

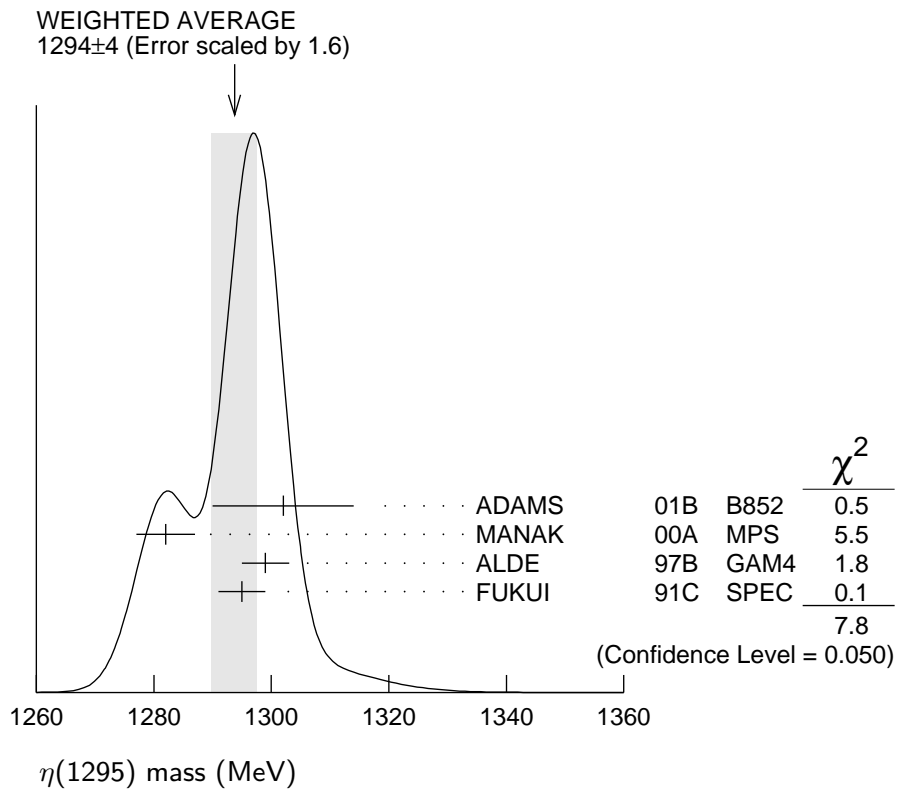
# η(1295)

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

See the review on "Pseudoscalar and pseudovector mesons in the 1400 MeV region."

## η(1295) MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b>1294±4 OUR AVERAGE</b>		Error includes scale factor of 1.6. See the ideogram below.		
1302±9±8	20k	ADAMS	01B B852	18 GeV π <sup>-</sup> p → K <sup>+</sup> K <sup>-</sup> π <sup>0</sup> n
1282±5	9082	MANAK	00A MPS	18 π <sup>-</sup> p → η π <sup>+</sup> π <sup>-</sup> n
1299±4	2100	ALDE	97B GAM4	100 π <sup>-</sup> p → η π <sup>0</sup> π <sup>0</sup> n
1295±4		FUKUI	91C SPEC	8.95 π <sup>-</sup> p → η π <sup>+</sup> π <sup>-</sup> n
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
1264±8		<sup>1</sup> AUGUSTIN	90 DM2	J/ψ → γ η π <sup>+</sup> π <sup>-</sup>
~ 1275		STANTON	79 CNTR	8.4 π <sup>-</sup> p → n η 2π



<sup>1</sup>PWA analysis of AUGUSTIN 92 assigns 0<sup>-+</sup> quantum numbers to this state rather than 1<sup>++</sup> as before.

**$\eta(1295)$  WIDTH**

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b>55 ± 5 OUR AVERAGE</b>				
57 ± 23 ± 21	20k	ADAMS	01B B852	18 GeV $\pi^- p \rightarrow K^+ K^- \pi^0 n$
66 ± 13	9082	MANAK	00A MPS	18 $\pi^- p \rightarrow \eta \pi^+ \pi^- n$
53 ± 6		FUKUI	91C SPEC	8.95 $\pi^- p \rightarrow \eta \pi^+ \pi^- n$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<40	2100	ALDE	97B GAM4	100 $\pi^- p \rightarrow \eta \pi^0 \pi^0 n$
44 ± 20		<sup>2</sup> AUGUSTIN	90 DM2	$J/\psi \rightarrow \gamma \eta \pi^+ \pi^-$
~ 70		STANTON	79 CNTR	8.4 $\pi^- p \rightarrow n \eta 2\pi$
<sup>2</sup> PWA analysis of AUGUSTIN 92 assigns $0^{-+}$ quantum numbers to this state rather than $1^{++}$ as before.				

