$f_0(1710)$

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

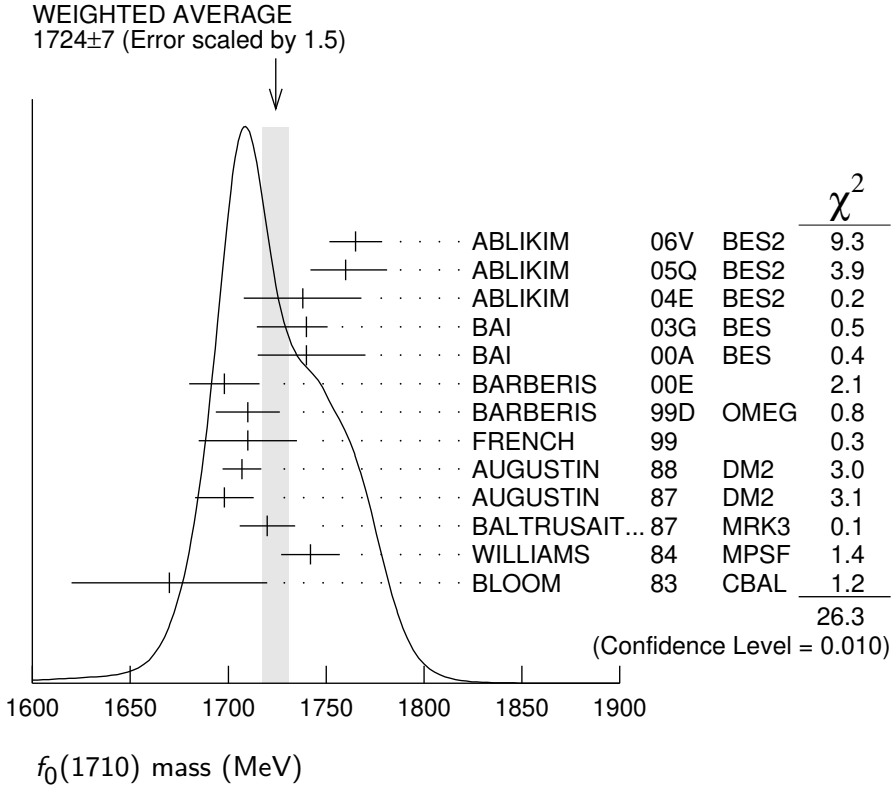
See our mini-review in the 2004 edition of this *Review*, PDG 04.

$f_0(1710)$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
1724± 7 OUR AVERAGE		Error includes scale factor of 1.5. See the ideogram below.			
$1765^{+4}_{-3} \pm 13$		ABLIKIM	06V	BES2	$e^+e^- \to J/\psi \to \gamma\pi^+\pi^-$
1760 ± 15 $^{+15}_{-10}$		[1] ABLIKIM	05Q	BES2	$\psi(2S) \to \gamma\pi^+\pi^- K^+K^-$
1738 ± 30		ABLIKIM	04E	BES2	$J/\psi \to \omega K^+K^-$
1740 ± 4 $^{+10}_{-25}$		[2] BAI	03G	BES	$J/\psi \to \gamma K\overline{K}$
1740^{+30}_{-25}		[2] BAI	00A	BES	$J/\psi \to \gamma(\pi^+\pi^-\pi^+\pi^-)$
1698 ± 18		[3] BARBERIS	00E		450 $pp \to p_f\eta\eta p_s$
1710 ± 12 ± 11		[4] BARBERIS	99D	OMEG	450 $pp \to K^+K^-, \pi^+\pi^-$
1710 ± 25		[5] FRENCH	99		300 $pp \to p_f(K^+K^-)p_s$
1707 ± 10		[6] AUGUSTIN	88	DM2	$J/\psi \to \gamma K^+K^-, K^0_S K^0_S$
1698 ± 15		[6] AUGUSTIN	87	DM2	$J/\psi \to \gamma\pi^+\pi^-$
1720 ± 10 ± 10		[7] BALTRUSAIT...	87	MRK3	$J/\psi \to \gamma K^+K^-$
1742 ± 15		[6] WILLIAMS	84	MPSF	200 $\pi^- N \to 2K^0_S X$
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	[8,9] 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}		[1] ABLIKIM	05	BES2	$J/\psi \to \phi\pi^+\pi^-$
1670 ± 20		[8] BINON	05	GAMS	33 $\pi^- p \to \eta\eta n$
1726 ± 7	74	[9] CHEKANOV	04	ZEUS	$ep \to K^0_S K^0_S X$
$1732 + 15$		[10] 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	[2,11] NICHITIU	02	OBLX	
1767 ± 14	221	[12] ACCIARRI	01H	L3	$\gamma\gamma \to K^0_S K^0_S$, E^{ee}_{cm}= 91, 183–209 GeV
1770 ± 12		[13,14] ANISOVICH	99B	SPEC	0.6–1.2 $p\overline{p} \to \eta\eta\pi^0$
1730 ± 15		[2] BARBERIS	99	OMEG	450 $pp \to p_s p_f K^+K^-$
1750 ± 20		[2] BARBERIS	99B	OMEG	450 $pp \to p_s p_f \pi^+\pi^-$
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 ± 5 $^{+9}_{-34}$		[7] BAI	96C	BES	$J/\psi \to \gamma K^+K^-$
1781 ± 8 $^{+10}_{-31}$		[2] BAI	96C	BES	$J/\psi \to \gamma K^+K^-$

