NODE=M068

$f_0(1710)$

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

See our mini-review in the 2004 edition of this *Review*, PDG 04.

NODE=M068

$f_0(1710)$ MASS

NODE=M068205

NODE=M068M

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT	
1720±6 OUR AVERAGE		Error includes scale factor of 1.6. See the ideogram below.				
$1701 \pm 5 \, ^{+9}_{-2}$	4k	[1] CHEKANOV	08	ZEUS	$e p \to K^0_S K^0_S X$	
$1765^{+4}_{-3} \pm 13$		ABLIKIM	06V	BES2	$e^+ e^- \to J/\psi \to \gamma \pi^+ \pi^-$	
$1760 \pm 15 \, ^{+15}_{-10}$		[2] ABLIKIM	05Q	BES2	$\psi(2S) \to \gamma \pi^+ \pi^- K^+ K^-$	
1738 ± 30		ABLIKIM	04E	BES2	$J/\psi \to \omega K^+ K^-$	
$1740 \pm 4 \, ^{+10}_{-25}$		[3] BAI	03G	BES	$J/\psi \to \gamma K \overline{K}$	
1740^{+30}_{-25}		[3] BAI	00A	BES	$J/\psi \to \gamma(\pi^+ \pi^- \pi^+ \pi^-)$	
1698 ± 18		[4] BARBERIS	00E		$450 \; p p \to p_f \eta \eta p_s$	
$1710 \pm 12 \pm 11$		[5] BARBERIS	99D	OMEG	$450 \; p p \to K^+ K^-, \pi^+ \pi^-$	
1710 ± 25		[6] FRENCH	99		$300 \; p p \to p_f (K^+ K^-) p_s$	
1707 ± 10		[7] AUGUSTIN	88	DM2	$J/\psi \to \gamma K^+ K^-, K^0_S K^0_S$	
1698 ± 15		[7] AUGUSTIN	87	DM2	$J/\psi \to \gamma \pi^+ \pi^-$	
$1720 \pm 10 \pm 10$		[8] BALTRUSAIT...	87	MRK3	$J/\psi \to \gamma K^+ K^-$	
1742 ± 15		[7] WILLIAMS	84	MPSF	$200 \; \pi^- N \to 2 K^0_S X$	
1670 ± 50		BLOOM	83	CBAL	$J/\psi \to \gamma 2\eta$	
• • • We do not use the following data for averages, fits, limits, etc. • • •						
1750 ± 13		AMSLER	06	CBAR	$1.64 \; \overline{p} p \to K^+ K^- \pi^0$	
1747 ± 5	80k	[9,10] UMAN	06	E835	$5.2 \; \overline{p} p \to \eta \eta \pi^0$	
1776 ± 15		VLADIMIRSK...	06	SPEC	$40 \; \pi^- p \to K^0_S K^0_S n$	
1790^{+40}_{-30}		[2] ABLIKIM	05	BES2	$J/\psi \to \phi \pi^+ \pi^-$	
1670 ± 20		[9] BINON	05	GAMS	$33 \; \pi^- p \to \eta \eta n$	
1726 ± 7	74	[10] CHEKANOV	04	ZEUS	$e p \to K^0_S K^0_S X$	
$1732+15$		[11] ANISOVICH	03	RVUE		
1682 ± 16		TIKHOMIROV	03	SPEC	$40.0 \; \pi^- C \to K^0_S K^0_S K^0_L X$	
1670 ± 26	3651	[3,12] NICHITIU	02	OBLX		
1770 ± 12		[13,14] ANISOVICH	99B	SPEC	$0.6–1.2 \; p \overline{p} \to \eta \eta \pi^0$	
1730 ± 15		[3] BARBERIS	99	OMEG	$450 \; p p \to p_s p_f K^+ K^-$	
1750 ± 20		[3] BARBERIS	99B	OMEG	$450 \; p p \to p_s p_f \pi^+ \pi^-$	
1750 ± 30		[15] ANISOVICH	98B	RVUE	Compilation	
1720 ± 39		BAI	98H	BES	$J/\psi \to \gamma \pi^0 \pi^0$	
1775 ± 1.5	57	[16] BARKOV	98		$\pi^- p \to K^0_S K^0_S n$	
1690 ± 11		[17] ABREU	96C	DLPH	$Z^0 \to K^+ K^- + X$	
$1696 \pm 5 \, ^{+9}_{-34}$		[8] BAI	96C	BES	$J/\psi \to \gamma K^+ K^-$	
$1781 \pm 8 \, ^{+10}_{-31}$		[3] BAI	96C	BES	$J/\psi \to \gamma K^+ K^-$	OCCUR=2
1768 ± 14		BALOSHIN	95	SPEC	$40 \; \pi^- C \to K^0_S K^0_S X$	
1750 ± 15		[18] BUGG	95	MRK3	$J/\psi \to \gamma \pi^+ \pi^- \pi^+ \pi^-$	
1620 ± 16		[8] BUGG	95	MRK3	$J/\psi \to \gamma \pi^+ \pi^- \pi^+ \pi^-$	OCCUR=2
1748 ± 10		[7] ARMSTRONG	93C	E760	$\overline{p} p \to \pi^0 \eta \eta \to 6\gamma$	
~ 1750		BREAKSTONE	93	SFM	$p p \to p p \pi^+ \pi^- \pi^+ \pi^-$	
1744 ± 15		[19] ALDE	92D	GAM2	$38 \; \pi^- p \to \eta \eta n$	
1713 ± 10		[20] ARMSTRONG	89D	OMEG	$300 \; p p \to p p K^+ K^-$	
1706 ± 10		[20] ARMSTRONG	89D	OMEG	$300 \; p p \to p p K^0_S K^0_S$	OCCUR=2
1700 ± 15		[8] BOLONKIN	88	SPEC	$40 \; \pi^- p \to K^0_S K^0_S n$	
1720 ± 60		[3] BOLONKIN	88	SPEC	$40 \; \pi^- p \to K^0_S K^0_S n$	OCCUR=2
1638 ± 10		[21] FALVARD	88	DM2	$J/\psi \to \phi K^+ K^-, K^0_S K^0_S$	
1690 ± 4		[22] FALVARD	88	DM2	$J/\psi \to \phi K^+ K^-, K^0_S K^0_S$	OCCUR=2
1755 ± 8		[23] ALDE	86C	GAM2	$38 \; \pi^- p \to n 2\eta$	
1730^{+2}_{-10}		[24] LONGACRE	86	RVUE	$22 \; \pi^- p \to n 2 K^0_S$	
1650 ± 50		BURKE	82	MRK2	$J/\psi \to \gamma 2\rho$	
1640 ± 50		[25,26] EDWARDS	82D	CBAL	$J/\psi \to \gamma 2\eta$	
$1730 \pm 10 \pm 20$		[27] ETKIN	82C	MPS	$23 \; \pi^- p \to n 2 K^0_S$	

