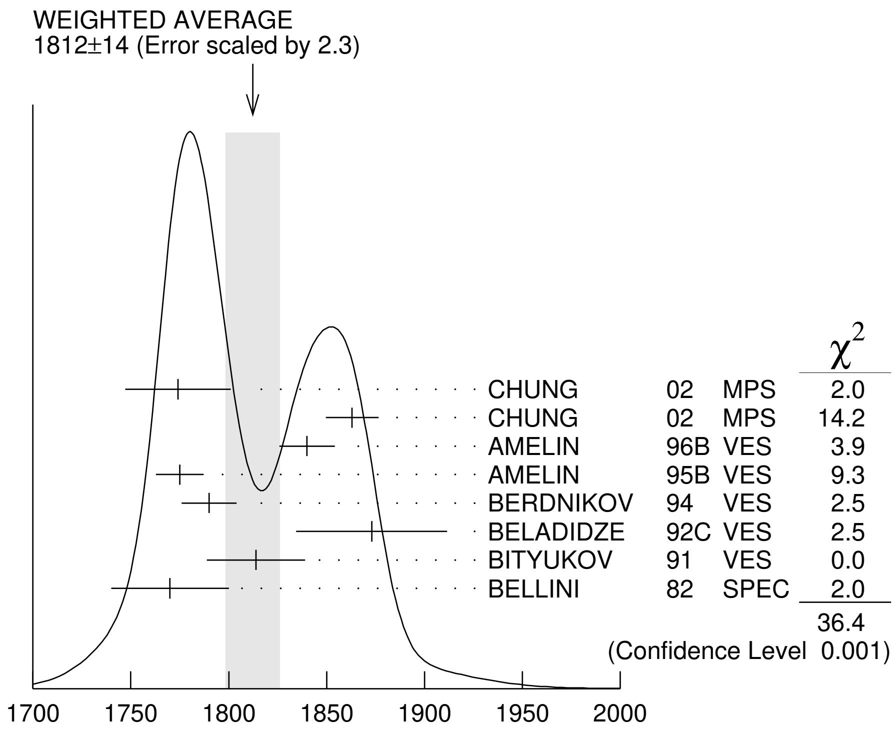
$\pi(1800)$

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

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

$\pi(1800)$ MASS

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



$\pi(1800)$ mass (MeV)

[1] In the $f_0(980)\pi$ wave.
[2] In the $f_0(600)\pi$ wave.
[3] From a fit to $J^{PC} = 0^{-+}$ $f_0(980)\pi$, $f_0(1370)\pi$ waves.
[4] From a fit to $J^{PC} = 0^{-+}$ $K_0^*(1430)K^-$ and $f_0(980)\pi^-$ waves.

$\pi(1800)$ WIDTH

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

[5] From a fit to $J^{PC} = 0^{-+}$ $f_0(980)\pi$, $f_0(1370)\pi$ waves.
[6] From a fit to $J^{PC} = 0^{-+}$ $K_0^*(1430)K^-$ and $f_0(980)\pi^-$ waves.
[7] In the $f_0(980)\pi$ wave.
[8] In 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

VALUE	DOCUMENT ID		TECN	COMMENT
0.44±0.08±0.38	[10] CHUNG	02	MPS	18.3 $\pi^- p \to \pi^+\pi^-\pi^- p$

$\Gamma(f_0(980)\pi^-)/\Gamma(f_0(1370)\pi^-)$ — Γ_3/Γ_4

VALUE	DOCUMENT ID		TECN	CHG	COMMENT
1.7±1.3	AMELIN	95B	VES	–	36 $\pi^- A \to \pi^+\pi^-\pi^- A$

$\Gamma(f_0(1370)\pi^-)/\Gamma_{total}$ — Γ_4/Γ

VALUE	DOCUMENT ID		TECN	CHG	COMMENT
seen	BELLINI	82	SPEC	–	40 π^- A $\to$ 3πA

$\Gamma(f_0(1500)\pi^-)/\Gamma_{total}$ — Γ_5/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
not seen	CHUNG	02	MPS	18.3 $\pi^- p \to \pi^+\pi^-\pi^- p$

$\Gamma(\eta\eta\pi^-)/\Gamma(\pi^+\pi^-\pi^-)$ — Γ_7/Γ_1

VALUE	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
0.5 ±0.1	1200	AMELIN	96B	VES	–	37 $\pi^- A \to \eta\eta\pi^- A$

$\Gamma(f_0(1500)\pi^-)/\Gamma(a_0(980)\eta)$ — Γ_9/Γ_8

VALUE	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
0.08 ±0.03	1200	[9] AMELIN	96B	VES	–	37 $\pi^- A \to \eta\eta\pi^- A$

[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

VALUE	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
0.29±0.06 OUR AVERAGE						
0.29±0.07		BELADIDZE	92C	VES	–	36 π^- Be $\to$ $\pi^-\eta'\eta$Be
0.3 ±0.1	426±57	BITYUKOV	91	VES	–	36 π^- C $\to$ $\pi^-\eta\eta$C

$\Gamma(K_0^*(1430)K^-)/\Gamma_{total}$ — Γ_{11}/Γ

VALUE	DOCUMENT ID		TECN	CHG	COMMENT
seen	BERDNIKOV	94	VES	–	37 $\pi^- A \to K^+K^-\pi^- A$

$\Gamma(K^*(892)K^-)/\Gamma_{total}$ — Γ_{12}/Γ

VALUE	DOCUMENT ID		TECN	CHG	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
not seen	BERDNIKOV	94	VES	–	37 $\pi^- A \to K^+K^-\pi^- A$

$\Gamma(\rho\pi^-)/\Gamma(f_0(980)\pi^-)$ 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 $\pi^- A \rightarrow \pi^+\pi^-\pi^- A$

$\Gamma(\rho\pi^-)/\Gamma_{total}$ Γ_6/Γ

VALUE	DOCUMENT ID		TECN	CHG	COMMENT
not seen	BELLINI	82	SPEC	–	40 π^- A $\rightarrow$ 3πA

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

π(1800) REFERENCES

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