 **$\eta(1295)$  DECAY MODES**

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1$ $\eta \pi^+ \pi^-$	seen
$\Gamma_2$ $a_0(980)\pi$	seen
$\Gamma_3$ $\gamma\gamma$	
$\Gamma_4$ $\eta \pi^0 \pi^0$	seen
$\Gamma_5$ $\eta(\pi\pi)S$ -wave	seen
$\Gamma_6$ $\sigma\eta$	
$\Gamma_7$ $K\bar{K}\pi$	

 **$\eta(1295)$   $\Gamma(i)\Gamma(\gamma\gamma)/\Gamma(\text{total})$** 

$\Gamma(\eta\pi^+\pi^-) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$					$\Gamma_1\Gamma_3/\Gamma$
VALUE (keV)	CL%	DOCUMENT ID	TECN	COMMENT	
<b>&lt;0.066</b>	95	ACCIARRI	01G L3	183–202 $e^+e^- \rightarrow e^+e^-\eta\pi^+\pi^-$	

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

<0.6	90	AIHARA	88C TPC	$e^+e^- \rightarrow e^+e^-\eta\pi^+\pi^-$	
<0.3		ANTREASYAN	87 CBAL	$e^+e^- \rightarrow e^+e^-\eta\pi\pi$	

$\Gamma(K\bar{K}\pi) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$					$\Gamma_7\Gamma_3/\Gamma$
VALUE (keV)	CL%	DOCUMENT ID	TECN	COMMENT	

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

<0.014	90	<sup>3,4</sup> AHOHE	05 CLE2	10.6 $e^+e^- \rightarrow e^+e^-K_S^0 K^\pm \pi^\mp$	
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<sup>3</sup> Using  $\eta(1295)$  mass and width 1294 MeV and 55 MeV, respectively.<sup>4</sup> Assuming three-body phase-space decay to  $K_S^0 K^\pm \pi^\mp$ .

$\eta(1295)$  BRANCHING RATIOS $\Gamma(a_0(980)\pi)/\Gamma_{\text{total}}$   $\Gamma_2/\Gamma$ 

VALUE	DOCUMENT ID	TECN	COMMENT
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
not seen	BERTIN	97	OBLX 0.0 $\bar{p}p \rightarrow K^\pm (K^0)\pi^\mp \pi^+ \pi^-$
seen	BIRMAN	88	MPS 8 $\pi^- p \rightarrow K^+ \bar{K}^0 \pi^- n$
large	ANDO	86	SPEC 8 $\pi^- p \rightarrow \eta \pi^+ \pi^- n$
large	STANTON	79	CNTR 8.4 $\pi^- p \rightarrow n \eta 2\pi$

 $\Gamma(a_0(980)\pi)/\Gamma(\eta\pi^0\pi^0)$   $\Gamma_2/\Gamma_4$ 

VALUE	DOCUMENT ID	TECN	COMMENT
<b>0.65 ± 0.10</b>	<sup>5</sup> ALDE	97B	GAM4 100 $\pi^- p \rightarrow \eta \pi^0 \pi^0 n$

<sup>5</sup> Assuming that  $a_0(980)$  decays only to  $\eta\pi$ . $\Gamma(\eta(\pi\pi)_{\text{S-wave}})/\Gamma(\eta\pi^0\pi^0)$   $\Gamma_5/\Gamma_4$ 

VALUE	DOCUMENT ID	TECN	COMMENT
<b>0.35 ± 0.10</b>	ALDE	97B	GAM4 100 $\pi^- p \rightarrow \eta \pi^0 \pi^0 n$

 $\Gamma(a_0(980)\pi)/\Gamma(\sigma\eta)$   $\Gamma_2/\Gamma_6$ 

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
<b>0.48 ± 0.22</b>	9082	MANAK	00A	MPS 18 $\pi^- p \rightarrow \eta \pi^+ \pi^- n$

 $\eta(1295)$  REFERENCES

AHOHE	05	PR D71 072001	R. Ahohe <i>et al.</i>	(CLEO Collab.)
ACCIARRI	01G	PL B501 1	M. Acciarri <i>et al.</i>	(L3 Collab.)
ADAMS	01B	PL B516 264	G.S. Adams <i>et al.</i>	(BNL E852 Collab.)
MANAK	00A	PR D62 012003	J.J. Manak <i>et al.</i>	(BNL E852 Collab.)
ALDE	97B	PAN 60 386	D. Alde <i>et al.</i>	(GAMS Collab.)
		Translated from YAF 60 458.		
BERTIN	97	PL B400 226	A. Bertin <i>et al.</i>	(OBELIX Collab.)
AUGUSTIN	92	PR D46 1951	J.E. Augustin, G. Cosme	(DM2 Collab.)
FUKUI	91C	PL B267 293	S. Fukui <i>et al.</i>	(SUGI, NAGO, KEK, KYOT+)
AUGUSTIN	90	PR D42 10	J.E. Augustin <i>et al.</i>	(DM2 Collab.)
AIHARA	88C	PR D38 1	H. Aihara <i>et al.</i>	(TPC-2 $\gamma$ Collab.)
BIRMAN	88	PRL 61 1557	A. Birman <i>et al.</i>	(BNL, FSU, IND, MASD) JP
ANTREASYAN	87	PR D36 2633	D. Antreasyan <i>et al.</i>	(Crystal Ball Collab.)
ANDO	86	PRL 57 1296	A. Ando <i>et al.</i>	(KEK, KYOT, NIRS, SAGA+) IJP
STANTON	79	PRL 42 346	N.R. Stanton <i>et al.</i>	(OSU, CARL, MCGI+) JP