$f_0(600)$ or σ

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

A REVIEW GOES HERE – Check our WWW List of Reviews

$f_0(600)$ T-MATRIX POLE $\sqrt{s}$

Note that $\Gamma \approx 2\ \mathrm{Im}(\sqrt{s_{\mathrm{pole}}})$.

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
(400–1200)−i(300–500) OUR ESTIMATE				
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$(541 \pm 39) - i(252 \pm 42)$	[1] ABLIKIM	04A	BES2	$J/\psi \to \omega\pi^+\pi^-$
$(528 \pm 32) - i(207 \pm 23)$	[2] GALLEGOS	04	RVUE	Compilation
$(440 \pm 8) - i(212 \pm 15)$	[3] PELAEZ	04A	RVUE	$\pi\pi \to \pi\pi$
$(533 \pm 25) - i(247 \pm 25)$	[4] BUGG	03	RVUE	
$532 - i272$	BLACK	01	RVUE	$\pi^0\pi^0 \to \pi^0\pi^0$
$(470 \pm 30) - i(295 \pm 20)$	[5] COLANGELO	01	RVUE	$\pi\pi \to \pi\pi$
$(535^{+48}_{-36}) - i(155^{+76}_{-53})$	[6] ISHIDA	01		$\Upsilon(3S) \to \Upsilon\pi\pi$
$610 \pm 14 - i620 \pm 26$	[7] SUROVTSEV	01	RVUE	$\pi\pi \to \pi\pi,\ K\overline{K}$
$(558^{+34}_{-27}) - i(196^{+32}_{-41})$	ISHIDA	00B		$p\overline{p} \to \pi^0\pi^0\pi^0$
$445 - i235$	HANNAH	99	RVUE	π scalar form factor
$(523 \pm 12) - i(259 \pm 7)$	KAMINSKI	99	RVUE	$\pi\pi \to \pi\pi,\ K\overline{K},\ \sigma\sigma$
$442 - i\ 227$	OLLER	99	RVUE	$\pi\pi \to \pi\pi,\ K\overline{K}$
$469 - i203$	OLLER	99B	RVUE	$\pi\pi \to \pi\pi,\ K\overline{K}$
$445 - i221$	OLLER	99C	RVUE	$\pi\pi \to \pi\pi,\ K\overline{K},\ \eta\eta$
$(1530^{+\ 90}_{-250}) - i(560 \pm 40)$	ANISOVICH	98B	RVUE	Compilation
$420 - i\ 212$	LOCHER	98	RVUE	$\pi\pi \to \pi\pi\ ,\ K\overline{K}$
$(602 \pm 26) - i(196 \pm 27)$	[8] ISHIDA	97		$\pi\pi \to \pi\pi$
$(537 \pm 20) - i(250 \pm 17)$	[9] KAMINSKI	97B	RVUE	$\pi\pi \to \pi\pi,\ K\overline{K},\ 4\pi$
$470 - i250$	[10,11] TORNQVIST	96	RVUE	$\pi\pi \to \pi\pi,\ K\overline{K},\ K\pi,\ \eta\pi$
$\sim (1100 - i300)$	AMSLER	95B	CBAR	$\overline{p}p \to 3\pi^0$
$400 - i500$	[11,12] AMSLER	95D	CBAR	$\overline{p}p \to 3\pi^0$
$1100 - i137$	[11,13] AMSLER	95D	CBAR	$\overline{p}p \to 3\pi^0$
$387 - i305$	[11,14] JANSSEN	95	RVUE	$\pi\pi \to \pi\pi,\ K\overline{K}$
$525 - i269$	[15] ACHASOV	94	RVUE	$\pi\pi \to \pi\pi$
$(506 \pm 10) - i(247 \pm 3)$	KAMINSKI	94	RVUE	$\pi\pi \to \pi\pi,\ K\overline{K}$
$370 - i356$	[16] ZOU	94B	RVUE	$\pi\pi \to \pi\pi,\ K\overline{K}$
$408 - i342$	[11,16] ZOU	93	RVUE	$\pi\pi \to \pi\pi,\ K\overline{K}$
$870 - i370$	[11,17] AU	87	RVUE	$\pi\pi \to \pi\pi,\ K\overline{K}$
$470 - i208$	[18] BEVEREN	86	RVUE	$\pi\pi \to \pi\pi,\ K\overline{K},\ \eta\eta,\ \ldots$
$(750 \pm 50) - i(450 \pm 50)$	[19] ESTABROOKS	79	RVUE	$\pi\pi \to \pi\pi,\ K\overline{K}$
$(660 \pm 100) - i(320 \pm 70)$	PROTOPOP...	73	HBC	$\pi\pi \to \pi\pi,\ K\overline{K}$
$650 - i370$	[20] BASDEVANT	72	RVUE	$\pi\pi \to \pi\pi$

