

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

D^\pm MASS

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.

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
1869.57 ± 0.16 OUR FIT	Error includes scale factor of 1.1.			
1869.5 ± 0.4 OUR AVERAGE				
1869.53 ± 0.49 ± 0.20	110 ± 15	ANASHIN	10A KEDR	e^+e^- at $\psi(3770)$
1870.0 ± 0.5 ± 1.0	317	BARLAG	90C ACCM	π^- Cu 230 GeV
1869.4 ± 0.6		¹ TRILLING	81 RVUE	e^+e^- 3.77 GeV
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
1875 ± 10	9	ADAMOVICH	87 EMUL	Photoproduction
1860 ± 16	6	ADAMOVICH	84 EMUL	Photoproduction
1863 ± 4		DERRICK	84 HRS	e^+e^- 29 GeV
1868.4 ± 0.5		¹ SCHINDLER	81 MRK2	e^+e^- 3.77 GeV
1874 ± 5		GOLDHABER	77 MRK1	D^0 , D^+ recoil spectra
1868.3 ± 0.9		¹ PERUZZI	77 LGW	e^+e^- 3.77 GeV
1874 ± 11		PICCOLO	77 MRK1	e^+e^- 4.03, 4.41 GeV
1876 ± 15	50	PERUZZI	76 MRK1	$K^\mp \pi^\pm \pi^\pm$

¹PERUZZI 77 and SCHINDLER 81 errors do not include the 0.13% uncertainty in the absolute SPEAR energy calibration. TRILLING 81 uses the high precision $J/\psi(1S)$ and $\psi(2S)$ measurements of ZHOLENTZ 80 to determine this uncertainty and combines the PERUZZI 77 and SCHINDLER 81 results to obtain the value quoted.

D^\pm MEAN LIFE

Measurements with an error $> 100 \times 10^{-15}$ s have been omitted from the Listings.

VALUE (10^{-15} s)	EVTS	DOCUMENT ID	TECN	COMMENT
1040 ± 7 OUR AVERAGE				
1039.4 ± 4.3 ± 7.0	110k	LINK	02F FOCS	γ nucleus, ≈ 180 GeV
1033.6 ± 22.1 ^{+9.9} _{-12.7}	3777	BONVICINI	99 CLEO	$e^+e^- \approx \Upsilon(4S)$
1048 ± 15 ± 11	9k	FRABETTI	94D E687	$D^+ \rightarrow K^- \pi^+ \pi^+$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
1075 ± 40 ± 18	2455	FRABETTI	91 E687	γ Be, $D^+ \rightarrow K^- \pi^+ \pi^+$
1030 ± 80 ± 60	200	ALVAREZ	90 NA14	γ , $D^+ \rightarrow K^- \pi^+ \pi^+$
1050 ⁺⁷⁷ ₋₇₂	317	² BARLAG	90C ACCM	π^- Cu 230 GeV
1050 ± 80 ± 70	363	ALBRECHT	88i ARG	e^+e^- 10 GeV
1090 ± 30 ± 25	2992	RAAB	88 E691	Photoproduction

²BARLAG 90C estimates the systematic error to be negligible.

D^+ DECAY MODES

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

Mode	Fraction (Γ_i/Γ)	Scale factor/ Confidence level
Inclusive modes		
Γ_1 e^+ semileptonic	$(16.07 \pm 0.30) \%$	
Γ_2 μ^+ anything	$(17.6 \pm 3.2) \%$	
Γ_3 K^- anything	$(25.7 \pm 1.4) \%$	
Γ_4 \bar{K}^0 anything + K^0 anything	$(61 \pm 5) \%$	
Γ_5 K^+ anything	$(5.9 \pm 0.8) \%$	
Γ_6 $K^*(892)^-$ anything	$(6 \pm 5) \%$	
Γ_7 $\bar{K}^*(892)^0$ anything	$(23 \pm 5) \%$	
Γ_8 $K^*(892)^0$ anything	$< 6.6 \%$	CL=90%
Γ_9 η anything	$(6.3 \pm 0.7) \%$	
Γ_{10} η' anything	$(1.04 \pm 0.18) \%$	
Γ_{11} ϕ anything	$(1.03 \pm 0.12) \%$	
Leptonic and semileptonic modes		
Γ_{12} $e^+ \nu_e$	$< 8.8 \times 10^{-6}$	CL=90%
Γ_{13} $\mu^+ \nu_\mu$	$(3.82 \pm 0.33) \times 10^{-4}$	
Γ_{14} $\tau^+ \nu_\tau$	$< 1.2 \times 10^{-3}$	CL=90%
Γ_{15} $\bar{K}^0 e^+ \nu_e$	$(8.83 \pm 0.22) \%$	
Γ_{16} $\bar{K}^0 \mu^+ \nu_\mu$	$(9.2 \pm 0.6) \%$	
Γ_{17} $K^- \pi^+ e^+ \nu_e$	$(3.5^{+0.7}_{-0.6}) \%$	
Γ_{18} $\bar{K}^*(892)^0 e^+ \nu_e$, $\bar{K}^*(892)^0 \rightarrow K^- \pi^+$	$(3.68 \pm 0.21) \%$	
Γ_{19} $K^- \pi^+ e^+ \nu_e$ nonresonant	$< 7 \times 10^{-3}$	CL=90%
Γ_{20} $K^- \pi^+ \mu^+ \nu_\mu$	$(3.8 \pm 0.4) \%$	
Γ_{21} $\bar{K}^*(892)^0 \mu^+ \nu_\mu$, $\bar{K}^*(892)^0 \rightarrow K^- \pi^+$	$(3.7 \pm 0.3) \%$	
Γ_{22} $K^- \pi^+ \mu^+ \nu_\mu$ nonresonant	$(2.0 \pm 0.5) \times 10^{-3}$	
Γ_{23} $K^- \pi^+ \pi^0 \mu^+ \nu_\mu$	$< 1.6 \times 10^{-3}$	CL=90%
Γ_{24} $\pi^0 e^+ \nu_e$	$(4.05 \pm 0.18) \times 10^{-3}$	
Γ_{25} $\eta e^+ \nu_e$	$(1.33 \pm 0.21) \times 10^{-3}$	
Γ_{26} $\rho^0 e^+ \nu_e$	$(2.2 \pm 0.4) \times 10^{-3}$	
Γ_{27} $\rho^0 \mu^+ \nu_\mu$	$(2.4 \pm 0.4) \times 10^{-3}$	

Γ_{28}	$\omega e^+ \nu_e$	$(1.6 \begin{smallmatrix} +0.7 \\ -0.6 \end{smallmatrix}) \times 10^{-3}$	
Γ_{29}	$\eta'(958) e^+ \nu_e$	< 3.5	$\times 10^{-4}$ CL=90%
Γ_{30}	$\phi e^+ \nu_e$	< 1.6	$\times 10^{-4}$ CL=90%

Fractions of some of the following modes with resonances have already appeared above as submodes of particular charged-particle modes.

Γ_{31}	$\bar{K}^*(892)^0 e^+ \nu_e$	$(5.53 \pm 0.13) \%$	
Γ_{32}	$\bar{K}^*(892)^0 \mu^+ \nu_\mu$	$(5.28 \pm 0.15) \%$	
Γ_{33}	$\bar{K}_0^*(1430)^0 \mu^+ \nu_\mu$	< 2.4	$\times 10^{-4}$
Γ_{34}	$\bar{K}^*(1680)^0 \mu^+ \nu_\mu$	< 1.5	$\times 10^{-3}$

Hadronic modes with a \bar{K} or $\bar{K}K\bar{K}$

Γ_{35}	$K_S^0 \pi^+$	$(1.47 \pm 0.07) \%$	S=2.0
Γ_{36}	$K_L^0 \pi^+$	$(1.46 \pm 0.05) \%$	
Γ_{37}	$K^- 2\pi^+$	[a] $(9.13 \pm 0.19) \%$	S=1.1
Γ_{38}	$(K^- \pi^+)_{S\text{-wave}} \pi^+$	$(7.31 \pm 0.19) \%$	
Γ_{39}	$\bar{K}_0^*(800)^0 \pi^+, \bar{K}_0^*(800) \rightarrow$		
Γ_{40}	$\bar{K}_0^*(1430)^0 \pi^+,$ $\bar{K}_0^*(1430)^0 \rightarrow K^- \pi^+$	[b] $(1.21 \pm 0.06) \%$	
Γ_{41}	$\bar{K}^*(892)^0 \pi^+,$ $\bar{K}^*(892)^0 \rightarrow K^- \pi^+$	$(1.01 \pm 0.11) \%$	
Γ_{42}	$\bar{K}^*(1410)^0 \pi^+, \bar{K}^{*0} \rightarrow$	not seen	
Γ_{43}	$\bar{K}_2^*(1430)^0 \pi^+,$ $\bar{K}_2^*(1430)^0 \rightarrow K^- \pi^+$	[b] $(2.2 \pm 0.7) \times 10^{-4}$	
Γ_{44}	$\bar{K}^*(1680)^0 \pi^+,$ $\bar{K}^*(1680)^0 \rightarrow K^- \pi^+$	[b] $(2.1 \pm 1.1) \times 10^{-4}$	
Γ_{45}	$K^- (2\pi^+)_{I=2}$	$(1.41 \pm 0.26) \%$	
Γ_{46}	$K^- 2\pi^+$ nonresonant		
Γ_{47}	$K_S^0 \pi^+ \pi^0$	[a] $(6.99 \pm 0.27) \%$	
Γ_{48}	$K_S^0 \rho^+$	$(4.8 \pm 1.0) \%$	
Γ_{49}	$\bar{K}^*(892)^0 \pi^+,$ $\bar{K}^*(892)^0 \rightarrow K_S^0 \pi^0$	$(1.3 \pm 0.6) \%$	
Γ_{50}	$K_S^0 \pi^+ \pi^0$ nonresonant	$(9 \pm 7) \times 10^{-3}$	
Γ_{51}	$K^- 2\pi^+ \pi^0$	[c] $(5.99 \pm 0.18) \%$	
Γ_{52}	$K_S^0 2\pi^+ \pi^-$	[c] $(3.12 \pm 0.11) \%$	
Γ_{53}	$K^- 3\pi^+ \pi^-$	[a] $(5.6 \pm 0.5) \times 10^{-3}$	S=1.1
Γ_{54}	$\bar{K}^*(892)^0 2\pi^+ \pi^-,$ $\bar{K}^*(892)^0 \rightarrow K^- \pi^+$	$(1.2 \pm 0.4) \times 10^{-3}$	
Γ_{55}	$\bar{K}^*(892)^0 \rho^0 \pi^+,$ $\bar{K}^*(892)^0 \rightarrow K^- \pi^+$	$(2.2 \pm 0.4) \times 10^{-3}$	

Γ_{56}	$\bar{K}^*(892)^0 a_1(1260)^+$	[d]	$(9.0 \pm 1.8) \times 10^{-3}$
Γ_{57}	$\bar{K}^*(892)^0 2\pi^+\pi^- \text{ no-}\rho,$ $\bar{K}^*(892)^0 \rightarrow K^-\pi^+$		
Γ_{58}	$K^-\rho^0 2\pi^+$		$(1.68 \pm 0.27) \times 10^{-3}$
Γ_{59}	$K^-\pi^+\pi^- \text{ nonresonant}$		$(3.9 \pm 2.9) \times 10^{-4}$
Γ_{60}	$K^+ 2K_S^0$		$(4.5 \pm 2.0) \times 10^{-3}$
Γ_{61}	$K^+ K^-\pi^+$		$(2.4 \pm 0.6) \times 10^{-4}$

Pionic modes

Γ_{62}	$\pi^+\pi^0$		$(1.19 \pm 0.06) \times 10^{-3}$
Γ_{63}	$2\pi^+\pi^-$		$(3.18 \pm 0.18) \times 10^{-3}$
Γ_{64}	$\rho^0\pi^+$		$(8.1 \pm 1.5) \times 10^{-4}$
Γ_{65}	$\pi^+(\pi^+\pi^-)_{S\text{-wave}}$		$(1.78 \pm 0.16) \times 10^{-3}$
Γ_{66}	$\sigma\pi^+, \sigma \rightarrow \pi^+\pi^-$		$(1.34 \pm 0.12) \times 10^{-3}$
Γ_{67}	$f_0(980)\pi^+,$ $f_0(980) \rightarrow \pi^+\pi^-$		$(1.52 \pm 0.33) \times 10^{-4}$
Γ_{68}	$f_0(1370)\pi^+,$ $f_0(1370) \rightarrow \pi^+\pi^-$		$(8 \pm 4) \times 10^{-5}$
Γ_{69}	$f_2(1270)\pi^+,$ $f_2(1270) \rightarrow \pi^+\pi^-$		$(4.9 \pm 0.9) \times 10^{-4}$
Γ_{70}	$\rho(1450)^0\pi^+,$ $\rho(1450)^0 \rightarrow \pi^+\pi^-$	< 8	$\times 10^{-5}$ CL=95%
Γ_{71}	$f_0(1500)\pi^+,$ $f_0(1500) \rightarrow \pi^+\pi^-$		$(1.1 \pm 0.4) \times 10^{-4}$
Γ_{72}	$f_0(1710)\pi^+,$ $f_0(1710) \rightarrow \pi^+\pi^-$	< 5	$\times 10^{-5}$ CL=95%
Γ_{73}	$f_0(1790)\pi^+,$ $f_0(1790) \rightarrow \pi^+\pi^-$	< 6	$\times 10^{-5}$ CL=95%
Γ_{74}	$(\pi^+\pi^+)_{S\text{-wave}}\pi^-$	< 1.2	$\times 10^{-4}$ CL=95%
Γ_{75}	$2\pi^+\pi^- \text{ nonresonant}$	< 1.1	$\times 10^{-4}$ CL=95%
Γ_{76}	$\pi^+ 2\pi^0$		$(4.6 \pm 0.4) \times 10^{-3}$
Γ_{77}	$2\pi^+\pi^-\pi^0$		$(1.13 \pm 0.08) \%$
Γ_{78}	$\eta\pi^+, \eta \rightarrow \pi^+\pi^-\pi^0$		$(7.8 \pm 0.5) \times 10^{-4}$
Γ_{79}	$\omega\pi^+, \omega \rightarrow \pi^+\pi^-\pi^0$	< 3	$\times 10^{-4}$ CL=90%
Γ_{80}	$3\pi^+ 2\pi^-$		$(1.61 \pm 0.16) \times 10^{-3}$

Fractions of some of the following modes with resonances have already appeared above as submodes of particular charged-particle modes.

Γ_{81}	$\eta\pi^+$		$(3.53 \pm 0.21) \times 10^{-3}$
Γ_{82}	$\eta\pi^+\pi^0$		$(1.38 \pm 0.35) \times 10^{-3}$
Γ_{83}	$\omega\pi^+$	< 3.4	$\times 10^{-4}$ CL=90%
Γ_{84}	$\eta'(958)\pi^+$		$(4.67 \pm 0.29) \times 10^{-3}$
Γ_{85}	$\eta'(958)\pi^+\pi^0$		$(1.6 \pm 0.5) \times 10^{-3}$

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

Γ_{86}	$K^+ K_S^0$	$(2.83 \pm 0.16) \times 10^{-3}$	S=2.2
Γ_{87}	$K^+ K^- \pi^+$	[a] $(9.54 \pm 0.26) \times 10^{-3}$	S=1.1
Γ_{88}	$\phi \pi^+, \phi \rightarrow K^+ K^-$	$(2.65_{-0.09}^{+0.08}) \times 10^{-3}$	
Γ_{89}	$K^+ \bar{K}^*(892)^0,$ $\bar{K}^*(892)^0 \rightarrow K^- \pi^+$	$(2.45_{-0.14}^{+0.09}) \times 10^{-3}$	
Γ_{90}	$K^+ \bar{K}_0^*(1430)^0, \bar{K}_0^*(1430)^0 \rightarrow$ $K^- \pi^+$	$(1.79 \pm 0.34) \times 10^{-3}$	
Γ_{91}	$K^+ \bar{K}_2^*(1430)^0, \bar{K}_2^* \rightarrow$ $K^- \pi^+$	$(1.6_{-0.8}^{+1.2}) \times 10^{-4}$	
Γ_{92}	$K^+ \bar{K}_0^*(800), \bar{K}_0^* \rightarrow K^- \pi^+$	$(6.7_{-2.1}^{+3.4}) \times 10^{-4}$	
Γ_{93}	$a_0(1450)^0 \pi^+, a_0^0 \rightarrow K^+ K^-$	$(4.4_{-1.8}^{+7.0}) \times 10^{-4}$	
Γ_{94}	$\phi(1680) \pi^+, \phi \rightarrow K^+ K^-$	$(4.9_{-1.9}^{+4.0}) \times 10^{-5}$	
Γ_{95}	$K^+ K^- \pi^+$ nonresonant	not seen	
Γ_{96}	$K^+ K_S^0 \pi^+ \pi^-$	$(1.75 \pm 0.18) \times 10^{-3}$	
Γ_{97}	$K_S^0 K^- 2\pi^+$	$(2.40 \pm 0.18) \times 10^{-3}$	
Γ_{98}	$K^+ K^- 2\pi^+ \pi^-$	$(2.2 \pm 1.2) \times 10^{-4}$	

A few poorly measured branching fractions:

Γ_{99}	$\phi \pi^+ \pi^0$	$(2.3 \pm 1.0) \%$	
Γ_{100}	$\phi \rho^+$	$< 1.5 \%$	CL=90%
Γ_{101}	$K^+ K^- \pi^+ \pi^0$ non- ϕ	$(1.5_{-0.6}^{+0.7}) \%$	
Γ_{102}	$K^*(892)^+ K_S^0$	$(1.6 \pm 0.7) \%$	

