

$K_0^*(1430)$

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

See our minireview in the 1994 edition and in this edition under the $f_0(1370)$. **$K_0^*(1430)$ MASS**

VALUE (MeV)	DOCUMENT ID	TECN	CHG	COMMENT	
1412 ± 6	¹ ASTON	88	LASS	0	11 $K^- p \rightarrow K^- \pi^+ n$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1436 ± 8	² BARBERIS	98E	OMEG		450 $pp \rightarrow p_f p_s K^+ K^- \pi^+ \pi^-$
1415 ± 25	³ ANISOVICH	97C	RVUE		11 $K^- p \rightarrow K^- \pi^+ n$
~ 1450	⁴ TORNQVIST	96	RVUE		$\pi\pi \rightarrow \pi\pi, K\bar{K}, K\pi$
~ 1430	BAUBILLIER	84B	HBC	—	8.25 $K^- p \rightarrow \bar{K}^0 \pi^- p$
~ 1425	^{5,6} ESTABROOKS	78	ASPK		13 $K^\pm p \rightarrow K^\pm \pi^\pm (n, \Delta)$
~ 1450.0	MARTIN	78	SPEC		10 $K^\pm p \rightarrow K_S^0 \pi p$

¹ Uses a model for the background, without this background they get a mass 1340 MeV, where the phase shift passes 90°.² J^P not determined, could be $K_2^*(1430)$.³ T-matrix pole. Reanalysis of ASTON 88 data.⁴ T-matrix pole.⁵ Mass defined by pole position.⁶ From elastic $K\pi$ partial-wave analysis. **$K_0^*(1430)$ WIDTH**

VALUE (MeV)	DOCUMENT ID	TECN	CHG	COMMENT	
294 ± 23	ASTON	88	LASS	0	11 $K^- p \rightarrow K^- \pi^+ n$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
196 ± 45	⁷ BARBERIS	98E	OMEG		450 $pp \rightarrow p_f p_s K^+ K^- \pi^+ \pi^-$
330 ± 50	⁸ ANISOVICH	97C	RVUE		11 $K^- p \rightarrow K^- \pi^+ n$
~ 320	⁹ TORNQVIST	96	RVUE		$\pi\pi \rightarrow \pi\pi, K\bar{K}, K\pi$
~ 200	BAUBILLIER	84B	HBC	—	8.25 $K^- p \rightarrow \bar{K}^0 \pi^- p$
200 to 300	¹⁰ ESTABROOKS	78	ASPK		13 $K^\pm p \rightarrow K^\pm \pi^\pm (n, \Delta)$

⁷ J^P not determined, could be $K_2^*(1430)$.⁸ T-matrix pole. Reanalysis of ASTON 88 data.⁹ T-matrix pole.¹⁰ From elastic $K\pi$ partial-wave analysis. **$K_0^*(1430)$ DECAY MODES**

Mode	Fraction (Γ_i/Γ)
Γ_1 $K\pi$	(93 ± 10) %

$K_0^*(1430)$ BRANCHING RATIOS

$\Gamma(K\pi)/\Gamma_{\text{total}}$					Γ_1/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>	<u>COMMENT</u>	
0.93±0.04±0.09	ASTON	88	LASS	0	11 $K^- p \rightarrow K^- \pi^+ n$

$K_0^*(1430)$ REFERENCES

BARBERIS	98E	PL B436 204	D. Barberis <i>et al.</i>	(Omega expt.)
ANISOVICH	97C	PL B413 137	A.V. Anisovich, A.V. Sarantsev	
TORNQVIST	96	PRL 76 1575	N.A. Tornqvist, M. Roos	(HELS)
ASTON	88	NP B296 493	D. Aston <i>et al.</i>	(SLAC, NAGO, CINC, INUS)
BAUBILLIER	84B	ZPHY C26 37	M. Baubillier <i>et al.</i>	(BIRM, CERN, GLAS+)
ESTABROOKS	78	NP B133 490	P.G. Estabrooks <i>et al.</i>	(MCGI, CARL, DURH+)
MARTIN	78	NP B134 392	A.D. Martin <i>et al.</i>	(DURH, GEVA)

OTHER RELATED PAPERS

BEVEREN	99	EPJ C10 469	E. Van Beveren, G. Rupp	
OLLER	99	PR D60 099906	J.A. Oller <i>et al.</i>	
OLLER	99C	PR D60 074023	J.A. Oller, E. Oset	
TORNQVIST	82	PRL 49 624	N.A. Tornqvist	(HELS)
GOLDBERG	69	PL 30B 434	J. Goldberg <i>et al.</i>	(SABRE Collab.)
TRIPPE	68	PL 28B 203	T.G. Trippe <i>et al.</i>	(UCLA)