$f_1(1285)$

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

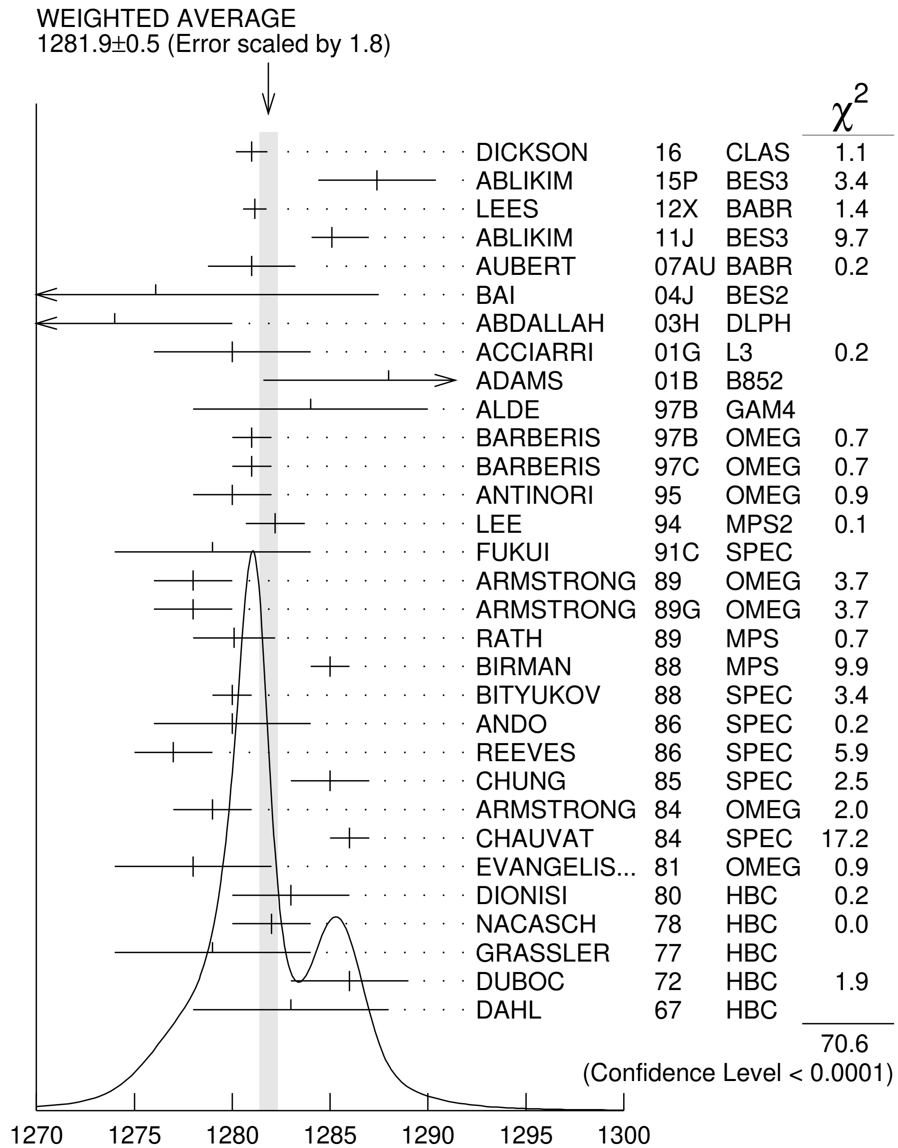
$f_1(1285)$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
1281.9 ± 0.5 OUR AVERAGE		Error includes scale factor of 1.8. See the ideogram below.			
1281.0 ± 0.8		DICKSON	16	CLAS	2.55 $\gamma p \rightarrow \eta\pi^+\pi^- p$
1287.4 ± 3.0	87	ABLIKIM	15P	BES3	$J/\psi \rightarrow K^+ K^- 3\pi$
1281.16 ± 0.39 ± 0.45		[1] LEES	12X	BABR	$\tau^- \rightarrow \pi^- f_1(1285)\nu_\tau$
1285.1 ± 1.0 $^{+1.6}_{-0.3}$		[2] ABLIKIM	11J	BES3	$J/\psi \rightarrow \omega(\eta\pi^+\pi^-)$
1281 ± 2 ± 1		AUBERT	07AU	BABR	10.6 $e^+ e^- \rightarrow f_1(1285)\pi^+\pi^-\gamma$
1276.1 ± 8.1 ± 8.0	203	BAI	04J	BES2	$J/\psi \rightarrow \gamma\gamma\pi^+\pi^-$
1274 ± 6	237	ABDALLAH	03H	DLPH	91.2 $e^+ e^- \rightarrow K^0_S K^\pm \pi^\mp + X$
1280 ± 4		ACCIARRI	01G	L3	
1288 ± 4 ± 5	20k	ADAMS	01B	B852	18 GeV $\pi^- p \rightarrow K^+ K^- \pi^0 n$
1284 ± 6	1400	ALDE	97B	GAM4	100 $\pi^- p \rightarrow \eta\pi^0\pi^0 n$
1281 ± 1		BARBERIS	97B	OMEG	450 $p p \rightarrow p p 2(\pi^+\pi^-)$
1281 ± 1		BARBERIS	97C	OMEG	450 $p p \rightarrow p p K^0_S K^\pm \pi^\mp$
1280 ± 2		[3] ANTINORI	95	OMEG	300,450 $p p \rightarrow p p 2(\pi^+\pi^-)$
1282.2 ± 1.5		LEE	94	MPS2	18 $\pi^- p \rightarrow K^+ \overline{K}^0 2\pi^- p$
1279 ± 5		FUKUI	91C	SPEC	8.95 $\pi^- p \rightarrow \eta\pi^+\pi^- n$