Doubly Cabibbo-suppressed modes

Γ_{103}	$K^+ \pi^0$	$(1.83 \pm 0.26) \times 10^{-4}$	S=1.4
Γ_{104}	$K^+ \eta$	$< 1.4 \times 10^{-4}$	CL=90%
Γ_{105}	$K^+ \eta'(958)$	$< 1.8 \times 10^{-4}$	CL=90%
Γ_{106}	$K^+ \pi^+ \pi^-$	$(5.27 \pm 0.23) \times 10^{-4}$	
Γ_{107}	$K^+ \rho^0$	$(2.0 \pm 0.5) \times 10^{-4}$	
Γ_{108}	$K^*(892)^0 \pi^+, K^*(892)^0 \rightarrow$ $K^+ \pi^-$	$(2.5 \pm 0.4) \times 10^{-4}$	
Γ_{109}	$K^+ f_0(980), f_0(980) \rightarrow$ $\pi^+ \pi^-$	$(4.7 \pm 2.8) \times 10^{-5}$	
Γ_{110}	$K_2^*(1430)^0 \pi^+, K_2^*(1430)^0 \rightarrow$ $K^+ \pi^-$	$(4.2 \pm 2.8) \times 10^{-5}$	
Γ_{111}	$K^+ \pi^+ \pi^-$ nonresonant	not seen	
Γ_{112}	$2K^+ K^-$	$(8.7 \pm 2.0) \times 10^{-5}$	

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

Γ_{113}	$\pi^+ e^+ e^-$	$C1$	< 5.9	$\times 10^{-6}$	CL=90%
Γ_{114}	$\pi^+ \phi, \phi \rightarrow e^+ e^-$		[e] $(1.7^{+1.4}_{-0.9})$	$\times 10^{-6}$	
Γ_{115}	$\pi^+ \mu^+ \mu^-$	$C1$	< 3.9	$\times 10^{-6}$	CL=90%
Γ_{116}	$\pi^+ \phi, \phi \rightarrow \mu^+ \mu^-$		[e] (1.8 ± 0.8)	$\times 10^{-6}$	
Γ_{117}	$\rho^+ \mu^+ \mu^-$	$C1$	< 5.6	$\times 10^{-4}$	CL=90%
Γ_{118}	$K^+ e^+ e^-$		[f] < 3.0	$\times 10^{-6}$	CL=90%
Γ_{119}	$K^+ \mu^+ \mu^-$		[f] < 9.2	$\times 10^{-6}$	CL=90%
Γ_{120}	$\pi^+ e^\pm \mu^\mp$	LF	[g] < 3.4	$\times 10^{-5}$	CL=90%
Γ_{121}	$\pi^+ e^+ \mu^-$				
Γ_{122}	$\pi^+ e^- \mu^+$				
Γ_{123}	$K^+ e^\pm \mu^\mp$	LF	[g] < 6.8	$\times 10^{-5}$	CL=90%
Γ_{124}	$K^+ e^+ \mu^-$				
Γ_{125}	$K^+ e^- \mu^+$				
Γ_{126}	$\pi^- 2e^+$	L	< 1.1	$\times 10^{-6}$	CL=90%
Γ_{127}	$\pi^- 2\mu^+$	L	< 4.8	$\times 10^{-6}$	CL=90%
Γ_{128}	$\pi^- e^+ \mu^+$	L	< 5.0	$\times 10^{-5}$	CL=90%
Γ_{129}	$\rho^- 2\mu^+$	L	< 5.6	$\times 10^{-4}$	CL=90%
Γ_{130}	$K^- 2e^+$	L	< 3.5	$\times 10^{-6}$	CL=90%
Γ_{131}	$K^- 2\mu^+$	L	< 1.3	$\times 10^{-5}$	CL=90%
Γ_{132}	$K^- e^+ \mu^+$	L	< 1.3	$\times 10^{-4}$	CL=90%
Γ_{133}	$K^*(892)^- 2\mu^+$	L	< 8.5	$\times 10^{-4}$	CL=90%

Γ_{134} A dummy mode used by the fit. $(51.2 \pm 1.0) \%$

- [a] 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.
- [b] These subfractions of the $K^- 2\pi^+$ mode are uncertain: see the Particle Listings.
- [c] Submodes of the $D^+ \rightarrow K^- 2\pi^+ \pi^0$ and $K_S^0 2\pi^+ \pi^-$ modes were studied by ANJOS 92C and COFFMAN 92B, but with at most 142 events for the first mode and 229 for the second – not enough for precise results. With nothing new for 18 years, we refer to our 2008 edition, Physics Letters **B667** 1 (2008), for those results.
- [d] The unseen decay modes of the resonances are included.
- [e] This is *not* a test for the $\Delta C=1$ weak neutral current, but leads to the $\pi^+ \ell^+ \ell^-$ final state.
- [f] This mode is not a useful test for a $\Delta C=1$ weak neutral current because both quarks must change flavor in this decay.

<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$0.103 \pm 0.009^{+0.009}_{-0.008}$	378	³ ABBIENDI	99K OPAL	$Z^0 \rightarrow c\bar{c}$

³ ABBIENDI 99K uses the excess of right-sign over wrong-sign leptons opposite reconstructed $D^*(2010)^+ \rightarrow D^0\pi^+$ decays in $Z^0 \rightarrow c\bar{c}$.

$\Gamma(c \rightarrow \mu^+ \text{ anything})/\Gamma(c \rightarrow \text{ anything})$

For the Summary Table, we only use the average of e^+ and μ^+ measurements from $Z^0 \rightarrow c\bar{c}$ decays; see the next data block.

<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.082 ± 0.005 OUR AVERAGE				
$0.073 \pm 0.008 \pm 0.002$	73	KAYIS-TOPAK.05	CHRS	ν_μ emulsion
$0.095 \pm 0.007^{+0.014}_{-0.013}$	2829	ASTIER	00D NOMD	$\nu_\mu \text{ Fe} \rightarrow \mu^- \mu^+ X$
$0.090 \pm 0.007^{+0.007}_{-0.006}$	476	⁴ ABBIENDI	99K OPAL	$Z^0 \rightarrow c\bar{c}$
$0.086 \pm 0.017^{+0.008}_{-0.007}$	69	⁵ ALBRECHT	92F ARG	$e^+e^- \approx 10 \text{ GeV}$
$0.078 \pm 0.009 \pm 0.012$		ONG	88 MRK2	$e^+e^- 29 \text{ GeV}$
$0.078 \pm 0.015 \pm 0.02$		BARTEL	87 JADE	$e^+e^- 34.6 \text{ GeV}$
$0.082 \pm 0.012^{+0.02}_{-0.01}$		ALTHOFF	84G TASS	$e^+e^- 34.5 \text{ GeV}$

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

$0.093 \pm 0.009 \pm 0.009$	88	KAYIS-TOPAK.02	CHRS	See KAYIS-TOPAKSU 05
$0.089 \pm 0.018 \pm 0.025$		BARTEL	85J JADE	See BARTEL 87

⁴ ABBIENDI 99K uses the excess of right-sign over wrong-sign leptons opposite reconstructed $D^*(2010)^+ \rightarrow D^0\pi^+$ decays in $Z^0 \rightarrow c\bar{c}$.

⁵ ALBRECHT 92F uses the excess of right-sign over wrong-sign leptons in a sample of events tagged by fully reconstructed $D^*(2010)^+ \rightarrow D^0\pi^+$ decays.

$\Gamma(c \rightarrow \ell^+ \text{ anything})/\Gamma(c \rightarrow \text{ anything})$

This is an average (not a sum) of e^+ and μ^+ measurements.

<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.096 ± 0.004 OUR AVERAGE				
$0.0958 \pm 0.0042 \pm 0.0028$	1828	⁶ ABREU	000 DLPH	$Z^0 \rightarrow c\bar{c}$
$0.095 \pm 0.006^{+0.007}_{-0.006}$	854	⁷ ABBIENDI	99K OPAL	$Z^0 \rightarrow c\bar{c}$

⁶ ABREU 000 uses leptons opposite fully reconstructed $D^*(2010)^+$, D^+ , or D^0 mesons.

⁷ ABBIENDI 99K uses the excess of right-sign over wrong-sign leptons opposite reconstructed $D^*(2010)^+ \rightarrow D^0\pi^+$ decays in $Z^0 \rightarrow c\bar{c}$.

$\Gamma(c \rightarrow D^*(2010)^+ \text{ anything})/\Gamma(c \rightarrow \text{ anything})$

<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$0.255 \pm 0.015 \pm 0.008$	2371	⁸ ABREU	000 DLPH	$Z^0 \rightarrow c\bar{c}$

⁸ ABREU 000 uses slow pions opposite fully reconstructed $D^*(2010)^+$, D^+ , or D^0 mesons as a signal of $D^*(2010)^-$ production.

————— Inclusive modes —————

$\Gamma(e^+ \text{ semileptonic})/\Gamma_{\text{total}}$

Γ_1/Γ

The sum of our $\bar{K}^0 e^+ \nu_e$, $\bar{K}^{*0}(892) e^+ \nu_e$, $\pi^0 e^+ \nu_e$, $\eta e^+ \nu_e$, $\rho^0 e^+ \nu_e$, and $\omega e^+ \nu_e$ branching fractions is $15.3 \pm 0.4\%$.

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
16.07±0.30 OUR AVERAGE				

16.13±0.10±0.29	26.2±0.2k	⁹ ASNER	10 CLEO	$e^+ e^-$ at 3774 MeV
15.2 ±0.9 ±0.8	521 ± 32	ABLIKIM	07G BES2	$e^+ e^- \approx \psi(3770)$

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

16.13±0.20±0.33	8798 ± 105	¹⁰ ADAM	06A CLEO	See ASNER 10
17.0 ±1.9 ±0.7	158	BALTRUSAIT..85B	MRK3	$e^+ e^-$ 3.77 GeV

⁹ Using the D^+ and D^0 lifetimes, ASNER 10 finds that the ratio of the D^+ and D^0 semileptonic widths is $0.985 \pm 0.015 \pm 0.024$.

¹⁰ Using the D^+ and D^0 lifetimes, ADAM 06A finds that the ratio of the D^+ and D^0 inclusive e^+ widths is $0.985 \pm 0.028 \pm 0.015$, consistent with the isospin-invariance prediction of 1.

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

Γ_2/Γ

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
17.6±2.7±1.8				

100 ± 12		¹¹ ABLIKIM	08L BES2	$e^+ e^- \approx \psi(3772)$
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¹¹ ABLIKIM 08L finds the ratio of $D^+ \rightarrow \mu^+ X$ and $D^0 \rightarrow \mu^+ X$ branching fractions to be $2.59 \pm 0.70 \pm 0.25$, in accord with the ratio of D^+ and D^0 lifetimes, 2.54 ± 0.02 .

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

Γ_3/Γ

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
25.7±1.4 OUR AVERAGE				

24.7±1.3±1.2	631 ± 33	ABLIKIM	07G BES2	$e^+ e^- \approx \psi(3770)$
27.8 ^{+3.6} _{-3.1}		BARLAG	92C ACCM	π^- Cu 230 GeV
27.1±2.3±2.4		COFFMAN	91 MRK3	$e^+ e^-$ 3.77 GeV

$[\Gamma(\bar{K}^0 \text{ anything}) + \Gamma(K^0 \text{ anything})]/\Gamma_{\text{total}}$

Γ_4/Γ

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
61 ± 5 OUR AVERAGE				

60.5±5.5±3.3	244 ± 22	ABLIKIM	06U BES2	$e^+ e^-$ at 3773 MeV
61.2±6.5±4.3		COFFMAN	91 MRK3	$e^+ e^-$ 3.77 GeV

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

Γ_5/Γ

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
5.9±0.8 OUR AVERAGE				

6.1±0.9±0.4	189 ± 27	ABLIKIM	07G BES2	$e^+ e^- \approx \psi(3770)$
5.5±1.3±0.9		COFFMAN	91 MRK3	$e^+ e^-$ 3.77 GeV

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

Γ_6/Γ

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
5.7±5.2±0.7				

7.2 ± 6.5		ABLIKIM	06U BES2	$e^+ e^-$ at 3773 MeV
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$\Gamma(\bar{K}^*(892)^0 \text{ anything})/\Gamma_{\text{total}}$ **Γ_7/Γ**

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
$23.2 \pm 4.5 \pm 3.0$	189 ± 36	ABLIKIM	05P BES	$e^+ e^- \approx 3773 \text{ MeV}$

$\Gamma(K^*(892)^0 \text{ anything})/\Gamma_{\text{total}}$ **Γ_8/Γ**

VALUE (%)	CL%	DOCUMENT ID	TECN	COMMENT
< 6.6	90	ABLIKIM	05P BES	$e^+ e^- \approx 3773 \text{ MeV}$

$\Gamma(\eta \text{ anything})/\Gamma_{\text{total}}$ **Γ_9/Γ**

This ratio includes η particles from η' decays.

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
$6.3 \pm 0.5 \pm 0.5$	1972 ± 142	HUANG	06B CLEO	$e^+ e^-$ at $\psi(3770)$

$\Gamma(\eta' \text{ anything})/\Gamma_{\text{total}}$ **Γ_{10}/Γ**

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
$1.04 \pm 0.16 \pm 0.09$	82 ± 13	HUANG	06B CLEO	$e^+ e^-$ at $\psi(3770)$

$\Gamma(\phi \text{ anything})/\Gamma_{\text{total}}$ **Γ_{11}/Γ**

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
$1.03 \pm 0.10 \pm 0.07$	248 ± 21	HUANG	06B CLEO	$e^+ e^-$ at $\psi(3770)$

————— **Leptonic and semileptonic modes** —————

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

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$< 8.8 \times 10^{-6}$	90	EISENSTEIN	08 CLEO	$e^+ e^-$ at $\psi(3770)$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
$< 2.4 \times 10^{-5}$	90	ARTUSO	05A CLEO	See EISENSTEIN 08

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

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

VALUE (units 10^{-4})	EVTS	DOCUMENT ID	TECN	COMMENT
$3.82 \pm 0.32 \pm 0.09$	150 ± 12	¹² EISENSTEIN	08 CLEO	$e^+ e^-$ at $\psi(3770)$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
$12.2 \begin{smallmatrix} +11.1 \\ -5.3 \end{smallmatrix} \pm 1.0$	3	¹³ ABLIKIM	05D BES	$e^+ e^- \approx 3.773 \text{ GeV}$
$4.40 \pm 0.66 \begin{smallmatrix} +0.09 \\ -0.12 \end{smallmatrix}$	47 ± 7	¹⁴ ARTUSO	05A CLEO	See EISENSTEIN 08
$3.5 \pm 1.4 \pm 0.6$	7	¹⁵ BONVICINI	04A CLEO	Incl. in ARTUSO 05A
$8 \begin{smallmatrix} +16 \\ -5 \end{smallmatrix} \begin{smallmatrix} +5 \\ -2 \end{smallmatrix}$	1	¹⁶ BAI	98B BES	$e^+ e^- \rightarrow D^{*+} D^-$

¹² EISENSTEIN 08, using the D^+ lifetime and assuming $|V_{cd}| = |V_{us}|$, gets $f_{D^+} = (205.8 \pm 8.5 \pm 2.5) \text{ MeV}$ from this measurement.

¹³ ABLIKIM 05D finds a background-subtracted $2.67 \pm 1.74 D^+ \rightarrow \mu^+ \nu_\mu$ events, and from this obtains $f_{D^+} = 371 \begin{smallmatrix} +129 \\ -119 \end{smallmatrix} \pm 25 \text{ MeV}$.

¹⁴ ARTUSO 05A obtains $f_{D^+} = 222.6 \pm 16.7 \begin{smallmatrix} +2.8 \\ -3.4 \end{smallmatrix} \text{ MeV}$ from this measurement.

¹⁵ BONVICINI 04A finds eight events with an estimated background of one, and from the branching fraction obtains $f_{D^+} = 202 \pm 41 \pm 17 \text{ MeV}$.

¹⁶ BAI 98B obtains $f_{D^+} = (300 \begin{smallmatrix} +180 \\ -150 \end{smallmatrix} \begin{smallmatrix} +80 \\ -40 \end{smallmatrix}) \text{ MeV}$ from this measurement.

$\Gamma(\tau^+ \nu_\tau)/\Gamma_{\text{total}}$					Γ_{14}/Γ
VALUE	CL%	DOCUMENT ID	TECN	COMMENT	
$<1.2 \times 10^{-3}$	90	EISENSTEIN 08	CLEO	$e^+ e^-$ at $\psi(3770)$	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<2.1 \times 10^{-3}$	90	RUBIN 06A	CLEO	See EISENSTEIN 08	

$\Gamma(\bar{K}^0 e^+ \nu_e)/\Gamma_{\text{total}}$					Γ_{15}/Γ
VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT	
8.83±0.22 OUR AVERAGE					
$8.83 \pm 0.10 \pm 0.20$	8467	17 BESSON	09 CLEO	$e^+ e^-$ at $\psi(3770)$	
$8.95 \pm 1.59 \pm 0.67$	34 ± 6	18 ABLIKIM	05A BES	$e^+ e^-$ at $\psi(3770)$	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$8.53 \pm 0.13 \pm 0.23$		19 DOBBS	08 CLEO	See BESSON 09	
$8.71 \pm 0.38 \pm 0.37$	545 ± 24	HUANG	05B CLEO	See DOBBS 08	

¹⁷ See the form-factor parameters near the end of this D^+ Listing.

¹⁸ The ABLIKIM 05A result together with the $D^0 \rightarrow K^- e^+ \nu_e$ branching fraction of ABLIKIM 04C and Particle Data Group lifetimes gives $\Gamma(D^0 \rightarrow K^- e^+ \nu_e) / \Gamma(D^+ \rightarrow \bar{K}^0 e^+ \nu_e) = 1.08 \pm 0.22 \pm 0.07$; isospin invariance predicts the ratio is 1.0.

¹⁹ 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 $\bar{K} e^+ \nu_e$ and $\pi e^+ \nu_e$. It also finds $\Gamma(D^0 \rightarrow K^- e^+ \nu_e) / \Gamma(D^+ \rightarrow \bar{K}^0 e^+ \nu_e) = 1.06 \pm 0.02 \pm 0.03$; isospin invariance predicts the ratio is 1.0.

