$\pi_1(1600)$

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

$\pi_1(1600)$ MASS

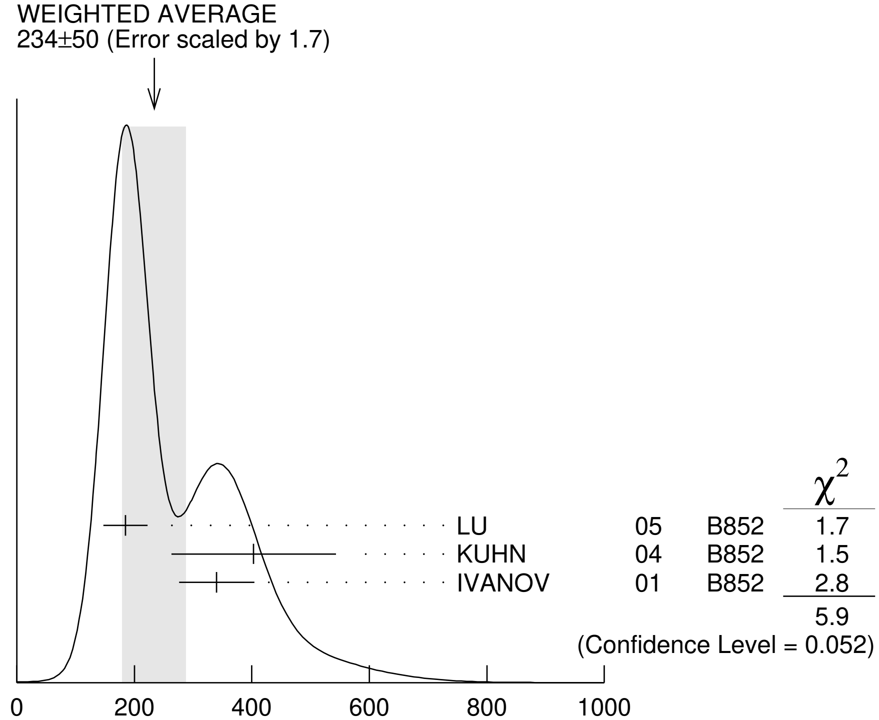
VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
1662^{+15}_{-11} OUR AVERAGE	Error includes scale factor of 1.2.				
$1664\pm 8\pm 10$	145k	[1] LU	05	B852	$18\ \pi^- p \rightarrow \omega\pi^-\pi^0 p$
$1709\pm 24\pm 41$	69k	[2] KUHN	04	B852	$18\ \pi^- p \rightarrow \eta\pi^+\pi^-\pi^- p$
$1597\pm 10^{+45}_{-10}$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

[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[3] Superseded by DZIERBA 06 excluding this state in a more refined PWA analysis, with 2.6 M events of $\pi^- p \rightarrow \pi^-\pi^-\pi^+ p$ and 3 M events of $\pi^- p \rightarrow \pi^-\pi^0\pi^0 p$ 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	$18\ \pi^- p \rightarrow \omega\pi^-\pi^0 p$
$403\pm 80\pm 115$	69k	[5] KUHN	04	B852	$18\ \pi^- p \rightarrow \eta\pi^+\pi^-\pi^- p$
$340\pm 40\pm 50$		[5] IVANOV	01	B852	$18\ \pi^- p \rightarrow \eta'\pi^- p$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$168\pm 20^{+150}_{-12}$		[5,6] ADAMS	98B	B852	$18.3\ \pi^- p \rightarrow \pi^+\pi^-\pi^- p$

[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[6] Superseded by DZIERBA 06 excluding this state in a more refined PWA analysis, with 2.6 M events of $\pi^- p \rightarrow \pi^-\pi^-\pi^+ p$ and 3 M events of $\pi^- p \rightarrow \pi^-\pi^0\pi^0 p$ of E852 data.



$\pi_1(1600)$ width (MeV)

$\pi_1(1600)$ 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	[7] DZIERBA	06	B852	18 $\pi^- p$

[7] From the PWA analysis of 2.6 M $\pi^- p \rightarrow \pi^-\pi^-\pi^+ p$ and 3 M events of $\pi^- p \rightarrow \pi^-\pi^0\pi^0 p$ 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 $\pi^- p \rightarrow \pi^-\pi^-\pi^+ p$ and 3 M events of $\pi^- p \rightarrow \pi^-\pi^0\pi^0 p$ 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	$18\ \pi^- p \rightarrow \omega\pi^-\pi^0 p$

$\Gamma(\eta'(958)\pi^-)/\Gamma_{total}$ 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	$18\ \pi^- p \rightarrow \eta\pi^+\pi^-\pi^- p$

[9] $B((b_1\pi)_{D-wave})/B((b_1\pi)_{S\text{-wave}})=0.3 \pm 0.1$.
[10] Using $\eta'(958)\pi$ data from IVANOV 01.

$\pi_1(1600)$ REFERENCES

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.)

OTHER RELATED PAPERS

BUISSERET	06	EPJ A29 343	F. Buisseret, V. Mathieu	(UMH)
BURNS	06	PR D74 034003	T.J. Burns, F.E. Close	
COOK	06	PR D74 094501	M.S. Cook, H.R. Fiebig	
CUI	06	PR D73 014018	Y. Cui *et al.*	
HEDDITCH	05	PR D72 114507	J.N. Hedditch *et al.*	
POPLAWSKI	05	PR D71 056003	N.J. Poplawski, A.P. Szczepaniak, J.T. Londergan	
CLOSE	04A	PR D70 094015	F.E. Close, J.J. Dudek	
BERNARD	03	PR D68 074505	C. Bernard *et al.*	
JIN	03	PR D67 014025	H.Y. Jin, J.G. Korener, T.G. Steele	
SZCZEPANIAK	03B	PRL 91 092002	A.P. Szczepaniak *et al.*	
ZHANG	03	PR D67 074020	A. Zhang, T.G. Steele	
ACHASOV	02J	PAN 65 552	N.N. Achasov, G.N. Shestakov	
		Translated from YAF 65 579.		
CHUNG	02C	EPL A15 539	S.U. Chung, E. Klempt, J.G. Korener	
ZHANG	02	PR D65 096005	R. Zhang *et al.*	
IDDIR	01	PL B507 183	F. Iddir, A.S. Safir	