$K_1(1400)$

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

$K_1(1400)$ MASS

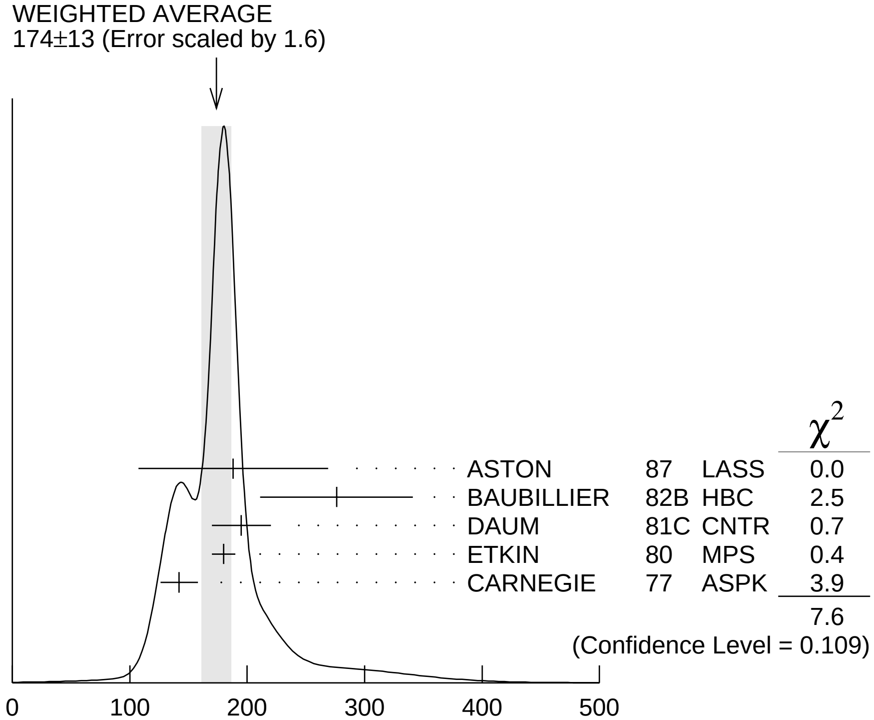
VALUE (MeV)		*DOCUMENT ID*		*TECN*	*CHG*	*COMMENT*
1402± 7 OUR AVERAGE						
1373±14±18	[1]	ASTON	87	LASS	0	11 $K^- p \rightarrow \overline{K}^0 \pi^+ \pi^- n$
1392±18		BAUBILLIER	82B	HBC	0	8.25 $K^- p \rightarrow K^0_S \pi^+ \pi^- n$
1410±25		DAUM	81C	CNTR	−	63 $K^- p \rightarrow K^- 2\pi p$
1415±15		ETKIN	80	MPS	0	6 $K^- p \rightarrow \overline{K}^0 \pi^+ \pi^- n$
1404±10	[2]	CARNEGIE	77	ASPK	±	13 $K^\pm p \rightarrow (K\pi\pi)^\pm p$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
∼ 1350	[3]	TORNQVIST	82B	RVUE		
∼ 1400		VERGEEST	79	HBC	−	4.2 $K^- p \rightarrow (\overline{K}\pi\pi)^- p$
∼ 1400		BRANDENB...	76	ASPK	±	13 $K^\pm p \rightarrow (K\pi\pi)^\pm p$
1420		DAVIS	72	HBC	+	12 $K^+ p$
1368±18		FIRESTONE	72B	DBC	+	12 $K^+ d$

[1] From partial-wave analysis of $K^0 \pi^+ \pi^-$ system.
[2] From a model-dependent fit with Gaussian background to BRANDENBURG 76 data.
[3] From a unitarized quark-model calculation.

$K_1(1400)$ WIDTH

VALUE (MeV)		*DOCUMENT ID*		*TECN*	*CHG*	*COMMENT*
174±13 OUR AVERAGE Error includes scale factor of 1.6. See the ideogram below.						
188±54±60	[4]	ASTON	87	LASS	0	11 $K^- p \rightarrow \overline{K}^0 \pi^+ \pi^- n$
276±65		BAUBILLIER	82B	HBC	0	8.25 $K^- p \rightarrow K^0_S \pi^+ \pi^- n$
195±25		DAUM	81C	CNTR	−	63 $K^- p \rightarrow K^- 2\pi p$
180±10		ETKIN	80	MPS	0	6 $K^- p \rightarrow \overline{K}^0 \pi^+ \pi^- n$
142±16	[5]	CARNEGIE	77	ASPK	±	13 $K^\pm p \rightarrow (K\pi\pi)^\pm p$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
∼ 200		VERGEEST	79	HBC	−	4.2 $K^- p \rightarrow (\overline{K}\pi\pi)^- p$
∼ 160		BRANDENB...	76	ASPK	±	13 $K^\pm p \rightarrow (K\pi\pi)^\pm p$
80		DAVIS	72	HBC	+	12 $K^+ p$
241±30		FIRESTONE	72B	DBC	+	12 $K^+ d$

[4] From partial-wave analysis of $K^0 \pi^+ \pi^-$ system.
[5] From a model-dependent fit with Gaussian background to BRANDENBURG 76 data.