1768 ± 14		BALOSHIN	95	SPEC	$40\ \pi^- C \rightarrow K^0_S K^0_S X$
1750 ± 15	[18]	BUGG	95	MRK3	$J/\psi \rightarrow \gamma \pi^+ \pi^- \pi^+ \pi^-$
1620 ± 16	[7]	BUGG	95	MRK3	$J/\psi \rightarrow \gamma \pi^+ \pi^- \pi^+ \pi^-$
1748 ± 10	[6]	ARMSTRONG	93C	E760	$\overline{p} p \rightarrow \pi^0 \eta \eta \rightarrow 6\gamma$
~ 1750		BREAKSTONE	93	SFM	$p p \rightarrow p p \pi^+ \pi^- \pi^+ \pi^-$
1744 ± 15	[19]	ALDE	92D	GAM2	$38\ \pi^- p \rightarrow \eta \eta n$
1713 ± 10	[20]	ARMSTRONG	89D	OMEG	$300\ p p \rightarrow p p K^+ K^-$
1706 ± 10	[20]	ARMSTRONG	89D	OMEG	$300\ p p \rightarrow p p K^0_S K^0_S$
1700 ± 15	[7]	BOLONKIN	88	SPEC	$40\ \pi^- p \rightarrow K^0_S K^0_S n$
1720 ± 60	[2]	BOLONKIN	88	SPEC	$40\ \pi^- p \rightarrow K^0_S K^0_S n$
1638 ± 10	[21]	FALVARD	88	DM2	$J/\psi \rightarrow \phi K^+ K^-$, $K^0_S K^0_S$
1690 ± 4	[22]	FALVARD	88	DM2	$J/\psi \rightarrow \phi K^+ K^-$, $K^0_S K^0_S$
1755 ± 8	[23]	ALDE	86C	GAM2	$38\ \pi^- p \rightarrow n 2\eta$
1730^{+2}_{-10}	[24]	LONGACRE	86	RVUE	$22\ \pi^- p \rightarrow n 2 K^0_S$
1650 ± 50		BURKE	82	MRK2	$J/\psi \rightarrow \gamma 2\rho$
1640 ± 50	[25,26]	EDWARDS	82D	CBAL	$J/\psi \rightarrow \gamma 2\eta$
$1730 \pm 10 \quad \pm 20$	[27]	ETKIN	82C	MPS	$23\ \pi^- p \rightarrow n 2 K^0_S$

