$X(4160)$

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

OMITTED FROM SUMMARY TABLE

Seen by PAKHLOV 08 in $e^+e^- \to J/\psi X$, $X \to D^*\overline{D}^*$

A state with consistent mass and width is seen by AAIJ 21E in $B^+ \to X(4160)K^+$ with $X(4160) \to J/\psi\phi$ using an amplitude analysis of $B^+ \to J/\psi\phi K^+$ with a significance (accounting for systematic uncertainties) of 4.8 σ. The $J^{PC} = 2^{-+}$ assignment is favored over other assignments with a significance of more than 4 σ.

$X(4160)$ MASS

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
4153^{+23}_{-21} OUR AVERAGE					
$4146 \pm 18 \pm 33$	24k	[1] AAIJ	21E	LHCB	$B^+ \to J/\psi\phi K^+$
$4156^{+25}_{-20} \pm 15$	24	PAKHLOV	08	BELL	$e^+e^- \to J/\psi X$

[1] From an amplitude analysis of the decay $B^+ \to J/\psi\phi K^+$ with a significance of 4.8 σ.

$X(4160)$ WIDTH

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
$136^{+\ 60}_{-\ 35}$ OUR AVERAGE					
$135 \pm\ 28^{+59}_{-30}$	24k	[1] AAIJ	21E	LHCB	$B^+ \to J/\psi\phi K^+$
$139^{+111}_{-\ 61} \pm 21$	24	PAKHLOV	08	BELL	$e^+e^- \to J/\psi X$

[1] From an amplitude analysis of the decay $B^+ \to J/\psi\phi K^+$ with a significance of 4.8 σ.

$X(4160)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$D\overline{D}$	not seen
Γ_2	$D^*\overline{D}$ + c.c.	not seen
Γ_3	$D^*\overline{D}^*$	seen
Γ_4	$J/\psi\phi$	seen

$X(4160)$ BRANCHING RATIOS

$\Gamma(D\overline{D})/\Gamma(D^*\overline{D}^*)$ **Γ_1/Γ_3**

VALUE	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
<0.09	90	PAKHLOV	08	BELL	$e^+e^- \to J/\psi X$

$\Gamma(D^*\overline{D}+\text{c.c.})/\Gamma(D^*\overline{D}^*)$ Γ_2/Γ_3

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.22	90	PAKHLOV	08	BELL	$e^+e^- \to J/\psi X$

$\Gamma(J/\psi\phi)/\Gamma_{\text{total}}$ Γ_4/Γ

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
seen	24k	[1] AAIJ	21E	LHCB	$B^+ \to J/\psi\phi K^+$

[1] From an amplitude analysis of the decay $B^+ \to J/\psi\phi K^+$ with a significance of 4.8 σ.

$X(4160)$ REFERENCES

AAIJ	21E	PRL 127 082001	R. Aaij *et al.*	(LHCb Collab.)
PAKHLOV	08	PRL 100 202001	P. Pakhlov *et al.*	(BELLE Collab.)