$f_2(2300)$

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

$f_2(2300)$ MASS

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
2297±28	[1] ETKIN	88	MPS	22 $\pi^- p \to \phi\phi n$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2262± 4±28	[2] ABLIKIM	21AI	BES3	3.51–4.60 $e^+e^- \to \phi\Lambda\overline{\Lambda}$
$2243^{+\ 7+\ 3}_{-\ 6-29}$	[3] UEHARA	13	BELL	$\gamma\gamma \to K^0_S K^0_S$
2270±12	VLADIMIRSK...06		SPEC	40 $\pi^- p \to K^0_S K^0_S n$
2327± 9± 6	ABE	04	BELL	10.6 $e^+e^- \to e^+e^- K^+K^-$
2340±13	[4] LONGACRE	04	RVUE	22 $\pi^- p \to \phi\phi n$, 450 $pp \to p_f 4\pi p_s$
2231±10	BOOTH	86	OMEG	85 π^- Be $\to 2\phi$Be
2220^{+90}_{-20}	LINDENBAUM	84	RVUE	
2320±40	ETKIN	82	MPS	22 $\pi^- p \to 2\phi n$

[1] Includes data of ETKIN 85. The percentage of the resonance going into $\phi\phi$ 2^{++} S_2, D_2, and D_0 is $6^{+15}_{-\ 5}$, 25^{+18}_{-14}, and 69^{+16}_{-27}, respectively.

[2] Threshold enhancement in $\Lambda\overline{\Lambda}$, preferred J^{PC} are 2^{++}, 2^{-+}, or 1^{++}. Could be another state.

[3] Spin 2 preferred, tentatively assigned to $f_2(2300)$.

[4] From a four pole K-matrix reanalysis of ETKIN 88 and BARBERIS 00C data.

$f_2(2300)$ WIDTH

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
149±41	[1] ETKIN	88	MPS	22 $\pi^- p \to \phi\phi n$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
72± 5±43	[2] ABLIKIM	21AI	BES3	3.51–4.60 $e^+e^- \to \phi\Lambda\overline{\Lambda}$
$145\pm12^{+27}_{-34}$	[3] UEHARA	13	BELL	$\gamma\gamma \to K^0_S K^0_S$
90±29	VLADIMIRSK...06		SPEC	40 $\pi^- p \to K^0_S K^0_S n$
275±36±20	ABE	04	BELL	10.6 $e^+e^- \to e^+e^- K^+K^-$
148^{+66}_{-32}	[4] LONGACRE	04	RVUE	22 $\pi^- p \to \phi\phi n$, 450 $pp \to p_f 4\pi p_s$
133±50	BOOTH	86	OMEG	85 π^- Be $\to 2\phi$Be
200±50	LINDENBAUM	84	RVUE	
220±70	ETKIN	82	MPS	22 $\pi^- p \to 2\phi n$

[1] Includes data of ETKIN 85.

[2] Threshold enhancement in $\Lambda\overline{\Lambda}$, preferred J^{PC} are 2^{++}, 2^{-+}, or 1^{++}. Could be another state.

[3] Spin 2 preferred, tentatively assigned to $f_2(2300)$.

[4] From a four pole K-matrix reanalysis of ETKIN 88 and BARBERIS 00C data.

$f_2(2300)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$\phi\phi$	seen
Γ_2	$K\overline{K}$	seen
Γ_3	$\gamma\gamma$	seen
Γ_4	$\Lambda\overline{\Lambda}$	seen

$f_2(2300)$ $\Gamma(i)\Gamma(\gamma\gamma)/\Gamma(total)$

$\Gamma(K\overline{K}) \times \Gamma(\gamma\gamma)/\Gamma_{total}$ $\Gamma_2\Gamma_3/\Gamma$

VALUE (eV)	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$3.2^{+0.5+1.3}_{-0.4-2.2}$	UEHARA	13	BELL	$\gamma\gamma \to K^0_S K^0_S$
44 $\pm 6 \pm 12$	[1] ABE	04	BELL	10.6 $e^+e^- \to e^+e^- K^+K^-$

[1] Assuming spin 2.

$f_2(2300)$ BRANCHING RATIOS

$\Gamma(\phi\phi)/\Gamma_{total}$ Γ_1/Γ

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
seen	BOOTH	86	OMEG	85 π^- Be $\to 2\phi$ Be
seen	ETKIN	82	MPS	22 $\pi^- p \to 2\phi n$

$\Gamma(K\overline{K})/\Gamma_{total}$ Γ_2/Γ

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
seen	VLADIMIRSK...06		SPEC	40 $\pi^- p \to K^0_S K^0_S n$
seen	ABE	04	BELL	10.6 $e^+e^- \to e^+e^- K^+K^-$

$\Gamma(\gamma\gamma)/\Gamma_{total}$ Γ_3/Γ

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
seen	UEHARA	13	BELL	$\gamma\gamma \to K^0_S K^0_S$

$\Gamma(\Lambda\overline{\Lambda})/\Gamma_{total}$ Γ_4/Γ

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
seen	[1] ABLIKIM	21AI	BES3	3.51–4.60 $e^+e^- \to \phi\Lambda\overline{\Lambda}$

[1] Threshold enhancement in $\Lambda\overline{\Lambda}$, preferred J^{PC} are 2^{++}, 2^{-+}, or 1^{++}. Could be another state.

$f_2(2300)$ REFERENCES

ABLIKIM	21AI	PR D104 052006	M. Ablikim *et al.*	(BESIII Collab.)
UEHARA	13	PTEP 2013 123C01	S. Uehara *et al.*	(BELLE Collab.)
VLADIMIRSK...	06	PAN 69 493 Translated from YAF 69 515.	V.V. Vladimirsky *et al.*	(ITEP, Moscow)
ABE	04	EPJ C32 323	K. Abe *et al.*	(BELLE Collab.)
LONGACRE	04	PR D70 094041	R.S. Longacre, S.J. Lindenbaum	(BNL, CUNY)
BARBERIS	00C	PL B471 440	D. Barberis *et al.*	(WA 102 Collab.)
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)
ETKIN	82	PRL 49 1620	A. Etkin *et al.*	(BNL, CUNY)