

$f_2(2340)$ 

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

 **$f_2(2340)$  MASS**

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

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

<sup>2</sup>From partial wave analysis including all possible combinations of  $0^{++}$ ,  $2^{++}$ , and  $4^{++}$  resonances.

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

<sup>4</sup>Statistical error only.

 **$f_2(2340)$  WIDTH**

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

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

<sup>2</sup>From partial wave analysis including all possible combinations of  $0^{++}$ ,  $2^{++}$ , and  $4^{++}$  resonances.

<sup>3</sup>Includes data of ETKIN 85.

<sup>4</sup>Statistical error only.

## $f_2(2340)$ DECAY MODES

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1$ $\phi\phi$	seen
$\Gamma_2$ $\eta\eta$	seen
$\Gamma_3$ $\eta'\eta'$	seen

## $f_2(2340)$ BRANCHING RATIOS

$\Gamma(\eta\eta)/\Gamma_{\text{total}}$	$\Gamma_2/\Gamma$		
VALUE	DOCUMENT ID	TECN	COMMENT
<b>seen</b>	UMAN	06	E835 $5.2 \bar{p}p \rightarrow \eta\eta\pi^0$

$\Gamma(\eta'\eta')/\Gamma_{\text{total}}$	$\Gamma_3/\Gamma$		
VALUE	DOCUMENT ID	TECN	COMMENT
<b>seen</b>	<sup>1</sup> ABLIKIM	22C	BES3 $J/\psi \rightarrow \gamma\eta'\eta' \rightarrow 4/5\gamma 2(\pi^+\pi^-)$

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

## $f_2(2340)$ REFERENCES

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