

$K_2(1820)$

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

See our mini-review in the 2004 edition of this *Review* (PDG 04) under $K_2(1770)$. **$K_2(1820)$ MASS**

<u>VALUE (MeV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
1819±12 OUR AVERAGE				
$1853 \pm 27^{+18}_{-35}$	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 3.0σ .				
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

<u>VALUE (MeV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
264±34 OUR AVERAGE				
$167 \pm 58^{+82}_{-72}$	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 3.0σ .				
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	63 $K^- p \rightarrow \bar{K} 2\pi p$

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

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⁺ → J/ψφK⁺

• • • We do not use the following data for averages, fits, limits, etc. • • •

seen 4289 ^{2,3} AAIJ 17C LHCB B⁺ → J/ψφK⁺

¹ From an amplitude analysis of the decay B⁺ → J/ψφK⁺ with a significance of 5.8 σ.

² From an amplitude analysis of the decay B⁺ → J/ψφK⁺ with a significance of 3.0 σ.

³ Superseded by AAIJ 21E.

K₂(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+)