D^0 – THIS IS PART 1 OF 3

To reduce the size of this section's PostScript file, we have divided it into three PostScript files. We present the following index:

PART 1

PART 2

PART 3

D^0

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

D^0 MASS

The fit includes $D^\pm$, D^0, $D_s^\pm$, $D^{*\pm}$, D^{*0}, and $D_s^{*\pm}$ mass and mass difference measurements.

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
1864.5± 0.5 OUR FIT	Error includes scale factor of 1.1.				
1864.1± 1.0 OUR AVERAGE					
1864.6± 0.3±1.0	641	BARLAG	90C	ACCM	π^- Cu 230 GeV
1852 ± 7	16	ADAMOVICH	87	EMUL	Photoproduction
1861 ± 4		DERRICK	84	HRS	e^+e^- 29 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1856 ±36	22	ADAMOVICH	84B	EMUL	Photoproduction
1847 ± 7	1	FIORINO	81	EMUL	$\gamma N \rightarrow \overline{D}^0 +$
1863.8± 0.5		[1] SCHINDLER	81	MRK2	e^+e^- 3.77 GeV
1864.7± 0.6		[1] TRILLING	81	RVUE	e^+e^- 3.77 GeV
1863.0± 2.5	238	ASTON	80E	OMEG	$\gamma p \rightarrow \overline{D}^0$
1860 ± 2	143	[2] AVERY	80	SPEC	$\gamma N \rightarrow D^{*+}$
1869 ± 4	35	[2] AVERY	80	SPEC	$\gamma N \rightarrow D^{*+}$
1854 ± 6	94	[2] ATIYA	79	SPEC	$\gamma N \rightarrow D^0 \overline{D}^0$
1850 ±15	64	BALTAY	78C	HBC	$\nu N \rightarrow K^0 \pi\pi$
1863 ± 3		GOLDHABER	77	MRK1	D^0, D^+ recoil spectra
1863.3± 0.9		[1] PERUZZI	77	MRK1	e^+e^- 3.77 GeV
1868 ±11		PICCOLO	77	MRK1	e^+e^- 4.03, 4.41 GeV
1865 ±15	234	GOLDHABER	76	MRK1	$K\pi$ and $K3\pi$

[1] PERUZZI 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. TRILLING 81 enters the fit in the $D^\pm$ mass, and PERUZZI 77 and SCHINDLER 81 enter in the $m_{D^\pm} - m_{D^0}$, below.

[2] Error does not include possible systematic mass scale shift, estimated to be less than 5 MeV.

$\left|m_{D_1^0} - m_{D_2^0}\right|$

The D_1^0 and D_2^0 are the mass eigenstates of the D^0 meson.

VALUE (10^{10} $\hbar$ s^{-1})	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
< 21	90	[3,4] ANJOS	88C	E691	Photoproduction
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 40	90	[3] ALBRECHT	87K	ARG	e^+e^- 10 GeV
< 24	90	[5] LOUIS	86	SPEC	π^- W 225 GeV
<106	90	[3,6] YAMAMOTO	85	DLCO	e^+e^- 29 GeV
< 99	90	[5] BODEK	82	SPEC	π^-, pFe $\rightarrow D^0$

[3] Limit inferred from the D^0-$\overline{D}^0$ mixing ratio $\Gamma(K^+\pi^-$ or $K^+\pi^-\pi^+\pi^-$ (via $\overline{D}^0))/\Gamma(K^-\pi^+$ or $K^-\pi^+\pi^+\pi^-)$ near the end of the D^0 Listings.

[4] Calculated by us using $\Delta m = (2r/(1-r))^{1/2}\hbar/4.15 \times 10^{-13}$ s, where r is the D^0-$\overline{D}^0$ mixing ratio. See the data on $r \equiv \Gamma(K^+\pi^-$ or $K^+\pi^-\pi^+\pi^-$ (via $\overline{D}^0))/\Gamma(K^-\pi^+$ or $K^-\pi^+\pi^+\pi^-)$ near the end of the D^0 Listings.

[5] Limit inferred from the D^0-$\overline{D}^0$ mixing ratio $\Gamma(\mu^-$anything (via $\overline{D}^0))/\Gamma(\mu^+$anything) near the end of the D^0 Listings.

[6] YAMAMOTO 85 gives $\Delta m/\Gamma <$ 0.44. We use $\Gamma = \hbar/4.15 \times 10^{-13}$ s.

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

The fit includes $D^\pm$, D^0, $D_s^\pm$, $D^{*\pm}$, D^{*0}, and $D_s^{*\pm}$ mass and mass difference measurements.

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
4.78±0.10 OUR FIT				
4.74±0.28 OUR AVERAGE				
4.7 ±0.3	[7] SCHINDLER	81	MRK2	e^+e^- 3.77 GeV
5.0 ±0.8	[7] PERUZZI	77	MRK1	e^+e^- 3.77 GeV

[7] See the footnote on TRILLING 81 in the D^0 and $D^\pm$ sections on the mass.

D^0 MEAN LIFE

Measurements with an error $> 0.05 \times 10^{-12}$ s are omitted from the average, and those with an error $> 0.1 \times 10^{-12}$ s or that have been superseded by later results have been removed from the Listings.

VALUE (10^{-12} s)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
0.415±0.004 OUR AVERAGE					
0.413±0.004±0.003	16k	FRABETTI	94D	E687	$K^-\pi^+$, $K^-\pi^+\pi^+\pi^-$
0.424±0.011±0.007	5118	FRABETTI	91	E687	$K^-\pi^+$, $K^-\pi^+\pi^+\pi^-$
0.417±0.018±0.015	890	ALVAREZ	90	NA14	$K^-\pi^+$, $K^-\pi^+\pi^+\pi^-$
$0.388^{+0.023}_{-0.021}$	641	[8] BARLAG	90C	ACCM	π^- Cu 230 GeV
0.48 ±0.04 ±0.03	776	ALBRECHT	88I	ARG	e^+e^- 10 GeV
0.422±0.008±0.010	4212	RAAB	88	E691	Photoproduction
0.42 ±0.05	90	BARLAG	87B	ACCM	K^- and π^- 200 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$0.34\ ^{+0.06}_{-0.05}\ \pm0.03$	58	AMENDOLIA	88	SPEC	Photoproduction
$0.46\ ^{+0.06}_{-0.05}$	145	AGUILAR-...	87D	HYBR	$\pi^- p$ and pp
0.50 ±0.07 ±0.04	317	CSORNA	87	CLEO	e^+e^- 10 GeV
0.61 ±0.09 ±0.03	50	ABE	86	HYBR	γp 20 GeV
$0.47\ ^{+0.09}_{-0.08}\ \pm0.05$	74	GLADNEY	86	MRK2	e^+e^- 29 GeV
$0.43\ ^{+0.07}_{-0.05}\ ^{+0.01}_{-0.02}$	58	USHIDA	86B	EMUL	ν wideband
$0.37\ ^{+0.10}_{-0.07}$	26	BAILEY	85	SILI	π^- Be 200 GeV

[8] BARLAG 90C estimate systematic error to be negligible.

