$\chi_{c2}(3930)$

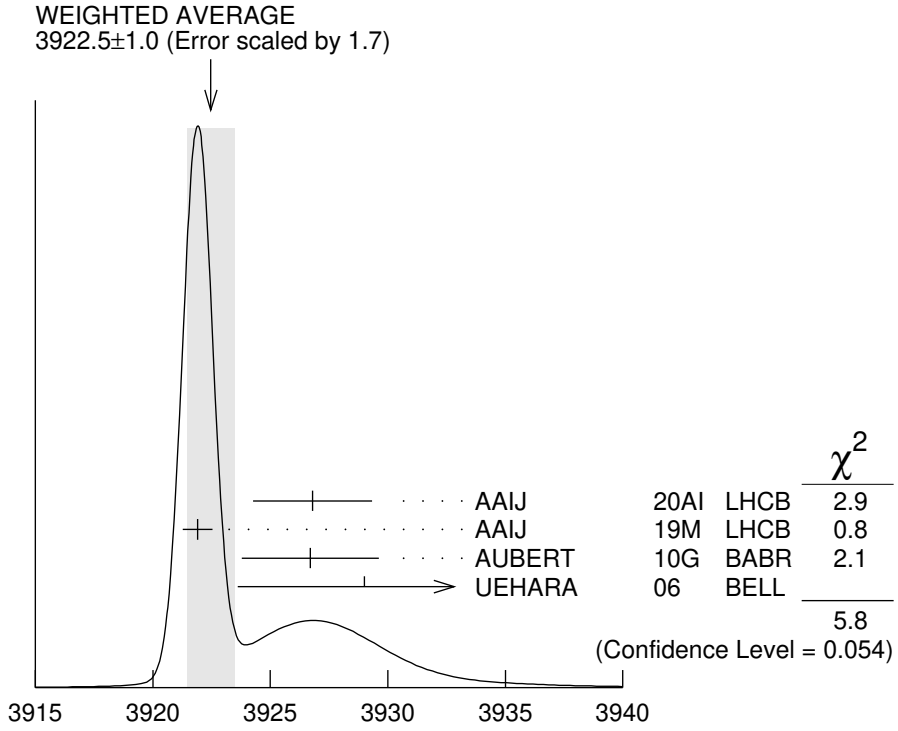
$I^G(J^{PC}) = 0^+(2^{++})$

$\chi_{c2}(3930)$ MASS

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
3922.5±1.0 OUR AVERAGE		Error includes scale factor of 1.7. See the ideogram below.			
3926.8±2.4±0.8	1.2k	[1] AAIJ	20AI	LHCB	$B^+ \to D^+ D^- K^+$
3921.9±0.6±0.2		[2] AAIJ	19M	LHCB	$pp \to D\overline{D} +$ anything
3926.7±2.7±1.1	76 ± 17	AUBERT	10G	BABR	10.6 $e^+e^- \to e^+e^- D\overline{D}$
3929 ±5 ±2	64	UEHARA	06	BELL	10.6 $e^+e^- \to e^+e^- D\overline{D}$

[1] Obtained from the full amplitude analysis. Parameterized with the relativistic Breit-Wigner line shape. Previous measurements assumed a single state in this region. This analysis revealed the presence of $\chi_{c0}(3930)$ with the same mass.

[2] Measured in prompt hadroproduction.



$\chi_{c2}(3930)$ WIDTH

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
35.2± 2.2 OUR AVERAGE		Error includes scale factor of 1.2.			
34.2± 6.6±1.1	1.2k	[1] AAIJ	20AI	LHCB	$B^+ \to D^+ D^- K^+$
36.6± 1.9±0.9		[2] AAIJ	19M	LHCB	$pp \to D\overline{D} +$ anything
21.3± 6.8±3.6	76 ± 17	AUBERT	10G	BABR	10.6 $e^+e^- \to e^+e^- D\overline{D}$
29 ±10 ±2	64	UEHARA	06	BELL	10.6 $e^+e^- \to e^+e^- D\overline{D}$

[1] Obtained from the full amplitude analysis. Parameterized with the relativistic Breit-Wigner line shape. Previous measurements assumed a single state in this region. This analysis revealed the presence of $\chi_{c0}(3930)$ with the same mass.