1278 ± 2	140	ARMSTRONG	89	OMEG	300 $p p \rightarrow K\overline{K}\pi p p$
1278 ± 2		ARMSTRONG	89G	OMEG	85 $\pi^+ p \rightarrow 4\pi\pi p$, $p p \rightarrow 4\pi p p$
1280.1 ± 2.1	60	RATH	89	MPS	21.4 $\pi^- p \rightarrow K^0_S K^0_S \pi^0 n$
1285 ± 1	4750	[4] BIRMAN	88	MPS	8 $\pi^- p \rightarrow K^+ \overline{K}^0 \pi^- n$
1280 ± 1	504	BITYUKOV	88	SPEC	32.5 $\pi^- p \rightarrow K^+ K^- \pi^0 n$
1280 ± 4		ANDO	86	SPEC	8 $\pi^- p \rightarrow \eta\pi^+\pi^- n$
1277 ± 2	420	REEVES	86	SPEC	6.6 $p\overline{p} \rightarrow K K \pi X$
1285 ± 2		CHUNG	85	SPEC	8 $\pi^- p \rightarrow N K\overline{K}\pi$
1279 ± 2	604	ARMSTRONG	84	OMEG	85 $\pi^+ p \rightarrow K\overline{K}\pi\pi p$, $p p \rightarrow K\overline{K}\pi p p$
1286 ± 1		CHAUVAT	84	SPEC	ISR 31.5 $p p$
1278 ± 4		EVANGELIS...	81	OMEG	12 $\pi^- p \rightarrow \eta\pi^+\pi^-\pi^- p$
1283 ± 3	103	DIONISI	80	HBC	4 $\pi^- p \rightarrow K\overline{K}\pi n$
1282 ± 2	320	NACASCH	78	HBC	0.7,0.76 $\overline{p} p \rightarrow K\overline{K} 3\pi$
1279 ± 5	210	GRASSLER	77	HBC	16 $\pi^\mp p$
1286 ± 3	180	DUBOC	72	HBC	1.2 $\overline{p} p \rightarrow 2K 4\pi$
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	$\pm$ 2.8		234	ABLIKIM	19BA	BES3	$e^+ e^- \to \psi(2S)$
1284.2	$\pm$ 2.2			[5] AAIJ	14Y	LHCB	$\overline{B}^0_{(s)} \to J/\psi 2(\pi^+\pi^-)$
1281.9	$\pm$ 0.5			[5] SOSA	99	SPEC	$p p \to p_{\text{slow}} (K^0_S K^+ \pi^-) p_{\text{fast}}$
