$a_0(1450)$

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

See minireview on scalar mesons under $f_0(600)$.

$a_0(1450)$ MASS

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
1474±19 OUR AVERAGE					
1480±30		ABELE	98	CBAR	0.0 $\overline{p}p \to K^0_L K^\pm \pi^\mp$
1470±25		[1] AMSLER	95D	CBAR	0.0 $\overline{p}p \to \pi^0\pi^0\pi^0$, $\pi^0\eta\eta$, $\pi^0\pi^0\eta$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1441^{+40}_{-15}	35280	[4] BAKER	03	SPEC	$\overline{p}p \to \omega\pi^+\pi^-\pi^0$
1303±16		[5] BARGIOTTI	03	OBLX	$\overline{p}p$
1296±10		[2] AMSLER	02	CBAR	0.9 $\overline{p}p \to \pi^0\pi^0\eta$
1565±30		[2] ANISOVICH	98B	RVUE	Compilation
1290±10		BERTIN	98B	OBLX	0.0 $\overline{p}p \to K^\pm K_s \pi^\mp$
1450±40		AMSLER	94D	CBAR	0.0 $\overline{p}p \to \pi^0\pi^0\eta$
1435±40		BUGG	94	RVUE	$\overline{p}p \to \eta 2\pi^0$
1410±25		ETKIN	82C	MPS	23 $\pi^- p \to n 2K^0_S$
~ 1300		MARTIN	78	SPEC	10 $K^\pm p \to K^0_S \pi p$
1255± 5		[3] CASON	76		

[1] Coupled-channel analysis of AMSLER 95B, AMSLER 95C, and AMSLER 94D.
[2] T-matrix pole.
[3] Isospin 0 not excluded.
[4] From the pole position.
[5] Coupled channel analysis of $\pi^+\pi^-\pi^0$, $K^+K^-\pi^0$, and $K^\pm K^0_S \pi^\mp$.

$a_0(1450)$ WIDTH

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
265±13 OUR AVERAGE					
265±15		ABELE	98	CBAR	0.0 $\overline{p}p \to K^0_L K^\pm \pi^\mp$
265±30		[6] AMSLER	95D	CBAR	0.0 $\overline{p}p \to \pi^0\pi^0\pi^0$, $\pi^0\eta\eta$, $\pi^0\pi^0\eta$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
110±14	35280	[9] BAKER	03	SPEC	$\overline{p}p \to \omega\pi^+\pi^-\pi^0$
92±16		[10] BARGIOTTI	03	OBLX	$\overline{p}p$
81±21		[7] AMSLER	02	CBAR	0.9 $\overline{p}p \to \pi^0\pi^0\eta$
292±40		[7] ANISOVICH	98B	RVUE	Compilation
80± 5		BERTIN	98B	OBLX	0.0 $\overline{p}p \to K^\pm K_s \pi^\mp$
270±40		AMSLER	94D	CBAR	0.0 $\overline{p}p \to \pi^0\pi^0\eta$
270±40		BUGG	94	RVUE	$\overline{p}p \to \eta 2\pi^0$
230±30		ETKIN	82C	MPS	23 $\pi^- p \to n 2K^0_S$
~ 250		MARTIN	78	SPEC	10 $K^\pm p \to K^0_S \pi p$
79±10		[8] CASON	76		

[6] Coupled-channel analysis of AMSLER 95B, AMSLER 95C, and AMSLER 94D.
[7] T-matrix pole.
[8] Isospin 0 not excluded.
[9] From the pole position.
[10] Coupled channel analysis of $\pi^+\pi^-\pi^0$, $K^+K^-\pi^0$, and $K^\pm K^0_S\pi^\mp$.

$a_0(1450)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$\pi\eta$	seen
Γ_2	$\pi\eta'(958)$	seen
Γ_3	$K\overline{K}$	seen
Γ_4	$\omega\pi\pi$	seen

$\Gamma(\pi\eta'(958))/\Gamma(\pi\eta)$ Γ_2/Γ_1

VALUE	DOCUMENT ID		TECN	COMMENT
0.35±0.16	[11] ABELE	98	CBAR	0.0 $\overline{p}p \to K^0_L K^\pm\pi^\mp$

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

0.43±0.19	ABELE	97C	CBAR	0.0 $\overline{p}p \to \pi^0\pi^0\eta'$

[11] Using $\pi^0\eta$ from AMSLER 94D.

$\Gamma(K\overline{K})/\Gamma(\pi\eta)$ Γ_3/Γ_1

VALUE	DOCUMENT ID		TECN	COMMENT
0.88±0.23	[11] ABELE	98	CBAR	0.0 $\overline{p}p \to K^0_L K^\pm\pi^\mp$

$\Gamma(\omega\pi\pi)/\Gamma(\pi\eta)$ Γ_4/Γ_1

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
10.7±2.3	35280	[12] BAKER	03	SPEC	$\overline{p}p \to \omega\pi^+\pi^-\pi^0$

[12] Using results on $\overline{p}p \to a_0(1450)^0\pi^0$, $a_0(1450) \to \eta\pi^0$ from ABELE 96C and assuming the $\omega\rho$ mechanism for the $\omega\pi\pi$ state.

$a_0(1450)$ REFERENCES

BAKER	03	PL B563 140	C.A. Baker *et al.*	
BARGIOTTI	03	EPJ C26 371	M. Bargiotti *et al.*	(OBELIX Collab.)
AMSLER	02	EPJ C23 29	C. Amsler *et al.*	
ABELE	98	PR D57 3860	A. Abele *et al.*	(Crystal Barrel Collab.)
ANISOVICH	98B	UFN 41 419	V.V. Anisovich *et al.*	
BERTIN	98B	PL B434 180	A. Bertin *et al.*	(OBELIX Collab.)
ABELE	97C	PL B404 179	A. Abele *et al.*	(Crystal Barrel Collab.)
ABELE	96C	NP A609 562	A. Abele *et al.*	(Crystal Barrel Collab.)
AMSLER	95B	PL B342 433	C. Amsler *et al.*	(Crystal Barrel Collab.)
AMSLER	95C	PL B353 571	C. Amsler *et al.*	(Crystal Barrel Collab.)
AMSLER	95D	PL B355 425	C. Amsler *et al.*	(Crystal Barrel Collab.)
AMSLER	94D	PL B333 277	C. Amsler *et al.*	(Crystal Barrel Collab.) IGJPC
BUGG	94	PR D50 4412	D.V. Bugg *et al.*	(LOQM)
ETKIN	82C	PR D25 2446	A. Etkin *et al.*	(BNL, CUNY, TUFTS, VAND)
MARTIN	78	NP B134 392	A.D. Martin *et al.*	(DURH, GEVA)
CASON	76	PRL 36 1485	N.M. Cason *et al.*	(NDAM, ANL)

OTHER RELATED PAPERS

CHENG	06	PR D73 014017	H.-Y. Cheng, C.-K. Chua, K.-C. Yang	
KATAEV	05	PAN 68 567 Translated from YAF 68 597.	A.L. Kataev	
RODRIGUEZ	05	PR D71 074008	S. Rodriguez, M. Napsuciale	
FURMAN	02	PL B538 266	A. Furman, L. Lesniak	
BARBERIS	00H	PL B488 225	D. Barberis *et al.*	(WA 102 Collab.)
MASONI	99	EPJ C8 385	A. Masoni	
AMSLER	98	RMP 70 1293	C. Amsler	