[1] In the SU(3) based model with a specific interference pattern of the $f_2(1270)$, $a_2^0(1320)$, and $f_2'(1525)$ mesons incoherently added to the $f_0(1710)$ and non-resonant background. NODE=M068M;LINKAGE=HE

[2] This state may be different from $f_0(1710)$, see CLOSE 05. NODE=M068M;LINKAGE=AB

[3] $J^P = 0^+$. NODE=M068M;LINKAGE=A8

[4] T-matrix pole. NODE=M068M;LINKAGE=TP

[5] Supersedes BARBERIS 99 and BARBERIS 99B. NODE=M068M;LINKAGE=BD

[6] $J^P = 0^+$, supersedes by ARMSTRONG 89D. NODE=M068M;LINKAGE=C3

[7] No J^{PC} determination. NODE=M068M;LINKAGE=A1

[8] $J^P = 2^+$. NODE=M068M;LINKAGE=A3

[9] Breit-Wigner mass. NODE=M068M;LINKAGE=BW

[10] Systematic errors not estimated. NODE=M068M;LINKAGE=CH

[11] K-matrix pole, assuming $J^P = 0^+$, from combined analysis of $\pi^- p \to \pi^0 \pi^0 n$, $\pi^- p \to K \overline{K} n$, $\pi^+ \pi^- \to \pi^+ \pi^-$, $\overline{p} p \to \pi^0 \pi^0 \pi^0$, $\pi^0 \eta \eta$, $\pi^0 \pi^0 \eta$, $\pi^+ \pi^- \pi^0$, $K^+ K^- \pi^0$, $K_S^0 K_S^0 \pi^0$, $K^+ K_S^0 \pi^-$ at rest, $\overline{p} n \to \pi^- \pi^- \pi^+$, $K_S^0 K^- \pi^0$, $K_S^0 K_S^0 \pi^-$ at rest. NODE=M068M;LINKAGE=KM

