S	PR D88 071104	J.P. Lees *et al.*	(BABAR Collab.)	REFID=55453
WHITE	13	PR D88 051101	E. White *et al.*	(BELLE Collab.)	REFID=55447
AAIJ	12G	PRL 108 111602	R. Aaij *et al.*	(LHCb Collab.)	REFID=54046
AAIJ	12K	JHEP 1204 129	R. Aaij *et al.*	(LHCb Collab.)	REFID=54115
AALTONEN	12AD	PR D86 032007	T. Aaltonen *et al.*	(CDF Collab.)	REFID=54369
AALTONEN	12B	PR D85 012009	T. Aaltonen *et al.*	(CDF Collab.)	REFID=54047
AALTONEN	12O	PRL 109 111801	T. Aaltonen *et al.*	(CDF Collab.)	REFID=54244
ARTUSO	12	PR D85 122002	M. Artuso *et al.*	(CLEO Collab.)	REFID=54413
ASNER	12	PR D86 112001	D.M. Asner	(CLEO Collab.)	REFID=54796
INSLER	12	PR D85 092016	J. Insler *et al.*	(CLEO Collab.)	REFID=54409
Also		PR D94 099905 (errat.)	J. Insler *et al.*	(CLEO Collab.)	REFID=57723
LEES	12L	PR D85 091107	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54379
LEES	12Q	PR D86 032001	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54384
KO	11	PRL 106 211801	B.R. Ko *et al.*	(BELLE Collab.)	REFID=16647
LOWREY	11	PR D84 092005	N. Lowrey *et al.*	(CLEO Collab.)	REFID=53879
WILLIAMS	11	PR D84 054015	M. Williams	(LOIC)	REFID=56416
AALTONEN	10X	PR D82 091105	T. Aaltonen *et al.*	(CDF Collab.)	REFID=53437
ANASHIN	10A	PL B686 84	V.V. Anashin *et al.*	(VEPP-4M KEDR Collab.)	REFID=53230
ASNER	10	PR D81 052007	D.M. Asner *et al.*	(CLEO Collab.)	REFID=53219
BHATTACHAR...	10A	PR D81 096008	B. Bhattacharya, C.-W. Chiang, J.L. Rosner	(CHIC+)	REFID=53402
DEL-AMO-SA...	10	PR D81 111103	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=53324
DEL-AMO-SA...	10D	PRL 105 081803	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=53370
MENDEZ	10	PR D81 052013	H. Mendez *et al.*	(CLEO Collab.)	REFID=53251
PETRIC	10	PR D81 091102	M. Petric *et al.*	(BELLE Collab.)	REFID=53336
AUBERT	09AI	PR D80 071103	B. Aubert *et al.*	(BABAR Collab.)	REFID=53067
AUBERT	09AN	PRL 103 211801	B. Aubert *et al.*	(BABAR Collab.)	REFID=53082
BEDIAGA	09	PR D80 096006	I. Bediaga *et al.*	(CBPF, NDAM)	REFID=53161
BESSON	09	PR D80 032005	D. Besson *et al.*	(CLEO Collab.)	REFID=52963
Also		PR D79 052010	J.Y. Ge *et al.*	(CLEO Collab.)	REFID=52823
LOWREY	09	PR D80 031105	N. Lowrey *et al.*	(CLEO Collab.)	REFID=53014
RUBIN	09	PR D79 097101	P. Rubin *et al.*	(CLEO Collab.)	REFID=52813

ZUPANC	09	PR D80 052006	A. Zupanc *et al.*	(BELLE Collab.)	REFID=53034
AALTONEN	08E	PRL 100 121802	T. Aaltonen *et al.*	(CDF Collab.)	REFID=52205
ABLIKIM	08L	PL B665 16	M. Ablikim *et al.*	(BES Collab.)	REFID=52461
ARINSTEIN	08	PL B662 102	K. Arinstein *et al.*	(BELLE Collab.)	REFID=52245
ARTUSO	08	PR D77 092003	M. Artuso *et al.*	(CLEO Collab.)	REFID=52350