1282.8	$\pm$ 0.6			[5] SOSA	99	SPEC	$p p \to p_{\text{slow}} (K^0_S K^- \pi^+) p_{\text{fast}}$
1270	$\pm$10			AMELIN	95	VES	$37\ \pi^- N \to \pi^-\pi^+\pi^-\gamma N$
1280	$\pm$ 2			ABATZIS	94	OMEG	$450\ p p \to p p 2(\pi^+\pi^-)$
1282	$\pm$ 4			ARMSTRONG	93C	E760	$\overline{p} p \to \pi^0 \eta\eta \to 6\gamma$
1270	$\pm$ 6	$\pm$10		ARMSTRONG	92C	OMEG	$300\ p p \to p p \pi^+\pi^-\gamma$
1281	$\pm$ 1			ARMSTRONG	89E	OMEG	$300\ p p \to p p 2(\pi^+\pi^-)$
1279	$\pm$ 6	$\pm$10	16	BECKER	87	MRK3	$e^+ e^- \to \phi K \overline{K} \pi$
1286	$\pm$ 9			GIDAL	87	MRK2	$e^+ e^- \to e^+ e^- \eta\pi^+\pi^-$
1287	$\pm$ 5		353	BITYUKOV	84B	SPEC	$32\ \pi^- p \to K^+ K^- \pi^0 n$
$\sim$ 1279				[6] TORNQVIST	82B	RVUE	
1275	$\pm$ 6		31	BROMBERG	80	SPEC	$100\ \pi^- p \to K \overline{K} \pi X$
1288	$\pm$ 9		200	GURTU	79	HBC	$4.2\ K^- p \to n \eta 2\pi$
$\sim$ 1275.0			46	[7] STANTON	79	CNTR	$8.5\ \pi^- p \to n 2\gamma 2\pi$
1271	$\pm$10		34	CORDEN	78	OMEG	12–15 $\pi^- p \to K^+ K^- \pi n$
1295	$\pm$12		85	CORDEN	78	OMEG	12–15 $\pi^- p \to n 5\pi$
1292	$\pm$10		150	DEFOIX	72	HBC	$0.7\ \overline{p} p \to 7\pi$
1280	$\pm$ 3		500	[8] THUN	72	MMS	$13.4\ \pi^- p$
1303	$\pm$ 8			BARDADIN-...	71	HBC	$8\ \pi^+ p \to p 6\pi$
1283	$\pm$ 6			BOESEBECK	71	HBC	$16.0\ \pi p \to p 5\pi$
1270	$\pm$10			CAMPBELL	69	DBC	$2.7\ \pi^+ d$
1285	$\pm$ 7			LORSTAD	69	HBC	$0.7\ \overline{p} p$, 4,5-body
1290	$\pm$ 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.