$\Gamma(\bar{K}^0 \mu^+ \nu_\mu)/\Gamma_{\text{total}}$					Γ_{16}/Γ
VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	
0.092±0.006 OUR FIT					
0.103±0.023±0.008	29 ± 6	ABLIKIM 07	BES2	$e^+ e^-$ at 3773 MeV	

$\Gamma(\bar{K}^0 \mu^+ \nu_\mu)/\Gamma(K^- 2\pi^+)$					Γ_{16}/Γ_{37}
VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	
1.00 ±0.07 OUR FIT					
1.019±0.076±0.065	555 ± 39	LINK 04E	FOCS	γ nucleus, $\bar{E}_\gamma \approx 180$ GeV	

$\Gamma(K^- \pi^+ e^+ \nu_e)/\Gamma_{\text{total}}$					Γ_{17}/Γ
VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT	
3.5 $\begin{smallmatrix} +0.7 \\ -0.6 \end{smallmatrix}$ OUR AVERAGE					
$3.50 \pm 0.75 \pm 0.27$	29 ± 6	ABLIKIM 060	BES2	$e^+ e^-$ at 3773 MeV	
$3.5 \begin{smallmatrix} +1.2 \\ -0.7 \end{smallmatrix} \pm 0.4$	14	BAI 91	MRK3	$e^+ e^- \approx 3.77$ GeV	

$\Gamma(\bar{K}^*(892)^0 e^+ \nu_e)/\Gamma_{\text{total}}$					Γ_{31}/Γ
Unseen decay modes of $\bar{K}^*(892)^0$ are included. See the end of the D^+ Listings for measurements of $D^+ \rightarrow \bar{K}^*(892)^0 \ell^+ \nu_\ell$ form-factor ratios.					

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
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5.53±0.13 OUR FIT

5.53±0.14 OUR AVERAGE

5.52±0.07±0.13 $\approx 5k$ BRIERE 10 CLEO e^+e^- at $\psi(3770)$

5.56±0.27±0.23 422 ± 21 ²⁰HUANG 05B CLEO e^+e^- at $\psi(3770)$

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

5.06±1.21±0.40 28 ± 7 ABLIKIM 06O BES2 e^+e^- at 3773 MeV

²⁰HUANG 05B finds $\Gamma(D^0 \rightarrow K^{*-} e^+ \nu_e) / \Gamma(D^+ \rightarrow \bar{K}^{*0} e^+ \nu_e) = 0.98 \pm 0.08 \pm 0.04$; isospin invariance predicts the ratio is 1.0.

$\Gamma(\bar{K}^*(892)^0 e^+ \nu_e) / \Gamma(K^- 2\pi^+)$ $\Gamma_{31} / \Gamma_{37}$

Unseen decay modes of the $\bar{K}^*(892)^0$ are included. See the end of the D^+ Listings for measurements of $D^+ \rightarrow \bar{K}^*(892)^0 \ell^+ \nu_\ell$ form-factor ratios.

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
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0.606±0.019 OUR FIT Error includes scale factor of 1.1.

0.61 ±0.07 OUR AVERAGE Error includes scale factor of 1.6. See the ideogram below.

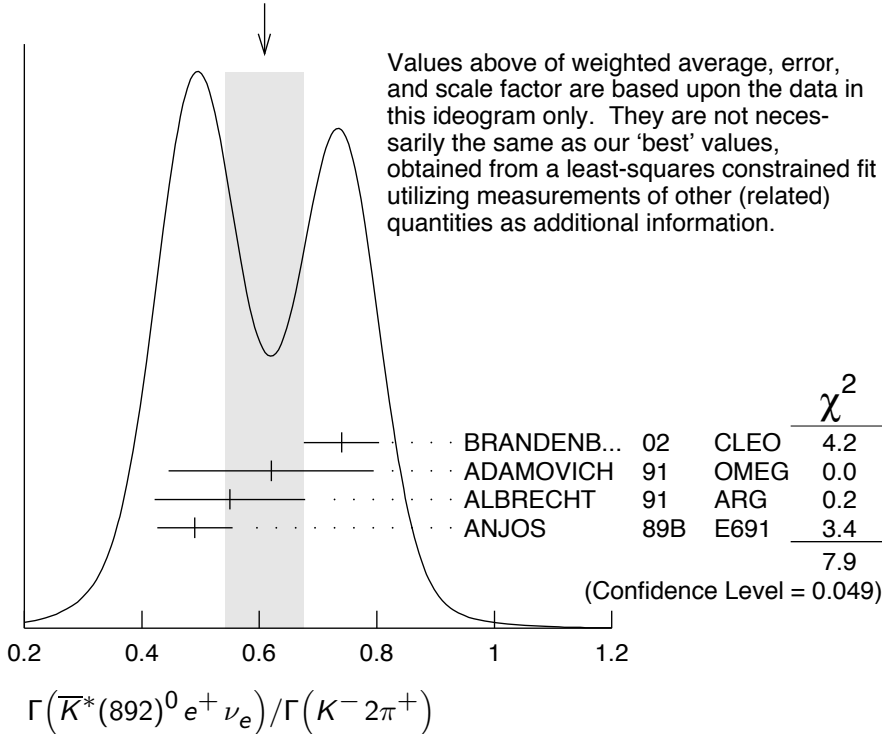
0.74 ±0.04 ±0.05 BRANDENB... 02 CLEO $e^+e^- \approx \Upsilon(4S)$

0.62 ±0.15 ±0.09 35 ADAMOVICH 91 OMEG π^- 340 GeV

0.55 ±0.08 ±0.10 880 ALBRECHT 91 ARG $e^+e^- \approx 10.4$ GeV

0.49 ±0.04 ±0.05 ANJOS 89B E691 Photoproduction

WEIGHTED AVERAGE
0.61±0.07 (Error scaled by 1.6)



$\Gamma(K^- \pi^+ e^+ \nu_e \text{ nonresonant}) / \Gamma_{\text{total}}$ Γ_{19} / Γ

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
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<0.007 90 ANJOS 89B E691 Photoproduction

$\Gamma(K^- \pi^+ \mu^+ \nu_\mu) / \Gamma(\bar{K}^0 \mu^+ \nu_\mu)$					$\Gamma_{20} / \Gamma_{16}$
<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
0.417 ± 0.030 ± 0.023	555 ± 39	LINK	04E	FOCS	γ nucleus, $\bar{E}_\gamma \approx 180$ GeV

$\Gamma(\bar{K}^*(892)^0 \mu^+ \nu_\mu) / \Gamma_{\text{total}}$					Γ_{32} / Γ
<u>VALUE (units 10⁻²)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
5.28 ± 0.15 OUR FIT					
5.27 ± 0.07 ± 0.14	≈ 5k	BRIERE	10	CLEO	$e^+ e^-$ at $\psi(3770)$

$\Gamma(\bar{K}^*(892)^0 \mu^+ \nu_\mu) / \Gamma(\bar{K}^0 \mu^+ \nu_\mu)$					$\Gamma_{32} / \Gamma_{16}$
Unseen decay modes of the $\bar{K}^*(892)^0$ are included. See the end of the D^+ Listings for measurements of $D^+ \rightarrow \bar{K}^*(892)^0 \ell^+ \nu_\ell$ form-factor ratios.					

<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
0.58 ± 0.04 OUR FIT					
0.594 ± 0.043 ± 0.033	555 ± 39	LINK	04E	FOCS	γ nucleus, $\bar{E}_\gamma \approx 180$ GeV

$\Gamma(\bar{K}^*(892)^0 \mu^+ \nu_\mu) / \Gamma(K^- 2\pi^+)$					$\Gamma_{32} / \Gamma_{37}$
Unseen decay modes of the $\bar{K}^*(892)^0$ are included. See the end of the D^+ Listings for measurements of $D^+ \rightarrow \bar{K}^*(892)^0 \ell^+ \nu_\ell$ form-factor ratios.					

<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
0.578 ± 0.020 OUR FIT	Error includes scale factor of 1.1.				
0.57 ± 0.06 OUR AVERAGE	Error includes scale factor of 1.2.				
0.72 ± 0.10 ± 0.05		BRANDENB...	02	CLEO	$e^+ e^- \approx \gamma(4S)$
0.56 ± 0.04 ± 0.06	875	FRABETTI	93E	E687	γ Be $\bar{E}_\gamma \approx 200$ GeV
0.46 ± 0.07 ± 0.08	224	KODAMA	92C	E653	π^- emulsion 600 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.602 ± 0.010 ± 0.021	12k	²¹ LINK	02J	FOCS	γ nucleus, ≈ 180 GeV

²¹This LINK 02J result includes the effects of an interference of a small S -wave $K^- \pi^+$ amplitude with the dominant \bar{K}^{*0} amplitude. (The interference effect is reported in LINK 02E.) This result is redundant with results of LINK 04E elsewhere in these Listings.

$\Gamma(K^- \pi^+ \mu^+ \nu_\mu \text{ nonresonant}) / \Gamma(K^- \pi^+ \mu^+ \nu_\mu)$					$\Gamma_{22} / \Gamma_{20}$
<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
0.0530 ± 0.0074^{+0.0099}_{-0.0096}	14k	LINK	05I	FOCS	γ nucleus, $\bar{E}_\gamma \approx 180$ GeV

$\Gamma(K^- \pi^+ \pi^0 \mu^+ \nu_\mu) / \Gamma(K^- \pi^+ \mu^+ \nu_\mu)$					$\Gamma_{23} / \Gamma_{20}$
<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<0.042	90	FRABETTI	93E	E687	γ Be $\bar{E}_\gamma \approx 200$ GeV

$\Gamma(\bar{K}_0^*(1430)^0 \mu^+ \nu_\mu) / \Gamma(K^- \pi^+ \mu^+ \nu_\mu)$					$\Gamma_{33} / \Gamma_{20}$
Unseen decay modes of the $\bar{K}_0^*(1430)^0$ are included.					
<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<0.0064	90	LINK	05I	FOCS	γ nucleus, $\bar{E}_\gamma \approx 180$ GeV

$\Gamma(\bar{K}^*(1680)^0 \mu^+ \nu_\mu) / \Gamma(K^- \pi^+ \mu^+ \nu_\mu)$ $\Gamma_{34} / \Gamma_{20}$

Unseen decay modes of the $\bar{K}^*(1680)^0$ are included.

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
<0.04	90	LINK	05I	FOCS γ nucleus, $\bar{E}_\gamma \approx 180$ GeV

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

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
0.405 ± 0.016 ± 0.009	838	²² BESSON	09	CLEO $e^+ e^-$ at $\psi(3770)$
0.373 ± 0.022 ± 0.013		²³ DOBBS	08	CLEO See BESSON 09
0.44 ± 0.06 ± 0.03	63 ± 9	HUANG	05B	CLEO See DOBBS 08

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

²² See the form-factor parameters near the end of this D^+ Listing.

²³ 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 $\bar{K} e^+ \nu_e$ and $\pi e^+ \nu_e$. It finds $\Gamma(D^0 \rightarrow \pi^- e^+ \nu_e) / \Gamma(D^+ \rightarrow \pi^0 e^+ \nu_e) = 2.03 \pm 0.14 \pm 0.08$; isospin invariance predicts the ratio is 2.0.

$\Gamma(\eta e^+ \nu_e) / \Gamma_{\text{total}}$ Γ_{25} / Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID	TECN	COMMENT
13.3 ± 2.0 ± 0.6	46 ± 8	MITCHELL	09B	CLEO $e^+ e^-$ at $\psi(3770)$

$\Gamma(\rho^0 e^+ \nu_e) / \Gamma_{\text{total}}$ Γ_{26} / Γ

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.0022 ± 0.0004 OUR FIT				
0.0021 ± 0.0004 ± 0.0001	27 ± 6	²⁴ HUANG	05B	CLEO $e^+ e^-$ at $\psi(3770)$

²⁴ HUANG 05B finds $\Gamma(D^0 \rightarrow \rho^- e^+ \nu_e) / 2 \Gamma(D^+ \rightarrow \rho^0 e^+ \nu_e) = 1.2^{+0.4}_{-0.3} \pm 0.1$; isospin invariance predicts the ratio is 1.0.

$\Gamma(\rho^0 e^+ \nu_e) / \Gamma(\bar{K}^*(892)^0 e^+ \nu_e)$ $\Gamma_{26} / \Gamma_{31}$

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.039 ± 0.007 OUR FIT				
0.045 ± 0.014 ± 0.009	49	²⁵ AITALA	97	E791 π^- nucleus, 500 GeV

²⁵ AITALA 97 explicitly subtracts $D^+ \rightarrow \eta' e^+ \nu_e$ and other backgrounds to get this result.

$\Gamma(\rho^0 \mu^+ \nu_\mu) / \Gamma(\bar{K}^*(892)^0 \mu^+ \nu_\mu)$ $\Gamma_{27} / \Gamma_{32}$

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.045 ± 0.007 OUR AVERAGE				Error includes scale factor of 1.1.
0.041 ± 0.006 ± 0.004	320 ± 44	LINK	06B	FOCS γ A, $\bar{E}_\gamma \approx 180$ GeV
0.051 ± 0.015 ± 0.009	54	²⁶ AITALA	97	E791 π^- nucleus, 500 GeV
0.079 ± 0.019 ± 0.013	39	²⁷ FRABETTI	97	E687 γ Be, $\bar{E}_\gamma \approx 220$ GeV

²⁶ AITALA 97 explicitly subtracts $D^+ \rightarrow \eta' \mu^+ \nu_\mu$ and other backgrounds to get this result.

²⁷ Because the reconstruction efficiency for photons is low, this FRABETTI 97 result also includes any $D^+ \rightarrow \eta' \mu^+ \nu_\mu \rightarrow \gamma \rho^0 \mu^+ \nu_\mu$ events in the numerator.

$\Gamma(\omega e^+ \nu_e)/\Gamma_{\text{total}}$ Γ_{28}/Γ

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
$0.0016^{+0.0007}_{-0.0006} \pm 0.0001$	$7.6^{+3.3}_{-2.7}$	HUANG	05B CLEO	$e^+ e^-$ at $\psi(3770)$

$\Gamma(\eta'(958) e^+ \nu_e)/\Gamma_{\text{total}}$ Γ_{29}/Γ

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<3.5 \times 10^{-4}$	90	MITCHELL	09B CLEO	$e^+ e^-$ at $\psi(3770)$

$\Gamma(\phi e^+ \nu_e)/\Gamma_{\text{total}}$ Γ_{30}/Γ

Unseen decay modes of the ϕ are included.

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<1.6 \times 10^{-4}$	90	MITCHELL	09B CLEO	$e^+ e^-$ at $\psi(3770)$

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

<0.0201	90	ABLIKIM	06P BES2	$e^+ e^-$ at 3773 MeV
<0.0209	90	BAI	91 MRK3	$e^+ e^- \approx 3.77$ GeV

————— Hadronic modes with a \bar{K} or $\bar{K}K\bar{K}$ —————

$\Gamma(K_S^0 \pi^+)/\Gamma_{\text{total}}$ Γ_{35}/Γ

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
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• • • We do not use the following data for averages, fits, limits, etc. • • •

$1.526 \pm 0.022 \pm 0.038$		²⁸ DOBBS	07 CLEO	See MENDEZ 10
$1.55 \pm 0.05 \pm 0.06$	2230 ± 60	²⁸ HE	05 CLEO	See DOBBS 07
$1.6 \pm 0.3 \pm 0.1$	161	ADLER	88C MRK3	$e^+ e^-$ 3.77 GeV

²⁸ DOBBS 07 and HE 05 use single- and double-tagged events in an overall fit. DOBBS 07 supersedes HE 05.

$\Gamma(K_S^0 \pi^+)/\Gamma(K^- 2\pi^+)$ Γ_{35}/Γ_{37}

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
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0.161 ± 0.007 OUR FIT Error includes scale factor of 3.4.

0.158 ± 0.007 OUR AVERAGE Error includes scale factor of 3.2.

$0.1682 \pm 0.0012 \pm 0.0037$	30k	MENDEZ	10 CLEO	$e^+ e^-$ at 3774 MeV
$0.1530 \pm 0.0023 \pm 0.0016$	10.6k	LINK	02B FOCS	γ nucleus, $\bar{E}_\gamma \approx 180$ GeV

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

$0.174 \pm 0.012 \pm 0.011$	473	²⁹ BISHAI	97 CLEO	$e^+ e^- \approx \Upsilon(4S)$
$0.137 \pm 0.015 \pm 0.016$	264	ANJOS	90C E691	Photoproduction

²⁹ See BISHAI 97 for an isospin analysis of $D^+ \rightarrow \bar{K}\pi$ amplitudes.

$\Gamma(K_L^0 \pi^+)/\Gamma_{\text{total}}$ Γ_{36}/Γ

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
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1.460 ± 0.040 ± 0.035 2023 ± 54 ³⁰ HE 08 CLEO $e^+ e^-$ at $\psi(3770)$

³⁰ The difference of CLEO $D^+ \rightarrow K_S^0 \pi^+$ and $K_L^0 \pi^+$ branching fractions over the sum (DOBBS 07 and HE 08) is $+0.022 \pm 0.016 \pm 0.018$.

$\Gamma(K^- 2\pi^+)/\Gamma_{\text{total}}$ Γ_{37}/Γ

VALUE (units 10^{-2}) EVTS DOCUMENT ID TECN COMMENT

9.13±0.19 OUR FIT Error includes scale factor of 1.1.

9.14±0.10±0.17 ³¹ DOBBS 07 CLEO $e^+ e^-$ at $\psi(3770)$

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

9.5 ±0.2 ±0.3 15.1k±130 ³¹ HE 05 CLEO See DOBBS 07

9.3 ±0.6 ±0.8 1502 ³² BALEST 94 CLEO $e^+ e^- \approx \Upsilon(4S)$

6.4 $\begin{matrix} +1.5 \\ -1.4 \end{matrix}$ ³³ BARLAG 92C ACCM π^- Cu 230 GeV

9.1 ±1.3 ±0.4 1164 ADLER 88C MRK3 $e^+ e^-$ 3.77 GeV

9.1 ±1.9 239 ³⁴ SCHINDLER 81 MRK2 $e^+ e^-$ 3.771 GeV

³¹ DOBBS 07 and HE 05 use single- and double-tagged events in an overall fit. DOBBS 07 supersedes HE 05.

