NODE=M074

$\psi(4230)$

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

also known as $Y(4230)$; was $\psi(4260)$

The original $\psi(4260)$ (also known as $Y(4260)$) was observed by AUBERT,B 05I as a peak in the energy dependence of the $e^+e^- \to \pi^+\pi^- J/\psi$ cross section and was confirmed by HE 06B, YUAN 07, LEES 12AC, and LIU 13B in the same process. A higher-statistics analysis by ABLIKIM 17B revealed an asymmetry in the cross section and resulted in a shift of the peak position to a lower mass. The $\psi(4260)$ was therefore renamed $\psi(4230)$. The energy-dependent cross sections for e^+e^- to other channels also exhibit peaks in the same mass region. The parameters corresponding to those peaks are also listed here, but the number of states in this region remains to be determined.

NODE=M074

For details see the review on "Spectroscopy of mesons containing two heavy quarks."

$\psi(4230)$ MASS

NODE=M074M

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
4222.2± 2.4 OUR AVERAGE Error includes scale factor of 1.7. See the ideogram below.					
4219.7± 2.5± 4.5		[1] ABLIKIM	24T	BES3	$e^+e^- \to \eta J/\psi$
4226.9± 6.6±22.0		[2] ABLIKIM	23U	BES3	$e^+e^- \to K_S K_S J/\psi$
4209.6± 4.7± 5.9		[3] ABLIKIM	23X	BES3	$e^+e^- \to D^{*0} D^{*-} \pi^+$
4221.4± 1.5± 2.0		[4] ABLIKIM	22AM	BES3	$e^+e^- \to \pi^+\pi^- J/\psi$
4225.3± 2.3±21.5		[5] ABLIKIM	22AU	BES3	$e^+e^- \to K^+K^- J/\psi$
4234.4± 3.2± 0.2		[6] ABLIKIM	21AJ	BES3	$e^+e^- \to \pi^+\pi^- \psi(2S)$
4216.7± 8.9± 4.1		[7] ABLIKIM	20AG	BES3	$e^+e^- \to \mu^+\mu^-$
4220.4± 2.4± 2.3		[8] ABLIKIM	20N	BES3	$e^+e^- \to \pi^0\pi^0 J/\psi$
4218.5± 1.6± 4.0		[9] ABLIKIM	19AI	BES3	$e^+e^- \to \omega\chi_{c0}$
4228.6± 4.1± 6.3		ABLIKIM	19R	BES3	$e^+e^- \to \pi^+ D^0 D^{*-}$ + c.c.
$4200.6^{+7.9}_{-13.3}$ ± 3.0		[10] ABLIKIM	19V	BES3	$e^+e^- \to \gamma\chi_{c1}(3872)$
$4218^{+5.5}_{-4.5}$ ± 0.9		ABLIKIM	17G	BES3	$e^+e^- \to \pi^+\pi^- h_c$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
4231.9± 5.3± 4.9		ABLIKIM	20N	BES3	$e^+e^- \to \pi^0 T_{c\bar{c}1}(3900)^0$, $T^0_{c\bar{c}1} \to \pi^0 J/\psi$
4218.6± 3.8± 2.5		[8] ABLIKIM	20O	BES3	$e^+e^- \to \eta J/\psi$
4222.0± 3.1± 1.4		[11] ABLIKIM	17B	BES3	$e^+e^- \to \pi^+\pi^- J/\psi$
4209.5± 7.4± 1.4		[12] ABLIKIM	17V	BES3	$e^+e^- \to \pi^+\pi^- \psi(2S)$
4209.1± 6.8± 7.0		[13] ZHANG	17B	RVUE	$e^+e^- \to \pi^+\pi^- \psi(2S)$
4223.3± 1.6± 2.5		[14] ZHANG	17C	RVUE	$e^+e^- \to \pi^+\pi^- J/\psi$ or $\psi(2S)$
4230 ± 8 ± 6 180		[15] ABLIKIM	15C	BES3	$e^+e^- \to \omega\chi_{c0}$
4258.6± 8.3±12.1		[16] LIU	13B	BELL	$e^+e^- \to \gamma\pi^+\pi^- J/\psi$
4245 ± 5 ± 4		[17] LEES	12AC	BABR	10.58 $e^+e^- \to \gamma\pi^+\pi^- J/\psi$
$4247 \pm 12^{+17}_{-32}$		[16,18] YUAN	07	BELL	10.58 $e^+e^- \to \gamma\pi^+\pi^- J/\psi$
4284^{+17}_{-16} ± 413.6		HE	06B	CLEO	9.4–10.6 $e^+e^- \to \gamma\pi^+\pi^- J/\psi$
$4259 \pm 8^{+2}_{-6}$ 125		[19] AUBERT,B	05I	BABR	10.58 $e^+e^- \to \gamma\pi^+\pi^- J/\psi$

OCCUR=2

OCCUR=2

[1] From a three-resonance fit to the Born cross section in the range $\sqrt{s}$ = 3.808–4.951 GeV. Supersedes ABLIKIM 20O. NODE=M074M;LINKAGE=K

[2] From a three-resonance fit to the dressed cross section in the range $\sqrt{s}$ = 4.128–4.950 GeV. NODE=M074M;LINKAGE=I

[3] From a cross-section measurement of $e^+e^- \to D^{*0} D^{*-} \pi^+$ between 4.189 and 4.951 GeV, assuming a coherent sum of 3 Breit-Wigner resonances plus a continuum amplitude. The two other resonances have masses (widths) 4675.3 ± 29.7 (218.3 ± 73.5) MeV and 4469.1 ± 26.4 (246.3 ± 37.9) MeV. NODE=M074M;LINKAGE=J

[4] From a three-resonance fit to the Born cross section in the range $\sqrt{s}$ = 3.7730–4.7008 GeV. NODE=M074M;LINKAGE=F

[5] From a two-resonance fit to the dressed cross section in the range $\sqrt{s}$ = 4.127–4.600 GeV. The second resonance has a mass of 4484.7 ± 13.3 ± 24.1 MeV and a total width of 111.1 ± 30.1 ± 15.2 MeV. NODE=M074M;LINKAGE=H

[6] From a three-resonance fit to the Born cross section in the range $\sqrt{s}$ = 4.008–4.698 GeV. NODE=M074M;LINKAGE=C

