$\pi_1(1600)$

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

$\pi_1(1600)$ MASS

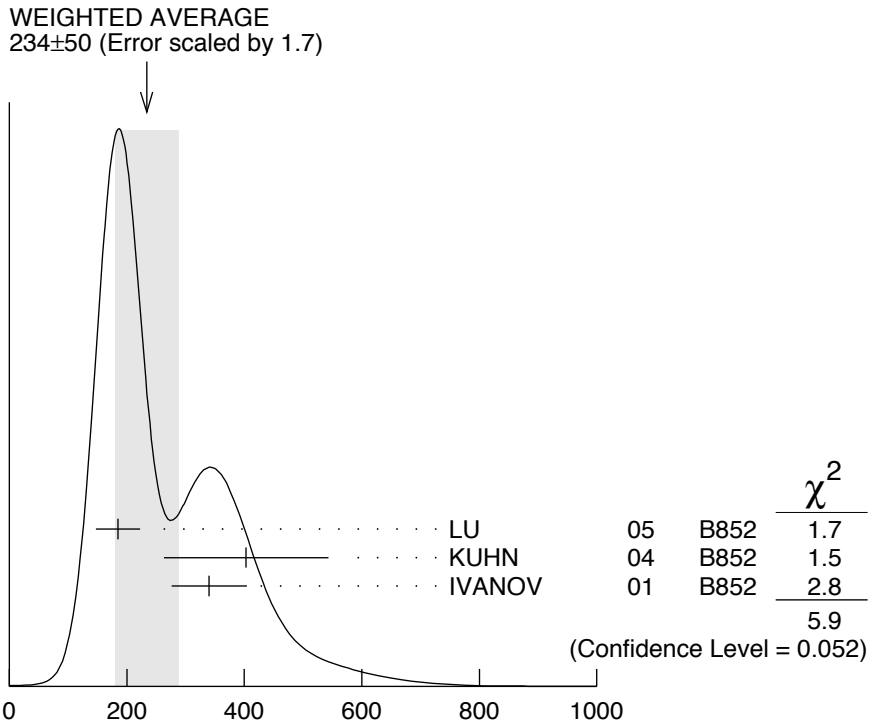
VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
1662^{+15}_{-11} OUR AVERAGE		Error includes scale factor of 1.2.			
$1664 \pm 8 \pm 10$	145k	[1] LU	05	B852	18 $\pi^- p \to \omega\pi^-\pi^0 p$
$1709 \pm 24 \pm 41$	69k	[2] KUHN	04	B852	18 $\pi^- p \to \eta\pi^+\pi^-\pi^- p$
$1597 \pm 10^{+45}_{-10}$		[2] IVANOV	01	B852	18 $\pi^- p \to \eta'\pi^- p$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$1593 \pm 8^{+29}_{-47}$		[2,3] ADAMS	98B	B852	18.3 $\pi^- p \to \pi^+\pi^-\pi^- p$

[1] May be a different state: natural and unnatural parity exchanges.
[2] Natural parity exchange.
[3] Superseded by DZIERBA 06 excluding this state in a more refined PWA analysis, with 2.6 M events of $\pi^- p \to \pi^-\pi^-\pi^+ p$ and 3 M events of $\pi^- p \to \pi^-\pi^0\pi^0 p$ of E852 data.

$\pi_1(1600)$ WIDTH

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
234 ± 50 OUR AVERAGE		Error includes scale factor of 1.7. See the ideogram below.			
$185 \pm 25 \pm 28$	145k	[4] LU	05	B852	18 $\pi^- p \to \omega\pi^-\pi^0 p$
$403 \pm 80 \pm 115$	69k	[5] KUHN	04	B852	18 $\pi^- p \to \eta\pi^+\pi^-\pi^- p$
$340 \pm 40 \pm 50$		[5] IVANOV	01	B852	18 $\pi^- p \to \eta'\pi^- p$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$168 \pm 20^{+150}_{-12}$		[5,6] ADAMS	98B	B852	18.3 $\pi^- p \to \pi^+\pi^-\pi^- p$

[4] May be a different state: natural and unnatural parity exchanges.
[5] Natural parity exchange.
[6] Superseded by DZIERBA 06 excluding this state in a more refined PWA analysis, with 2.6 M events of $\pi^- p \to \pi^-\pi^-\pi^+ p$ and 3 M events of $\pi^- p \to \pi^-\pi^0\pi^0 p$ of E852 data.



$\pi_1(1600)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$\pi\pi\pi$	not seen
Γ_2	$\rho^0\pi^-$	not seen
Γ_3	$f_2(1270)\pi^-$	not seen
Γ_4	$b_1(1235)\pi$	seen
Γ_5	$\eta'(958)\pi^-$	seen
Γ_6	$f_1(1285)\pi$	seen

$\pi_1(1600)$ BRANCHING RATIOS

$\Gamma(\rho^0\pi^-)/\Gamma_{total}$ Γ_2/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	NOZAR	09	CLAS	$\gamma p \to 2\pi^+\pi^- n$
not seen	[7] DZIERBA	06	B852	18 $\pi^- p$

[7] From the PWA analysis of 2.6 M $\pi^- p \to \pi^-\pi^-\pi^+ p$ and 3 M events of $\pi^- p \to \pi^-\pi^0\pi^0 p$ of E852 data. Supersedes ADAMS 98B.

$\Gamma(f_2(1270)\pi^-)/\Gamma_{total}$ Γ_3/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	[8] DZIERBA	06	B852	18 $\pi^- p$

[8] From the PWA analysis of 2.6 M $\pi^- p \to \pi^-\pi^-\pi^+ p$ and 3 M events of $\pi^- p \to \pi^-\pi^0\pi^0 p$ of E852 data. Supersedes CHUNG 02.

$\Gamma(b_1(1235)\pi)/\Gamma_{total}$ Γ_4/Γ

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
seen	35280	[9] BAKER	03	SPEC	$\overline{p}p \rightarrow \omega\pi^+\pi^-\pi^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
seen	145k	LU	05	B852	18 $\pi^- p \rightarrow \omega\pi^-\pi^0 p$

[9] B$((b_1\pi)_{D-wave})$/B$((b_1\pi)_{S\text{-wave}})$=0.3 ± 0.1.

$\Gamma(\eta'(958)\pi^-)/\Gamma_{total}$ Γ_5/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	IVANOV	01	B852	18 $\pi^- p \rightarrow \eta'\pi^- p$

$\Gamma(f_1(1285)\pi)/\Gamma(\eta'(958)\pi^-)$ Γ_6/Γ_5

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
3.80±0.78	69k	[10] KUHN	04	B852	18 $\pi^- p \rightarrow \eta\pi^+\pi^-\pi^- p$

[10] Using $\eta'(958)\pi$ data from IVANOV 01.

$\pi_1(1600)$ REFERENCES

NOZAR	09	PRL 102 102002	M. Nozar *et al.*	(CLAS Collab.)
DZIERBA	06	PR D73 072001	A.R. Dzierba *et al.*	(BNL E852 Collab.)
LU	05	PRL 94 032002	M. Lu *et al.*	(BNL E852 Collab.)
KUHN	04	PL B595 109	J. Kuhn *et al.*	(BNL E852 Collab.)
BAKER	03	PL B563 140	C.A. Baker *et al.*	
CHUNG	02	PR D65 072001	S.U. Chung *et al.*	(BNL E852 Collab.)
IVANOV	01	PRL 86 3977	E.I. Ivanov *et al.*	(BNL E852 Collab.)
ADAMS	98B	PRL 81 5760	G.S. Adams *et al.*	(BNL E852 Collab.)