[12] Decaying to $f_0(1370) \pi \pi$. NODE=M068M;LINKAGE=NC

[13] $J^P = 0^+$. NODE=M068M;LINKAGE=AV

[14] Not seen by AMSLER 02. NODE=M068M;LINKAGE=NS

[15] T-matrix pole, assuming $J^P = 0^+$ NODE=M068M;LINKAGE=AN

[16] No J^{PC} determination. NODE=M068M;LINKAGE=4A

[17] No J^{PC} determination, width not determined. NODE=M068M;LINKAGE=A4

[18] From a fit to the 0^+ partial wave. NODE=M068M;LINKAGE=Q0

[19] ALDE 92D combines all the GAMS-2000 data. NODE=M068M;LINKAGE=AA

[20] $J^P = 2^+$, superseded by FRENCH 99. NODE=M068M;LINKAGE=C

[21] From an analysis ignoring interference with $f_2'(1525)$. NODE=M068M;LINKAGE=A

[22] From an analysis including interference with $f_2'(1525)$. NODE=M068M;LINKAGE=B

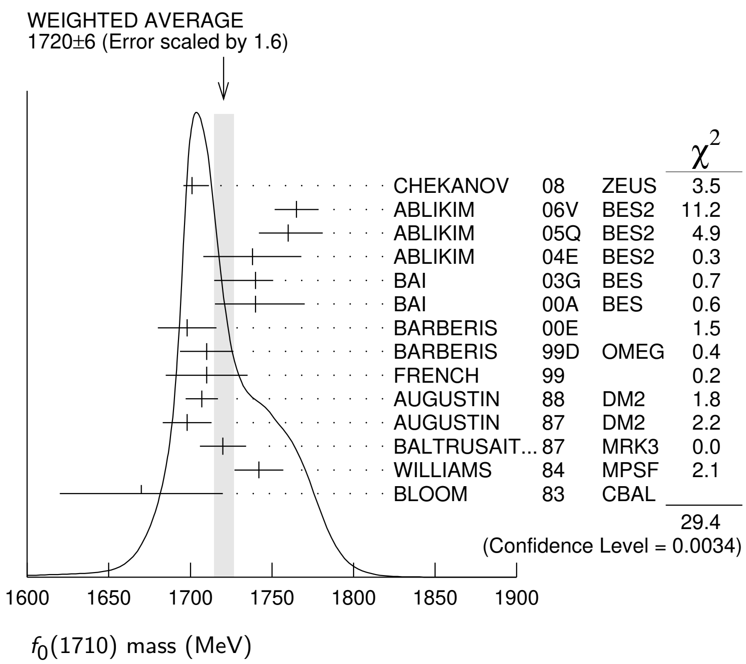
[23] Superseded by ALDE 92D. NODE=M068M;LINKAGE=BB

[24] Uses MRK3 data. From a partial-wave analysis of data using a K-matrix formalism with 5 poles, but assuming spin 2. Fit with constrained inelasticity. NODE=M068M;LINKAGE=A9

[25] $J^P = 2^+$ preferred. NODE=M068M;LINKAGE=B2

[26] From fit neglecting nearby $f_2'(1525)$. Replaced by BLOOM 83. NODE=M068M;LINKAGE=E

[27] Superseded by LONGACRE 86. NODE=M068M;LINKAGE=B1



$f_0(1710)$ WIDTH

NODE=M068210

NODE=M068W

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
135 ± 8 OUR AVERAGE		Error includes scale factor of 1.1.		
100 ± 24 $^{+7}_{-22}$	4k	[28] CHEKANOV	08 ZEUS	$e p \to K_S^0 K_S^0 X$
145 ± 8 ±69		ABLIKIM	06V BES2	$e^+ e^- \to J/\psi \to \gamma \pi^+ \pi^-$
125 ± 25 $^{+10}_{-15}$		[29] ABLIKIM	05Q BES2	$\psi(2S) \to \gamma \pi^+ \pi^- K^+ K^-$
125 ± 20		ABLIKIM	04E BES2	$J/\psi \to \omega K^+ K^-$
166 $^{+5}_{-8}$ $^{+15}_{-10}$		[30] BAI	03G BES	$J/\psi \to \gamma K \overline{K}$
120 $^{+50}_{-40}$		[30] BAI	00A BES	$J/\psi \to \gamma (\pi^+ \pi^- \pi^+ \pi^-)$

