$f_0(1370)$

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

See also the mini-reviews on scalar mesons under $f_0(600)$ (see the index for the page number) and on non-$q\overline{q}$ candidates in PDG 06, Journal of Physics, G **33** 1 (2006).

$f_0(1370)$ T-MATRIX POLE POSITION

Note that $\Gamma \approx 2\ \mathrm{Im}(\sqrt{s_{\mathrm{pole}}})$.

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
(1200–1500)−i(150–250) OUR ESTIMATE				
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$(1290 \pm 50)-i(170^{+20}_{-40})$	[1] ANISOVICH	09	RVUE	0.0 $\overline{p}p$, πN
$(1373 \pm 15)-i(137 \pm 10)$	[2] BARGIOTTI	03	OBLX	$\overline{p}p$
$(1302 \pm 17)-i(166 \pm 18)$	[3] BARBERIS	00C		450 $pp \rightarrow p_f 4\pi p_s$
$(1312 \pm 25 \pm 10)-i(109 \pm 22 \pm 15)$	BARBERIS	99D	OMEG	450 $pp \rightarrow K^+K^-$, $\pi^+\pi^-$
$(1406 \pm 19)-i(80 \pm 6)$	[4] KAMINSKI	99	RVUE	$\pi\pi \rightarrow \pi\pi$, $K\overline{K}$, $\sigma\sigma$
$(1300 \pm 20)-i(120 \pm 20)$	ANISOVICH	98B	RVUE	Compilation
$(1290 \pm 15)-i(145 \pm 15)$	BARBERIS	97B	OMEG	450 $pp \rightarrow pp2(\pi^+\pi^-)$
$(1548 \pm 40)-i(560 \pm 40)$	BERTIN	97C	OBLX	0.0 $\overline{p}p \rightarrow \pi^+\pi^-\pi^0$
$(1380 \pm 40)-i(180 \pm 25)$	ABELE	96B	CBAR	0.0 $\overline{p}p \rightarrow \pi^0 K^0_L K^0_L$
$(1300 \pm 15)-i(115 \pm 8)$	BUGG	96	RVUE	
$(1330 \pm 50)-i(150 \pm 40)$	[5] AMSLER	95B	CBAR	$\overline{p}p \rightarrow 3\pi^0$
$(1360 \pm 35)-i(150–300)$	[5] AMSLER	95C	CBAR	$\overline{p}p \rightarrow \pi^0\eta\eta$
$(1390 \pm 30)-i(190 \pm 40)$	[6] AMSLER	95D	CBAR	$\overline{p}p \rightarrow 3\pi^0$, $\pi^0\eta\eta$, $\pi^0\pi^0\eta$
$1346 - i249$	[7,8] JANSSEN	95	RVUE	$\pi\pi \rightarrow \pi\pi$, $K\overline{K}$
$1214 - i168$	[8,9] TORNQVIST	95	RVUE	$\pi\pi \rightarrow \pi\pi$, $K\overline{K}$, $K\pi$, $\eta\pi$
$1364 - i139$	AMSLER	94D	CBAR	$\overline{p}p \rightarrow \pi^0\pi^0\eta$
$(1365^{+20}_{-55})-i(134 \pm 35)$	ANISOVICH	94	CBAR	$\overline{p}p \rightarrow 3\pi^0, \pi^0\eta\eta$
$(1340 \pm 40)-i(127^{+30}_{-20})$	[10] BUGG	94	RVUE	$\overline{p}p \rightarrow 3\pi^0$, $\eta\eta\pi^0$, $\eta\pi^0\pi^0$
$(1430 \pm 5)-i(73 \pm 13)$	[11] KAMINSKI	94	RVUE	$\pi\pi \rightarrow \pi\pi$, $K\overline{K}$
$1420 - i220$	[12] AU	87	RVUE	$\pi\pi \rightarrow \pi\pi$, $K\overline{K}$

[1] Another pole is found at $(1510 \pm 130) - i\,(800^{+100}_{-150})$ MeV.

[2] Coupled channel analysis of $\pi^+\pi^-\pi^0$, $K^+K^-\pi^0$, and $K^\pm K^0_S\pi^\mp$.

[3] Average between $\pi^+\pi^-2\pi^0$ and $2(\pi^+\pi^-)$.

[4] T-matrix pole on sheet $---$.