[1] From a mean of six different analyses and $f_0(600)$ parameterizations.
[2] Using data on $\psi(2S) \to J/\psi\pi\pi$ from BAI 00E and on $\Upsilon(\text{nS}) \to \Upsilon(\text{mS})\pi\pi$ from BUTLER 94B and ALEXANDER 98.
[3] Reanalysis of data from PROTOPOPESCU 73, ESTABROOKS 74, GRAYER 74, and COHEN 80 in the unitarized ChPT model.
[4] From a combined analysis of HYAMS 73, AUGUSTIN 89, AITALA 01B, and PISLAK 01.
[5] From a phase-shift analysis of HYAMS 73 and PROTOPOPESCU 73 data.
[6] A similar analysis (KOMADA 01) finds $(580^{+79}_{-30}) - i(190^{+107}_{-49})$ MeV.
[7] Coupled channel reanalysis of BATON 70, BENSINGER 71, BAILLON 72, HYAMS 73, HYAMS 75, ROSSELET 77, COHEN 80, and ETKIN 82B using the uniformizing variable.
[8] Reanalysis of data from HYAMS 73, GRAYER 74, SRINIVASAN 75, and ROSSELET 77 using the interfering amplitude method.
[9] Average and spread of 4 variants ("up" and "down") of KAMINSKI 97B 3-channel model.
[10] Uses data from BEIER 72B, OCHS 73, HYAMS 73, GRAYER 74, ROSSELET 77, CASON 83, ASTON 88, and ARMSTRONG 91B. Coupled channel analysis with flavor symmetry and all light two-pseudoscalars systems.
[11] Demonstrates explicitly that $f_0(600)$ and $f_0(1370)$ are two different poles.
[12] Coupled channel analysis of $\overline{p}p \to 3\pi^0$, $\pi^0\eta\eta$ and $\pi^0\pi^0\eta$ on sheet II.
[13] Coupled channel analysis of $\overline{p}p \to 3\pi^0$, $\pi^0\eta\eta$ and $\pi^0\pi^0\eta$ on sheet III.
[14] Analysis of data from FALVARD 88.
[15] Analysis of data from OCHS 73, ESTABROOKS 75, ROSSELET 77, and MUKHIN 80.
[16] Analysis of data from OCHS 73, GRAYER 74, and ROSSELET 77.
[17] Analysis of data from OCHS 73, GRAYER 74, BECKER 79, and CASON 83.
[18] Coupled-channel analysis using data from PROTOPOPESCU 73, HYAMS 73, HYAMS 75, GRAYER 74, ESTABROOKS 74, ESTABROOKS 75, FROGGATT 77, CORDEN 79, BISWAS 81.
[19] Analysis of data from APEL 73, GRAYER 74, CASON 76, PAWLICKI 77. Includes spread and errors of 4 solutions.
[20] Analysis of data from BATON 70, BENSINGER 71, COLTON 71, BAILLON 72,PROTOPOPESCU 73, and WALKER 67.