ASNER	08	PR D78 012001	D.M. Asner *et al.*	(CLEO Collab.)	REFID=52412
AUBERT	08AL	PR D78 034023	B. Aubert *et al.*	(BABAR Collab.)	REFID=52361
AUBERT	08AO	PR D78 051102	B. Aubert *et al.*	(BABAR Collab.)	REFID=52363
AUBERT	08AZ	PR D78 071101	B. Aubert *et al.*	(BABAR Collab.)	REFID=52510
AUBERT	08L	PRL 100 051802	B. Aubert *et al.*	(BABAR Collab.)	REFID=52213
AUBERT	08M	PRL 100 061803	B. Aubert *et al.*	(BABAR Collab.)	REFID=52216
AUBERT	08U	PR D78 011105	B. Aubert *et al.*	(BABAR Collab.)	REFID=52244
BITENC	08	PR D77 112003	U. Bitenc *et al.*	(BELLE Collab.)	REFID=52406
BONVICINI	08	PR D77 091106	G. Bonvicini *et al.*	(CLEO Collab.)	REFID=52349
DEANDREA	08	PR D78 034032	A. Deandrea, A. Nehme, P. Talavera		REFID=52423
DOBBS	08	PR D77 112005	S. Dobbs *et al.*	(CLEO Collab.)	REFID=52407
Also		PRL 100 251802	D. Cronin-Hennessy *et al.*	(CLEO Collab.)	REFID=52443
GASPERO	08	PR D78 014015	M. Gaspero *et al.*	(ROMA, CINN, TELA)	REFID=52507
HE	08	PRL 100 091801	Q. He *et al.*	(CLEO Collab.)	REFID=52215
PDG	08	PL B667 1	C. Amsler *et al.*	(PDG Collab.)	REFID=52166
STARIC	08	PL B670 190	M. Staric *et al.*	(BELLE Collab.)	REFID=52527
ABLIKIM	07G	PL B658 1	M. Ablikim *et al.*	(BES Collab.)	REFID=52031
ARTUSO	07A	PRL 99 191801	M. Artuso *et al.*	(CLEO Collab.)	REFID=52017
AUBERT	07AB	PR D76 014018	B. Aubert *et al.*	(BABAR Collab.)	REFID=51856
AUBERT	07BG	PR D76 052005	B. Aubert *et al.*	(BABAR Collab.)	REFID=51938
AUBERT	07BJ	PRL 99 251801	B. Aubert *et al.*	(BABAR Collab.)	REFID=52093
AUBERT	07T	PR D76 011102	B. Aubert *et al.*	(BABAR Collab.)	REFID=51726
AUBERT	07W	PRL 98 211802	B. Aubert *et al.*	(BABAR Collab.)	REFID=51754
CAWLFIELD	07	PRL 98 092002	C. Cawlfield *et al.*	(CLEO Collab.)	REFID=51659
DOBBS	07	PR D76 112001	S. Dobbs *et al.*	(CLEO Collab.)	REFID=52075
LINK	07A	PR D75 052003	J.M. Link *et al.*	(FNAL FOCUS Collab.)	REFID=51713
STARIC	07	PRL 98 211803	M. Staric *et al.*	(BELLE Collab.)	REFID=51755
ZHANG	07B	PRL 99 131803	L.M. Zhang *et al.*	(BELLE Collab.)	REFID=51926
ABLIKIM	06O	EPJ C47 31	M. Ablikim *et al.*	(BES Collab.)	REFID=51228
ABLIKIM	06U	PL B643 246	M. Ablikim *et al.*	(BES Collab.)	REFID=51495
ABULENCIA	06X	PR D74 031109	A. Abulencia *et al.*	(CDF Collab.)	REFID=51328
ADAM	06A	PRL 97 251801	N.E. Adam *et al.*	(CLEO Collab.)	REFID=51559
AUBERT,B	06N	PRL 97 221803	B. Aubert *et al.*	(BABAR Collab.)	REFID=51491
AUBERT,B	06X	PR D74 091102	B. Aubert *et al.*	(BABAR Collab.)	REFID=51497
CAWLFIELD	06A	PR D74 031108	C. Cawlfield *et al.*	(CLEO Collab.)	REFID=51153
HUANG	06B	PR D74 112005	G.S. Huang *et al.*	(CLEO Collab.)	REFID=51590
