

$\chi_{c1}(4274)$

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

was $X(4274)$

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 $B^+ \rightarrow \chi_{c1} K^+$, $\chi_{c1} \rightarrow J/\psi\phi$ using an amplitude analysis of $B^+ \rightarrow J/\psi\phi K^+$ with a significance (accounting for systematic uncertainties) of 6.0σ .

$\chi_{c1}(4274)$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
4286 ± 8 -9 OUR AVERAGE		Error includes scale factor of 1.7.		
4294 ± 4 ± 3 -6	24k	¹ AAIJ	21E LHCb	$B^+ \rightarrow J/\psi\phi K^+$
4274.4 ± 8.4 -6.7 ± 1.9	22	² AALTONEN	17 CDF	$B^+ \rightarrow J/\psi\phi K^+$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
4273.3 ± 8.3 ± 17.2 -3.6	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 18σ .

² From a fit to the invariant mass spectrum with a significance of 3.1σ .

³ From an amplitude analysis of the decay $B^+ \rightarrow J/\psi\phi K^+$ with a significance of 6.0σ .

⁴ Superseded by AAIJ 21E.

$\chi_{c1}(4274)$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
51 ± 7 OUR AVERAGE				
53 ± 5 ± 5	24k	¹ AAIJ	21E LHCb	$B^+ \rightarrow J/\psi\phi K^+$
32.3 ± 21.9 -15.3 ± 7.6	22	² AALTONEN	17 CDF	$B^+ \rightarrow J/\psi\phi K^+$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
56 ± 11 ± 8 -11	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 18σ .

² From a fit to the invariant mass spectrum with a significance of 3.1σ .

³ From an amplitude analysis of the decay $B^+ \rightarrow J/\psi\phi K^+$ with a significance of 6.0σ .

⁴ Superseded by AAIJ 21E.

$\chi_{c1}(4274)$ DECAY MODES

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

$\chi_{c1}(4274)$ BRANCHING RATIOS

$\Gamma(J/\psi\phi)/\Gamma_{\text{total}}$						Γ_1/Γ
<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>		

seen	24k	¹ AAIJ	21E	LHCB	B ⁺ → J/ψφK ⁺	
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• • • We do not use the following data for averages, fits, limits, etc. • • •

seen	4289	^{2,3} AAIJ	17C	LHCB	B ⁺ → J/ψφK ⁺	
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¹ From an amplitude analysis of the decay B⁺ → J/ψφK⁺ with a significance of 18 σ.

² From an amplitude analysis of the decay B⁺ → J/ψφK⁺ with a significance of 6.0 σ.

³ Superseded by AAIJ 21E.

 $\chi_{c1}(4274)$ 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.) JP
Also		PR D95 012002	R. Aaij <i>et al.</i>	(LHCb Collab.)
AALTONEN	17	MPL A32 1750139	T. Altonen <i>et al.</i>	(CDF Collab.)