$f_1(1285)$

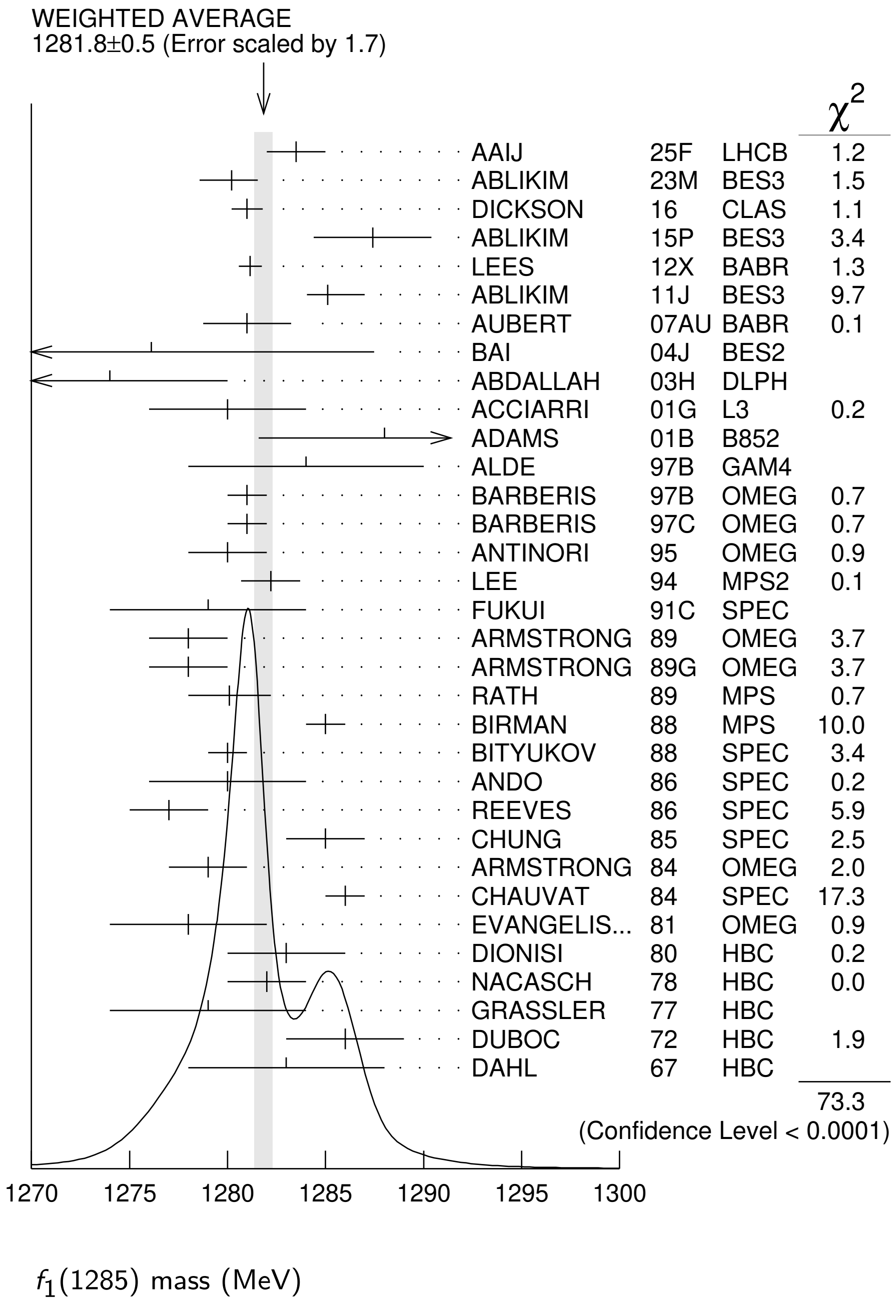
$I^G(J^{PC}) = 0^+(1^{++})$

$f_1(1285)$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
1281.8 ± 0.5 OUR AVERAGE		Error includes scale factor of 1.7. See the ideogram below.			
1283.5 ± 1.5	360	AAIJ	25F	LHCB	$B \to (K^0_S K \pi) K$
1280.2 ± 0.6 $^{+1.2}_{-1.5}$	126k	ABLIKIM	23M	BES3	$J/\psi \to \gamma K^0_S K^0_S \pi^0$
1281.0 ± 0.8		DICKSON	16	CLAS	2.55 $\gamma p \to \eta \pi^+ \pi^- p$
1287.4 ± 3.0	87	ABLIKIM	15P	BES3	$J/\psi \to K^+ K^- 3\pi$
1281.16 ± 0.39 ± 0.45		[1] LEES	12X	BABR	$\tau^- \to \pi^- f_1(1285) \nu_\tau$
1285.1 ± 1.0 $^{+1.6}_{-0.3}$		[2] ABLIKIM	11J	BES3	$J/\psi \to \omega(\eta \pi^+ \pi^-)$
1281 ± 2 ± 1		AUBERT	07AU	BABR	10.6 $e^+ e^- \to f_1(1285) \pi^+ \pi^- \gamma$
1276.1 ± 8.1 ± 8.0	203	BAI	04J	BES2	$J/\psi \to \gamma \gamma \pi^+ \pi^-$
1274 ± 6	237	ABDALLAH	03H	DLPH	91.2 $e^+ e^- \to K^0_S K^\pm \pi^\mp + X$
1280 ± 4		ACCIARRI	01G	L3	
1288 ± 4 ± 5	20k	ADAMS	01B	B852	18 GeV $\pi^- p \to K^+ K^- \pi^0 n$
1284 ± 6	1400	ALDE	97B	GAM4	100 $\pi^- p \to \eta \pi^0 \pi^0 n$
1281 ± 1		BARBERIS	97B	OMEG	450 $p p \to p p 2(\pi^+ \pi^-)$
1281 ± 1		BARBERIS	97C	OMEG	450 $p p \to p p K^0_S K^\pm \pi^\mp$
1280 ± 2		[3] ANTINORI	95	OMEG	300,450 $p p \to p p 2(\pi^+ \pi^-)$
1282.2 ± 1.5		LEE	94	MPS2	18 $\pi^- p \to K^+ \overline{K}^0 2\pi^- p$
1279 ± 5		FUKUI	91C	SPEC	8.95 $\pi^- p \to \eta \pi^+ \pi^- n$
1278 ± 2	140	ARMSTRONG	89	OMEG	300 $p p \to K \overline{K} \pi p p$
1278 ± 2		ARMSTRONG	89G	OMEG	85 $\pi^+ p \to 4\pi \pi p$, $p p \to 4\pi p p$
1280.1 ± 2.1	60	RATH	89	MPS	21.4 $\pi^- p \to K^0_S K^0_S \pi^0 n$
1285 ± 1	4750	[4] BIRMAN	88	MPS	8 $\pi^- p \to K^+ \overline{K}^0 \pi^- n$
1280 ± 1	504	BITYUKOV	88	SPEC	32.5 $\pi^- p \to K^+ K^- \pi^0 n$
1280 ± 4		ANDO	86	SPEC	8 $\pi^- p \to \eta \pi^+ \pi^- n$
1277 ± 2	420	REEVES	86	SPEC	6.6 $p \overline{p} \to K K \pi X$
1285 ± 2		CHUNG	85	SPEC	8 $\pi^- p \to N K \overline{K} \pi$
1279 ± 2	604	ARMSTRONG	84	OMEG	85 $\pi^+ p \to K \overline{K} \pi \pi p$, $p p \to K \overline{K} \pi p p$
1286 ± 1		CHAUVAT	84	SPEC	ISR 31.5 $p p$
1278 ± 4		EVANGELIS...	81	OMEG	12 $\pi^- p \to \eta \pi^+ \pi^- \pi^- p$
1283 ± 3	103	DIONISI	80	HBC	4 $\pi^- p \to K \overline{K} \pi n$