[7] Solution 1 of 8 with equal fit quality to the $e^+e^- \to \mu^+\mu^-$ cross section between 3.8 and 4.6 GeV to the coherent sum of four resonant amplitudes. Other solutions range from 4212.8 ± 7.2 ± 4.0 to 4219.4 ± 11.2 ± 4.1 MeV. NODE=M074M;LINKAGE=HP

[8] From a fit of the measured cross section in the range $\sqrt{s}$ = 3.808–4.600 GeV. NODE=M074M;LINKAGE=GP

[9] From a fit of the measured cross section from $\sqrt{s}$ = 4.178–4.278 GeV. Supersedes ABLIKIM 15C. NODE=M074M;LINKAGE=CP

[10] Simultaneous fit to $\chi_{c1} \to \omega J/\psi$ and $\chi_{c1} \to \pi^+\pi^- J/\psi$. NODE=M074M;LINKAGE=FP

[11] From a three-resonance fit. Superseded by ABLIKIM 22AM. NODE=M074M;LINKAGE=G

[12] From a fit to the cross section for $e^+e^- \to \pi^+\pi^-\psi(2S) \to 2(\pi^+\pi^-)\ell^+\ell^-$ obtained from 16 center-of-mass energies between 4.008 and 4.600 GeV and comprising 5.1 fb^{-1}. Superseded by ABLIKIM 21AJ. NODE=M074M;LINKAGE=BP

[13] From a three-resonance fit. NODE=M074M;LINKAGE=A

[14] From a combined fit of BELLE, BABAR and BES3 $e^+e^- \to \pi^+\pi^- J/\psi$ and $e^+e^- \to \pi^+\pi^-\psi(2S)$ data. NODE=M074M;LINKAGE=CA

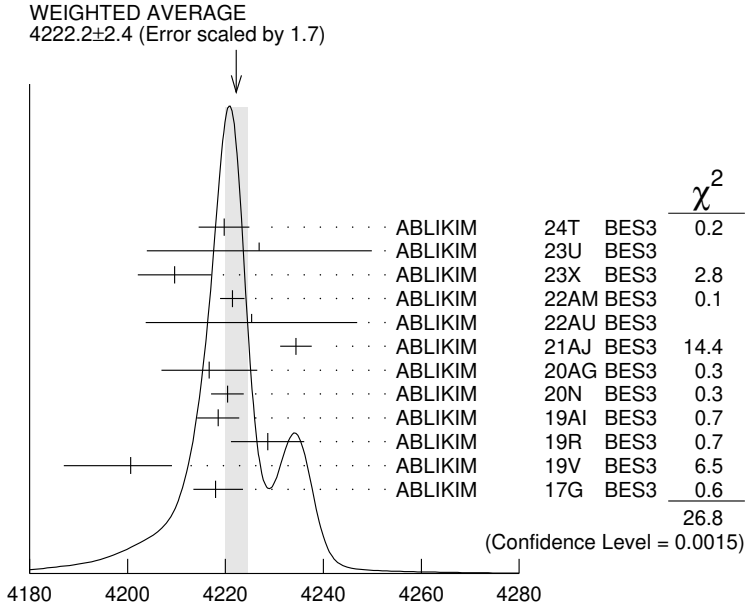
[15] From a 3-parameter fit of measured cross sections from $\sqrt{s}$ = 4.21–4.42 GeV to a phase-space modified Breit-Wigner function, using the decays $\chi_{c0} \to \pi^+\pi^-$, $\chi_{c0} \to K^+K^-$, and $\omega \to \pi^+\pi^-\pi^0$. NODE=M074M;LINKAGE=AP

[16] From a two-resonance fit. NODE=M074M;LINKAGE=YU

[17] From a single-resonance fit. Supersedes AUBERT,B 05I. NODE=M074M;LINKAGE=LE

[18] Superseded by LIU 13B. NODE=M074M;LINKAGE=YN

[19] From a single-resonance fit. Two interfering resonances are not excluded. Superseded by LEES 12AC. NODE=M074M;LINKAGE=AU



ψ(4230) WIDTH

NODE=M074W

NODE=M074W

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
51 ± 8 OUR AVERAGE		Error includes scale factor of 3.7. See the ideogram below.			
80.7± 4.4± 1.4		[1] ABLIKIM	24T	BES3	$e^+e^- \to \eta J/\psi$
71.7±16.2±32.8		[2] ABLIKIM	23U	BES3	$e^+e^- \to K_S K_S J/\psi$
81.6±17.8± 9.0		[3] ABLIKIM	23X	BES3	$e^+e^- \to D^{*0} D^{*-}\pi^+$
41.8± 2.9± 2.7		[4] ABLIKIM	22AM	BES3	$e^+e^- \to \pi^+\pi^- J/\psi$
72.9± 6.1±30.8		[5] ABLIKIM	22AU	BES3	$e^+e^- \to K^+K^- J/\psi$
17.6±18.1± 0.9		[6] ABLIKIM	21AJ	BES3	$e^+e^- \to \pi^+\pi^-\psi(2S)$
47.2±22.8±10.5		[7] ABLIKIM	20AG	BES3	$e^+e^- \to \mu^+\mu^-$
46.2± 4.7± 2.1		[8] ABLIKIM	20N	BES3	$e^+e^- \to \pi^0\pi^0 J/\psi$
28.2± 3.9± 1.6		[9] ABLIKIM	19AI	BES3	$e^+e^- \to \omega\chi_{c0}$
77.0± 6.8± 6.3		ABLIKIM	19R	BES3	$e^+e^- \to \pi^+ D^0 D^{*-}$ + c.c.
115 $^{+38}_{-26}$ ±12		[10] ABLIKIM	19V	BES3	$e^+e^- \to \gamma\chi_{c1}(3872)$
66.0$^{+12.3}_{-\ 8.3}$± 0.4		ABLIKIM	17G	BES3	$e^+e^- \to \pi^+\pi^- h_c$

