CONSTRAINED FIT INFORMATION

An overall fit to the total width and a partial width uses 18 measurements and one constraint to determine 3 parameters. The overall fit has a $\chi^2 = 15.2$ for 16 degrees of freedom.

The following *off-diagonal* array elements are the correlation coefficients $\left\langle \delta p_i \delta p_j \right\rangle / (\delta p_i \cdot \delta p_j)$, in percent, from the fit to parameters p_i, including the branching fractions, $x_i \equiv \Gamma_i / \Gamma_{\rm total}$. The fit constrains the x_i whose labels appear in this array to sum to one.

x_5	-100	
Γ	17	-17
	x_2	x_5

	Mode	Rate (MeV)
Γ_2	$(K\pi)^\pm$	49.8 ± 0.8
Γ_5	$K^\pm \gamma$	0.050 ± 0.005

CONSTRAINED FIT INFORMATION

An overall fit to the total width and a partial width uses 18 measurements and one constraint to determine 3 parameters. The overall fit has a $\chi^2 = 18.4$ for 16 degrees of freedom.

The following *off-diagonal* array elements are the correlation coefficients $\left\langle \delta p_i \delta p_j \right\rangle / (\delta p_i \cdot \delta p_j)$, in percent, from the fit to parameters p_i, including the branching fractions, $x_i \equiv \Gamma_i / \Gamma_{\rm total}$. The fit constrains the x_i whose labels appear in this array to sum to one.

x_4	-100	
Γ	14	-14
	x_3	x_4

	Mode	Rate (MeV)	Scale factor
Γ_3	$(K\pi)^0$	50.4 ± 0.6	1.1
Γ_4	$K^0 \gamma$	0.117 ± 0.010	

$K^*(892)$ PARTIAL WIDTHS

$\Gamma(K^0\gamma)$ — Γ_4

VALUE (keV)	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
116 ±10 OUR FIT						
116.5± 9.9	584	CARLSMITH	86	SPEC	0	$K^0_L A \to K^0_S \pi^0 A$

$\Gamma(K^\pm\gamma)$ — Γ_5

VALUE (keV)	DOCUMENT ID		TECN	CHG	COMMENT
50 ± 5 OUR FIT					
50 ± 5 OUR AVERAGE					
48.0±11.0	BERG	83	SPEC	$-$	156 $K^- A \to \overline{K}\pi A$
51.0± 5.0	CHANDLEE	83	SPEC	$+$	200 $K^+ A \to K\pi A$

$K^*(892)$ BRANCHING RATIOS

$\Gamma(K^0\gamma)/\Gamma_{\rm total}$ — Γ_4/Γ

VALUE (units 10^{-3})	DOCUMENT ID		TECN	CHG	COMMENT
2.30±0.20 OUR FIT					
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.5 ±0.7	CARITHERS	75B	CNTR	0	8–16 $\overline{K}^0 A$

$\Gamma(K^\pm\gamma)/\Gamma_{\rm total}$ — Γ_5/Γ

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	CHG	COMMENT
1.01±0.09 OUR FIT						
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<1.6	95	BEMPORAD	73	CNTR	$+$	10–16 $K^+ A$

$\Gamma(K\pi\pi)/\Gamma((K\pi)^\pm)$ — Γ_6/Γ_2

VALUE	CL%	DOCUMENT ID		TECN	CHG	COMMENT
<0.0007	95	JONGEJANS	78	HBC		4 $K^- p \to p\overline{K}^0 2\pi$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<0.002		WOJCICKI	64	HBC	$-$	1.7 $K^- p \to \overline{K}^0 \pi^- p$

