

$\chi_{c1}(4274)$ 

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

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  $6.0 \sigma$ .

 **$\chi_{c1}(4274)$  MASS**

| VALUE (MeV)  | EVTS | DOCUMENT ID           | TECN     | COMMENT                           |
|--|------|-----------------------|----------|-----------------------------------|
| <b>4274 <math>\pm 8</math><br/><math>-6</math> OUR AVERAGE</b> |      |                       |          |                                   |
| $4273.3 \pm 8.3^{+17.2}_{-3.6}$                                | 4289 | <sup>1</sup> AAIJ     | 17C LHCb | $B^+ \rightarrow J/\psi \phi K^+$ |
| $4274.4^{+8.4}_{-6.7} \pm 1.9$                                 | 22   | <sup>2</sup> AALTONEN | 17 CDF   | $B^+ \rightarrow J/\psi \phi K^+$ |

<sup>1</sup> From an amplitude analysis of the decay  $B^+ \rightarrow J/\psi \phi K^+$  with a significance of  $6.0 \sigma$ .

<sup>2</sup> From a fit to the invariant mass spectrum with a significance of  $3.1 \sigma$ .

 **$\chi_{c1}(4274)$  WIDTH**

| VALUE (MeV)                               | EVTS | DOCUMENT ID           | TECN     | COMMENT                           |
|---|------|-----------------------|----------|-----------------------------------|
| <b>49 <math>\pm 12</math> OUR AVERAGE</b> |      |                       |          |                                   |
| $56 \pm 11^{+8}_{-11}$                    | 4289 | <sup>1</sup> AAIJ     | 17C LHCb | $B^+ \rightarrow J/\psi \phi K^+$ |
| $32.3^{+21.9}_{-15.3} \pm 7.6$            | 22   | <sup>2</sup> AALTONEN | 17 CDF   | $B^+ \rightarrow J/\psi \phi K^+$ |

<sup>1</sup> From an amplitude analysis of the decay  $B^+ \rightarrow J/\psi \phi K^+$  with a significance of  $6.0 \sigma$ .

<sup>2</sup> From a fit to the invariant mass spectrum with a significance of  $3.1 \sigma$ .

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

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

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

| $\Gamma(J/\psi \phi)/\Gamma_{\text{total}}$ | EVTS | DOCUMENT ID       | TECN     | COMMENT                           | $\Gamma_1/\Gamma$ |
|---|------|-------------------|----------|-----------------------------------|-------------------|
| <b>seen</b>                                 | 4289 | <sup>1</sup> AAIJ | 17C 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  $6.0 \sigma$ .

 **$\chi_{c1}(4274)$  REFERENCES**

|          |     |                 |                   |                   |
|----------|-----|-----------------|-------------------|-------------------|
| AAIJ     | 17C | PRL 118 022003  | R. Aaij et al.    | (LHCb Collab.) JP |
| Also     |     | PR D95 012002   | R. Aaij et al.    | (LHCb Collab.)    |
| AALTONEN | 17  | MPL A32 1750139 | T. Altonen et al. | (CDF Collab.)     |