$\left|\Gamma_{D_1^0} - \Gamma_{D_2^0}\right|/\Gamma_{D^0}$ MEAN LIFE DIFFERENCE/AVERAGE

The D_1^0 and D_2^0 are the mass eigenstates of the D^0 meson.

VALUE	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
<0.17	90	[9,10] ANJOS	88C	E691	Photoproduction
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.21	90	[11] LOUIS	86	SPEC	π^- W 225 GeV
<0.8	90	[9] YAMAMOTO	85	DLCO	e^+e^- 29 GeV
<0.55	90	[11] BODEK	82	SPEC	π^-, pFe $\rightarrow$ D^0

[9] This limit is inferred from the D^0-$\overline{D}^0$ mixing ratio $\Gamma(K^+\pi^-$ or $K^+\pi^-\pi^+\pi^-$ (via $\overline{D}^0$))/$\Gamma(K^-\pi^+$ or $K^-\pi^+\pi^+\pi^-)$ near the end of the D^0 Listings.

[10] Calculated by us using $\Delta\Gamma/\Gamma = [8r/(1+r)]^{1/2}$, where r is the D^0-$\overline{D}^0$ mixing ratio. See the data on $r \equiv \Gamma(K^+\pi^-$ or $K^+\pi^-\pi^+\pi^-$ (via $\overline{D}^0$))/$\Gamma(K^-\pi^+$ or $K^-\pi^+\pi^+\pi^-)$ near the end of the D^0 Listings.

[11] Limit inferred from the D^0-$\overline{D}^0$ mixing ratio $\Gamma(\mu^-$ anything (via $\overline{D}^0$))/$\Gamma(\mu^+$ anything) near the end of the D^0 Listings.

D^0 DECAY MODES

$\overline{D}^0$ modes are charge conjugates of the modes below.

	Mode		Fraction (Γ_i/Γ)	Scale factor/ Confidence level
	Inclusive modes			
Γ_1	e^+ anything		(7.7 ± 1.2) %	S=1.1
Γ_2	μ^+ anything	[a]	(6.8 ± 1.0) %	
Γ_3	K^- anything		(53 ± 4) %	S=1.3
Γ_4	$\overline{K}^0$ anything + K^0 anything		(42 ± 5) %	
Γ_5	K^+ anything		$(3.4 ^{+0.6}_{-0.4})$ %	
Γ_6	η anything	[b]	< 13 %	CL=90%
	Semileptonic modes			
Γ_7	$K^- \ell^+ \nu_\ell$	[c]	(3.48 ± 0.16) %	S=1.1
Γ_8	$K^- e^+ \nu_e$		(3.64 ± 0.20) %	S=1.1
Γ_9	$K^- \mu^+ \nu_\mu$		(3.23 ± 0.19) %	
Γ_{10}	$K^- \pi^0 e^+ \nu_e$		$(1.6 ^{+1.3}_{-0.5})$ %	
Γ_{11}	$\overline{K}^0 \pi^- e^+ \nu_e$		$(2.8 ^{+1.7}_{-0.9})$ %	
Γ_{12}	$\overline{K}^*(892)^- e^+ \nu_e$ $\times$ B($K^{*-} \to \overline{K}^0 \pi^-$)		(1.34 ± 0.22) %	
Γ_{13}	$K^*(892)^- \ell^+ \nu_\ell$			
Γ_{14}	$K^- \pi^0 (\pi^0) e^+ \nu_e$			
Γ_{15}	$\overline{K}^0 \pi^- (\pi^0) e^+ \nu_e$			
Γ_{16}	$\overline{K}^*(892)^0 \pi^- e^+ \nu_e$			
Γ_{17}	$K^- \pi^+ \pi^- \mu^+ \nu_\mu$		$< 1.2 \times 10^{-3}$	CL=90%
Γ_{18}	$(\overline{K}^*(892)\pi)^- \mu^+ \nu_\mu$		$< 1.4 \times 10^{-3}$	CL=90%
Γ_{19}	$\pi^- e^+ \nu_e$		$(3.8 ^{+1.2}_{-1.0}) \times 10^{-3}$	

A fraction of the following resonance mode has already appeared above as a submode of a charged-particle mode.

	Mode		Fraction (Γ_i/Γ)	Scale factor/ Confidence level
Γ_{20}	$K^*(892)^- e^+ \nu_e$		(2.01 ± 0.33) %	
	Hadronic modes with a $\overline{K}$ or $\overline{K}K\overline{K}$			
Γ_{21}	$K^- \pi^+$		(3.83 ± 0.12) %	
Γ_{22}	$\overline{K}^0 \pi^0$		(2.11 ± 0.21) %	S=1.1
Γ_{23}	$\overline{K}^0 \pi^+ \pi^-$	[d]	(5.4 ± 0.4) %	S=1.2
Γ_{24}	$\overline{K}^0 \rho^0$		(1.20 ± 0.17) %	
Γ_{25}	$\overline{K}^0 f_0(980)$ $\times$ B($f_0 \to \pi^+ \pi^-$)		$(3.0 \pm 0.8) \times 10^{-3}$	
Γ_{26}	$\overline{K}^0 f_2(1270)$ $\times$ B($f_2 \to \pi^+ \pi^-$)		$(2.3 \pm 0.9) \times 10^{-3}$	
Γ_{27}	$\overline{K}^0 f_0(1370)$ $\times$ B($f_0 \to \pi^+ \pi^-$)		$(4.3 \pm 1.3) \times 10^{-3}$	
Γ_{28}	$K^*(892)^- \pi^+$ $\times$ B($K^{*-} \to \overline{K}^0 \pi^-$)		(3.3 ± 0.3) %	
Γ_{29}	$K_0^*(1430)^- \pi^+$ $\times$ B($K_0^*(1430)^- \to \overline{K}^0 \pi^-$)		$(6.4 \pm 1.6) \times 10^{-3}$	
Γ_{30}	$\overline{K}^0 \pi^+ \pi^-$ nonresonant		(1.46 ± 0.24) %	
Γ_{31}	$K^- \pi^+ \pi^0$	[d]	(13.9 ± 0.9) %	S=1.3
Γ_{32}	$K^- \rho^+$		(10.8 ± 1.0) %	
Γ_{33}	$K^*(892)^- \pi^+$ $\times$ B($K^{*-} \to K^- \pi^0$)		(1.7 ± 0.2) %	
Γ_{34}	$\overline{K}^*(892)^0 \pi^0$ $\times$ B($\overline{K}^{*0} \to K^- \pi^+$)		(2.1 ± 0.3) %	
Γ_{35}	$K^- \pi^+ \pi^0$ nonresonant		$(6.9 \pm 2.5) \times 10^{-3}$	
Γ_{36}	$\overline{K}^0 \pi^0 \pi^0$			