120 ± 26		[31] BARBERIS	00E		$450\ pp \to p_f \eta\eta p_s$	
$126 \pm 16 \pm 18$		[32] BARBERIS	99D	OMEG	$450\ pp \to K^+K^-, \pi^+\pi^-$	
105 ± 34		[33] FRENCH	99		$300\ pp \to p_f (K^+K^-) p_s$	
166.4 ± 33.2		[34] AUGUSTIN	88	DM2	$J/\psi \to \gamma K^+K^-, K^0_S K^0_S$	
136 ± 28		[34] AUGUSTIN	87	DM2	$J/\psi \to \gamma \pi^+\pi^-$	
130 ± 20		[35] BALTRUSAIT...	87	MRK3	$J/\psi \to \gamma K^+K^-$	
57 ± 38		[36] WILLIAMS	84	MPSF	$200\ \pi^- N \to 2K^0_S X$	
160 ± 80		BLOOM	83	CBAL	$J/\psi \to \gamma 2\eta$	

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

$148 {}^{+40}_{-30}$		AMSLER	06	CBAR	$1.64\ \bar{p}p \to K^+K^-\pi^0$	
188 ± 13	80k	[29,37] UMAN	06	E835	$5.2\ \bar{p}p \to \eta\eta\pi^0$	
250 ± 30		VLADIMIRSK...	06	SPEC	$40\ \pi^- p \to K^0_S K^0_S n$	
$270 {}^{+60}_{-30}$		[38] ABLIKIM	05	BES2	$J/\psi \to \phi\pi^+\pi^-$	
260 ± 50		[29] BINON	05	GAMS	$33\ \pi^- p \to \eta\eta n$	
$38 {}^{+20}_{-14}$	74	[37] CHEKANOV	04	ZEUS	$ep \to K^0_S K^0_S X$	
144 ± 30		[39,40] ANISOVICH	03	RVUE		
$320 {}^{+50}_{-20}$		[40,41] ANISOVICH	03	RVUE		OCCUR=2
102 ± 26		TIKHOMIROV	03	SPEC	$40.0\ \pi^- C \to K^0_S K^0_S K^0_L X$	
267 ± 44	3651	[30,42] NICHITIU	02	OBLX		
220 ± 40		[43,44] ANISOVICH	99B	SPEC	$0.6\text{–}1.2\ p\bar{p} \to \eta\eta\pi^0$	
100 ± 25		[30] BARBERIS	99	OMEG	$450\ pp \to p_s p_f K^+K^-$	
160 ± 30		[30] BARBERIS	99B	OMEG	$450\ pp \to p_s p_f \pi^+\pi^-$	
250 ± 140		[45] ANISOVICH	98B	RVUE	Compilation	
30 ± 7	57	[46] BARKOV	98		$\pi^- p \to K^0_S K^0_S n$	
$103 \pm 18 {}^{+30}_{-11}$		[35] BAI	96C	BES	$J/\psi \to \gamma K^+K^-$	
$85 \pm 24 {}^{+22}_{-19}$		[30] BAI	96C	BES	$J/\psi \to \gamma K^+K^-$	OCCUR=2
56 ± 19		BALOSHIN	95	SPEC	$40\ \pi^- C \to K^0_S K^0_S X$	
160 ± 40		[47] BUGG	95	MRK3	$J/\psi \to \gamma\pi^+\pi^-\pi^+\pi^-$	
$160 {}^{+60}_{-20}$		[35] BUGG	95	MRK3	$J/\psi \to \gamma\pi^+\pi^-\pi^+\pi^-$	OCCUR=2
264 ± 25		[34] ARMSTRONG	93C	E760	$\bar{p}p \to \pi^0\eta\eta \to 6\gamma$	
200 to 300		BREAKSTONE	93	SFM	$pp \to pp\pi^+\pi^-\pi^+\pi^-$	
< 80 90% CL		[48] ALDE	92D	GAM2	$38\ \pi^- p \to \eta\eta N^*$	
181 ± 30		[49] ARMSTRONG	89D	OMEG	$300\ pp \to ppK^+K^-$	
104 ± 30		[49] ARMSTRONG	89D	OMEG	$300\ pp \to ppK^0_S K^0_S$	OCCUR=2
30 ± 20		[35] BOLONKIN	88	SPEC	$40\ \pi^- p \to K^0_S K^0_S n$	
350 ± 150		[30] BOLONKIN	88	SPEC	$40\ \pi^- p \to K^0_S K^0_S n$	OCCUR=2
148 ± 17		[50] FALVARD	88	DM2	$J/\psi \to \phi K^+K^-, K^0_S K^0_S$	
184 ± 6		[51] FALVARD	88	DM2	$J/\psi \to \phi K^+K^-, K^0_S K^0_S$	OCCUR=2
$122 {}^{+74}_{-15}$		[52] LONGACRE	86	RVUE	$22\ \pi^- p \to n2K^0_S$	
200 ± 100		BURKE	82	MRK2	$J/\psi \to \gamma 2\rho$	
$220 {}^{+100}_{-70}$		[53,54] EDWARDS	82D	CBAL	$J/\psi \to \gamma 2\eta$	
$200 {}^{+156}_{-9}$		[55] ETKIN	82B	MPS	$23\ \pi^- p \to n2K^0_S$	