$f_0(600)$ BREIT-WIGNER MASS OR K-MATRIX POLE PARAMETERS

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
(400–1200) OUR ESTIMATE				
513 ± 32	[21] MURAMATSU	02	CLEO	$e^+e^- \approx 10$ GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$478^{+24}_{-23} \pm 17$	AITALA	01B	E791	$D^+ \to \pi^-\pi^+\pi^+$
$563 \pm {}^{+58}_{-20}$	[22] ISHIDA	01		$\Upsilon(3S) \to \Upsilon\pi\pi$
555	[23] ASNER	00	CLE2	$\tau^- \to \pi^-\pi^0\pi^0\nu_\tau$
540 ± 36	ISHIDA	00B		$p\overline{p} \to \pi^0\pi^0\pi^0$
750 ± 4	ALEKSEEV	99	SPEC	1.78 π^- $p_{\text{polar}} \to \pi^-\pi^+ n$
744 ± 5	ALEKSEEV	98	SPEC	1.78 π^- $p_{\text{polar}} \to \pi^-\pi^+ n$
759 ± 5	[24] TROYAN	98		5.2 $np \to np\pi^+\pi^-$
780 ± 30	ALDE	97	GAM2	450 $pp \to pp\pi^0\pi^0$
585 ± 20	[25] ISHIDA	97		$\pi\pi \to \pi\pi$
761 ± 12	[26] SVEC	96	RVUE	6–17 $\pi N_{\text{polar}} \to \pi^+\pi^- N$
~ 860	[27,28] TORNQVIST	96	RVUE	$\pi\pi \to \pi\pi$, $K\overline{K}$, $K\pi$, $\eta\pi$
1165 ± 50	[29,30] ANISOVICH	95	RVUE	$\pi^- p \to \pi^0\pi^0 n$, $\overline{p}p \to \pi^0\pi^0\pi^0$, $\pi^0\pi^0\eta$, $\pi^0\eta\eta$
~ 1000	[31] ACHASOV	94	RVUE	$\pi\pi \to \pi\pi$
414 ± 20	[26] AUGUSTIN	89	DM2	

[21] Statistical uncertainty only.
[22] A similar analysis (KOMADA 01) finds 526^{+48}_{-37} MeV.
[23] From the best fit of the Dalitz plot.
[24] 6σ effect, no PWA.
[25] Reanalysis of data from HYAMS 73, GRAYER 74, SRINIVASAN 75, and ROSSELET 77 using the interfering amplitude method.
[26] Breit-Wigner fit to S-wave intensity measured in $\pi N \to \pi^-\pi^+ N$ on polarized targets. The fit does not include $f_0(980)$.
[27] Uses data from ASTON 88, OCHS 73, HYAMS 73, ARMSTRONG 91B, GRAYER 74, CASON 83, ROSSELET 77, and BEIER 72B. Coupled channel analysis with flavor symmetry and all light two-pseudoscalars systems.
[28] Also observed by ASNER 00 in $\tau^- \to \pi^-\pi^0\pi^0\nu_\tau$ decays.
[29] Uses $\pi^0\pi^0$ data from ANISOVICH 94, AMSLER 94D, and ALDE 95B, $\pi^+\pi^-$ data from OCHS 73, GRAYER 74 and ROSSELET 77, and $\eta\eta$ data fromANISOVICH 94.
[30] The pole is on Sheet III. Demonstrates explicitly that $f_0(600)$ and $f_0(1370)$ are two different poles.
[31] Analysis of data from OCHS 73, ESTABROOKS 75, ROSSELET 77, and MUKHIN 80.

$f_0(600)$ BREIT-WIGNER WIDTH

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
(600–1000) OUR ESTIMATE				
335 ± 67	[32] MURAMATSU	02	CLEO	$e^+e^- \approx 10$ GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$324^{+42}_{-40} \pm 21$	AITALA	01B	E791	$D^+ \to \pi^-\pi^+\pi^+$
$372 \pm {}^{+229}_{-95}$	[33] ISHIDA	01		$\Upsilon(3S) \to \Upsilon\pi\pi$
540	[34] ASNER	00	CLE2	$\tau^- \to \pi^-\pi^0\pi^0\nu_\tau$
372 ± 80	ISHIDA	00B		$p\overline{p} \to \pi^0\pi^0\pi^0$
119 ± 13	ALEKSEEV	99	SPEC	1.78 π^- $p_{\text{polar}} \to \pi^-\pi^+ n$
77 ± 22	ALEKSEEV	98	SPEC	1.78 π^- $p_{\text{polar}} \to \pi^-\pi^+ n$
35 ± 12	[35] TROYAN	98		5.2 $np \to np\pi^+\pi^-$
780 ± 60	ALDE	97	GAM2	450 $pp \to pp\pi^0\pi^0$
385 ± 70	[36] ISHIDA	97		$\pi\pi \to \pi\pi$
290 ± 54	[37] SVEC	96	RVUE	6–17 $\pi N_{\text{polar}} \to \pi^+\pi^- N$
~ 880	[38,39] TORNQVIST	96	RVUE	$\pi\pi \to \pi\pi$, $K\overline{K}$, $K\pi$, $\eta\pi$
460 ± 40	[40,41] ANISOVICH	95	RVUE	$\pi^- p \to \pi^0\pi^0 n$, $\overline{p}p \to \pi^0\pi^0\pi^0$, $\pi^0\pi^0\eta$, $\pi^0\eta\eta$
~ 3200	[42] ACHASOV	94	RVUE	$\pi\pi \to \pi\pi$
494 ± 58	[37] AUGUSTIN	89	DM2	

