

$K_2(1820)$

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

See our mini-review in the 2004 edition of this *Review* (PDG 04) under $K_2(1770)$.

$K_2(1820)$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
1819±12 OUR AVERAGE				
1853±27 ⁺¹⁸ ₋₃₅	4289	¹ AAIJ	17C LHCb	$B^+ \rightarrow J/\psi \phi K^+$
1816±13		² ASTON	93 LASS	$11K^- p \rightarrow K^- \omega p$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
~ 1840		³ DAUM	81C CNTR	$63 K^- p \rightarrow K^- 2\pi p$
¹ From an amplitude analysis of the decay $B^+ \rightarrow J/\psi \phi K^+$ with a significance of 3.0 σ .				
² From a partial wave analysis of the $K^- \omega$ system.				
³ From a partial wave analysis of the $K^- 2\pi$ system.				

$K_2(1820)$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
264±34 OUR AVERAGE				
167±58 ⁺⁸² ₋₇₂	4289	¹ AAIJ	17C LHCb	$B^+ \rightarrow J/\psi \phi K^+$
276±35		² ASTON	93 LASS	$11K^- p \rightarrow K^- \omega p$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
~ 230		³ DAUM	81C CNTR	$63 K^- p \rightarrow K^- 2\pi p$
¹ From an amplitude analysis of the decay $B^+ \rightarrow J/\psi \phi K^+$ with a significance of 3.0 σ .				
² From a partial wave analysis of the $K^- \omega$ system.				
³ From a partial wave analysis of the $K^- 2\pi$ system.				

$K_2(1820)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
Γ_1 $K \pi \pi$	seen
Γ_2 $K_2^*(1430) \pi$	seen
Γ_3 $K^*(892) \pi$	seen
Γ_4 $K f_2(1270)$	seen
Γ_5 $K \omega$	seen
Γ_6 $K \phi$	seen

$K_2(1820)$ BRANCHING RATIOS

$\Gamma(K_2^*(1430)\pi)/\Gamma(K\pi\pi)$	Γ_2/Γ_1			
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
~ 0.77	DAUM	81C	CNTR	$63K^-p \rightarrow \bar{K}2\pi p$

$\Gamma(K^*(892)\pi)/\Gamma(K\pi\pi)$

Γ_3/Γ_1

VALUE	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
~ 0.05	DAUM	81C	CNTR 63K ⁻ p → $\bar{K}2\pi p$

$\Gamma(K f_2(1270))/\Gamma(K\pi\pi)$

Γ_4/Γ_1

VALUE	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
~ 0.18	DAUM	81C	CNTR 63K ⁻ p → $\bar{K}2\pi p$

$\Gamma(K\phi)/\Gamma_{\text{total}}$

Γ_6/Γ

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
seen	24k	¹ AAIJ	21E	LHCB $B^+ \rightarrow J/\psi\phi K^+$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
seen	4289	^{2,3} AAIJ	17C	LHCB $B^+ \rightarrow J/\psi\phi K^+$
¹ From an amplitude analysis of the decay $B^+ \rightarrow J/\psi\phi K^+$ with a significance of 5.8 σ .				
² From an amplitude analysis of the decay $B^+ \rightarrow J/\psi\phi K^+$ with a significance of 3.0 σ .				
³ Superseded by AAIJ 21E.				

$K_2(1820)$ REFERENCES

AAIJ	21E	PRL 127 082001	R. Aaij <i>et al.</i>	(LHCb Collab.)
AAIJ	17C	PRL 118 022003	R. Aaij <i>et al.</i>	(LHCb Collab.)
Also		PR D95 012002	R. Aaij <i>et al.</i>	(LHCb Collab.)
PDG	04	PL B592 1	S. Eidelman <i>et al.</i>	(PDG Collab.)
ASTON	93	PL B308 186	D. Aston <i>et al.</i>	(SLAC, NAGO, CINC, INUS)
DAUM	81C	NP B187 1	C. Daum <i>et al.</i>	(AMST, CERN, CRAC, MPIM+)