PDG	06	JP G33 1	W.-M. Yao *et al.*	(PDG Collab.)	REFID=51004
RUBIN	06	PRL 96 081802	P. Rubin *et al.*	(CLEO Collab.)	REFID=50981
WIDHALM	06	PRL 97 061804	L. Widhalm *et al.*	(BELLE Collab.)	REFID=51251
ZHANG	06	PRL 96 151801	L.M. Zhang *et al.*	(BELLE Collab.)	REFID=51105
ABLIKIM	05F	PL B622 6	M. Ablikim *et al.*	(BES Collab.)	REFID=50681
ABLIKIM	05P	PL B625 196	M. Ablikim *et al.*	(BES Collab.)	REFID=50879
ACOSTA	05C	PRL 94 122001	D. Acosta *et al.*	(FNAL CDF Collab.)	REFID=50588
ASNER	05	PR D72 012001	D.M. Asner *et al.*	(CLEO Collab.)	REFID=50704
AUBERT,B	05J	PR D72 052008	B. Aubert *et al.*	(BABAR Collab.)	REFID=50824
BITENC	05	PR D72 071101	U. Bitenc *et al.*	(BELLE Collab.)	REFID=50909
CAWLFIELD	05	PR D71 077101	C. Cawlfield *et al.*	(CLEO Collab.)	REFID=50632
COAN	05	PRL 95 181802	T.E. Coan *et al.*	(CLEO Collab.)	REFID=50933
CRONIN-HEN...	05	PR D72 031102	D. Cronin-Hennessy *et al.*	(CLEO Collab.)	REFID=50571
HE	05	PRL 95 121801	Q. He *et al.*	(CLEO Collab.)	REFID=50924
Also		PRL 96 199903 (errat.)	Q. He *et al.*	(CLEO Collab.)	REFID=51211
HUANG	05	PRL 94 011802	G.S. Huang *et al.*	(CLEO Collab.)	REFID=50367
KAYIS-TOPAK...	05	PL B626 24	A. Kayis-Topaksu *et al.*	(CERN CHORUS Collab.)	REFID=50880
LI	05A	PRL 94 071801	J. Li *et al.*	(BELLE Collab.)	REFID=50574
LINK	05	PL B607 51	J.M. Link *et al.*	(FNAL FOCUS Collab.)	REFID=50468
LINK	05A	PL B607 59	J.M. Link *et al.*	(FNAL FOCUS Collab.)	REFID=50469
LINK	05B	PL B607 67	J.M. Link *et al.*	(FNAL FOCUS Collab.)	REFID=50470
LINK	05E	PL B622 239	J.M. Link *et al.*	(FNAL FOCUS Collab.)	REFID=50567
LINK	05G	PL B610 225	J.M. Link *et al.*	(FNAL FOCUS Collab.)	REFID=50599
LINK	05H	PL B618 23	J.M. Link *et al.*	(FNAL FOCUS Collab.)	REFID=50653
ONENGUT	05	PL B613 105	G. Onengut *et al.*	(CERN CHORUS Collab.)	REFID=50600
TIAN	05	PRL 95 231801	X.C. Tian *et al.*	(BELLE Collab.)	REFID=50952
ABLIKIM	04C	PL B597 39	M. Ablikim *et al.*	(BEPC BES Collab.)	REFID=49985
ABT	04	PL B596 173	I. Abt *et al.*	(HERA B Collab.)	REFID=49981
ASNER	04A	PR D70 091101	D.M. Asner *et al.*	(CLEO Collab.)	REFID=50238
AUBERT	04Q	PR D69 051101	B. Aubert *et al.*	(BABAR Collab.)	REFID=49954
AUBERT,B	04Q	PR D70 091102	B. Aubert *et al.*	(BABAR Collab.)	REFID=50239
AUBERT,B	04Y	PRL 93 191801	B. Aubert *et al.*	(BABAR Collab.)	REFID=50267
LINK	04B	PL B586 21	J.M. Link *et al.*	(FNAL FOCUS Collab.)	REFID=49883
LINK	04D	PL B586 191	J.M. Link *et al.*	(FNAL FOCUS Collab.)	REFID=49888
RUBIN	04	PRL 93 111801	P. Rubin *et al.*	(CLEO Collab.)	REFID=50076
TAJIMA	04	PRL 92 101803	O. Tajima *et al.*	(BELLE Collab.)	REFID=49723
