

$\chi_{c1}(4685)$

$$I^G(J^{PC}) = 0^+(1^{++})$$

OMITTED FROM SUMMARY TABLE

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

Seen by AAIJ 21E in $B^+ \rightarrow \chi_{c1}(4685)K^+$ with $\chi_{c1}(4685) \rightarrow J/\psi\phi$ using an amplitude analysis of $B^+ \rightarrow J/\psi\phi K^+$ with a significance (accounting for systematic uncertainties) of 15σ . The $J^P = 1^+$ assignment is favored with high significance.

$\chi_{c1}(4685)$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
$4684 \pm 7^{+13}_{-16}$	24k	¹ AAIJ	21E	LHCB $B^+ \rightarrow J/\psi\phi K^+$

¹From an amplitude analysis of the decay $B^+ \rightarrow J/\psi\phi K^+$ with a significance of 15σ .

$\chi_{c1}(4685)$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
$126 \pm 15^{+37}_{-41}$	24k	¹ AAIJ	21E	LHCB $B^+ \rightarrow J/\psi\phi K^+$

¹From an amplitude analysis of the decay $B^+ \rightarrow J/\psi\phi K^+$ with a significance of 15σ .

$\chi_{c1}(4685)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
$\Gamma_1 \quad J/\psi\phi$	seen

$\chi_{c1}(4685)$ BRANCHING RATIOS

$\Gamma(J/\psi\phi)/\Gamma_{\text{total}}$					Γ_1/Γ
VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	
seen	24k	¹ AAIJ	21E	LHCB $B^+ \rightarrow J/\psi\phi K^+$	

¹From an amplitude analysis of the decay $B^+ \rightarrow J/\psi\phi K^+$ with a significance of 15σ .

$\chi_{c1}(4685)$ REFERENCES

AAIJ	21E	PRL 127 082001	R. Aaij <i>et al.</i>	(LHCb Collab.) JP
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