NODE=M019

$K_0^*(1430)$

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

See our minireview in the 1994 edition and in this edition under the $f_0(600)$.

NODE=M019

$K_0^*(1430)$ MASS

NODE=M019205

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
1412 ± 6		[1] ASTON	88	LASS	0	11 $K^- p \to K^- \pi^+ n$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
1459 ± 9	15090	[2] AITALA	02	E791		$D^+ \to K^- \pi^+ \pi^+$
~ 1440		[3] JAMIN	00	RVUE		$Kp \to Kp$
1436 ± 8		[4] BARBERIS	98E	OMEG		450 $pp \to p_f p_s K^+ K^- \pi^+ \pi^-$
1415 ±25		[5] ANISOVICH	97C	RVUE		11 $K^- p \to K^- \pi^+ n$
~ 1450		[6] TORNQVIST	96	RVUE		$\pi\pi \to \pi\pi, K\overline{K}, K\pi$
~ 1430		BAUBILLIER	84B	HBC	–	8.25 $K^- p \to \overline{K}^0 \pi^- p$
~ 1425		[7,8] ESTABROOKS	78	ASPK		13 $K^\pm p \to K^\pm \pi^\pm (n, \Delta)$
~ 1450.0		MARTIN	78	SPEC		10 $K^\pm p \to K^0_S \pi p$

[1] Uses a model for the background, without this background they get a mass 1340 MeV, where the phase shift passes 90°.
[2] Assuming a low-mass scalar $K\pi$ resonance, $\kappa(800)$.
[3] T-matrix pole. Using data from ESTABROOKS 78 and ASTON 88.
[4] J^P not determined, could be $K_2^*(1430)$.
[5] T-matrix pole. Reanalysis of ASTON 88 data.
[6] T-matrix pole.
[7] Mass defined by pole position.
[8] From elastic $K\pi$ partial-wave analysis.

NODE=M019M
NODE=M019M;LINKAGE=D
NODE=M019M;LINKAGE=A0
NODE=M019M;LINKAGE=JM
NODE=M019M;LINKAGE=JP
NODE=M019M;LINKAGE=A1
NODE=M019M;LINKAGE=TT
NODE=M019M;LINKAGE=A
NODE=M019M;LINKAGE=C

$K_0^*(1430)$ WIDTH

NODE=M019210

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
294±23		ASTON	88	LASS	0	11 $K^- p \to K^- \pi^+ n$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
175±17	15090	[9] AITALA	02	E791		$D^+ \to K^- \pi^+ \pi^+$
~ 300		[10] JAMIN	00	RVUE		$Kp \to Kp$
196±45		[11] BARBERIS	98E	OMEG		450 $pp \to p_f p_s K^+ K^- \pi^+ \pi^-$
330±50		[12] ANISOVICH	97C	RVUE		11 $K^- p \to K^- \pi^+ n$
~ 320		[13] TORNQVIST	96	RVUE		$\pi\pi \to \pi\pi, K\overline{K}, K\pi$
~ 200		BAUBILLIER	84B	HBC	–	8.25 $K^- p \to \overline{K}^0 \pi^- p$
200 to 300		[14] ESTABROOKS	78	ASPK		13 $K^\pm p \to K^\pm \pi^\pm (n, \Delta)$

[9] Assuming a low-mass scalar $K\pi$ resonance, $\kappa(800)$.
[10] T-matrix pole. Using data from ESTABROOKS 78 and ASTON 88.
[11] J^P not determined, could be $K_2^*(1430)$.
[12] T-matrix pole. Reanalysis of ASTON 88 data.
[13] T-matrix pole.
[14] From elastic $K\pi$ partial-wave analysis.

NODE=M019W
NODE=M019W;LINKAGE=A0
NODE=M019W;LINKAGE=JM
NODE=M019W;LINKAGE=JP
NODE=M019W;LINKAGE=A1
NODE=M019W;LINKAGE=TT
NODE=M019W;LINKAGE=C

$K_0^*(1430)$ DECAY MODES

NODE=M019215;NODE=M019

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

DESIG=1

$K_0^*(1430)$ BRANCHING RATIOS

NODE=M019220

$\Gamma(K\pi)/\Gamma_{\text{total}}$ Γ_1/Γ

NODE=M019R1

VALUE	DOCUMENT ID		TECN	CHG	COMMENT
0.93±0.04±0.09	ASTON	88	LASS	0	11 $K^- p \to K^- \pi^+ n$

NODE=M019R1

$K_0^*(1430)$ REFERENCES

NODE=M019

AITALA	02	PRL 89 121801	E.M. Aitala *et al.*	(FNAL E791 Collab.)	REFID=48807
JAMIN	00	NP B587 331	M. Jamin *et al.*		REFID=47983
BARBERIS	98E	PL B436 204	D. Barberis *et al.*	(Omega Expt.)	REFID=46348
ANISOVICH	97C	PL B413 137	A.V. Anisovich, A.V. Sarantsev		REFID=45815
TORNQVIST	96	PRL 76 1575	N.A. Tornqvist, M. Roos	(HELS)	REFID=44507
ASTON	88	NP B296 493	D. Aston *et al.*	(SLAC, NAGO, CINC, INUS)	REFID=40262
BAUBILLIER	84B	ZPHY C26 37	M. Baubillier *et al.*	(BIRM, CERN, GLAS+)	REFID=22459
ESTABROOKS	78	NP B133 490	P.G. Estabrooks *et al.*	(MCGI, CARL, DURH+)	REFID=22443
MARTIN	78	NP B134 392	A.D. Martin *et al.*	(DURH, GEVA)	REFID=22446

OTHER RELATED PAPERS

SHAKIN	00	PR D62 114014	C.M. Shakin, H. Wang		REFID=47992
BEVEREN	99	EPJ C10 469	E. Van Beveren, G. Rupp		REFID=47405
OLLER	99	PR D60 099906 (erratum)	J.A. Oller *et al.*		REFID=46899
OLLER	99C	PR D60 074023	J.A. Oller, E. Oset		REFID=47386
TORNQVIST	82	PRL 49 624	N.A. Tornqvist	(HELS)	REFID=20392
GOLDBERG	69	PL 30B 434	J. Goldberg *et al.*	(SABRE Collab.)	REFID=22558
TRIPPE	68	PL 28B 203	T.G. Trippe *et al.*	(UCLA)	REFID=22555