

# π(1300)

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

## π(1300) MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b>1300±100 OUR ESTIMATE</b>				
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
1128± 26±70		DARGENT 17	RVUE	$D^0 \rightarrow \pi^- \pi^+ \pi^- \pi^+$
1345± 8±10	18k	<sup>1</sup> SCHEGELSKY 06	RVUE	$\gamma\gamma \rightarrow \pi^+ \pi^- \pi^0$
1200± 40	90k	SALVINI 04	OBLX	$\bar{p}p \rightarrow 2\pi^+ 2\pi^-$
1343± 15±24		CHUNG 02	B852	$18.3 \pi^- p \rightarrow \pi^+ \pi^- \pi^- p$
1375± 40		ABELE 01	CBAR	$0.0 \bar{p}d \rightarrow \pi^- 4\pi^0 p$
1275± 15		BERTIN 97D	OBLX	$0.05 \bar{p}p \rightarrow 2\pi^+ 2\pi^-$
~ 1114		ABELE 96	CBAR	$0.0 \bar{p}p \rightarrow 5\pi^0$
1190± 30		ZIELINSKI 84	SPEC	$200 \pi^+ Z \rightarrow Z 3\pi$
1240± 30		BELLINI 82	SPEC	$40 \pi^- A \rightarrow A 3\pi$
1273± 50		<sup>2</sup> AARON 81	RVUE	
1342± 20		BONESINI 81	OMEG	$12 \pi^- p \rightarrow p 3\pi$
~ 1400		DAUM 81B	SPEC	$63,94 \pi^- p$

<sup>1</sup> From analysis of L3 data at 183–209 GeV.

<sup>2</sup> Uses multichannel Aitchison-Bowler model (BOWLER 75). Uses data from DAUM 80 and DANKOWYCH 81.

## π(1300) WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b>200 to 600 OUR ESTIMATE</b>				
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
314± 39±66		DARGENT 17	RVUE	$D^0 \rightarrow \pi^- \pi^+ \pi^- \pi^+$
260± 20±30	18k	<sup>3</sup> SCHEGELSKY 06	RVUE	$\gamma\gamma \rightarrow \pi^+ \pi^- \pi^0$
470±120	90k	SALVINI 04	OBLX	$\bar{p}p \rightarrow 2\pi^+ 2\pi^-$
449± 39±47		CHUNG 02	B852	$18.3 \pi^- p \rightarrow \pi^+ \pi^- \pi^- p$
268± 50		ABELE 01	CBAR	$0.0 \bar{p}d \rightarrow \pi^- 4\pi^0 p$
218±100		BERTIN 97D	OBLX	$0.05 \bar{p}p \rightarrow 2\pi^+ 2\pi^-$
~ 340		ABELE 96	CBAR	$0.0 \bar{p}p \rightarrow 5\pi^0$
440± 80		ZIELINSKI 84	SPEC	$200 \pi^+ Z \rightarrow Z 3\pi$
360±120		BELLINI 82	SPEC	$40 \pi^- A \rightarrow A 3\pi$
580±100		<sup>4</sup> AARON 81	RVUE	
220± 70		BONESINI 81	OMEG	$12 \pi^- p \rightarrow p 3\pi$
~ 600		DAUM 81B	SPEC	$63,94 \pi^- p$

<sup>3</sup> From analysis of L3 data at 183–209 GeV.

<sup>4</sup> Uses multichannel Aitchison-Bowler model (BOWLER 75). Uses data from DAUM 80 and DANKOWYCH 81.

## $\pi(1300)$ DECAY MODES

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1$ $\rho\pi$	seen
$\Gamma_2$ $\pi(\pi\pi)_{S\text{-wave}}$	seen
$\Gamma_3$ $\gamma\gamma$	

### $\pi(1300)$ $\Gamma(i)\Gamma(\gamma\gamma)/\Gamma(\text{total})$

$\Gamma(\rho\pi) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$					$\Gamma_1\Gamma_3/\Gamma$
VALUE (keV)	CL%	DOCUMENT ID	TECN	COMMENT	
<b>&lt;0.085</b>	90	ACCIARRI	97T L3	$e^+e^- \rightarrow e^+e^-\pi^+\pi^-\pi^0$	
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●					
<0.8	95	<sup>5</sup> SCHEGELSKY 06	RVUE	$\gamma\gamma \rightarrow \pi^+\pi^-\pi^0$	
<0.54	90	ALBRECHT	97B ARG	$e^+e^- \rightarrow e^+e^-\pi^+\pi^-\pi^0$	
<sup>5</sup> From analysis of L3 data at 183–209 GeV.					

### $\pi(1300)$ BRANCHING RATIOS

$\Gamma(\pi(\pi\pi)_{S\text{-wave}})/\Gamma(\rho\pi)$					$\Gamma_2/\Gamma_1$
VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●					
2.2 ± 0.4		90k	SALVINI	04 OBLX	$\bar{p}p \rightarrow 2\pi^+2\pi^-$
seen			CHUNG	02 B852	$18.3 \pi^- p \rightarrow \pi^+2\pi^- p$
<0.15	90		ABELE	01 CBAR	$0.0 \bar{p}d \rightarrow \pi^-4\pi^0 p$
2.12			<sup>6</sup> AARON	81 RVUE	
<sup>6</sup> Uses multichannel Aitchison-Bowler model (BOWLER 75). Uses data from DAUM 80 and DANKOWYCH 81.					

### $\pi(1300)$ REFERENCES

DARGENT	17	JHEP 1705 143	P. dArgent <i>et al.</i>	(HEID, BRIS)
SCHEGELSKY	06	EPJ A27 199	V.A. Schegelsky <i>et al.</i>	
SALVINI	04	EPJ C35 21	P. Salvini <i>et al.</i>	(OBELIX Collab.)
CHUNG	02	PR D65 072001	S.U. Chung <i>et al.</i>	(BNL E852 Collab.)
ABELE	01	EPJ C19 667	A. Abele <i>et al.</i>	(Crystal Barrel Collab.)
ACCIARRI	97T	PL B413 147	M. Acciarri <i>et al.</i>	(L3 Collab.)
ALBRECHT	97B	ZPHY C74 469	H. Albrecht <i>et al.</i>	(ARGUS Collab.)
BERTIN	97D	PL B414 220	A. Bertin <i>et al.</i>	(OBELIX Collab.)
ABELE	96	PL B380 453	A. Abele <i>et al.</i>	(Crystal Barrel Collab.)
ZIELINSKI	84	PR D30 1855	M. Zielinski <i>et al.</i>	(ROCH, MINN, FNAL)
BELLINI	82	PRL 48 1697	G. Bellini <i>et al.</i>	(MILA, BGNA, JINR)
AARON	81	PR D24 1207	R.A. Aaron, R.S. Longacre	(NEAS, BNL)
BONESINI	81	PL 103B 75	M. Bonesini <i>et al.</i>	(MILA, LIVP, DARE+)
DANKOWYCH...	81	PRL 46 580	J.A. Dankowych <i>et al.</i>	(TNTO, BNL, CARL+)
DAUM	81B	NP B182 269	C. Daum <i>et al.</i>	(AMST, CERN, CRAC, MPIM+)
DAUM	80	PL 89B 281	C. Daum <i>et al.</i>	(AMST, CERN, CRAC, MPIM+)
BOWLER	75	NP B97 227	M.G. Bowler <i>et al.</i>	(OXFTP, DARE)