

$f_2(1810)$

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

OMITTED FROM SUMMARY TABLE

Needs confirmation.

$f_2(1810)$ MASS

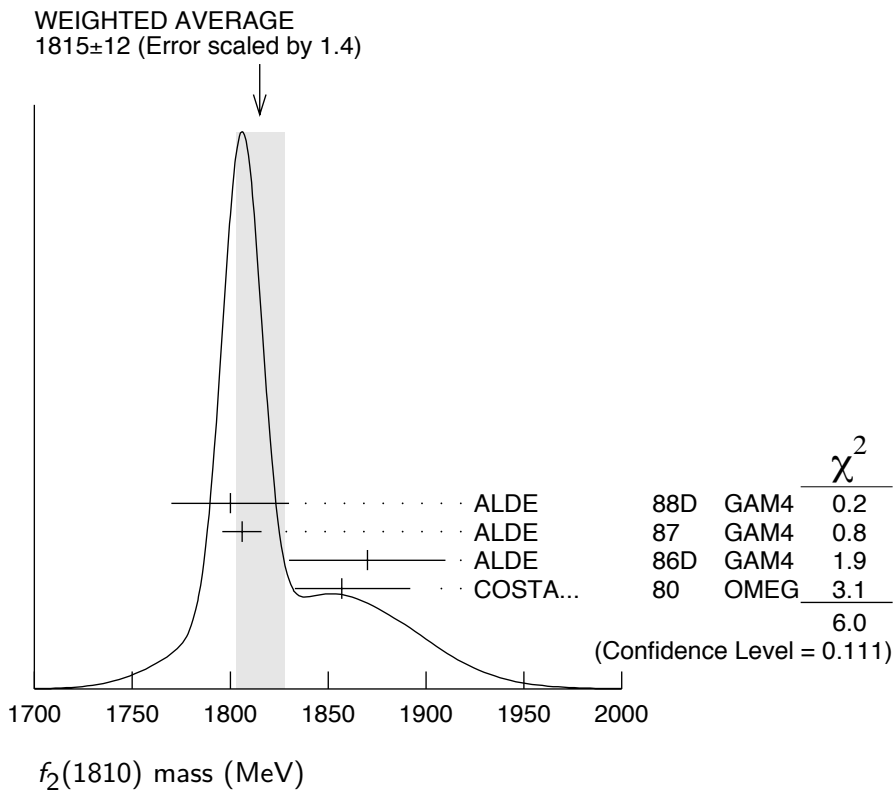
VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
1815±12 OUR AVERAGE		Error includes scale factor of 1.4. See the ideogram below.		
1800±30	40	ALDE	88D	GAM4 300 $\pi^- p \rightarrow \pi^- p 4\pi^0$
1806±10	1600	ALDE	87	GAM4 100 $\pi^- p \rightarrow 4\pi^0 n$
1870±40		¹ ALDE	86D	GAM4 100 $\pi^- p \rightarrow \eta\eta n$
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.



$f_2(1810)$ 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 $\pi^+ p \rightarrow \Delta^{++} \pi^0 \pi^0$

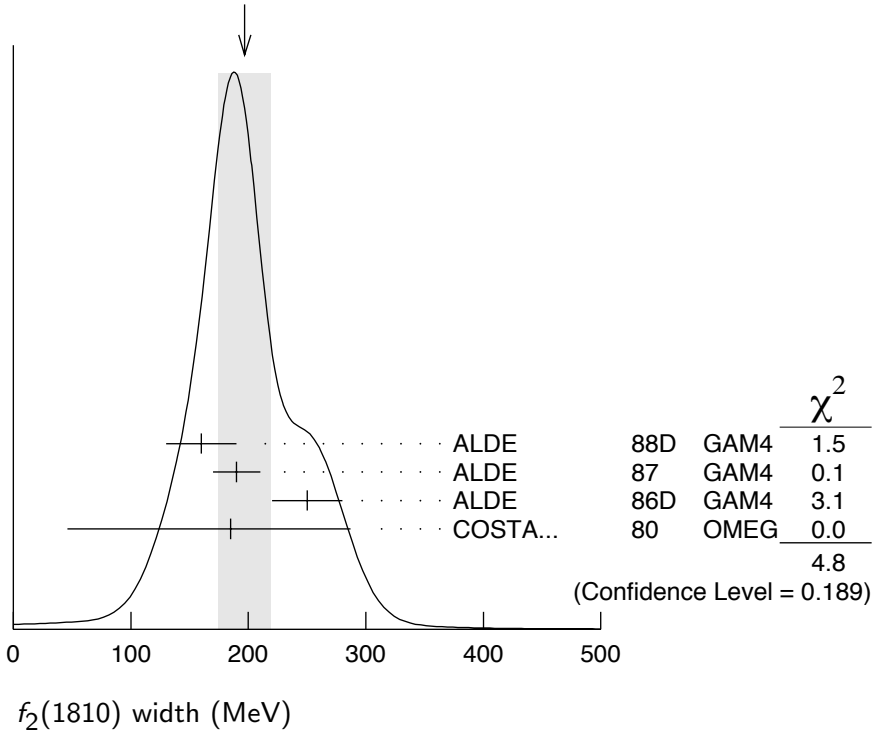
⁵ Seen in only one solution.

