

$f_2(1950)$

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

OMITTED FROM SUMMARY TABLE

Needs confirmation.

$f_2(1950)$ MASS

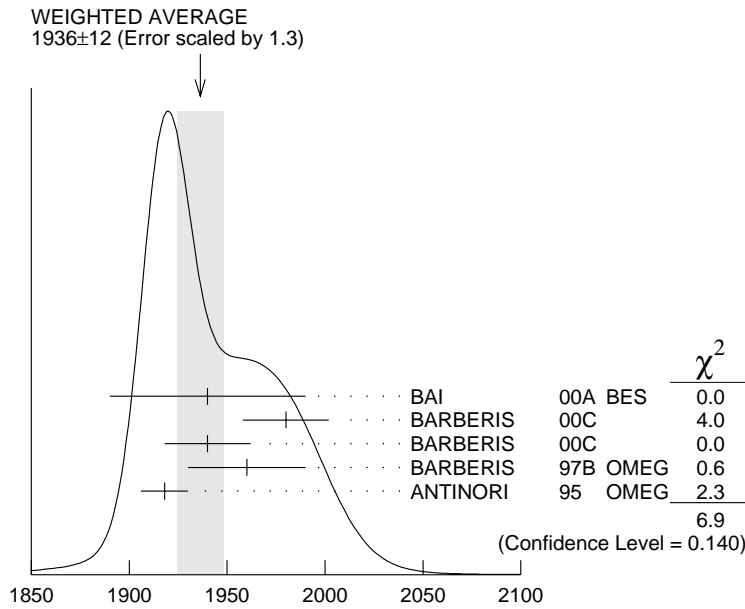
VALUE (MeV)	DOCUMENT ID	TECN	CHG	COMMENT
1936 ± 12 OUR AVERAGE Error includes scale factor of 1.3. See the ideogram below.				
1940 ± 50	BAI	00A	BES	$J/\psi \rightarrow \gamma(\pi^+\pi^-\pi^+\pi^-)$
1980 ± 22	¹ BARBERIS	00C		450 $pp \rightarrow pp4\pi$
1940 ± 22	² BARBERIS	00C		450 $pp \rightarrow pp4\pi$
1960 ± 30	BARBERIS	97B	OMEG	450 $pp \rightarrow pp2(\pi^+\pi^-)$
1918 ± 12	ANTINORI	95	OMEG	300,450 $pp \rightarrow pp2(\pi^+\pi^-)$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
2010 ± 25	ANISOVICH	00J	SPEC	
1980 ± 50	ANISOVICH	99B	SPEC	1.35–1.94 $p\bar{p} \rightarrow \eta\eta\pi^0$
~ 1996	HASAN	94	RVUE	$\bar{p}p \rightarrow \pi\pi$
~ 1990	³ OAKDEN	94	RVUE	0.36–1.55 $\bar{p}p \rightarrow \pi\pi$
1950 ± 15	⁴ ASTON	91	LASS 0	11 $K^-p \rightarrow \Lambda K\bar{K}\pi\pi$

¹ Decaying into $\pi^+\pi^-2\pi^0$.

² Decaying into $2(\pi^+\pi^-)$.

³ From solution B of amplitude analysis of data on $\bar{p}p \rightarrow \pi\pi$. See however KLOET 96 who fit $\pi^+\pi^-$ only and find waves only up to $J = 3$ to be important but not significantly resonant.

⁴ Cannot determine spin to be 2.



$f_2(1950)$ MASS (MeV)

$f_2(1950)$ WIDTH

VALUE (MeV)	DOCUMENT ID	TECN	CHG	COMMENT
464 ± 24 OUR AVERAGE				
380 ⁺¹²⁰ ₋₉₀	BAI	00A	BES	$J/\psi \rightarrow \gamma(\pi^+\pi^-\pi^+\pi^-)$
520 ± 50	⁵ BARBERIS	00C		450 $pp \rightarrow pp4\pi$
485 ± 55	⁶ BARBERIS	00C		450 $pp \rightarrow pp4\pi$
460 ± 40	BARBERIS	97B	OMEG	450 $pp \rightarrow pp2(\pi^+\pi^-)$
390 ± 60	ANTINORI	95	OMEG	300,450 $pp \rightarrow pp2(\pi^+\pi^-)$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
495 ± 35	ANISOVICH	00J	SPEC	
500 ± 100	ANISOVICH	99B	SPEC	1.35–1.94 $p\bar{p} \rightarrow \eta\eta\pi^0$
~ 134	HASAN	94	RVUE	$\bar{p}p \rightarrow \pi\pi$
~ 100	⁷ OAKDEN	94	RVUE	0.36–1.55 $\bar{p}p \rightarrow \pi\pi$
250 ± 50	⁸ ASTON	91	LASS 0	11 $K^-p \rightarrow \Lambda K\bar{K}\pi\pi$

⁵ Decaying into $\pi^+\pi^-2\pi^0$.