[5] Supersedes ANISOVICH 94.

[6] Coupled-channel analysis of $\overline{p}p \rightarrow 3\pi^0$, $\pi^0\eta\eta$, and $\pi^0\pi^0\eta$ on sheet IV. Demonstrates explicitly that $f_0(600)$ and $f_0(1370)$ are two different poles.

[7] Analysis of data from FALVARD 88.

[8] The pole is on Sheet III. Demonstrates explicitly that $f_0(600)$ and $f_0(1370)$ are two different poles.

[9] Uses data from BEIER 72B, OCHS 73, HYAMS 73, GRAYER 74, ROSSELET 77, CASON 83, ASTON 88, and ARMSTRONG 91B. Coupled channel analysis with flavor symmetry and all light two-pseudoscalars systems.
[10] Reanalysis of ANISOVICH 94 data.
[11] T-matrix pole on sheet III.
[12] Analysis of data from OCHS 73,GRAYER 74, BECKER 79, and CASON 83.

$f_0(1370)$ BREIT-WIGNER MASS OR K-MATRIX POLE PARAMETER

VALUE (MeV)	*DOCUMENT ID*
1200 to 1500 OUR ESTIMATE	

$\pi\pi$ MODE

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1400 ± 40		[13] AUBERT	09L	BABR	$B^{\pm} \to \pi^{\pm}\pi^{\pm}\pi^{\mp}$
$1470^{+\ 6}_{-\ 7}{}^{+\ 72}_{-255}$		[14] UEHARA	08A	BELL	$10.6\ e^+e^- \to e^+e^-\pi^0\pi^0$
1259 ± 55	2.6k	BONVICINI	07	CLEO	$D^+ \to \pi^-\pi^+\pi^+$
$1309 \pm 1 \pm 15$		[15] BUGG	07A	RVUE	$0.0\ p\overline{p} \to 3\pi^0$
1449 ± 13	4286	[16] GARMASH	06	BELL	$B^+ \to K^+\pi^+\pi^-$
1350 ± 50		ABLIKIM	05	BES2	$J/\psi \to \phi\pi^+\pi^-$
$1265 \pm 30^{+\ 20}_{-\ 35}$		ABLIKIM	05Q	BES2	$\psi(2S) \to \gamma\pi^+\pi^-K^+K^-$
$1434 \pm 18 \pm 9$	848	AITALA	01A	E791	$D_s^+ \to \pi^-\pi^+\pi^+$
1308 ± 10		BARBERIS	99B	OMEG	$450\ pp \to p_s p_f \pi^+\pi^-$
1315 ± 50		BELLAZZINI	99	GAM4	$450\ pp \to pp\pi^0\pi^0$
1315 ± 30		ALDE	98	GAM4	$100\ \pi^-p \to \pi^0\pi^0 n$
1280 ± 55		BERTIN	98	OBLX	$0.05–0.405\ \overline{n}p \to \pi^+\pi^+\pi^-$
1186		[17,18] TORNQVIST	95	RVUE	$\pi\pi \to \pi\pi, K\overline{K}, K\pi, \eta\pi$
1472 ± 12		ARMSTRONG	91	OMEG	$300\ pp \to pp\pi\pi,\ ppK\overline{K}$
1275 ± 20		BREAKSTONE	90	SFM	$62\ pp \to pp\pi^+\pi^-$
1420 ± 20		AKESSON	86	SPEC	$63\ pp \to pp\pi^+\pi^-$
1256		FROGGATT	77	RVUE	$\pi^+\pi^-$ channel

[13] Breit-Wigner mass.
[14] Breit-Wigner mass. May also be the $f_0(1500)$.
[15] Reanalysis of ABELE 96C data.
[16] Also observed by GARMASH 07 in $B^0 \to K_S^0\pi^+\pi^-$ decays. Supersedes GARMASH 05.
[17] Uses data from BEIER 72B, OCHS 73, HYAMS 73, GRAYER 74, ROSSELET 77, CASON 83, ASTON 88, and ARMSTRONG 91B. Coupled channel analysis with flavor symmetry and all light two-pseudoscalars systems.
[18] Also observed by ASNER 00 in $\tau^- \to \pi^-\pi^0\pi^0\nu_\tau$ decays