³² BALEST 94 measures the ratio of $D^+ \rightarrow K^- \pi^+ \pi^+$ and $D^0 \rightarrow K^- \pi^+$ branching fractions to be $2.35 \pm 0.16 \pm 0.16$ and uses their absolute measurement of the $D^0 \rightarrow K^- \pi^+$ fraction (AKERIB 93).

³³ BARLAG 92C computes the branching fraction by topological normalization.

³⁴ SCHINDLER 81 (MARK-2) measures $\sigma(e^+ e^- \rightarrow \psi(3770)) \times$ branching fraction to be 0.38 ± 0.05 nb. We use the MARK-3 (ADLER 88C) value of $\sigma = 4.2 \pm 0.6 \pm 0.3$ nb.

A REVIEW GOES HERE – Check our WWW List of Reviews

A REVIEW GOES HERE – Check our WWW List of Reviews

$\Gamma((K^- \pi^+)_{S\text{-wave}} \pi^+)/\Gamma(K^- 2\pi^+)$ Γ_{38}/Γ_{37}

This is the “fit fraction” from the Dalitz-plot analysis. The $K^- \pi^+$ S-wave includes a broad scalar κ ($\bar{K}_0^*(800)$), the $\bar{K}_0^*(1430)^0$, and non-resonant background.

VALUE DOCUMENT ID TECN COMMENT

0.801 ±0.012 OUR AVERAGE

0.8024±0.0138±0.0043 ³⁵ LINK 09 FOCS MIPWA fit, 53k evts

0.838 ±0.038 ³⁶ BONVICINI 08A CLEO QMIPWA fit, 141k evts

0.786 ±0.014 ±0.018 AITALA 06 E791 Dalitz fit, 15.1k events

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

0.8323±0.0150±0.0008 ³⁷ LINK 07B FOCS See LINK 09

³⁵ This LINK 09 model-independent partial-wave analysis of the $K^- \pi^+$ S-wave slices the $K^- \pi^+$ mass range into 39 bins.

³⁶ The BONVICINI 08A QMIPWA (quasi-model-independent partial-wave analysis) of the $K^- \pi^+$ S-wave amplitude slices the $K^- \pi^+$ mass range into 26 bins but keeps the Breit-Wigner $\bar{K}_0^*(1430)^0$.

³⁷ This LINK 07B fit uses a K matrix. The $K^- \pi^+$ S-wave fit fraction given above breaks down into $(207.3 \pm 25.5 \pm 12.4)\%$ isospin-1/2 and $(40.5 \pm 9.6 \pm 3.2)\%$ isospin-3/2 — with large interference between the two. The isospin-1/2 component includes the κ (or $\bar{K}_0^*(800)^0$) and $\bar{K}_0^*(1430)^0$.

$\Gamma(\bar{K}_0^*(800)^0 \pi^+, \bar{K}_0^*(800) \rightarrow K^- \pi^+)/\Gamma(K^- 2\pi^+)$ Γ_{39}/Γ_{37}

This is the “fit fraction” from the Dalitz-plot analysis.

VALUE DOCUMENT ID TECN COMMENT

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

0.478±0.121±0.053 AITALA 02 E791 See AITALA 06

$\Gamma(\bar{K}^*(892)^0 \pi^+, \bar{K}^*(892)^0 \rightarrow K^- \pi^+)/\Gamma(K^- 2\pi^+)$ Γ_{41}/Γ_{37}

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

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.111 ± 0.012 OUR AVERAGE			Error includes scale factor of 3.7.
0.1236 ± 0.0034 ± 0.0034	LINK	09	FOCS MIPWA fit, 53k evts
0.0988 ± 0.0046	BONVICINI	08A	CLEO QMIPWA fit, 141k evts
0.119 ± 0.002 ± 0.020	AITALA	06	E791 Dalitz fit, 15.1k events
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.1361 ± 0.0041 ± 0.0030	³⁸ LINK	07B	FOCS See LINK 09
0.123 ± 0.010 ± 0.009	AITALA	02	E791 See AITALA 06
0.137 ± 0.006 ± 0.009	FRABETTI	94G	E687 Dalitz fit, 8800 evts
0.170 ± 0.009 ± 0.034	ANJOS	93	E691 γ Be 90–260 GeV
0.14 ± 0.04 ± 0.04	ALVAREZ	91B	NA14 Photoproduction
0.13 ± 0.01 ± 0.07	ADLER	87	MRK3 $e^+ e^-$ 3.77 GeV

³⁸The statistical error on this LINK 07B value is corrected in LINK 09.

$\Gamma(\bar{K}^*(1410)^0 \pi^+, \bar{K}^{*0} \rightarrow K^- \pi^+)/\Gamma(K^- 2\pi^+)$ Γ_{42}/Γ_{37}

<u>VALUE (units 10⁻³)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
not seen	LINK	09	FOCS MIPWA fit, 53k evts
not seen	BONVICINI	08A	CLEO QMIPWA fit, 141k evts
• • • We do not use the following data for averages, fits, limits, etc. • • •			
4.8 ± 2.1 ± 1.7	LINK	07B	FOCS See LINK 09

$\Gamma(\bar{K}_0^*(1430)^0 \pi^+, \bar{K}_0^*(1430)^0 \rightarrow K^- \pi^+)/\Gamma(K^- 2\pi^+)$ Γ_{40}/Γ_{37}

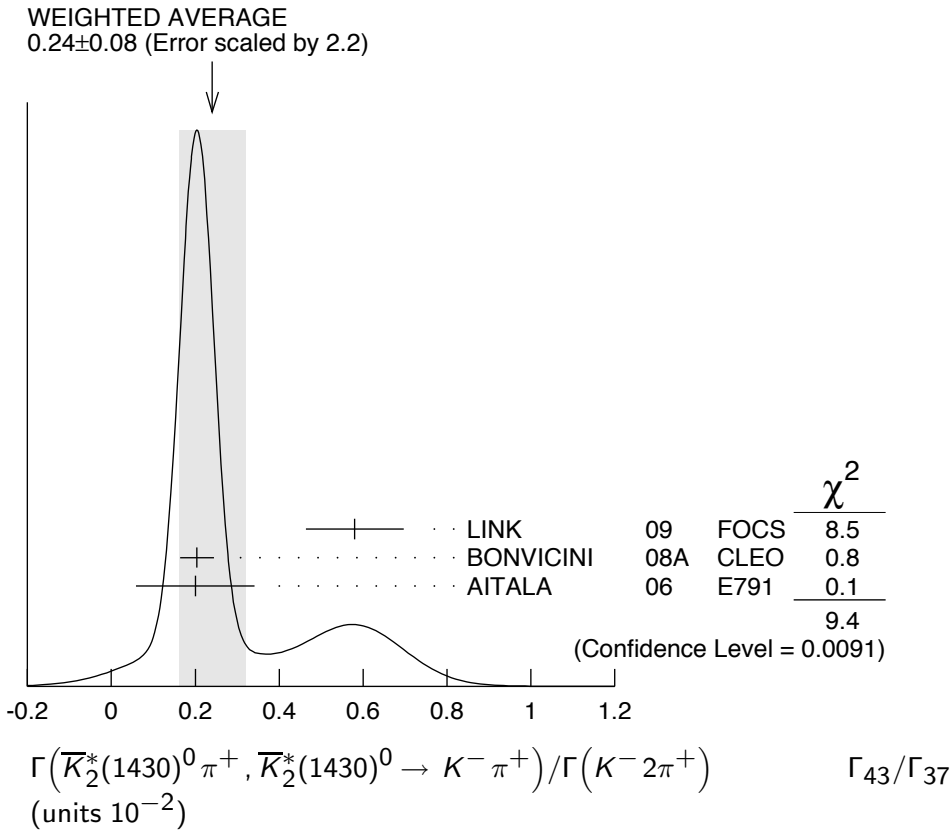
This is the "fit fraction" from the Dalitz-plot analysis.

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.1330 ± 0.0062	BONVICINI	08A	CLEO QMIPWA fit, 141k evts
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.125 ± 0.014 ± 0.005	AITALA	02	E791 See AITALA 06
0.284 ± 0.022 ± 0.059	FRABETTI	94G	E687 Dalitz fit, 8800 evts
0.248 ± 0.019 ± 0.017	ANJOS	93	E691 γ Be 90–260 GeV

$\Gamma(\bar{K}_2^*(1430)^0 \pi^+, \bar{K}_2^*(1430)^0 \rightarrow K^- \pi^+)/\Gamma(K^- 2\pi^+)$ Γ_{43}/Γ_{37}

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

<u>VALUE (units 10⁻²)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.24 ± 0.08 OUR AVERAGE			Error includes scale factor of 2.2. See the ideogram below.
0.58 ± 0.10 ± 0.06	LINK	09	FOCS MIPWA fit, 53k evts
0.204 ± 0.040	BONVICINI	08A	CLEO QMIPWA fit, 141k evts
0.2 ± 0.1 ± 0.1	AITALA	06	E791 Dalitz fit, 15.1k events
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.39 ± 0.09 ± 0.05	LINK	07B	FOCS See LINK 09
0.5 ± 0.1 ± 0.2	AITALA	02	E791 See AITALA 06



$\Gamma(\bar{K}^*(1680)^0 \pi^+, \bar{K}^*(1680)^0 \rightarrow K^- \pi^+) / \Gamma(K^- 2\pi^+)$ **Γ_{44}/Γ_{37}**
This is the "fit fraction" from the Dalitz-plot analysis.

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
0.23 ± 0.12	OUR AVERAGE		
1.75 ± 0.62 ± 0.54	LINK	09	FOCS MIPWA fit, 53k evts
0.196 ± 0.118	BONVICINI	08A	CLEO QMIPWA fit, 141k evts
1.2 ± 0.6 ± 1.2	AITALA	06	E791 Dalitz fit, 15.1k events
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
1.90 ± 0.63 ± 0.43	LINK	07B	FOCS See LINK 09
2.5 ± 0.7 ± 0.3	AITALA	02	E791 See AITALA 06
4.7 ± 0.6 ± 0.7	FRABETTI	94G	E687 Dalitz fit, 8800 evts
3.0 ± 0.4 ± 1.3	ANJOS	93	E691 γ Be 90–260 GeV

$\Gamma(K^- (2\pi^+)_{I=2}) / \Gamma(K^- 2\pi^+)$ **Γ_{45}/Γ_{37}**

VALUE	DOCUMENT ID	TECN	COMMENT
0.155 ± 0.028	BONVICINI	08A	CLEO QMIPWA fit, 141k evts

$\Gamma(K^- 2\pi^+ \text{ nonresonant}) / \Gamma(K^- 2\pi^+)$ **Γ_{46}/Γ_{37}**
This is the "fit fraction" from the Dalitz-plot analysis. Later analyses find little need for this decay mode.

VALUE	DOCUMENT ID	TECN	COMMENT
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
0.130 ± 0.058 ± 0.044	AITALA	02	E791 See AITALA 06
0.998 ± 0.037 ± 0.072	FRABETTI	94G	E687 Dalitz fit, 8800 evts
0.838 ± 0.088 ± 0.275	ANJOS	93	E691 γ Be 90–260 GeV
0.79 ± 0.07 ± 0.15	ADLER	87	MRK3 $e^+ e^-$ 3.77 GeV

$\Gamma(K_S^0 \pi^+ \pi^0) / \Gamma_{\text{total}}$ Γ_{47} / Γ

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
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6.99 ± 0.27 OUR FIT

6.99 ± 0.09 ± 0.25 ³⁹ DOBBS 07 CLEO $e^+ e^-$ at $\psi(3770)$

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

7.2 ± 0.2 ± 0.4 5090 ± 100 ³⁹ HE 05 CLEO See DOBBS 07

5.1 ± 1.3 ± 0.8 159 ADLER 88C MRK3 $e^+ e^-$ 3.77 GeV

³⁹ DOBBS 07 and HE 05 use single- and double-tagged events in an overall fit. DOBBS 07 supersedes HE 05.

$\Gamma(K_S^0 \rho^+) / \Gamma(K_S^0 \pi^+ \pi^0)$ $\Gamma_{48} / \Gamma_{47}$

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

VALUE	DOCUMENT ID	TECN	COMMENT
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0.68 ± 0.08 ± 0.12 ADLER 87 MRK3 $e^+ e^-$ 3.77 GeV

$\Gamma(\bar{K}^*(892)^0 \pi^+, \bar{K}^*(892)^0 \rightarrow K_S^0 \pi^0) / \Gamma(K_S^0 \pi^+ \pi^0)$ $\Gamma_{49} / \Gamma_{47}$

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

VALUE	DOCUMENT ID	TECN	COMMENT
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0.19 ± 0.06 ± 0.06 ADLER 87 MRK3 $e^+ e^-$ 3.77 GeV

$\Gamma(K_S^0 \pi^+ \pi^0 \text{ nonresonant}) / \Gamma(K_S^0 \pi^+ \pi^0)$ $\Gamma_{50} / \Gamma_{47}$

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

VALUE	DOCUMENT ID	TECN	COMMENT
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0.13 ± 0.07 ± 0.08 ADLER 87 MRK3 $e^+ e^-$ 3.77 GeV

$\Gamma(K^- 2\pi^+ \pi^0) / \Gamma_{\text{total}}$ Γ_{51} / Γ

See our 2008 Review (Physics Letters **B667** 1 (2008)) for measurements of submodes of this mode. There is nothing new since 1992, and the two papers, ANJOS 92C, with 91 ± 12 events above background, and COFFMAN 92B, with 142 ± 20 such events, could not determine submode fractions with much accuracy.

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
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5.99 ± 0.18 OUR FIT

5.98 ± 0.08 ± 0.16 ⁴⁰ DOBBS 07 CLEO $e^+ e^-$ at $\psi(3770)$

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

6.0 ± 0.2 ± 0.2 4840 ± 100 ⁴⁰ HE 05 CLEO See DOBBS 07

5.8 ± 1.2 ± 1.2 142 COFFMAN 92B MRK3 $e^+ e^-$ 3.77 GeV

6.3 $\begin{smallmatrix} +1.4 \\ -1.3 \end{smallmatrix}$ ± 1.2 175 BALTRUSAIT..86E MRK3 See COFFMAN 92B

⁴⁰ DOBBS 07 and HE 05 use single- and double-tagged events in an overall fit. DOBBS 07 supersedes HE 05.

$\Gamma(K_S^0 2\pi^+ \pi^-) / \Gamma_{\text{total}}$ Γ_{52} / Γ

See our 2008 Review (Physics Letters **B667** 1 (2008)) for measurements of submodes of this mode. There is nothing new since 1992, and the two papers, ANJOS 92C, with 229 ± 17 events above background, and COFFMAN 92B, with 209 ± 20 such events, could not determine submode fractions with much accuracy.

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
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3.12 ± 0.11 OUR FIT

3.122 ± 0.046 ± 0.096 ⁴¹ DOBBS 07 CLEO $e^+ e^-$ at $\psi(3770)$

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

3.2	± 0.1	± 0.2	3210 ± 85	⁴¹ HE	05	CLEO	See DOBBS 07
2.1	$+1.0$	-0.9		⁴² BARLAG	92C	ACCM	π^- Cu 230 GeV
3.3	± 0.8	± 0.2	168	ADLER	88C	MRK3	e^+e^- 3.77 GeV

⁴¹ DOBBS 07 and HE 05 use single- and double-tagged events in an overall fit. DOBBS 07 supersedes HE 05.

⁴² BARLAG 92C computes the branching fraction by topological normalization.

$\Gamma(K^- 3\pi^+ \pi^-) / \Gamma(K^- 2\pi^+)$ $\Gamma_{53} / \Gamma_{37}$

<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.061 ± 0.005 OUR FIT				Error includes scale factor of 1.1.
0.062 ± 0.008 OUR AVERAGE				Error includes scale factor of 1.3.
0.058 ± 0.002 ± 0.006	2923	LINK	03D FOCS	γ A, $\bar{E}_\gamma \approx 180$ GeV
0.077 ± 0.008 ± 0.010	239	FRABETTI	97C E687	γ Be, $\bar{E}_\gamma \approx 200$ GeV

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

0.09	± 0.01	± 0.01	113	ANJOS	90D	E691	Photoproduction
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$\Gamma(\bar{K}^*(892)^0 2\pi^+ \pi^-, \bar{K}^*(892)^0 \rightarrow K^- \pi^+) / \Gamma(K^- 3\pi^+ \pi^-)$ $\Gamma_{54} / \Gamma_{53}$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.21 ± 0.04 ± 0.06	LINK	03D FOCS	γ A, $\bar{E}_\gamma \approx 180$ GeV

$\Gamma(\bar{K}^*(892)^0 \rho^0 \pi^+, \bar{K}^*(892)^0 \rightarrow K^- \pi^+) / \Gamma(K^- 3\pi^+ \pi^-)$ $\Gamma_{55} / \Gamma_{53}$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.40 ± 0.03 ± 0.06	LINK	03D FOCS	γ A, $\bar{E}_\gamma \approx 180$ GeV

$\Gamma(\bar{K}^*(892)^0 \rho^0 \pi^+, \bar{K}^*(892)^0 \rightarrow K^- \pi^+) / \Gamma(K^- 2\pi^+)$ $\Gamma_{55} / \Gamma_{37}$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
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• • • We do not use the following data for averages, fits, limits, etc. • • •

0.016 ± 0.007 ± 0.004	FRABETTI	97C E687	γ Be, $\bar{E}_\gamma \approx 200$ GeV
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$\Gamma(\bar{K}^*(892)^0 2\pi^+ \pi^- \text{no-}\rho, \bar{K}^*(892)^0 \rightarrow K^- \pi^+) / \Gamma(K^- 2\pi^+)$ $\Gamma_{57} / \Gamma_{37}$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
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• • • We do not use the following data for averages, fits, limits, etc. • • •

0.032 ± 0.010 ± 0.008	FRABETTI	97C E687	γ Be, $\bar{E}_\gamma \approx 200$ GeV
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$\Gamma(K^- \rho^0 2\pi^+) / \Gamma(K^- 3\pi^+ \pi^-)$ $\Gamma_{58} / \Gamma_{53}$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.30 ± 0.04 ± 0.01	LINK	03D FOCS	γ A, $\bar{E}_\gamma \approx 180$ GeV

$\Gamma(K^- \rho^0 2\pi^+) / \Gamma(K^- 2\pi^+)$ $\Gamma_{58} / \Gamma_{37}$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
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• • • We do not use the following data for averages, fits, limits, etc. • • •

0.034 ± 0.009 ± 0.005	FRABETTI	97C E687	γ Be, $\bar{E}_\gamma \approx 200$ GeV
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$\Gamma(\bar{K}^*(892)^0 a_1(1260)^+)/\Gamma(K^- 2\pi^+)$ Γ_{56}/Γ_{37}

Unseen decay modes of the $\bar{K}^*(892)^0$ and $a_1(1260)^+$ are included.

