

K₄^{*}(2045)

$$I(J^P) = \frac{1}{2}(4^+)$$

K₄^{*}(2045) MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	CHG	COMMENT
2045 ± 9 OUR AVERAGE		Error includes scale factor of 1.1.			
2062 ± 14 ± 13		¹ ASTON	86 LASS	0	11 K ⁻ p → K ⁻ π ⁺ n
2039 ± 10	400	^{2,3} CLELAND	82 SPEC	±	50 K ⁺ p → K _S ⁰ π [±] p
2070 ⁺¹⁰⁰ ₋₄₀		⁴ ASTON	81c LASS	0	11 K ⁻ p → K ⁻ π ⁺ n
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●					
2079 ± 7	431	TORRES	86 MPSF		400 pA → 4KX
2088 ± 20	650	BAUBILLIER	82 HBC	-	8.25 K ⁻ p → K _S ⁰ π ⁻ p
2115 ± 46	488	CARMONY	77 HBC	0	9 K ⁺ d → K ⁺ π ^{'s} X

¹ From a fit to all moments.
² From a fit to 8 moments.
³ Number of events evaluated by us.
⁴ From energy-independent partial-wave analysis.

K₄^{*}(2045) WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	CHG	COMMENT
198 ± 30 OUR AVERAGE					
221 ± 48 ± 27		⁵ ASTON	86 LASS	0	11 K ⁻ p → K ⁻ π ⁺ n
189 ± 35	400	^{6,7} CLELAND	82 SPEC	±	50 K ⁺ p → K _S ⁰ π [±] p
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●					
61 ± 58	431	TORRES	86 MPSF		400 pA → 4KX
170 ⁺¹⁰⁰ ₋₅₀	650	BAUBILLIER	82 HBC	-	8.25 K ⁻ p → K _S ⁰ π ⁻ p
240 ⁺⁵⁰⁰ ₋₁₀₀		⁸ ASTON	81c LASS	0	11 K ⁻ p → K ⁻ π ⁺ n
300 ± 200		CARMONY	77 HBC	0	9 K ⁺ d → K ⁺ π ^{'s} X

⁵ From a fit to all moments.
⁶ From a fit to 8 moments.
⁷ Number of events evaluated by us.
⁸ From energy-independent partial-wave analysis.

K₄^{*}(2045) DECAY MODES

Mode	Fraction (Γ _i /Γ)
Γ ₁ Kπ	(9.9 ± 1.2) %
Γ ₂ K [*] (892)ππ	(9 ± 5) %
Γ ₃ K [*] (892)πππ	(7 ± 5) %

Γ_4	$\rho K \pi$	$(5.7 \pm 3.2) \%$
Γ_5	$\omega K \pi$	$(5.0 \pm 3.0) \%$
Γ_6	$\phi K \pi$	$(2.8 \pm 1.4) \%$
Γ_7	$\phi K^*(892)$	$(1.4 \pm 0.7) \%$

$K_4^*(2045)$ BRANCHING RATIOS

$\Gamma(K\pi)/\Gamma_{\text{total}}$					Γ_1/Γ
VALUE	DOCUMENT ID	TECN	CHG	COMMENT	
0.099 ± 0.012	ASTON	88	LASS	0	11 $K^- p \rightarrow K^- \pi^+ n$

$\Gamma(K^*(892)\pi\pi)/\Gamma(K\pi)$					Γ_2/Γ_1
VALUE	DOCUMENT ID	TECN	CHG	COMMENT	
0.89 ± 0.53	BAUBILLIER	82	HBC	—	8.25 $K^- p \rightarrow p K_S^0 3\pi$

$\Gamma(K^*(892)\pi\pi\pi)/\Gamma(K\pi)$					Γ_3/Γ_1
VALUE	DOCUMENT ID	TECN	CHG	COMMENT	
0.75 ± 0.49	BAUBILLIER	82	HBC	—	8.25 $K^- p \rightarrow p K_S^0 3\pi$

$\Gamma(\rho K\pi)/\Gamma(K\pi)$					Γ_4/Γ_1
VALUE	DOCUMENT ID	TECN	CHG	COMMENT	
0.58 ± 0.32	BAUBILLIER	82	HBC	—	8.25 $K^- p \rightarrow p K_S^0 3\pi$

$\Gamma(\omega K\pi)/\Gamma(K\pi)$					Γ_5/Γ_1
VALUE	DOCUMENT ID	TECN	CHG	COMMENT	
0.50 ± 0.30	BAUBILLIER	82	HBC	—	8.25 $K^- p \rightarrow p K_S^0 3\pi$

$\Gamma(\phi K\pi)/\Gamma_{\text{total}}$					Γ_6/Γ
VALUE	DOCUMENT ID	TECN	CHG	COMMENT	
0.028 ± 0.014	⁹ TORRES	86	MPSF	400 $pA \rightarrow 4KX$	

$\Gamma(\phi K^*(892))/\Gamma_{\text{total}}$					Γ_7/Γ
VALUE	DOCUMENT ID	TECN	CHG	COMMENT	
0.014 ± 0.007	⁹ TORRES	86	MPSF	400 $pA \rightarrow 4KX$	

⁹ Error determination is model dependent.

$K_4^*(2045)$ REFERENCES

ASTON	88	NP B296 493	D. Aston <i>et al.</i>	(SLAC, NAGO, CINC, INUS)
ASTON	86	PL B180 308	D. Aston <i>et al.</i>	(SLAC, NAGO, CINC, INUS)
TORRES	86	PR 34 707	S. Torres <i>et al.</i>	(VPI, ARIZ, FNAL, FSU+)
BAUBILLIER	82	PL 118B 447	M. Baubillier <i>et al.</i>	(BIRM, CERN, GLAS+)
CLELAND	82	NP B208 189	W.E. Cleland <i>et al.</i>	(DURH, GEVA, LAUS+)
ASTON	81C	PL 106B 235	D. Aston <i>et al.</i>	(SLAC, CARL, OTTA) JP
CARMONY	77	PR D16 1251	D.D. Carmony <i>et al.</i>	(PURD, UCD, IUPU)

OTHER RELATED PAPERS

BROMBERG	80	PR D22 1513	C.M. Bromberg <i>et al.</i>	(CIT, FNAL, ILLC+)
CARMONY	71	PRL 27 1160	D.D. Carmony <i>et al.</i>	(PURD, UCD, IUPU)