[2] Measured in prompt hadroproduction.

$\chi_{c2}(3930)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$\gamma\gamma$	seen
Γ_2	$K\overline{K}\pi$	not seen
Γ_3	$K^+K^-\pi^+\pi^-\pi^0$	not seen
Γ_4	$D\overline{D}$	seen
Γ_5	D^+D^-	seen
Γ_6	$D^0\overline{D}^0$	seen
Γ_7	$\pi^+\pi^-\eta_c(1S)$	not seen
Γ_8	$K\overline{K}$	not seen

$\chi_{c2}(3930)$ PARTIAL WIDTHS

$\chi_{c2}(3930)$ $\Gamma(i)\Gamma(\gamma\gamma)/\Gamma(\text{total})$

$\Gamma(K\overline{K}\pi) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$ $\Gamma_2\Gamma_1/\Gamma$

VALUE (eV)	CL%	DOCUMENT ID	TECN	COMMENT
<2.1	90	DEL-AMO-SA..11M	BABR	$\gamma\gamma \to K^0_S K^\pm \pi^\mp$

$\Gamma(K^+K^-\pi^+\pi^-\pi^0) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$ $\Gamma_3\Gamma_1/\Gamma$

VALUE (eV)	CL%	DOCUMENT ID	TECN	COMMENT
<3.4	90	DEL-AMO-SA..11M	BABR	$\gamma\gamma \to K^+K^-\pi^+\pi^-\pi^0$

$\Gamma(D\overline{D}) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$ $\Gamma_4\Gamma_1/\Gamma$

VALUE (keV)	EVTS	DOCUMENT ID		TECN	COMMENT
0.21±0.04 OUR AVERAGE					
0.24±0.05±0.04	76 ± 17	AUBERT	10G	BABR	10.6 $e^+e^- \to e^+e^- D\overline{D}$
0.18±0.05±0.03	64	[1] UEHARA	06	BELL	10.6 $e^+e^- \to e^+e^- D\overline{D}$

[1] Assuming $B(D^+D^-) = 0.89\ B(D^0\overline{D}^0)$.

$\Gamma(\pi^+\pi^-\eta_c(1S)) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$ $\Gamma_7\Gamma_1/\Gamma$

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<18	90	LEES	12AE	BABR	$e^+e^- \to e^+e^-\pi^+\pi^-\eta_c$

$\Gamma(K\overline{K}) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$ $\Gamma_8\Gamma_1/\Gamma$

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<0.256	90	UEHARA	13	BELL	$\gamma\gamma \to K^0_S K^0_S$

$\chi_{c2}(3930)$ BRANCHING RATIOS

$\Gamma(D^+D^-)/\Gamma(D^0\overline{D}^0)$ Γ_5/Γ_6

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.74±0.43±0.16	64	UEHARA	06	BELL	10.6 $e^+e^- \to e^+e^- D\overline{D}$

$\chi_{c2}(3930)$ REFERENCES

AAIJ	20AI	PR D102 112003	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	19M	JHEP 1907 035	R. Aaij *et al.*	(LHCb Collab.)
UEHARA	13	PTEP 2013 123C01	S. Uehara *et al.*	(BELLE Collab.)
LEES	12AE	PR D86 092005	J.P. Lees *et al.*	(BABAR Collab.)
DEL-AMO-SA...	11M	PR D84 012004	P. del Amo Sanchez *et al.*	(BABAR Collab.)
AUBERT	10G	PR D81 092003	B. Aubert *et al.*	(BABAR Collab.)
UEHARA	06	PRL 96 082003	S. Uehara *et al.*	(BELLE Collab.)