[32] Statistical uncertainty only.
[33] A similar analysis (KOMADA 01) finds 301^{+145}_{-100} MeV.
[34] From the best fit of the Dalitz plot.
[35] 6σ effect, no PWA.
[36] Reanalysis of data from HYAMS 73, GRAYER 74, SRINIVASAN 75, and ROSSELET 77 using the interfering amplitude method.
[37] Breit-Wigner fit to S-wave intensity measured in $\pi N \to \pi^-\pi^+ N$ on polarized targets. The fit does not include $f_0(980)$.

[38] Uses data from ASTON 88, OCHS 73, HYAMS 73, ARMSTRONG 91B, GRAYER 74, CASON 83, ROSSELET 77, and BEIER 72B. Coupled channel analysis with flavor symmetry and all light two-pseudoscalars systems.

[39] Also observed by ASNER 00 in $\tau^- \to \pi^-\pi^0\pi^0\nu_\tau$ decays.

[40] Uses $\pi^0\pi^0$ data from ANISOVICH 94, AMSLER 94D, and ALDE 95B, $\pi^+\pi^-$ data from OCHS 73, GRAYER 74 and ROSSELET 77, and $\eta\eta$ data fromANISOVICH 94.

[41] The pole is on Sheet III. Demonstrates explicitly that $f_0(600)$ and $f_0(1370)$ are two different poles.

[42] Analysis of data from OCHS 73, ESTABROOKS 75, ROSSELET 77, and MUKHIN 80.

$f_0(600)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$\pi\pi$	dominant
Γ_2	$\gamma\gamma$	seen

$f_0(600)$ PARTIAL WIDTHS

$\Gamma(\gamma\gamma)$ Γ_2

VALUE (keV)	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3.8 ± 1.5	[43,44] BOGLIONE	99	RVUE	$\gamma\gamma \to \pi^+\pi^-, \pi^0\pi^0$
5.4 ± 2.3	[43] MORGAN	90	RVUE	$\gamma\gamma \to \pi^+\pi^-, \pi^0\pi^0$
10 ± 6	COURAU	86	DM1	$e^+e^- \to \pi^+\pi^- e^+e^-$

[43] This width could equally well be assigned to the $f_0(1370)$. The authors analyse data from BOYER 90 and MARSISKE 90 and report strong correlation with $\gamma\gamma$ width of $f_2(1270)$.

[44] Supersedes MORGAN 90.

$f_0(600)$ REFERENCES

ABLIKIM	04A	PL B598 149	M. Ablikim *et al.*	(BES Collab.)
GALLEGOS	04	PR D69 074033	A. Gallegos *et al.*	
PELAEZ	04A	MPL A19 2879	J.R. Pelaez	
BUGG	03	PL B572 1	D.V. Bugg	
MURAMATSU	02	PRL 89 251802	H. Muramatsu *et al.*	(CLEO Collab.)
Also	03	PRL 90 059901 (erratum)	H. Muramatsu *et al.*	(CLEO Collab.)
AITALA	01B	PRL 86 770	E.M. Aitala *et al.*	(FNAL E791 Collab.)
BLACK	01	PR D64 014031	D. Black *et al.*	
COLANGELO	01	NP B603 125	G. Colangelo, J. Gasser, H. Leytwyler	
ISHIDA	01	PL B518 47	M. Ishida *et al.*	
KOMADA	01	PL B508 31	T. Komada *et al.*	
PISLAK	01	PRL 87 221801	S. Pislak *et al.*	(BNL E865 Collab.)
Also	03	PR D67 072004	S. Pislak *et al.*	(BNL E865 Collab.)
SUROVTSEV	01	PR D63 054024	Y.S. Surovtsev, D. Krupa, M. Nagy	
ASNER	00	PR D61 012002	D.M. Asner *et al.*	(CLEO Collab.)
BAI	00E	PR D62 032002	J. Bai *et al.*	(BES Collab.)
ISHIDA	00B	PTP 104 203	M. Ishida *et al.*	
ALEKSEEV	99	NP B541 3	I.G. Alekseev *et al.*	
BOGLIONE	99	EPJ C9 11	M. Boglione, M.R. Pennington	
HANNAH	99	PR D60 017502	T. Hannah	
KAMINSKI	99	EPJ C9 141	R. Kaminski, L. Lesniak, B. Loiseau	(CRAC, PARIN)
OLLER	99	PR D60 099906 (erratum)	J.A. Oller *et al.*	
OLLER	99B	NP A652 407 (erratum)	J.A. Oller, E. Oset	
OLLER	99C	PR D60 074023	J.A. Oller, E. Oset	
ALEKSEEV	98	PAN 61 174	I.G. Alekseev *et al.*	
ALEXANDER	98	PR D58 052004	J.P. Alexander *et al.*	(CLEO Collab.)