$K^*(892)$ REFERENCES

BIRD	89	SLAC-332		(SLAC)
ASTON	88	NP B296 493	+Awaji, Bienz, Bird+	(SLAC, NAGO, CINC, INUS)
ATKINSON	86	ZPHY C30 521	+	(BONN, CERN, GLAS, LANC, MCHS, CURIN+)
CARLSMITH	86	PRL 56 18	+Bernstein, Peyaud, Turlay	(EFI, SACL)
BAUBILLIER	84B	ZPHY C26 37	+	(BIRM, CERN, GLAS, MICH, CURIN)
NAPIER	84	PL 149B 514	+Chen+	(TUFTS, ARIZ, FNAL, FLOR, NDAM+)
BARTH	83	NP B223 296	+Drevermann+	(BRUX, CERN, GENO, MONS+)
BERG	83	Thesis		(ROCH)
CHANDLEE	83	PRL 51 168	+Berg, Cihangir, Collick+	(ROCH, FNAL, MINN)
CLELAND	82	NP B208 189	+Delfosse, Dorsaz, Gloor	(DURH, GEVA, LAUS, PITT)
DELFOSSE	81	NP B183 349	+Guisan, Martin, Muhlemann, Weill+	(GEVA, LAUS)
TOAFF	81	PR D23 1500	+Musgrave, Ammar, Davis, Ecklund+	(ANL, KANS)
AJINENKO	80	ZPHY C5 177	+Barth, Dujardin+	(SERP, BRUX, MONS, SACL)
EVANGELISTA	80	NP B165 383	+	(BARI, BONN, CERN, DARE, GLAS, LIVP+)
AGUILAR-...	78B	NP B141 101	Aguilar-Benitez+	(MADR, TATA, CERN+)
BALAND	78	NP B140 220	+Grard+	(MONS, BELG, CERN, LOIC, LALO)
COOPER	78	NP B136 365	+Gurtu+	(TATA, CERN, CDEF+)
JONGEJANS	78	NP B139 383	+Cerrada+	(ZEEM, CERN, NIJM, OXF)
WICKLUND	78	PR D17 1197	+Ayres, Diebold, Greene, Kramer, Pawlicki	(ANL)
BOWLER	77	NP B126 31	+Dainton, Drake, Williams	(OXF)
CARITHERS	75B	PRL 35 349	+Muhlemann, Underwood+	(ROCH, MCGI)
MCCUBBIN	75	NP B86 13	+Lyons	(OXF)
PALER	75	NP B96 1	+Tovey, Shah, Spiro+	(RHEL, SACL, EPOL)
FOX	74	NP B80 403	+Griss	(CIT)
MATISON	74	PR D9 1872	+Galtieri, Alston-Garnjost, Flatte, Friedman+	(LBL)
BEMPORAD	73	NP B51 1	+Beusch, Freudenreich+	(CERN, ETH, LOIC)
CLARK	73	NP B54 432	+Lyons, Radojicic	(OXF)
LEWIS	73	NP B60 283	+Allen, Jacobs+	(LOWC, LOIC, CDEF)
LINGLIN	73	NP B55 408		(CERN)
BUCHNER	72	NP B45 333	+Dehm, Charriere, Cornet+	(MPIM, CERN, BRUX)
AGUILAR-...	71B	PR D4 2583	Aguilar-Benitez, Eisner, Kinson	(BNL)
HABER	70	NP B17 289	+Shapira, Alexander+	(REHO, SACL, BGNA, EPOL)
CRENNELL	69D	PRL 22 487	+Karshon, Lai, O'Neall, Scarr	(BNL)
DAVIS	69	PRL 23 1071	+Derenzo, Flatte, Garnjost, Lynch, Solmitz	(LRL)
FRIEDMAN	69	UCRL 18860 Thesis		(LRL)
DEWIT	68	Thesis		(ANIK)
SCHWEING...	68	PR 166 1317	Schweingruber, Derrick, Fields+	(ANL, NWES)
BARASH	67B	PR 156 1399	+Kirsch, Miller, Tan	(COLU)
BARLOW	67	NC 50A 701	+Lillestol, Montanet+	(CERN, CDEF, IRAD, LIVP)
DAUBER	67B	PR 153 1403	+Schlein, Slater, Ticho	(UCLA)
DEBAERE	67B	NC 51A 401	+Goldschmidt-Clermont, Henri+	(BRUX, CERN)
WOJCICKI	64	PR 135B 484		(LRL)

OTHER RELATED PAPERS

KAMAL	92	PL B284 421	+Xu	(ALBE)
NAPIER	84	PL 149B 514	+Chen+	(TUFTS, ARIZ, FNAL, FLOR, NDAM+)
CLELAND	82	NP B208 189	+Delfosse, Dorsaz, Gloor	(DURH, GEVA, LAUS, PITT)
ALEXANDER	62	PRL 8 447	+Kalbfleisch, Miller, Smith	(LRL)
ALSTON	62B	CERN Conf. 291	+Ticho, Wojcicki+	(LRL)
ARMENTEROS	62C	CERN Conf. 295	+Astrer, Montanet+	(CERN, CDEF)
COLLEY	62B	CERN Conf. 315	+Gelfand+	(COLU, RUTG)
ALSTON	61	PRL 6 300	+Alvarez, Eberhard, Good+	(LRL)

$K_1(1270)$

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

Our latest mini-review on this particle can be found in the 1984 edition.

$K_1(1270)$ MASS

VALUE (MeV)	DOCUMENT ID
1273±7 OUR AVERAGE	Includes data from the 2 datablocks that follow this one.

PRODUCED BY K^-, BACKWARD SCATTERING, HYPERON EXCHANGE

The data in this block is included in the average printed for a previous datablock.

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
1275.0±10.0	700	GAVILLET	78	HBC	$+$	4.2 $K^- p \to \Xi^- (K\pi\pi)^+$

PRODUCED BY K BEAMS

The data in this block is included in the average printed for a previous datablock.

VALUE (MeV)	DOCUMENT ID		TECN	CHG	COMMENT
1270 ±10	DAUM	81C	CNTR	$-$	63 $K^- p \to K^- 2\pi p$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
~ 1276.0	[1] TORNQVIST	82B	RVUE		
~ 1300.0	VERGEEST	79	HBC	$-$	4.2 $K^- p \to (\overline{K}\pi\pi)^- p$
1289.0±25.0	[2] CARNEGIE	77	ASPK	$\pm$	13 $K^\pm p \to (K\pi\pi)^\pm p$
~ 1300	BRANDENB...	76	ASPK	$\pm$	13 $K^\pm p \to (K\pi\pi)^\pm p$
~ 1270.0	OTTER	76	HBC	$-$	10,14,16 $K^- p \to (\overline{K}\pi\pi)^- p$
1260	DAVIS	72	HBC	$+$	12 $K^+ p$
1234 ±12	FIRESTONE	72B	DBC	$+$	12 $K^+ d$

[1] From a unitarized quark-model calculation.

[2] From a model-dependent fit with Gaussian background to BRANDENBURG 76 data.

PRODUCED BY BEAMS OTHER THAN K MESONS

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •						
1294 ±10	310	RODEBACK	81	HBC		4 $\pi^- p \to \Lambda K 2\pi$
1300	40	CRENNELL	72	HBC	0	4.5 $\pi^- p \to \Lambda K 2\pi$
$1242.0^{+\ 9.0}_{-10.0}$		[3] ASTIER	69	HBC	0	$\overline{p} p$
1300	45	CRENNELL	67	HBC	0	6 $\pi^- p \to \Lambda K 2\pi$

[3] This was called the C meson.