[28] In the SU(3) based model with a specific interference pattern of the $f_2(1270)$, $a^0_2(1320)$, and $f'_2(1525)$ mesons incoherently added to the $f_0(1710)$ and non-resonant background. NODE=M068W;LINKAGE=HE

[29] Breit-Wigner width. NODE=M068W;LINKAGE=BW

[30] $J^P = 0^+$. NODE=M068W;LINKAGE=A8

[31] T-matrix pole. NODE=M068W;LINKAGE=TP

[32] Supersedes BARBERIS 99 and BARBERIS 99B. NODE=M068W;LINKAGE=BD

[33] $J^P = 0^+$, supersedes by ARMSTRONG 89D. NODE=M068W;LINKAGE=C3

[34] No J^{PC} determination. NODE=M068W;LINKAGE=A1

[35] $J^P = 2^+$. NODE=M068W;LINKAGE=A3

[36] No J^{PC} determination. NODE=M068M;LINKAGE=WI

[37] Systematic errors not estimated. NODE=M068W;LINKAGE=CH

[38] This state may be different from $f_0(1710)$, see CLOSE 05. NODE=M068W;LINKAGE=AB

[39] (Solution I) NODE=M068W;LINKAGE=K1

[40] K-matrix pole, assuming $J^P = 0^+$, from combined analysis of $\pi^- p \to \pi^0\pi^0 n$, $\pi^- p \to K\bar{K} n$, $\pi^+\pi^- \to \pi^+\pi^-$, $\bar{p}p \to \pi^0\pi^0\pi^0$, $\pi^0\eta\eta$, $\pi^0\pi^0\eta$, $\pi^+\pi^-\pi^0$, $K^+K^-\pi^0$, $K^0_S K^0_S \pi^0$, $K^+K^0_S\pi^-$ at rest, $\bar{p}n \to \pi^-\pi^-\pi^+$, $K^0_S K^-\pi^0$, $K^0_S K^0_S \pi^-$ at rest. NODE=M068W;LINKAGE=KM