$K\overline{K}$ MODE

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1440 ± 6	VLADIMIRSK...	06	SPEC	$40\ \pi^-p \to K_S^0K_S^0 n$
1391 ± 10	TIKHOMIROV	03	SPEC	$40.0\ \pi^-\mathrm{C} \to K_S^0K_S^0K_L^0X$
1440 ± 50	BOLONKIN	88	SPEC	$40\ \pi^-p \to K_S^0K_S^0 n$
1463 ± 9	ETKIN	82B	MPS	$23\ \pi^-p \to n2K_S^0$
1425 ± 15	WICKLUND	80	SPEC	$6\ \pi N \to K^+K^-N$
~ 1300	POLYCHRO...	79	STRC	$7\ \pi^-p \to n2K_S^0$

4π MODE $2(\pi\pi)_S+\rho\rho$

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1395±40		ABELE	01	CBAR	0.0 $\overline{p}d \to \pi^- 4\pi^0 p$
1374±38		AMSLER	94	CBAR	0.0 $\overline{p}p \to \pi^+\pi^- 3\pi^0$
1345±12		ADAMO	93	OBLX	$\overline{n}p \to 3\pi^+ 2\pi^-$
1386±30		GASPERO	93	DBC	0.0 $\overline{p}n \to 2\pi^+ 3\pi^-$
∼1410	5751	[19] BETTINI	66	DBC	0.0 $\overline{p}n \to 2\pi^+ 3\pi^-$

[19] $\rho\rho$ dominant.

$\eta\eta$ MODE

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1262^{+51}_{-78}{}^{+82}_{-103}$	[20] UEHARA	10A	BELL	10.6 $e^+e^- \to e^+e^-\eta\eta$
1430	AMSLER	92	CBAR	0.0 $\overline{p}p \to \pi^0\eta\eta$
1220±40	ALDE	86D	GAM4	100 $\pi^- p \to n 2\eta$

[20] Breit-Wigner mass. May also be the $f_0(1500)$.

COUPLED CHANNEL MODE

VALUE (MeV)	DOCUMENT ID		TECN
• • • We do not use the following data for averages, fits, limits, etc. • • •			
1306±20	[21] ANISOVICH	03	RVUE

[21] K-matrix pole from combined analysis of $\pi^- p \to \pi^0\pi^0 n$, $\pi^- p \to K\overline{K}n$, $\pi^+\pi^- \to \pi^+\pi^-$, $\overline{p}p \to \pi^0\pi^0\pi^0$, $\pi^0\eta\eta$, $\pi^0\pi^0\eta$, $\pi^+\pi^-\pi^0$, $K^+K^-\pi^0$, $K^0_S K^0_S\pi^0$, $K^+K^0_S\pi^-$ at rest, $\overline{p}n \to \pi^-\pi^-\pi^+$, $K^0_S K^-\pi^0$, $K^0_S K^0_S\pi^-$ at rest.

$f_0(1370)$ BREIT-WIGNER WIDTH

VALUE (MeV)	DOCUMENT ID
200 to 500 OUR ESTIMATE	

$\pi\pi$ MODE

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
300± 80		[22] AUBERT	09L	BABR	$B^\pm \to \pi^\pm\pi^\pm\pi^\mp$
$90^{+2}_{-1}{}^{+50}_{-22}$		[23] UEHARA	08A	BELL	10.6 $e^+e^- \to e^+e^-\pi^0\pi^0$
298± 21	2.6k	BONVICINI	07	CLEO	$D^+ \to \pi^-\pi^+\pi^+$
126± 25	4286	[24] GARMASH	06	BELL	$B^+ \to K^+\pi^+\pi^-$
265± 40		ABLIKIM	05	BES2	$J/\psi \to \phi\pi^+\pi^-$
$350\pm100^{+105}_{-60}$		ABLIKIM	05Q	BES2	$\psi(2S) \to \gamma\pi^+\pi^-K^+K^-$
173± 32± 6	848	AITALA	01A	E791	$D_s^+ \to \pi^-\pi^+\pi^+$
222± 20		BARBERIS	99B	OMEG	450 $pp \to p_s p_f \pi^+\pi^-$