VALUE	DOCUMENT ID	TECN	COMMENT
0.099±0.008±0.018	LINK	03D FOCS	γ A, $\bar{E}_\gamma \approx 180$ GeV

$\Gamma(K^- 3\pi^+ \pi^- \text{ nonresonant})/\Gamma(K^- 3\pi^+ \pi^-)$ Γ_{59}/Γ_{53}

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
0.07 ±0.05±0.01		LINK	03D FOCS	γ A, $\bar{E}_\gamma \approx 180$ GeV

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

<0.026	90	FRABETTI	97C E687	γ Be, $\bar{E}_\gamma \approx 200$ GeV
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$\Gamma(K^+ 2K_S^0)/\Gamma(K^- 2\pi^+)$ Γ_{60}/Γ_{37}

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.049±0.022 OUR AVERAGE				Error includes scale factor of 2.4.
0.035±0.010±0.005	39 ± 9	ALBRECHT	94I ARG	$e^+ e^- \approx 10$ GeV
0.085±0.018	70 ± 12	AMMAR	91 CLEO	$e^+ e^- \approx 10.5$ GeV

$\Gamma(K^+ K^- K_S^0 \pi^+)/\Gamma(K_S^0 2\pi^+ \pi^-)$ Γ_{61}/Γ_{52}

VALUE (units 10^{-3})	EVTS	DOCUMENT ID	TECN	COMMENT
7.7±1.5±0.9	35 ± 7	LINK	01C FOCS	γ nucleus, $\bar{E}_\gamma \approx 180$ GeV

————— Pionic modes —————

$\Gamma(\pi^+ \pi^0)/\Gamma(K^- 2\pi^+)$ Γ_{62}/Γ_{37}

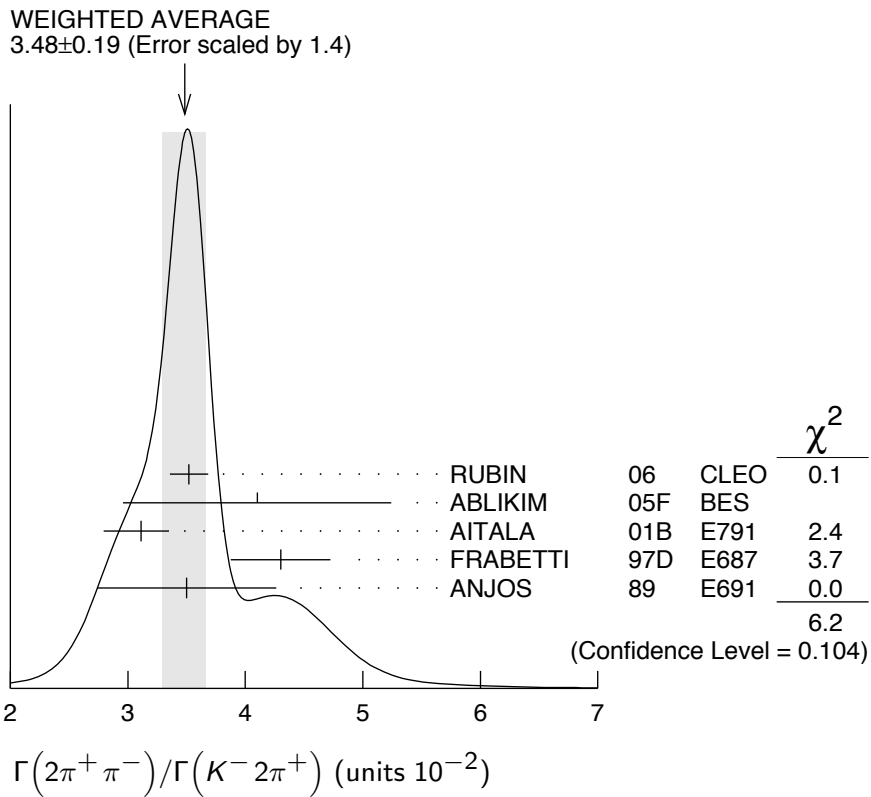
VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
1.31±0.06 OUR AVERAGE				
1.29±0.04±0.05	2649 ± 76	MENDEZ	10 CLEO	$e^+ e^-$ at 3774 MeV
1.33±0.11±0.09	1229 ± 99	AUBERT,B	06F BABR	$e^+ e^- \approx \Upsilon(4S)$
1.44±0.19±0.10	171 ± 22	ARMS	04 CLEO	$e^+ e^- \approx 10$ GeV

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

1.33±0.07±0.06	914 ± 46	RUBIN	06 CLEO	See MENDEZ 10
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$\Gamma(2\pi^+ \pi^-)/\Gamma(K^- 2\pi^+)$ Γ_{63}/Γ_{37}

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
3.48±0.19 OUR AVERAGE				Error includes scale factor of 1.4. See the ideogram below.
3.52±0.11±0.12	3303 ± 95	RUBIN	06 CLEO	$e^+ e^-$ at $\psi(3770)$
4.1 ±1.1 ±0.3	85 ± 22	ABLIKIM	05F BES	$e^+ e^- \approx \psi(3770)$
3.11±0.18 ^{+0.16} _{-0.26}	1172	AITALA	01B E791	π^- nucleus, 500 GeV
4.3 ±0.3 ±0.3	236	FRABETTI	97D E687	γ Be ≈ 200 GeV
3.5 ±0.7 ±0.3	83	ANJOS	89 E691	Photoproduction

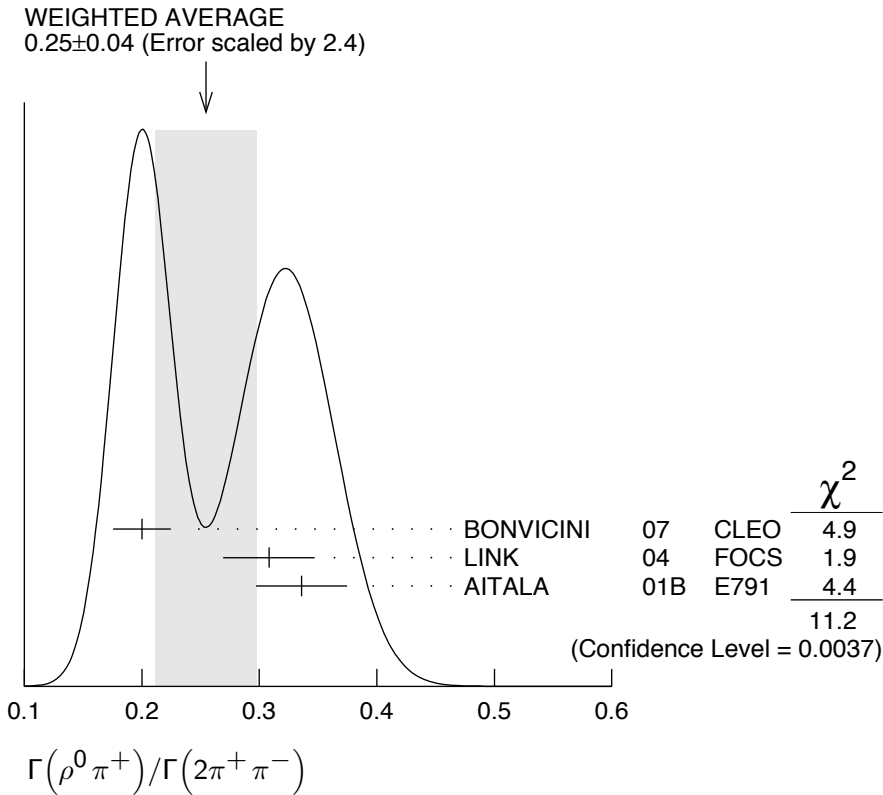


$\Gamma(\rho^0\pi^+)/\Gamma(2\pi^+\pi^-)$

Γ_{64}/Γ_{63}

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

VALUE	DOCUMENT ID	TECN	COMMENT
0.25 ± 0.04 OUR AVERAGE	Error includes scale factor of 2.4. See the ideogram below.		
0.200 ± 0.023 ± 0.009	BONVICINI	07 CLEO	Dalitz fit, ≈ 2240 evts
0.3082 ± 0.0314 ± 0.0230	LINK	04 FOCS	Dalitz fit, 1527 ± 51 evts
0.336 ± 0.032 ± 0.022	AITALA	01B E791	Dalitz fit, 1172 evts



$\Gamma(\pi^+(\pi^+\pi^-)_{S\text{-wave}}) / \Gamma(2\pi^+\pi^-)$ $\Gamma_{65} / \Gamma_{63}$

This is the "fit fraction" from the Dalitz-plot analysis. See also the next three data blocks.

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$0.5600 \pm 0.0324 \pm 0.0214$	⁴³ LINK	04	FOCS Dalitz fit, 1527 ± 51 evts

⁴³LINK 04 borrows a K-matrix parametrization from ANISOVICH 03 of the full $\pi\text{-}\pi$ S-wave isoscalar scattering amplitude to describe the $\pi^+\pi^-$ S-wave component of the $\pi^+\pi^+\pi^-$ state. The fit fraction given above is a sum over five f_0 mesons, the $f_0(980)$, $f_0(1300)$, $f_0(1200\text{--}1600)$, $f_0(1500)$, and $f_0(1750)$. See LINK 04 for details and discussion.

$\Gamma(\sigma\pi^+, \sigma \rightarrow \pi^+\pi^-) / \Gamma(2\pi^+\pi^-)$ $\Gamma_{66} / \Gamma_{63}$

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

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.422 ± 0.027 OUR AVERAGE			
$0.418 \pm 0.014 \pm 0.025$	BONVICINI	07	CLEO Dalitz fit, ≈ 2240 evts
$0.463 \pm 0.090 \pm 0.021$	AITALA	01B	E791 Dalitz fit, 1172 evts

$\Gamma(f_0(980)\pi^+, f_0(980) \rightarrow \pi^+\pi^-) / \Gamma(2\pi^+\pi^-)$ $\Gamma_{67} / \Gamma_{63}$

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

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.048 ± 0.010 OUR AVERAGE			Error includes scale factor of 1.3.
$0.041 \pm 0.009 \pm 0.003$	BONVICINI	07	CLEO Dalitz fit, ≈ 2240 evts
$0.062 \pm 0.013 \pm 0.004$	AITALA	01B	E791 Dalitz fit, 1172 evts

$\Gamma(f_0(1370)\pi^+, f_0(1370) \rightarrow \pi^+\pi^-)/\Gamma(2\pi^+\pi^-)$ Γ_{68}/Γ_{63}

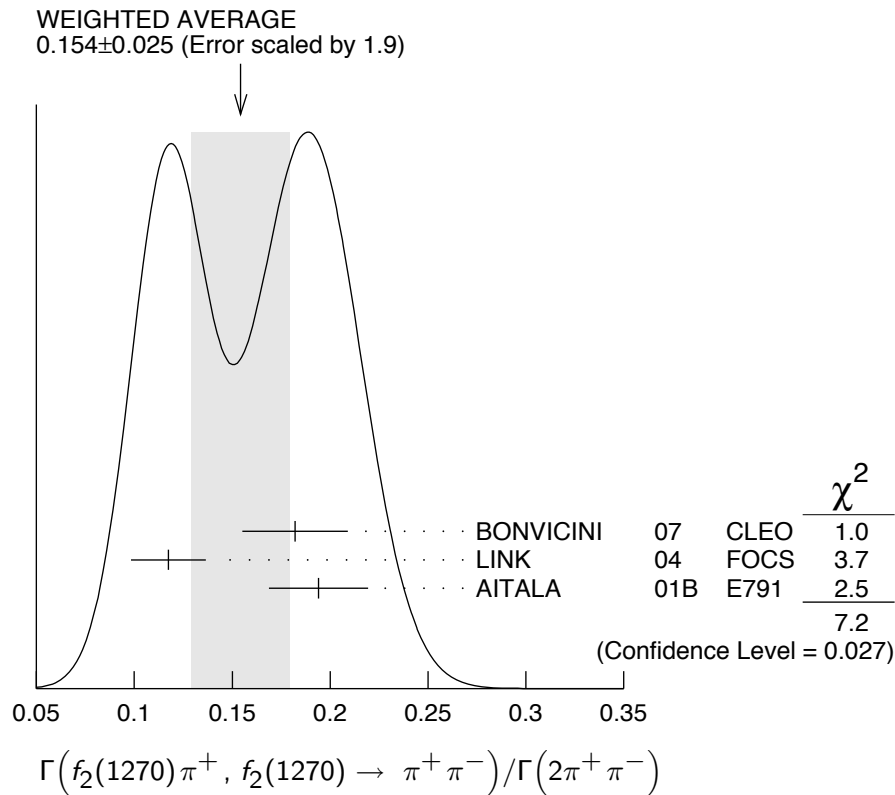
This is the "fit fraction" from the Dalitz-plot analysis.

VALUE	DOCUMENT ID	TECN	COMMENT
0.024 ± 0.013 OUR AVERAGE			
0.026 ± 0.018 ± 0.006	BONVICINI 07	CLEO	Dalitz fit, ≈ 2240 evts
0.023 ± 0.015 ± 0.008	AITALA 01B	E791	Dalitz fit, 1172 evts

$\Gamma(f_2(1270)\pi^+, f_2(1270) \rightarrow \pi^+\pi^-)/\Gamma(2\pi^+\pi^-)$ Γ_{69}/Γ_{63}

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

VALUE	DOCUMENT ID	TECN	COMMENT
0.154 ± 0.025 OUR AVERAGE	Error includes scale factor of 1.9. See the ideogram below.		
0.182 ± 0.026 ± 0.007	BONVICINI 07	CLEO	Dalitz fit, ≈ 2240 evts
0.1174 ± 0.0190 ± 0.0029	LINK 04	FOCS	Dalitz fit, 1527 ± 51 evts
0.194 ± 0.025 ± 0.004	AITALA 01B	E791	Dalitz fit, 1172 evts



$\Gamma(\rho(1450)^0\pi^+, \rho(1450)^0 \rightarrow \pi^+\pi^-)/\Gamma(2\pi^+\pi^-)$ Γ_{70}/Γ_{63}

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

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.024	95	BONVICINI 07	CLEO	Dalitz fit, ≈ 2240 evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.007 ± 0.007 ± 0.003		AITALA 01B	E791	Dalitz fit, 1172 evts

$\Gamma(f_0(1500)\pi^+, f_0(1500) \rightarrow \pi^+\pi^-)/\Gamma(2\pi^+\pi^-)$ Γ_{71}/Γ_{63}

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

VALUE	DOCUMENT ID	TECN	COMMENT
0.034 ± 0.010 ± 0.008	BONVICINI 07	CLEO	Dalitz fit, ≈ 2240 evts

$\Gamma(f_0(1710)\pi^+, f_0(1710) \rightarrow \pi^+\pi^-)/\Gamma(2\pi^+\pi^-)$ Γ_{72}/Γ_{63}

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

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.016	95	BONVICINI 07	CLEO	Dalitz fit, ≈ 2240 evts

$\Gamma(f_0(1790)\pi^+, f_0(1790) \rightarrow \pi^+\pi^-)/\Gamma(2\pi^+\pi^-)$ Γ_{73}/Γ_{63}

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

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.02	95	BONVICINI 07	CLEO	Dalitz fit, ≈ 2240 evts

$\Gamma((\pi^+\pi^+)_{S\text{-wave}}\pi^-)/\Gamma(2\pi^+\pi^-)$ Γ_{74}/Γ_{63}

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

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.037	95	BONVICINI 07	CLEO	Dalitz fit, ≈ 2240 evts

$\Gamma(2\pi^+\pi^- \text{ nonresonant})/\Gamma(2\pi^+\pi^-)$ Γ_{75}/Γ_{63}

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

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.035	95	BONVICINI 07	CLEO	Dalitz fit, ≈ 2240 evts

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

$0.078 \pm 0.060 \pm 0.027$		AITALA 01B	E791	Dalitz fit, 1172 evts
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$\Gamma(\pi^+2\pi^0)/\Gamma(K^-2\pi^+)$ Γ_{76}/Γ_{37}

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
$5.0 \pm 0.3 \pm 0.3$	1535 ± 89	RUBIN 06	CLEO	e^+e^- at $\psi(3770)$

$\Gamma(2\pi^+\pi^-\pi^0)/\Gamma(K^-2\pi^+)$ Γ_{77}/Γ_{37}

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
$12.4 \pm 0.5 \pm 0.6$	5701 ± 205	RUBIN 06	CLEO	e^+e^- at $\psi(3770)$

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

Unseen decay modes of the η are included.

VALUE (units 10^{-4})	EVTS	DOCUMENT ID	TECN	COMMENT
$34.3 \pm 1.4 \pm 1.7$	1033 ± 42	ARTUSO 08	CLEO	See MENDEZ 10

$\Gamma(\eta\pi^+)/\Gamma(K^-2\pi^+)$ Γ_{81}/Γ_{37}

Unseen decay modes of the η are included.