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

41.2±16.0±16.4			ABLIKIM	20N	BES3	$e^+e^- \to \pi^0 T_{c\bar{c}1}(3900)^0$, $T^0_{c\bar{c}1} \to \pi^0 J/\psi$	OCCUR=2
82.0± 5.7± 0.4		[8]	ABLIKIM	20O	BES3	$e^+e^- \to \eta J/\psi$	
44.1± 4.3± 2.0		[11]	ABLIKIM	17B	BES3	$e^+e^- \to \pi^+\pi^- J/\psi$	
80.1±24.6± 2.9		[12]	ABLIKIM	17V	BES3	$e^+e^- \to \pi^+\pi^- \psi(2S)$	
76.6±14.2± 2.4		[13]	ZHANG	17B	RVUE	$e^+e^- \to \pi^+\pi^- \psi(2S)$	
54.2± 2.6± 1.0		[14]	ZHANG	17C	RVUE	$e^+e^- \to \pi^+\pi^- J/\psi$ or $\psi(2S)$	
38 ±12 ± 2	180	[15]	ABLIKIM	15C	BES3	$e^+e^- \to \omega\chi_{c0}$	
134.1±16.4± 5.5		[16]	LIU	13B	BELL	$e^+e^- \to \gamma\pi^+\pi^- J/\psi$	
114 $^{+16}_{-15}$ ± 7		[17]	LEES	12AC	BABR	10.58 $e^+e^- \to \gamma\pi^+\pi^- J/\psi$	
108 ±19 ±10		[16,18]	YUAN	07	BELL	10.58 $e^+e^- \to \gamma\pi^+\pi^- J/\psi$	
73 $^{+39}_{-25}$ ± 5	13.6		HE	06B	CLEO	9.4–10.6 $e^+e^- \to \gamma\pi^+\pi^- J/\psi$	
88 ±23 $^{+6}_{-4}$	125	[19]	AUBERT,B	05I	BABR	10.58 $e^+e^- \to \gamma\pi^+\pi^- J/\psi$	

[1] From a three-resonance fit to the Born cross section in the range $\sqrt{s}$ = 3.808–4.951 GeV. Supersedes ABLIKIM 20O. NODE=M074W;LINKAGE=J

[2] From a three-resonance fit to the dressed cross section in the range $\sqrt{s}$ = 4.128–4.950 GeV. NODE=M074W;LINKAGE=H

[3] From a cross-section measurement of $e^+e^- \to D^{*0}D^{*-}\pi^+$ between 4.189 and 4.951 GeV, assuming a coherent sum of 3 Breit-Wigner resonances plus a continuum amplitude. The two other resonances have masses (widths) 4675.3 ± 29.7 (218.3 ± 73.5) MeV and 4469.1 ± 26.4 (246.3 ± 37.9) MeV. NODE=M074W;LINKAGE=I

[4] From a three-resonance fit to the Born cross section in the range $\sqrt{s}$ = 3.7730–4.7008 GeV. NODE=M074W;LINKAGE=F

[5] From a two-resonance fit to the dressed cross section in the range $\sqrt{s}$ = 4.127–4.600 GeV. The second resonance has a mass of 4484.7 ± 13.3 ± 24.1 MeV and a total width of 111.1 ± 30.1 ± 15.2 MeV. NODE=M074W;LINKAGE=G

[6] From a three-resonance fit to the Born cross section in the range $\sqrt{s}$ = 4.008–4.698 GeV. NODE=M074W;LINKAGE=D

[7] Solution 1 of 8 with equal fit quality to the $e^+e^- \to \mu^+\mu^-$ cross section between 3.8 and 4.6 GeV to the coherent sum of four resonant amplitudes. Other solutions range from 36.4 ± 16.8 ± 8.1 to 49.6 ± 22.6 ± 11.0 MeV. NODE=M074W;LINKAGE=GP

[8] From a fit of the measured cross section in the range $\sqrt{s}$ = 3.808–4.600 GeV. NODE=M074W;LINKAGE=FP

[9] From a fit of the measured cross section from $\sqrt{s}$ = 4.178–4.278 GeV. Supersedes ABLIKIM 15C. NODE=M074W;LINKAGE=CP

[10] Simultaneous fit to $\chi_{c1} \to \omega J/\psi$ and $\chi_{c1} \to \pi^+\pi^- J/\psi$. NODE=M074W;LINKAGE=EP

[11] From a three-resonance fit. Superseded by ABLIKIM 22AM. NODE=M074W;LINKAGE=E

[12] From a fit to the cross section for $e^+e^- \to \pi^+\pi^-\psi(2S) \to 2(\pi^+\pi^-)\ell^+\ell^-$ obtained from 16 center-of-mass energies between 4.008 and 4.600 GeV and comprising 5.1 fb^{-1}. Superseded by ABLIKIM 21AJ. NODE=M074W;LINKAGE=BP

[13] From a three-resonance fit. NODE=M074W;LINKAGE=C

[14] From a combined fit of BELLE, BABAR and BES3 $e^+e^- \to \pi^+\pi^- J/\psi$ and $e^+e^- \to \pi^+\pi^-\psi(2S)$ data. NODE=M074W;LINKAGE=B

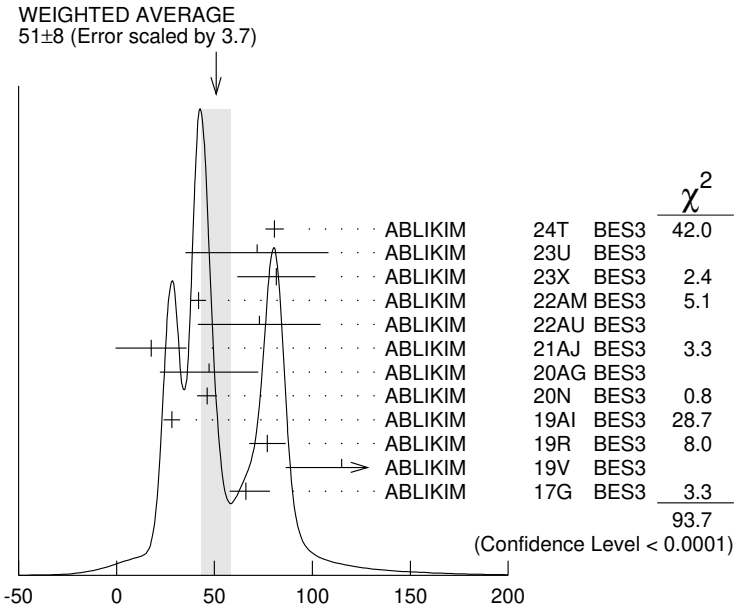
[15] From a 3-parameter fit of measured cross sections from $\sqrt{s}$ = 4.21–4.42 GeV to a phase-space modified Breit-Wigner function, using the decays $\chi_{c0} \to \pi^+\pi^-$, $\chi_{c0} \to K^+K^-$, and $\omega \to \pi^+\pi^-\pi^0$. NODE=M074W;LINKAGE=AP