[41] (Solution I) NODE=M068W;LINKAGE=K2
[42] Decaying to $f_0(1370)\pi\pi$. NODE=M068W;LINKAGE=NC
[43] $J^P = 0^+$. NODE=M068W;LINKAGE=AV
[44] Not seen by AMSLER 02. NODE=M068W;LINKAGE=NS
[45] T-matrix pole, assuming $J^P = 0^+$ NODE=M068W;LINKAGE=AN
[46] No J^{PC} determination. NODE=M068W;LINKAGE=4A
[47] From a fit to the 0^+ partial wave. NODE=M068W;LINKAGE=Q0
[48] ALDE 92D combines all the GAMS-2000 data. NODE=M068W;LINKAGE=AA
[49] $J^P = 2^+$, (0^+ excluded). NODE=M068W;LINKAGE=B
[50] From an analysis ignoring interference with $f'_2(1525)$. NODE=M068W;LINKAGE=C
[51] From an analysis including interference with $f'_2(1525)$. NODE=M068W;LINKAGE=D
[52] Uses MRK3 data. From a partial-wave analysis of data using a K-matrix formalism with 5 poles, but assuming spin 2. Fit with constrained inelasticity. NODE=M068W;LINKAGE=A9
[53] $J^P = 2^+$ preferred. NODE=M068W;LINKAGE=B2
[54] From fit neglecting nearby $f'_2(1525)$. Replaced by BLOOM 83. NODE=M068W;LINKAGE=E
[55] From an amplitude analysis of the $K^0_S K^0_S$ system, superseded by LONGACRE 86. NODE=M068W;LINKAGE=A

$f_0(1710)$ DECAY MODES

NODE=M068215;NODE=M068

	Mode	Fraction (Γ_i/Γ)	
Γ_1	$K\overline{K}$	seen	DESIG=2;OUR EST;→ NOT CHECKED ←
Γ_2	$\eta\eta$	seen	DESIG=1;OUR EST;→ NOT CHECKED ←
Γ_3	$\pi\pi$	seen	DESIG=5;OUR EST;→ NOT CHECKED ←
Γ_4	$\gamma\gamma$		DESIG=6
Γ_5	$\omega\omega$	seen	DESIG=4

$f_0(1710)$ $\Gamma(i)\Gamma(\gamma\gamma)/\Gamma(\text{total})$

NODE=M068220

$\Gamma(K\overline{K}) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$ $\Gamma_1\Gamma_4/\Gamma$

NODE=M068G2
NODE=M068G2

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<110	95	[56] BEHREND	89C	CELL	$\gamma\gamma \to K^0_S K^0_S$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<480	95	ALBRECHT	90G	ARG	$\gamma\gamma \to K^+K^-$
<280	95	[56] ALTHOFF	85B	TASS	$\gamma\gamma \to K\overline{K}\pi$

[56] Assuming helicity 2. NODE=M068G2;LINKAGE=F

$\Gamma(\pi\pi) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$ $\Gamma_3\Gamma_4/\Gamma$

NODE=M068G3
NODE=M068G3

VALUE (keV)	CL%	DOCUMENT ID		TECN	COMMENT
<0.82	95	[57] BARATE	00E	ALEP	$\gamma\gamma \to \pi^+\pi^-$

[57] Assuming spin 0. NODE=M068G;LINKAGE=Z

$f_0(1710)$ BRANCHING RATIOS

NODE=M068225

$\Gamma(K\overline{K})/\Gamma_{\text{total}}$ Γ_1/Γ

NODE=M068R2
NODE=M068R2

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.38^{+0.09}_{-0.19}$	[58,59] LONGACRE	86	MPS	$22\ \pi^- p \to n2K^0_S$

$\Gamma(\eta\eta)/\Gamma_{\text{total}}$ Γ_2/Γ

NODE=M068R1
NODE=M068R1

VALUE	DOCUMENT ID		TECN
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.18^{+0.03}_{-0.13}$	[58,59] LONGACRE	86	RVUE

$\Gamma(\pi\pi)/\Gamma_{\text{total}}$ Γ_3/Γ

NODE=M068R5
NODE=M068R5

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
not seen	AMSLER	02	CBAR	$0.9\ \overline{p}p \to \pi^0\eta\eta,\ \pi^0\pi^0\pi^0$
$0.039^{+0.002}_{-0.024}$	[58,59] LONGACRE	86	RVUE	

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

NODE=M068R6
NODE=M068R6

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$0.41^{+0.11}_{-0.17}$		ABLIKIM	06V	BES2	$e^+e^- \to J/\psi \to \gamma\pi^+\pi^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.11	95	[60] ABLIKIM	04E	BES2	$J/\psi \to \omega K^+K^-$
$5.8\ ^{+9.1}_{-5.5}$		[61] ANISOVICH	02D	SPEC	Combined fit
$0.2\ \pm0.024\pm0.036$		BARBERIS	99D	OMEG	$450\ pp \to K^+K^-, \pi^+\pi^-$
0.39 ± 0.14		ARMSTRONG	91	OMEG	$300\ pp \to pp\pi\pi,\ ppK\overline{K}$