ACOSTA	03F	PR D68 091101	D. Acosta *et al.*	(CDF Collab.)	REFID=49839
AUBERT	03P	PRL 91 121801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49541
AUBERT	03Z	PRL 91 171801	B. Aubert *et al.*	(BABAR Collab.)	REFID=49688
COAN	03	PRL 90 101801	T.E. Coan *et al.*	(CLEO Collab.)	REFID=49297
LINK	03	PL B555 167	J.M. Link *et al.*	(FNAL FOCUS Collab.)	REFID=49254
LINK	03B	PL B556 7	J.M. Link *et al.*	(FNAL FOCUS Collab.)	REFID=49256
LINK	03G	PL B575 190	J.M. Link *et al.*	(FNAL FOCUS Collab.)	REFID=49684
ABE	02I	PRL 88 162001	K. Abe *et al.*	(KEK BELLE Collab.)	REFID=48665
CSORNA	02	PR D65 092001	S.E. Csorna *et al.*	(CLEO Collab.)	REFID=48661
LINK	02F	PL B537 192	J.M. Link *et al.*	(FNAL FOCUS Collab.)	REFID=48767
MURAMATSU	02	PRL 89 251802	H. Muramatsu *et al.*	(CLEO Collab.)	REFID=49081
Also		PRL 90 059901 (errat.)	H. Muramatsu *et al.*	(CLEO Collab.)	REFID=49385
AITALA	01C	PRL 86 3969	E.M. Aitala *et al.*	(FNAL E791 Collab.)	REFID=48121
AITALA	01D	PR D64 112003	E.M. Aitala *et al.*	(FNAL E791 Collab.)	REFID=48423
BONVICINI	01	PR D63 071101	G. Bonvicini *et al.*	(CLEO Collab.)	REFID=48101
BRANDENB...	01	PRL 87 071802	G. Brandenburg *et al.*	(CLEO Collab.)	REFID=48210

DYTMAN	01	PR D64 111101	S.A. Dytman *et al.*	(CLEO Collab.)	REFID=48419
KOPP	01	PR D63 092001	S. Kopp *et al.*	(CLEO Collab.)	REFID=48134
KUSHNIR...	01	PRL 86 5243	A. Kushnirenko *et al.*	(FNAL SELEX Collab.)	REFID=48138
LINK	01	PRL 86 2955	J.M. Link *et al.*	(FNAL FOCUS Collab.)	REFID=48108
BAI	00C	PR D62 052001	J.Z. Bai *et al.*	(BEPC BES Collab.)	REFID=47694
GODANG	00	PRL 84 5038	R. Godang *et al.*	(CLEO Collab.)	REFID=47519
JUN	00	PRL 84 1857	S.Y. Jun *et al.*	(FNAL SELEX Collab.)	REFID=47502
LINK	00	PL B485 62	J.M. Link *et al.*	(FNAL FOCUS Collab.)	REFID=47717
LINK	00B	PL B491 232	J.M. Link *et al.*	(FNAL FOCUS Collab.)	REFID=47794
Also		PL B495 443 (errat.)	J.M. Link *et al.*	(FNAL FOCUS Collab.)	REFID=47918
PRIPSTEIN	00	PR D61 032005	D. Pripstein *et al.*	(FNAL E789 Collab.)	REFID=47460
AITALA	99E	PRL 83 32	E.M. Aitala *et al.*	(FNAL E791 Collab.)	REFID=47030
AITALA	99G	PL B462 401	E.M. Aitala *et al.*	(FNAL E791 Collab.)	REFID=47185
BONVICINI	99	PRL 82 4586	G. Bonvicini *et al.*	(CLEO Collab.)	REFID=47018
AITALA	98	PR D57 13	E.M. Aitala *et al.*	(FNAL E791 Collab.)	REFID=45779
AITALA	98C	PL B421 405	E.M. Aitala *et al.*	(FNAL E791 Collab.)	REFID=45931
AITALA	98D	PL B423 185	E.M. Aitala *et al.*	(FNAL E791 Collab.)	REFID=45930
ARTUSO	98	PRL 80 3193	M. Artuso *et al.*	(CLEO Collab.)	REFID=45972
ASNER	98	PR D58 092001	D.M. Asner *et al.*	(CLEO Collab.)	REFID=46452
BARATE	98W	PL B436 211	R. Barate *et al.*	(ALEPH Collab.)	REFID=46160
