$\pi_1(1400)$

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

See also the mini-review under non-$q\overline{q}$ candidates in PDG 06, Journal of Physics, G **33** 1 (2006).

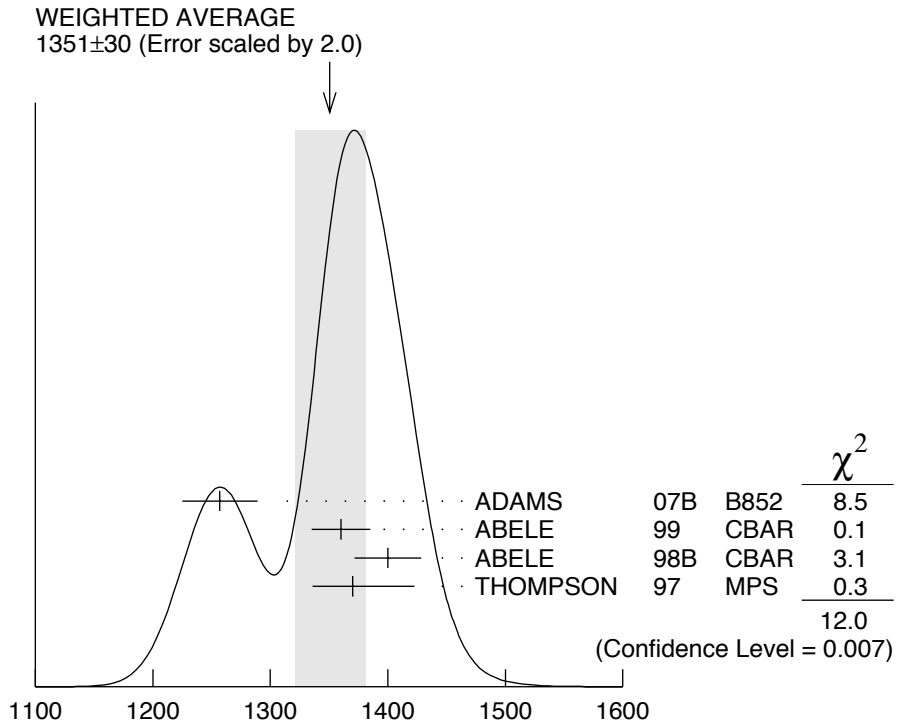
$\pi_1(1400)$ MASS

VALUE (MeV)			*EVTS*	*DOCUMENT ID*		*TECN*	*CHG*	*COMMENT*
1351	**±30**	**OUR AVERAGE**		Error includes scale factor of 2.0. See the ideogram below.				
1257	±20	±25	23.5k	ADAMS	07B	B852		18 $\pi^- p \rightarrow \eta\pi^0 n$
1360	±25			ABELE	99	CBAR		0.0 $\overline{p}p \rightarrow \pi^0\pi^0\eta$
1400	±20	±20		ABELE	98B	CBAR		0.0 $\overline{p}n \rightarrow \pi^-\pi^0\eta$
1370	±16	$^{+50}_{-30}$		[1] THOMPSON	97	MPS		18 $\pi^- p \rightarrow \eta\pi^- p$
• • • We do not use the following data for averages, fits, limits, etc. • • •								
1323.1	± 4.6			[2] AOYAGI	93	BKEI		$\pi^- p \rightarrow \eta\pi^- p$
1406	±20			[3] ALDE	88B	GAM4	0	100 $\pi^- p \rightarrow \eta\pi^0 n$

[1] Natural parity exchange, questioned by DZIERBA 03.

[2] Unnatural parity exchange.

[3] Seen in the P_0-wave intensity of the $\eta\pi^0$ system, unnatural parity exchange.



THE IDEOGRAM SUBTITLE IS MISSING.

$\pi_1(1400)$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
313 ±40 OUR AVERAGE						
354 ±64 ± 58	23.5k	ADAMS	07B	B852		18 $\pi^- p \to \eta\pi^0 n$
220 ±90		ABELE	99	CBAR		0.0 $\overline{p}p \to \pi^0\pi^0\eta$
310 ±50 $^{+\ 50}_{-\ 30}$		ABELE	98B	CBAR		0.0 $\overline{p}n \to \pi^-\pi^0\eta$
385 ±40 $^{+\ 65}_{-105}$		[4] THOMPSON	97	MPS		18 $\pi^- p \to \eta\pi^- p$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
143.2±12.5		[5] AOYAGI	93	BKEI		$\pi^- p \to \eta\pi^- p$
180 ±20		[6] ALDE	88B	GAM4	0	100 $\pi^- p \to \eta\pi^0 n$

[4] Resolution is not unfolded, natural parity exchange, questioned by DZIERBA 03.
[5] Unnatural parity exchange.
[6] Seen in the P_0-wave intensity of the $\eta\pi^0$ system, unnatural parity exchange.

$\pi_1(1400)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$\eta\pi^0$	seen
Γ_2	$\eta\pi^-$	seen
Γ_3	$\eta'\pi$	

$\pi_1(1400)$ BRANCHING RATIOS

$\Gamma(\eta\pi^0)/\Gamma_{\text{total}}$ Γ_1/Γ

VALUE	DOCUMENT ID		TECN	CHG	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
not seen	PROKOSHKIN	95B	GAM4		100 $\pi^- p \to \eta\pi^0 n$
not seen	[7] BUGG	94	RVUE		$\overline{p}p \to \eta 2\pi^0$
not seen	[8] APEL	81	NICE	0	40 $\pi^- p \to \eta\pi^0 n$

[7] Using Crystal Barrel data.
[8] A general fit allowing S, D, and P waves (including m=0) is not done because of limited statistics.

$\Gamma(\eta\pi^-)/\Gamma_{\text{total}}$ Γ_2/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
possibly seen	BELADIDZE	93	VES	$37\pi^- N \to \eta\pi^- N$

$\Gamma(\eta'\pi)/\Gamma(\eta\pi^0)$ Γ_3/Γ_1

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.80	95	BOUTEMEUR	90	GAM4	100 $\pi^- p \to 4\gamma n$

$\pi_1(1400)$ REFERENCES

ADAMS	07B	PL B657 27	G.S. Adams *et al.*	(BNL E852 Collab.)
PDG	06	JPG 33 1	W.-M. Yao *et al.*	(PDG Collab.)
DZIERBA	03	PR D67 094015	A.R. Dzierba *et al.*	
ABELE	99	PL B446 349	A. Abele *et al.*	(Crystal Barrel Collab.)
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THOMPSON	97	PRL 79 1630	D.R. Thompson *et al.*	(BNL E852 Collab.)
PROKOSHKIN	95B	PAN 58 606	Y.D. Prokoshkin, S.A. Sadovsky	(SERP)
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BUGG	94	PR D50 4412	D.V. Bugg *et al.*	(LOQM)
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		Translated from YAF 62 462.		
CHUNG	99	PR D60 092001	S.U. Chung *et al.*	(BNL E852 Collab.)
DONNACHIE	98	PR D58 114012	A. Donnachie *et al.*	
LACOCK	97	PL B401 308	P. Lacock *et al.*	(EDIN, LIVP)
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		Translated from YAF 58 921.		
KALASHNIK...	94	ZPHY C62 323	Y.S. Kalashnikova	(ITEP)
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