[1] This state may be different from $f_0(1710)$, see CLOSE 05.
[2] $J^P = 0^+$.
[3] T-matrix pole.
[4] Supersedes BARBERIS 99 and BARBERIS 99B.
[5] $J^P = 0^+$, supersedes by ARMSTRONG 89D.
[6] No J^{PC} determination.
[7] $J^P = 2^+$.
[8] Breit-Wigner mass.
[9] Systematic errors not estimated.
[10] K-matrix pole, assuming $J^P = 0^+$, 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.
[11] Decaying to $f_0(1370) \pi \pi$.
[12] Spin 2 dominant, isospin not determined, could also be I=1.
[13] $J^P = 0^+$.
[14] Not seen by AMSLER 02.
[15] T-matrix pole, assuming $J^P = 0^+$
[16] No J^{PC} determination.
[17] No J^{PC} determination, width not determined.
[18] From a fit to the 0^+ partial wave.
[19] ALDE 92D combines all the GAMS-2000 data.
[20] $J^P = 2^+$, superseded by FRENCH 99.
[21] From an analysis ignoring interference with $f'_2(1525)$.
[22] From an analysis including interference with $f'_2(1525)$.
[23] Superseded by ALDE 92D.
[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.
[25] $J^P = 2^+$ preferred.
[26] From fit neglecting nearby $f'_2(1525)$. Replaced by BLOOM 83.
[27] Superseded by LONGACRE 86.



$f_0(1710)$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
137 ± 8 OUR AVERAGE		Error includes scale factor of 1.1.			
145 ± 8 ±69		ABLIKIM	06V	BES2	$e^+e^- \to J/\psi \to \gamma\pi^+\pi^-$
125 ± 25 $^{+10}_{-15}$	[28]	ABLIKIM	05Q	BES2	$\psi(2S) \to \gamma\pi^+\pi^- K^+K^-$
125 ± 20		ABLIKIM	04E	BES2	$J/\psi \to \omega K^+K^-$
166 $^{+5}_{-8}$ $^{+15}_{-10}$	[29]	BAI	03G	BES	$J/\psi \to \gamma K\overline{K}$
120 $^{+50}_{-40}$	[29]	BAI	00A	BES	$J/\psi \to \gamma(\pi^+\pi^-\pi^+\pi^-)$
120 ± 26	[30]	BARBERIS	00E		450 $pp \to p_f\eta\eta p_s$
126 ± 16 ±18	[31]	BARBERIS	99D	OMEG	450 $pp \to K^+K^-, \pi^+\pi^-$
105 ± 34	[32]	FRENCH	99		300 $pp \to p_f(K^+K^-)p_s$
166.4 ± 33.2	[33]	AUGUSTIN	88	DM2	$J/\psi \to \gamma K^+K^-, K^0_SK^0_S$
136 ± 28	[33]	AUGUSTIN	87	DM2	$J/\psi \to \gamma\pi^+\pi^-$
130 ± 20	[34]	BALTRUSAIT...	87	MRK3	$J/\psi \to \gamma K^+K^-$
57 ± 38	[6]	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 $\overline{p}p \to K^+K^-\pi^0$
188 ± 13	80k [28,35]	UMAN	06	E835	5.2 $\overline{p}p \to \eta\eta\pi^0$

