

X(4630)

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

NODE=M262

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."

NODE=M262

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

NODE=M262M

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
$4626 \pm 16^{+18}_{-110}$	24k	¹ AAIJ	21E LHCB	$B^+ \rightarrow J/\psi\phi K^+$

NODE=M262M

¹From an amplitude analysis of the decay $B^+ \rightarrow J/\psi\phi K^+$ with a significance of 5.5σ .

NODE=M262M;LINKAGE=A

X(4630) WIDTH

NODE=M262W

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
170^{+140}_{-80} OUR AVERAGE		[174 ⁺¹⁴⁰ ₋₈₀ MeV OUR 2023 AVERAGE]		
$174 \pm 27^{+134}_{-73}$	24k	¹ AAIJ	21E LHCB	$B^+ \rightarrow J/\psi\phi K^+$

NODE=M262W

NEW

¹From an amplitude analysis of the decay $B^+ \rightarrow J/\psi\phi K^+$ with a significance of 5.5σ .

NODE=M262W;LINKAGE=A

X(4630) DECAY MODES

NODE=M262215;NODE=M262

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

DESIG=1

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

NODE=M262R01
NODE=M262R01

¹From an amplitude analysis of the decay $B^+ \rightarrow J/\psi\phi K^+$ with a significance of 5.5σ .

NODE=M262R01;LINKAGE=A

X(4630) REFERENCES

NODE=M262

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

REFID=61150