1282 ± 2		320	NACASCH	78	HBC	0.7,0.76 $\overline{p}p \to K\overline{K}3\pi$
1279 ± 5		210	GRASSLER	77	HBC	16 $\pi^{\mp}p$
1286 ± 3		180	DUBOC	72	HBC	1.2 $\overline{p}p \to 2K4\pi$
1283 ± 5			DAHL	67	HBC	1.6–4.2 $\pi^- p$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
1289.3 ± 2.8		234	ABLIKIM	19BA	BES3	$e^+e^- \to \psi(2S)$
1284.2 ± 2.2			[5] AAIJ	14Y	LHCB	$\overline{B}^0_{(s)} \to J/\psi 2(\pi^+\pi^-)$
1281.9 ± 0.5			[5] SOSA	99	SPEC	$pp \to p_{\text{slow}} (K^0_S K^+\pi^-) p_{\text{fast}}$
1282.8 ± 0.6			[5] SOSA	99	SPEC	$pp \to p_{\text{slow}} (K^0_S K^-\pi^+) p_{\text{fast}}$
1270 ±10			AMELIN	95	VES	37 $\pi^- N \to \pi^-\pi^+\pi^-\gamma N$
1280 ± 2			ABATZIS	94	OMEG	450 $pp \to pp2(\pi^+\pi^-)$
1282 ± 4			ARMSTRONG	93C	E760	$\overline{p}p \to \pi^0\eta\eta \to 6\gamma$
1270 ± 6	±10		ARMSTRONG	92C	OMEG	300 $pp \to pp\pi^+\pi^-\gamma$
1281 ± 1			ARMSTRONG	89E	OMEG	300 $pp \to pp2(\pi^+\pi^-)$
1279 ± 6	±10	16	BECKER	87	MRK3	$e^+e^- \to \phi K\overline{K}\pi$
1286 ± 9			GIDAL	87	MRK2	$e^+e^- \to e^+e^-\eta\pi^+\pi^-$
1287 ± 5		353	BITYUKOV	84B	SPEC	32 $\pi^- p \to K^+K^-\pi^0 n$
~ 1279			[6] TORNQVIST	82B	RVUE	
1275 ± 6		31	BROMBERG	80	SPEC	100 $\pi^- p \to K\overline{K}\pi X$
1288 ± 9		200	GURTU	79	HBC	4.2 $K^- p \to n\eta 2\pi$
~ 1275.0		46	[7] STANTON	79	CNTR	8.5 $\pi^- p \to n2\gamma 2\pi$
1271 ±10		34	CORDEN	78	OMEG	12–15 $\pi^- p \to K^+K^-\pi n$
1295 ±12		85	CORDEN	78	OMEG	12–15 $\pi^- p \to n5\pi$
1292 ±10		150	DEFOIX	72	HBC	0.7 $\overline{p}p \to 7\pi$
1280 ± 3		500	[8] THUN	72	MMS	13.4 $\pi^- p$
1303 ± 8			BARDADIN-...	71	HBC	8 $\pi^+ p \to p6\pi$
1283 ± 6			BOESEBECK	71	HBC	16.0 $\pi p \to p5\pi$
1270 ±10			CAMPBELL	69	DBC	2.7 $\pi^+ d$
1285 ± 7			LORSTAD	69	HBC	0.7 $\overline{p}p$, 4,5-body
1290 ± 7			D'ANDLAU	68	HBC	1.2 $\overline{p}p$, 5–6 body

[1] Using the $2\pi^+2\pi^-$ and $\pi^+\pi^-\eta$ modes of $f_1(1285)$ decay.
[2] The selected process is $J/\psi \to \omega a_0(980)\pi$.
[3] Supersedes ABATZIS 94, ARMSTRONG 89E.
[4] From partial wave analysis of $K^+\overline{K}^0\pi^-$ system.
[5] No systematic error given.
[6] From a unitarized quark-model calculation.
[7] From phase shift analysis of $\eta\pi^+\pi^-$ system.
[8] Seen in the missing mass spectrum.