250 ± 30				VLADIMIRSK...	06	SPEC	40 $\pi^- p \to K^0_S K^0_S n$
270 $^{+60}_{-30}$			36	ABLIKIM	05	BES2	$J/\psi \to \phi\pi^+\pi^-$
260 ± 50			28	BINON	05	GAMS	33 $\pi^- p \to \eta\eta n$
38 $^{+20}_{-14}$		74	35	CHEKANOV	04	ZEUS	$ep \to K^0_S K^0_S X$
144 ± 30			37,38	ANISOVICH	03	RVUE	
320 $^{+50}_{-20}$			38,39	ANISOVICH	03	RVUE	
102 ± 26				TIKHOMIROV	03	SPEC	40.0 π^- C $\to K^0_S K^0_S K^0_L$ X
267 ± 44		3651	29,40	NICHITIU	02	OBLX	
187 ± 60		221	41	ACCIARRI	01H	L3	$\gamma\gamma \to K^0_S K^0_S$, E^{ee}_{cm}= 91, 183–209 GeV
220 ± 40			42,43	ANISOVICH	99B	SPEC	0.6–1.2 $p\overline{p} \to \eta\eta\pi^0$
100 ± 25			29	BARBERIS	99	OMEG	450 $pp \to p_s p_f K^+ K^-$
160 ± 30			29	BARBERIS	99B	OMEG	450 $pp \to p_s p_f \pi^+\pi^-$
250 ±140			44	ANISOVICH	98B	RVUE	Compilation
30 ± 7		57	45	BARKOV	98		$\pi^- p \to K^0_S K^0_S n$
103 ± 18	$^{+30}_{-11}$		34	BAI	96C	BES	$J/\psi \to \gamma K^+ K^-$
85 ± 24	$^{+22}_{-19}$		29	BAI	96C	BES	$J/\psi \to \gamma K^+ K^-$
56 ± 19				BALOSHIN	95	SPEC	40 π^- C $\to K^0_S K^0_S$ X
160 ± 40			46	BUGG	95	MRK3	$J/\psi \to \gamma\pi^+\pi^-\pi^+\pi^-$
160 $^{+60}_{-20}$			34	BUGG	95	MRK3	$J/\psi \to \gamma\pi^+\pi^-\pi^+\pi^-$
264 ± 25			33	ARMSTRONG	93C	E760	$\overline{p}p \to \pi^0\eta\eta \to 6\gamma$
200 to 300				BREAKSTONE	93	SFM	$pp \to pp\pi^+\pi^-\pi^+\pi^-$
< 80 90% CL			47	ALDE	92D	GAM2	38 $\pi^- p \to \eta\eta N^*$
181 ± 30			48	ARMSTRONG	89D	OMEG	300 $pp \to ppK^+K^-$
104 ± 30			48	ARMSTRONG	89D	OMEG	300 $pp \to ppK^0_S K^0_S$
30 ± 20			34	BOLONKIN	88	SPEC	40 $\pi^- p \to K^0_S K^0_S n$
350 ±150			29	BOLONKIN	88	SPEC	40 $\pi^- p \to K^0_S K^0_S n$
148 ± 17			49	FALVARD	88	DM2	$J/\psi \to \phi K^+K^-$, $K^0_S K^0_S$
184 ± 6			50	FALVARD	88	DM2	$J/\psi \to \phi K^+K^-$, $K^0_S K^0_S$
122 $^{+74}_{-15}$			51	LONGACRE	86	RVUE	22 $\pi^- p \to n2K^0_S$
200 ±100				BURKE	82	MRK2	$J/\psi \to \gamma 2\rho$
220 $^{+100}_{-70}$			52,53	EDWARDS	82D	CBAL	$J/\psi \to \gamma 2\eta$
200 $^{+156}_{-9}$			54	ETKIN	82B	MPS	23 $\pi^- p \to n2K^0_S$

[28] Breit-Wigner width.
[29] $J^P = 0^+$.
[30] T-matrix pole.
[31] Supersedes BARBERIS 99 and BARBERIS 99B.
[32] $J^P = 0^+$, supersedes by ARMSTRONG 89D.
[33] No J^{PC} determination.
[34] $J^P = 2^+$.
[35] Systematic errors not estimated.
[36] This state may be different from $f_0(1710)$, see CLOSE 05.

[37] (Solution I)
[38] K-matrix pole, assuming $J^P = 0^+$, from combined analysis of $\pi^- p \to \pi^0 \pi^0 n$, $\pi^- p \to K \overline{K} n$, $\pi^+ \pi^- \to \pi^+ \pi^-$, $\overline{p} p \to \pi^0 \pi^0 \pi^0$, $\pi^0 \eta \eta$, $\pi^0 \pi^0 \eta$, $\pi^+ \pi^- \pi^0$, $K^+ K^- \pi^0$, $K^0_S K^0_S \pi^0$, $K^+ K^0_S \pi^-$ at rest, $\overline{p} n \to \pi^- \pi^- \pi^+$, $K^0_S K^- \pi^0$, $K^0_S K^0_S \pi^-$ at rest.
[39] (Solution I)
[40] Decaying to $f_0(1370) \pi \pi$.
[41] Spin 2 dominant, isospin not determined, could also be I=1.
[42] $J^P = 0^+$.
[43] Not seen by AMSLER 02.
[44] T-matrix pole, assuming $J^P = 0^+$
[45] No J^{PC} determination.
[46] From a fit to the 0^+ partial wave.
[47] ALDE 92D combines all the GAMS-2000 data.
[48] $J^P = 2^+$, (0^+ excluded).
[49] From an analysis ignoring interference with $f'_2(1525)$.
[50] From an analysis including interference with $f'_2(1525)$.
[51] 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.
[52] $J^P = 2^+$ preferred.
[53] From fit neglecting nearby $f'_2(1525)$. Replaced by BLOOM 83.
[54] From an amplitude analysis of the $K^0_S K^0_S$ system, superseded by LONGACRE 86.