$f_1(1285)$ mass (MeV)

$f_1(1285)$ WIDTH

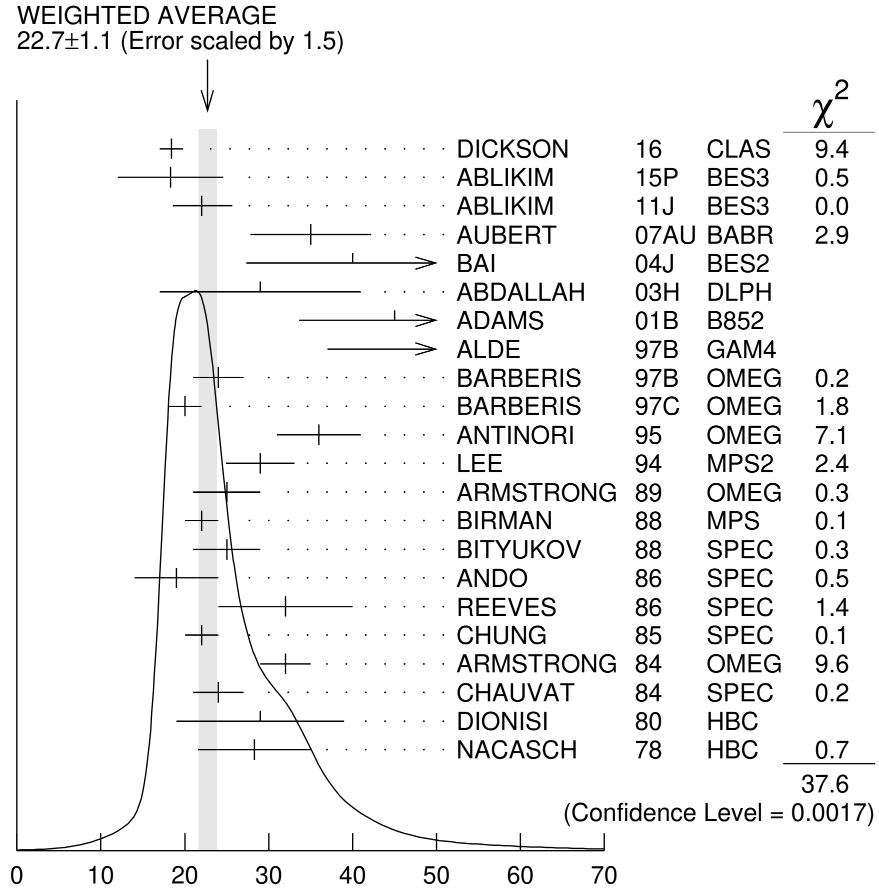
Only experiments giving width error less than 20 MeV are kept for averaging.

