

$K_1(1400)$

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

$K_1(1400)$ MASS

VALUE (MeV)	DOCUMENT ID	TECN	CHG	COMMENT
1402 ± 7 OUR AVERAGE				
1373 ± 14 ± 18	¹ ASTON	87 LASS	0	11 $K^- p \rightarrow \bar{K}^0 \pi^+ \pi^- n$
1392 ± 18	BAUBILLIER	82B HBC	0	8.25 $K^- p \rightarrow K_S^0 \pi^+ \pi^- n$
1410 ± 25	DAUM	81C CNTR	-	63 $K^- p \rightarrow K^- 2\pi p$
1415 ± 15	ETKIN	80 MPS	0	6 $K^- p \rightarrow \bar{K}^0 \pi^+ \pi^- n$
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 $K^- p \rightarrow (\bar{K}\pi\pi)^- p$
~ 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.

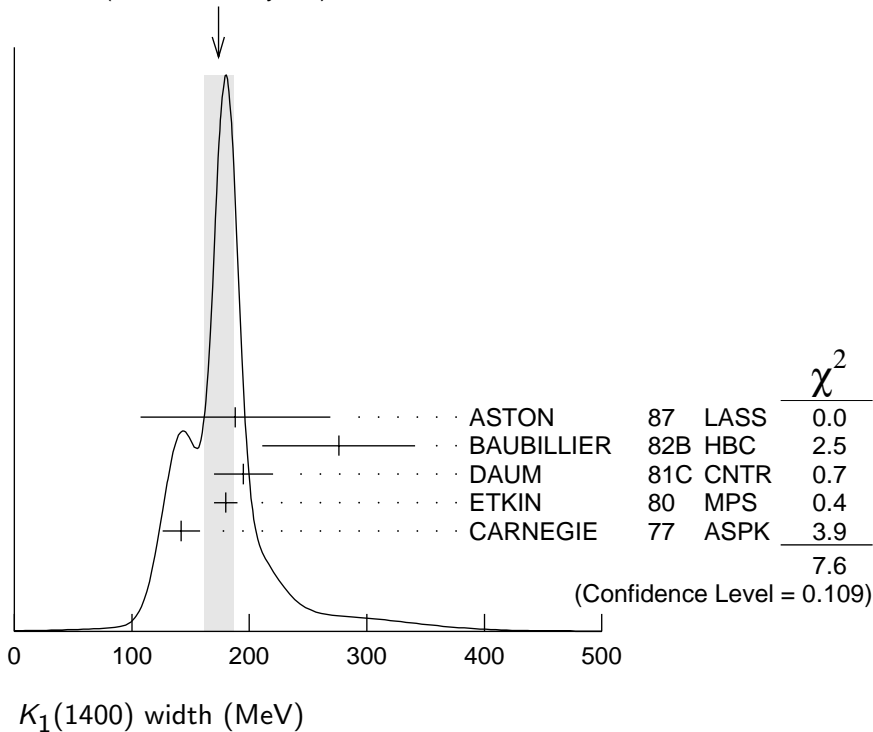
$K_1(1400)$ WIDTH

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 $K^- p \rightarrow \bar{K}^0 \pi^+ \pi^- n$
276 ± 65	BAUBILLIER	82B HBC	0	8.25 $K^- p \rightarrow K_S^0 \pi^+ \pi^- n$
195 ± 25	DAUM	81C CNTR	-	63 $K^- p \rightarrow K^- 2\pi p$
180 ± 10	ETKIN	80 MPS	0	6 $K^- p \rightarrow \bar{K}^0 \pi^+ \pi^- n$
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 $K^- p \rightarrow (\bar{K}\pi\pi)^- p$
~ 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.

WEIGHTED AVERAGE
 174 ± 13 (Error scaled by 1.6)



$K_1(1400)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
Γ_1 $K^*(892)\pi$	(94 \pm 6) %
Γ_2 $K\rho$	(3.0 \pm 3.0) %
Γ_3 $Kf_0(1370)$	(2.0 \pm 2.0) %
Γ_4 $K\omega$	(1.0 \pm 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 \pm 10	CARNEGIE	77	ASPK	\pm 13 $K^\pm p \rightarrow (K\pi\pi)^\pm p$
$\Gamma(K\rho)$ Γ_2				
VALUE (MeV)	DOCUMENT ID	TECN	CHG	COMMENT
2 \pm 1	CARNEGIE	77	ASPK	\pm 13 $K^\pm p \rightarrow (K\pi\pi)^\pm p$
$\Gamma(K\omega)$ Γ_4				
VALUE (MeV)	DOCUMENT ID	TECN	CHG	COMMENT
23 \pm 12	CARNEGIE	77	ASPK	\pm 13 $K^\pm p \rightarrow (K\pi\pi)^\pm p$

$\Gamma(\gamma K^0)$	Γ_6
<u>VALUE (keV)</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
280.8 ± 23.2 ± 40.4	ALAVI-HARATI02B KTEV $K + A \rightarrow K^* + A$

$K_1(1400)$ BRANCHING RATIOS

$\Gamma(K^*(892)\pi)/\Gamma_{\text{total}}$	Γ_1/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
0.94 ± 0.06	⁶ DAUM 81C CNTR 63 $K^- p \rightarrow K^- 2\pi p$

$\Gamma(K\rho)/\Gamma_{\text{total}}$	Γ_2/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
0.03 ± 0.03	⁶ DAUM 81C CNTR 63 $K^- p \rightarrow K^- 2\pi p$

$\Gamma(K f_0(1370))/\Gamma_{\text{total}}$	Γ_3/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
0.02 ± 0.02	⁶ DAUM 81C CNTR 63 $K^- p \rightarrow K^- 2\pi p$

$\Gamma(K\omega)/\Gamma_{\text{total}}$	Γ_4/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
0.01 ± 0.01	⁶ DAUM 81C CNTR 63 $K^- p \rightarrow K^- 2\pi p$

$\Gamma(K_0^*(1430)\pi)/\Gamma_{\text{total}}$	Γ_5/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
not seen	⁶ DAUM 81C CNTR 63 $K^- p \rightarrow K^- 2\pi p$

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

<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
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

ALAVI-HARATI 02B	PRL 89 072001	A. Alavi-Harati <i>et al.</i>	(FNAL KTeV Collab.)
ASTON 87	NP B292 693	D. Aston <i>et al.</i>	(SLAC, NAGO, CINC, INUS)
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BRANDENB... 76	PRL 26 703	G.W. Brandenburg <i>et al.</i>	(SLAC) JP
DAVIS 72	PR D5 2688	P.J. Davis <i>et al.</i>	(LBL)
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