$f_0(600)$ or σ

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

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

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

VALUE (MeV)		*DOCUMENT ID*		*TECN*	*COMMENT*
(400–1200)−*i*(250–500) OUR ESTIMATE					
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$(552^{+84}_{-106})-i(232^{+81}_{-72})$	[1]	ABLIKIM	07A	BES2	$\psi(2S) \to \pi^+\pi^- J/\psi$
$(466 \pm 18)-i(223 \pm 28)$	[2]	BONVICINI	07	CLEO	$D^+ \to \pi^-\pi^+\pi^+$
$(484 \pm 17)-i(255 \pm 10)$		GARCIA-MAR...	07	RVUE	$Ke4$
$(441^{+16}_{-8})-i(272^{+9}_{-12.5})$	[3]	CAPRINI	06	RVUE	$\pi\pi \to \pi\pi$
$(470 \pm 50)-i(285 \pm 25)$	[4]	ZHOU	05	RVUE	
$(541 \pm 39)-i(252 \pm 42)$	[5]	ABLIKIM	04A	BES2	$J/\psi \to \omega\pi^+\pi^-$
$(528 \pm 32)-i(207 \pm 23)$	[6]	GALLEGOS	04	RVUE	Compilation
$(440 \pm 8)-i(212 \pm 15)$	[7]	PELAEZ	04A	RVUE	$\pi\pi \to \pi\pi$
$(533 \pm 25)-i(247 \pm 25)$	[8]	BUGG	03	RVUE	
$532 - i272$		BLACK	01	RVUE	$\pi^0\pi^0 \to \pi^0\pi^0$
$(470 \pm 30)-i(295 \pm 20)$	[3]	COLANGELO	01	RVUE	$\pi\pi \to \pi\pi$
$(535^{+48}_{-36})-i(155^{+76}_{-53})$	[9]	ISHIDA	01		$\Upsilon(3S) \to \Upsilon\pi\pi$
$610 \pm 14 - i620 \pm 26$	[10]	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	$\pi\pi \to \pi\pi$, $K\overline{K}$
$(602 \pm 26)-i(196 \pm 27)$	[11]	ISHIDA	97		$\pi\pi \to \pi\pi$
$(537 \pm 20)-i(250 \pm 17)$	[12]	KAMINSKI	97B	RVUE	$\pi\pi \to \pi\pi$, $K\overline{K}$, 4π
$470 - i250$	[13,14]	TORNQVIST	96	RVUE	$\pi\pi \to \pi\pi$, $K\overline{K}$, $K\pi$, $\eta\pi$
$\sim (1100 - i300)$		AMSLER	95B	CBAR	$\overline{p}p \to 3\pi^0$
$400 - i500$	[14,15]	AMSLER	95D	CBAR	$\overline{p}p \to 3\pi^0$
$1100 - i137$	[14,16]	AMSLER	95D	CBAR	$\overline{p}p \to 3\pi^0$
$387 - i305$	[14,17]	JANSSEN	95	RVUE	$\pi\pi \to \pi\pi$, $K\overline{K}$
$525 - i269$	[18]	ACHASOV	94	RVUE	$\pi\pi \to \pi\pi$
$(506 \pm 10)-i(247 \pm 3)$		KAMINSKI	94	RVUE	$\pi\pi \to \pi\pi$, $K\overline{K}$
$370 - i356$	[19]	ZOU	94B	RVUE	$\pi\pi \to \pi\pi$, $K\overline{K}$
$408 - i342$	[14,19]	ZOU	93	RVUE	$\pi\pi \to \pi\pi$, $K\overline{K}$
$870 - i370$	[14,20]	AU	87	RVUE	$\pi\pi \to \pi\pi$, $K\overline{K}$
$470 - i208$	[21]	VANBEVEREN	86	RVUE	$\pi\pi \to \pi\pi$, $K\overline{K}$, $\eta\eta$, ...