COAN	98	PRL 80 1150	T.E. Coan *et al.*	(CLEO Collab.)	REFID=45872
PDG	98	EPJ C3 1	C. Caso *et al.*	(PDG Collab.)	REFID=45838
ADAMOVICH	97	PL B408 469	M.I. Adamovich *et al.*	(CERN BEATRICE Collab.)	REFID=45587
BARATE	97C	PL B403 367	R. Barate *et al.*	(ALEPH Collab.)	REFID=45451
AITALA	96C	PRL 77 2384	E.M. Aitala *et al.*	(FNAL E791 Collab.)	REFID=44928
ALBRECHT	96C	PL B374 249	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=44890
ALEXOPOU...	96	PRL 77 2380	T. Alexopoulos *et al.*	(FNAL E771 Collab.)	REFID=44927
ASNER	96B	PR D54 4211	D.M. Asner *et al.*	(CLEO Collab.)	REFID=44942
BARISH	96	PL B373 334	B.C. Barish *et al.*	(CLEO Collab.)	REFID=44679
FRABETTI	96B	PL B382 312	P.L. Frabetti *et al.*	(FNAL E687 Collab.)	REFID=44852
FREYBERGER	96	PRL 76 3065	A. Freyberger *et al.*	(CLEO Collab.)	REFID=44694
Also		PRL 77 2147 (errat.)	A. Freyberger *et al.*	(CLEO Collab.)	REFID=44808
KUBOTA	96B	PR D54 2994	Y. Kubota *et al.*	(CLEO Collab.)	REFID=44939
ADAMOVICH	95	PL B353 563	M.I. Adamovich *et al.*	(CERN BEATRICE Collab.)	REFID=44353
BARTELT	95	PR D52 4860	J.E. Bartelt *et al.*	(CLEO Collab.)	REFID=44481
BUTLER	95	PR D52 2656	F. Butler *et al.*	(CLEO Collab.)	REFID=44414
FRABETTI	95C	PL B354 486	P.L. Frabetti *et al.*	(FNAL E687 Collab.)	REFID=44359
FRABETTI	95G	PL B364 127	P.L. Frabetti *et al.*	(FNAL E687 Collab.)	REFID=44574
KODAMA	95	PL B345 85	K. Kodama *et al.*	(FNAL E653 Collab.)	REFID=44124
ALBRECHT	94	PL B324 249	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=43782
ALBRECHT	94F	PL B340 125	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=44043
ALBRECHT	94I	ZPHY C64 375	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=44156
FRABETTI	94C	PL B321 295	P.L. Frabetti *et al.*	(FNAL E687 Collab.)	REFID=43713
FRABETTI	94D	PL B323 459	P.L. Frabetti *et al.*	(FNAL E687 Collab.)	REFID=43745
FRABETTI	94G	PL B331 217	P.L. Frabetti *et al.*	(FNAL E687 Collab.)	REFID=43895
FRABETTI	94J	PL B340 254	P.L. Frabetti *et al.*	(FNAL E687 Collab.)	REFID=44065
KODAMA	94	PL B336 605	K. Kodama *et al.*	(FNAL E653 Collab.)	REFID=43969
MISHRA	94	PR D50 9	C.S. Mishra *et al.*	(FNAL E789 Collab.)	REFID=43860
AKERIB	93	PRL 71 3070	D.S. Akerib *et al.*	(CLEO Collab.)	REFID=43571
ALBRECHT	93D	PL B308 435	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=43377
ANJOS	93	PR D48 56	J.C. Anjos *et al.*	(FNAL E691 Collab.)	REFID=43332
BEAN	93C	PL B317 647	A. Bean *et al.*	(CLEO Collab.)	REFID=43584
FRABETTI	93I	PL B315 203	P.L. Frabetti *et al.*	(FNAL E687 Collab.)	REFID=43534
KODAMA	93B	PL B313 260	K. Kodama *et al.*	(FNAL E653 Collab.)	REFID=43469