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

NODE=M068R7
NODE=M068R7

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
0.48 ± 0.15		BARBERIS	00E		$450\ pp \to p_f\eta\eta p_s$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$0.46^{+0.70}_{-0.38}$		[61] ANISOVICH	02D	SPEC	Combined fit
<0.02	90	[62] PROKOSHKIN	91	GA24	$300\ \pi^- p \to \pi^- p\eta\eta$

$\Gamma(\omega\omega)/\Gamma_{total}$ Γ_5/Γ

NODE=M068R3
NODE=M068R3

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
seen	180	ABLIKIM	06H	BES	$J/\psi \to \gamma\omega\omega$

[58] From a partial-wave analysis of data using a K-matrix formalism with 5 poles, but assuming spin 2. NODE=M068R;LINKAGE=L

[59] Fit with constrained inelasticity. NODE=M068R;LINKAGE=M

[60] Using data from ABLIKIM 04A. NODE=M068R;LINKAGE=AB

[61] From a combined K-matrix analysis of Crystal Barrel ($0.\ p\overline{p} \to \pi^0\pi^0\pi^0$, $\pi^0\eta\eta$, $\pi^0\pi^0\eta$), GAMS ($\pi p \to \pi^0\pi^0 n$, $\eta\eta n$, $\eta\eta' n$), and BNL ($\pi p \to K\overline{K} n$) data. NODE=M068R;LINKAGE=CH