[16] From a two-resonance fit. NODE=M074W;LINKAGE=YU

[17] From a single-resonance fit. Supersedes AUBERT,B 05I. NODE=M074W;LINKAGE=LE

[18] Superseded by LIU 13B. NODE=M074W;LINKAGE=YN

[19] From a single-resonance fit. Two interfering resonances are not excluded. Superseded by LEES 12AC. NODE=M074W;LINKAGE=AU



ψ(4230) DECAY MODES

NODE=M074215;NODE=M074

	Mode	Fraction (Γ_i/Γ)	
Γ_1	e^+e^-		DESIG=1
Γ_2	$\mu^+\mu^-$	$(3.0\pm2.7)\times10^{-5}$	DESIG=63
Γ_3	$\eta_c(1S)\pi^+\pi^-$	not seen	DESIG=65
Γ_4	$\eta_c(1S)\pi^+\pi^-\pi^0$	seen	DESIG=64
Γ_5	$J/\psi\pi^+\pi^-$	seen	DESIG=2
Γ_6	$J/\psi f_0(980),\ f_0(980)\to\ \pi^+\pi^-$	seen	DESIG=41;OUR EVAL;→ UNCHECKED ←
Γ_7	$T_{c\bar{c}1}(3900)^\pm\pi^\mp,\ T^\pm_{c\bar{c}1}\to\ J/\psi\pi^\pm$	seen	DESIG=43;OUR EVAL;→ UNCHECKED ←
Γ_8	$J/\psi\pi^0\pi^0$	seen	DESIG=4
Γ_9	$J/\psi K^+K^-$	seen	DESIG=5;OUR EVAL;→ UNCHECKED ←
Γ_{10}	$J/\psi K^0_S K^0_S$	not seen	DESIG=44
Γ_{11}	$J/\psi\eta$	seen	DESIG=6
Γ_{12}	$J/\psi\pi^0$	not seen	DESIG=7;OUR EVAL;→ UNCHECKED ←
Γ_{13}	$J/\psi\eta'$	seen	DESIG=8;OUR EVAL;→ UNCHECKED ←
Γ_{14}	$J/\psi\pi^+\pi^-\pi^0$	not seen	DESIG=9;OUR EVAL;→ UNCHECKED ←
Γ_{15}	$J/\psi\eta\pi^0$	not seen	DESIG=45
Γ_{16}	$J/\psi\eta\eta$	not seen	DESIG=10;OUR EVAL;→ UNCHECKED ←
Γ_{17}	$\psi(2S)\pi^+\pi^-$	seen	DESIG=11
Γ_{18}	$\psi(2S)\eta$	not seen	DESIG=12;OUR EVAL;→ UNCHECKED ←
Γ_{19}	$\chi_{c0}\omega$	seen	DESIG=13
Γ_{20}	$\chi_{c1}\pi^+\pi^-\pi^0$	not seen	DESIG=16;OUR EVAL;→ UNCHECKED ←
Γ_{21}	$\chi_{c2}\pi^+\pi^-\pi^0$	not seen	DESIG=17;OUR EVAL;→ UNCHECKED ←
Γ_{22}	$h_c(1P)\pi^+\pi^-$	seen	DESIG=40
Γ_{23}	$\phi\pi^+\pi^-$	not seen	DESIG=18;OUR EVAL;→ UNCHECKED ←
Γ_{24}	$\phi f_0(980)\to\ \phi\pi^+\pi^-$	not seen	DESIG=22;OUR EVAL;→ UNCHECKED ←
Γ_{25}	ϕK^+K^-	not seen	DESIG=72;OUR EVAL;→ UNCHECKED ←
Γ_{26}	$\phi K^0_S K^0_S$	not seen	DESIG=73;OUR EVAL;→ UNCHECKED ←
Γ_{27}	$\phi\eta$	not seen	DESIG=76
Γ_{28}	$\phi\eta'$	not seen	DESIG=70;OUR EVAL;→ UNCHECKED ←
Γ_{29}	$D\overline{D}$	not seen	DESIG=19;OUR EVAL;→ UNCHECKED ←
Γ_{30}	$D^0\overline{D}^0$	possibly seen	DESIG=31
Γ_{31}	D^+D^-	possibly seen	DESIG=32
Γ_{32}	$D^*\overline{D}$ +c.c.	not seen	DESIG=23;OUR EVAL;→ UNCHECKED ←
Γ_{33}	$D^*(2007)^0\overline{D}^0$ +c.c.	not seen	DESIG=33
Γ_{34}	$D^*(2010)^+D^-$ +c.c.	not seen	DESIG=34
Γ_{35}	$D^*\overline{D}^*$	not seen	DESIG=24;OUR EST;→ UNCHECKED ←