$f_1(1285)$ WIDTH

Only experiments giving width error less than 20 MeV are kept for averaging.

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
23.0± 1.0 OUR AVERAGE		Error includes scale factor of 1.5. See the ideogram below.			
27.4± 5.6	360	AAIJ	25F	LHCB	$B \to (K^0_S K \pi) K$
28.2± $1.1^{+5.5}_{-2.9}$	126k	ABLIKIM	23M	BES3	$J/\psi \to \gamma K^0_S K^0_S \pi^0$
18.4± 1.4		DICKSON	16	CLAS	2.55 $\gamma p \to \eta \pi^+ \pi^- p$

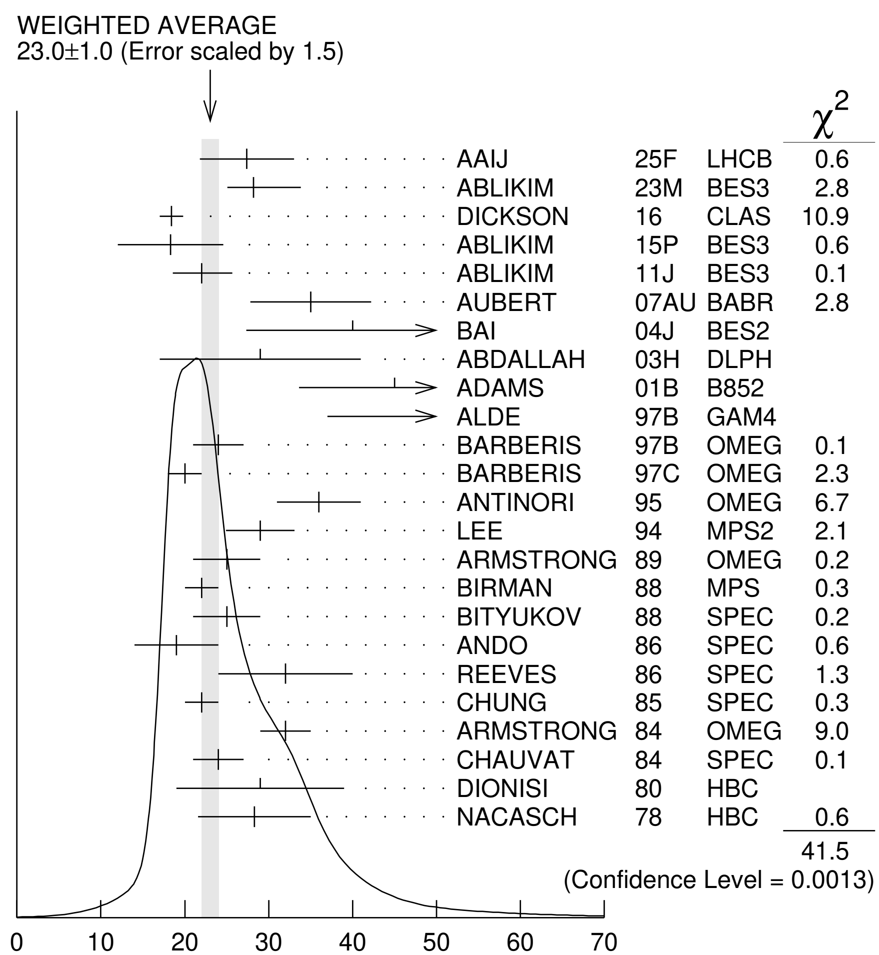
18.3 ± 6.3	87	ABLIKIM	15P	BES3	$J/\psi \to K^+ K^- 3\pi$
22.0 ± 3.1 $^{+2.0}_{-1.5}$		[1] ABLIKIM	11J	BES3	$J/\psi \to \omega(\eta\pi^+\pi^-)$
35 ± 6 ± 4		AUBERT	07AU	BABR	10.6 $e^+e^- \to f_1(1285)\pi^+\pi^-\gamma$
40.0 ± 8.6 ± 9.3	203	BAI	04J	BES2	$J/\psi \to \gamma\gamma\pi^+\pi^-$
29 ± 12	237	ABDALLAH	03H	DLPH	91.2 $e^+e^- \to K^0_S K^\pm \pi^\mp + X$
45 ± 9 ± 7	20k	ADAMS	01B	B852	18 GeV $\pi^- p \to K^+ K^- \pi^0 n$
55 ± 18	1400	ALDE	97B	GAM4	100 $\pi^- p \to \eta\pi^0\pi^0 n$
24 ± 3		BARBERIS	97B	OMEG	450 $pp \to pp2(\pi^+\pi^-)$
20 ± 2		BARBERIS	97C	OMEG	450 $pp \to pp K^0_S K^\pm \pi^\mp$
36 ± 5		[2] ANTINORI	95	OMEG	300,450 $pp \to pp2(\pi^+\pi^-)$
29.0 ± 4.1		LEE	94	MPS2	18 $\pi^- p \to K^+ \overline{K}^0 2\pi^- p$
25 ± 4	140	ARMSTRONG	89	OMEG	300 $pp \to K\overline{K}\pi pp$
22 ± 2	4750	[3] BIRMAN	88	MPS	8 $\pi^- p \to K^+ \overline{K}^0 \pi^- n$
25 ± 4	504	BITYUKOV	88	SPEC	32.5 $\pi^- p \to K^+ K^- \pi^0 n$
19 ± 5		ANDO	86	SPEC	8 $\pi^- p \to \eta\pi^+\pi^- n$
32 ± 8	420	REEVES	86	SPEC	6.6 $p\overline{p} \to KK\pi X$
22 ± 2		CHUNG	85	SPEC	8 $\pi^- p \to NK\overline{K}\pi$
32 ± 3	604	ARMSTRONG	84	OMEG	85 $\pi^+ p \to K\overline{K}\pi\pi p$, $pp \to K\overline{K}\pi pp$
24 ± 3		CHAUVAT	84	SPEC	ISR 31.5 pp
29 ± 10	103	DIONISI	80	HBC	4 $\pi^- p \to K\overline{K}\pi n$
28.3 ± 6.7	320	NACASCH	78	HBC	0.7,0.76 $\overline{p}p \to K\overline{K}3\pi$

