$X(3900)^{\pm}$

$I(J^P) = ?(1^+)$

Seen as a peak in the invariant mass distribution of the $J/\psi\pi^{\pm}$ system by BES3 (ABLIKIM 13T) in $e^+e^- \to \pi^+\pi^- J/\psi$ at c.m. energy of 4.42 GeV and by radiative return from e^+e^- collisions at $\sqrt{s}$ from 9.46 to 10.86 GeV at BELLE (LIU 13B). Angular analysis of ABLIKIM 14A favors the $J^P = 1^+$ assignment. Needs confirmation.

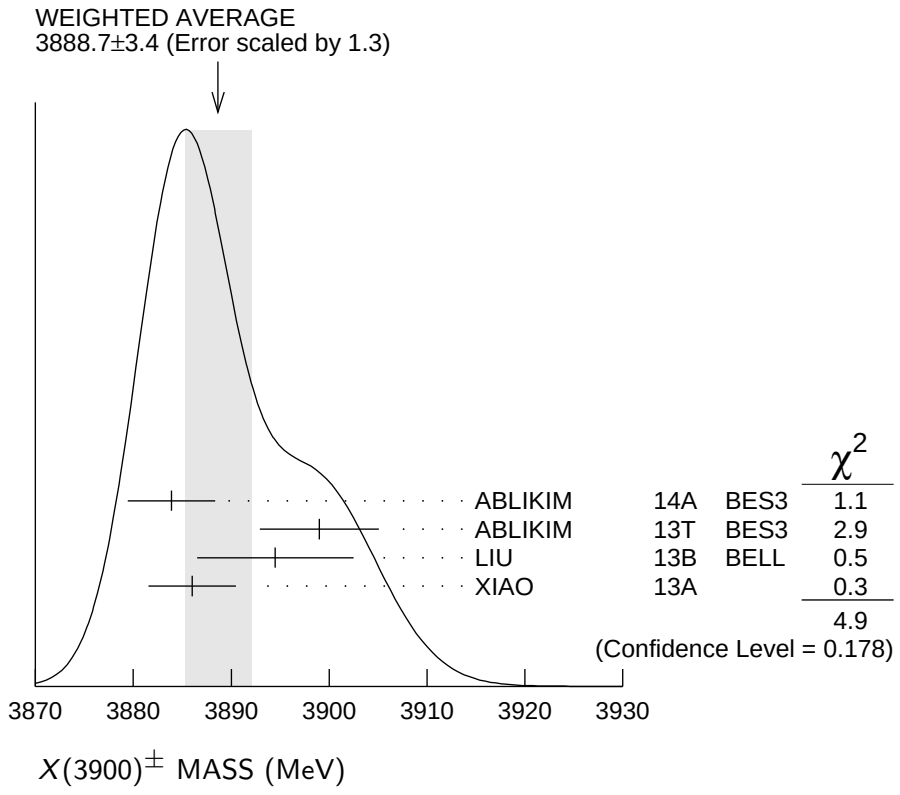
$X(3900)^{\pm}$ MASS

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
3888.7±3.4 OUR AVERAGE		Error includes scale factor of 1.3. See the ideogram below.			
3883.9±1.5±4.2	1.2k	[1,2] ABLIKIM	14A	BES3	$e^+e^- \to \pi^{\pm}(D\overline{D}^*)^{\mp}$
3899.0±3.6±4.9	307 ± 48	[1] ABLIKIM	13T	BES3	$e^+e^- \to \pi^+\pi^- J/\psi$
3894.5±6.6±4.5	159 ± 49	[1] LIU	13B	BELL	$e^+e^- \to \gamma\pi^+\pi^- J/\psi$
3886 ±4 ±2	81 ± 16	[3] XIAO	13A		4.17 $e^+e^- \to \pi^+\pi^- J/\psi$

[1] Neglecting interference between the $X(3900)$ and non-resonant continuum.

[2] With estimated statistical signifance of more than 18 σ.

[3] For $M^2(\pi^+\pi^-) < 0.65$ GeV^2. Signal has 5.7σ significance including systematic uncertainties. Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.



$X(3900)^{\pm}$ WIDTH

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
35 ± 7 OUR AVERAGE					
$24.8 \pm 3.3 \pm 11.0$	1.2k	[1,2] ABLIKIM	14A	BES3	$e^+e^- \to \pi^\pm (D\overline{D}^*)^\mp$
$46 \pm 10 \pm 20$	307 ± 48	[1] ABLIKIM	13T	BES3	$e^+e^- \to \pi^+\pi^- J/\psi$
$63 \pm 24 \pm 26$	159 ± 49	[1] LIU	13B	BELL	$e^+e^- \to \gamma\pi^+\pi^- J/\psi$
$37 \pm 4 \pm 8$	81 ± 16	[3] XIAO	13A		4.17 $e^+e^- \to \pi^+\pi^- J/\psi$

[1] Neglecting interference between the $X(3900)$ and non-resonant continuum.

[2] With estimated statistical signifance of more than 18 σ.

[3] For $M^2(\pi^+\pi^-) < 0.65$ GeV^2. Signal has 5.7σ significance including systematic uncertainties. Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.

$X(3900)^{\pm}$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$J/\psi\pi^\pm$	seen
Γ_2	$h_c\pi^\pm$	not seen
Γ_3	$(D\overline{D}^*)^\pm$	seen

$X(3900)^{\pm}$ BRANCHING RATIOS

$\Gamma(J/\psi\pi^\pm)/\Gamma_{\text{total}}$ Γ_1/Γ

VALUE	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
seen	307 ± 48	ABLIKIM	13T	BES3	$e^+e^- \to \pi^+\pi^- J/\psi$

$\Gamma(h_c\pi^\pm)/\Gamma_{\text{total}}$ Γ_2/Γ

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
not seen	ABLIKIM	13X	BES3	$e^+e^- \to h_c\pi^\pm$

$\Gamma((D\overline{D}^*)^\pm)/\Gamma(J/\psi\pi^\pm)$ Γ_3/Γ_1

VALUE	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
6.2±1.1±2.7	1.2k	[1] ABLIKIM	14A	BES3	$e^+e^- \to \pi^\pm (D\overline{D}^*)^\mp$

[1] Assuming the same origin of the $(D\overline{D}^*)^\pm$ and $\pi^\pm J/\psi$ decay modes.

$X(3900)^{\pm}$ REFERENCES

ABLIKIM	14A	PRL 112 022001	M. Ablikim *et al.*	(BES III Collab.) JP
ABLIKIM	13T	PRL 110 252001	M. Ablikim *et al.*	(BES III Collab.)
ABLIKIM	13X	PRL 111 242001	M. Ablikim *et al.*	(BES III Collab.)
LIU	13B	PRL 110 252002	Z.Q. Liu *et al.*	(BELLE Collab.)
XIAO	13A	PL B727 366	T. Xiao *et al.*	(NWES)