ANISOVICH	98B	UFN 41 419	V.V. Anisovich *et al.*	
LOCHER	98	EPJ C4 317	M.P. Locher *et al.*	(PSI)
TROYAN	98	JINRRC 5-91 33	Yu. Troyan *et al.*	
ALDE	97	PL B397 350	D.M. Alde *et al.*	(GAMS Collab.)
ISHIDA	97	PTP 98 1005	S. Ishida *et al.*	(TOKY, MIYA, KEK)
KAMINSKI	97B	PL B413 130	R. Kaminski, L. Lesniak, B. Loiseau	(CRAC, IPN)
Also	96	PTP 95 745	S. Ishida *et al.*	(TOKY, MIYA, KEK)
SVEC	96	PR D53 2343	M. Svec	(MCGI)
TORNQVIST	96	PRL 76 1575	N.A. Tornqvist, M. Roos	(HELS)
ALDE	95B	ZPHY C66 375	D.M. Alde *et al.*	(GAMS Collab.)
AMSLER	95B	PL B342 433	C. Amsler *et al.*	(Crystal Barrel Collab.)
AMSLER	95D	PL B355 425	C. Amsler *et al.*	(Crystal Barrel Collab.)
ANISOVICH	95	PL B355 363	V.V. Anisovich *et al.*	(PNPI, SERP)
JANSSEN	95	PR D52 2690	G. Janssen *et al.*	(STON, ADLD, JULI)
ACHASOV	94	PR D49 5779	N.N. Achasov, G.N. Shestakov	(NOVM)
AMSLER	94D	PL B333 277	C. Amsler *et al.*	(Crystal Barrel Collab.)
ANISOVICH	94	PL B323 233	V.V. Anisovich *et al.*	(Crystal Barrel Collab.)
BUTLER	94B	PR D49 40	F. Butler *et al.*	(CLEO Collab.)
KAMINSKI	94	PR D50 3145	R. Kaminski, L. Lesniak, J.P. Maillet	(CRAC+)
ZOU	94B	PR D50 591	B.S. Zou, D.V. Bugg	(LOQM)
ZOU	93	PR D48 R3948	B.S. Zou, D.V. Bugg	(LOQM)
ARMSTRONG	91B	ZPHY C52 389	T.A. Armstrong *et al.*	(ATHU, BARI, BIRM+)
BOYER	90	PR D42 1350	J. Boyer *et al.*	(Mark II Collab.)
MARSISKE	90	PR D41 3324	H. Marsiske *et al.*	(Crystal Ball Collab.)
MORGAN	90	ZPHY C48 623	D. Morgan, M.R. Pennington	(RAL, DURH)
AUGUSTIN	89	NP B320 1	J.E. Augustin, G. Cosme	(DM2 Collab.)
ASTON	88	NP B296 493	D. Aston *et al.*	(SLAC, NAGO, CINC, INUS)
FALVARD	88	PR D38 2706	A. Falvard *et al.*	(CLER, FRAS, LALO+)
AU	87	PR D35 1633	K.L. Au, D. Morgan, M.R. Pennington	(DURH, RAL)
BEVEREN	86	ZPHY C30 615	E. van Beveren *et al.*	(NIJM, BIEL)
COURAU	86	NP B271 1	A. Courau *et al.*	(CLER, LALO)
CASON	83	PR D28 1586	N.M. Cason *et al.*	(NDAM, ANL)
ETKIN	82B	PR D25 1786	A. Etkin *et al.*	(BNL, CUNY, TUFTS, VAND)
BISWAS	81	PRL 47 1378	N.N. Biswas *et al.*	(NDAM, ANL)
COHEN	80	PR D22 2595	D. Cohen *et al.*	(ANL) IJP
MUKHIN	80	JETPL 32 601	K.N. Mukhin *et al.*	(KIAE)
		Translated from ZETFP 32 616.		
BECKER	79	NP B151 46	H. Becker *et al.*	(MPIM, CERN, ZEEM, CRAC)
CORDEN	79	NP B157 250	M.J. Corden *et al.*	(BIRM, RHEL, TELA+) JP
ESTABROOKS	79	PR D19 2678	P. Estabrooks	(CARL)
FROGGATT	77	NP B129 89	C.D. Froggatt, J.L. Petersen	(GLAS, NORD)
PAWLICKI	77	PR D15 3196	A.J. Pawlicki *et al.*	(ANL) IJ
ROSSELET	77	PR D15 574	L. Rosselet *et al.*	(GEVA, SACL)
CASON	76	PRL 36 1485	N.M. Cason *et al.*	(NDAM, ANL) IJ
ESTABROOKS	75	NP B95 322	P.G. Estabrooks, A.D. Martin	(DURH)
HYAMS	75	NP B100 205	B.D. Hyams *et al.*	(CERN, MPIM)
SRINIVASAN	75	PR D12 681	V. Srinivasan *et al.*	(NDAM, ANL)
ESTABROOKS	74	NP B79 301	P.G. Estabrooks, A.D. Martin	(DURH)
GRAYER	74	NP B75 189	G. Grayer *et al.*	(CERN, MPIM)
APEL	73	PL 41B 542	W.D. Apel *et al.*	(KARL, PISA)
HYAMS	73	NP B64 134	B.D. Hyams *et al.*	(CERN, MPIM)
OCHS	73	Thesis	W. Ochs	(MPIM, MUNI)
PROTOPOP...	73	PR D7 1279	S.D. Protopopescu *et al.*	(LBL)
BAILLON	72	PL 38B 555	P.H. Baillon *et al.*	(SLAC)
BASDEVANT	72	PL 41B 178	J.L. Basdevant, C.D. Froggatt, J.L. Petersen	(CERN)
BEIER	72B	PRL 29 511	E.W. Beier *et al.*	(PENN)
BENSINGER	71	PL 36B 134	J.R. Bensinger *et al.*	(WISC)
COLTON	71	PR D3 2028	E.P. Colton *et al.*	(LBL, FNAL, UCLA+)
BATON	70	PL 33B 528	J.P. Baton, G. Laurens, J. Reignier	(SACL)
WALKER	67	RMP 39 695	W.D. Walker	(WISC)

