$K_1(1400)$

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

$K_1(1400)$ MASS

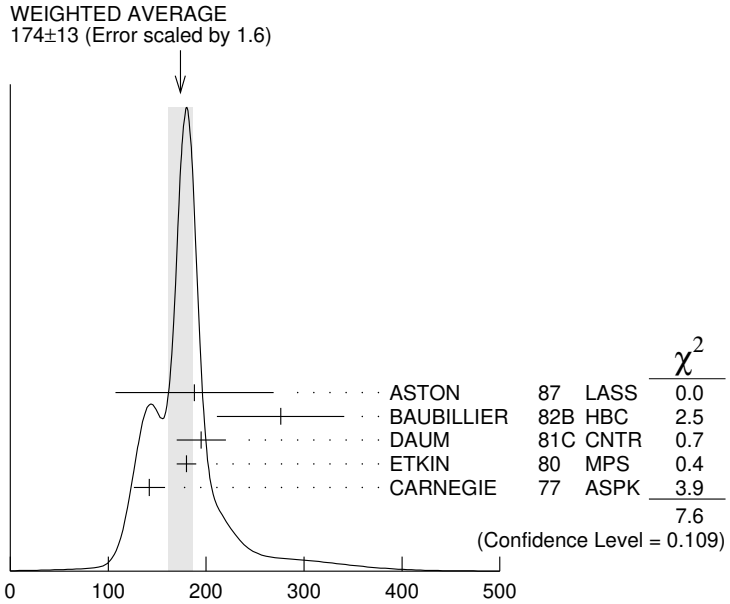
VALUE (MeV)	DOCUMENT ID		TECN	CHG	COMMENT
1402± 7 OUR AVERAGE					
1373±14±18	[1] ASTON	87	LASS	0	11 $K^- p \to \overline{K}^0 \pi^+ \pi^- n$
1392±18	BAUBILLIER	82B	HBC	0	8.25 $K^- p \to K^0_S \pi^+ \pi^- n$
1410±25	DAUM	81C	CNTR	−	63 $K^- p \to K^- 2\pi p$
1415±15	ETKIN	80	MPS	0	6 $K^- p \to \overline{K}^0 \pi^+ \pi^- n$
1404±10	[2] CARNEGIE	77	ASPK	±	13 $K^\pm p \to (K\pi\pi)^\pm p$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
∼ 1350	[3] TORNQVIST	82B	RVUE		
∼ 1400	VERGEEST	79	HBC	−	4.2 $K^- p \to (\overline{K}\pi\pi)^- p$
∼ 1400	BRANDENB...	76	ASPK	±	13 $K^\pm p \to (K\pi\pi)^\pm p$
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 $K^- p \to \overline{K}^0 \pi^+ \pi^- n$
276±65	BAUBILLIER	82B	HBC	0	8.25 $K^- p \to K^0_S \pi^+ \pi^- n$
195±25	DAUM	81C	CNTR	−	63 $K^- p \to K^- 2\pi p$
180±10	ETKIN	80	MPS	0	6 $K^- p \to \overline{K}^0 \pi^+ \pi^- n$
142±16	[5] CARNEGIE	77	ASPK	±	13 $K^\pm p \to (K\pi\pi)^\pm p$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
∼ 200	VERGEEST	79	HBC	−	4.2 $K^- p \to (\overline{K}\pi\pi)^- p$
∼ 160	BRANDENB...	76	ASPK	±	13 $K^\pm p \to (K\pi\pi)^\pm p$
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	$K + A \rightarrow K^* + A$

$K_1(1400)$ 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 $K^- p \rightarrow K^- 2\pi p$

$\Gamma(K\rho)/\Gamma_{total}$ — Γ_2/Γ

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

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

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

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

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

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

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

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

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

[6] Average from low and high t data.

$K_1(1400)$ REFERENCES

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