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
$3.87 \pm 0.09 \pm 0.19$	2940 ± 68	MENDEZ 10	CLEO	e^+e^- at 3774 MeV
$3.81 \pm 0.26 \pm 0.21$	377 ± 26	RUBIN 06	CLEO	See ARTUSO 08

$\Gamma(\omega\pi^+)/\Gamma_{\text{total}}$ Γ_{83}/Γ

Unseen decay modes of the ω are included.

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<3.4 \times 10^{-4}$	90	RUBIN 06	CLEO	e^+e^- at $\psi(3770)$

$\Gamma(3\pi^+ 2\pi^-)/\Gamma(K^- 2\pi^+)$ Γ_{80}/Γ_{37}

VALUE (units 10^{-2}) EVTS DOCUMENT ID TECN COMMENT

1.77±0.17 OUR FIT

1.73±0.20±0.17 732 ± 77 RUBIN 06 CLEO $e^+ e^-$ at $\psi(3770)$

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

2.3 ± 0.4 ± 0.2 58 FRABETTI 97C E687 γ Be, $\bar{E}_\gamma \approx 200$ GeV

$\Gamma(3\pi^+ 2\pi^-)/\Gamma(K^- 3\pi^+ \pi^-)$ Γ_{80}/Γ_{53}

VALUE EVTS DOCUMENT ID TECN COMMENT

0.289±0.019 OUR FIT

0.290±0.017±0.011 835 LINK 03D FOCS γ A, $\bar{E}_\gamma \approx 180$ GeV

$\Gamma(\eta\pi^+\pi^0)/\Gamma_{\text{total}}$ Γ_{82}/Γ

VALUE (units 10^{-4}) EVTS DOCUMENT ID TECN COMMENT

13.8±3.1±1.6 149 ± 34 ARTUSO 08 CLEO $e^+ e^-$ at $\psi(3770)$

$\Gamma(\eta'(958)\pi^+)/\Gamma_{\text{total}}$ Γ_{84}/Γ

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

VALUE (units 10^{-4}) EVTS DOCUMENT ID TECN COMMENT

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

44.2±2.5±2.9 352 ± 20 ARTUSO 08 CLEO See MENDEZ 10

$\Gamma(\eta'(958)\pi^+)/\Gamma(K^- 2\pi^+)$ Γ_{84}/Γ_{37}

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

VALUE (units 10^{-2}) EVTS DOCUMENT ID TECN COMMENT

5.12±0.17±0.25 1037 ± 35 MENDEZ 10 CLEO $e^+ e^-$ at 3774 MeV

$\Gamma(\eta'(958)\pi^+\pi^0)/\Gamma_{\text{total}}$ Γ_{85}/Γ

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

VALUE (units 10^{-4}) EVTS DOCUMENT ID TECN COMMENT

15.7±4.3±2.5 33 ± 9 ARTUSO 08 CLEO $e^+ e^-$ at $\psi(3770)$

————— Hadronic modes with a $K\bar{K}$ pair —————

$\Gamma(K^+ K_S^0)/\Gamma_{\text{total}}$ Γ_{86}/Γ

VALUE (units 10^{-3}) EVTS DOCUMENT ID TECN COMMENT

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

3.14±0.09±0.08 1971 ± 51 BONVICINI 08 CLEO See MENDEZ 10

$\Gamma(K^+ K_S^0)/\Gamma(K_S^0\pi^+)$ Γ_{86}/Γ_{35}

VALUE EVTS DOCUMENT ID TECN COMMENT

0.193 ± 0.007 OUR FIT Error includes scale factor of 3.2.

0.1901±0.0024 OUR AVERAGE

0.1899±0.0011±0.0022 101k±561 WON 09 BELL $e^+ e^-$ at $\Upsilon(4S)$

0.1892±0.0155±0.0073 278 ± 21 ARMS 04 CLEO $e^+ e^- \approx 10$ GeV

0.1996±0.0119±0.0096 949 LINK 02B FOCS γ A, $\bar{E}_\gamma \approx 180$ GeV

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

0.222 ± 0.037 ± 0.013	63 ± 10	ABLIKIM	05F	BES	$e^+e^- \approx \psi(3770)$
0.222 ± 0.041 ± 0.019	70	BISHAI	97	CLEO	See ARMS 04
0.25 ± 0.04 ± 0.02	129	FRABETTI	95	E687	γ Be $\bar{E}_\gamma \approx 200$ GeV
0.271 ± 0.065 ± 0.039	69	ANJOS	90C	E691	γ Be
0.317 ± 0.086 ± 0.048	31	BALTRUSAIT..85E	MRK3		e^+e^- 3.77 GeV
0.25 ± 0.15	6	SCHINDLER	81	MRK2	e^+e^- 3.771 GeV

$\Gamma(K^+ K_S^0)/\Gamma(K^- 2\pi^+)$

Γ_{86}/Γ_{37}

VALUE (units 10^{-2}) EVTS DOCUMENT ID TECN COMMENT

3.11 ± 0.16 OUR FIT Error includes scale factor of 3.3.

3.35 ± 0.06 ± 0.07 5161 ± 86 MENDEZ 10 CLEO e^+e^- at 3774 MeV

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

3.02 ± 0.18 ± 0.15 949 ⁴⁴ LINK 02B FOCS γ nucleus, $\bar{E}_\gamma \approx 180$ GeV

⁴⁴ This LINK 02B result is redundant with a result in the previous datablock.

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

Γ_{87}/Γ

VALUE (units 10^{-2}) EVTS DOCUMENT ID TECN COMMENT

0.954 ± 0.026 OUR FIT Error includes scale factor of 1.1.

0.935 ± 0.017 ± 0.024 ⁴⁵ DOBBS 07 CLEO e^+e^- at $\psi(3770)$

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

0.97 ± 0.04 ± 0.04 1250 ± 40 ⁴⁵ HE 05 CLEO See DOBBS 07

⁴⁵ DOBBS 07 and HE 05 use single- and double-tagged events in an overall fit. DOBBS 07 supersedes HE 05.

$\Gamma(K^+ K^- \pi^+)/\Gamma(K^- 2\pi^+)$

Γ_{87}/Γ_{37}

VALUE EVTS DOCUMENT ID TECN COMMENT

0.1045 ± 0.0021 OUR FIT Error includes scale factor of 1.3.

0.1058 ± 0.0029 OUR AVERAGE Error includes scale factor of 1.4.

0.117 ± 0.013 ± 0.007 181 ± 20 ABLIKIM 05F BES $e^+e^- \approx \psi(3770)$

0.107 ± 0.001 ± 0.002 43k AUBERT 05s BABR $e^+e^- \approx \Upsilon(4S)$

0.093 ± 0.010 $\begin{smallmatrix} +0.008 \\ -0.006 \end{smallmatrix}$ JUN 00 SELX Σ^- nucleus, 600 GeV

0.0976 ± 0.0042 ± 0.0046 FRABETTI 95B E687 γ Be, $\bar{E}_\gamma \approx 200$ GeV

$\Gamma(\phi\pi^+, \phi \rightarrow K^+ K^-)/\Gamma(K^+ K^- \pi^+)$

Γ_{88}/Γ_{87}

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

VALUE (%) DOCUMENT ID TECN COMMENT

27.8 ± 0.4 $\begin{smallmatrix} +0.2 \\ -0.5 \end{smallmatrix}$ RUBIN 08 CLEO Dalitz fit, 19,458 ± 163 evts

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

29.2 ± 3.1 ± 3.0 FRABETTI 95B E687 Dalitz fit, 915 evts

$\Gamma(K^+ \bar{K}^*(892)^0, \bar{K}^*(892)^0 \rightarrow K^- \pi^+)/\Gamma(K^+ K^- \pi^+)$

Γ_{89}/Γ_{87}

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

VALUE (%) DOCUMENT ID TECN COMMENT

25.7 ± 0.5 $\begin{smallmatrix} +0.4 \\ -1.2 \end{smallmatrix}$ RUBIN 08 CLEO Dalitz fit, 19,458 ± 163 evts

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

30.1 ± 2.0 ± 2.5 FRABETTI 95B E687 Dalitz fit, 915 evts

$$\Gamma(K^+ \bar{K}_0^*(1430)^0, \bar{K}_0^*(1430)^0 \rightarrow K^- \pi^+) / \Gamma(K^+ K^- \pi^+) \quad \Gamma_{90} / \Gamma_{87}$$

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

VALUE (%)	DOCUMENT ID	TECN	COMMENT
$18.8 \pm 1.2^{+3.3}_{-3.4}$	RUBIN	08	CLEO Dalitz fit, 19,458 ± 163 evts

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

$37.0 \pm 3.5 \pm 1.8$ FRABETTI 95B E687 Dalitz fit, 915 evts

$$\Gamma(K^+ \bar{K}_2^*(1430)^0, \bar{K}_2^* \rightarrow K^- \pi^+) / \Gamma(K^+ K^- \pi^+) \quad \Gamma_{91} / \Gamma_{87}$$

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

VALUE (%)	DOCUMENT ID	TECN	COMMENT
$1.7 \pm 0.4^{+1.2}_{-0.7}$	RUBIN	08	CLEO Dalitz fit, 19,458 ± 163 evts

$$\Gamma(K^+ \bar{K}_0^*(800), \bar{K}_0^* \rightarrow K^- \pi^+) / \Gamma(K^+ K^- \pi^+) \quad \Gamma_{92} / \Gamma_{87}$$

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

VALUE (%)	DOCUMENT ID	TECN	COMMENT
$7.0 \pm 0.8^{+3.5}_{-2.0}$	RUBIN	08	CLEO Dalitz fit, 19,458 ± 163 evts

$$\Gamma(a_0(1450)^0 \pi^+, a_0^0 \rightarrow K^+ K^-) / \Gamma(K^+ K^- \pi^+) \quad \Gamma_{93} / \Gamma_{87}$$

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

VALUE (%)	DOCUMENT ID	TECN	COMMENT
$4.6 \pm 0.6^{+7.2}_{-1.8}$	RUBIN	08	CLEO Dalitz fit, 19,458 ± 163 evts

$$\Gamma(\phi(1680) \pi^+, \phi \rightarrow K^+ K^-) / \Gamma(K^+ K^- \pi^+) \quad \Gamma_{94} / \Gamma_{87}$$

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

VALUE (%)	DOCUMENT ID	TECN	COMMENT
$0.51 \pm 0.11^{+0.37}_{-0.16}$	RUBIN	08	CLEO Dalitz fit, 19,458 ± 163 evts

$$\Gamma(K^*(892)^+ K_S^0) / \Gamma(K_S^0 \pi^+) \quad \Gamma_{102} / \Gamma_{35}$$

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

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
$1.1 \pm 0.3 \pm 0.4$	67	FRABETTI	95 E687	γ Be $\bar{E}_\gamma \approx 200$ GeV

$$\Gamma(\phi \pi^+ \pi^0) / \Gamma_{\text{total}} \quad \Gamma_{99} / \Gamma$$

Unseen decay modes of the ϕ are included.

VALUE	DOCUMENT ID	TECN	COMMENT
0.023 ± 0.010	⁴⁶ BARLAG	92C ACCM	π^- Cu 230 GeV

⁴⁶BARLAG 92C computes the branching fraction using topological normalization.

$$\Gamma(\phi \rho^+) / \Gamma(K^- 2\pi^+) \quad \Gamma_{100} / \Gamma_{37}$$

Unseen decay modes of the ϕ are included.

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
< 0.16	90	DAOUDI	92	CLEO $e^+ e^- \approx 10.5$ GeV

$$\Gamma(K^+ K^- \pi^+ \pi^0 \text{ non-}\phi) / \Gamma_{\text{total}} \quad \Gamma_{101} / \Gamma$$

VALUE	DOCUMENT ID	TECN	COMMENT
$0.015^{+0.007}_{-0.006}$	⁴⁷ BARLAG	92C ACCM	π^- Cu 230 GeV

⁴⁷BARLAG 92C computes the branching fraction using topological normalization.

$\Gamma(K^+ K^- \pi^+ \pi^0 \text{non-}\phi) / \Gamma(K^- 2\pi^+)$ $\Gamma_{101} / \Gamma_{37}$

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
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• • • We do not use the following data for averages, fits, limits, etc. • • •

<0.25	90	ANJOS	89E E691	Photoproduction
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$\Gamma(K^+ K_S^0 \pi^+ \pi^-) / \Gamma(K_S^0 2\pi^+ \pi^-)$ $\Gamma_{96} / \Gamma_{52}$

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
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5.62 ± 0.39 ± 0.40	469 ± 32	LINK	01C FOCS	γ nucleus, $\bar{E}_\gamma \approx 180$ GeV
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$\Gamma(K_S^0 K^- 2\pi^+) / \Gamma(K_S^0 2\pi^+ \pi^-)$ $\Gamma_{97} / \Gamma_{52}$

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
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7.68 ± 0.41 ± 0.32	670 ± 35	LINK	01C FOCS	γ nucleus, $\bar{E}_\gamma \approx 180$ GeV
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$\Gamma(K^+ K^- 2\pi^+ \pi^-) / \Gamma(K^- 3\pi^+ \pi^-)$ $\Gamma_{98} / \Gamma_{53}$

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
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0.040 ± 0.009 ± 0.019	38	LINK	03D FOCS	γ A, $\bar{E}_\gamma \approx 180$ GeV
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———— Doubly Cabibbo-suppressed modes ————

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

VALUE (units 10^{-4})	EVTS	DOCUMENT ID	TECN	COMMENT
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(1.83 ± 0.26) OUR FIT Error includes scale factor of 1.4.

2.52 ± 0.47 ± 0.26	189 ± 37	AUBERT,B	06F BABR	$e^+ e^- \approx \Upsilon(4S)$
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• • • We do not use the following data for averages, fits, limits, etc. • • •

2.28 ± 0.36 ± 0.17	148 ± 23	DYTMAN	06 CLEO	See MENDEZ 10
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$\Gamma(K^+ \pi^0) / \Gamma(K^- 2\pi^+)$ $\Gamma_{103} / \Gamma_{37}$

VALUE (units 10^{-3})	EVTS	DOCUMENT ID	TECN	COMMENT
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2.01 ± 0.29 OUR FIT Error includes scale factor of 1.4.

1.9 ± 0.2 ± 0.1	343 ± 37	MENDEZ	10 CLEO	$e^+ e^-$ at 3774 MeV
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$\Gamma(K^+ \eta) / \Gamma(K^- 2\pi^+)$ $\Gamma_{104} / \Gamma_{37}$

Unseen decay modes of the η are included.

VALUE (units 10^{-2})	CL%	DOCUMENT ID	TECN	COMMENT
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<0.15	90	MENDEZ	10 CLEO	$e^+ e^-$ at 3774 MeV
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$\Gamma(K^+ \eta'(958)) / \Gamma(K^- 2\pi^+)$ $\Gamma_{105} / \Gamma_{37}$

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

VALUE (units 10^{-2})	CL%	DOCUMENT ID	TECN	COMMENT
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<0.20	90	MENDEZ	10 CLEO	$e^+ e^-$ at 3774 MeV
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$\Gamma(K^+ \pi^+ \pi^-) / \Gamma(K^- 2\pi^+)$ $\Gamma_{106} / \Gamma_{37}$

VALUE (units 10^{-3})	EVTS	DOCUMENT ID	TECN	COMMENT
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5.77 ± 0.22 OUR AVERAGE

5.69 ± 0.18 ± 0.14	2638 ± 84	KO	09 BELL	$e^+ e^-$ at $\Upsilon(4S)$
6.5 ± 0.8 ± 0.4	189 ± 24	LINK	04F FOCS	γ A, $\bar{E}_\gamma \approx 180$ GeV
7.7 ± 1.7 ± 0.8	59 ± 13	AITALA	97C E791	π^- A, 500 GeV
7.2 ± 2.3 ± 1.7	21	FRABETTI	95E E687	γ Be, $\bar{E}_\gamma = 220$ GeV

$\Gamma(K^+\rho^0)/\Gamma(K^+\pi^+\pi^-)$ $\Gamma_{107}/\Gamma_{106}$

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

VALUE	DOCUMENT ID	TECN	COMMENT
0.39 ± 0.09 OUR AVERAGE			
0.3943 ± 0.0787 ± 0.0815	LINK	04F FOCS	Dalitz fit, 189 evts
0.37 ± 0.14 ± 0.07	AITALA	97C E791	Dalitz fit, 59 evts

$\Gamma(K^+f_0(980), f_0(980) \rightarrow \pi^+\pi^-)/\Gamma(K^+\pi^+\pi^-)$ $\Gamma_{109}/\Gamma_{106}$

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

VALUE	DOCUMENT ID	TECN	COMMENT
0.0892 ± 0.0333 ± 0.0412	LINK	04F FOCS	Dalitz fit, 189 evts

$\Gamma(K^*(892)^0\pi^+, K^*(892)^0 \rightarrow K^+\pi^-)/\Gamma(K^+\pi^+\pi^-)$ $\Gamma_{108}/\Gamma_{106}$

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

VALUE	DOCUMENT ID	TECN	COMMENT
0.47 ± 0.08 OUR AVERAGE			
0.5220 ± 0.0684 ± 0.0638	LINK	04F FOCS	Dalitz fit, 189 evts
0.35 ± 0.14 ± 0.01	AITALA	97C E791	Dalitz fit, 59 evts

$\Gamma(K_2^*(1430)^0\pi^+, K_2^*(1430)^0 \rightarrow K^+\pi^-)/\Gamma(K^+\pi^+\pi^-)$ $\Gamma_{110}/\Gamma_{106}$

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

VALUE	DOCUMENT ID	TECN	COMMENT
0.0803 ± 0.0372 ± 0.0391	LINK	04F FOCS	Dalitz fit, 189 evts

$\Gamma(K^+\pi^+\pi^- \text{ nonresonant})/\Gamma(K^+\pi^+\pi^-)$ $\Gamma_{111}/\Gamma_{106}$

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

VALUE	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.36 ± 0.14 ± 0.07	⁴⁸ AITALA	97C E791	Dalitz fit, 59 evts
⁴⁸ LINK 04F, with three times as many events, finds no need for a nonresonant amplitude.			

