$\eta(1405)$

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

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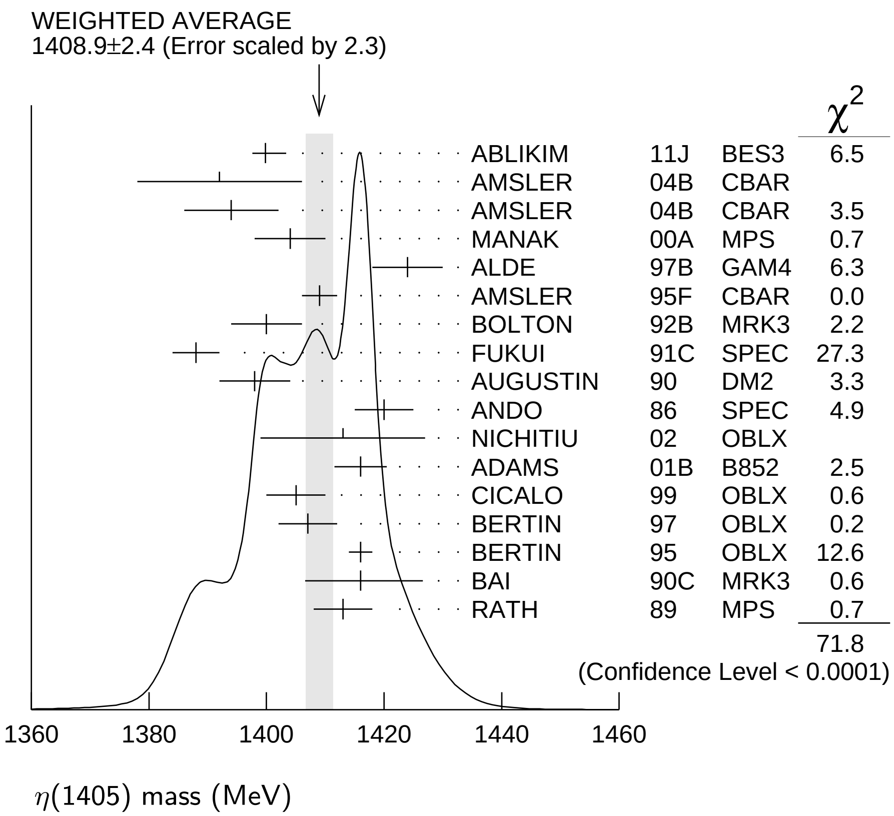
$\eta(1405)$ MASS

VALUE (MeV) *DOCUMENT ID*

1408.9±2.4 OUR AVERAGE Includes data from the 2 datablocks that follow this one. Error includes scale factor of 2.3. See the ideogram below.



$\eta\pi\pi$ MODE

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

The data in this block is included in the average printed for a previous datablock.

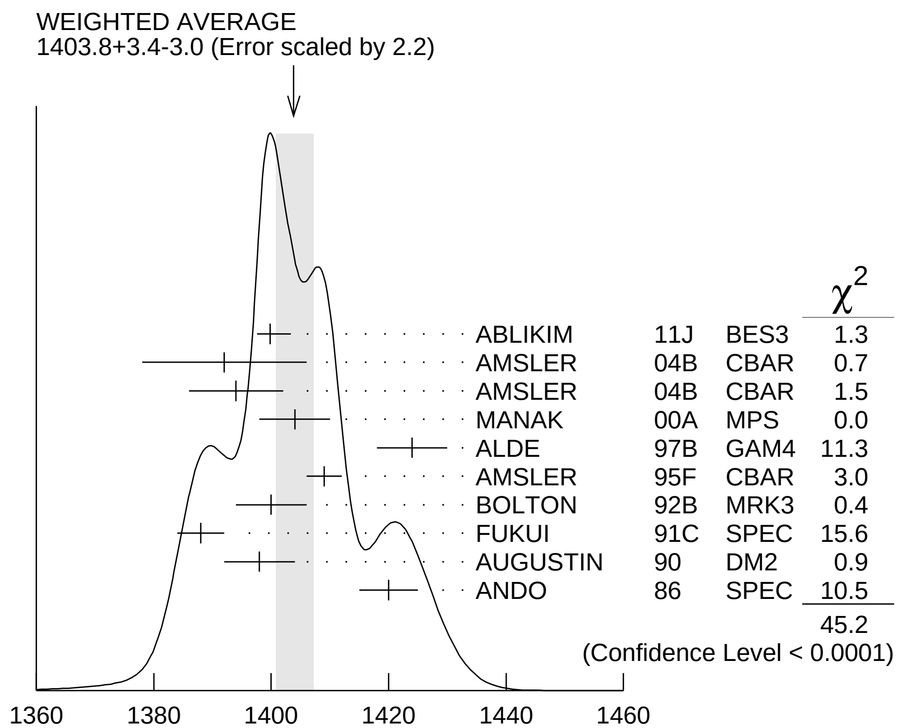
$1403.8^{+3.4}_{-3.0}$ OUR AVERAGE Error includes scale factor of 2.2. See the ideogram below.