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.

WEIGHTED AVERAGE
197 ± 22 (Error scaled by 1.5)



$f_2(1810)$ 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

VALUE	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
not seen	AMSLER 02	CBAR	$0.9 \bar{p}p \rightarrow \pi^0 \eta \eta,$ $\pi^0 \pi^0 \pi^0$
not seen	PROKOSHKIN 97	GAM2	$38 \pi^- p \rightarrow \pi^0 \pi^0 n$
$0.21^{+0.02}_{-0.03}$	⁹ LONGACRE 86	RVUE	Compilation
0.44 ± 0.03	¹⁰ CASON 82	STRC	$8 \pi^+ p \rightarrow \Delta^{++} \pi^0 \pi^0$

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

VALUE	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.008^{+0.028}_{-0.003}$	⁹ LONGACRE 86	RVUE	Compilation

$\Gamma(\pi\pi)/\Gamma(4\pi^0)$ Γ_1/Γ_3

VALUE	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
<0.75	ALDE 87	GAM4	$100 \pi^- p \rightarrow 4\pi^0 n$

$\Gamma(4\pi^0)/\Gamma(\eta\eta)$ Γ_3/Γ_2

VALUE	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.8 ± 0.3	ALDE 87	GAM4	$100 \pi^- p \rightarrow 4\pi^0 n$

$\Gamma(K^+K^-)/\Gamma_{\text{total}}$ Γ_4/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.003^{+0.019}_{-0.002}$	⁹ LONGACRE 86	RVUE	Compilation
seen	COSTA... 80	OMEG	$10 \pi^- p \rightarrow K^+ K^- n$

$f_2(1810)$ REFERENCES

AMSLER	02	EPJ C23 29	C. Amsler <i>et al.</i>	
PROKOSHKIN	97	SPD 42 117	Y.D. Prokoshkin <i>et al.</i>	(SERP)
		Translated from DANS 353 323.		
ALDE	88D	SJNP 47 810	D.M. Alde <i>et al.</i>	(SERP, BELG, LANL, LAPP+)
		Translated from YAF 47 1273.		
ALDE	87	PL B198 286	D.M. Alde <i>et al.</i>	(LANL, BRUX, SERP, LAPP)
ALDE	86D	NP B269 485	D.M. Alde <i>et al.</i>	(BELG, LAPP, SERP, CERN+)
LONGACRE	86	PL B177 223	R.S. Longacre <i>et al.</i>	(BNL, BRAN, CUNY+)
CASON	82	PRL 48 1316	N.M. Cason <i>et al.</i>	(NDAM, ANL)
COSTA...	80	NP B175 402	G. Costa de Beauregard <i>et al.</i>	(BARI, BONN+)

OTHER RELATED PAPERS

ANISOVICH	05	JETPL 80 715	V.V. Anisovich	
		Translated from ZETFP 80 845.		
AKER	91	PL B260 249	E. Aker <i>et al.</i>	(Crystal Barrel Collab.)
CASON	83	PR D28 1586	N.M. Cason <i>et al.</i>	(NDAM, ANL)
ETKIN	82B	PR D25 1786	A. Etkin <i>et al.</i>	(BNL, CUNY, TUFTS, VAND)
