NODE=M190

$X(4160)$

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

OMITTED FROM SUMMARY TABLE

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

NODE=M190

A state with consistent mass and width is seen by AAIJ 21E in $B^+ \rightarrow X(4160)K^+$ with $X(4160) \rightarrow J/\psi\phi$ using an amplitude analysis of $B^+ \rightarrow J/\psi\phi K^+$ 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

NODE=M190M

NODE=M190M

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
4153^{+23}_{-21} OUR AVERAGE					
$4146\pm18\pm33$	24k	[1] AAIJ	21E	LHCB	$B^+ \rightarrow J/\psi\phi K^+$
$4156^{+25}_{-20}\pm15$	24	PAKHLOV	08	BELL	$e^+e^- \rightarrow J/\psi X$

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

NODE=M190M;LINKAGE=A

$X(4160)$ WIDTH

NODE=M190W

NODE=M190W

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
$136^{+\ 60}_{-\ 35}$ OUR AVERAGE					
$135\pm\ 28^{+59}_{-30}$	24k	[1] AAIJ	21E	LHCB	$B^+ \rightarrow J/\psi\phi K^+$
$139^{+111}_{-\ 61}\pm21$	24	PAKHLOV	08	BELL	$e^+e^- \rightarrow J/\psi X$

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

NODE=M190W;LINKAGE=A

$X(4160)$ DECAY MODES

NODE=M190215;NODE=M190

	Mode	Fraction (Γ_i/Γ)	
Γ_1	$D\overline{D}$	not seen	DESIG=1;OUR EVAL;→ UNCHECKED ←
Γ_2	$D^*\overline{D}$+ c.c.	not seen	DESIG=2;OUR EVAL;→ UNCHECKED ←
Γ_3	$D^*\overline{D}^*$	seen	DESIG=3;OUR EVAL;→ UNCHECKED ←
Γ_4	$J/\psi\phi$	seen	DESIG=4

$X(4160)$ BRANCHING RATIOS

NODE=M190225

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

NODE=M190R01
NODE=M190R01

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

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

NODE=M190R02
NODE=M190R02

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

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

NODE=M190R00
NODE=M190R00

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
seen	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 4.8 σ.

NODE=M190R00;LINKAGE=A

$X(4160)$ REFERENCES

NODE=M190

AAIJ	21E	PRL 127 082001	R. Aaij *et al.*	(LHCb Collab.)	REFID=61150
PAKHLOV	08	PRL 100 202001	P. Pakhlov *et al.*	(BELLE Collab.)	REFID=52302