OTHER RELATED PAPERS

ABLIKIM	05	PL B607 243	M. Ablikim *et al.*	(BES Collab.)
BRITO	05	PL B608 69	T.V. Brito *et al.*	
GIACOSA	05	PR C71 025202	F. Giacosa *et al.*	
JAFFE	05	PRPL 409 1	R.L. Jaffe	
AUBERT,B	04O	PR D70 091103R	B. Aubert *et al.*	(BABAR Collab.)
AUBERT,B	04P	PR D70 092001	B. Aubert *et al.*	(BABAR Collab.)
BUGG	04C	PRPL 397 257	D.V. Bugg	
BUGG	04D	EPJ C37 433	D.V. Bugg	

FARIBORZ	04	IJMP A19 2095	A.H. Fariborz	
KALOSHIN	04	EPJ A20 475	A.E. Kaloshin *et al.*	
LINK	04	PL B585 200	J.M. Link *et al.*	(FNAL FOCUS Collab.)
MAIANI	04A	PRL 93 212002	L. Maiani *et al.*	
NAPSUCIALE	04A	PR D70 094043	N.N. Napsuciale, S. Rodriguez	
PELAEZ	04	PRL 92 102001	J.R. Pelaez	
PRAKHOV	04	PR C69 042202R	S. Prakhov *et al.*	(BNL Crystal Ball Collab.)
PRAKHOV	04A	PR C69 045202	S. Prakhov *et al.*	
PRAKHOV	04B	PR C70 034605	S. Prakhov *et al.*	
TESHIMA	04	JPG 30 663	T. Teshima *et al.*	
VANBEVEREN	04	MPL A19 1949	E. Banbeveren, G. Rupp	
ABDEL-REHIM	03	PR D67 054001	A. Abdel-Rehim *et al.*	
ABDEL-REHIM	03B	PR D68 013008	A. Abdlel-Rehim *et al.*	
ISHIDA	03	PTPS 149 190	M. Ishida	
KAMINSKI	03	PL B551 241	R. Kaminski, L. Lesniak, B. Loiseau	
OLLER	03B	NP A714 161	J.A. Oller *et al.*	
SCADRON	03	NP A724 391	M.D. Scadron *et al.*	
SEMENOV	03	PAN 66 526	S.V. Semenov	
		Translated from YAF 66 553.		
AITALA	02	PRL 89 121801	E.M. Aitala *et al.*	(FNAL E791 Collab.)
BEVEREN	02	MPL A17 1673	E. van Beveren *et al.*	
BLACK	02	PRL 88 181603	D. Black, M. Harada, J. Schechter	
BOGLIONE	02	PR D65 114010	M. Boglione, M.R. Pennington	
BRAMON	02	EPJ C26 253	A. Bramon *et al.*	
CLOSE	02B	JPG 28 R249	F.E. Close, N. Tornqvist	
HE	02	PL B536 59	J. He, Z.G. Xiao, H.Q. Zheng	
HERNANDEZ	02	PR C66 065201	E. Hernandez, E. Oset, M.J. Vicente Vacas	
ISHIDA	02	PL B539 249	S. Ishida, M. Ishida	
KAMINSKI	02	EPJ Direct C4 1	R. Kaminski, L. Lesniak, K. Rybicki	
LINK	02E	PL B535 43	J.M. Link *et al.*	(FNAL FOCUS Collab.)
TESHIMA	02	JPG 28 1391	T. Teshima, I. Kitamura, N. Morisita	