$1399.8\pm 2.2^{+2.8}_{-0.1}$		[1] ABLIKIM	11J BES3	$J/\psi \to \omega(\eta\pi^+\pi^-)$
1392 ±14	900 ± 375	AMSLER	04B CBAR	$0\ \overline{p}p \to \pi^+\pi^-\pi^+\pi^-\eta$
1394 ± 8	6.6 ± 2.0k	AMSLER	04B CBAR	$0\ \overline{p}p \to \pi^+\pi^-\pi^0\pi^0\eta$
1404 ± 6	9082	MANAK	00A MPS	$18\ \pi^- p \to \eta\pi^+\pi^- n$
1424 ± 6	2200	ALDE	97B GAM4	$100\ \pi^- p \to \eta\pi^0\pi^0 n$

1409 ± 3		AMSLER	95F	CBAR	$0\ \overline{p}p \to \pi^+\pi^-\pi^0\pi^0\eta$
1400 ± 6		[2] BOLTON	92B	MRK3	$J/\psi \to \gamma\eta\pi^+\pi^-$
1388 ± 4		FUKUI	91C	SPEC	$8.95\ \pi^- p \to \eta\pi^+\pi^- n$
1398 ± 6	261	[3] AUGUSTIN	90	DM2	$J/\psi \to \gamma\eta\pi^+\pi^-$
1420 ± 5		ANDO	86	SPEC	$8\ \pi^- p \to \eta\pi^+\pi^- n$

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

1385 ± 7	BAI	99	BES	$J/\psi \to \gamma\eta\pi^+\pi^-$



$\eta(1405)$ mass, $\eta\pi\pi$ mode (MeV)

$K\overline{K}\pi$ MODE ($a_0(980)\pi$ or direct $K\overline{K}\pi$)

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
The data in this block is included in the average printed for a previous datablock.					
1413.9± 1.7 OUR AVERAGE		Error includes scale factor of 1.1.			
1413 ±14	3651	[4] NICHITIU	02	OBLX	
1416 ± 4 ±2	20k	ADAMS	01B	B852	$18\ \text{GeV}\ \pi^- p \to K^+ K^- \pi^0 n$
1405 ± 5		[5] CICALO	99	OBLX	$0\ \overline{p}p \to K^\pm K^0_S \pi^\mp \pi^+ \pi^-$
1407 ± 5		[5] BERTIN	97	OBLX	$0\ \overline{p}p \to K^\pm (K^0) \pi^\mp \pi^+ \pi^-$
1416 ± 2		[5] BERTIN	95	OBLX	$0\ \overline{p}p \to K\overline{K}\pi\pi\pi$
1416 ± 8 $^{+7}_{-5}$	700	[6] BAI	90C	MRK3	$J/\psi \to \gamma K^0_S K^\pm \pi^\mp$
1413 ± 5		[6] RATH	89	MPS	$21.4\ \pi^- p \to n K^0_S K^0_S \pi^0$

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

1459 ± 5	[7] AUGUSTIN	92	DM2	$J/\psi \to \gamma K\overline{K}\pi$

$\pi\pi\gamma$ MODE

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
1390±12	235 ± 91	AMSLER	04B	CBAR	$0\ \overline{p}p \to \pi^+\pi^-\pi^+\pi^-\gamma$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1424±10±11	547	BAI	04J	BES2	$J/\psi \to \gamma\gamma\pi^+\pi^-$
1401±18		[8,9] AUGUSTIN	90	DM2	$J/\psi \to \pi^+\pi^-\gamma\gamma$
1432± 8		[9] COFFMAN	90	MRK3	$J/\psi \to \pi^+\pi^- 2\gamma$

4π MODE

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1420±20		BUGG	95	MRK3	$J/\psi \to \gamma\pi^+\pi^-\pi^+\pi^-$
1489±12	3270	[10] BISELLO	89B	DM2	$J/\psi \to 4\pi\gamma$

$K\overline{K}\pi$ MODE (unresolved)

