

X(4140)

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

OMITTED FROM SUMMARY TABLE

Needs confirmation.

Seen by AALTONEN 09AH in the $B^+ \rightarrow X K^+$, $X \rightarrow J/\psi \phi$. Not seen by SHEN 10 in $\gamma\gamma \rightarrow J/\psi \phi$.

X(4140) MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
4143.0 ± 2.9 ± 1.2	14 ± 5	¹ AALTONEN	09AH CDF	$B^+ \rightarrow J/\psi \phi K^+$

¹Statistical significance of 3.8 σ .

X(4140) WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
11.7^{+8.3}_{-5.0} ± 3.7	14 ± 5	² AALTONEN	09AH CDF	$B^+ \rightarrow J/\psi \phi K^+$

²Statistical significance of 3.8 σ .

X(4140) DECAY MODES

Mode	Fraction (Γ_i/Γ)
Γ_1 $J/\psi \phi$	seen
Γ_2 $\gamma\gamma$	not seen

X(4140) $\Gamma(i)\Gamma(\gamma\gamma)/\Gamma(\text{total})$

$\Gamma(\gamma\gamma) \times \Gamma(J/\psi \phi)/\Gamma_{\text{total}}$					$\Gamma_2\Gamma_1/\Gamma$
VALUE (eV)	CL%	DOCUMENT ID	TECN	COMMENT	
<41	90	³ SHEN	10 BELL	10.6 $e^+e^- \rightarrow e^+e^- J/\psi \phi$	
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●					
< 6	90	⁴ SHEN	10 BELL	10.6 $e^+e^- \rightarrow e^+e^- J/\psi \phi$	
³ For $J^P = 0^+$.					
⁴ For $J^P = 2^+$.					

X(4140) BRANCHING RATIOS

$\Gamma(J/\psi \phi)/\Gamma_{\text{total}}$					Γ_1/Γ
VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	
seen	14 ± 5	⁵ AALTONEN	09AH CDF	$B^+ \rightarrow J/\psi \phi K^+$	

⁵Statistical significance of 3.8 σ .

$\Gamma(\gamma\gamma)/\Gamma_{\text{total}}$					Γ_2/Γ
VALUE		DOCUMENT ID	TECN	COMMENT	
not seen		SHEN	10 BELL	10.6 $e^+e^- \rightarrow e^+e^- J/\psi \phi$	

X(4140) REFERENCES

SHEN	10	PRL 104 112004	C.P. Shen <i>et al.</i>	(BELLE Collab.)
AALTONEN	09AH	PRL 102 242002	T. Aaltonen <i>et al.</i>	(CDF Collab.)