$(750 \pm 50)-i(450 \pm 50)$	[22] ESTABROOKS	79	RVUE	$\pi\pi \to \pi\pi$, $K\overline{K}$
$(660 \pm 100)-i(320 \pm 70)$	PROTOPOP...	73	HBC	$\pi\pi \to \pi\pi$, $K\overline{K}$
$650 - i370$	[23] BASDEVANT	72	RVUE	$\pi\pi \to \pi\pi$

[1] From a mean of three different $f_0(600)$ parametrizations. Uses 40k events.
[2] From an isobar model using 2.6k events.
[3] From the solution of the Roy equation (ROY 71) for the isoscalar S-wave and using a phase-shift analysis of HYAMS 73 and PROTOPOPESCU 73 data.
[4] Reanalysis of the data from PROTOPOPESCU 73, ESTABROOKS 74, GRAYER 74, ROSSELET 77, PISLAK 03, and AKHMETSHIN 04.
[5] From a mean of six different analyses and $f_0(600)$ parameterizations.
[6] Using data on $\psi(2S) \to J/\psi\pi\pi$ from BAI 00E and on Υ(nS) $\to$ Υ(mS)$\pi\pi$ from BUTLER 94B and ALEXANDER 98.
[7] Reanalysis of data from PROTOPOPESCU 73, ESTABROOKS 74, GRAYER 74, and COHEN 80 in the unitarized ChPT model.
[8] From a combined analysis of HYAMS 73, AUGUSTIN 89, AITALA 01B, and PISLAK 01.
[9] A similar analysis (KOMADA 01) finds $(580^{+79}_{-30})-i(190^{+107}_{-49})$ MeV.
[10] 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.
[11] Reanalysis of data from HYAMS 73, GRAYER 74, SRINIVASAN 75, and ROSSELET 77 using the interfering amplitude method.
[12] Average and spread of 4 variants ("up" and "down") of KAMINSKI 97B 3-channel model.
[13] 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.
[14] Demonstrates explicitly that $f_0(600)$ and $f_0(1370)$ are two different poles.
[15] Coupled channel analysis of $\overline{p}p \to 3\pi^0$, $\pi^0\eta\eta$ and $\pi^0\pi^0\eta$ on sheet II.
[16] Coupled channel analysis of $\overline{p}p \to 3\pi^0$, $\pi^0\eta\eta$ and $\pi^0\pi^0\eta$ on sheet III.
[17] Analysis of data from FALVARD 88.
[18] Analysis of data from OCHS 73, ESTABROOKS 75, ROSSELET 77, and MUKHIN 80.
[19] Analysis of data from OCHS 73, GRAYER 74, and ROSSELET 77.
[20] Analysis of data from OCHS 73, GRAYER 74, BECKER 79, and CASON 83.
[21] Coupled-channel analysis using data from PROTOPOPESCU 73, HYAMS 73, HYAMS 75, GRAYER 74, ESTABROOKS 74, ESTABROOKS 75, FROGGATT 77, CORDEN 79, BISWAS 81.
[22] Analysis of data from APEL 73, GRAYER 74, CASON 76, PAWLICKI 77. Includes spread and errors of 4 solutions.
[23] 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	[24] MURAMATSU	02	CLEO	$e^+e^- \approx 10$ GeV

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

$478^{+24}_{-23}\pm17$	AITALA	01B	E791	$D^+ \rightarrow \pi^-\pi^+\pi^+$
563^{+58}_{-29}	[25] ISHIDA	01		$\Upsilon(3S) \rightarrow \Upsilon\pi\pi$
555	[26] ASNER	00	CLE2	$\tau^- \rightarrow \pi^-\pi^0\pi^0\nu_\tau$
540 ± 36	ISHIDA	00B		$p\overline{p} \rightarrow \pi^0\pi^0\pi^0$
$750\pm\ 4$	ALEKSEEV	99	SPEC	$1.78\ \pi^- p_{\text{polar}} \rightarrow \pi^-\pi^+ n$
$744\pm\ 5$	ALEKSEEV	98	SPEC	$1.78\ \pi^- p_{\text{polar}} \rightarrow \pi^-\pi^+ n$
$759\pm\ 5$	[27] TROYAN	98		$5.2\ np \rightarrow np\pi^+\pi^-$
780 ± 30	ALDE	97	GAM2	$450\ pp \rightarrow pp\pi^0\pi^0$
585 ± 20	[28] ISHIDA	97		$\pi\pi \rightarrow \pi\pi$
761 ± 12	[29] SVEC	96	RVUE	6–17 $\pi N_{\text{polar}} \rightarrow \pi^+\pi^- N$
$\sim$ 860	[30,31] TORNQVIST	96	RVUE	$\pi\pi \rightarrow \pi\pi$, $K\overline{K}$, $K\pi$, $\eta\pi$
1165 ± 50	[32,33] ANISOVICH	95	RVUE	$\pi^- p \rightarrow \pi^0\pi^0 n$, $\overline{p}p \rightarrow \pi^0\pi^0\pi^0$, $\pi^0\pi^0\eta$, $\pi^0\eta\eta$
$\sim$ 1000	[34] ACHASOV	94	RVUE	$\pi\pi \rightarrow \pi\pi$
414 ± 20	[29] AUGUSTIN	89	DM2	