$\Gamma(2K^+K^-)/\Gamma(K^-2\pi^+)$ Γ_{112}/Γ_{37}

VALUE (units 10 ⁻⁴)	EVTS	DOCUMENT ID	TECN	COMMENT
9.49 ± 2.17 ± 0.22	65	⁴⁹ LINK	02I FOCS	γ nucleus, \approx 180 GeV
⁴⁹ LINK 02I finds little evidence for ϕK^+ or $f_0(980)K^+$ submodes.				

————— Rare or forbidden modes —————

$\Gamma(\pi^+e^+e^-)/\Gamma_{\text{total}}$ Γ_{113}/Γ

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
<5.9 × 10⁻⁶	90	⁵⁰	RUBIN	10	CLEO e^+e^- at $\psi(3770)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<7.4 × 10 ⁻⁶	90		HE	05A	CLEO See RUBIN 10
<5.2 × 10 ⁻⁵	90		AITALA	99G	E791 $\pi^- N$ 500 GeV
<1.1 × 10 ⁻⁴	90		FRABETTI	97B	E687 γ Be, $\bar{E}_\gamma \approx$ 220 GeV
<6.6 × 10 ⁻⁵	90		AITALA	96	E791 $\pi^- N$ 500 GeV
<2.5 × 10 ⁻³	90		WEIR	90B	MRK2 e^+e^- 29 GeV
<2.6 × 10 ⁻³	90	39	HAAS	88	CLEO e^+e^- 10 GeV

⁵⁰This RUBIN 10 limit is for the e^+e^- mass in the continuum away from the $\phi(1020)$. See the next data block.

$\Gamma(\pi^+ \phi, \phi \rightarrow e^+ e^-) / \Gamma_{\text{total}}$ Γ_{114} / Γ

This is *not* a test for the $\Delta C = 1$ weak neutral current, but leads to the $\pi^+ e^+ e^-$ final state.

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
$(1.7^{+1.4}_{-0.9} \pm 0.1) \times 10^{-6}$	4	⁵¹ RUBIN	10	CLEO $e^+ e^-$ at $\psi(3770)$

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

$(2.7^{+3.6}_{-1.8} \pm 0.2) \times 10^{-6}$	2	HE	05A	CLEO See RUBIN 10
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⁵¹This RUBIN 10 result is consistent with the known $D^+ \rightarrow \phi \pi^+$ and $\phi \rightarrow e^+ e^-$ fractions.

$\Gamma(\pi^+ \mu^+ \mu^-) / \Gamma_{\text{total}}$ Γ_{115} / Γ

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$< 3.9 \times 10^{-6}$	90		⁵² ABAZOV	08D D0	$p\bar{p}$, $E_{\text{cm}} = 1.96$ TeV

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

$< 8.8 \times 10^{-6}$	90		LINK	03F FOCS	γ nucleus, $\bar{E}_\gamma \approx 180$ GeV
$< 1.5 \times 10^{-5}$	90		AITALA	99G E791	$\pi^- N$ 500 GeV
$< 8.9 \times 10^{-5}$	90		FRABETTI	97B E687	γ Be, $\bar{E}_\gamma \approx 220$ GeV
$< 1.8 \times 10^{-5}$	90		AITALA	96 E791	$\pi^- N$ 500 GeV
$< 2.2 \times 10^{-4}$	90	0	KODAMA	95 E653	π^- emulsion 600 GeV
$< 5.9 \times 10^{-3}$	90		WEIR	90B MRK2	$e^+ e^-$ 29 GeV
$< 2.9 \times 10^{-3}$	90	36	HAAS	88 CLEO	$e^+ e^-$ 10 GeV

⁵²This ABAZOV 08D limit is for the $\mu^+ \mu^-$ mass in the continuum away from the $\phi(1020)$. See the next data block.

$\Gamma(\pi^+ \phi, \phi \rightarrow \mu^+ \mu^-) / \Gamma_{\text{total}}$ Γ_{116} / Γ

This is *not* a test for the $\Delta C = 1$ weak neutral current, but leads to the $\pi^+ \mu^+ \mu^-$ final state.

VALUE	DOCUMENT ID	TECN	COMMENT
$(1.8 \pm 0.5 \pm 0.6) \times 10^{-6}$	⁵³ ABAZOV	08D D0	$p\bar{p}$, $E_{\text{cm}} = 1.96$ TeV

⁵³This ABAZOV 08D value is consistent with the known $D^+ \rightarrow \phi \pi^+$ and $\phi \rightarrow \mu^+ \mu^-$ fractions.

$\Gamma(\rho^+ \mu^+ \mu^-) / \Gamma_{\text{total}}$ Γ_{117} / Γ

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$< 5.6 \times 10^{-4}$	90	0	KODAMA	95 E653	π^- emulsion 600 GeV

$\Gamma(K^+ e^+ e^-) / \Gamma_{\text{total}}$ Γ_{118} / Γ

Both quarks would have to change flavor for this decay to occur.

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$< 3.0 \times 10^{-6}$	90	RUBIN	10	CLEO $e^+ e^-$ at $\psi(3770)$

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

$< 6.2 \times 10^{-6}$	90	HE	05A	CLEO See RUBIN 10
$< 2.0 \times 10^{-4}$	90	AITALA	99G E791	$\pi^- N$ 500 GeV
$< 2.0 \times 10^{-4}$	90	FRABETTI	97B E687	γ Be, $\bar{E}_\gamma \approx 220$ GeV
$< 4.8 \times 10^{-3}$	90	WEIR	90B MRK2	$e^+ e^-$ 29 GeV

$\Gamma(K^+ \mu^+ \mu^-)/\Gamma_{\text{total}}$ **Γ_{119}/Γ**

Both quarks would have to change flavor for this decay to occur.

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$<9.2 \times 10^{-6}$	90	LINK	03F FOCS	γ nucleus, $\bar{E}_\gamma \approx 180$ GeV
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
$<4.4 \times 10^{-5}$	90	AITALA	99G E791	$\pi^- N$ 500 GeV
$<9.7 \times 10^{-5}$	90	FRABETTI	97B E687	γ Be, $\bar{E}_\gamma \approx 220$ GeV
$<3.2 \times 10^{-4}$	90	KODAMA	95 E653	π^- emulsion 600 GeV
$<9.2 \times 10^{-3}$	90	WEIR	90B MRK2	$e^+ e^-$ 29 GeV

$\Gamma(\pi^+ e^\pm \mu^\mp)/\Gamma_{\text{total}}$ **Γ_{120}/Γ**

A test of lepton-family-number conservation.

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$<3.4 \times 10^{-5}$	90	AITALA	99G E791	$\pi^- N$ 500 GeV

$\Gamma(\pi^+ e^+ \mu^-)/\Gamma_{\text{total}}$ **Γ_{121}/Γ**

A test of lepton-family-number conservation.

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
$<1.1 \times 10^{-4}$	90	FRABETTI	97B E687	γ Be, $\bar{E}_\gamma \approx 220$ GeV
$<3.3 \times 10^{-3}$	90	WEIR	90B MRK2	$e^+ e^-$ 29 GeV

$\Gamma(\pi^+ e^- \mu^+)/\Gamma_{\text{total}}$ **Γ_{122}/Γ**

A test of lepton-family-number conservation.

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
$<1.3 \times 10^{-4}$	90	FRABETTI	97B E687	γ Be, $\bar{E}_\gamma \approx 220$ GeV
$<3.3 \times 10^{-3}$	90	WEIR	90B MRK2	$e^+ e^-$ 29 GeV

$\Gamma(K^+ e^\pm \mu^\mp)/\Gamma_{\text{total}}$ **Γ_{123}/Γ**

A test of lepton-family-number conservation.

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$<6.8 \times 10^{-5}$	90	AITALA	99G E791	$\pi^- N$ 500 GeV

$\Gamma(K^+ e^+ \mu^-)/\Gamma_{\text{total}}$ **Γ_{124}/Γ**

A test of lepton-family-number conservation.

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
$<1.3 \times 10^{-4}$	90	FRABETTI	97B E687	γ Be, $\bar{E}_\gamma \approx 220$ GeV
$<3.4 \times 10^{-3}$	90	WEIR	90B MRK2	$e^+ e^-$ 29 GeV

$\Gamma(K^+ e^- \mu^+)/\Gamma_{\text{total}}$ **Γ_{125}/Γ**

A test of lepton-family-number conservation.

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
$<1.2 \times 10^{-4}$	90	FRABETTI	97B E687	γ Be, $\bar{E}_\gamma \approx 220$ GeV
$<3.4 \times 10^{-3}$	90	WEIR	90B MRK2	$e^+ e^-$ 29 GeV

$\Gamma(\pi^- 2e^+)/\Gamma_{\text{total}}$ **Γ_{126}/Γ**

A test of lepton-number conservation.

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$<1.1 \times 10^{-6}$	90	RUBIN	10	CLEO $e^+ e^-$ at $\psi(3770)$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
$<3.6 \times 10^{-6}$	90	HE	05A	CLEO See RUBIN 10
$<9.6 \times 10^{-5}$	90	AITALA	99G	E791 $\pi^- N$ 500 GeV
$<1.1 \times 10^{-4}$	90	FRABETTI	97B	E687 γ Be, $\bar{E}_\gamma \approx 220$ GeV
$<4.8 \times 10^{-3}$	90	WEIR	90B	MRK2 $e^+ e^-$ 29 GeV

$\Gamma(\pi^- 2\mu^+)/\Gamma_{\text{total}}$ **Γ_{127}/Γ**

A test of lepton-number conservation.

<u>VALUE</u>	<u>CL%</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$<4.8 \times 10^{-6}$	90		LINK	03F	FOCS γ nucleus, $\bar{E}_\gamma \approx 180$ GeV
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●					
$<1.7 \times 10^{-5}$	90		AITALA	99G	E791 $\pi^- N$ 500 GeV
$<8.7 \times 10^{-5}$	90		FRABETTI	97B	E687 γ Be, $\bar{E}_\gamma \approx 220$ GeV
$<2.2 \times 10^{-4}$	90	0	KODAMA	95	E653 π^- emulsion 600 GeV
$<6.8 \times 10^{-3}$	90		WEIR	90B	MRK2 $e^+ e^-$ 29 GeV

$\Gamma(\pi^- e^+ \mu^+)/\Gamma_{\text{total}}$ **Γ_{128}/Γ**

A test of lepton-number conservation.

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$<5.0 \times 10^{-5}$	90	AITALA	99G	E791 $\pi^- N$ 500 GeV
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
$<1.1 \times 10^{-4}$	90	FRABETTI	97B	E687 γ Be, $\bar{E}_\gamma \approx 220$ GeV
$<3.7 \times 10^{-3}$	90	WEIR	90B	MRK2 $e^+ e^-$ 29 GeV

$\Gamma(\rho^- 2\mu^+)/\Gamma_{\text{total}}$ **Γ_{129}/Γ**

A test of lepton-number conservation.

<u>VALUE</u>	<u>CL%</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$<5.6 \times 10^{-4}$	90	0	KODAMA	95	E653 π^- emulsion 600 GeV

$\Gamma(K^- 2e^+)/\Gamma_{\text{total}}$ **Γ_{130}/Γ**

A test of lepton-number conservation.

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$<3.5 \times 10^{-6}$	90	RUBIN	10	CLEO $e^+ e^-$ at $\psi(3770)$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
$<4.5 \times 10^{-6}$	90	HE	05A	CLEO See RUBIN 10
$<1.2 \times 10^{-4}$	90	FRABETTI	97B	E687 γ Be, $\bar{E}_\gamma \approx 220$ GeV
$<9.1 \times 10^{-3}$	90	WEIR	90B	MRK2 $e^+ e^-$ 29 GeV

$\Gamma(K^- 2\mu^+)/\Gamma_{\text{total}}$ **Γ_{131}/Γ**

A test of lepton-number conservation.

<u>VALUE</u>	<u>CL%</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$<1.3 \times 10^{-5}$	90		LINK	03F	FOCS γ nucleus, $\bar{E}_\gamma \approx 180$ GeV

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

$<1.2 \times 10^{-4}$	90		FRABETTI	97B	E687	γ Be, $\bar{E}_\gamma \approx 220$ GeV
$<3.2 \times 10^{-4}$	90	0	KODAMA	95	E653	π^- emulsion 600 GeV
$<4.3 \times 10^{-3}$	90		WEIR	90B	MRK2	e^+e^- 29 GeV

$\Gamma(K^- e^+ \mu^+)/\Gamma_{\text{total}}$ Γ_{132}/Γ

A test of lepton-number conservation.

VALUE	CL%		DOCUMENT ID	TECN	COMMENT
$<1.3 \times 10^{-4}$	90		FRABETTI	97B	E687 γ Be, $\bar{E}_\gamma \approx 220$ GeV

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

$<4.0 \times 10^{-3}$	90		WEIR	90B	MRK2	e^+e^- 29 GeV
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$\Gamma(K^*(892)^- 2\mu^+)/\Gamma_{\text{total}}$ Γ_{133}/Γ

A test of lepton-number conservation.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<8.5 \times 10^{-4}$	90	0	KODAMA	95	E653 π^- emulsion 600 GeV

D^\pm CP-VIOLATING DECAY-RATE ASYMMETRIES

This is the difference between D^+ and D^- partial widths for these modes divided by the sum of the widths.

$A_{CP}(\mu^\pm \nu)$ in $D^+ \rightarrow \mu^+ \nu_\mu, D^- \rightarrow \mu^- \bar{\nu}_\mu$

VALUE (%)		DOCUMENT ID	TECN	COMMENT
$+8 \pm 8$		EISENSTEIN 08	CLEO	e^+e^- at $\psi(3770)$

$A_{CP}(K_S^0 \pi^\pm)$ in $D^\pm \rightarrow K_S^0 \pi^\pm$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
-0.80 ± 0.26	OUR AVERAGE			
$-0.71 \pm 0.19 \pm 0.20$		KO 10	BELL	$e^+e^- \approx \Upsilon(4S)$
$-1.3 \pm 0.7 \pm 0.3$	30k	MENDEZ 10	CLEO	e^+e^- at 3774 MeV
$-1.6 \pm 1.5 \pm 0.9$	10.6k	⁵⁴ LINK 02B	FOCS	γ nucleus, $\bar{E}_\gamma \approx 180$ GeV

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

$-0.6 \pm 1.0 \pm 0.3$		DOBBS 07	CLEO	See MENDEZ 10
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⁵⁴LINK 02B measures $N(D^+ \rightarrow K_S^0 \pi^+)/N(D^+ \rightarrow K^- \pi^+ \pi^+)$, the ratio of numbers of events observed, and similarly for the D^- .

$A_{CP}(K^\mp 2\pi^\pm)$ in $D^+ \rightarrow K^- 2\pi^+, D^- \rightarrow K^+ 2\pi^-$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
$-0.1 \pm 0.4 \pm 0.9$	231k	MENDEZ 10	CLEO	e^+e^- at 3774 MeV

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

$-0.5 \pm 0.4 \pm 0.9$		DOBBS 07	CLEO	See MENDEZ 10
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$A_{CP}(K^\mp \pi^\pm \pi^\pm \pi^0)$ in $D^+ \rightarrow K^- \pi^+ \pi^+ \pi^0, D^- \rightarrow K^+ \pi^- \pi^- \pi^0$

VALUE (%)		DOCUMENT ID	TECN	COMMENT
$+1.0 \pm 0.9 \pm 0.9$		DOBBS 07	CLEO	e^+e^- at $\psi(3770)$

$A_{CP}(K_S^0 \pi^\pm \pi^0)$ in $D^+ \rightarrow K_S^0 \pi^+ \pi^0, D^- \rightarrow K_S^0 \pi^- \pi^0$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
+0.3±0.9±0.3	DOBBS	07	CLEO e^+e^- at $\psi(3770)$

$A_{CP}(K_S^0 \pi^\pm \pi^+ \pi^-)$ in $D^+ \rightarrow K_S^0 \pi^+ \pi^+ \pi^-, D^- \rightarrow K_S^0 \pi^- \pi^- \pi^+$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
+0.1±1.1±0.6	DOBBS	07	CLEO e^+e^- at $\psi(3770)$

$A_{CP}(\pi^\pm \pi^0)$ in $D^\pm \rightarrow \pi^\pm \pi^0$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
+2.9±2.9±0.3	2.6k	MENDEZ	10	CLEO e^+e^- at 3774 MeV

$A_{CP}(\pi^\pm \eta)$ in $D^\pm \rightarrow \pi^\pm \eta$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
-2.0±2.3±0.3	2.9k	MENDEZ	10	CLEO e^+e^- at 3774 MeV

$A_{CP}(\pi^\pm \eta'(958))$ in $D^\pm \rightarrow \pi^\pm \eta'(958)$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
-4.0±3.4±0.3	1.0k	MENDEZ	10	CLEO e^+e^- at 3774 MeV

$A_{CP}(K_S^0 K^\pm)$ in $D^\pm \rightarrow K_S^0 K^\pm$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
-0.1 ±0.6 OUR AVERAGE				

-0.16±0.58±0.25		KO	10	BELL $e^+e^- \approx \Upsilon(4S)$
-0.2 ±1.5 ±0.9	5.2k	MENDEZ	10	CLEO e^+e^- at 3774 MeV
+7.1 ±6.1 ±1.2	949	⁵⁵ LINK	02B	FOCS γ nucleus, $\bar{E}_\gamma \approx 180$ GeV

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

+6.9 ±6.0 ±1.5	949	⁵⁶ LINK	02B	FOCS γ nucleus, $\bar{E}_\gamma \approx 180$ GeV
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⁵⁵LINK 02B measures $N(D^+ \rightarrow K_S^0 K^+)/N(D^+ \rightarrow K_S^0 \pi^+)$, the ratio of numbers of events observed, and similarly for the D^- .

⁵⁶LINK 02B measures $N(D^+ \rightarrow K_S^0 K^+)/N(D^+ \rightarrow K^- \pi^+ \pi^+)$, the ratio of numbers of events observed, and similarly for the D^- .

