

K₀^{*}(1430)

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

See our minireview in the 1994 edition and in this edition under the f₀(600).

K₀^{*}(1430) MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	CHG	COMMENT	
1412 ± 6		¹ ASTON	88	LASS	0	11 K ⁻ p → K ⁻ π ⁺ n
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●						
~ 1419		² BUGG	03	RVUE		11 K ⁻ p → K ⁻ π ⁺ n
~ 1440		³ LI	03	RVUE		11 K ⁻ p → K ⁻ π ⁺ n
1459 ± 9	15090	⁴ AITALA	02	E791		D ⁺ → K ⁻ π ⁺ π ⁺
~ 1440		⁵ JAMIN	00	RVUE		Kp → Kp
1436 ± 8		⁶ BARBERIS	98E	OMEG		450 pp → p _f p _s K ⁺ K ⁻ π ⁺ π ⁻
1415 ± 25		² ANISOVICH	97C	RVUE		11 K ⁻ p → K ⁻ π ⁺ n
~ 1450		⁷ TORNQVIST	96	RVUE		ππ → ππ, K ⁻ K ⁺ , Kπ
~ 1430		BAUBILLIER	84B	HBC	-	8.25 K ⁻ p → K ⁰ π ⁻ p
~ 1425		^{8,9} ESTABROOKS	78	ASPK		13 K [±] p → K [±] π [±] (n, Δ)
~ 1450.0		MARTIN	78	SPEC		10 K [±] p → K ⁰ _S πp

¹ Uses a model for the background, without this background they get a mass 1340 MeV, where the phase shift passes 90°.

² T-matrix pole. Reanalysis of ASTON 88 data.

³ Breit-Wigner fit. Using ASTON 88.

⁴ Assuming a low-mass scalar Kπ resonance, κ(800).

⁵ T-matrix pole. Using data from ESTABROOKS 78 and ASTON 88.

⁶ J^P not determined, could be K₂^{*}(1430).

⁷ T-matrix pole.

⁸ Mass defined by pole position.

⁹ From elastic Kπ partial-wave analysis.

K₀^{*}(1430) WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	CHG	COMMENT	
294 ± 23		ASTON	88	LASS	0	11 K ⁻ p → K ⁻ π ⁺ n
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●						
~ 316		¹⁰ BUGG	03	RVUE		11 K ⁻ p → K ⁻ π ⁺ n
~ 350		¹¹ LI	03	RVUE		11 K ⁻ p → K ⁻ π ⁺ n
175 ± 17	15090	¹² AITALA	02	E791		D ⁺ → K ⁻ π ⁺ π ⁺
~ 300		¹³ JAMIN	00	RVUE		Kp → Kp
196 ± 45		¹⁴ BARBERIS	98E	OMEG		450 pp → p _f p _s K ⁺ K ⁻ π ⁺ π ⁻
330 ± 50		¹⁰ ANISOVICH	97C	RVUE		11 K ⁻ p → K ⁻ π ⁺ n
~ 320		¹⁵ TORNQVIST	96	RVUE		ππ → ππ, K ⁻ K ⁺ , Kπ
~ 200		BAUBILLIER	84B	HBC	-	8.25 K ⁻ p → K ⁰ π ⁻ p
200 to 300		¹⁶ ESTABROOKS	78	ASPK		13 K [±] p → K [±] π [±] (n, Δ)

- ¹⁰ T-matrix pole. Reanalysis of ASTON 88 data.
- ¹¹ Breit-Wigner fit. Using ASTON 88.
- ¹² Assuming a low-mass scalar $K\pi$ resonance, $\kappa(800)$.
- ¹³ T-matrix pole. Using data from ESTABROOKS 78 and ASTON 88.
- ¹⁴ J^P not determined, could be $K_2^*(1430)$.
- ¹⁵ T-matrix pole.
- ¹⁶ 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

BUGG	03	PL B572 1	D.V. Bugg	
LI	03	PR D67 034025	L. Li, B. Zou, G. Li	
AITALA	02	PRL 89 121801	E.M. Aitala <i>et al.</i>	(FNAL E791 Collab.)
JAMIN	00	NP B587 331	M. Jamin <i>et al.</i>	
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

SHAKIN	00	PR D62 114014	C.M. Shakin, H. Wang	
BEVEREN	99	EPJ C10 469	E. Van Beveren, G. Rupp	
OLLER	99	PR D60 099906 (erratum)	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)