[24] Statistical uncertainty only.
[25] A similar analysis (KOMADA 01) finds 526^{+48}_{-37} MeV.
[26] From the best fit of the Dalitz plot.
[27] 6σ effect, no PWA.
[28] Reanalysis of data from HYAMS 73, GRAYER 74, SRINIVASAN 75, and ROSSELET 77 using the interfering amplitude method.
[29] Breit-Wigner fit to S-wave intensity measured in $\pi N \rightarrow \pi^-\pi^+ N$ on polarized targets. The fit does not include $f_0(980)$.
[30] 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.
[31] Also observed by ASNER 00 in $\tau^- \rightarrow \pi^-\pi^0\pi^0\nu_\tau$ decays.
[32] 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 from ANISOVICH 94.
[33] The pole is on Sheet III. Demonstrates explicitly that $f_0(600)$ and $f_0(1370)$ are two different poles.
[34] 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				
$335\pm\ 67$	[35] MURAMATSU	02	CLEO	$e^+e^- \approx$ 10 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$324^{+\ 42}_{-\ 40}\pm21$	AITALA	01B	E791	$D^+ \rightarrow \pi^-\pi^+\pi^+$
$372^{+229}_{-\ 95}$	[36] ISHIDA	01		$\Upsilon(3S) \rightarrow \Upsilon\pi\pi$
540	[37] ASNER	00	CLE2	$\tau^- \rightarrow \pi^-\pi^0\pi^0\nu_\tau$
$372\pm\ 80$	ISHIDA	00B		$p\overline{p} \rightarrow \pi^0\pi^0\pi^0$
$119\pm\ 13$	ALEKSEEV	99	SPEC	$1.78\ \pi^- p_{\text{polar}} \rightarrow \pi^-\pi^+ n$
$77\pm\ 22$	ALEKSEEV	98	SPEC	$1.78\ \pi^- p_{\text{polar}} \rightarrow \pi^-\pi^+ n$
$35\pm\ 12$	[38] TROYAN	98		$5.2\ np \rightarrow np\pi^+\pi^-$

780± 60	ALDE	97	GAM2	450 $p p \to p p \pi^0 \pi^0$
385± 70	[39] ISHIDA	97		$\pi \pi \to \pi \pi$
290± 54	[40] SVEC	96	RVUE	6–17 $\pi N_{polar} \to \pi^+ \pi^- N$
∼ 880	[41,42] TORNQVIST	96	RVUE	$\pi \pi \to \pi \pi$, $K \overline{K}$, $K \pi$, $\eta \pi$
460± 40	[43,44] 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	[45] ACHASOV	94	RVUE	$\pi \pi \to \pi \pi$
494± 58	[40] AUGUSTIN	89	DM2	

[35] Statistical uncertainty only.

[36] A similar analysis (KOMADA 01) finds 301^{+145}_{-100} MeV.

[37] From the best fit of the Dalitz plot.

[38] 6σ effect, no PWA.

[39] Reanalysis of data from HYAMS 73, GRAYER 74, SRINIVASAN 75, and ROSSELET 77 using the interfering amplitude method.

[40] Breit-Wigner fit to S-wave intensity measured in $\pi N \to \pi^- \pi^+ N$ on polarized targets. The fit does not include $f_0(980)$.

[41] 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.

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

[43] 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 from ANISOVICH 94.

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

[45] 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. • • •				
4.1±0.3	[46] PENNINGTON	06	RVUE	$\gamma \gamma \to \pi^0 \pi^0$
3.8±1.5	[47,48] BOGLIONE	99	RVUE	$\gamma \gamma \to \pi^+ \pi^-$, $\pi^0 \pi^0$
5.4±2.3	[47] MORGAN	90	RVUE	$\gamma \gamma \to \pi^+ \pi^-$, $\pi^0 \pi^0$
10 ±6	COURAU	86	DM1	$e^+ e^- \to \pi^+ \pi^- e^+ e^-$

[46] Using unitarity and the σ pole position from CAPRINI 06.

[47] 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 $f_2(1270)$.