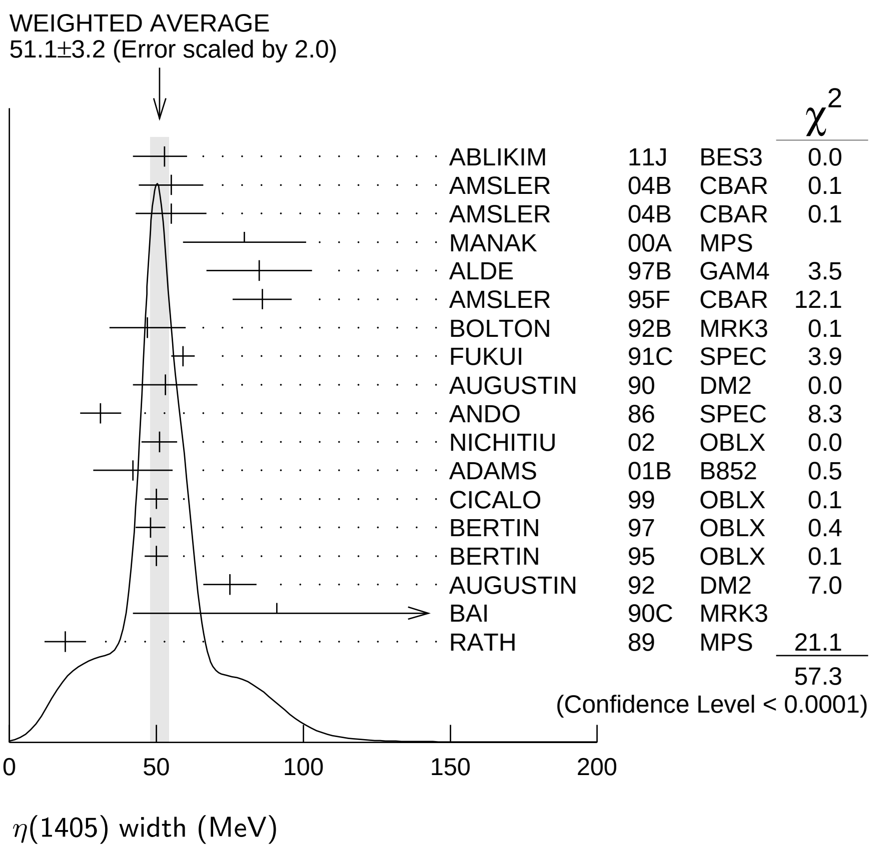
VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1437.6± 3.2	249 ± 35	[11,12] ABLIKIM	08E	BES2	$J/\psi \to \omega K^0_S K^+\pi^-$ + c.c.
1445.9± 5.7	62 ± 18	[11,12] ABLIKIM	08E	BES2	$J/\psi \to \omega K^+K^-\pi^0$
1442 ±10	410	[11] BAI	98C	BES	$J/\psi \to \gamma K^+K^-\pi^0$
1445 ± 8	693	[11] AUGUSTIN	90	DM2	$J/\psi \to \gamma K^0_S K^\pm\pi^\mp$
1433 ± 8	296	[11] AUGUSTIN	90	DM2	$J/\psi \to \gamma K^+K^-\pi^0$
1413 ± 8	500	[11] DUCH	89	ASTE	$\overline{p}p \to \pi^+\pi^-K^\pm\pi^\mp K^0$
1453 ± 7	170	[11] RATH	89	MPS	$21.4\ \pi^-p \to K^0_S K^0_S \pi^0 n$
1419 ± 1	8800	[11] BIRMAN	88	MPS	$8\ \pi^-p \to K^+\overline{K}^0\pi^-n$
1424 ± 3	620	[11] REEVES	86	SPEC	$6.6\ p\overline{p} \to K\overline{K}\pi X$
1421 ± 2		[11] CHUNG	85	SPEC	$8\ \pi^-p \to K\overline{K}\pi n$
1440 $^{+20}_{-15}$	174	[11] EDWARDS	82E	CBAL	$J/\psi \to \gamma K^+K^-\pi^0$
1440 $^{+10}_{-15}$		[11] SCHARRE	80	MRK2	$J/\psi \to \gamma K^0_S K^\pm\pi^\mp$
1425 ± 7	800	[11,13] BAILLON	67	HBC	$0\ \overline{p}p \to K\overline{K}\pi\pi\pi$

[1] The selected process is $J/\psi \to \omega a_0(980)\pi$.
[2] From fit to the $a_0(980)\pi$ 0^{-+} partial wave.
[3] Best fit with a single Breit Wigner.
[4] Decaying dominantly directly to $K^+K^-\pi^0$.
[5] Decaying into $(K\overline{K})_S\pi$, $(K\pi)_S\overline{K}$, and $a_0(980)\pi$.
[6] From fit to the $a_0(980)\pi$ 0^{-+} partial wave. Cannot rule out a $a_0(980)\pi$ 1^{++} partial wave.
[7] Excluded from averaging because averaging would be meaningless.
[8] Best fit with a single Breit Wigner.
[9] This peak in the $\gamma\rho$ channel may not be related to the $\eta(1405)$.
[10] Estimated by us from various fits.
[11] These experiments identify only one pseudoscalar in the 1400–1500 range. Data could also refer to $\eta(1475)$.
[12] Systematic uncertainty not evaluated.
[13] From best fit of 0^{-+} partial wave , 50% $K^*(892)K$, 50% $a_0(980)\pi$.