255± 60	BELLAZZINI	99	GAM4	450 $pp \to pp\pi^0\pi^0$
190± 50	ALDE	98	GAM4	100 $\pi^- p \to \pi^0\pi^0 n$
323± 13	BERTIN	98	OBLX	0.05–0.405 $\overline{n}p \to \pi^+\pi^+\pi^-$
350	[25,26] TORNQVIST	95	RVUE	$\pi\pi \to \pi\pi$, $K\overline{K}$, $K\pi$, $\eta\pi$
195± 33	ARMSTRONG	91	OMEG	300 $pp \to pp\pi\pi$, $ppK\overline{K}$
285± 60	BREAKSTONE	90	SFM	62 $pp \to pp\pi^+\pi^-$
460± 50	AKESSON	86	SPEC	63 $pp \to pp\pi^+\pi^-$
∼ 400	[27] FROGGATT	77	RVUE	$\pi^+\pi^-$ channel

[22] The systematic errors are not reported.
[23] Breit-Wigner width. May also be the $f_0(1500)$.
[24] Also observed by GARMASH 07 in $B^0 \to K^0_S\pi^+\pi^-$ decays. Supersedes GARMASH 05.
[25] Uses data from BEIER 72B, OCHS 73, HYAMS 73, GRAYER 74, ROSSELET 77, CASON 83, ASTON 88, and ARMSTRONG 91B. Coupled channel analysis with flavor symmetry and all light two-pseudoscalars systems.
[26] Also observed by ASNER 00 in $\tau^- \to \pi^-\pi^0\pi^0\nu_\tau$ decays
[27] Width defined as distance between 45 and 135° phase shift.

$K\overline{K}$ MODE

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
121± 15	VLADIMIRSK...	06	SPEC	40 $\pi^- p \to K^0_S K^0_S n$
55± 26	TIKHOMIROV	03	SPEC	40.0 $\pi^- C \to K^0_S K^0_S K^0_L X$
250± 80	BOLONKIN	88	SPEC	40 $\pi^- p \to K^0_S K^0_S n$
118^{+138}_{-16}	ETKIN	82B	MPS	23 $\pi^- p \to n2K^0_S$
160± 30	WICKLUND	80	SPEC	6 $\pi N \to K^+K^- N$
∼ 150	POLYCHRO...	79	STRC	7 $\pi^- p \to n2K^0_S$

4π MODE 2$(\pi\pi)_S$+$\rho\rho$

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
275±55		ABELE	01	CBAR	0.0 $\overline{p}d \to \pi^- 4\pi^0 p$
375±61		AMSLER	94	CBAR	0.0 $\overline{p}p \to \pi^+\pi^- 3\pi^0$
398±26		ADAMO	93	OBLX	$\overline{n}p \to 3\pi^+ 2\pi^-$
310±50		GASPERO	93	DBC	0.0 $\overline{p}n \to 2\pi^+ 3\pi^-$
∼ 90	5751	[28] BETTINI	66	DBC	0.0 $\overline{p}n \to 2\pi^+ 3\pi^-$

[28] $\rho\rho$ dominant.

$\eta\eta$ MODE

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$484^{+246}_{-170}{}^{+246}_{-263}$	[29] UEHARA	10A	BELL	10.6 $e^+e^- \to e^+e^-\eta\eta$
250	AMSLER	92	CBAR	0.0 $\overline{p}p \to \pi^0\eta\eta$
320± 40	ALDE	86D	GAM4	100 $\pi^- p \to n2\eta$

[29] Breit-Wigner width. May also be the $f_0(1500)$.

COUPLED CHANNEL MODE

VALUE (MeV)	DOCUMENT ID		TECN
• • • We do not use the following data for averages, fits, limits, etc. • • •			
147^{+30}_{-50}	[30] ANISOVICH	03	RVUE

[30] K-matrix pole from combined analysis of $\pi^- p \rightarrow \pi^0 \pi^0 n$, $\pi^- p \rightarrow K\overline{K} n$, $\pi^+\pi^- \rightarrow \pi^+\pi^-$, $\overline{p}p \rightarrow \pi^0\pi^0\pi^0$, $\pi^0\eta\eta$, $\pi^0\pi^0\eta$, $\pi^+\pi^-\pi^0$, $K^+K^-\pi^0$, $K^0_S K^0_S \pi^0$, $K^+ K^0_S \pi^-$ at rest, $\overline{p}n \rightarrow \pi^-\pi^-\pi^+$, $K^0_S K^-\pi^0$, $K^0_S K^0_S \pi^-$ at rest.