$f_0(1710)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$K \overline{K}$	seen
Γ_2	$\eta \eta$	seen
Γ_3	$\pi \pi$	seen
Γ_4	$\gamma \gamma$	
Γ_5	$\omega \omega$	seen

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

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

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. • • •					
49±11±13		[57] ACCIARRI	01H	L3	$\gamma\gamma \to K^0_S K^0_S$, E^{ee}_{cm}= 91, 183–209 GeV
<480	95	ALBRECHT	90G	ARG	$\gamma\gamma \to K^+ K^-$
<280	95	[56] ALTHOFF	85B	TASS	$\gamma\gamma \to K \overline{K} \pi$

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

VALUE (keV)	CL%	DOCUMENT ID		TECN	COMMENT
<0.82	95	[55] BARATE	00E	ALEP	$\gamma\gamma \to \pi^+ \pi^-$

[55] Assuming spin 0.
[56] Assuming helicity 2.
[57] Spin 2 dominant, isospin not determined, could also be I=1.

$f_0(1710)$ BRANCHING RATIOS

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

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	$22\ \pi^- p \rightarrow n 2K^0_S$

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

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

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

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

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

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

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

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
0.48 ± 0.15		BARBERIS	00E		$450\ pp \rightarrow p_f\eta\eta p_s$
• • • 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	$300\ \pi^- p \rightarrow \pi^- p\eta\eta$

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

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

[58] From a partial-wave analysis of data using a K-matrix formalism with 5 poles, but assuming spin 2.
[59] Fit with constrained inelasticity.
[60] Using data from ABLIKIM 04A.
[61] 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.
[62] Combining results of GAM4 with those of ARMSTRONG 89D.

