

$f_2(1810)$

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

OMITTED FROM SUMMARY TABLE

Needs confirmation.

$f_2(1810)$ MASS

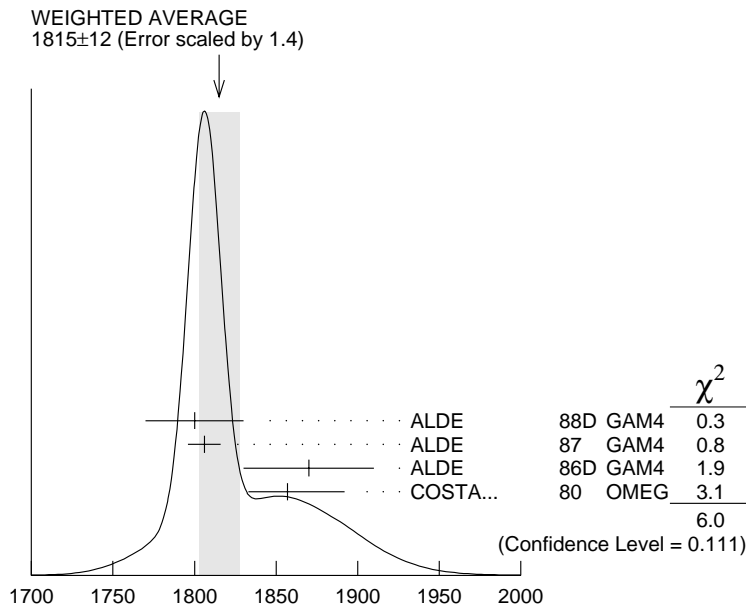
VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
1815±12 OUR AVERAGE		Error includes scale factor of 1.4. See the ideogram below.		
1800±30	40	ALDE	88D GAM4	300 $\pi^- p \rightarrow \pi^- p 4\pi^0$
1806±10	1600	ALDE	87 GAM4	100 $\pi^- p \rightarrow 4\pi^0 n$
1870±40		¹ ALDE	86D GAM4	100 $\pi^- p \rightarrow \eta\eta n$
1857 ⁺³⁵ ₋₂₄		² COSTA...	80 OMEG	10 $\pi^- p \rightarrow K^+ K^- n$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
1858 ⁺¹⁸ ₋₇₁		³ LONGACRE	86 RVUE	Compilation
1799±15		⁴ CASON	82 STRC	8 $\pi^+ p \rightarrow \Delta^{++} \pi^0 \pi^0$

¹ Seen in only one solution.

² Error increased by spread of two solutions. Included in LONGACRE 86 global analysis.

³ From a partial-wave analysis of data using a K-matrix formalism with 5 poles. Includes compilation of several other experiments.

⁴ From an amplitude analysis of the reaction $\pi^+ \pi^- \rightarrow 2\pi^0$. The resonance in the $2\pi^0$ final state is not confirmed by PROKOSHKIN 97.



$f_2(1810)$ mass (MeV)

$f_2(1810)$ WIDTH

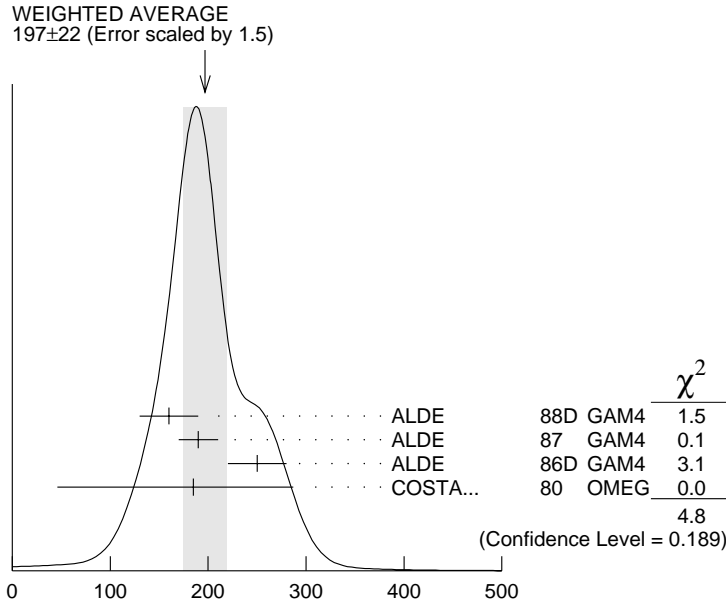
VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
197 ± 22 OUR AVERAGE				Error includes scale factor of 1.5. See the ideogram below.
160 ± 30	40	ALDE	88D GAM4	300 $\pi^- p \rightarrow \pi^- p 4\pi^0$
190 ± 20	1600	ALDE	87 GAM4	100 $\pi^- p \rightarrow 4\pi^0 n$
250 ± 30		⁵ ALDE	86D GAM4	100 $\pi^- p \rightarrow \eta\eta n$
185 ⁺¹⁰² ₋₁₃₉		⁶ COSTA...	80 OMEG	10 $\pi^- p \rightarrow K^+ K^- n$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
388 ⁺¹⁵ ₋₂₁		⁷ LONGACRE	86 RVUE	Compilation
280 ⁺⁴² ₋₃₅		⁸ CASON	82 STRC	8 $\pi^+ p \rightarrow \Delta^{++} \pi^0 \pi^0$