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

17.1 ± 3.4	234	ABLIKIM	19BA	BES3	$e^+e^- \to \psi(2S)$
32.4 ± 5.8		[4] AAIJ	14Y	LHCB	$\overline{B}^0_{(s)} \to J/\psi 2(\pi^+\pi^-)$
18.2 ± 1.2		[4] SOSA	99	SPEC	$pp \to p_{slow} (K^0_S K^+ \pi^-) p_{fast}$
19.4 ± 1.5		[4] SOSA	99	SPEC	$pp \to p_{slow} (K^0_S K^- \pi^+) p_{fast}$
40 ± 5		ABATZIS	94	OMEG	450 $pp \to pp2(\pi^+\pi^-)$
31 ± 5		ARMSTRONG	89E	OMEG	300 $pp \to pp2(\pi^+\pi^-)$
41 ± 12		ARMSTRONG	89G	OMEG	85 $\pi^+ p \to 4\pi\pi p$, $pp \to 4\pi pp$
17.9 ± 10.9	60	RATH	89	MPS	21.4 $\pi^- p \to K^0_S K^0_S \pi^0 n$
14 $^{+20}_{-14}$ ± 10	16	BECKER	87	MRK3	$e^+e^- \to \phi K\overline{K}\pi$
26 ± 12		EVANGELIS...	81	OMEG	12 $\pi^- p \to \eta\pi^+\pi^-\pi^- p$
25 ± 15	200	GURTU	79	HBC	4.2 $K^- p \to n\eta 2\pi$
~ 10		[5] STANTON	79	CNTR	8.5 $\pi^- p \to n2\gamma 2\pi$
24 ± 18	210	GRASSLER	77	HBC	16 $\pi^\mp p$
28 ± 5	150	[6] DEFOIX	72	HBC	0.7 $\overline{p}p \to 7\pi$
46 ± 9	180	[6] DUBOC	72	HBC	1.2 $\overline{p}p \to 2K4\pi$
37 ± 5	500	[7] THUN	72	MMS	13.4 $\pi^- p$
10 ± 10		BOESEBECK	71	HBC	16.0 $\pi p \to p5\pi$
30 ± 15		CAMPBELL	69	DBC	2.7 $\pi^+ d$
60 ± 15		[6] LORSTAD	69	HBC	0.7 $\overline{p}p$, 4,5-body

35 ± 10	[6] DAHL	67	HBC	1.6–4.2 $\pi^- p$

[1] The selected process is $J/\psi \to \omega a_0(980) \pi$.
[2] Supersedes ABATZIS 94, ARMSTRONG 89E.
[3] From partial wave analysis of $K^+ \overline{K}^0 \pi^-$ system.
[4] No systematic error given.
[5] From phase shift analysis of $\eta \pi^+ \pi^-$ system.
[6] Resolution is not unfolded.
[7] Seen in the missing mass spectrum.



$f_1(1285)$ width (MeV)

$f_1(1285)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)	Scale factor/ Confidence level
Γ_1	4π	(32.7± 1.8) %	S=1.2
Γ_2	$\pi^0 \pi^0 \pi^+ \pi^-$	(21.8± 1.2) %	S=1.2
Γ_3	$2\pi^+ 2\pi^-$	(10.9± 0.6) %	S=1.2
Γ_4	$\rho^0 \pi^+ \pi^-$	(10.9± 0.6) %	S=1.2
Γ_5	$\rho^0 \rho^0$	seen	

Γ_6	$4\pi^0$	$<$ 7	$\times 10^{-4}$	CL=90%
Γ_7	$\eta\pi^+\pi^-$	(35 $\pm$15) %		
Γ_8	$\eta\pi\pi$	(52.2$\pm$ 1.9) %		S=1.2
Γ_9	$a_0(980)\pi$ [ignoring $a_0(980) \to K\overline{K}$]	(38 $\pm$ 4) %		
Γ_{10}	$\eta\pi\pi$ [excluding $a_0(980)\pi$]	(14 $\pm$ 4) %		
Γ_{11}	$K\overline{K}\pi$	(9.0$\pm$ 0.4) %		S=1.1
Γ_{12}	$K\overline{K}^*(892)$	not seen		
Γ_{13}	$\pi^+\pi^-\pi^0$	(3.0$\pm$ 0.9)	$\times 10^{-3}$	
Γ_{14}	$\rho^\pm\pi^\mp$	$<$ 3.1	$\times 10^{-3}$	CL=95%
Γ_{15}	$\gamma\rho^0$	(6.1$\pm$ 1.0) %		S=1.7
Γ_{16}	$\phi\gamma$	seen		
Γ_{17}	e^+e^-	$<$ 9.4	$\times 10^{-9}$	CL=90%
Γ_{18}	$\gamma\gamma^*$			
Γ_{19}	$\gamma\gamma$			

CONSTRAINED FIT INFORMATION

An overall fit to 6 branching ratios uses 18 measurements and one constraint to determine 5 parameters. The overall fit has a χ^2 = 24.0 for 14 degrees of freedom.