⁶ Decaying into $2(\pi^+\pi^-)$.

⁷ From solution B of amplitude analysis of data on $\bar{p}p \rightarrow \pi\pi$. See however KLOET 96 who fit $\pi^+\pi^-$ only and find waves only up to $J = 3$ to be important but not significantly resonant.

⁸ Cannot determine spin to be 2.

$f_2(1950)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
Γ_1 $K^*(892)\bar{K}^*(892)$	seen
Γ_2 $\pi^+\pi^-$	seen
Γ_3 4π	seen
Γ_4 $\pi^+\pi^-\pi^+\pi^-$	
Γ_5 $a_2(1320)\pi$	
Γ_6 $f_2(1270)\pi\pi$	
Γ_7 $\eta\eta$	not seen

$f_2(1950)$ BRANCHING RATIOS

$\Gamma(K^*(892)\bar{K}^*(892))/\Gamma_{\text{total}}$	Γ_1/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>CHG</u> <u>COMMENT</u>
seen	ASTON 91 LASS 0 11 $K^-\rho \rightarrow \Lambda K \bar{K} \pi \pi$

$\Gamma(a_2(1320)\pi)/\Gamma_{\text{total}}$	Γ_5/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>

• • • We do not use the following data for averages, fits, limits, etc. • • •

not seen	BARBERIS 00B 450 $p\rho \rightarrow p_f \eta \pi^+ \pi^- \rho_S$
not seen	BARBERIS 00C 450 $p\rho \rightarrow p_f 4\pi \rho_S$
possibly seen	BARBERIS 97B OMEG 450 $p\rho \rightarrow \rho\rho 2(\pi^+\pi^-)$

$\Gamma(\eta\eta)/\Gamma(4\pi)$	Γ_7/Γ_3
<u>VALUE</u>	<u>CL%</u> <u>DOCUMENT ID</u> <u>COMMENT</u>

• • • We do not use the following data for averages, fits, limits, etc. • • •

$<5.0 \times 10^{-3}$	90 BARBERIS 00E 450 $p\rho \rightarrow p_f \eta \eta \rho_S$
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$f_2(1950)$ REFERENCES

ANISOVICH 00J PL B491 47	A.V. Anisovich <i>et al.</i>	
BAI 00A PL B472 207	J.Z. Bai <i>et al.</i>	(BES Collab.)
BARBERIS 00B PL B471 435	D. Barberis <i>et al.</i>	(WA 102 Collab.)
BARBERIS 00C PL B471 440	D. Barberis <i>et al.</i>	(WA 102 Collab.)
BARBERIS 00E PL B479 59	D. Barberis <i>et al.</i>	(WA 102 Collab.)
ANISOVICH 99B PL B449 154	A.V. Anisovich <i>et al.</i>	
BARBERIS 97B PL B413 217	D. Barberis <i>et al.</i>	(WA 102 Collab.)
KLOET 96 PR D53 6120	W.M. Kloet, F. Myhrer	(RUTG, NORD)
ANTINORI 95 PL B353 589	F. Antinori <i>et al.</i>	(ATHU, BARI, BIRM+) JP
HASAN 94 PL B334 215	A. Hasan, D.V. Bugg	(LOQM)
OAKDEN 94 NPA 574 731	M.N. Oakden, M.R. Pennington	(DURH)
ASTON 91 NP B21 5 (suppl)	D. Aston <i>et al.</i>	(LASS Collab.)

OTHER RELATED PAPERS

ALBRECHT 88N PL B212 528	H. Albrecht <i>et al.</i>	(ARGUS Collab.)
ALBRECHT 87Q PL B198 255	H. Albrecht <i>et al.</i>	(ARGUS Collab.)
ARMSTRONG 87C ZPHY C34 33	T.A. Armstrong <i>et al.</i>	(CERN, BIRM, BARI+)