Γ_{36}	$D^*(2007)^0\overline{D}^*(2007)^0$	not seen	DESIG=35
Γ_{37}	$D^*(2010)^+D^*(2010)^-$	not seen	DESIG=36
Γ_{38}	$D\overline{D}\pi$ +c.c.	not seen	DESIG=37;OUR EST;→ UNCHECKED ←
Γ_{39}	$D^0D^-\pi^+$ +c.c. (excl. $D^*(2007)^0\overline{D}^{*0}$ +c.c., $D^*(2010)^+D^-$ +c.c.)	not seen	DESIG=38
Γ_{40}	$D\overline{D}^*\pi$ +c.c. (excl. $D^*\overline{D}^*$)	not seen	DESIG=25
Γ_{41}	$D^0D^*(2010)^-\pi^+$ +c.c.	seen	DESIG=30
Γ_{42}	$D_1(2420)\overline{D}$ + c.c.	not seen	DESIG=50
Γ_{43}	$D^*\overline{D}^*\pi$	seen	DESIG=26
Γ_{44}	$D^{*0}D^{*-}\pi^+$	seen	DESIG=74;OUR EVAL;→ UNCHECKED ←
Γ_{45}	$D_s^+D_s^-$	not seen	DESIG=27
Γ_{46}	$D_s^{*+}D_s^-$ +c.c.	not seen	DESIG=28
Γ_{47}	$D_s^{*+}D_s^{*-}$	not seen	DESIG=29
Γ_{48}	$p\overline{p}$	not seen	DESIG=3;OUR EVAL;→ UNCHECKED ←
Γ_{49}	$p\overline{p}\pi^0$	not seen	DESIG=46;OUR EVAL;→ UNCHECKED ←
Γ_{50}	$p\overline{p}\eta$	not seen	DESIG=61
Γ_{51}	$\omega\pi^+\pi^-$	seen	DESIG=71;OUR EVAL;→ UNCHECKED ←
Γ_{52}	$p\overline{p}\omega$	not seen	DESIG=62
Γ_{53}	$\Xi^0\overline{\Xi}^0$		DESIG=80
Γ_{54}	$\Xi^-\overline{\Xi}^+$	not seen	DESIG=51;OUR EVAL;→ UNCHECKED ←
Γ_{55}	$\pi^+\pi^+\pi^-\pi^-$	not seen	DESIG=53;OUR EVAL;→ UNCHECKED ←
Γ_{56}	$\pi^+\pi^+\pi^-\pi^-\pi^0$	not seen	DESIG=54;OUR EVAL;→ UNCHECKED ←
Γ_{57}	$\omega\pi^0$	not seen	DESIG=68
Γ_{58}	$\omega\eta$	not seen	DESIG=69
Γ_{59}	$K_S^0K^\pm\pi^\mp$	not seen	DESIG=20;OUR EVAL;→ UNCHECKED ←
Γ_{60}	$K_S^0K^\pm\pi^\mp\pi^0$	not seen	DESIG=48;OUR EVAL;→ UNCHECKED ←
Γ_{61}	$K_S^0K^\pm\pi^\mp\eta$	not seen	DESIG=49;OUR EVAL;→ UNCHECKED ←
Γ_{62}	$K^+K^-\pi^0$	not seen	DESIG=21;OUR EVAL;→ UNCHECKED ←
Γ_{63}	$K^+K^-\pi^+\pi^-$	not seen	DESIG=55;OUR EVAL;→ UNCHECKED ←
Γ_{64}	$K^+K^-\pi^+\pi^-\pi^0$	not seen	DESIG=56;OUR EVAL;→ UNCHECKED ←
Γ_{65}	$K^+K^+K^-K^-$	not seen	DESIG=57;OUR EVAL;→ UNCHECKED ←
Γ_{66}	$K^+K^+K^-K^-\pi^0$	not seen	DESIG=58;OUR EVAL;→ UNCHECKED ←
Γ_{67}	$p\overline{p}\pi^+\pi^-$	not seen	DESIG=59;OUR EVAL;→ UNCHECKED ←
Γ_{68}	$p\overline{p}\pi^+\pi^-\pi^0$	not seen	DESIG=60;OUR EVAL;→ UNCHECKED ←
Γ_{69}	$p\overline{p}p\overline{p}$	not seen	DESIG=67
Γ_{70}	$\Lambda\overline{\Lambda}$	not seen	DESIG=52;OUR EVAL;→ UNCHECKED ←
Γ_{71}	$\Sigma^+\overline{\Sigma}^-$	not seen	DESIG=77;OUR EVAL;→ UNCHECKED ←
Γ_{72}	$pK^-\overline{\Lambda}$ + c.c.	not seen	DESIG=75;OUR EVAL;→ UNCHECKED ←
Γ_{73}	$\Lambda\overline{\Xi}^+K^-$ + c.c.	not seen	DESIG=78;OUR EVAL;→ UNCHECKED ←
Γ_{74}	$\Sigma^0\overline{\Xi}^+K^-$ + c.c.	not seen	DESIG=79;OUR EVAL;→ UNCHECKED ←

Radiative decays

NODE=M074;CLUMP=C

Γ_{75}	$\eta_c(1S)\gamma$	possibly seen	DESIG=47
Γ_{76}	$\eta_c(1S)\pi^0\gamma$	not seen	DESIG=66
Γ_{77}	$\chi_{c1}\gamma$	not seen	DESIG=14;OUR EVAL;→ UNCHECKED ←
Γ_{78}	$\chi_{c2}\gamma$	not seen	DESIG=15;OUR EVAL;→ UNCHECKED ←
Γ_{79}	$\chi_{c1}(3872)\gamma$	seen	DESIG=42

$\psi(4230)$ PARTIAL WIDTHS

NODE=M074235

$\Gamma(\mu^+\mu^-)$ Γ_2

NODE=M074W01

VALUE (keV)	DOCUMENT ID	TECN	COMMENT
1.53±1.26±0.54	[1,2] ABLIKIM	20AG BES3	$e^+e^-\to\mu^+\mu^-$

NODE=M074W01

[1] From a fit to the $e^+e^-\to\mu^+\mu^-$ cross section between 3.8 and 4.6 GeV to the coherent sum of four resonant amplitudes assuming $\Gamma(\mu^+\mu^-)=\Gamma(e^+e^-)$.

NODE=M074W01;LINKAGE=A

[2] From solution 1 of 8 with equal fit quality. Other solutions range from $1.09\pm0.84\pm0.39$ to $1.53\pm1.26\pm0.54$ keV.

NODE=M074W01;LINKAGE=B

$\psi(4230)$ Γ(i) × Γ(e^+e^-)/Γ(total)

NODE=M074230

Γ($J/\psi\pi^+\pi^-$) × Γ(e^+e^-)/Γ_{total} — $\Gamma_5\Gamma_1/\Gamma$

NODE=M074G1
NODE=M074G1

VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT
9.2±1.0 OUR AVERAGE					
9.2±0.8±0.7		[1] LEES	12AC	BABR	10.58 $e^+e^- \to \gamma\pi^+\pi^- J/\psi$
$8.9^{+3.9}_{-3.1}\pm1.8$	8.1	HE	06B	CLEO	9.4–10.6 $e^+e^- \to \gamma\pi^+\pi^- J/\psi$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
6.4±0.8±0.6		[2] LIU	13B	BELL	$e^+e^- \to \gamma\pi^+\pi^- J/\psi$
20.5±1.4±2.0		[3] LIU	13B	BELL	$e^+e^- \to \gamma\pi^+\pi^- J/\psi$
$6.0\pm1.2^{+4.7}_{-0.5}$		[2,4] YUAN	07	BELL	10.58 $e^+e^- \to \gamma\pi^+\pi^- J/\psi$
$20.6\pm2.3^{+9.1}_{-1.7}$		[3,4] YUAN	07	BELL	10.58 $e^+e^- \to \gamma\pi^+\pi^- J/\psi$
$5.5\pm1.0^{+0.8}_{-0.7}$	125	[5] AUBERT,B	05I	BABR	10.58 $e^+e^- \to \gamma\pi^+\pi^- J/\psi$