$\eta(1405)$ WIDTH

VALUE (MeV)	DOCUMENT ID

51.1±3.2 OUR AVERAGE Includes data from the 2 datablocks that follow this one. Error includes scale factor of 2.0. See the ideogram below.



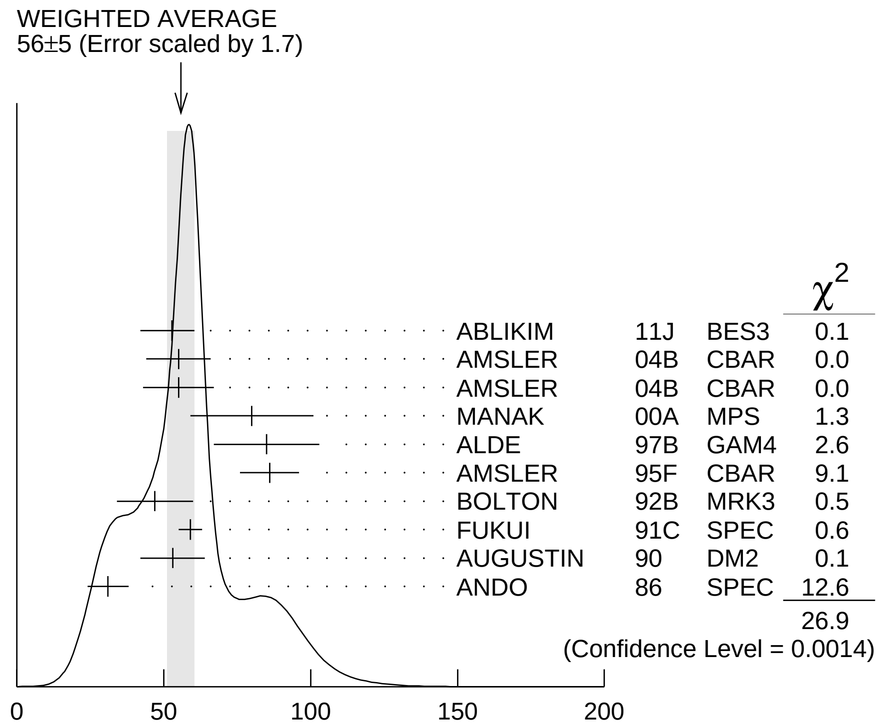
$\eta\pi\pi$ MODE

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT

The data in this block is included in the average printed for a previous datablock.

56 ± 5 OUR AVERAGE Error includes scale factor of 1.7. See the ideogram below.

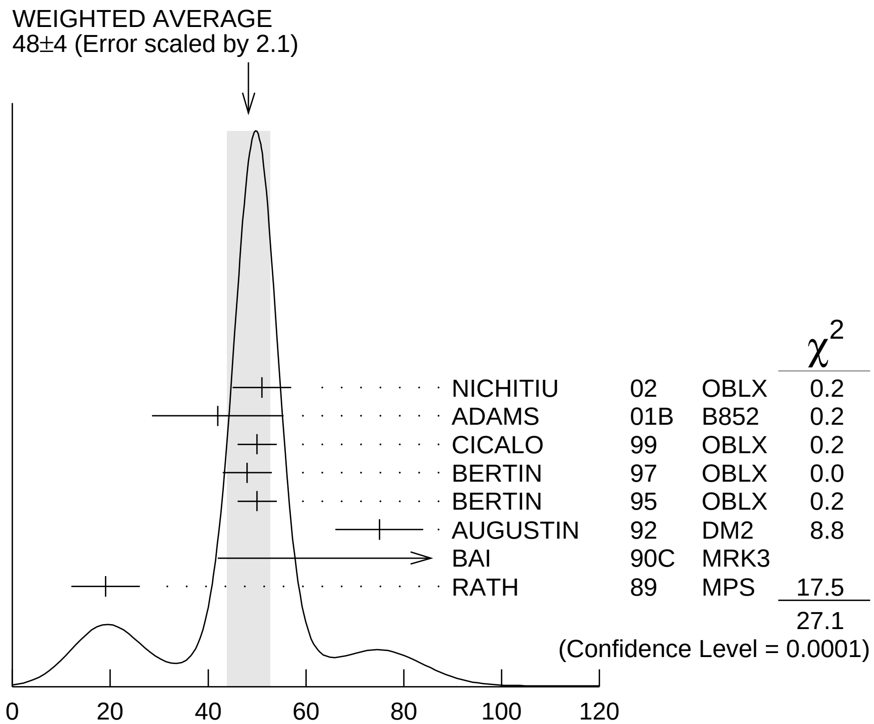
VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
$52.8\pm\ 7.6^{+0.1}_{-7.6}$		[14] ABLIKIM	11J	BES3	$J/\psi \to \omega(\eta\pi^+\pi^-)$
55 ±11	900 ± 375	AMSLER	04B	CBAR	$0\ \overline{p}p \to \pi^+\pi^-\pi^+\pi^-\eta$
55 ±12	6.6 ± 2.0k	AMSLER	04B	CBAR	$0\ \overline{p}p \to \pi^+\pi^-\pi^0\pi^0\gamma$
80 ±21	9082	MANAK	00A	MPS	$18\ \pi^- p \to \eta\pi^+\pi^- n$
85 ±18	2200	ALDE	97B	GAM4	$100\ \pi^- p \to \eta\pi^0\pi^0 n$
86 ±10		AMSLER	95F	CBAR	$0\ \overline{p}p \to \pi^+\pi^-\pi^0\pi^0\eta$
47 ±13		[15] BOLTON	92B	MRK3	$J/\psi \to \gamma\eta\pi^+\pi^-$
59 ± 4		FUKUI	91C	SPEC	$8.95\ \pi^- p \to \eta\pi^+\pi^- n$
53 ±11		[16] AUGUSTIN	90	DM2	$J/\psi \to \gamma\eta\pi^+\pi^-$
31 ± 7		ANDO	86	SPEC	$8\ \pi^- p \to \eta\pi^+\pi^- n$



