

X(4630)

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

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 $B^+ \rightarrow X(4630)K^+$ with $X(4630) \rightarrow J/\psi\phi$ using an amplitude analysis of $B^+ \rightarrow J/\psi\phi K^+$ with a significance (accounting for systematic uncertainties) of 5.5σ . The $J^P = 1^-$ assignment is favored over 2^- with a significance of 3σ and other assignments are disfavored by more than 5σ .

X(4630) MASS

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | COMMENT |
|----------------------------|------|-------------------|----------|----------------------------------|
| $4626 \pm 16^{+18}_{-110}$ | 24k | ¹ AAIJ | 21E 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 5.5σ .

X(4630) WIDTH

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | COMMENT |
|---------------------------|------|-------------------|----------|----------------------------------|
| $174 \pm 27^{+134}_{-73}$ | 24k | ¹ AAIJ | 21E 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 5.5σ .

X(4630) DECAY MODES

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

| $\Gamma(J/\psi\phi)/\Gamma_{\text{total}}$ | Γ_1/Γ |
|--|---|
| VALUE | COMMENT |
| seen | ¹ AAIJ 21E 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 5.5σ .

X(4630) REFERENCES

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