OCCUR=2
OCCUR=2

[1] From a single-resonance fit. Supersedes AUBERT,B 05I. NODE=M074G1;LINKAGE=LE
[2] Solution I of two equivalent solutions in a fit using two interfering resonances. NODE=M074G1;LINKAGE=YU
[3] Solution II of two equivalent solutions in a fit using two interfering resonances. NODE=M074G1;LINKAGE=YA
[4] Superseded by LIU 13B. NODE=M074G1;LINKAGE=YN
[5] From a single-resonance fit. Two interfering resonances are not excluded. Superseded by LEES 12AC. NODE=M074G1;LINKAGE=AU

Γ($J/\psi K^+K^-$) × Γ(e^+e^-)/Γ_{total} — $\Gamma_9\Gamma_1/\Gamma$

NODE=M074G3
NODE=M074G3

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.42±0.04±0.15		[1] ABLIKIM	22AU	BES3	$e^+e^- \to K^+K^- J/\psi$
0.29±0.02±0.10		[2] ABLIKIM	22AU	BES3	$e^+e^- \to K^+K^- J/\psi$
<1.7	90	[3] SHEN	14	BELL	9.4–10.9 $e^+e^- \to \gamma K^+K^- J/\psi$
<1.2	90	[4] YUAN	08	BELL	$e^+e^- \to \gamma K^+K^- J/\psi$

OCCUR=2

[1] Solution I from a two-resonance fit to the dressed cross section in the range $\sqrt{s}$ = 4.127–4.600 GeV. The second resonance has a mass of 4484.7 ± 13.3 ± 24.1 MeV, a total width of 111.1 ± 30.1 ± 15.2 MeV, and $\Gamma_{ee}\cdot B$ = 1.35 ± 0.14 ± 0.07 eV. The phase difference is 1.72 ± 0.09 ± 0.52 rad. NODE=M074G3;LINKAGE=B
[2] Solution II from a two-resonance fit to the dressed cross section in the range $\sqrt{s}$ = 4.127–4.600 GeV. The second resonance has a mass of 4484.7 ± 13.3 ± 24.1 MeV, a total width of 111.1 ± 30.1 ± 15.2 MeV, and $\Gamma_{ee}\cdot B$ = 0.41 ± 0.08 ± 0.13 eV. The phase difference is 5.49 ± 0.35 ± 0.58 rad. NODE=M074G3;LINKAGE=C
[3] From a fit of the broad $K^+K^- J/\psi$ enhancement including a coherent $\psi(4260)$ amplitude with mass and width from LIU 13B. Supersedes YUAN 08. The shape of the cross section observed by ABLIKIM 18N between 4.2 and 4.3 GeV is incompatible with that of $e^+e^- \to \pi^+\pi^- J/\psi$ in ABLIKIM 13T and ABLIKIM 17B. They also observe a broad enhancement around 4.5 GeV. NODE=M074G3;LINKAGE=A
[4] From a fit of the broad $K^+K^- J/\psi$ enhancement including a coherent $\psi(4260)$ amplitude with mass and width from YUAN 07. NODE=M074G3;LINKAGE=YU

Γ($J/\psi K^0_S K^0_S$) × Γ(e^+e^-)/Γ_{total} — $\Gamma_{10}\Gamma_1/\Gamma$

NODE=M074G02
NODE=M074G02

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<0.85	90	[1] SHEN	14	BELL	9.4–10.9 $e^+e^- \to \gamma K^0_S K^0_S J/\psi$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.13±0.02±0.05		[2,3] ABLIKIM	23U	BES3	$e^+e^- \to K_S K_S J/\psi$
0.14±0.03±0.06		[2,4] ABLIKIM	23U	BES3	$e^+e^- \to K_S K_S J/\psi$
0.18±0.05±0.07		[2,5] ABLIKIM	23U	BES3	$e^+e^- \to K_S K_S J/\psi$
0.20±0.04±0.07		[2,6] ABLIKIM	23U	BES3	$e^+e^- \to K_S K_S J/\psi$

OCCUR=2
OCCUR=3
OCCUR=4

[1] From a fit of the $K^0_S K^0_S J/\psi$ mass range from 4.4 to 5.5 GeV including a coherent $\psi(4260)$ amplitude with mass and width from LIU 13B. NODE=M074G02;LINKAGE=A
[2] A three-resonance fit to the dressed cross section in the range $\sqrt{s}$ = 4.128–4.950 GeV. NODE=M074G02;LINKAGE=B
[3] Solution I. NODE=M074G02;LINKAGE=F
[4] Solution II. NODE=M074G02;LINKAGE=C
[5] Solution III. NODE=M074G02;LINKAGE=D
[6] Solution IV. NODE=M074G02;LINKAGE=E

$\Gamma(J/\psi\eta) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ $\Gamma_{11}\Gamma_1/\Gamma$

NODE=M074G01
NODE=M074G01

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT	
• • • We do not use the following data for averages, fits, limits, etc. • • •						
$4.0\pm0.5\pm0.1$		[1] ABLIKIM	24T	BES3	$e^+e^- \to \eta J/\psi$	
$5.5\pm0.7\pm0.3$		[2] ABLIKIM	24T	BES3	$e^+e^- \to \eta J/\psi$	OCCUR=2
$8.7\pm1.0\pm0.4$		[3] ABLIKIM	24T	BES3	$e^+e^- \to \eta J/\psi$	OCCUR=3
$11.9\pm1.1\pm0.6$		[4] ABLIKIM	24T	BES3	$e^+e^- \to \eta J/\psi$	OCCUR=4
8.0 ± 1.7		[5] ABLIKIM	20O	BES3	$e^+e^- \to \eta J/\psi$	
4.8 ± 1.0		[6] ABLIKIM	20O	BES3	$e^+e^- \to \eta J/\psi$	OCCUR=2
7.0 ± 1.5		[7] ABLIKIM	20O	BES3	$e^+e^- \to \eta J/\psi$	OCCUR=3
<14.2	90	WANG	13B	BELL	$e^+e^- \to J/\psi\eta\gamma$	