$A_{CP}(K^+ K^- \pi^\pm)$ in $D^\pm \rightarrow K^+ K^- \pi^\pm$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
0.3 ±0.6 OUR AVERAGE				

-0.03±0.84±0.29		RUBIN	08	CLEO e^+e^- , 3774 MeV
-0.1 ±1.5 ±0.8		DOBBS	07	CLEO e^+e^- at $\psi(3770)$
+1.4 ±1.0 ±0.8	43k±321	⁵⁷ AUBERT	05S	BABR $e^+e^- \approx \Upsilon(4S)$
+0.6 ±1.1 ±0.5	14k	⁵⁸ LINK	00B	FOCS
-1.4 ±2.9		⁵⁸ AITALA	97B	E791 $-0.062 < A_{CP} < +0.034$ (90% CL)
-3.1 ±6.8		⁵⁸ FRABETTI	94I	E687 $-0.14 < A_{CP} < +0.081$ (90% CL)

⁵⁷AUBERT 05S measures $N(D^+ \rightarrow K^+ K^- \pi^+)/N(D_s^+ \rightarrow K^+ K^- \pi^+)$, the ratio of the numbers of events observed, and similarly for the D^- .

⁵⁸FRABETTI 94I, AITALA 98C, and LINK 00B measure $N(D^+ \rightarrow K^- K^+ \pi^+)/N(D^+ \rightarrow K^- \pi^+ \pi^+)$, the ratio of numbers of events observed, and similarly for the D^- .

$A_{CP}(K^\pm K^{*0})$ in $D^+ \rightarrow K^+ \bar{K}^{*0}$, $D^- \rightarrow K^- K^{*0}$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
0.1 ± 1.3 OUR AVERAGE				
- 0.4 ± 2.0 ± 0.6		RUBIN	08 CLEO	Fit-fraction asymmetry
+ 0.9 ± 1.7 ± 0.7	11k ± 122	⁵⁹ AUBERT	05S BABR	$e^+ e^- \approx \Upsilon(4S)$
- 1.0 ± 5.0		⁶⁰ AITALA	97B E791	-0.092 < A_{CP} < +0.072 (90% CL)
-12 ± 13		⁶⁰ FRABETTI	94I E687	-0.33 < A_{CP} < +0.094 (90% CL)

⁵⁹ AUBERT 05S measures $N(D^+ \rightarrow K^+ \bar{K}^{*0})/N(D_S^+ \rightarrow K^+ K^- \pi^+)$, the ratio of the numbers of events observed, and similarly for the D^- .

⁶⁰ FRABETTI 94I and AITALA 97B measure $N(D^+ \rightarrow K^+ \bar{K}^*(892)^0)/N(D^+ \rightarrow K^- \pi^+ \pi^+)$, the ratio of numbers of events observed, and similarly for the D^- .

$A_{CP}(\phi\pi^\pm)$ in $D^\pm \rightarrow \phi\pi^\pm$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
-0.9 ± 1.1 OUR AVERAGE				
-1.8 ± 1.6 ^{+0.2} _{-0.4}		RUBIN	08 CLEO	Fit-fraction asymmetry
+0.2 ± 1.5 ± 0.6	10k ± 136	⁶¹ AUBERT	05S BABR	$e^+ e^- \approx \Upsilon(4S)$
-2.8 ± 3.6		⁶² AITALA	97B E791	-0.087 < A_{CP} < +0.031 (90% CL)
+6.6 ± 8.6		⁶² FRABETTI	94I E687	-0.075 < A_{CP} < +0.21 (90% CL)

⁶¹ AUBERT 05S measures $N(D^+ \rightarrow \phi\pi^+)/N(D_S^+ \rightarrow K^+ K^- \pi^+)$, the ratio of the numbers of events observed, and similarly for the D^- .

⁶² FRABETTI 94I and AITALA 97B measure $N(D^+ \rightarrow \phi\pi^+)/N(D^+ \rightarrow K^- \pi^+ \pi^+)$, the ratio of numbers of events observed, and similarly for the D^- .

$A_{CP}(K^\pm K_0^*(1430)^0)$ in $D^+ \rightarrow K^+ \bar{K}_0^*(1430)^0$, $D^- \rightarrow K^- K_0^*(1430)^0$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
+8 ± 6 ⁺⁴ ₋₂	RUBIN	08 CLEO	Fit-fraction asymmetry

$A_{CP}(K^\pm K_2^*(1430)^0)$ in $D^+ \rightarrow K^+ \bar{K}_2^*(1430)^0$, $D^- \rightarrow K^- K_2^*(1430)^0$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
+43 ± 19 ⁺⁵ ₋₁₈	RUBIN	08 CLEO	Fit-fraction asymmetry

$A_{CP}(K^\pm K_0^*(800))$ in $D^+ \rightarrow K^+ \bar{K}_0^*(800)$, $D^- \rightarrow K^- K_0^*(800)$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
-12 ± 11 ⁺¹⁴ ₋₆	RUBIN	08 CLEO	Fit-fraction asymmetry

$A_{CP}(a_0(1450)^0\pi^\pm)$ in $D^\pm \rightarrow a_0(1450)^0\pi^\pm$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
-19 ± 12 ⁺⁸ ₋₁₁	RUBIN	08 CLEO	Fit-fraction asymmetry

$A_{CP}(\phi(1680)\pi^\pm)$ in $D^\pm \rightarrow \phi(1680)\pi^\pm$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
$-9 \pm 22 \pm 14$	RUBIN	08	CLEO Fit-fraction asymmetry

$A_{CP}(\pi^+\pi^-\pi^\pm)$ in $D^\pm \rightarrow \pi^+\pi^-\pi^\pm$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
-1.7 ± 4.2	⁶³ AITALA	97B E791	$-0.086 < A_{CP} < +0.052$ (90% CL)
⁶³ AITALA 97B measure $N(D^+ \rightarrow \pi^+\pi^-\pi^+)/N(D^+ \rightarrow K^-\pi^+\pi^+)$, the ratio of numbers of events observed, and similarly for the D^- .			

$A_{CP}(K_S^0 K^\pm \pi^+ \pi^-)$ in $D^\pm \rightarrow K_S^0 K^\pm \pi^+ \pi^-$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
$-4.2 \pm 6.4 \pm 2.2$	523 ± 32	LINK	05E FOCS	γ A, $\bar{E}_\gamma \approx 180$ GeV

$A_{CP}(K^\pm \pi^0)$ in $D^\pm \rightarrow K^\pm \pi^0$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
$-3.5 \pm 10.7 \pm 0.9$	343 ± 37	MENDEZ	10 CLEO	e^+e^- at 3774 MeV

D^+-D^- T-VIOLATING DECAY-RATE ASYMMETRIES

$A_{Tviol}(K_S^0 K^\pm \pi^+ \pi^-)$ in $D^\pm \rightarrow K_S^0 K^\pm \pi^+ \pi^-$

$C_T \equiv \vec{p}_{K^+} \cdot (\vec{p}_{\pi^+} \times \vec{p}_{\pi^-})$ is a T -odd correlation of the K^+ , π^+ , and π^- momenta for the D^+ . $\bar{C}_T \equiv \vec{p}_{K^-} \cdot (\vec{p}_{\pi^-} \times \vec{p}_{\pi^+})$ is the corresponding quantity for the D^- . $A_T \equiv [\Gamma(C_T > 0) - \Gamma(C_T < 0)] / [\Gamma(C_T > 0) + \Gamma(C_T < 0)]$ would, in the absence of strong phases, test for T violation in D^+ decays (the Γ 's are partial widths). With $\bar{A}_T \equiv [\Gamma(-\bar{C}_T > 0) - \Gamma(-\bar{C}_T < 0)] / [\Gamma(-\bar{C}_T > 0) + \Gamma(-\bar{C}_T < 0)]$, the asymmetry $A_{Tviol} \equiv \frac{1}{2}(A_T - \bar{A}_T)$ tests for T violation even with nonzero strong phases.

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
$+0.023 \pm 0.062 \pm 0.022$	523 ± 32	LINK	05E FOCS	γ A, $\bar{E}_\gamma \approx 180$ GeV

$D^+ \rightarrow (\bar{K}^0/\pi^0/\bar{K}^{*0})\ell^+\nu_\ell$ FORM FACTORS

$f_+(0)|V_{cs}|$ in $D^+ \rightarrow \bar{K}^0\ell^+\nu_\ell$

VALUE	DOCUMENT ID	TECN	COMMENT
$0.707 \pm 0.010 \pm 0.009$	BESSON	09	CLEO $\bar{K}^0 e^+ \nu_e$ 3-parameter fit

$r_1 \equiv a_1/a_0$ in $D^+ \rightarrow \bar{K}^0\ell^+\nu_\ell$

VALUE	DOCUMENT ID	TECN	COMMENT
$-1.66 \pm 0.44 \pm 0.10$	BESSON	09	CLEO $\bar{K}^0 e^+ \nu_e$ 3-parameter fit

$r_2 \equiv a_2/a_0$ in $D^+ \rightarrow \bar{K}^0\ell^+\nu_\ell$

VALUE	DOCUMENT ID	TECN	COMMENT
$-14 \pm 11 \pm 1$	BESSON	09	CLEO $\bar{K}^0 e^+ \nu_e$ 3-parameter fit

$f_+(0)|V_{cd}|$ in $D^+ \rightarrow \pi^0\ell^+\nu_\ell$

VALUE	DOCUMENT ID	TECN	COMMENT
$0.146 \pm 0.007 \pm 0.002$	BESSON	09	CLEO $\pi^0 e^+ \nu_e$ 3-parameter fit

$$r_1 \equiv a_1/a_0 \text{ in } D^+ \rightarrow \pi^0 \ell^+ \nu_\ell$$

VALUE	DOCUMENT ID	TECN	COMMENT
$-1.37 \pm 0.88 \pm 0.24$	BESSON 09	CLEO	$\pi^0 e^+ \nu_e$ 3-parameter fit

$$r_2 \equiv a_2/a_0 \text{ in } D^+ \rightarrow \pi^0 \ell^+ \nu_\ell$$

VALUE	DOCUMENT ID	TECN	COMMENT
$-4 \pm 5 \pm 1$	BESSON 09	CLEO	$\pi^0 e^+ \nu_e$ 3-parameter fit

$$r_v \equiv V(0)/A_1(0) \text{ in } D^+ \rightarrow \bar{K}^*(892)^0 \ell^+ \nu_\ell$$

See also BRIERE 10 for $\bar{K}^* \ell^+ \nu_\ell$ helicity-basis form-factor measurements.

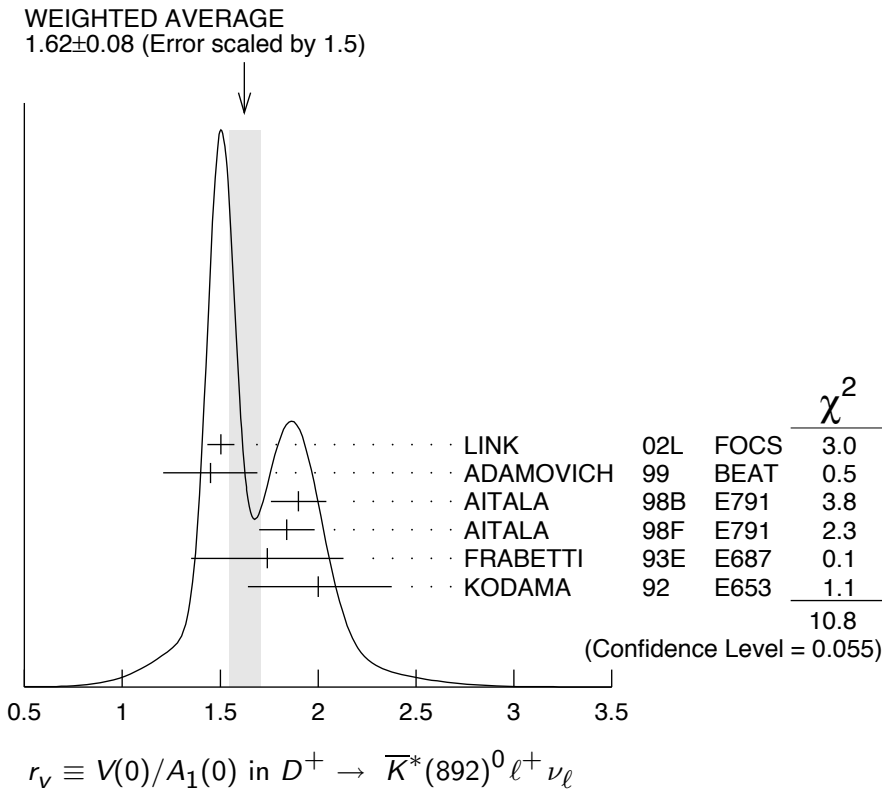
VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
1.62 ± 0.08 OUR AVERAGE		Error includes scale factor of 1.5. See the ideogram below.		
$1.504 \pm 0.057 \pm 0.039$	15k	⁶⁴ LINK 02L	FOCS	$\bar{K}^*(892)^0 \mu^+ \nu_\mu$
$1.45 \pm 0.23 \pm 0.07$	763	ADAMOVICH 99	BEAT	$\bar{K}^*(892)^0 \mu^+ \nu_\mu$
$1.90 \pm 0.11 \pm 0.09$	3000	⁶⁵ AITALA 98B	E791	$\bar{K}^*(892)^0 e^+ \nu_e$
$1.84 \pm 0.11 \pm 0.09$	3034	AITALA 98F	E791	$\bar{K}^*(892)^0 \mu^+ \nu_\mu$
$1.74 \pm 0.27 \pm 0.28$	874	FRABETTI 93E	E687	$\bar{K}^*(892)^0 \mu^+ \nu_\mu$
$2.00^{+0.34}_{-0.32} \pm 0.16$	305	KODAMA 92	E653	$\bar{K}^*(892)^0 \mu^+ \nu_\mu$

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

$2.0 \pm 0.6 \pm 0.3$	183	ANJOS 90E	E691	$\bar{K}^*(892)^0 e^+ \nu_e$
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⁶⁴ LINK 02L includes the effects of interference with an S-wave background. This much improves the goodness of fit, but does not much shift the values of the form factors.

⁶⁵ This is slightly different from the AITALA 98B value: see ref. [5] in AITALA 98F.



$r_2 \equiv A_2(0)/A_1(0)$ in $D^+ \rightarrow \bar{K}^*(892)^0 \ell^+ \nu_\ell$

See also BRIERE 10 for $\bar{K}^* \ell^+ \nu_\ell$ helicity-basis form-factor measurements.

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.83 ± 0.05 OUR AVERAGE				
0.875 ± 0.049 ± 0.064	15k	⁶⁶ LINK	02L FOCs	$\bar{K}^*(892)^0 \mu^+ \nu_\mu$
1.00 ± 0.15 ± 0.03	763	ADAMOVICH	99 BEAT	$\bar{K}^*(892)^0 \mu^+ \nu_\mu$
0.71 ± 0.08 ± 0.09	3000	AITALA	98B E791	$\bar{K}^*(892)^0 e^+ \nu_e$
0.75 ± 0.08 ± 0.09	3034	AITALA	98F E791	$\bar{K}^*(892)^0 \mu^+ \nu_\mu$
0.78 ± 0.18 ± 0.10	874	FRABETTI	93E E687	$\bar{K}^*(892)^0 \mu^+ \nu_\mu$
0.82 $^{+0.22}_{-0.23}$ ± 0.11	305	KODAMA	92 E653	$\bar{K}^*(892)^0 \mu^+ \nu_\mu$

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

0.0 ± 0.5 ± 0.2	183	ANJOS	90E E691	$\bar{K}^*(892)^0 e^+ \nu_e$
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⁶⁶ LINK 02L includes the effects of interference with an *S*-wave background. This much improves the goodness of fit, but does not much shift the values of the form factors.

$r_3 \equiv A_3(0)/A_1(0)$ in $D^+ \rightarrow \bar{K}^*(892)^0 \ell^+ \nu_\ell$

See also BRIERE 10 for $\bar{K}^* \ell^+ \nu_\ell$ helicity-basis form-factor measurements.

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.04 ± 0.33 ± 0.29	3034	AITALA	98F E791	$\bar{K}^*(892)^0 \mu^+ \nu_\mu$

Γ_L/Γ_T in $D^+ \rightarrow \bar{K}^*(892)^0 \ell^+ \nu_\ell$

See also BRIERE 10 for $\bar{K}^* \ell^+ \nu_\ell$ helicity-basis form-factor measurements.

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
1.13 ± 0.08 OUR AVERAGE				
1.09 ± 0.10 ± 0.02	763	ADAMOVICH	99 BEAT	$\bar{K}^*(892)^0 \mu^+ \nu_\mu$
1.20 ± 0.13 ± 0.13	874	FRABETTI	93E E687	$\bar{K}^*(892)^0 \mu^+ \nu_\mu$
1.18 ± 0.18 ± 0.08	305	KODAMA	92 E653	$\bar{K}^*(892)^0 \mu^+ \nu_\mu$

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

1.8 $^{+0.6}_{-0.4}$ ± 0.3	183	ANJOS	90E E691	$\bar{K}^*(892)^0 e^+ \nu_e$
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Γ_+/Γ_- in $D^+ \rightarrow \bar{K}^*(892)^0 \ell^+ \nu_\ell$

See also BRIERE 10 for $\bar{K}^* \ell^+ \nu_\ell$ helicity-basis form-factor measurements.

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.22 ± 0.06 OUR AVERAGE				Error includes scale factor of 1.6.
0.28 ± 0.05 ± 0.02	763	ADAMOVICH	99 BEAT	$\bar{K}^*(892)^0 \mu^+ \nu_\mu$
0.16 ± 0.05 ± 0.02	305	KODAMA	92 E653	$\bar{K}^*(892)^0 \mu^+ \nu_\mu$

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

0.15 $^{+0.07}_{-0.05}$ ± 0.03	183	ANJOS	90E E691	$\bar{K}^*(892)^0 e^+ \nu_e$
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