Γ_{37}	$\overline{K}^*(892)^0\pi^0 \times B(\overline{K}^{*0} \to \overline{K}^0\pi^0)$		$(1.0 \pm 0.2)\ \%$	
Γ_{38}	$\overline{K}^0\pi^0\pi^0$ nonresonant		$(7.8 \pm 2.0) \times 10^{-3}$	
Γ_{39}	$K^-\pi^+\pi^+\pi^-$	[d]	$(7.5 \pm 0.4)\ \%$	S=1.1
Γ_{40}	$K^-\pi^+\rho^0$ total		$(6.3 \pm 0.4)\ \%$	
Γ_{41}	$K^-\pi^+\rho^0$ 3-body		$(4.7 \pm 2.1) \times 10^{-3}$	
Γ_{42}	$\overline{K}^*(892)^0\rho^0 \times B(\overline{K}^{*0} \to K^-\pi^+)$		$(9.8 \pm 2.2) \times 10^{-3}$	
Γ_{43}	$K^-a_1(1260)^+ \times B(a_1(1260)^+ \to \pi^+\pi^+\pi^-)$		$(3.6 \pm 0.6)\ \%$	
Γ_{44}	$\overline{K}^*(892)^0\pi^+\pi^-$ total $\times B(\overline{K}^{*0} \to K^-\pi^+)$		$(1.5 \pm 0.4)\ \%$	
Γ_{45}	$\overline{K}^*(892)^0\pi^+\pi^-$ 3-body $\times B(\overline{K}^{*0} \to K^-\pi^+)$		$(9.5 \pm 2.1) \times 10^{-3}$	
Γ_{46}	$K_1(1270)^-\pi^+ \times B(K_1(1270)^- \to K^-\pi^+\pi^-)$	[e]	$(3.6 \pm 1.0) \times 10^{-3}$	
Γ_{47}	$K^-\pi^+\pi^+\pi^-$ nonresonant		$(1.75 \pm 0.25)\ \%$	
Γ_{48}	$\overline{K}^0\pi^+\pi^-\pi^0$	[d]	$(10.0 \pm 1.2)\ \%$	
Γ_{49}	$\overline{K}^0\eta \times B(\eta \to \pi^+\pi^-\pi^0)$		$(1.6 \pm 0.3) \times 10^{-3}$	
Γ_{50}	$\overline{K}^0\omega \times B(\omega \to \pi^+\pi^-\pi^0)$		$(1.9 \pm 0.4)\ \%$	
Γ_{51}	$K^*(892)^-\rho^+ \times B(K^{*-} \to \overline{K}^0\pi^-)$		$(4.0 \pm 1.6)\ \%$	
Γ_{52}	$\overline{K}^*(892)^0\rho^0 \times B(\overline{K}^{*0} \to \overline{K}^0\pi^0)$		$(4.9 \pm 1.1) \times 10^{-3}$	
Γ_{53}	$K_1(1270)^-\pi^+ \times B(K_1(1270)^- \to \overline{K}^0\pi^-\pi^0)$	[e]	$(5.1 \pm 1.4) \times 10^{-3}$	
Γ_{54}	$\overline{K}^*(892)^0\pi^+\pi^-$ 3-body $\times B(\overline{K}^{*0} \to \overline{K}^0\pi^0)$		$(4.7 \pm 1.1) \times 10^{-3}$	
Γ_{55}	$\overline{K}^0\pi^+\pi^-\pi^0$ nonresonant		$(2.1 \pm 2.1)\ \%$	
Γ_{56}	$K^-\pi^+\pi^0\pi^0$		$(15 \pm 5)\ \%$	
Γ_{57}	$K^-\pi^+\pi^+\pi^-\pi^0$		$(4.0 \pm 0.4)\ \%$	
Γ_{58}	$\overline{K}^*(892)^0\pi^+\pi^-\pi^0 \times B(\overline{K}^{*0} \to K^-\pi^+)$		$(1.2 \pm 0.6)\ \%$	
Γ_{59}	$\overline{K}^*(892)^0\eta \times B(\overline{K}^{*0} \to K^-\pi^+) \times B(\eta \to \pi^+\pi^-\pi^0)$		$(3.0 \pm 0.8) \times 10^{-3}$	
Γ_{60}	$K^-\pi^+\omega \times B(\omega \to \pi^+\pi^-\pi^0)$		$(2.7 \pm 0.5)\ \%$	
Γ_{61}	$\overline{K}^*(892)^0\omega \times B(\overline{K}^{*0} \to K^-\pi^+) \times B(\omega \to \pi^+\pi^-\pi^0)$		$(7 \pm 3) \times 10^{-3}$	
Γ_{62}	$\overline{K}^0\pi^+\pi^+\pi^-\pi^-$		$(5.8 \pm 1.6) \times 10^{-3}$	
Γ_{63}	$\overline{K}^0\pi^+\pi^-\pi^0\pi^0(\pi^0)$		$(10.6\ ^{+7.3}_{-3.0})\ \%$	
Γ_{64}	$\overline{K}^0K^+K^-$		$(9.3 \pm 1.0) \times 10^{-3}$	
	In the fit as $\frac{1}{2}\Gamma_{76} + \Gamma_{66}$, where $\frac{1}{2}\Gamma_{76} = \Gamma_{65}$.			
Γ_{65}	$\overline{K}^0\phi \times B(\phi \to K^+K^-)$		$(4.2 \pm 0.5) \times 10^{-3}$	
Γ_{66}	$\overline{K}^0K^+K^-$ non-ϕ		$(5.0 \pm 0.8) \times 10^{-3}$	
Γ_{67}	$K^0_S K^0_S K^0_S$		$(9.7 \pm 2.3) \times 10^{-4}$	
Γ_{68}	$K^+K^-K^-\pi^+$		$(2.1 \pm 0.5) \times 10^{-4}$	
Γ_{69}	$K^+K^-\overline{K}^0\pi^0$		$(7.2\ ^{+4.8}_{-3.5}) \times 10^{-3}$	

Fractions of many of the following modes with resonances have already appeared above as submodes of particular charged-particle modes. (Modes for which there are only upper limits and $\overline{K}^*(892)\rho$ submodes only appear below.)

