NODE=M210

$X(3900)^{\pm}$

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

Seen as a peak in the invariant mass distribution of the $J/\psi\pi^{\pm}$ system by BES3 (ABLIKIM 13T) in $e^+e^- \rightarrow \pi^+\pi^- J/\psi$ 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.

NODE=M210

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

NODE=M210M

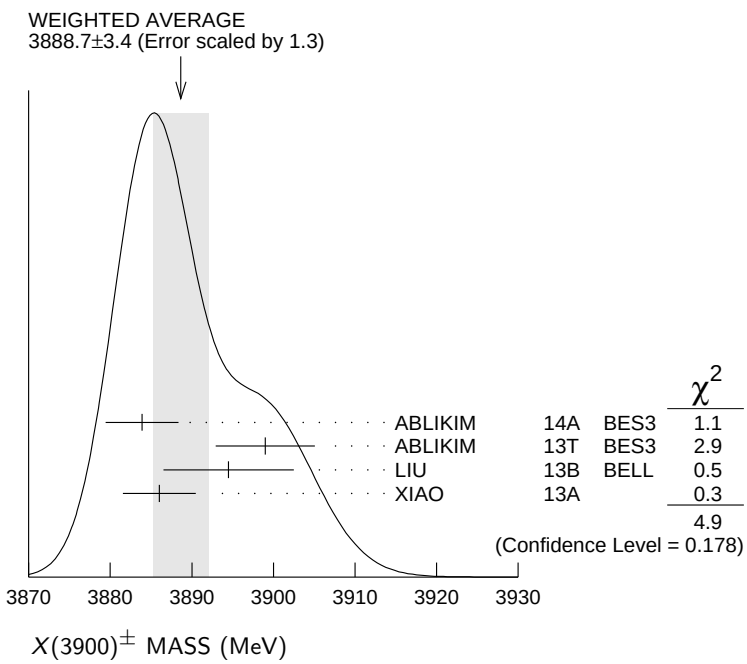
VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
3888.7±3.4 OUR AVERAGE		Error includes scale factor of 1.3. See the ideogram below.			
3883.9±1.5±4.2	1.2k	[1,2] ABLIKIM	14A	BES3	$e^+e^- \rightarrow \pi^{\pm}(D\overline{D}^*)^{\mp}$
3899.0±3.6±4.9	307 ± 48	[1] ABLIKIM	13T	BES3	$e^+e^- \rightarrow \pi^+\pi^-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

NODE=M210M

[1] Neglecting interference between the $X(3900)$ and non-resonant continuum. NODE=M210M;LINKAGE=A

[2] With estimated statistical signifance of more than 18 σ. NODE=M210M;LINKAGE=C

[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. NODE=M210M;LINKAGE=B



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

NODE=M210W

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

NODE=M210W

[1] Neglecting interference between the $X(3900)$ and non-resonant continuum. NODE=M210W;LINKAGE=A

[2] With estimated statistical signifance of more than 18 σ. NODE=M210W;LINKAGE=C

[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. NODE=M210W;LINKAGE=B

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

NODE=M210215;NODE=M210

	Mode	Fraction (Γ_i/Γ)	
Γ_1	$J/\psi\pi^{\pm}$	seen	DESIG=1
Γ_2	$h_c\pi^{\pm}$	not seen	DESIG=2
Γ_3	$(D\overline{D}^*)^{\pm}$	seen	DESIG=3;OUR EVAL;→ UNCHECKED ←

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

NODE=M210225

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

NODE=M210R01
NODE=M210R01

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

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

NODE=M210R02
NODE=M210R02

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

NODE=M210R03
NODE=M210R03

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.

NODE=M210R03;LINKAGE=A

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

NODE=M210

ABLIKIM	14A	PRL 112 022001	M. Ablikim *et al.*	(BES III Collab.) JP	REFID=55648
ABLIKIM	13T	PRL 110 252001	M. Ablikim *et al.*	(BES III Collab.)	REFID=55409
ABLIKIM	13X	PRL 111 242001	M. Ablikim *et al.*	(BES III Collab.)	REFID=55635
LIU	13B	PRL 110 252002	Z.Q. Liu *et al.*	(BELLE Collab.)	REFID=55410
XIAO	13A	PL B727 366	T. Xiao *et al.*	(NWES)	REFID=55593