The following *off-diagonal* array elements are the correlation coefficients $\left\langle\delta x_i \delta x_j\right\rangle/(\delta x_i \cdot \delta x_j)$, in percent, from the fit to the branching fractions, $x_i \equiv \Gamma_i/\Gamma_{total}$. The fit constrains the x_i whose labels appear in this array to sum to one.

x_9	−29			
x_{10}	−12	−89		
x_{11}	22	−9	−4	
x_{15}	−24	−8	−3	−27
	x_1	x_9	x_{10}	x_{11}

$f_1(1285)$ $\Gamma(i)\Gamma(\gamma\gamma)/\Gamma(\text{total})$

$\Gamma(\eta\pi\pi) \times \Gamma(\gamma\gamma)/\Gamma_{total}$ — $\Gamma_8\Gamma_{19}/\Gamma = (\Gamma_9+\Gamma_{10})\Gamma_{19}/\Gamma$

VALUE (keV)	CL%	DOCUMENT ID		TECN	COMMENT
<0.62	95	GIDAL	87	MRK2	$e^+e^- \to e^+e^-\eta\pi^+\pi^-$

$\Gamma(\eta\pi\pi) \times \Gamma(\gamma\gamma^*)/\Gamma_{total}$ — $\Gamma_8\Gamma_{18}/\Gamma = (\Gamma_9+\Gamma_{10})\Gamma_{18}/\Gamma$

VALUE (keV)	EVTS	DOCUMENT ID		TECN	COMMENT
1.4 ±0.4 OUR AVERAGE	Error includes scale factor of 1.4.				
1.18±0.25±0.20	26	[1,2] AIHARA	88B	TPC	$e^+e^- \to e^+e^-\eta\pi^+\pi^-$
2.30±0.61±0.42		[1,3] GIDAL	87	MRK2	$e^+e^- \to e^+e^-\eta\pi^+\pi^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.8 ±0.3 ±0.3	420	[4] ACHARD	02B	L3	183–209 $e^+e^- \to e^+e^-\eta\pi^+\pi^-$

[1] Assuming a ρ-pole form factor.
[2] Published value multiplied by $\eta\pi\pi$ branching ratio 0.49.
[3] Published value divided by 2 and multiplied by the $\eta\pi\pi$ branching ratio 0.49.
[4] Published value multiplied by the $\eta\pi\pi$ branching ratio 0.52.

$f_1(1285)$ BRANCHING RATIOS

$\Gamma(K\overline{K}\pi)/\Gamma(4\pi)$ — Γ_{11}/Γ_1

VALUE	DOCUMENT ID		TECN	COMMENT
0.274±0.017 OUR FIT Error includes scale factor of 1.4.				
0.271±0.016 OUR AVERAGE Error includes scale factor of 1.2.				
0.265±0.014	[1] BARBERIS	97C	OMEG	450 $pp \rightarrow ppK^0_S K^{\pm}\pi^{\mp}$
0.28 ±0.05	[2] ARMSTRONG	89E	OMEG	300 $pp \rightarrow ppf_1(1285)$
0.37 ±0.03 ±0.05	[3] ARMSTRONG	89G	OMEG	85 $\pi p \rightarrow 4\pi X$

[1] Using $2(\pi^+\pi^-)$ data from BARBERIS 97B.
[2] Assuming $\rho\pi\pi$ and $a_0(980)\pi$ intermediate states.
[3] 4π consistent with being entirely $\rho\pi\pi$.

$\Gamma(\pi^0\pi^0\pi^+\pi^-)/\Gamma_{total}$ — $\Gamma_2/\Gamma = \frac{2}{3}\Gamma_1/\Gamma$

VALUE	DOCUMENT ID
0.218±0.012 OUR FIT Error includes scale factor of 1.2.	

$\Gamma(2\pi^+2\pi^-)/\Gamma_{total}$ — $\Gamma_3/\Gamma = \frac{1}{3}\Gamma_1/\Gamma$

VALUE	DOCUMENT ID
0.109±0.006 OUR FIT Error includes scale factor of 1.2.	

$\Gamma(\rho^0\pi^+\pi^-)/\Gamma_{total}$ — $\Gamma_4/\Gamma = \frac{1}{3}\Gamma_1/\Gamma$

VALUE	DOCUMENT ID
0.109±0.006 OUR FIT Error includes scale factor of 1.2.	

$\Gamma(\rho^0\pi^+\pi^-)/\Gamma(2\pi^+2\pi^-)$ — Γ_4/Γ_3

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.0±0.4	GRASSLER	77	HBC	16 GeV $\pi^{\pm}p$

$\Gamma(\rho^0\rho^0)/\Gamma_{total}$ — Γ_5/Γ

VALUE	DOCUMENT ID		COMMENT
seen	BARBERIS	00C	450 $pp \rightarrow p_f 4\pi p_s$

$\Gamma(4\pi^0)/\Gamma_{total}$ — Γ_6/Γ

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
<7	90	ALDE	87	GAM4	100 $\pi^- p \rightarrow 4\pi^0 n$

$\Gamma(\pi^+\pi^-\pi^0)/\Gamma(\eta\pi^+\pi^-)$ — Γ_{13}/Γ_7

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.86±0.16±0.20	2.3k	[1] DOROFEEV	11	VES	$\pi^- N \rightarrow \pi^- f_1(1285) N$

[1] Value obtained selecting the region corresponding to $f_0(980)$ in the $\pi^+\pi^-$ mass spectrum.

$\Gamma(\eta\pi\pi)/\Gamma_{total}$ — $\Gamma_8/\Gamma = (\Gamma_9+\Gamma_{10})/\Gamma$

VALUE	DOCUMENT ID
0.522±0.019 OUR FIT Error includes scale factor of 1.2.	

$\Gamma(4\pi)/\Gamma(\eta\pi\pi)$ — $\Gamma_1/\Gamma_8 = \Gamma_1/(\Gamma_9+\Gamma_{10})$

VALUE	DOCUMENT ID		TECN	COMMENT
0.63±0.06 OUR FIT Error includes scale factor of 1.2.				
0.41±0.14 OUR AVERAGE				
0.37±0.11±0.11	BOLTON	92	MRK3	$J/\psi \rightarrow \gamma f_1(1285)$
0.64±0.40	GURTU	79	HBC	4.2 $K^- p$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.93±0.30	[1] GRASSLER	77	HBC	16 $\pi^\mp p$

[1] Assuming $\rho\pi\pi$ and $a_0(980)\pi$ intermediate states.