$\eta(1405)$ width $\eta\pi\pi$ mode (MeV)

$K\overline{K}\pi$ MODE ($a_0(980)\pi$ or direct $K\overline{K}\pi$)

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
The data in this block is included in the average printed for a previous datablock.					
48± 4 OUR AVERAGE		Error includes scale factor of 2.1. See the ideogram below.			
51± 6	3651	[17] NICHITIU	02	OBLX	
42±10± 9	20k	ADAMS	01B	B852	18 GeV $\pi^- p \to K^+ K^- \pi^0 n$
50± 4		CICALO	99	OBLX	0 $\overline{p}p \to K^\pm K^0_S \pi^\mp \pi^+ \pi^-$
48± 5		[18] BERTIN	97	OBLX	0.0 $\overline{p}p \to K^\pm (K^0) \pi^\mp \pi^+ \pi^-$
50± 4		[18] BERTIN	95	OBLX	0 $\overline{p}p \to K\overline{K}\pi\pi\pi$
75± 9		AUGUSTIN	92	DM2	$J/\psi \to \gamma K\overline{K}\pi$
$91^{+67}_{-31}{}^{+15}_{-38}$		[19] BAI	90C	MRK3	$J/\psi \to \gamma K^0_S K^\pm \pi^\mp$
19± 7		[19] RATH	89	MPS	21.4 $\pi^- p \to n K^0_S K^0_S \pi^0$



$\eta(1405)$ width $K\overline{K}\pi$ mode ($a_0(980)$ π dominant)

$\pi\pi\gamma$ MODE

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
64 ±18	235 ± 91	AMSLER	04B	CBAR	0 $\overline{p}p \to \pi^+\pi^-\pi^+\pi^-\gamma$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
101.0± 8.8±8.8	547	BAI	04J	BES2	$J/\psi \to \gamma\gamma\pi^+\pi^-$
174 ±44		AUGUSTIN	90	DM2	$J/\psi \to \pi^+\pi^-\gamma\gamma$
90 ±26		[20] COFFMAN	90	MRK3	$J/\psi \to \pi^+\pi^- 2\gamma$

4π MODE

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
160±30		BUGG	95	MRK3	$J/\psi \to \gamma\pi^+\pi^-\pi^+\pi^-$
144±13	3270	[21] BISELLO	89B	DM2	$J/\psi \to 4\pi\gamma$

$K\overline{K}\pi$ MODE (unresolved)

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
48.9± 9.0	249 ± 35	[22,23] ABLIKIM	08E	BES2	$J/\psi \to \omega K^0_S K^+\pi^-$ + c.c.
34.2±18.5	62 ± 18	[22,23] ABLIKIM	08E	BES2	$J/\psi \to \omega K^+ K^-\pi^0$
93 ±14	296	[22] AUGUSTIN	90	DM2	$J/\psi \to \gamma K^+ K^-\pi^0$
105 ±10	693	[22] AUGUSTIN	90	DM2	$J/\psi \to \gamma K^0_S K^\pm\pi^\mp$
62 ±16	500	[22] DUCH	89	ASTE	$\overline{p}p \to K\overline{K}\pi\pi\pi$
100 ±11	170	[22] RATH	89	MPS	21.4 $\pi^- p \to K^0_S K^0_S \pi^0 n$