$f_0(1370)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$\pi\pi$	seen
Γ_2	4π	seen
Γ_3	$4\pi^0$	seen
Γ_4	$2\pi^+2\pi^-$	seen
Γ_5	$\pi^+\pi^-2\pi^0$	seen
Γ_6	$\rho\rho$	dominant
Γ_7	$2(\pi\pi)_{S\text{-wave}}$	seen
Γ_8	$\pi(1300)\pi$	seen
Γ_9	$a_1(1260)\pi$	seen
Γ_{10}	$\eta\eta$	seen
Γ_{11}	$K\overline{K}$	seen
Γ_{12}	$K\overline{K}n\pi$	not seen
Γ_{13}	6π	not seen
Γ_{14}	$\omega\omega$	not seen
Γ_{15}	$\gamma\gamma$	seen
Γ_{16}	e^+e^-	not seen

$f_0(1370)$ PARTIAL WIDTHS

$\Gamma(\gamma\gamma)$ — Γ_{15}

See $\gamma\gamma$ widths under $f_0(600)$ and MORGAN 90.

$\Gamma(e^+e^-)$ — Γ_{16}

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<20	90	VOROBYEV	88	ND	$e^+e^- \rightarrow \pi^0\pi^0$

$f_0(1370)$ $\Gamma(i)\Gamma(\gamma\gamma)/\Gamma(\text{total})$

$\Gamma(\eta\eta) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$ — $\Gamma_{10}\Gamma_{15}/\Gamma$

VALUE (eV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$121^{+133}_{-\ 53}{}^{+169}_{-106}$	[31] UEHARA	10A	BELL	10.6 $e^+e^- \rightarrow e^+e^-\eta\eta$

[31] Including interference with the $f'_2(1525)$ (parameters fixed to the values from the 2008 edition of this review, PDG 08) and $f_2(1270)$. May also be the $f_0(1500)$.

$f_0(1370)$ BRANCHING RATIOS

$\Gamma(\pi\pi)/\Gamma_{total}$ — Γ_1/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.26±0.09	BUGG	96	RVUE	
<0.15	[32] AMSLER	94	CBAR	$\overline{p}p \rightarrow \pi^+\pi^- 3\pi^0$
<0.06	GASPERO	93	DBC	0.0 $\overline{p}n \rightarrow$ hadrons

[32] Using AMSLER 95B ($3\pi^0$).

$\Gamma(4\pi)/\Gamma_{total}$ — $\Gamma_2/\Gamma = (\Gamma_3+\Gamma_4+\Gamma_5)/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
>0.72	GASPERO	93	DBC	0.0 $\overline{p}n \rightarrow$ hadrons

$\Gamma(4\pi^0)/\Gamma(4\pi)$ — Γ_3/Γ_2

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
seen	ABELE	96	CBAR	0.0 $\overline{p}p \rightarrow 5\pi^0$
0.068±0.005	[33] GASPERO	93	DBC	0.0 $\overline{p}n \rightarrow$ hadrons

[33] Model-dependent evaluation.

$\Gamma(2\pi^+2\pi^-)/\Gamma(4\pi)$ — $\Gamma_4/\Gamma_2 = \Gamma_4/(\Gamma_3+\Gamma_4+\Gamma_5)$

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.420±0.014	[34] GASPERO	93	DBC	0.0 $\overline{p}n \rightarrow 2\pi^+ 3\pi^-$

[34] Model-dependent evaluation.

$\Gamma(\pi^+\pi^- 2\pi^0)/\Gamma(4\pi)$ — $\Gamma_5/\Gamma_2 = \Gamma_5/(\Gamma_3+\Gamma_4+\Gamma_5)$

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.512±0.019	[35] GASPERO	93	DBC	0.0 $\overline{p}n \rightarrow$ hadrons

[35] Model-dependent evaluation.

$\Gamma(\rho\rho)/\Gamma(4\pi)$ — Γ_6/Γ_2

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.26±0.07	ABELE	01B	CBAR	0.0 $\overline{p}d \rightarrow 5\pi p$

$\Gamma(2(\pi\pi)_{S\text{-wave}})/\Gamma(\pi\pi)$ — Γ_7/Γ_1

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
5.6±2.6	[36] ABELE	01	CBAR	0.0 $\overline{p}d \rightarrow \pi^- 4\pi^0 p$

[36] From the combined data of ABELE 96 and ABELE 96C.