$\Gamma(2\pi^+2\pi^-)/\Gamma(\eta\pi\pi)$ — Γ_3/Γ_8

VALUE	DOCUMENT ID		TECN	COMMENT
0.28±0.02±0.02	[1] LEES	12X	BABR	$\tau^- \rightarrow \pi^- f_1(1285)\nu_\tau$

[1] Assuming B($f_1(1285) \rightarrow \pi\pi\eta$) = 3/2 B($f_1(1285) \rightarrow \pi^+\pi^-\eta$).

$\Gamma(a_0(980)\pi$ [ignoring $a_0(980) \rightarrow K\overline{K}$]$)/\Gamma(\eta\pi\pi)$ — $\Gamma_9/\Gamma_8 = \Gamma_9/(\Gamma_9+\Gamma_{10})$

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
0.72±0.08 OUR FIT					
0.72±0.07 OUR AVERAGE					
0.74±0.02±0.09		DICKSON	16	CLAS	$\gamma p \rightarrow f_1(1285) p$
0.72±0.15		GURTU	79	HBC	4.2 $K^- p$
0.6 $^{+0.3}_{-0.2}$		CORDEN	78	OMEG	12–15 $\pi^- p$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
>0.69	95	ACHARD	02B	L3	183–209 $e^+e^- \rightarrow e^+e^-\eta\pi^+\pi^-$
0.28±0.07		ALDE	97B	GAM4	100 $\pi^- p \rightarrow \eta\pi^0\pi^0 n$
1.0 ±0.3		GRASSLER	77	HBC	16 $\pi^\mp p$

$\Gamma(K\overline{K}\pi)/\Gamma(\eta\pi\pi)$ — $\Gamma_{11}/\Gamma_8 = \Gamma_{11}/(\Gamma_9+\Gamma_{10})$

VALUE	DOCUMENT ID		TECN	COMMENT
0.172±0.011 OUR FIT				
0.176±0.012 OUR AVERAGE				
0.216±0.010±0.031	DICKSON	16	CLAS	$\gamma p \rightarrow f_1(1285) p$
0.166±0.01 ±0.008	BARBERIS	98C	OMEG	450 $pp \rightarrow p_f f_1(1285) p_s$
0.42 ±0.15	GURTU	79	HBC	4.2 $K^- p$
0.5 ±0.2	[1] CORDEN	78	OMEG	12–15 $\pi^- p$
0.20 ±0.08	[2] DEFOIX	72	HBC	0.7 $\overline{p}p \rightarrow 7\pi$
0.16 ±0.08	CAMPBELL	69	DBC	2.7 $\pi^+ d$

[1] CORDEN 78 assumes low-mass $\eta\pi\pi$ region is dominantly 1^{++}. See BARBERIS 98C and MANAK 00A for discussion.
[2] $K\overline{K}$ system characterized by the $I = 1$ threshold enhancement. (See under $a_0(980)$).

$\Gamma(K\overline{K}^*(892))/\Gamma_{total}$ — Γ_{12}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	NACASCH	78	HBC	0.7,0.76 $\overline{p}p \to K\overline{K}3\pi$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
seen	[1] ACHARD	07	L3	183–209 $e^+e^- \to e^+e^- K^0_S K^\pm \pi^\mp$

[1] A clear signal of 19.8 ± 4.4 events observed at high Q^2.

$\Gamma(\pi^+\pi^-\pi^0)/\Gamma_{total}$ — Γ_{13}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.30±0.055±0.074	2.3k	[1] DOROFEEV	11	VES	$\pi^- N \to \pi^- f_1(1285) N$

[1] Value obtained selecting the region corresponding to $f_0(980)$ in the $\pi^+\pi^-$ mass spectrum. The sytematic error includes the uncertainty on the partial width $f_1 \to \eta\pi\pi$ obtained from PDG 10 data.

$\Gamma(\rho^\pm\pi^\mp)/\Gamma_{total}$ — Γ_{14}/Γ

VALUE (%)	CL%	DOCUMENT ID		TECN	COMMENT
<0.31	95	DOROFEEV	11	VES	$\pi^- N \to \pi^- f_1(1285) N$

$\Gamma(\gamma\rho^0)/\Gamma_{total}$ — Γ_{15}/Γ

VALUE (units 10^{-2})	CL%	DOCUMENT ID		TECN	COMMENT
6.1±1.0 OUR FIT Error includes scale factor of 1.7.					
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2.8±0.7±0.6		[1] AMELIN	95	VES	37 $\pi^- N \to \pi^-\pi^+\pi^-\gamma N$
<5	95	BITYUKOV	91B	SPEC	32 $\pi^- p \to \pi^+\pi^-\gamma n$

[1] Not an independent measurement.

$\Gamma(\gamma\rho^0)/\Gamma(2\pi^+2\pi^-)$ — $\Gamma_{15}/\Gamma_3 = \Gamma_{15}/\frac{1}{3}\Gamma_1$