PROCARIO	93B	PR D48 4007	M. Procario *et al.*	(CLEO Collab.)	REFID=43546
SELEN	93	PRL 71 1973	M.A. Selen *et al.*	(CLEO Collab.)	REFID=43509
ADAMOVICH	92	PL B280 163	M.I. Adamovich *et al.*	(CERN WA82 Collab.)	REFID=42024
ALBRECHT	92P	ZPHY C56 7	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=43149
ANJOS	92C	PR D46 1941	J.C. Anjos *et al.*	(FNAL E691 Collab.)	REFID=42102
BARLAG	92C	ZPHY C55 383	S. Barlag *et al.*	(ACCMOR Collab.)	REFID=42202
Also		ZPHY C48 29	S. Barlag *et al.*	(ACCMOR Collab.)	REFID=41313
COFFMAN	92B	PR D45 2196	D.M. Coffman *et al.*	(Mark III Collab.)	REFID=41921
Also		PRL 64 2615	J. Adler *et al.*	(Mark III Collab.)	REFID=41038
FRABETTI	92	PL B281 167	P.L. Frabetti *et al.*	(FNAL E687 Collab.)	REFID=42079
FRABETTI	92B	PL B286 195	P.L. Frabetti *et al.*	(FNAL E687 Collab.)	REFID=42124
ALVAREZ	91B	ZPHY C50 11	M.P. Alvarez *et al.*	(CERN NA14/2 Collab.)	REFID=41498
AMMAR	91	PR D44 3383	R. Ammar *et al.*	(CLEO Collab.)	REFID=41847
ANJOS	91	PR D43 635	J.C. Anjos *et al.*	(FNAL-TPS Collab.)	REFID=41390
ANJOS	91D	PR D44 3371	J.C. Anjos *et al.*	(FNAL-TPS Collab.)	REFID=41806
BAI	91	PRL 66 1011	Z. Bai *et al.*	(Mark III Collab.)	REFID=41470
COFFMAN	91	PL B263 135	D.M. Coffman *et al.*	(Mark III Collab.)	REFID=41541
CRAWFORD	91B	PR D44 3394	G. Crawford *et al.*	(CLEO Collab.)	REFID=41884
DECAMP	91J	PL B266 218	D. Decamp *et al.*	(ALEPH Collab.)	REFID=41614
FRABETTI	91	PL B263 584	P.L. Frabetti *et al.*	(FNAL E687 Collab.)	REFID=41570
KINOSHITA	91	PR D43 2836	K. Kinoshita *et al.*	(CLEO Collab.)	REFID=41500
KODAMA	91	PRL 66 1819	K. Kodama *et al.*	(FNAL E653 Collab.)	REFID=41477
ALBRECHT	90C	ZPHY C46 9	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41223
ALEXANDER	90	PRL 65 1184	J. Alexander *et al.*	(CLEO Collab.)	REFID=41281
ALVAREZ	90	ZPHY C47 539	M.P. Alvarez *et al.*	(CERN NA14/2 Collab.)	REFID=41311
ANJOS	90D	PR D42 2414	J.C. Anjos *et al.*	(FNAL E691 Collab.)	REFID=41309
BARLAG	90C	ZPHY C46 563	S. Barlag *et al.*	(ACCMOR Collab.)	REFID=41097
ADLER	89	PRL 62 1821	J. Adler *et al.*	(Mark III Collab.)	REFID=40769
ADLER	89C	PR D40 906	J. Adler *et al.*	(Mark III Collab.)	REFID=40848
ALBRECHT	89D	ZPHY C43 181	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40857
ANJOS	89F	PRL 62 1587	J.C. Anjos *et al.*	(FNAL E691 Collab.)	REFID=40783
ABACHI	88	PL B205 411	S. Abachi *et al.*	(HRS Collab.)	REFID=40398
ADLER	88	PR D37 2023	J. Adler *et al.*	(Mark III Collab.)	REFID=40371
ADLER	88C	PRL 60 89	J. Adler *et al.*	(Mark III Collab.)	REFID=40361
ALBRECHT	88G	PL B209 380	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40650