$\Gamma(2(\pi\pi)_{S\text{-wave}})/\Gamma(4\pi)$ — Γ_7/Γ_2

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.51 ± 0.09	ABELE	01B	CBAR	$0.0\ \overline{p}d \rightarrow 5\pi p$

$\Gamma(\rho\rho)/\Gamma(2(\pi\pi)_{S\text{-wave}})$ — Γ_6/Γ_7

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
large	BARBERIS	00C		$450\ pp \rightarrow p_f 4\pi p_s$
$1.6\ \pm0.2$	AMSLER	94	CBAR	$\overline{p}p \rightarrow \pi^+\pi^- 3\pi^0$
~ 0.65	GASPERO	93	DBC	$0.0\ \overline{p}n \rightarrow$ hadrons

$\Gamma(\pi(1300)\pi)/\Gamma(4\pi)$ — Γ_8/Γ_2

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.17 ± 0.06	ABELE	01B	CBAR	$0.0\ \overline{p}d \rightarrow 5\pi p$

$\Gamma(a_1(1260)\pi)/\Gamma(4\pi)$ — Γ_9/Γ_2

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.06 ± 0.02	ABELE	01B	CBAR	$0.0\ \overline{p}d \rightarrow 5\pi p$

$\Gamma(\eta\eta)/\Gamma(4\pi)$ — $\Gamma_{10}/\Gamma_2 = \Gamma_{10}/(\Gamma_3+\Gamma_4+\Gamma_5)$

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$(28\ \pm11\ )\times10^{-3}$	[37] ANISOVICH	02D	SPEC	Combined fit
$(\ 4.7\pm\ 2.0)\times10^{-3}$	BARBERIS	00E		$450\ pp \rightarrow p_f \eta\eta p_s$

[37] From a combined K-matrix analysis of Crystal Barrel ($0.\ p\overline{p} \rightarrow \pi^0\pi^0\pi^0$, $\pi^0\eta\eta$, $\pi^0\pi^0\eta$), GAMS ($\pi p \rightarrow \pi^0\pi^0 n$, $\eta\eta n$, $\eta\eta' n$), and BNL ($\pi p \rightarrow K\overline{K}n$) data.

$\Gamma(K\overline{K})/\Gamma_{\text{total}}$ — Γ_{11}/Γ

VALUE	DOCUMENT ID		TECN
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.35 ± 0.13	BUGG	96	RVUE

$\Gamma(K\overline{K})/\Gamma(\pi\pi)$ — Γ_{11}/Γ_1

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.08 ± 0.08	ABLIKIM	05	BES2	$J/\psi \rightarrow \phi\pi^+\pi^-$, ϕK^+K^-
0.91 ± 0.20	[38] BARGIOTTI	03	OBLX	$\overline{p}p$
0.12 ± 0.06	[39] ANISOVICH	02D	SPEC	Combined fit
$0.46\pm0.15\pm0.11$	BARBERIS	99D	OMEG	$450\ pp \rightarrow K^+K^-$, $\pi^+\pi^-$

[38] Coupled channel analysis of $\pi^+\pi^-\pi^0$, $K^+K^-\pi^0$, and $K^\pm K^0_S\pi^\mp$.

[39] From a combined K-matrix analysis of Crystal Barrel ($0.\ p\overline{p} \rightarrow \pi^0\pi^0\pi^0$, $\pi^0\eta\eta$, $\pi^0\pi^0\eta$), GAMS ($\pi p \rightarrow \pi^0\pi^0 n$, $\eta\eta n$, $\eta\eta' n$), and BNL ($\pi p \rightarrow K\overline{K}n$) data.

$\Gamma(K\overline{K}n\pi)/\Gamma_{total}$ Γ_{12}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<0.03	GASPERO	93	DBC	0.0 $\overline{p}n \rightarrow$ hadrons

$\Gamma(6\pi)/\Gamma_{total}$ Γ_{13}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<0.22	GASPERO	93	DBC	0.0 $\overline{p}n \rightarrow$ hadrons

$\Gamma(\omega\omega)/\Gamma_{total}$ Γ_{14}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<0.13	GASPERO	93	DBC	0.0 $\overline{p}n \rightarrow$ hadrons

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