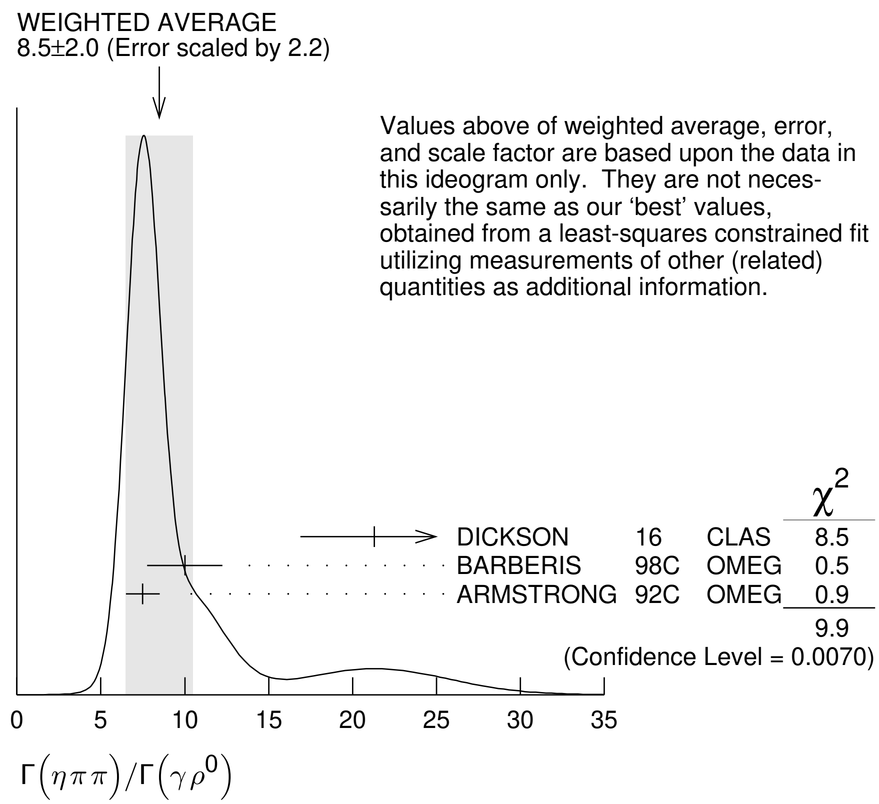
VALUE	DOCUMENT ID		TECN	COMMENT
0.55±0.10 OUR FIT Error includes scale factor of 1.5.				
0.45±0.18	[1] COFFMAN	90	MRK3	$J/\psi \to \gamma\gamma\pi^+\pi^-$

[1] Using B($J/\psi \to \gamma f_1(1285) \to \gamma\gamma\rho^0$)=0.25 × 10^{-4} and B($J/\psi \to \gamma f_1(1285) \to \gamma 2\pi^+ 2\pi^-$)=0.55 × 10^{-4} given by MIR 88.

$\Gamma(\eta\pi\pi)/\Gamma(\gamma\rho^0)$ — $\Gamma_8/\Gamma_{15} = (\Gamma_9+\Gamma_{10})/\Gamma_{15}$

VALUE	DOCUMENT ID		TECN	COMMENT
8.6±1.6 OUR FIT Error includes scale factor of 1.9.				
8.5±2.0 OUR AVERAGE Error includes scale factor of 2.2. See the ideogram below.				
21.3±4.4	DICKSON	16	CLAS	$\gamma p \to f_1(1285) p$
10.0±1.0±2.0	BARBERIS	98C	OMEG	450 $pp \to p_f f_1(1285) p_s$
7.5±1.0	[1] ARMSTRONG	92C	OMEG	300 $pp \to pp\pi^+\pi^-\gamma,\ pp\eta\pi^+\pi^-$

[1] Published value multiplied by 1.5.



$\Gamma(\gamma\rho^0)/\Gamma(K\overline{K}\pi)$ — Γ_{15}/Γ_{11}

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
>0.035	90	[1] COFFMAN	90	MRK3	$J/\psi \to \gamma\gamma\pi^+\pi^-$

[1] Using $B(J/\psi \to \gamma f_1(1285) \to \gamma\gamma\rho^0)=0.25 \times 10^{-4}$ and $B(J/\psi \to \gamma f_1(1285) \to \gamma K\overline{K}\pi)=< 0.72 \times 10^{-3}$.

$\Gamma(\phi\gamma)/\Gamma_{total}$ — Γ_{16}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	[1] ABLIKIM	25P	BES3	$J/\psi \to \gamma\gamma\phi$

[1] From a partial wave analysis of $J/\psi \to \gamma\gamma\phi$ with significance 17.3σ.

$\Gamma(\phi\gamma)/\Gamma(K\overline{K}\pi)$ — Γ_{16}/Γ_{11}

VALUE (units 10^{-2})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
0.82±0.21±0.20		19	BITYUKOV	88	SPEC	32.5 $\pi^- p \to K^+ K^- \pi^0 n$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<0.50	95		BARBERIS	98C	OMEG	450 $p p \to p_f f_1(1285) p_s$
<0.93	95		AMELIN	95	VES	37 $\pi^- N \to \pi^-\pi^+\pi^-\gamma N$

$\Gamma(e^+ e^-)/\Gamma_{total}$ — Γ_{17}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<9.4 \times 10^{-9}$	90	[1] ACHASOV	20	SND	$e^+ e^- \to \eta\pi^0\pi^0$

[1] ACHASOV 20 reports two candidate events corresponding to a significance of 2.5 σ and the branching fraction of $(5.1^{+3.7}_{-2.7}) \times 10^{-9}$.