[48] Supersedes MORGAN 90.

$f_0(600)$ REFERENCES

ABLIKIM	07A	PL B645 19	M. Ablikim *et al.*	(BES Collab.)
BONVICINI	07	PR D76 012001	G. Bonvicini *et al.*	(CLEO Collab.)
GARCIA-MAR...	07	PR D76 074034	R. Garcia-Martin, J.R. Pelaez, F.J. Yndurain	
CAPRINI	06	PRL 96 132001	I. Caprini, G. Colangelo, H. Leutwyler	(BCIP+)
PENNINGTON	06	PRL 97 011601	M.R. Pennington	
ZHOU	05	JHEP 0502 043	Z.Y. Zhou *et al.*	
ABLIKIM	04A	PL B598 149	M. Ablikim *et al.*	(BES Collab.)
AKHMETSHIN	04	PL B578 285	R.R. Akhmetshin *et al.*	(Novosibirsk CMD-2 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	
PISLAK	03	PR D67 072004	S. Pislak *et al.*	(BNL E865 Collab.)
MURAMATSU	02	PRL 89 251802	H. Muramatsu *et al.*	(CLEO Collab.)
Also		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		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	SPU 41 419	V.V. Anisovich *et al.*	
		Translated from UFN 168 481.		
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		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)
COURAU	86	NP B271 1	A. Courau *et al.*	(CLER, LALO)
VANBEVEREN	86	ZPHY C30 615	E. van Beveren *et al.*	(NIJM, BIEL)
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+)
ROY	71	PL 36B 353	S.M. Roy	
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

GIACOSA	08	PR D77 034007	F. Giacosa, T. Gutsche, V.E. Lyubovitskij	
LIU	08B	PR D77 034025	Y.-H. Liu *et al.*	
ACHASOV	07	PRL 99 072001	N.N. Achasov, G.N. Shestakov	
AMBROSINO	07	EPJ C49 473	F. Ambrosino *et al.*	(KLOE Collab.)
AUBERT	07AX	PRL 99 161802	B. Aubert *et al.*	(BABAR Collab.)
AUBERT	07BB	PRL 99 221801	B. Aubert *et al.*	(BABAR Collab.)
AUBERT	07T	PR D76 011102R	B. Aubert *et al.*	(BABAR Collab.)
CHEN	07E	PR D76 094025	H.-X. Chen, A. Hosaka, S.L. Zhu	
GIACOSA	07	PR D75 054007	F. Giacosa	
GIACOSA	07A	PR C76 065204	F. Giacosa, G. Pagliara	
KLEMPT	07	PRPL 454 1	E. Klempt, A. Zaitsev	
MAIANI	07	EPJ C50 609	L. Maiani *et al.*	
MATHEUS	07A	PR D76 056005	R.D. Matheus	
MATHUR	07	PR D76 114505	N. Mathur	
PENNINGTON	07	MPL A22 1439	M.R. Pennington	
SU	07	NP A792 288	M.X. Su *et al.*	
WADA	07	PL B652 250	H. Wada *et al.*	
XIAO	07	IJMP A22 4603	L.Y. Xiao, Z.-H. Guo, H.Q. Zheng	
ABLIKIM	06B	EPJ C45 337	M. Ablikim *et al.*	(BES Collab.)
ABLIKIM	06C	PL B633 681	M. Ablikim *et al.*	(BES Collab.)
ABLIKIM	06V	PL B642 441	M. Ablikim *et al.*	(BES Collab.)
AITALA	06	PR D73 032004	E.M. Aitala *et al.*	(FNAL E791 Collab.)
Also		PR D74 059901 (errat.)	E.M. Aitala *et al.*	(FNAL E791 Collab.)
ANISOVICH	06	IJMP A21 3615	V.V. Anisovich	
BEDIAGA	06	PL B633 167	I. Bediaga, J.M. de Miranda	
CHENG	06	PR D73 014017	H.-Y. Cheng, C.-K. Chua, K.-C. Yang	
CHENG	06A	PR D74 094005	H.-Y. Cheng, C.-K Chua, K.-F. Liu	
DESCOTES-G...	06	EPJ C48 553	S. Descotes-Genon, B. Moussallam	
FARIBORZ	06	PR D74 054030	A.H. Fariborz	
GIACOSA	06	PR D74 014028	F. Giacosa	
KAMANO	06	PR C73 055203	H. Kamano, M. Arima	
LEE	06A	EPJ A30 423	H.-J. Lee	
PELAEZ	06	PRL 97 242002	J.R. Pelaez, G. Rios	
SCHUMACHER	06	EPJ A30 413	M. Schumacher	
VANBEVEREN	06	PL B641 265	E. van Beberen *et al.*	
VANBEVEREN	06A	PR D74 037501	E. van Beberen *et al.*	
VANBEVEREN	06B	PRL 97 202001	E. van Beberen, G. Rupp	
VENTO	06	PR D73 054006	V. Vento	
ABLIKIM	05	PL B607 243	M. Ablikim *et al.*	(BES Collab.)
ABLIKIM	05Q	PR D72 092002	M. Ablikim *et al.*	(BES Collab.)
AUBERT,B	05G	PR D72 052002	B. Aubert *et al.*	(BABAR Collab.)