Γ_{70}	$\overline{K}^0\eta$		$(7.0 \pm 1.0) \times 10^{-3}$	
Γ_{71}	$\overline{K}^0\rho^0$		(1.20 ± 0.17) %	
Γ_{72}	$K^-\rho^+$		(10.8 ± 1.0) %	S=1.2
Γ_{73}	$\overline{K}^0\omega$		(2.1 ± 0.4) %	
Γ_{74}	$\overline{K}^0\eta'(958)$		(1.70 ± 0.26) %	
Γ_{75}	$\overline{K}^0 f_0(980)$		$(5.7 \pm 1.6) \times 10^{-3}$	
Γ_{76}	$\overline{K}^0\phi$		$(8.5 \pm 1.0) \times 10^{-3}$	
Γ_{77}	$K^- a_1(1260)^+$		(7.3 ± 1.1) %	
Γ_{78}	$\overline{K}^0 a_1(1260)^0$		< 1.9 %	CL=90%
Γ_{79}	$\overline{K}^0 f_2(1270)$		$(4.1 \pm 1.5) \times 10^{-3}$	
Γ_{80}	$\overline{K}^0 f_0(1370)$		$(6.9 \pm 2.1) \times 10^{-3}$	
Γ_{81}	$K^- a_2(1320)^+$		$< 2 \times 10^{-3}$	CL=90%
Γ_{82}	$K^*(892)^-\pi^+$		(5.0 ± 0.4) %	S=1.2
Γ_{83}	$\overline{K}^*(892)^0\pi^0$		(3.1 ± 0.4) %	
Γ_{84}	$\overline{K}^*(892)^0\pi^+\pi^-$ total		(2.3 ± 0.5) %	
Γ_{85}	$\quad\overline{K}^*(892)^0\pi^+\pi^-$ 3-body		(1.42 ± 0.32) %	
Γ_{86}	$K^-\pi^+\rho^0$ total		(6.3 ± 0.4) %	
Γ_{87}	$\quad K^-\pi^+\rho^0$ 3-body		$(4.7 \pm 2.1) \times 10^{-3}$	
Γ_{88}	$\quad\overline{K}^*(892)^0\rho^0$		(1.47 ± 0.33) %	
Γ_{89}	$\qquad\overline{K}^*(892)^0\rho^0$ transverse		(1.5 ± 0.5) %	
Γ_{90}	$\qquad\overline{K}^*(892)^0\rho^0$ *S*-wave		(2.8 ± 0.6) %	
Γ_{91}	$\qquad\overline{K}^*(892)^0\rho^0$ *S*-wave long.		$< 3 \times 10^{-3}$	CL=90%
Γ_{92}	$\qquad\overline{K}^*(892)^0\rho^0$ *P*-wave		$< 3 \times 10^{-3}$	CL=90%
Γ_{93}	$\qquad\overline{K}^*(892)^0\rho^0$ *D*-wave		(1.9 ± 0.6) %	
Γ_{94}	$K^*(892)^-\rho^+$		(6.0 ± 2.4) %	
Γ_{95}	$\quad K^*(892)^-\rho^+$ longitudinal		(2.9 ± 1.2) %	
Γ_{96}	$\quad K^*(892)^-\rho^+$ transverse		(3.2 ± 1.8) %	
Γ_{97}	$\quad K^*(892)^-\rho^+$ *P*-wave		< 1.5 %	CL=90%
Γ_{98}	$K^-\pi^+ f_0(980)$		< 1.1 %	CL=90%
Γ_{99}	$\quad\overline{K}^*(892)^0 f_0(980)$		$< 7 \times 10^{-3}$	CL=90%
Γ_{100}	$K_1(1270)^-\pi^+$	[e]	(1.06 ± 0.29) %	
Γ_{101}	$K_1(1400)^-\pi^+$		< 1.2 %	CL=90%
Γ_{102}	$\overline{K}_1(1400)^0\pi^0$		< 3.7 %	CL=90%
Γ_{103}	$K^*(1410)^-\pi^+$		< 1.2 %	CL=90%
Γ_{104}	$K_0^*(1430)^-\pi^+$		(1.04 ± 0.26) %	
Γ_{105}	$K_2^*(1430)^-\pi^+$		$< 8 \times 10^{-3}$	CL=90%
Γ_{106}	$\overline{K}_2^*(1430)^0\pi^0$		$< 4 \times 10^{-3}$	CL=90%
Γ_{107}	$\overline{K}^*(892)^0\pi^+\pi^-\pi^0$		(1.8 ± 0.9) %	
Γ_{108}	$\quad\overline{K}^*(892)^0\eta$		(1.9 ± 0.5) %	
Γ_{109}	$K^-\pi^+\omega$		(3.0 ± 0.6) %	
Γ_{110}	$\quad\overline{K}^*(892)^0\omega$		(1.1 ± 0.4) %	
Γ_{111}	$K^-\pi^+\eta'(958)$		$(7.0 \pm 1.8) \times 10^{-3}$	
Γ_{112}	$\quad\overline{K}^*(892)^0\eta'(958)$		$< 1.1 \times 10^{-3}$	CL=90%

