

**$\chi_{c1}(4685)$** 

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

**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  $15\sigma$ . 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	<sup>1</sup> AAIJ	21E LHCb	$B^+ \rightarrow J/\psi\phi K^+$

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

 **$\chi_{c1}(4685)$  WIDTH**

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

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

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

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1$ $J/\psi\phi$	seen

**$\Gamma(J/\psi\phi)/\Gamma_{\text{total}}$**   **$\Gamma_1/\Gamma$**

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
seen	24k	<sup>1</sup> AAIJ	21E LHCb	$B^+ \rightarrow J/\psi\phi K^+$

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

 **$\chi_{c1}(4685)$  REFERENCES**

AAIJ 21E PRL 127 082001 R. Aaij *et al.* (LHCb Collab.) JP