ALBRECHT	88I	PL B210 267	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40653
ANJOS	88C	PRL 60 1239	J.C. Anjos *et al.*	(FNAL E691 Collab.)	REFID=40548
BORTOLETTO	88	PR D37 1719	D. Bortoletto *et al.*	(CLEO Collab.)	REFID=40835
Also		PR D39 1471 (errat.)	D. Bortoletto *et al.*	(CLEO Collab.)	REFID=40834

HAAS	88	PRL 60 1614	P. Haas *et al.*	(CLEO Collab.)	REFID=40601
RAAB	88	PR D37 2391	J.R. Raab *et al.*	(FNAL E691 Collab.)	REFID=40355
ADLER	87	PL B196 107	J. Adler *et al.*	(Mark III Collab.)	REFID=40357
AGUILAR-...	87E	ZPHY C36 551	M. Aguilar-Benitez *et al.*	(LEBC-EHS Collab.)	REFID=40402
Also		ZPHY C40 321	M. Aguilar-Benitez *et al.*	(LEBC-EHS Collab.)	REFID=40699
AGUILAR-...	87F	ZPHY C36 559	M. Aguilar-Benitez *et al.*	(LEBC-EHS Collab.)	REFID=40403
Also		ZPHY C38 520 (errat.)	M. Aguilar-Benitez *et al.*	(LEBC-EHS Collab.)	REFID=40694
BARLAG	87B	ZPHY C37 17	S. Barlag *et al.*	(ACCMOR Collab.)	REFID=40401
BECKER	87C	PL B193 147	J.J. Becker *et al.*	(Mark III Collab.)	REFID=40365
Also		PL B198 590 (errat.)	J.J. Becker *et al.*	(Mark III Collab.)	REFID=40366
PALKA	87	PL B189 238	H. Palka *et al.*	(ACCMOR Collab.)	REFID=40364
RILES	87	PR D35 2914	K. Riles *et al.*	(Mark II Collab.)	REFID=40363
BAILEY	86	ZPHY C30 51	R. Bailey *et al.*	(ACCMOR Collab.)	REFID=11537
BEBEK	86	PRL 56 1893	C. Bebek *et al.*	(CLEO Collab.)	REFID=11540
LOUIS	86	PRL 56 1027	W.C. Louis *et al.*	(PRIN, CHIC, ISU)	REFID=11541
ALBRECHT	85B	PL 158B 525	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=11528
ALBRECHT	85F	PL 150B 235	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=11527
AUBERT	85	PL 155B 461	J.J. Aubert *et al.*	(EMC Collab.)	REFID=11529
BALTRUSAIT...	85E	PRL 55 150	R.M. Baltrusaitis *et al.*	(Mark III Collab.)	REFID=11472
BENVENUTI	85	PL 158B 531	A.C. Benvenuti *et al.*	(BCDMS Collab.)	REFID=40517
SUMMERS	84	PRL 52 410	D.J. Summers *et al.*	(UCSB, CARL, COLO+)	REFID=11525
BAILEY	83B	PL 132B 237	R. Bailey *et al.*	(ACCMOR Collab.)	REFID=11518
BODEK	82	PL 113B 82	A. Bodek *et al.*	(ROCH, CIT, CHIC, FNAL+)	REFID=11514
SCHINDLER	81	PR D24 78	R.H. Schindler *et al.*	(Mark II Collab.)	REFID=11453
AVERY	80	PRL 44 1309	P. Avery *et al.*	(ILL, FNAL, COLU)	REFID=11498
ABRAMS	79D	PRL 43 481	G.S. Abrams *et al.*	(Mark II Collab.)	REFID=11492
VUILLEMIN	78	PRL 41 1149	V. Vuillemin *et al.*	(LGW Collab.)	REFID=11439
PERUZZI	77	PRL 39 1301	I. Peruzzi *et al.*	(LGW Collab.)	REFID=11435
PICCOLO	77	PL 70B 260	M. Piccolo *et al.*	(Mark I Collab.)	REFID=11436
MOSTELLER	48	AST 2 No.5 30	R.A. Fisher, F. Mosteller		REFID=56417

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