$f_1(1285)$ REFERENCES

AAIJ	25F	PR D111 092009	R. Aaij et al.	(LHCb Collab.)
ABLIKIM	25P	PR D111 052011	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	23M	JHEP 2303 121	M. Ablikim et al.	(BESIII Collab.)
ACHASOV	20	PL B800 135074	M.N. Achasov et al.	(SND Collab.)
ABLIKIM	19BA	PR D100 092003	M. Ablikim et al.	(BESIII Collab.)
DICKSON	16	PR C93 065202	R. Dickson et al.	(JLab CLAS Collab.)
ABLIKIM	15P	PR D92 012007	M. Ablikim et al.	(BESIII Collab.)
AAIJ	14Y	PRL 112 091802	R. Aaij et al.	(LHCb Collab.)
LEES	12X	PR D86 092010	J.P. Lees et al.	(BABAR Collab.)
ABLIKIM	11J	PRL 107 182001	M. Ablikim et al.	(BESIII Collab.)
DOROFEEV	11	EPJ A47 68	V. Dorofeev et al.	(SERP, MIPT)
PDG	10	JP G37 075021	K. Nakamura et al.	(PDG Collab.)
ACHARD	07	JHEP 0703 018	P. Achard et al.	(L3 Collab.)
AUBERT	07AU	PR D76 092005	B. Aubert et al.	(BABAR Collab.)
BAI	04J	PL B594 47	J.Z. Bai et al.	(BES Collab.)
ABDALLAH	03H	PL B569 129	J. Abdallah et al.	(DELPHI Collab.)
ACHARD	02B	PL B526 269	P. Achard et al.	(L3 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.)
BARBERIS	00C	PL B471 440	D. Barberis et al.	(WA 102 Collab.)
MANAK	00A	PR D62 012003	J.J. Manak et al.	(BNL E852 Collab.)
SOSA	99	PRL 83 913	M. Sosa et al.	
BARBERIS	98C	PL B440 225	D. Barberis et al.	(WA 102 Collab.)
ALDE	97B	PAN 60 386	D. Alde et al.	(GAMS Collab.)
		Translated from YAF 60 458.		
BARBERIS	97B	PL B413 217	D. Barberis et al.	(WA 102 Collab.)
BARBERIS	97C	PL B413 225	D. Barberis et al.	(WA 102 Collab.)
AMELIN	95	ZPHY C66 71	D.V. Amelin et al.	(VES Collab.)
ANTINORI	95	PL B353 589	F. Antinori et al.	(ATHU, BARI, BIRM+)
ABATZIS	94	PL B324 509	S. Abatzis et al.	(ATHU, BARI, BIRM+)
LEE	94	PL B323 227	J.H. Lee et al.	(BNL, IND, KYUN, MASD+)
ARMSTRONG	93C	PL B307 394	T.A. Armstrong et al.	(FNAL, FERR, GENO+)
ARMSTRONG	92C	ZPHY C54 371	T.A. Armstrong et al.	(ATHU, BARI, BIRM+)
BOLTON	92	PL B278 495	T. Bolton et al.	(Mark III Collab.)
BITYUKOV	91B	SJNP 54 318	S.I. Bityukov et al.	(SERP)
		Translated from YAF 54 529.		
FUKUI	91C	PL B267 293	S. Fukui et al.	(SUGI, NAGO, KEK, KYOT+)
COFFMAN	90	PR D41 1410	D.M. Coffman et al.	(Mark III Collab.)
ARMSTRONG	89	PL B221 216	T.A. Armstrong et al.	(CERN, CDEF, BIRM+) JPC
ARMSTRONG	89E	PL B228 536	T.A. Armstrong, M. Benayoun	(ATHU, BARI, BIRM+)
ARMSTRONG	89G	ZPHY C43 55	T.A. Armstrong et al.	(CERN, BIRM, BARI+)
RATH	89	PR D40 693	M.G. Rath et al.	(NDAM, BRAN, BNL, CUNY+)
AIHARA	88B	PL B209 107	H. Aihara et al.	(TPC-2γ Collab.)
BIRMAN	88	PRL 61 1557	A. Birman et al.	(BNL, FSU, IND, MASD) JP
BITYUKOV	88	PL B203 327	S.I. Bityukov et al.	(SERP)
MIR	88	Photon-Photon 88, 126	R. Mir	(Mark III Collab.)
Conference				
ALDE	87	PL B198 286	D.M. Alde et al.	(LANL, BRUX, SERP, LAPP)
BECKER	87	PRL 59 186	J.J. Becker et al.	(Mark III Collab.)
GIDAL	87	PRL 59 2012	G. Gidal et al.	(LBL, SLAC, HARV)
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
ARMSTRONG	84	PL 146B 273	T.A. Armstrong et al.	(ATHU, BARI, BIRM+) JP
BITYUKOV	84B	PL 144B 133	S.I. Bityukov et al.	(SERP)
CHAUVAT	84	PL 148B 382	P. Chauvat et al.	(CERN, CLER, UCLA+)
TORNQVIST	82B	NP B203 268	N.A. Tornqvist	(HELS)
EVANGELIS...	81	NP B178 197	C. Evangelista et al.	(BARI, BONN, CERN+)

BROMBERG	80	PR D22 1513	C.M. Bromberg *et al.*	(CIT, FNAL, ILLC+)	
DIONISI	80	NP B169 1	C. Dionisi *et al.*	(CERN, MADR, CDEF+)	
GURTU	79	NP B151 181	A. Gurtu *et al.*	(CERN, ZEEM, NIJM, OXF)	
STANTON	79	PRL 42 346	N.R. Stanton *et al.*	(OSU, CARL, MCGI+)	JP
CORDEN	78	NP B144 253	M.J. Corden *et al.*	(BIRM, RHEL, TELA+)	JP
NACASCH	78	NP B135 203	R. Nacasch *et al.*	(PARIS, MADR, CERN)	
GRASSLER	77	NP B121 189	H. Grassler *et al.*	(AACH3, BERL, BONN+)	
DEFOIX	72	NP B44 125	C. Defoix *et al.*	(CDEF, CERN)	
DUBOC	72	NP B46 429	J. Duboc *et al.*	(PARIS, LIVP)	
THUN	72	PRL 28 1733	R. Thun *et al.*	(STON, NEAS)	
BARDADIN-...	71	PR D4 2711	M. Bardadin-Otwinowska *et al.*	(WARS)	
BOESEBECK	71	PL 34B 659	K. Boesebeck	(AACH, BERL, BONN, CERN, CRAC+)	
CAMPBELL	69	PRL 22 1204	J.H. Campbell *et al.*	(PURD)	
LORSTAD	69	NP B14 63	B. Lorstad *et al.*	(CDEF, CERN)	JP
D'ANDLAU	68	NP B5 693	C. d'Andlau *et al.*	(CDEF, CERN, IRAD+)	IJP
DAHL	67	PR 163 1377	O.I. Dahl *et al.*	(LRL)	IJP