⁵ Seen in only one solution.

⁶ Error increased by spread of two solutions. Included in LONGACRE 86 global analysis.

⁷ From a partial-wave analysis of data using a K-matrix formalism with 5 poles. Includes compilation of several other experiments.

⁸ From an amplitude analysis of the reaction $\pi^+ \pi^- \rightarrow 2\pi^0$. The resonance in the $2\pi^0$ final state is not confirmed by PROKOSHKIN 97.



$f_2(1810)$ width (MeV)

$f_2(1810)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
Γ_1 $\pi\pi$	
Γ_2 $\eta\eta$	
Γ_3 $4\pi^0$	seen
Γ_4 K^+K^-	

$f_2(1810)$ BRANCHING RATIOS

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

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
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• • • We do not use the following data for averages, fits, limits, etc. • • •

not seen	PROKOSHKIN 97	GAM2	38 $\pi^- p \rightarrow \pi^0 \pi^0 n$
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0.21 ^{+0.02} _{-0.03}	⁹ LONGACRE	86	RVUE Compilation
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0.44 ± 0.03	¹⁰ CASON	82	STRC 8 $\pi^+ p \rightarrow \Delta^{++} \pi^0 \pi^0$
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⁹ From a partial-wave analysis of data using a K-matrix formalism with 5 poles. Includes compilation of several other experiments.

¹⁰ Included in LONGACRE 86 global analysis.

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

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
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• • • We do not use the following data for averages, fits, limits, etc. • • •

0.008 ^{+0.028} _{-0.003}	⁹ LONGACRE	86	RVUE Compilation
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$\Gamma(\pi\pi)/\Gamma(4\pi^0)$ Γ_1/Γ_3

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
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• • • We do not use the following data for averages, fits, limits, etc. • • •

<0.75	ALDE	87	GAM4 100 $\pi^- p \rightarrow 4\pi^0 n$
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$\Gamma(4\pi^0)/\Gamma(\eta\eta)$ Γ_3/Γ_2

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
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• • • We do not use the following data for averages, fits, limits, etc. • • •

0.8 ± 0.3	ALDE	87	GAM4 100 $\pi^- p \rightarrow 4\pi^0 n$
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$\Gamma(K^+K^-)/\Gamma_{\text{total}}$ Γ_4/Γ

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
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• • • We do not use the following data for averages, fits, limits, etc. • • •

0.003 ^{+0.019} _{-0.002}	⁹ LONGACRE	86	RVUE Compilation
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seen	COSTA...	80	OMEG 10 $\pi^- p \rightarrow K^+ K^- n$
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$f_2(1810)$ REFERENCES

PROKOSHKIN	97	SPD 42 117	+Kondashov, Sadovsky+	(SERP)
		Translated from	DANS 353 323.	
ALDE	88D	SJNP 47 810	+Bellazzini, Binon+	(SERP, BELG, LANL, LAPP, PISA)
		Translated from	YAF 47 1273.	
ALDE	87	PL B198 286	+Binon, Bricman+	(LANL, BRUX, SERP, LAPP)
ALDE	86D	NP B269 485	+Binon, Bricman+	(BELG, LAPP, SERP, CERN, LANL)
LONGACRE	86	PL B177 223	+Etkin+	(BNL, BRAN, CUNY, DUKE, NDAM)
CASON	82	PRL 48 1316	+Biswas, Baumbaugh, Bishop+	(NDAM, ANL)
COSTA...	80	NP B175 402	Costa De Beaugard+	(BARI, BONN, CERN+)

OTHER RELATED PAPERS

AKER	91	PL B260 249	+Amsler, Peters+	(Crystal Barrel Collab.)
CASON	83	PR D28 1586	+Cannata, Baumbaugh, Bishop+	(NDAM, ANL)
ETKIN	82B	PR D25 1786	+Foley, Lai+	(BNL, CUNY, TUFTS, VAND)