Pionic modes

Γ_{113}	$\pi^+\pi^-$		$(1.52 \pm 0.11) \times 10^{-3}$	
Γ_{114}	$\pi^0\pi^0$		$(8.4 \pm 2.2) \times 10^{-4}$	
Γ_{115}	$\pi^+\pi^-\pi^0$		(1.6 ± 1.1) %	S=2.7
Γ_{116}	$\pi^+\pi^+\pi^-\pi^-$		$(7.4 \pm 0.6) \times 10^{-3}$	
Γ_{117}	$\pi^+\pi^+\pi^-\pi^-\pi^0$		(1.9 ± 0.4) %	
Γ_{118}	$\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-$		$(4.0 \pm 3.0) \times 10^{-4}$	

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

	Mode		Fraction	Scale factor/CL
Γ_{119}	K^+K^-		$(4.33\pm0.27)\times10^{-3}$	
Γ_{120}	$K^0\overline{K}^0$		$(1.3\ \pm0.4\ )\times10^{-3}$	
Γ_{121}	$K^0K^-\pi^+$		$(6.4\ \pm1.0\ )\times10^{-3}$	S=1.1
Γ_{122}	$\overline{K}^*(892)^0K^0 \times \mathrm{B}(\overline{K}^{*0}\to K^-\pi^+)$		$<1.1\times10^{-3}$	CL=90%
Γ_{123}	$K^*(892)^+K^- \times \mathrm{B}(K^{*+}\to K^0\pi^+)$		$(2.3\ \pm0.5\ )\times10^{-3}$	
Γ_{124}	$K^0K^-\pi^+$ nonresonant		$(2.3\ \pm2.3\ )\times10^{-3}$	
Γ_{125}	$\overline{K}^0K^+\pi^-$		$(4.9\ \pm1.0\ )\times10^{-3}$	
Γ_{126}	$K^*(892)^0\overline{K}^0 \times \mathrm{B}(K^{*0}\to K^+\pi^-)$		$<5\times10^{-4}$	CL=90%
Γ_{127}	$K^*(892)^-K^+ \times \mathrm{B}(K^{*-}\to \overline{K}^0\pi^-)$		$(1.2\ \pm0.7\ )\times10^{-3}$	
Γ_{128}	$\overline{K}^0K^+\pi^-$ nonresonant		$(3.8\ ^{+2.3}_{-1.9})\times10^{-3}$	
Γ_{129}	$K^+K^-\pi^+\pi^-$	[f]	$(2.58\pm0.28)\times10^{-3}$	
Γ_{130}	$\phi\pi^+\pi^- \times \mathrm{B}(\phi\to K^+K^-)$		$(5.3\ \pm1.4\ )\times10^{-4}$	
Γ_{131}	$\phi\rho^0 \times \mathrm{B}(\phi\to K^+K^-)$		$(5.3\ \pm1.4\ )\times10^{-4}$	
Γ_{132}	$K^+K^-\rho^0$ 3-body		$(9.0\ \pm2.3\ )\times10^{-4}$	
Γ_{133}	$K^*(892)^0K^-\pi^+ \times \mathrm{B}(K^{*0}\to K^+\pi^-)$		$(2.1\ \pm0.9\ )\times10^{-3}$	
Γ_{134}	$\overline{K}^*(892)^0K^+\pi^- \times \mathrm{B}(\overline{K}^{*0}\to K^-\pi^+)$		$(1.1\ \pm0.8\ )\times10^{-3}$	
Γ_{135}	$K^*(892)^0\overline{K}^*(892)^0 \times \mathrm{B}^2(K^{*0}\to K^+\pi^-)$		$(6\ \ \pm2\ \ )\times10^{-4}$	
Γ_{136}	$K^+K^-\pi^+\pi^-$ non-ϕ		$(1.7\ \pm0.5\ )\times10^{-3}$	
Γ_{137}	$K^+K^-\pi^+\pi^-$ nonresonant		$<8\times10^{-4}$	CL=90%
Γ_{138}	$K^0\overline{K}^0\pi^+\pi^-$		$(6.8\ \pm2.7\ )\times10^{-3}$	
Γ_{139}	$K^+K^-\pi^+\pi^-\pi^0$		$(3.1\ \pm2.0\ )\times10^{-3}$	

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

	Mode		Fraction	Scale factor/CL
Γ_{140}	$\overline{K}^*(892)^0K^0$		$<1.6\times10^{-3}$	CL=90%
Γ_{141}	$K^*(892)^+K^-$		$(3.5\ \pm0.8\ )\times10^{-3}$	
Γ_{142}	$K^*(892)^0\overline{K}^0$		$<8\times10^{-4}$	CL=90%
Γ_{143}	$K^*(892)^-K^+$		$(1.8\ \pm1.0\ )\times10^{-3}$	
Γ_{144}	$\phi\pi^0$		$<1.4\times10^{-3}$	CL=90%
Γ_{145}	$\phi\eta$		$<2.8\times10^{-3}$	CL=90%
Γ_{146}	$\phi\omega$		$<2.1\times10^{-3}$	CL=90%
Γ_{147}	$\phi\pi^+\pi^-$		$(1.07\pm0.29)\times10^{-3}$	
Γ_{148}	$\phi\rho^0$		$(1.07\pm0.29)\times10^{-3}$	
Γ_{149}	$\phi\pi^+\pi^-$ 3-body		$<5\times10^{-4}$	CL=90%
Γ_{150}	$K^*(892)^0K^-\pi^+$ + c.c.			
Γ_{151}	$K^*(892)^0K^-\pi^+$		$(3.2\ \pm1.3\ )\times10^{-3}$	
Γ_{152}	$\overline{K}^*(892)^0K^+\pi^-$		$(1.7\ \pm1.2\ )\times10^{-3}$	
Γ_{153}	$K^*(892)^0\overline{K}^*(892)^0$		$(1.4\ \pm0.5\ )\times10^{-3}$	

Doubly Cabibbo suppressed (*DC*) modes, $\Delta C = 2$ forbidden via mixing (*C2M*) modes, $\Delta C = 1$ weak neutral current (*C1*) modes, or Lepton Family number (*LF*) violating modes

