

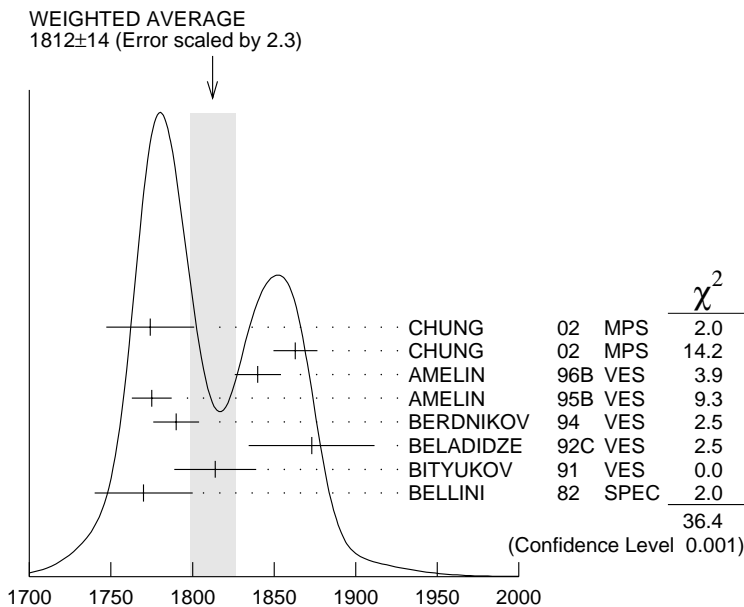
π(1800)

$$I^G(J^{PC}) = 1^-(0^{-+})$$

See also minireview under non- $q\bar{q}$ candidates. (See the index for the page number.)

π(1800) MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	CHG	COMMENT
1812±14 OUR NEW AVERAGE		Error includes scale factor of 2.3. See the ideogram below. [1801 ± 13 MeV OUR 2002 AVERAGE Scale factor = 1.9]			
1774±18±20		¹ CHUNG	02	MPS	18.3 π ⁻ p → π ⁺ π ⁻ π ⁻ p
1863± 9±10		² CHUNG	02	MPS	18.3 π ⁻ p → π ⁺ π ⁻ π ⁻ p
1840±10±10	1200	AMELIN	96B	VES	- 37 π ⁻ A → ηηπ ⁻ A
1775± 7±10		³ AMELIN	95B	VES	- 36 π ⁻ A → π ⁺ π ⁻ π ⁻ A
1790±14		⁴ BERDNIKOV	94	VES	- 37 π ⁻ A → K ⁺ K ⁻ π ⁻ A
1873±33±20		BELADIDZE	92C	VES	- 36 π ⁻ Be → π ⁻ η' η Be
1814±10±23	426±57	BITYUKOV	91	VES	- 36 π ⁻ C → π ⁻ ηη C
1770±30	1100	BELLINI	82	SPEC	- 40 π ⁻ A → 3π A
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1737± 5±15		AMELIN	99	VES	37 π ⁻ A → ω π ⁻ π ⁰ A*



π(1800) mass (MeV)

¹In the $f_0(980)\pi$ wave.

²In the $f_0(600)\pi$ wave.

³From a fit to $J^{PC} = 0^{-+} f_0(980)\pi, f_0(1370)\pi$ waves.

⁴From a fit to $J^{PC} = 0^{-+} K_0^*(1430)K^-, f_0(980)\pi^-$ waves.