ABELE	01	EPJ C19 667	A. Abele *et al.*	(Crystal Barrel Collab.)
ABELE	01B	EPJ C21 261	A. Abele *et al.*	(Crystal Barrel Collab.)
BEVEREN	01B	EPJ C22 493	E. van Beveren	
CHERRY	01	NP A688 823	S.N. Cherry, M.R. Pennington	
DEANDREA	01	PL B502 79	A. Deandrea *et al.*	
FAZIO	01	PL B521 15	F. De Fazio, M.R. Pennington	
GOKALP	01	PR D64 053017	A. Gokalp, O. Yilmaz	
NARISON	01C	NPBPS 96 244	S. Narison	
XIAO	01	NP A695 273	Z. Xiao, H. Zheng	
ACHASOV	00H	PL B485 349	M.N. Achasov *et al.*	(Novosibirsk SND Collab.)
ALFORD	00	NP B578 367	M. Alford, R.L. Jaffe	
BLACK	00B	PR D61 074030	D. Black, A. Fariborz, J. Schechter	
FANG	00	NP A671 416	Fang Shi *et al.*	
JAMIN	00	NP B587 331	M. Jamin *et al.*	
MONTANET	00	NPBPS 86 381	L. Montanet	
ABREU	99J	PL B449 364	P. Abreu *et al.*	(DELPHI Collab.)
BLACK	99	PR D59 074026	D. Black *et al.*	
DELBOURGO	99	PL B446 332	R. Delbourgo, D. Liu, M. Scadron	
IGI	99	PR D59 034005	K. Igi, K. Hikasa	
LUCIO	99	PL B454 365	J.L. Lucio, M. Napsuciale	
MINKOWSKI	99	EPJ C9 283	P. Minkowski, W. Ochs	
SCADRON	99	EPJ C6 141	M. Scadron	
TAKAMATSU	99	PAN 62 435	K. Takamatsu	
ACKERSTAFF	98A	EPJ C5 411	K. Ackerstaff *et al.*	(OPAL Collab.)
ANISOVICH	98	PL B437 209	V.V. Anisovich *et al.*	
DELBOURGO	98	IJMP A13 657	R. Delbourgo *et al.*	
OLLER	98	PRL 80 3452	J.A. Oller *et al.*	
ANISOVICH	97	PL B395 123	A.V. Anisovich, A.V. Sarantsev	(PNPI)
ANISOVICH	97D	ZPHY A359 173	A.V. Anisovich, V.V. Anisovich, A.V. Sarantsev	
HARADA	97	PRL 78 1603	M. Harada, F. Sannino, J. Schechter	
ISHIDA	97B	PTP 98 621	S. Ishida *et al.*	
KAMINSKI	97	ZPHY C74 79	R. Kaminski, L. Lesniak, K. Rybicki	(CRAC)
MALTMAN	97	PL B393 19	K. Maltman, C.E. Wolfe	(YORKC)
OLLER	97	NP A620 438	J.A. Oller *et al.*	(VALE)
SVEC	97	PR D55 4355	M. Svec	
SVEC	97B	PR D55 5727	M. Svec	(MCGI)
AMSLER	96	PR D53 295	C. Amsler, F.E. Close	(ZURI, RAL)
BIJNENS	96	PL B374 210	J. Bijnens *et al.*	(NORD, BERN, WIEN+)
BONUTTI	96	PRL 77 603	F. Bonutti *et al.*	(TRSTI, TRSTT, TRIU)
BUGG	96	NP B471 59	D.V. Bugg, A.V. Sarantsev, B.S. Zou	(LOQM, PNPI)

