

$\chi_{c0}(4700)$

$$I^G(J^{PC}) = 0^+(0^{++})$$

OMITTED FROM SUMMARY TABLE
was $X(4700)$

This state shows properties different from a conventional $q\bar{q}$ state.
A candidate for an exotic structure. See the review on non- $q\bar{q}$ states.

Seen by AAIJ 17C in $B^+ \rightarrow \chi_{c0} K^+$, $\chi_{c0} \rightarrow J/\psi\phi$ using an amplitude analysis of $B^+ \rightarrow J/\psi\phi K^+$ with a significance (accounting for systematic uncertainties) of 5.6σ .

$\chi_{c0}(4700)$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
$4694 \pm 4^{+16}_{-3}$	24k	¹ AAIJ	21E LHCb	$B^+ \rightarrow J/\psi\phi K^+$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
$4741 \pm 6 \pm 6$	175	² AAIJ	21C LHCb	$B^0_S \rightarrow J/\psi\phi\pi^+\pi^-$
$4704 \pm 10^{+14}_{-24}$	4289	^{3,4} 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 17σ .

² From a 1D fit to the $J/\psi\phi$ mass distribution with a significance of 5.3σ . The identification of this structure as the $\chi_{c0}(4700)$ needs confirmation.

³ From an amplitude analysis of the decay $B^+ \rightarrow J/\psi\phi K^+$ with a significance of 5.6σ .

⁴ Superseded by AAIJ 21E.

$\chi_{c0}(4700)$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
$87 \pm 8^{+16}_{-6}$	24k	¹ AAIJ	21E LHCb	$B^+ \rightarrow J/\psi\phi K^+$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
$53 \pm 15 \pm 11$	175	² AAIJ	21C LHCb	$B^0_S \rightarrow J/\psi\phi\pi^+\pi^-$
$120 \pm 31^{+42}_{-33}$	4289	^{3,4} AAIJ	17C LHCb	$B^+ \rightarrow J/\psi\phi K^+$

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² From a 1D fit to the $J/\psi\phi$ mass distribution with a significance of 5.3σ . The identification of this structure as the $\chi_{c0}(4700)$ needs confirmation.

³ From an amplitude analysis of the decay $B^+ \rightarrow J/\psi\phi K^+$ with a significance of 5.6σ .

⁴ Superseded by AAIJ 21E.

$\chi_{c0}(4700)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
Γ_1 $J/\psi\phi$	seen

$\chi_{c0}(4700)$ BRANCHING RATIOS

$\Gamma(J/\psi\phi)/\Gamma_{\text{total}}$					Γ_1/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	175	² AAIJ	21C LHCb	$B_s^0 \rightarrow J/\psi\phi\pi^+\pi^-$	
seen	4289	^{3,4} 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 17σ .

² From a 1D fit to the $J/\psi\phi$ mass distribution with a significance of 5.3σ . The identification of this structure as the $\chi_{c0}(4700)$ needs confirmation.

³ From an amplitude analysis of the decay $B^+ \rightarrow J/\psi\phi K^+$ with a significance of 5.6σ .

⁴ Superseded by AAIJ 21E.

$\chi_{c0}(4700)$ REFERENCES

AAIJ	21C	JHEP 2102 024	R. Aaij <i>et al.</i>	(LHCb Collab.)
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.) JP
Also		PR D95 012002	R. Aaij <i>et al.</i>	(LHCb Collab.)