$\pi(1800)$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	CHG	COMMENT
207 ± 13 OUR NEW AVERAGE		[210 ± 15 MeV OUR 2002 AVERAGE]			
223 ± 48 ± 50		⁷ CHUNG	02	MPS	18.3 $\pi^- p \rightarrow \pi^+ \pi^- \pi^- p$
191 ± 21 ± 20		⁸ CHUNG	02	MPS	18.3 $\pi^- p \rightarrow \pi^+ \pi^- \pi^- p$
210 ± 30 ± 30	1200	AMELIN	96B	VES	37 $\pi^- A \rightarrow \eta \eta \pi^- A$
190 ± 15 ± 15		⁵ AMELIN	95B	VES	36 $\pi^- A \rightarrow \pi^+ \pi^- \pi^- A$
210 ± 70		⁶ BERDNIKOV	94	VES	37 $\pi^- A \rightarrow K^+ K^- \pi^- A$
225 ± 35 ± 20		BELADIDZE	92C	VES	36 $\pi^- Be \rightarrow \pi^- \eta' \eta Be$
205 ± 18 ± 32	426 ± 57	BITYUKOV	91	VES	36 $\pi^- C \rightarrow \pi^- \eta \eta C$
310 ± 50	1100	BELLINI	82	SPEC	40 $\pi^- A \rightarrow 3\pi A$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
259 ± 19 ± 6		AMELIN	99	VES	37 $\pi^- A \rightarrow \omega \pi^- \pi^0 A^*$

⁵From a fit to $J^{PC} = 0^{-+} f_0(980)\pi, f_0(1370)\pi$ waves.

⁶From a fit to $J^{PC} = 0^{-+} K_0^*(1430)K^-, f_0(980)\pi^-$ waves.

⁷In the $f_0(980)\pi$ wave.

⁸In the $f_0(600)\pi$ wave.

$\pi(1800)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
Γ_1 $\pi^+ \pi^- \pi^-$	seen
Γ_2 $f_0(600)\pi^-$	seen
Γ_3 $f_0(980)\pi^-$	seen
Γ_4 $f_0(1370)\pi^-$	seen
Γ_5 $f_0(1500)\pi^-$	not seen
Γ_6 $\rho\pi^-$	not seen
Γ_7 $\eta\eta\pi^-$	seen
Γ_8 $a_0(980)\eta$	seen
Γ_9 $f_0(1500)\pi^-$	seen
Γ_{10} $\eta\eta'(958)\pi^-$	seen
Γ_{11} $K_0^*(1430)K^-$	seen
Γ_{12} $K^*(892)K^-$	not seen

$\pi(1800)$ BRANCHING RATIOS

$\Gamma(f_0(980)\pi^-)/\Gamma(f_0(600)\pi^-)$					Γ_3/Γ_2
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>	<u>COMMENT</u>	
$0.44 \pm 0.08 \pm 0.38$	¹⁰ CHUNG	02	MPS	18.3 $\pi^- p \rightarrow \pi^+ \pi^- \pi^- p$	

$\Gamma(f_0(980)\pi^-)/\Gamma(f_0(1370)\pi^-)$					Γ_3/Γ_4
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>	<u>COMMENT</u>	
1.7 ± 1.3	AMELIN	95B	VES	— 36 $\pi^- A \rightarrow \pi^+ \pi^- \pi^- A$	

$\Gamma(f_0(1370)\pi^-)/\Gamma_{\text{total}}$					Γ_4/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>	<u>COMMENT</u>	
seen	BELLINI	82	SPEC	— 40 $\pi^- A \rightarrow 3\pi A$	

$\Gamma(f_0(1500)\pi^-)/\Gamma_{\text{total}}$					Γ_5/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>	<u>COMMENT</u>	

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

not seen	CHUNG	02	MPS	18.3 $\pi^- p \rightarrow \pi^+ \pi^- \pi^- p$	
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$\Gamma(\eta\eta\pi^-)/\Gamma(\pi^+\pi^-\pi^-)$					Γ_7/Γ_1
<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>	<u>COMMENT</u>
0.5 ± 0.1	1200	AMELIN	96B	VES	— 37 $\pi^- A \rightarrow \eta\eta\pi^- A$

$\Gamma(f_0(1500)\pi^-)/\Gamma(a_0(980)\eta)$					Γ_9/Γ_8
<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>	<u>COMMENT</u>
0.08 ± 0.03	1200	⁹ AMELIN	96B	VES	— 37 $\pi^- A \rightarrow \eta\eta\pi^- A$

⁹ Assuming that $f_0(1500)$ decays only to $\eta\eta$ and $a_0(980)$ decays only to $\eta\pi$.