66	$\pm$ 2	8800	[22] BIRMAN	88	MPS	$8\ \pi^- p \rightarrow K^+ \overline{K}^0 \pi^- n$
60	$\pm$10	620	[22] REEVES	86	SPEC	$6.6\ p\overline{p} \rightarrow K K \pi X$
60	$\pm$10		[22] CHUNG	85	SPEC	$8\ \pi^- p \rightarrow K \overline{K} \pi n$
55	$^{+20}_{-30}$	174	[22] EDWARDS	82E	CBAL	$J/\psi \rightarrow \gamma K^+ K^- \pi^0$
50	$^{+30}_{-20}$		[22] SCHARRE	80	MRK2	$J/\psi \rightarrow \gamma K^0_S K^\pm \pi^\mp$
80	$\pm$10	800	[22,24] BAILLON	67	HBC	$0.0\ \overline{p} p \rightarrow K \overline{K} \pi \pi \pi$

[14] The selected process is $J/\psi \rightarrow \omega a_0(980)\pi$.
[15] From fit to the $a_0(980)\pi$ 0^{-+} partial wave.
[16] From $\eta\pi^+\pi^-$ mass distribution - mainly $a_0(980)\pi$ - no spin–parity determination available.
[17] Decaying dominantly directly to $K^+ K^- \pi^0$.
[18] Decaying into $(K\overline{K})_S\pi$, $(K\pi)_S\overline{K}$, and $a_0(980)\pi$.
[19] From fit to the $a_0(980)\pi$ 0^{-+} partial wave , but $a_0(980)\pi$ 1^{++} cannot be excluded.
[20] This peak in the $\gamma\rho$ channel may not be related to the $\eta(1405)$.
[21] Estimated by us from various fits.
[22] These experiments identify only one pseudoscalar in the 1400–1500 range. Data could also refer to $\eta(1475)$.
[23] Systematic uncertainty not evaluated.
[24] From best fit to 0^{-+} partial wave , 50% $K^*(892)K$, 50% $a_0(980)\pi$.

η(1405) DECAY MODES

	Mode	Fraction (Γ_i/Γ)	Confidence level
Γ_1	$K\overline{K}\pi$	seen	
Γ_2	$\eta\pi\pi$	seen	
Γ_3	$a_0(980)\pi$	seen	
Γ_4	$\eta(\pi\pi)_{S\text{-wave}}$	seen	
Γ_5	$f_0(980)\eta$	seen	
Γ_6	4π	seen	
Γ_7	$\rho\rho$	<58 %	99.85%
Γ_8	$\gamma\gamma$		
Γ_9	$\rho^0\gamma$	seen	
Γ_{10}	$\phi\gamma$		
Γ_{11}	$K^*(892)K$	seen	

η(1405) $\Gamma(i)\Gamma(\gamma\gamma)/\Gamma(\text{total})$

$\Gamma(K\overline{K}\pi) \times \Gamma(\gamma\gamma)/\Gamma_{total}$ — $\Gamma_1\Gamma_8/\Gamma$

VALUE (keV)	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.035	90	[25,26] AHOHE	05	CLE2	$10.6\ e^+e^- \rightarrow e^+e^- K^0_S K^\pm \pi^\mp$

$\Gamma(\eta\pi\pi) \times \Gamma(\gamma\gamma)/\Gamma_{total}$ — $\Gamma_2\Gamma_8/\Gamma$

VALUE (keV)	CL%	DOCUMENT ID		TECN	COMMENT
<0.095	95	ACCIARRI	01G	L3	$183–202\ e^+e^- \rightarrow e^+e^- \eta\pi^+\pi^-$

$\Gamma(\rho^0\gamma) \times \Gamma(\gamma\gamma)/\Gamma_{total}$ — $\Gamma_9\Gamma_8/\Gamma$

VALUE (keV)	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<1.5	95	ALTHOFF	84E	TASS	$e^+e^- \rightarrow e^+e^-\pi^+\pi^-\gamma$

[25] Using $\eta(1405)$ mass and width 1410 MeV and 51 MeV, respectively.
[26] Assuming three-body phase-space decay to $K^0_S K^\pm \pi^\mp$.

