

$K_0^*(1950)$

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

OMITTED FROM SUMMARY TABLE

Seen in partial-wave analysis of the $K^- \pi^+$ system. Needs confirmation. **$K_0^*(1950)$ MASS**

VALUE (MeV)	DOCUMENT ID	TECN	CHG	COMMENT
1944 ± 18 OUR AVERAGE				
1942 ± 22 ± 21	LEES	21A	BABR	$\gamma\gamma \rightarrow \eta_c(1S) \rightarrow \eta' K^+ K^-$
1945 ± 10 ± 20	¹ ASTON	88	LASS 0	11 $K^- p \rightarrow K^- \pi^+ n$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1917 ± 12	² ZHOU	06	RVUE	$K p \rightarrow K^- \pi^+ n$
1820 ± 40	³ ANISOVICH	97C	RVUE	11 $K^- p \rightarrow K^- \pi^+ n$
¹ We take the central value of the two solutions and the larger error given.				
² S-matrix pole. Using ASTON 88 and assuming $K_0^*(700)$, $K_0^*(1430)$.				
³ T-matrix pole. Reanalysis of ASTON 88 data.				

 $K_0^*(1950)$ WIDTH

VALUE (MeV)	DOCUMENT ID	TECN	CHG	COMMENT
100 ± 40 OUR AVERAGE Error includes scale factor of 1.3.				
80 ± 32 ± 20	LEES	21A	BABR	$\gamma\gamma \rightarrow \eta_c(1S) \rightarrow \eta' K^+ K^-$
201 ± 34 ± 79	⁴ ASTON	88	LASS 0	11 $K^- p \rightarrow K^- \pi^+ n$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
145 ± 38	⁵ ZHOU	06	RVUE	$K p \rightarrow K^- \pi^+ n$
250 ± 100	⁶ ANISOVICH	97C	RVUE	11 $K^- p \rightarrow K^- \pi^+ n$
⁴ We take the central value of the two solutions and the larger error given.				
⁵ S-matrix pole. Using ASTON 88 and assuming $K_0^*(700)$, $K_0^*(1430)$.				
⁶ T-matrix pole. Reanalysis of ASTON 88 data.				

 $K_0^*(1950)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
Γ_1 $K^- \pi^+$	(52 ± 14) %

 $K_0^*(1950)$ BRANCHING RATIOS

$\Gamma(K^- \pi^+)/\Gamma_{\text{total}}$	Γ_1/Γ
0.52 ± 0.08 ± 0.12	⁷ ASTON
• • • We do not use the following data for averages, fits, limits, etc. • • •	
~ 0.60	⁸ ZHOU
⁷ We take the central value of the two solutions and the larger error given.	
⁸ S-matrix pole. Using ASTON 88 and assuming $K_0^*(700)$, $K_0^*(1430)$.	

$K_0^*(1950)$ REFERENCES

LEES	21A	PR D104 072002	J.P. Lees <i>et al.</i>	(BABAR Collab.)
ZHOU	06	NP A775 212	Z.Y. Zhou, H.Q. Zheng	
ANISOVICH	97C	PL B413 137	A.V. Anisovich, A.V. Sarantsev	
ASTON	88	NP B296 493	D. Aston <i>et al.</i>	(SLAC, NAGO, CINC, INUS)