	Mode		Fraction	Scale factor/CL
Γ_{154}	$K^+\pi^-$	*DC*	$(2.9\ \pm1.4\ )\times10^{-4}$	
Γ_{155}	$K^+\pi^-$ (via $\overline{D}^0$)	*C2M*	$<1.9\times10^{-4}$	CL=90%
Γ_{156}	$K^+\pi^-\pi^+\pi^-$	*DC*	$<1.4\times10^{-3}$	CL=90%
Γ_{157}	$K^+\pi^-\pi^+\pi^-$ (via $\overline{D}^0$)	*C2M*	$<4\times10^{-4}$	CL=90%
Γ_{158}	μ^- anything (via $\overline{D}^0$)	*C2M*	$<4\times10^{-4}$	CL=90%
Γ_{159}	e^+e^-	*C1*	$<1.3\times10^{-5}$	CL=90%
Γ_{160}	$\mu^+\mu^-$	*C1*	$<7.6\times10^{-6}$	CL=90%
Γ_{161}	$\pi^0e^+e^-$	*C1*	$<4.5\times10^{-5}$	CL=90%
Γ_{162}	$\pi^0\mu^+\mu^-$	*C1*	$<1.8\times10^{-4}$	CL=90%

Γ_{163}	$\eta e^+ e^-$	*C1*		< 1.1	$\times 10^{-4}$	CL=90%
Γ_{164}	$\eta \mu^+ \mu^-$	*C1*		< 5.3	$\times 10^{-4}$	CL=90%
Γ_{165}	$\rho^0 e^+ e^-$	*C1*		< 1.0	$\times 10^{-4}$	CL=90%
Γ_{166}	$\rho^0 \mu^+ \mu^-$	*C1*		< 2.3	$\times 10^{-4}$	CL=90%
Γ_{167}	$\omega e^+ e^-$	*C1*		< 1.8	$\times 10^{-4}$	CL=90%
Γ_{168}	$\omega \mu^+ \mu^-$	*C1*		< 8.3	$\times 10^{-4}$	CL=90%
Γ_{169}	$\phi e^+ e^-$	*C1*		< 5.2	$\times 10^{-5}$	CL=90%
Γ_{170}	$\phi \mu^+ \mu^-$	*C1*		< 4.1	$\times 10^{-4}$	CL=90%
Γ_{171}	$\overline{K}^0 e^+ e^-$		[g]	< 1.1	$\times 10^{-4}$	CL=90%
Γ_{172}	$\overline{K}^0 \mu^+ \mu^-$		[g]	< 2.6	$\times 10^{-4}$	CL=90%
Γ_{173}	$\overline{K}^*(892)^0 e^+ e^-$		[g]	< 1.4	$\times 10^{-4}$	CL=90%
Γ_{174}	$\overline{K}^*(892)^0 \mu^+ \mu^-$		[g]	< 1.18	$\times 10^{-3}$	CL=90%
Γ_{175}	$\pi^+ \pi^- \pi^0 \mu^+ \mu^-$	*C1*		< 8.1	$\times 10^{-4}$	CL=90%
Γ_{176}	$\mu^\pm e^\mp$	*LF*	[h]	< 1.9	$\times 10^{-5}$	CL=90%
Γ_{177}	$\pi^0 e^\pm \mu^\mp$	*LF*	[h]	< 8.6	$\times 10^{-5}$	CL=90%
Γ_{178}	$\eta e^\pm \mu^\mp$	*LF*	[h]	< 1.0	$\times 10^{-4}$	CL=90%
Γ_{179}	$\rho^0 e^\pm \mu^\mp$	*LF*	[h]	< 4.9	$\times 10^{-5}$	CL=90%
Γ_{180}	$\omega e^\pm \mu^\mp$	*LF*	[h]	< 1.2	$\times 10^{-4}$	CL=90%
Γ_{181}	$\phi e^\pm \mu^\mp$	*LF*	[h]	< 3.4	$\times 10^{-5}$	CL=90%
Γ_{182}	$\overline{K}^0 e^\pm \mu^\mp$	*LF*	[h]	< 1.0	$\times 10^{-4}$	CL=90%
Γ_{183}	$\overline{K}^*(892)^0 e^\pm \mu^\mp$	*LF*	[h]	< 1.0	$\times 10^{-4}$	CL=90%

Γ_{184}	A dummy mode used by the fit.	(23.8 ± 3.5) %	S=1.1

[a] This value is calculated from the ratio $\Gamma(K^- \mu^+ \nu_\mu)/\Gamma(\mu^+ \text{anything})$ in these Particle Listings.

[b] This is a weighted average of $D^\pm$ (44%) and D^0 (56%) branching fractions. See "D^+ and $D^0 \rightarrow$ (η anything) / (total D^+ and D^0)" under "D^+ Branching Ratios" in these Particle Listings.

[c] This value averages the e^+ and μ^+ branching fractions, after making a small phase-space adjustment to the μ^+ fraction to be able to use it as an e^+ fraction; hence our ℓ^+ is really an e^+.

[d] The branching fractions for this mode may differ from the sum of the submodes that contribute to it, due to interference effects. See the relevant papers.

[e] The two experiments determining this ratio are in serious disagreement. See the Particle Listings.

[f] The experiments on the division of this charge mode amongst its submodes disagree, and the submode branching fractions here add up to considerably more than the charged-mode fraction.

[g] This mode is not a useful test for a $\Delta C=1$ weak neutral current because both quarks must change flavor in this decay.

[h] The value is for the sum of the charge states of particle/antiparticle states indicated.

CONSTRAINED FIT INFORMATION

An overall fit to 49 branching ratios uses 114 measurements and one constraint to determine 27 parameters. The overall fit has a $\chi^2 = 60.3$ for 88 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_8	x_9	x_{19}	x_{20}	x_{21}	x_{22}	x_{23}	x_{31}	x_{39}	x_{48}
x_9	33									
x_{19}	10	3								
x_{20}	10	5	1							
x_{21}	59	56	6	9						
x_{22}	8	6	1	24	11					
x_{23}	10	8	1	36	14	66				
x_{31}	19	17	2	8	31	18	19			
x_{39}	21	20	2	3	36	4	6	11		
x_{48}	5	4	1	18	8	34	51	10	4	
x_{57}	14	13	1	2	23	3	4	7	34	2
x_{66}	5	4	0	16	7	30	46	9	3	23
x_{70}	5	4	1	17	7	58	47	11	3	24
x_{73}	4	3	0	13	5	24	37	7	3	43
x_{76}	6	5	1	22	9	40	60	12	4	30
x_{82}	9	7	1	31	13	56	84	20	5	43
x_{83}	9	8	1	7	15	25	19	44	5	10
x_{85}	5	4	0	1	8	1	1	2	22	1
x_{89}	3	3	0	2	5	3	5	2	12	9
x_{100}	3	2	0	7	4	13	20	4	4	40
x_{108}	5	5	1	2	9	4	5	24	3	2
x_{119}	31	29	3	5	52	6	8	16	19	4
x_{120}	3	3	0	6	5	12	17	4	2	9
x_{121}	6	5	1	14	9	26	39	9	3	20
x_{125}	5	4	0	11	8	20	30	7	3	15
x_{141}	3	2	0	11	4	20	30	6	2	15
x_{184}	−29	−26	−6	−36	−40	−55	−72	−54	−31	−69

