

π(1300)

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

π(1300) MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
-------------	------	-------------	------	---------

1300 ± 100 OUR ESTIMATE

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

1345 ± 8 ± 10	18k	¹ SCHEGELSKY 06	RVUE	γγ → π ⁺ π ⁻ π ⁰
1343 ± 15 ± 24		CHUNG 02	B852	18.3 π ⁻ p → π ⁺ π ⁻ π ⁻ 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 π ⁺ Z → Z3π
1240 ± 30		BELLINI 82	SPEC	40 π ⁻ A → A3π
1273 ± 50		² AARON 81	RVUE	
1342 ± 20		BONESINI 81	OMEG	12 π ⁻ p → p3π
~ 1400		DAUM 81B	SPEC	63,94 π ⁻ p

¹ From analysis of L3 data at 183–209 GeV.

² 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
-------------	------	-------------	------	---------

200 to 600 OUR ESTIMATE

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

260 ± 20 ± 30	18k	³ SCHEGELSKY 06	RVUE	γγ → π ⁺ π ⁻ π ⁰
449 ± 39 ± 47		CHUNG 02	B852	18.3 π ⁻ p → π ⁺ π ⁻ π ⁻ 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 π ⁺ Z → Z3π
360 ± 120		BELLINI 82	SPEC	40 π ⁻ A → A3π
580 ± 100		⁴ AARON 81	RVUE	
220 ± 70		BONESINI 81	OMEG	12 π ⁻ p → p3π
~ 600		DAUM 81B	SPEC	63,94 π ⁻ p

³ From analysis of L3 data at 183–209 GeV.

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

π(1300) DECAY MODES

Mode	Fraction (Γ _{<i>i</i>} /Γ)
Γ ₁ ρπ	seen
Γ ₂ π(ππ) _{S-wave}	seen
Γ ₃ γγ	

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

$\Gamma(\rho\pi) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$					$\Gamma_1\Gamma_3/\Gamma$
VALUE (keV)	CL%	DOCUMENT ID	TECN	COMMENT	
<0.085	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	⁵ SCHEGELSKY 06	RVUE	$\gamma\gamma \rightarrow \pi^+\pi^-\pi^0$	
<0.54	90	ALBRECHT	97B ARG	$e^+e^- \rightarrow e^+e^-\pi^+\pi^-\pi^0$	
⁵ From analysis of L3 data at 183–209 GeV.					

$\pi(1300)$ BRANCHING RATIOS

$\Gamma(\pi(\pi\pi)_{S\text{-wave}})/\Gamma(\rho\pi)$					Γ_2/Γ_1
VALUE	CL%	DOCUMENT ID	TECN	COMMENT	
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●					
seen		CHUNG	02 B852	$18.3 \pi^-p \rightarrow \pi^+\pi^-\pi^-p$	
<0.15	90	ABELE	01 CBAR	$0.0 \bar{p}d \rightarrow \pi^-4\pi^0p$	
2.12		⁶ AARON	81 RVUE		
⁶ Uses multichannel Aitchison-Bowler model (BOWLER 75). Uses data from DAUM 80 and DANKOWYCH 81.					

$\pi(1300)$ REFERENCES

SCHEGELSKY 06	EPJ A27 199	V.A. Schegelsky <i>et al.</i>	
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)

OTHER RELATED PAPERS

EBERT 05	MPL A20 1887	D. Ebert, R.N. Faustov, V.O. Galkin	
KATAEV 05	PAN 68 567	A.L. Kataev	
Translated from YAF 68 597.			
ASNER 00	PR D61 012002	D.M. Asner <i>et al.</i>	(CLEO Collab.)
ZAIMIDOROGA 99	PAN 30 1	O.A. Zaimidoroga	
Translated from SJPN 30 5.			
ACKERSTAFF 97R	ZPHY C75 593	K. Ackerstaff <i>et al.</i>	(OPAL Collab.)
ALBRECHT 95C	PL B349 576	H. Albrecht <i>et al.</i>	(ARGUS Collab.)