$\Gamma(\eta\eta'(958)\pi^-)/\Gamma(\eta\eta\pi^-)$					Γ_{10}/Γ_7
<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>	<u>COMMENT</u>
0.29 ± 0.06 OUR AVERAGE		BELADIDZE	92C	VES	— 36 $\pi^- \text{Be} \rightarrow \pi^- \eta' \eta \text{Be}$
0.29 \pm 0.07		BITYUKOV	91	VES	— 36 $\pi^- \text{C} \rightarrow \pi^- \eta \eta \text{C}$
0.3 \pm 0.1	426 \pm 57				

$\Gamma(K_0^*(1430)K^-)/\Gamma_{\text{total}}$					Γ_{11}/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>	<u>COMMENT</u>	
seen	BERDNIKOV	94	VES	— 37 $\pi^- A \rightarrow K^+ K^- \pi^- A$	

$\Gamma(K^*(892)K^-)/\Gamma_{\text{total}}$					Γ_{12}/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>	<u>COMMENT</u>	

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

not seen	BERDNIKOV	94	VES	— 37 $\pi^- A \rightarrow K^+ K^- \pi^- A$	
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$\Gamma(\rho\pi^-)/\Gamma(f_0(980)\pi^-)$					Γ_6/Γ_3
VALUE	CL%	DOCUMENT ID	TECN	CHG	COMMENT
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●					
<0.25		CHUNG	02	MPS	18.3 $\pi^- p \rightarrow \pi^+ \pi^- \pi^- p$
<0.14	90	AMELIN	95B	VES	— 36 $\pi^- A \rightarrow \pi^+ \pi^- \pi^- A$

$\Gamma(\rho\pi^-)/\Gamma_{\text{total}}$					Γ_6/Γ
VALUE		DOCUMENT ID	TECN	CHG	COMMENT
not seen		BELLINI	82	SPEC	— 40 $\pi^- A \rightarrow 3\pi A$

¹⁰ Assuming that $f_0(980)$ decays only to $\pi\pi$.

$\pi(1800)$ REFERENCES

CHUNG	02	PR D65 072001	S.U. Chung <i>et al.</i>	
AMELIN	99	PAN 62 445	D.V. Amelin <i>et al.</i>	(VES Collab.)
		Translated from YAF 62 487.		
AMELIN	96B	PAN 59 976	D.V. Amelin <i>et al.</i>	(SERP, TBIL) IGJPC
		Translated from YAF 59 1021.		
AMELIN	95B	PL B356 595	D.V. Amelin <i>et al.</i>	(SERP, TBIL)
BERDNIKOV	94	PL B337 219	E.B. Berdnikov <i>et al.</i>	(SERP, TBIL)
BELADIDZE	92C	SJNP 55 1535	G.M. Beladidze, S.I. Bityukov, G.V. Borisov	(SERP+)
		Translated from YAF 55 2748.		
BITYUKOV	91	PL B268 137	S.I. Bityukov <i>et al.</i>	(SERP, TBIL)
BELLINI	82	PRL 48 1697	G. Bellini <i>et al.</i>	(MILA, BGNA, JINR)

OTHER RELATED PAPERS

LANDSBERG	99	SPU 42 871	L.G. Landsberg	
		Translated from UFN 42 961.		
ZAIMIDOROGA	99	PAN 30 1	O.A. Zaimidoriga	
		Translated from SJPN 30 5.		
BORISOV	92	SJNP 55 1441	G.V. Borisov, S.S. Gershtein, A.M. Zaitsev	(SERP)
		Translated from YAF 55 2583.		