	x_{57}	x_{66}	x_{70}	x_{73}	x_{76}	x_{82}	x_{83}	x_{85}	x_{89}	x_{100}
x_{66}	2									
x_{70}	2	22								
x_{73}	1	17	17							
x_{76}	2	7	28	22						
x_{82}	3	39	40	31	50					
x_{83}	3	9	15	7	12	18				
x_{85}	7	1	1	1	1	1	1			
x_{89}	4	2	2	4	3	4	1	3		
x_{100}	2	9	10	17	12	17	4	1	4	
x_{108}	2	2	3	2	3	5	10	1	1	1
x_{119}	12	4	4	3	5	7	8	4	2	2
x_{120}	1	8	8	6	10	15	4	0	1	4
x_{121}	2	18	19	15	24	33	8	1	2	8
x_{125}	2	14	14	11	18	25	6	1	2	6
x_{141}	1	14	14	11	18	26	6	0	2	6
x_{184}	−25	−34	−39	−45	−44	−66	−41	−16	−24	−35

x_{119}	5					
x_{120}	1	7				
x_{121}	2	5	7			
x_{125}	2	4	5	12		
x_{141}	1	2	5	12	9	
x_{184}	−26	−22	−15	−32	−25	−24
	x_{108}	x_{119}	x_{120}	x_{121}	x_{125}	x_{141}

D^0 BRANCHING RATIOS

See the "Note on D Mesons" in the $D^{\pm}$ Listings.

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

Inclusive modes

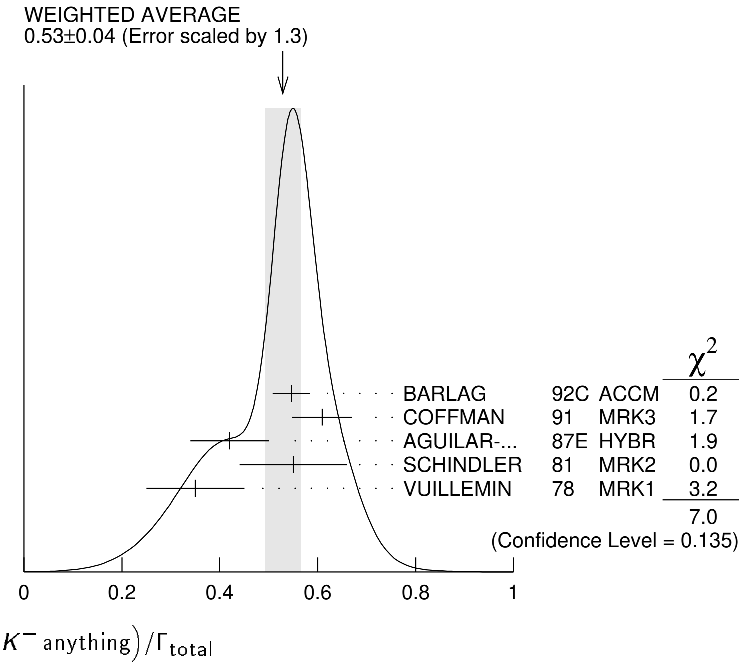
$\Gamma(e^+ \text{anything})/\Gamma_{\text{total}}$ **Γ_1/Γ**

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.077±0.012 OUR AVERAGE	Error includes scale factor of 1.1.				
0.15 ±0.05		AGUILAR-...	87E	HYBR	πp, pp 360, 400 GeV
0.075±0.011±0.004	137	BALTRUSAIT...	85B	MRK3	e^+e^- 3.77 GeV
0.055±0.037	12	SCHINDLER	81	MRK2	e^+e^- 3.771 GeV

$\Gamma(K^- \text{anything})/\Gamma_{\text{total}}$ **Γ_3/Γ**

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.53 ±0.04 OUR AVERAGE	Error includes scale factor of 1.3. See the ideogram below.				
$0.546^{+0.039}_{-0.038}$		[12] 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	MRK1	e^+e^- 3.772 GeV

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



$\left[\Gamma(\overline{K}^0 \text{anything}) + \Gamma(K^0 \text{anything})\right]/\Gamma_{\text{total}}$ **Γ_4/Γ**

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.42 ±0.05 OUR AVERAGE					
0.455±0.050±0.032		COFFMAN	91	MRK3	e^+e^- 3.77 GeV
0.29 ±0.11	13	SCHINDLER	81	MRK2	e^+e^- 3.771 GeV
0.57 ±0.26	6	VUILLEMIN	78	MRK1	e^+e^- 3.772 GeV

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

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
$0.034^{+0.006}_{-0.004}$ OUR AVERAGE					
$0.034^{+0.007}_{-0.005}$		[13] BARLAG	92C	ACCM	π^- Cu 230 GeV
$0.028 \pm 0.009 \pm 0.004$		COFFMAN	91	MRK3	e^+e^- 3.77 GeV
$0.03\ ^{+0.05}_{-0.02}$		AGUILAR-...	87E	HYBR	πp, pp 360, 400 GeV
0.08 ± 0.03	25	SCHINDLER	81	MRK2	e^+e^- 3.771 GeV

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

Semileptonic modes

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

We average our $K^- e^+ \nu_e$ and $K^- \mu^+ \nu_\mu$ branching fractions, after multiplying the latter by a phase-space factor of 1.03 to be able to use it with the $K^- e^+ \nu_e$ fraction. Hence our ℓ^+ here is really an e^+.