$K_1(1400)$ width (MeV)

$K_1(1400)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$K^*(892)\pi$	(94 ±6) %
Γ_2	$K\rho$	(3.0±3.0) %
Γ_3	$K f_0(1370)$	(2.0±2.0) %
Γ_4	$K\omega$	(1.0±1.0) %
Γ_5	$K_0^*(1430)\pi$	not seen
Γ_6	γK^0	seen

$K_1(1400)$ PARTIAL WIDTHS

$\Gamma(K^*(892)\pi)$ Γ_1

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*CHG*	*COMMENT*
117±10	CARNEGIE	77	ASPK	±	13 $K^\pm p \to (K\pi\pi)^\pm p$

$\Gamma(K\rho)$ Γ_2

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*CHG*	*COMMENT*
2 ±1	CARNEGIE	77	ASPK	±	13 $K^\pm p \to (K\pi\pi)^\pm p$

$\Gamma(K\omega)$ Γ_4

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*CHG*	*COMMENT*
23±12	CARNEGIE	77	ASPK	±	13 $K^\pm p \to (K\pi\pi)^\pm p$

$\Gamma(\gamma K^0)$ Γ_6

VALUE (keV)	DOCUMENT ID	TECN	COMMENT
280.8±23.2±40.4	ALAVI-HARATI 02B	KTEV	$K + A \to K^* + A$

$K_1(1400)$ BRANCHING RATIOS

$\Gamma(K^*(892)\pi)/\Gamma_{total}$ Γ_1/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
0.94±0.06	[6] DAUM 81C	CNTR	63 $K^- p \to K^- 2\pi p$

$\Gamma(K\rho)/\Gamma_{total}$ Γ_2/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
0.03 ±0.03	[6] DAUM 81C	CNTR	63 $K^- p \to K^- 2\pi p$

$\Gamma(K f_0(1370))/\Gamma_{total}$ Γ_3/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
0.02 ±0.02	[6] DAUM 81C	CNTR	63 $K^- p \to K^- 2\pi p$

$\Gamma(K\omega)/\Gamma_{total}$ Γ_4/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
0.01 ±0.01	[6] DAUM 81C	CNTR	63 $K^- p \to K^- 2\pi p$

$\Gamma(K_0^*(1430)\pi)/\Gamma_{total}$ Γ_5/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
not seen	[6] DAUM 81C	CNTR	63 $K^- p \to K^- 2\pi p$

D-wave/S-wave RATIO FOR $K_1(1400) \to K^*(892)\pi$

VALUE	DOCUMENT ID	TECN	COMMENT
0.04 ±0.01	[6] DAUM 81C	CNTR	63 $K^- p \to K^- 2\pi p$

[6] Average from low and high t data.

$K_1(1400)$ REFERENCES

ALAVI-HARATI	02B	PRL 89 072001	A. Alavi-Harati *et al.*	(FNAL KTeV Collab.)
ASTON	87	NP B292 693	D. Aston *et al.*	(SLAC, NAGO, CINC, INUS)
BAUBILLIER	82B	NP B202 21	M. Baubillier *et al.*	(BIRM, CERN, GLAS+)
TORNQVIST	82B	NP B203 268	N.A. Tornqvist	(HELS)
DAUM	81C	NP B187 1	C. Daum *et al.*	(AMST, CERN, CRAC, MPIM+)
ETKIN	80	PR D22 42	A. Etkin *et al.*	(BNL, CUNY) JP
VERGEEST	79	NP B158 265	J.S.M. Vergeest *et al.*	(NIJM, AMST, CERN+)
CARNEGIE	77	NP B127 509	R.K. Carnegie *et al.*	(SLAC)
BRANDENB...	76	PRL 26 703	G.W. Brandenburg *et al.*	(SLAC) JP
DAVIS	72	PR D5 2688	P.J. Davis *et al.*	(LBL)
FIRESTONE	72B	PR D5 505	A. Firestone *et al.*	(LBL)

OTHER RELATED PAPERS

SUZUKI	93	PR D47 1252	M. Suzuki	(LBL)
FERNANDEZ	82	ZPHY C16 95	C. Fernandez *et al.*	(MADR, CERN, CDEF+)
SHEN	66	PRL 17 726	B.C. Shen *et al.*	(LRL)
Also	66	Private Comm.	G. Goldhaber	(LRL)
ALMEIDA	65	PL 16 184	S.P. Almeida *et al.*	(CAVE)
ARMENTEROS	64	PL 9 207	R. Armenteros *et al.*	(CERN, CDEF)
Also	66	PR 145 1095	N. Barash *et al.*	(COLU)