BRITO	05	PL B608 69	T.V. Brito *et al.*	
CHANOWITZ	05	PRL 95 172001	M. Chanowitz	
CLOSE	05	PR D71 094022	F.E. Close, Q. Zhao	
CRONIN-HEN...	05	PR D72 031102R	D. Cronin-Hennessy *et al.*	(CLEO Collab.)
GIACOSA	05	PR C71 025202	F. Giacosa *et al.*	
JAFFE	05	PRPL 409 1	R.L. Jaffe	
LI	05B	EPJ A25 263	D.-M. Li, K.-W. Wei, H. Yu	
LINK	05I	PL B621 72	J.M. Link *et al.*	(FNAL FOCUS Collab.)
RODRIGUEZ	05	PR D71 074008	S. Rodriguez, M. Napsuciale	
VIJANDE	05	PR D72 034025	J. Vijande, A. Valarce, F. Fernandez	
ABE	04	EPJ C32 323	K. Abe *et al.*	(BELLE Collab.)
ABLIKIM	04E	PL B603 138	M. Ablikim *et al.*	(BES Collab.)
AKHMETSHIN	04B	PL B580 119	R.R. Akhmetshin *et al.*	(Novosibirsk CMD-2 Collab.)
AMSLER	04	PRPL 389 61	C. Amsler, N.A. Tornqvist	
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	04	PL B603 195	M. Napsuciale, S. Rodriguez	(GUAN)
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. van Beveren, G. Rupp	
ZHENG	04	NP A733 235	H.Q. Zheng *et al.*	
ABDEL-REHIM	03	PR D67 054001	A. Abdel-Rehim *et al.*	
ABDEL-REHIM	03B	PR D68 013008	A. Abdel-Rehim *et al.*	
BOGLIONE	03	EPJ C30 503	M. Boglione, M.R. Pennington	
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.		
ACHASOV	02F	PL B537 201	M.N. Achasov *et al.*	(Novosibirsk SND Collab.)
AITALA	02	PRL 89 121801	E.M. Aitala *et al.*	(FNAL E791 Collab.)
ALOISIO	02C	PL B536 209	A. Aloisio *et al.*	(KLOE Collab.)
ALOISIO	02D	PL B537 21	A. Aloisio *et al.*	(KLOE Collab.)
AMSLER	02	EPJ C23 29	C. Amsler *et al.*	
AMSLER	02B	PL B541 22	C. Amsler	
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	
GARMASH	02	PR D65 092005	A. Garmash *et al.*	(BELLE Collab.)
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	02	PL B525 205	J.M. Link *et al.*	(FNAL FOCUS Collab.)
LINK	02E	PL B535 43	J.M. Link *et al.*	(FNAL FOCUS Collab.)
TESHIMA	02	JPG 28 1391	T. Teshima, I. Kitamura, N. Morisita	
VANBEVEREN	02	MPL A17 1673	E. van Beveren *et al.*	
ABELE	01	EPJ C19 667	A. Abele *et al.*	(Crystal Barrel Collab.)
ABELE	01B	EPJ C21 261	A. Abele *et al.*	(Crystal Barrel Collab.)
ACCIARRI	01H	PL B501 173	M. Acciarri *et al.*	(L3 Collab.)
CHERRY	01	NP A688 823	S.N. Cherry, M.R. Pennington	
CLOSE	01B	EPJ C21 531	F.E. Close, A. Kirk	
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	
KOPP	01	PR D63 092001	S. Kopp *et al.*	(CLEO Collab.)
LI	01	JPG 27 807	D.-M. Li, H. Yu, Q.-X. Shen	
NARISON	01C	NPBPS 96 244	S. Narison	
SHAKIN	01	PR D63 014019	C.M. Shakin, H. Wang	

