

**$K_0^*(1430)$** 

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

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

NODE=M019

NODE=M019

 **$K_0^*(1430)$  MASS**

NODE=M019205

NODE=M019M

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	CHG	COMMENT
<b>1412 ± 6</b>		<sup>1</sup> ASTON	88	LASS	0 11 $K^- p \rightarrow K^- \pi^+ n$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●					
1459 ± 9	15090	<sup>2</sup> AITALA	02	E791	$D^+ \rightarrow K^- \pi^+ \pi^+$
~ 1440		<sup>3</sup> JAMIN	00	RVUE	$K p \rightarrow K p$
1436 ± 8		<sup>4</sup> BARBERIS	98E	OMEG	450 $pp \rightarrow$ $p_f p_s K^+ K^- \pi^+ \pi^-$
1415 ± 25		<sup>5</sup> ANISOVICH	97C	RVUE	11 $K^- p \rightarrow K^- \pi^+ n$
~ 1450		<sup>6</sup> 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		<sup>7,8</sup> ESTABROOKS	78	ASPK	13 $K^\pm p \rightarrow$ $K^\pm \pi^\pm (n, \Delta)$
~ 1450.0		MARTIN	78	SPEC	10 $K^\pm p \rightarrow K_S^0 \pi p$

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

<sup>2</sup> Assuming a low-mass scalar  $K\pi$  resonance,  $\kappa(800)$ .

<sup>3</sup> T-matrix pole. Using data from ESTABROOKS 78 and ASTON 88.

<sup>4</sup>  $J^P$  not determined, could be  $K_2^*(1430)$ .

<sup>5</sup> T-matrix pole. Reanalysis of ASTON 88 data.

<sup>6</sup> T-matrix pole.

<sup>7</sup> Mass defined by pole position.

<sup>8</sup> From elastic  $K\pi$  partial-wave analysis.

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

NODE=M019W

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	CHG	COMMENT
<b>294 ± 23</b>		ASTON	88	LASS	0 11 $K^- p \rightarrow K^- \pi^+ n$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●					
175 ± 17	15090	<sup>9</sup> AITALA	02	E791	$D^+ \rightarrow K^- \pi^+ \pi^+$
~ 300		<sup>10</sup> JAMIN	00	RVUE	$K p \rightarrow K p$
196 ± 45		<sup>11</sup> BARBERIS	98E	OMEG	450 $pp \rightarrow$ $p_f p_s K^+ K^- \pi^+ \pi^-$
330 ± 50		<sup>12</sup> ANISOVICH	97C	RVUE	11 $K^- p \rightarrow K^- \pi^+ n$
~ 320		<sup>13</sup> 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		<sup>14</sup> ESTABROOKS	78	ASPK	13 $K^\pm p \rightarrow$ $K^\pm \pi^\pm (n, \Delta)$

<sup>9</sup> Assuming a low-mass scalar  $K\pi$  resonance,  $\kappa(800)$ .

<sup>10</sup> T-matrix pole. Using data from ESTABROOKS 78 and ASTON 88.

<sup>11</sup>  $J^P$  not determined, could be  $K_2^*(1430)$ .

<sup>12</sup> T-matrix pole. Reanalysis of ASTON 88 data.

<sup>13</sup> T-matrix pole.

<sup>14</sup> From elastic  $K\pi$  partial-wave analysis.

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 ( $\Gamma_i/\Gamma$ )
$\Gamma_1$ $K\pi$	(93 ± 10) %

DESIG=1

 **$K_0^*(1430)$  BRANCHING RATIOS**

NODE=M019220

$\Gamma(K\pi)/\Gamma_{\text{total}}$	DOCUMENT ID	TECN	CHG	COMMENT	$\Gamma_1/\Gamma$
<b>0.93 ± 0.04 ± 0.09</b>	ASTON	88	LASS	0 11 $K^- p \rightarrow K^- \pi^+ n$	

NODE=M019R1

NODE=M019R1

**$K_0^*(1430)$  REFERENCES**

NODE=M019

AITALA	02	PRL 89 121801	E.M. Aitala <i>et al.</i>	(FNAL E791 Collab.)	REFID=48807
JAMIN	00	NP B587 331	M. Jamin <i>et al.</i>		REFID=47983
BARBERIS	98E	PL B436 204	D. Barberis <i>et al.</i>	(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 <i>et al.</i>	(SLAC, NAGO, CINC, INUS)	REFID=40262
BAUBILLIER	84B	ZPHY C26 37	M. Baubillier <i>et al.</i>	(BIRM, CERN, GLAS+)	REFID=22459
ESTABROOKS	78	NP B133 490	P.G. Estabrooks <i>et al.</i>	(MCGI, CARL, DURH+)	REFID=22443
MARTIN	78	NP B134 392	A.D. Martin <i>et al.</i>	(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 <i>et al.</i>		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 <i>et al.</i>	(SABRE Collab.)	REFID=22558
TRIPPE	68	PL 28B 203	T.G. Trippe <i>et al.</i>	(UCLA)	REFID=22555