VALUE	DOCUMENT ID		COMMENT
0.0349 ± 0.0016 OUR AVERAGE	Error includes scale factor of 1.1.		
0.0364 ± 0.0020	PDG	96	Our $\Gamma(K^- e^+ \nu_e)/\Gamma_{\text{total}}$
0.0333 ± 0.0020	PDG	96	$1.03 \times$ our $\Gamma(K^- \mu^+ \nu_\mu)/\Gamma_{\text{total}}$

$\Gamma(K^- e^+ \nu_e)/\Gamma_{\text{total}}$ Γ_8/Γ

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.0364 ± 0.0020 OUR FIT	Error includes scale factor of 1.1.				
$0.034 \pm 0.005 \pm 0.004$	55	ADLER	89	MRK3	e^+e^- 3.77 GeV

$\Gamma(K^- e^+ \nu_e)/\Gamma(K^- \pi^+)$ Γ_8/Γ_{21}

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.95 ± 0.04 OUR FIT					
0.95 ± 0.04 OUR AVERAGE					
$0.978 \pm 0.027 \pm 0.044$	2510	[14] BEAN	93C	CLEO	$e^+e^- \approx \Upsilon(4S)$
$0.90 \pm 0.06 \pm 0.06$	584	[15] CRAWFORD	91B	CLEO	$e^+e^- \approx$ 10.5 GeV
$0.91 \pm 0.07 \pm 0.11$	250	[16] ANJOS	89F	E691	Photoproduction

[14] 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.

[15] 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.

[16] 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.

$\Gamma(K^- \mu^+ \nu_\mu)/\Gamma(K^- \pi^+)$ Γ_9/Γ_{21}

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.84 ± 0.04 OUR FIT					
0.84 ± 0.04 OUR AVERAGE					
$0.852 \pm 0.034 \pm 0.028$	1897	[17] FRABETTI	95G	E687	γBe $\overline{E}_\gamma$= 220 GeV
$0.82 \pm 0.13 \pm 0.13$	338	[18] FRABETTI	93I	E687	γBe $\overline{E}_\gamma$= 221 GeV
$0.79 \pm 0.08 \pm 0.09$	231	[19] CRAWFORD	91B	CLEO	$e^+e^- \approx$ 10.5 GeV

[17] 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.

[18] 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.

[19] 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.

$\Gamma(K^- \mu^+ \nu_\mu)/\Gamma(\mu^+ \text{anything})$ Γ_9/Γ_2

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

$\Gamma(K^- \pi^0 e^+ \nu_e)/\Gamma_{\text{total}}$ Γ_{10}/Γ

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
$0.016^{+0.013}_{-0.005}\pm0.002$	4	[20] BAI	91	MRK3	$e^+e^- \approx$ 3.77 GeV

[20] 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.

$\Gamma(\overline{K}^0 \pi^- e^+ \nu_e)/\Gamma_{\text{total}}$ Γ_{11}/Γ

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
$0.028^{+0.017}_{-0.008}\pm0.003$	6	[21] BAI	91	MRK3	$e^+e^- \approx$ 3.77 GeV

[21] 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 $\overline{K}^*(892)e^+\nu_e$.

$\Gamma(K^*(892)^- e^+ \nu_e)/\Gamma(K^- e^+ \nu_e)$ Γ_{20}/Γ_8

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

VALUE	DOCUMENT ID		TECN	COMMENT
0.55±0.09 OUR FIT				
0.51±0.18±0.06	CRAWFORD	91B	CLEO	$e^+e^- \approx$ 10.5 GeV

$\Gamma(K^*(892)^- e^+ \nu_e)/\Gamma(\overline{K}^0 \pi^+ \pi^-)$ Γ_{20}/Γ_{23}

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

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.37±0.06 OUR FIT					
0.38±0.06±0.03	152	[22] BEAN	93C	CLEO	$e^+e^- \approx \Upsilon(4S)$

[22] 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.

$\Gamma(K^*(892)^- \ell^+ \nu_\ell)/\Gamma(\overline{K}^0 \pi^+ \pi^-)$ Γ_{13}/Γ_{23}

This an average of the $K^*(892)^- e^+\nu_e$ and $K^*(892)^-\mu^+\nu_\mu$ ratios. Unseen decay modes of the $K^*(892)^-$ are included.

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.24±0.07±0.06	137	[23] ALEXANDER	90B	CLEO	e^+e^- 10.5–11 GeV

[23] ALEXANDER 90B cannot exclude extra π^0's in the final state. See nearby data blocks for more detailed results.

$\Gamma(K^- \pi^0 (\pi^0) e^+ \nu_e)/\Gamma_{\text{total}}$ Γ_{14}/Γ

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$0.023^{+0.050}_{-0.006}\pm0.001$	1	[24] AGUILAR-...	87F	HYBR	πp, pp 360, 400 GeV

[24] AGUILAR-BENITEZ 87F computes the branching fraction using topological normalization. Does not distinguish presence of a second π^0.

$\Gamma(\overline{K}^0 \pi^- (\pi^0) e^+ \nu_e)/\Gamma_{\text{total}}$ Γ_{15}/Γ

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$0.079^{+0.069}_{-0.023}\pm0.005$	3	[25] AGUILAR-...	87F	HYBR	πp, pp 360, 400 GeV

[25] AGUILAR-BENITEZ 87F computes the branching fraction using topological normalization. Does not distinguish presence of a second π^0.

$\Gamma(\overline{K}^*(892)^0 \pi^- e^+ \nu_e)/\Gamma(K^*(892)^- e^+ \nu_e)$ Γ_{16}/Γ_{20}

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

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.64	90	[26] CRAWFORD	91B	CLEO	$e^+e^- \approx$ 10.5 GeV

[26] The limit on $(\overline{K}^*(892)\pi)^- \mu^+\nu_\mu$ below is much stronger.

$\Gamma(K^- \pi^+ \pi^- \mu^+ \nu_\mu)/\Gamma(K^- \mu^+ \nu_\mu)$ Γ_{17}/Γ_9

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_{18}/Γ_9

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.043	90	[27] KODAMA	93B	E653	π^- emulsion 600 GeV

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

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

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.0038^{+0.0012}_{-0.0010}}$ **OUR FIT**					
$\mathbf{0.0039^{+0.0023}_{-0.0011}\pm0.0004}$	7	[28] ADLER	89	MRK3	e^+e^- 3.77 GeV

[28] This result of ADLER 89 gives $|\frac{V_{cd}}{V_{cs}}\cdot\frac{f_+^\pi(0)}{f_+^K(0)}|^2 = 0.057^{+0.038}_{-0.015} \pm 0.005$.

$\Gamma(\pi^-e^+\nu_e)/\Gamma(K^-e^+\nu_e)$ — Γ_{19}/Γ_8

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.105^{+0.033}_{-0.028}}$ **OUR FIT**					
0.103±0.039±0.013	87	[29] BUTLER	95	CLEO	< 0.156 (90% CL)

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