HARADA	96	PR D54 1991	M. Harasa *et al.*	(SYRA)
ISHIDA	96	PTP 95 745	S. Ishida *et al.*	(TOKY, MIYA, KEK)
ANTINORI	95	PL B353 589	F. Antinori *et al.*	(ATHU, BARI, BIRM+)
GASPERO	95	NP A588 861	M. Gaspero	(ROMA)
TORNQVIST	95	ZPHY C68 647	N.A. Tornqvist	(HELS)
AMSLER	94	PL B322 431	C. Amsler *et al.*	(Crystal Barrel Collab.)
BUGG	94	PR D50 4412	D.V. Bugg *et al.*	(LOQM)
ADAMO	93	NP A558 13C	A. Adamo *et al.*	(OBELIX Collab.)
GASPERO	93	NP A562 407	M. Gaspero	(ROMAI)
MORGAN	93	PR D48 1185	D. Morgan, M.R. Pennington	(RAL, DURH)
Also	93C	NC A Conf. Suppl.	D. Morgan	(RAL)
BOLTON	92B	PRL 69 1328	T. Bolton *et al.*	(Mark III Collab.)
SVEC	92	PR D45 55	M. Svec, A. de Lesquen, L. van Rossum	(MCGI+)
SVEC	92B	PR D45 1518	M. Svec, A. de Lesquen, L. van Rossum	(MCGI+)
SVEC	92C	PR D46 949	M. Svec, A. de Lesquen, L. van Rossum	(MCGI+)
RIGGENBACH	91	PR D43 127	C. Riggenbach *et al.*	(BERN, CERN, MASA)
BAI	90C	PRL 65 2507	Z. Bai *et al.*	(Mark III Collab.)
WEINSTEIN	90	PR D41 2236	J. Weinstein, N. Isgur	(TNTO)
ASTON	88D	NP B301 525	D. Aston *et al.*	(SLAC, NAGO, CINC, INUS)
ACHASOV	84	ZPHY C22 53	N.N. Achasov, S.A. Devyanin, G.N. Shestakov	(NOVM)
GASSER	84	ANP 158 142	J. Gasser, H. Leutwyler	
TORNQVIST	82	PRL 49 624	N.A. Tornqvist	(HELS)
COSTA	80	NP B175 402	G. Costa *et al.*	(BARI, BONN, CERN, GLAS+)
BECKER	79B	NP B150 301	H. Becker *et al.*	(MPIM, CERN, ZEEM, CRAC)
NAGELS	79	PR D20 1633	M.M. Nagels, T.A. Rijken, J.J. de Swart	(NIJM)
POLYCHRO...	79	PR D19 1317	V.A. Polychronakos *et al.*	(NDAM, ANL) IJP
CORDEN	78	NP B144 253	M.J. Corden *et al.*	(BIRM, RHEL, TELA+)
JAFFE	77	PR D15 267,281	R. Jaffe	(MIT)
FLATTE	76	PL 63B 224	S.M. Flatte	(CERN)
WETZEL	76	NP B115 208	W. Wetzel *et al.*	(ETH, CERN, LOIC)
DEFOIX	72	NP B44 125	C. Defoix *et al.*	(CDEF, CERN)