f_0(1710) REFERENCES

ABLIKIM	06H	PR D73 112007	M. Ablikim *et al.*	(BES Collab.)
ABLIKIM	06V	PL B642 441	M. Ablikim *et al.*	(BES Collab.)
AMSLER	06	PL B639 165	C. Amsler *et al.*	(CBAR Collab.)
UMAN	06	PR D73 052009	I. Uman *et al.*	(FNAL E835)
VLADIMIRSK...	06	PAN 69 493	V.V. Vladimirsky *et al.*	(ITEP, Moscow)
		Translated from YAF 69 515.		
ABLIKIM	05	PL B607 243	M. Ablikim *et al.*	(BES Collab.)
ABLIKIM	05Q	PR D72 092002	M. Ablikim *et al.*	(BES Collab.)
BINON	05	PAN 68 960	F. Binon *et al.*	
		Translated from YAF 68 998.		
CLOSE	05	PR D71 094022	F.E. Close, Q. Zhao	
ABLIKIM	04A	PL B598 149	M. Ablikim *et al.*	(BES Collab.)
ABLIKIM	04E	PL B603 138	M. Ablikim *et al.*	(BES Collab.)
CHEKANOV	04	PL B578 33	S. Chekanov *et al.*	(ZEUS Collab.)
PDG	04	PL B592 1	S. Eidelman *et al.*	
ANISOVICH	03	EPJ A16 229	V.V. Anisovich *et al.*	
BAI	03G	PR D68 052003	J.Z. Bai *et al.*	(BES Collab.)
TIKHOMIROV	03	PAN 66 828	G.D. Tikhomirov *et al.*	
		Translated from YAF 66 860.		
AMSLER	02	EPJ C23 29	C. Amsler *et al.*	
ANISOVICH	02D	PAN 65 1545	V.V. Anisovich *et al.*	
		Translated from YAF 65 1583.		
NICHITIU	02	PL B545 261	F. Nichitiu *et al.*	(OBELIX Collab.)
ACCIARRI	01H	PL B501 173	M. Acciarri *et al.*	(L3 Collab.)
BAI	00A	PL B472 207	J.Z. Bai *et al.*	(BES Collab.)
BARATE	00E	PL B472 189	R. Barate *et al.*	(ALEPH Collab.)
BARBERIS	00E	PL B479 59	D. Barberis *et al.*	(WA 102 Collab.)
ANISOVICH	99B	PL B449 154	A.V. Anisovich *et al.*	
BARBERIS	99	PL B453 305	D. Barberis *et al.*	(Omega Expt.)
BARBERIS	99B	PL B453 316	D. Barberis *et al.*	(Omega Expt.)
BARBERIS	99D	PL B462 462	D. Barberis *et al.*	(Omega Expt.)
FRENCH	99	PL B460 213	B. French *et al.*	(WA76 Collab.)
ANISOVICH	98B	SPU 41 419	V.V. Anisovich *et al.*	
		Translated from UFN 168 481.		
BAI	98H	PRL 81 1179	J.Z. Bai *et al.*	(BES Collab.)
BARKOV	98	JETPL 68 764	B.P. Barkov *et al.*	
ABREU	96C	PL B379 309	P. Abreu *et al.*	(DELPHI Collab.)
BAI	96C	PRL 77 3959	J.Z. Bai *et al.*	(BES Collab.)
BALOSHIN	95	PAN 58 46	O.N. Baloshin *et al.*	(ITEP)
		Translated from YAF 58 50.		
BUGG	95	PL B353 378	D.V. Bugg *et al.*	(LOQM, PNPI, WASH)
ARMSTRONG	93C	PL B307 394	T.A. Armstrong *et al.*	(FNAL, FERR, GENO+)
BREAKSTONE	93	ZPHY C58 251	A.M. Breakstone *et al.*	(IOWA, CERN, DORT+)
ALDE	92D	PL B284 457	D.M. Alde *et al.*	(GAM2 Collab.)
Also		SJNP 54 451	D.M. Alde *et al.*	(GAM2 Collab.)
		Translated from YAF 54 745.		
ARMSTRONG	91	ZPHY C51 351	T.A. Armstrong *et al.*	(ATHU, BARI, BIRM+)
PROKOSHKIN	91	SPD 36 155	Y.D. Prokoshkin	(GAM2, GAM4 Collab.)
		Translated from DANS 316 900.		
ALBRECHT	90G	ZPHY C48 183	H. Albrecht *et al.*	(ARGUS Collab.)
ARMSTRONG	89D	PL B227 186	T.A. Armstrong, M. Benayoun	(ATHU, BARI, BIRM+)
BEHREND	89C	ZPHY C43 91	H.J. Behrend *et al.*	(CELLO Collab.)
AUGUSTIN	88	PRL 60 2238	J.E. Augustin *et al.*	(DM2 Collab.)
BOLONKIN	88	NP B309 426	B.V. Bolonkin *et al.*	(ITEP, SERP)
FALVARD	88	PR D38 2706	A. Falvard *et al.*	(CLER, FRAS, LALO+)
AUGUSTIN	87	ZPHY C36 369	J.E. Augustin *et al.*	(LALO, CLER, FRAS+)
BALTRUSAIT...	87	PR D35 2077	R.M. Baltrusaitis *et al.*	(Mark III Collab.)
ALDE	86C	PL B182 105	D.M. Alde *et al.*	(SERP, BELG, LANL, LAPP)
LONGACRE	86	PL B177 223	R.S. Longacre *et al.*	(BNL, BRAN, CUNY+)
ALTHOFF	85B	ZPHY C29 189	M. Althoff *et al.*	(TASSO Collab.)
WILLIAMS	84	PR D30 877	E.G.H. Williams *et al.*	(VAND, NDAM, TUFTS+)
BLOOM	83	ARNS 33 143	E.D. Bloom, C. Peck	(SLAC, CIT)
BURKE	82	PRL 49 632	D.L. Burke *et al.*	(LBL, SLAC)
EDWARDS	82D	PRL 48 458	C. Edwards *et al.*	(CIT, HARV, PRIN+)
ETKIN	82B	PR D25 1786	A. Etkin *et al.*	(BNL, CUNY, TUFTS, VAND)
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LINK	04	PL B585 200	J.M. Link *et al.*	(FNAL FOCUS Collab.)
TESHIMA	04	JPG 30 663	T. Teshima *et al.*	
ANISOVICH	03B	PAN 66 741	V.V. Anisovich, V.A. Nikonov, A.V. Sarantsev	
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