

**X(4160)**

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

## OMITTED FROM SUMMARY TABLE

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

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  $4.8\sigma$ . The  $J^{PC} = 2^{-+}$  assignment is favored over other assignments with a significance of more than  $4\sigma$ .

**X(4160) MASS**

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b>4153<sup>+23</sup><sub>-21</sub> OUR AVERAGE</b>				
4146 ± 18 ± 33	24k	<sup>1</sup> AAIJ	21E LHCb	$B^+ \rightarrow J/\psi\phi K^+$
4156 <sup>+25</sup> <sub>-20</sub> ± 15	24	PAKHLOV	08 BELL	$e^+e^- \rightarrow J/\psi X$

<sup>1</sup>From an amplitude analysis of the decay  $B^+ \rightarrow J/\psi\phi K^+$  with a significance of  $4.8\sigma$ .**X(4160) WIDTH**

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b>136<sup>+60</sup><sub>-35</sub> OUR AVERAGE</b>				
135 ± 28 <sup>+59</sup> <sub>-30</sub>	24k	<sup>1</sup> AAIJ	21E LHCb	$B^+ \rightarrow J/\psi\phi K^+$
139 <sup>+111</sup> <sub>-61</sub> ± 21	24	PAKHLOV	08 BELL	$e^+e^- \rightarrow J/\psi X$

<sup>1</sup>From an amplitude analysis of the decay  $B^+ \rightarrow J/\psi\phi K^+$  with a significance of  $4.8\sigma$ .**X(4160) DECAY MODES**

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1$ $D\bar{D}$	not seen
$\Gamma_2$ $D^*\bar{D} + \text{c.c.}$	not seen
$\Gamma_3$ $D^*\bar{D}^*$	seen
$\Gamma_4$ $J/\psi\phi$	seen

**X(4160) BRANCHING RATIOS**

$\Gamma(D\bar{D})/\Gamma(D^*\bar{D}^*)$					$\Gamma_1/\Gamma_3$
VALUE	CL%	DOCUMENT ID	TECN	COMMENT	
<0.09	90	PAKHLOV	08 BELL	$e^+e^- \rightarrow J/\psi X$	

$\Gamma(D^*\bar{D} + \text{c.c.})/\Gamma(D^*\bar{D}^*)$					$\Gamma_2/\Gamma_3$
<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<0.22	90	PAKHLOV 08	BELL	$e^+e^- \rightarrow J/\psi X$	

$\Gamma(J/\psi\phi)/\Gamma_{\text{total}}$					$\Gamma_4/\Gamma$
<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
seen	24k	<sup>1</sup> AAIJ	21E LHCB	$B^+ \rightarrow J/\psi\phi K^+$	

<sup>1</sup>From an amplitude analysis of the decay  $B^+ \rightarrow J/\psi\phi K^+$  with a significance of  $4.8\sigma$ .

### X(4160) REFERENCES

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