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
22.7± 1.1 OUR AVERAGE				Error includes scale factor of 1.5. See the ideogram below.
18.4± 1.4		DICKSON	16 CLAS	2.55 $\gamma p \to \eta\pi^+\pi^- p$
18.3± 6.3	87	ABLIKIM	15P BES3	$J/\psi \to K^+K^- 3\pi$
$22.0\pm 3.1^{+2.0}_{-1.5}$		[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 $e^+e^- \rightarrow K^0_S K^\pm \pi^\mp + X$
45 ± 9 ± 7	20k	ADAMS	01B	B852	18 GeV $\pi^- p \rightarrow K^+ K^- \pi^0 n$
55 ±18	1400	ALDE	97B	GAM4	100 $\pi^- p \rightarrow \eta \pi^0 \pi^0 n$
24 ± 3		BARBERIS	97B	OMEG	450 $p p \rightarrow p p 2(\pi^+ \pi^-)$
20 ± 2		BARBERIS	97C	OMEG	450 $p p \rightarrow p p K^0_S K^\pm \pi^\mp$
36 ± 5		[2] ANTINORI	95	OMEG	300,450 $p p \rightarrow p p 2(\pi^+ \pi^-)$
29.0± 4.1		LEE	94	MPS2	18 $\pi^- p \rightarrow K^+ \overline{K}^0 2\pi^- p$
25 ± 4	140	ARMSTRONG	89	OMEG	300 $p p \rightarrow K \overline{K} \pi p p$
22 ± 2	4750	[3] BIRMAN	88	MPS	8 $\pi^- p \rightarrow K^+ \overline{K}^0 \pi^- n$
25 ± 4	504	BITYUKOV	88	SPEC	32.5 $\pi^- p \rightarrow K^+ K^- \pi^0 n$
19 ± 5		ANDO	86	SPEC	8 $\pi^- p \rightarrow \eta \pi^+ \pi^- n$
32 ± 8	420	REEVES	86	SPEC	6.6 $p \overline{p} \rightarrow K K \pi X$
22 ± 2		CHUNG	85	SPEC	8 $\pi^- p \rightarrow N K \overline{K} \pi$
32 ± 3	604	ARMSTRONG	84	OMEG	85 $\pi^+ p \rightarrow K \overline{K} \pi \pi p$, $p p \rightarrow K \overline{K} \pi p p$
24 ± 3		CHAUVAT	84	SPEC	ISR 31.5 $p p$
29 ±10	103	DIONISI	80	HBC	4 $\pi^- p \rightarrow K \overline{K} \pi n$
28.3± 6.7	320	NACASCH	78	HBC	0.7,0.76 $\overline{p} p \rightarrow K \overline{K} 3\pi$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
17.1± 3.4	234	ABLIKIM	19BA	BES3	$e^+e^- \rightarrow \psi(2S)$
32.4± 5.8		[4] AAIJ	14Y	LHCB	$\overline{B}^0_{(s)} \rightarrow J/\psi 2(\pi^+ \pi^-)$
18.2± 1.2		[4] SOSA	99	SPEC	$p p \rightarrow p_{\text{slow}} (K^0_S K^+ \pi^-) p_{\text{fast}}$
19.4± 1.5		[4] SOSA	99	SPEC	$p p \rightarrow p_{\text{slow}} (K^0_S K^- \pi^+) p_{\text{fast}}$
40 ± 5		ABATZIS	94	OMEG	450 $p p \rightarrow p p 2(\pi^+ \pi^-)$
31 ± 5		ARMSTRONG	89E	OMEG	300 $p p \rightarrow p p 2(\pi^+ \pi^-)$
41 ±12		ARMSTRONG	89G	OMEG	85 $\pi^+ p \rightarrow 4\pi \pi p$, $p p \rightarrow 4\pi p p$
17.9±10.9	60	RATH	89	MPS	21.4 $\pi^- p \rightarrow K^0_S K^0_S \pi^0 n$
14 $^{+20}_{-14}$ ±10	16	BECKER	87	MRK3	$e^+e^- \rightarrow \phi K \overline{K} \pi$
26 ±12		EVANGELIS...	81	OMEG	12 $\pi^- p \rightarrow \eta \pi^+ \pi^- \pi^- p$
25 ±15	200	GURTU	79	HBC	4.2 $K^- p \rightarrow n \eta 2\pi$
∼ 10		[5] STANTON	79	CNTR	8.5 $\pi^- p \rightarrow n 2\gamma 2\pi$
24 ±18	210	GRASSLER	77	HBC	16 $\pi^\mp p$
28 ± 5	150	[6] DEFOIX	72	HBC	0.7 $\overline{p} p \rightarrow 7\pi$
46 ± 9	180	[6] DUBOC	72	HBC	1.2 $\overline{p} p \rightarrow 2K 4\pi$
37 ± 5	500	[7] THUN	72	MMS	13.4 $\pi^- p$
10 ±10		BOESEBECK	71	HBC	16.0 $\pi p \rightarrow p 5\pi$
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 $J/\psi \rightarrow \omega a_0(980) \pi$.
[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± 1.9) %	S=1.2
Γ_2	$\pi^0\pi^0\pi^+\pi^-$	(21.8± 1.3) %	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 ±15) %	
Γ_8	$\eta\pi\pi$	(52.2± 2.0) %	S=1.2
Γ_9	$a_0(980)\pi$ [ignoring $a_0(980) \to K\overline{K}$]	(38 ± 4) %	

Γ_{10}	$\eta\pi\pi$ [excluding $a_0(980)\pi$]	(14 ± 4) %	
Γ_{11}	$K\overline{K}\pi$	(9.0± 0.4) %	S=1.1
Γ_{12}	$K\overline{K}^*(892)$	not seen	
Γ_{13}	$\pi^+\pi^-\pi^0$	(3.0± 0.9) × 10^{-3}	
Γ_{14}	$\rho^\pm\pi^\mp$	< 3.1 × 10^{-3}	CL=95%
Γ_{15}	$\gamma\rho^0$	(6.1± 1.0) %	S=1.7
Γ_{16}	$\phi\gamma$	(7.4± 2.6) × 10^{-4}	
Γ_{17}	e^+e^-	< 9.4 × 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 $\chi^2 =$ 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_1	x_9	x_{10}	x_{11}
x_9	−30			
x_{10}	−12	−88		
x_{11}	22	−10	−4	
x_{15}	−25	−7	−3	−27

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

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

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 $pp \to ppK^0_S K^\pm \pi^\mp$
0.28 ±0.05	[2] ARMSTRONG	89E	OMEG	300 $pp \to ppf_1(1285)$
0.37 ±0.03 ±0.05	[3] ARMSTRONG	89G	OMEG	85 $\pi p \to 4\pi X$

[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±0.013 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 $pp \to p_f 4\pi p_s$