[1] Solution 1 of 4. Supersedes ABLIKIM 20O. NODE=M074G01;LINKAGE=D
[2] Solution 2 of 4. Supersedes ABLIKIM 20O. NODE=M074G01;LINKAGE=E
[3] Solution 3 of 4. Supersedes ABLIKIM 20O. NODE=M074G01;LINKAGE=F
[4] Solution 4 of 4. Supersedes ABLIKIM 20O. NODE=M074G01;LINKAGE=G
[5] Solution 1 of three equivalent fit solutions using three resonant structures. NODE=M074G01;LINKAGE=A
[6] Solution 2 of three equivalent fit solutions using three resonant structures. NODE=M074G01;LINKAGE=B
[7] Solution 3 of three equivalent fit solutions using three resonant structures. NODE=M074G01;LINKAGE=C

$\Gamma(J/\psi\eta') \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ $\Gamma_{13}\Gamma_1/\Gamma$

NODE=M074R34
NODE=M074R34

VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT	
• • • We do not use the following data for averages, fits, limits, etc. • • •						
0.06 ± 0.03	46	[1,2] ABLIKIM	20A	BES3	$e^+e^- \to \eta' J/\psi$	
1.38 ± 0.11	46	[1,3] ABLIKIM	20A	BES3	$e^+e^- \to \eta' J/\psi$	OCCUR=2

[1] Based on a fit to $\sigma(e^+e^- \to \eta' J/\psi)$ from $\sqrt{s} = 4.18$ to 4.60 GeV assuming interfering $\psi(4160)$ and $\psi(4260)$ contributions. At $\sqrt{s} = 4.23$ GeV, $\sigma(e^+e^- \to \eta' J/\psi) = 3.6 \pm 0.6 \pm 0.3$ pb. NODE=M074R34;LINKAGE=A
[2] Solution I of the fit, corresponding to a phase of -0.03 ± 0.44 rad. NODE=M074R34;LINKAGE=B
[3] Solution II of the fit, corresponding to a phase of 2.54 ± 0.04 rad. NODE=M074R34;LINKAGE=C

$\Gamma(\psi(2S)\pi^+\pi^-) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ $\Gamma_{17}\Gamma_1/\Gamma$

NODE=M074G7
NODE=M074G7

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT	
• • • We do not use the following data for averages, fits, limits, etc. • • •						
1.59 ± 0.75		[1] ABLIKIM	21AJ	BES3	$e^+e^- \to \pi^+\pi^-\psi(2S)$	
1.63 ± 0.78		[2] ABLIKIM	21AJ	BES3	$e^+e^- \to \pi^+\pi^-\psi(2S)$	OCCUR=2
0.02 ± 0.01		[3] ABLIKIM	21AJ	BES3	$e^+e^- \to \pi^+\pi^-\psi(2S)$	OCCUR=3
$1.6\ \pm1.3$		[4] ABLIKIM	19K	BES3	$e^+e^- \to \pi^+\pi^-\psi(2S)$	
$1.8\ \pm1.4$		[5] ABLIKIM	19K	BES3	$e^+e^- \to \pi^+\pi^-\psi(2S)$	OCCUR=2
<4.3	90	[6] LIU	08H	RVUE	10.58 $e^+e^- \to \psi(2S)\pi^+\pi^-\gamma$	
$7.4\ {}^{+2.1}_{-1.7}$		[7] LIU	08H	RVUE	10.58 $e^+e^- \to \psi(2S)\pi^+\pi^-\gamma$	OCCUR=2

[1] Solution I of four equivalent solutions in a fit using three interfering resonances. NODE=M074G7;LINKAGE=A
[2] Solution II of four equivalent solutions in a fit using three interfering resonances NODE=M074G7;LINKAGE=B
[3] Solutions III and IV of four equivalent solutions in a fit using three interfering resonances. NODE=M074G7;LINKAGE=C
[4] Solution I of two equivalent solutions in a fit using two interfering resonances. NODE=M074G7;LINKAGE=AA
[5] Solution II of two equivalent solutions in a fit using two interfering resonances. NODE=M074G7;LINKAGE=BB
[6] For constructive interference with the $\psi(4360)$ in a combined fit of AUBERT 07S and WANG 07D data with three resonances. NODE=M074G7;LINKAGE=LI
[7] For destructive interference with the $\psi(4360)$ in a combined fit of AUBERT 07S and WANG 07D data with three resonances. NODE=M074G7;LINKAGE=LU

$\Gamma(\chi_{c0}\omega) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ $\Gamma_{19}\Gamma_1/\Gamma$

NODE=M074G05
NODE=M074G05

VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT
$2.5\pm0.2\pm0.3$		[1] ABLIKIM	19AI	BES3	$e^+e^- \to \omega\chi_{c0}$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$2.7\pm0.5\pm0.4$	180	[2] ABLIKIM	15C	BES3	$e^+e^- \to \omega\chi_{c0}$

[1] From a fit of the measured cross section from $\sqrt{s} = 4.178$–4.278 GeV. Supersedes ABLIKIM 15C. NODE=M074G05;LINKAGE=B
[2] From a 3-parameter fit of measured cross sections from $\sqrt{s} = 4.21$–4.42 GeV to a phase-space modified Breit-Wigner function, using the decays $\chi_{c0} \to \pi^+\pi^-$, $\chi_{c0} \to K^+K^-$, and $\omega \to \pi^+\pi^-\pi^0$. NODE=M074G05;LINKAGE=A

$\Gamma(h_c(1P)\pi^+\pi^-) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ $\Gamma_{22}\Gamma_1/\Gamma$

NODE=M074R47
NODE=M074R47

VALUE (eV)	DOCUMENT ID		TECN	COMMENT
$4.6^{+2.9}_{-1.4}\pm0.8$	ABLIKIM	17G	BES3	$e^+e^- \to \pi^+\pi^- h_c$

$\Gamma(\phi\pi^+\pi^-) \times \Gamma(e^+e^-)/\Gamma_{total}$ $\Gamma_{23}\Gamma_1/\Gamma$

NODE=M074G2
NODE=M074G2

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<0.4	90	AUBERT,BE	06D	BABR	10.6 $e^+e^- \to K^+K^-\pi^+\pi^-\gamma$

$\Gamma(\phi f_0(980) \to \phi\pi^+\pi^-) \times \Gamma(e^+e^-)/\Gamma_{total}$ $\Gamma_{24}\Gamma_1/\Gamma$

NODE=M074G6
NODE=M074G6

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<0.28	90	[1] AUBERT	07AK	BABR	10.6 $e^+e^- \to \pi^+\pi^- K^+K^-\gamma$

