$f_2(2340)$

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

$f_2(2340)$ MASS

VALUE (MeV)	EVTS		DOCUMENT ID		TECN	COMMENT
2346^{+21}_{-10} OUR AVERAGE						
$2346\pm 8^{+22}_{-6}$		[1]	ABLIKIM	22C	BES3	$J/\psi \to \gamma\eta'\eta' \to$ $4/5\gamma 2(\pi^+\pi^-)$
$2362^{+31+140}_{-30-63}$	5.5k	[2]	ABLIKIM	13N	BES3	$e^+e^- \to J/\psi \to \gamma\eta\eta$
2339 ± 55		[3]	ETKIN	88	MPS	$22\ \pi^- p \to \phi\phi n$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
2350 ± 7	80k	[4]	UMAN	06	E835	$5.2\ \overline{p}p \to \eta\eta\pi^0$
2392 ± 10			BOOTH	86	OMEG	$85\ \pi^- Be \to 2\phi Be$
2360 ± 20			LINDENBAUM	84	RVUE	

[1] From a partial wave analysis of the systems (γX), with $X \to \eta'\eta'$, and $(\eta' X)$, with $X \to \gamma\eta'$ in the decay $J/\psi \to \gamma\eta'\eta'$. The intermediate resonance X is parametrized by a constant-width, relativistic Breit-Wigner.

[2] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances.

[3] Includes data of ETKIN 85. The percentage of the resonance going into $\phi\phi\ 2^{++}\ S_2$, D_2, and D_0 is 37 ± 19, 4^{+12}_{-4}, and 59^{+21}_{-19}, respectively.

[4] Statistical error only.

$f_2(2340)$ WIDTH

VALUE (MeV)	EVTS		DOCUMENT ID		TECN	COMMENT
331^{+27}_{-18} OUR AVERAGE						
$332\pm 14^{+26}_{-12}$		[1]	ABLIKIM	22C	BES3	$J/\psi \to \gamma\eta'\eta' \to$ $4/5\gamma 2(\pi^+\pi^-)$
$334^{+62+165}_{-54-100}$	5.5k	[2]	ABLIKIM	13N	BES3	$e^+e^- \to J/\psi \to \gamma\eta\eta$
319^{+81}_{-69}		[3]	ETKIN	88	MPS	$22\ \pi^- p \to \phi\phi n$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
218 ± 16	80k	[4]	UMAN	06	E835	$5.2\ \overline{p}p \to \eta\eta\pi^0$
198 ± 50			BOOTH	86	OMEG	$85\ \pi^- Be \to 2\phi Be$
150^{+150}_{-50}			LINDENBAUM	84	RVUE	

[1] From a partial wave analysis of the systems (γX), with $X \to \eta'\eta'$, and $(\eta' X)$, with $X \to \gamma\eta'$ in the decay $J/\psi \to \gamma\eta'\eta'$. The intermediate resonance X is parametrized by a constant-width, relativistic Breit-Wigner.

[2] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances.

[3] Includes data of ETKIN 85.

[4] Statistical error only.

$f_2(2340)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$\phi\phi$	seen
Γ_2	$\eta\eta$	seen
Γ_3	$\eta'\eta'$	seen

$f_2(2340)$ BRANCHING RATIOS

$\Gamma(\eta\eta)/\Gamma_{\text{total}}$ $\qquad\qquad$ Γ_2/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	UMAN	06	E835	5.2 $\overline{p}p \to \eta\eta\pi^0$

$\Gamma(\eta'\eta')/\Gamma_{\text{total}}$ $\qquad\qquad$ Γ_3/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	[1] ABLIKIM	22C	BES3	$J/\psi \to \gamma\eta'\eta' \to 4/5\gamma 2(\pi^+\pi^-)$

[1] From a partial wave analysis of the systems (γX), with $X \to \eta'\eta'$, and $(\eta' X)$, with $X \to \gamma\eta'$ in the decay $J/\psi \to \gamma\eta'\eta'$. The intermediate resonance X is parametrized by a constant-width, relativistic Breit-Wigner.

$f_2(2340)$ REFERENCES

ABLIKIM	22C	PR D105 072002	M. Ablikim *et al.*	(BESIII Collab.)
ABLIKIM	13N	PR D87 092009	M. Ablikim *et al.*	(BESIII Collab.)
UMAN	06	PR D73 052009	I. Uman *et al.*	(FNAL E835)
ETKIN	88	PL B201 568	A. Etkin *et al.*	(BNL, CUNY)
BOOTH	86	NP B273 677	P.S.L. Booth *et al.*	(LIVP, GLAS, CERN)
ETKIN	85	PL 165B 217	A. Etkin *et al.*	(BNL, CUNY)
LINDENBAUM	84	CNPP 13 285	S.J. Lindenbaum	(CUNY)