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

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

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

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

[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±0.020 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 1.3.				
0.41±0.14 OUR AVERAGE				
0.37±0.11±0.11	BOLTON	92	MRK3	$J/\psi \to \gamma f_1(1285)$
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	$\tau^- \to \pi^- f_1(1285)\nu_\tau$

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

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

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	$\gamma p \to f_1(1285) p$
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 $e^+e^- \to e^+e^-\eta\pi^+\pi^-$
0.28±0.07		ALDE	97B	GAM4	100 $\pi^- p \to \eta\pi^0\pi^0 n$
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±0.012 OUR FIT Error includes scale factor of 1.1.				
0.176±0.012 OUR AVERAGE				
0.216±0.010±0.031	DICKSON	16	CLAS	$\gamma p \to f_1(1285) p$
0.166±0.01 ±0.008	BARBERIS	98C	OMEG	450 $pp \to p_f f_1(1285) p_s$
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 $\overline{p}p \to 7\pi$
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.

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

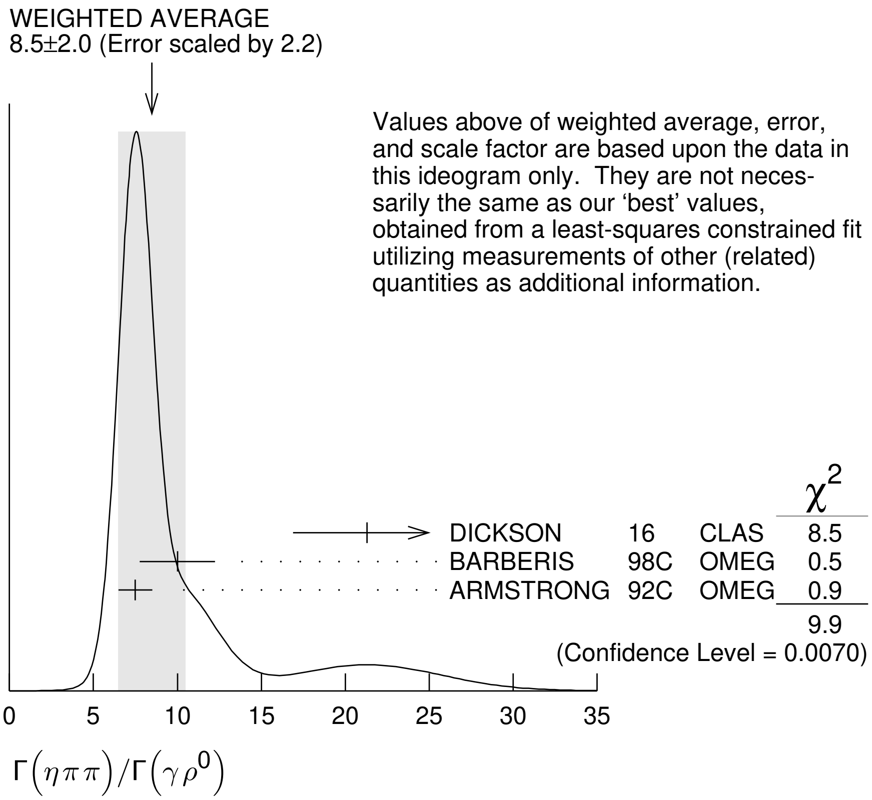
VALUE	DOCUMENT ID		TECN	COMMENT
0.55±0.10 OUR FIT Error includes scale factor of 1.5.				
0.45±0.18	[1] COFFMAN	90	MRK3	$J/\psi \to \gamma\gamma\pi^+\pi^-$

[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	$J/\psi \rightarrow \gamma\gamma\pi^+\pi^-$

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

$\Gamma(\phi\gamma)/\Gamma(K\overline{K}\pi)$ 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 $\pi^- p \rightarrow K^+ K^- \pi^0 n$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<0.50	95		BARBERIS	98C	OMEG	450 $p p \rightarrow p_f f_1(1285) p_s$
<0.93	95		AMELIN	95	VES	37 $\pi^- N \rightarrow \pi^-\pi^+\pi^-\gamma N$

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

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

[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

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