

X(3940)

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

OMITTED FROM SUMMARY TABLE
Reported by ABE 07, observed in $e^+e^- \rightarrow J/\psi X$.

X(3940) MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
3942± 9 OUR AVERAGE				
3945 ⁺²⁸⁺³⁷ ₋₁₇₋₂₈	1.6k	¹ AAIJ	24AB LHCB	$B^+ \rightarrow D^{*\pm} D^\mp K^+$
3942 ⁺⁷ ₋₆ ± 6	52	PAKHLOV	08 BELL	$e^+e^- \rightarrow J/\psi X$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3943± 6 ± 6	25	² ABE	07 BELL	$e^+e^- \rightarrow J/\psi X$
3936±14	266	³ ABE	07 BELL	$e^+e^- \rightarrow J/\psi(c\bar{c})$
¹ From a simultaneous amplitude analysis of $B^+ \rightarrow D^{*+} D^- K^+$, $B^+ \rightarrow D^{*-} D^+ K^+$ and their c.c.				
² From a fit to $D^{*+} D^-$ and $D^{*0} \bar{D}^0$ events.				
³ From the inclusive fit. Not independent of the exclusive measurement by ABE 07.				

X(3940) WIDTH

VALUE (MeV)	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
43⁺²⁸₋₁₈ OUR AVERAGE Error includes scale factor of 1.1.					
130 ⁺⁹²⁺¹⁰¹ ₋₄₉₋₇₀	1.6k	¹ AAIJ	24AB LHCB	$B^+ \rightarrow D^{*\pm} D^\mp K^+$	
37 ⁺²⁶ ₋₁₅ ± 8	52	PAKHLOV	08 BELL	$e^+e^- \rightarrow J/\psi X$	
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●					
< 52	90	25	ABE	07 BELL	$e^+e^- \rightarrow J/\psi X$
¹ From a simultaneous amplitude analysis of $B^+ \rightarrow D^{*+} D^- K^+$, $B^+ \rightarrow D^{*-} D^+ K^+$ and their c.c.					

X(3940) DECAY MODES

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

X(3940) BRANCHING RATIOS

$\Gamma(D\bar{D}^* + \text{c.c.})/\Gamma_{\text{total}}$ Γ_1/Γ

VALUE CL% EVTS DOCUMENT ID TECN COMMENT

• • • We do not use the following data for averages, fits, limits, etc. • • •
>0.45 90 25 1,2 ABE 07 BELL $e^+e^- \rightarrow J/\psi X$

¹For X(3940) decaying to final states with more than two tracks.
²PAKHLOV 08 finds that the inclusive peak near 3940 MeV/c² may consist of several states.

$\Gamma(D\bar{D})/\Gamma_{\text{total}}$ Γ_2/Γ

VALUE CL% DOCUMENT ID TECN COMMENT

• • • We do not use the following data for averages, fits, limits, etc. • • •
<0.41 90 1,2 ABE 07 BELL $e^+e^- \rightarrow J/\psi X$

¹For X(3940) decaying to final states with more than two tracks.
²PAKHLOV 08 finds that the inclusive peak near 3940 MeV/c² may consist of several states.

$\Gamma(J/\psi\omega)/\Gamma_{\text{total}}$ Γ_3/Γ

VALUE CL% DOCUMENT ID TECN COMMENT

• • • We do not use the following data for averages, fits, limits, etc. • • •
<0.26 90 1,2 ABE 07 BELL $e^+e^- \rightarrow J/\psi X$

¹For X(3940) decaying to final states with more than two tracks.
²PAKHLOV 08 finds that the inclusive peak near 3940 MeV/c² may consist of several states.

X(3940) REFERENCES

AAIJ	24AB	PRL 133 131902	R. Aaij <i>et al.</i>	(LHCb Collab.)
PAKHLOV	08	PRL 100 202001	P. Pakhlov <i>et al.</i>	(BELLE Collab.)
ABE	07	PRL 98 082001	K. Abe <i>et al.</i>	(BELLE Collab.)