$\eta(1405)$ BRANCHING RATIOS

$\Gamma(\eta\pi\pi)/\Gamma(K\overline{K}\pi)$ — Γ_2/Γ_1

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.09±0.48		[27] AMSLER	04B	CBAR	0 $\overline{p}p \rightarrow \pi^+\pi^-\pi^+\pi^-\eta$
<0.5	90	EDWARDS	83B	CBAL	$J/\psi \rightarrow \eta\pi\pi\gamma$
<1.1	90	SCHARRE	80	MRK2	$J/\psi \rightarrow \eta\pi\pi\gamma$
<1.5	95	FOSTER	68B	HBC	0.0 $\overline{p}p$

$\Gamma(\rho^0\gamma)/\Gamma(\eta\pi\pi)$ — Γ_9/Γ_2

VALUE	DOCUMENT ID		TECN	COMMENT
0.111±0.064	AMSLER	04B	CBAR	0 $\overline{p}p$

$\Gamma(a_0(980)\pi)/\Gamma(K\overline{K}\pi)$ — Γ_3/Γ_1

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
∼ 0.15		[28] BERTIN	95	OBLX	0 $\overline{p}p \rightarrow K\overline{K}\pi\pi\pi$
∼ 0.8	500	[28] DUCH	89	ASTE	$\overline{p}p \rightarrow \pi^+\pi^-K^\pm\pi^\mp K^0$
∼ 0.75		[28] REEVES	86	SPEC	6.6 $p\overline{p} \rightarrow KK\pi X$

$\Gamma(a_0(980)\pi)/\Gamma(\eta\pi\pi)$ — Γ_3/Γ_2

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.29±0.10		ABELE	98E	CBAR	0 $p\overline{p} \rightarrow \eta\pi^0\pi^0\pi^0$
0.19±0.04	2200	[29] ALDE	97B	GAM4	100 $\pi^- p \rightarrow \eta\pi^0\pi^0 n$
0.56±0.04±0.03		[29] AMSLER	95F	CBAR	0 $\overline{p}p \rightarrow \pi^+\pi^-\pi^0\pi^0\eta$

$\Gamma(a_0(980)\pi)/\Gamma(\eta(\pi\pi)_{S\text{-wave}})$ — Γ_3/Γ_4

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.91±0.12		ANISOVICH	01	SPEC	0.0 $\overline{p}p \rightarrow \eta\pi^+\pi^-\pi^+\pi^-$
0.15±0.04	9082	[30] MANAK	00A	MPS	18 $\pi^- p \rightarrow \eta\pi^+\pi^- n$
0.70±0.12±0.20		[31] BAI	99	BES	$J/\psi \rightarrow \gamma\eta\pi^+\pi^-$

$\Gamma(\rho^0\gamma)/\Gamma(K\overline{K}\pi)$ — Γ_9/Γ_1

VALUE	DOCUMENT ID		TECN	COMMENT
0.0152±0.0038	[32] COFFMAN	90	MRK3	$J/\psi \rightarrow \gamma\gamma\pi^+\pi^-$

$\Gamma(\eta(\pi\pi)_{S\text{-wave}})/\Gamma(\eta\pi\pi)$ Γ_4/Γ_2

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.81 ± 0.04	2200	ALDE 97B	GAM4	100 $\pi^- p \to \eta\pi^0\pi^0 n$

$\Gamma(f_0(980)\eta)/\Gamma(\eta\pi\pi)$ Γ_5/Γ_2

VALUE	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.32 ± 0.07	[33] ANISOVICH 00	SPEC	0.9–1.2 $\overline{p}p \to \eta 3\pi^0$

$\Gamma(\rho\rho)/\Gamma_{\text{total}}$ Γ_7/Γ

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.58	99.85	[27,34] AMSLER 04B	CBAR	0 $\overline{p}p$

$\Gamma(K^*(892)K)/\Gamma(a_0(980)\pi)$ Γ_{11}/Γ_3

VALUE	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.084 ± 0.024	[30] ADAMS 01B	B852	18 GeV $\pi^- p \to K^+K^-\pi^0 n$

$\Gamma(\phi\gamma)/\Gamma(\rho^0\gamma)$ Γ_{10}/Γ_9

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<0.77	95	[35] BAI 04J	BES2	$J/\psi \to \gamma\gamma K^+K^-$

[27] Using the data of BAILLON 67 on $\overline{p}p \to K\overline{K}\pi$.
[28] Assuming that the $a_0(980)$ decays only into $K\overline{K}$.
[29] Assuming that the $a_0(980)$ decays only into $\eta\pi$.
[30] Statistical error only.
[31] Assuming that the $a_0(980)$ decays only into $\eta\pi$.
[32] Using $B(J/\psi \to \gamma\eta(1405) \to \gamma K\overline{K}\pi)=4.2\times10^{-3}$ and $B(J/\psi \to \gamma\eta(1405) \to \gamma\gamma\rho^0)=6.4\times10^{-5}$ and assuming that the $\gamma\rho^0$ signal does not come from the $f_1(1420)$.
[33] Using preliminary Crystal Barrel data.
[34] Assuming that the $\eta(1405)$ decays are saturated by the $\pi\pi\eta$, $K\overline{K}\pi$ and $\rho\rho$ modes.
[35] Calculated by us from $B(J/\psi \to \eta(1405)\gamma \to \phi\gamma\gamma) < 0.82\times10^{-4}$ and $B(J/\psi \to \eta(1405)\gamma \to \rho^0\gamma\gamma) = (1.07\pm0.17\pm0.11)\times10^{-4}$.