[62] Combining results of GAM4 with those of ARMSTRONG 89D. NODE=M068R;LINKAGE=A

$f_0(1710)$ REFERENCES

NODE=M068

CHEKANOV	08	PRL 101 112003	S. Chekanov *et al.*	(ZEUS Collab.)	REFID=52275
ABLIKIM	06H	PR D73 112007	M. Ablikim *et al.*	(BES Collab.)	REFID=51125
ABLIKIM	06V	PL B642 441	M. Ablikim *et al.*	(BES Collab.)	REFID=51507
AMSLER	06	PL B639 165	C. Amsler *et al.*	(CBAR Collab.)	REFID=51136
UMAN	06	PR D73 052009	I. Uman *et al.*	(FNAL E835)	REFID=51063
VLADIMIRSK...	06	PAN 69 493	V.V. Vladimirsky *et al.*	(ITEP, Moscow)	REFID=51191
		Translated from YAF 69 515.			
ABLIKIM	05	PL B607 243	M. Ablikim *et al.*	(BES Collab.)	REFID=50450
ABLIKIM	05Q	PR D72 092002	M. Ablikim *et al.*	(BES Collab.)	REFID=50958
BINON	05	PAN 68 960	F. Binon *et al.*		REFID=50780
		Translated from YAF 68 998.			
CLOSE	05	PR D71 094022	F.E. Close, Q. Zhao		REFID=50788
ABLIKIM	04A	PL B598 149	M. Ablikim *et al.*	(BES Collab.)	REFID=49740
ABLIKIM	04E	PL B603 138	M. Ablikim *et al.*	(BES Collab.)	REFID=50174
CHEKANOV	04	PL B578 33	S. Chekanov *et al.*	(ZEUS Collab.)	REFID=49672
PDG	04	PL B592 1	S. Eidelman *et al.*		REFID=49653
ANISOVICH	03	EPJ A16 229	V.V. Anisovich *et al.*		REFID=49401
BAI	03G	PR D68 052003	J.Z. Bai *et al.*	(BES Collab.)	REFID=49580
TIKHOMIROV	03	PAN 66 828	G.D. Tikhomirov *et al.*		REFID=49423
		Translated from YAF 66 860.			
AMSLER	02	EPJ C23 29	C. Amsler *et al.*		REFID=48580
ANISOVICH	02D	PAN 65 1545	V.V. Anisovich *et al.*		REFID=48831
		Translated from YAF 65 1583.			
NICHITIU	02	PL B545 261	F. Nichitiu *et al.*	(OBELIX Collab.)	REFID=48848
BAI	00A	PL B472 207	J.Z. Bai *et al.*	(BES Collab.)	REFID=47426
BARATE	00E	PL B472 189	R. Barate *et al.*	(ALEPH Collab.)	REFID=47428
BARBERIS	00E	PL B479 59	D. Barberis *et al.*	(WA 102 Collab.)	REFID=47961
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FRENCH	99	PL B460 213	B. French *et al.*	(WA76 Collab.)	REFID=47491
ANISOVICH	98B	SPU 41 419	V.V. Anisovich *et al.*		REFID=46331
		Translated from UFN 168 481.			
BAI	98H	PRL 81 1179	J.Z. Bai *et al.*	(BES Collab.)	REFID=46342
BARKOV	98	JETPL 68 764	B.P. Barkov *et al.*		REFID=46616
ABREU	96C	PL B379 309	P. Abreu *et al.*	(DELPHI Collab.)	REFID=44671
BAI	96C	PRL 77 3959	J.Z. Bai *et al.*	(BES Collab.)	REFID=45169
BALOSHIN	95	PAN 58 46	O.N. Baloshin *et al.*	(ITEP)	REFID=44621
		Translated from YAF 58 50.			
BUGG	95	PL B353 378	D.V. Bugg *et al.*	(LOQM, PNPI, WASH)	REFID=44438
ARMSTRONG	93C	PL B307 394	T.A. Armstrong *et al.*	(FNAL, FERR, GENO+)	REFID=43587
BREAKSTONE	93	ZPHY C58 251	A.M. Breakstone *et al.*	(IOWA, CERN, DORT+)	REFID=43312
ALDE	92D	PL B284 457	D.M. Alde *et al.*	(GAM2 Collab.)	REFID=41591
Also		SJNP 54 451	D.M. Alde *et al.*	(GAM2 Collab.)	REFID=44696
		Translated from YAF 54 745.			
ARMSTRONG	91	ZPHY C51 351	T.A. Armstrong *et al.*	(ATHU, BARI, BIRM+)	REFID=41744
PROKOSHKIN	91	SPD 36 155	Y.D. Prokoshkin	(GAM2, GAM4 Collab.)	REFID=41719
		Translated from DANS 316 900.			
ALBRECHT	90G	ZPHY C48 183	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41374
ARMSTRONG	89D	PL B227 186	T.A. Armstrong, M. Benayoun	(ATHU, BARI, BIRM+)	REFID=41010
BEHREND	89C	ZPHY C43 91	H.J. Behrend *et al.*	(CELLO Collab.)	REFID=40915
AUGUSTIN	88	PRL 60 2238	J.E. Augustin *et al.*	(DM2 Collab.)	REFID=40574
BOLONKIN	88	NP B309 426	B.V. Bolonkin *et al.*	(ITEP, SERP)	REFID=40580
FALVARD	88	PR D38 2706	A. Falvard *et al.*	(CLER, FRAS, LALO+)	REFID=40576
AUGUSTIN	87	ZPHY C36 369	J.E. Augustin *et al.*	(LALO, CLER, FRAS+)	REFID=40268
BALTRUSAIT...	87	PR D35 2077	R.M. Baltrusaitis *et al.*	(Mark III Collab.)	REFID=40010
ALDE	86C	PL B182 105	D.M. Alde *et al.*	(SERP, BELG, LANL, LAPP)	REFID=21694
LONGACRE	86	PL B177 223	R.S. Longacre *et al.*	(BNL, BRAN, CUNY+)	REFID=20768
ALTHOFF	85B	ZPHY C29 189	M. Althoff *et al.*	(TASSO Collab.)	REFID=21349
WILLIAMS	84	PR D30 877	E.G.H. Williams *et al.*	(VAND, NDAM, TUFTS+)	REFID=21693
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ETKIN	82B	PR D25 1786	A. Etkin *et al.*	(BNL, CUNY, TUFTS, VAND)	REFID=20390
ETKIN	82C	PR D25 2446	A. Etkin *et al.*	(BNL, CUNY, TUFTS, VAND)	REFID=20391

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ANISOVICH	03B	PAN 66 741	V.V. Anisovich, V.A. Nikonov, A.V. Sarantsev		REFID=49420
		Translated from YAF 66 772.			
AMSLER	02B	PL B541 22	C. Amsler		REFID=48826
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