VANBEVEREN	01B	EPJ C22 493	E. van Beveren	
XIAO	01	NP A695 273	Z. Xiao, H. Zheng	
ACHASOV	00F	PL B479 53	M.N. Achasov *et al.*	(Novosibirsk SND Collab.)
ACHASOV	00H	PL B485 349	M.N. Achasov *et al.*	(Novosibirsk SND Collab.)
ALFORD	00	NP B578 367	M. Alford, R.L. Jaffe	
BARATE	00E	PL B472 189	R. Barate *et al.*	(ALEPH Collab.)
BARBERIS	00C	PL B471 440	D. Barberis *et al.*	(WA 102 Collab.)
BARBERIS	00E	PL B479 59	D. Barberis *et al.*	(WA 102 Collab.)
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.*	
KAMINSKI	00	APP B31 895	R. Kaminski, L. Lesniak, K. Rybicki	
KIRK	00	PL B489 29	A. Kirk	
KYOTO	00	KEK-Proceedings 2000-4	S. Ishida (ed.) *et al.*	
LEE	00	PR D61 014015	W. Lee, D. Weingarten	
MONTANET	00	NPBPS 86 381	L. Montanet	
ABREU	99J	PL B449 364	P. Abreu *et al.*	(DELPHI Collab.)
AKHMETSHIN	99B	PL B462 371	R.R. Akhmetshin *et al.*	(Novosibirsk CMD-2 Collab.)
BARBERIS	99D	PL B462 462	D. Barberis *et al.*	(Omega Expt.)
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	
ISHIDA	99	PTP 101 661	M. Ishida	
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	
TORNQVIST	99	EPJ C11 359	N. Tornqvist	
VANBEVEREN	99	EPJ C10 469	E. van Beveren, G. Rupp	
ABELE	98	PR D57 3860	A. Abele *et al.*	(Crystal Barrel Collab.)
ACHASOV	98E	PR D58 054011	N.N. Achasov, G.N. Shestakov	
ACKERSTAFF	98A	EPJ C5 411	K. Ackerstaff *et al.*	(OPAL Collab.)
ANISOVICH	98	PL B437 209	V.V. Anisovich *et al.*	
BARBERIS	98C	PL B440 225	D. Barberis *et al.*	(WA 102 Collab.)
CLOSE	98B	PL B419 387	F.E. Close	
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	97C	PL B413 137	A.V. Anisovich, A.V. Sarantsev	
ANISOVICH	97D	ZPHY A359 173	A.V. Anisovich, V.V. Anisovich, A.V. Sarantsev	
CLOSE	97	PL B397 333	F. Close *et al.*	(RAL, BIRM)
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)
ABELE	96	PL B380 453	A. Abele *et al.*	(Crystal Barrel Collab.)
ABELE	96B	PL B385 425	A. Abele *et al.*	(Crystal Barrel Collab.)
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)
AMSLER	95C	PL B353 571	C. Amsler *et al.*	(Crystal Barrel Collab.)
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)
ZOU	94	PL B329 519	Y. Zou *et al.*	(RUTG, MINN, MICH)
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		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+)

BERNARD	91	PR D43 2757	V. Bernard, N. Kaiser, U.G. Meissner	
LI	91	PR D43 2161	Z.P. Li *et al.*	(TENN)
RIGGENBACH	91	PR D43 127	C. Riggenbach *et al.*	(BERN, CERN, MASA)
BAI	90C	PRL 65 2507	Z. Bai *et al.*	(Mark III Collab.)
LOHSE	90	PL B234 235	D. Lohse *et al.*	
WEINSTEIN	90	PR D41 2236	J. Weinstein, N. Isgur	(TNTO)
ASTON	88D	NP B301 525	D. Aston *et al.*	(SLAC, NAGO, CINC, INUS)
BARNES	85	PL B165 434	T. Barnes	
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)
MARTIN	79	NP B158 520	A.D. Martin, E.N. Ozmutlu	(DURH) IJP
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+)
ESTABROOKS	78	NP B133 490	P.G. Estabrooks *et al.*	(MCGI, CARL, DURH+)
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)
ADLER	65	PR 137 B1022	S.L. Adler	
ADLER	65A	PR 139 B1638	S.L. Adler	