$\eta(1405)$ REFERENCES

ABLIKIM	11J	PRL 107 182001	M. Ablikim *et al.*	(BES III Collab.)
ABLIKIM	08E	PR D77 032005	M. Ablikim *et al.*	(BES Collab.)
AHOHE	05	PR D71 072001	R. Ahohe *et al.*	(CLEO Collab.)
AMSLER	04B	EPJ C33 23	C. Amsler *et al.*	(Crystal Barrel Collab.)
BAI	04J	PL B594 47	J.Z. Bai *et al.*	(BES Collab.)
NICHITIU	02	PL B545 261	F. Nichitiu *et al.*	(OBELIX Collab.)
ACCIARRI	01G	PL B501 1	M. Acciarri *et al.*	(L3 Collab.)
ADAMS	01B	PL B516 264	G.S. Adams *et al.*	(BNL E852 Collab.)
ANISOVICH	01	NP A690 567	A.V. Anisovich *et al.*	
ANISOVICH	00	PL B472 168	A.V. Anisovich *et al.*	
MANAK	00A	PR D62 012003	J.J. Manak *et al.*	(BNL E852 Collab.)
BAI	99	PL B446 356	J.Z. Bai *et al.*	(BES Collab.)
CICALO	99	PL B462 453	C. Cicalo *et al.*	(OBELIX Collab.)
ABELE	98E	NP B514 45	A. Abele *et al.*	(Crystal Barrel Collab.)
BAI	98C	PL B440 217	J.Z. Bai *et al.*	(BES Collab.)
ALDE	97B	PAN 60 386	D. Alde *et al.*	(GAMS Collab.)
		Translated from YAF 60 458.		

BERTIN	97	PL B400 226	A. Bertin *et al.*	(OBELIX Collab.)
AMSLER	95F	PL B358 389	C. Amsler *et al.*	(Crystal Barrel Collab.)
BERTIN	95	PL B361 187	A. Bertin *et al.*	(OBELIX Collab.)
BUGG	95	PL B353 378	D.V. Bugg *et al.*	(LOQM, PNPI, WASH)
AUGUSTIN	92	PR D46 1951	J.E. Augustin, G. Cosme	(DM2 Collab.)
BOLTON	92B	PRL 69 1328	T. Bolton *et al.*	(Mark III Collab.)
FUKUI	91C	PL B267 293	S. Fukui *et al.*	(SUGI, NAGO, KEK, KYOT+)
AUGUSTIN	90	PR D42 10	J.E. Augustin *et al.*	(DM2 Collab.)
BAI	90C	PRL 65 2507	Z. Bai *et al.*	(Mark III Collab.)
COFFMAN	90	PR D41 1410	D.M. Coffman *et al.*	(Mark III Collab.)
BISELLO	89B	PR D39 701	G. Busetto *et al.*	(DM2 Collab.)
DUCH	89	ZPHY C45 223	K.D. Duch *et al.*	(ASTERIX Collab.) JP
RATH	89	PR D40 693	M.G. Rath *et al.*	(NDAM, BRAN, BNL, CUNY+)
BIRMAN	88	PRL 61 1557	A. Birman *et al.*	(BNL, FSU, IND, MASD) JP
ANDO	86	PRL 57 1296	A. Ando *et al.*	(KEK, KYOT, NIRS, SAGA+) IJP
REEVES	86	PR D34 1960	D.F. Reeves *et al.*	(FLOR, BNL, IND+) JP
CHUNG	85	PRL 55 779	S.U. Chung *et al.*	(BNL, FLOR, IND+) JP
ALTHOFF	84E	PL 147B 487	M. Althoff *et al.*	(TASSO Collab.)
EDWARDS	83B	PRL 51 859	C. Edwards *et al.*	(CIT, HARV, PRIN+)
EDWARDS	82E	PRL 49 259	C. Edwards *et al.*	(CIT, HARV, PRIN+)
Also		PRL 50 219	C. Edwards *et al.*	(CIT, HARV, PRIN+)
SCHARRE	80	PL 97B 329	D.L. Scharre *et al.*	(SLAC, LBL)
FOSTER	68B	NP B8 174	M. Foster *et al.*	(CERN, CDEF)
BAILLON	67	NC 50A 393	P.H. Baillon *et al.*	(CERN, CDEF, IRAD)