[1] AUBERT 07AK reports $[\Gamma(\psi(4230) \to \phi f_0(980) \to \phi\pi^+\pi^-) \times \Gamma(\psi(4230) \to e^+e^-)/\Gamma_{total}] \times [B(\phi(1020) \to K^+K^-)] <$ 0.14 eV which we divide by our best value $B(\phi(1020) \to K^+K^-) = 49.9 \times 10^{-2}$. NODE=M074G6;LINKAGE=AU

$\Gamma(\phi K^+K^-) \times \Gamma(e^+e^-)/\Gamma_{total}$ $\Gamma_{25}\Gamma_1/\Gamma$

NODE=M074R63
NODE=M074R63

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<1.75	90	ABLIKIM	23AE	BES3	$e^+e^- \to \phi K^+K^-$

$\Gamma(\phi K^0_S K^0_S) \times \Gamma(e^+e^-)/\Gamma_{total}$ $\Gamma_{26}\Gamma_1/\Gamma$

NODE=M074R64
NODE=M074R64

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<0.47	90	ABLIKIM	23AE	BES3	$e^+e^- \to \phi K^0_S K^0_S$

$\Gamma(\phi\eta') \times \Gamma(e^+e^-)/\Gamma_{total}$ $\Gamma_{28}\Gamma_1/\Gamma$

NODE=M074R61
NODE=M074R61

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<0.53	90	ABLIKIM	23R	BES3	$e^+e^- \to \phi\eta'$

$\Gamma(D^{*0}D^{*-}\pi^+) \times \Gamma(e^+e^-)/\Gamma_{total}$ $\Gamma_{44}\Gamma_1/\Gamma$

NODE=M074R65
NODE=M074R65

VALUE (eV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
5 to 22	[1] ABLIKIM	23X	BES3	$e^+e^- \to D^{*0}D^{*-}\pi^+$

[1] From a cross-section measurement of $e^+e^- \to D^{*0}D^{*-}\pi^+$ between 4.189 and 4.951 GeV, assuming a coherent sum of 3 Breit-Wigner resonances plus a continuum amplitude. Depending on solutions I – VIII with the same fit qualities. NODE=M074R65;LINKAGE=A

$\Gamma(\omega\pi^+\pi^-) \times \Gamma(e^+e^-)/\Gamma_{total}$ $\Gamma_{51}\Gamma_1/\Gamma$

NODE=M074R62
NODE=M074R62

VALUE (eV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.487 ±0.008 ±0.030	[1,2] ABLIKIM	23AQ	BES3	fit to cross sections
0.0005±0.0003±0.0001	[2,3] ABLIKIM	23AQ	BES3	fit to cross sections OCCUR=2

[1] Solution I of the fit. NODE=M074R62;LINKAGE=A

[2] From a fit to $e^+e^- \to \omega\pi^+\pi^-$ cross sections between 4 and 4.6 GeV. Recalculated from 12 π $\Gamma(e^+e^-)$ $B(\psi(4230) \to \omega\pi^+\pi^-)$. First uncertainty is from statistical and uncommon systematic uncertainties, and the second is a 6.2% common systematic uncertainty quoted in the paper. NODE=M074R62;LINKAGE=C

[3] Solution II of the fit. NODE=M074R62;LINKAGE=B

$\Gamma(\pi^+\pi^+\pi^-\pi^-) \times \Gamma(e^+e^-)/\Gamma_{total}$ $\Gamma_{55}\Gamma_1/\Gamma$

NODE=M074R37
NODE=M074R37

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<32	90	ABLIKIM	21AW	BES3	$e^+e^- \to 2\pi^+2\pi^-$

$\Gamma(\pi^+\pi^+\pi^-\pi^-\pi^0) \times \Gamma(e^+e^-)/\Gamma_{total}$ $\Gamma_{56}\Gamma_1/\Gamma$

NODE=M074R38
NODE=M074R38

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<16	90	ABLIKIM	21AW	BES3	$e^+e^- \to 2\pi^+2\pi^-\pi^0$

$\Gamma(K^0_S K^\pm\pi^\mp) \times \Gamma(e^+e^-)/\Gamma_{total}$ $\Gamma_{59}\Gamma_1/\Gamma$

NODE=M074G4
NODE=M074G4

VALUE (eV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2.04 ±0.19 ±0.09	[1] ABLIKIM	19AE	BES3	$e^+e^- \to K^0_S K^\pm\pi^\mp$
0.0027±0.0023±0.0001	[2] ABLIKIM	19AE	BES3	$e^+e^- \to K^0_S K^\pm\pi^\mp$ OCCUR=2
< 0.5 at 90% CL	AUBERT	08S	BABR	10.6 $e^+e^- \to K^0_S K^\pm\pi^\mp\gamma$

[1] Solution I of the fit including the $\psi(4160)$ with mass 4191 ± 5 MeV and width 70 ± 10 MeV from PDG 16 and the $\psi(4230)$ with mass 4219.6 ± 3.3 ± 5.1 MeV and width 56.0 ± 3.6 ± 6.9 MeV from GAO 17. NODE=M074G4;LINKAGE=A

[2] Solution II of the fit including the $\psi(4160)$ with mass 4191 ± 5 MeV and width 70 ± 10 MeV from PDG 16 and the $\psi(4230)$ with mass 4219.6 ± 3.3 ± 5.1 MeV and width 56.0 ± 3.6 ± 6.9 MeV from GAO 17. NODE=M074G4;LINKAGE=B

$\Gamma(K^0_S K^\pm\pi^\mp\pi^0) \times \Gamma(e^+e^-)/\Gamma_{total}$ **$\Gamma_{60}\Gamma_1/\Gamma$**

NODE=M074R31
NODE=M074R31

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<0.05	90	ABLIKIM	19	BES3	$e^+e^- \to K^0_S K^\pm\pi^\mp\pi^0$

$\Gamma(K^0_S K^\pm\pi^\mp\eta) \times \Gamma(e^+e^-)/\Gamma_{total}$ **$\Gamma_{61}\Gamma_1/\Gamma$**

NODE=M074R32
NODE=M074R32

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<0.19	90	ABLIKIM	19	BES3	$e^+e^- \to K^0_S K^\pm\pi^\mp\eta$

$\Gamma(K^+K^-\pi^0) \times \Gamma(e^+e^-)/\Gamma_{total}$ **$\Gamma_{62}\Gamma_1/\Gamma$**

NODE=M074G5
NODE=M074G5

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.6	90	AUBERT	08S	BABR	10.6 $e^+e^- \to K^+K^-\pi^0\gamma$

$\Gamma(K^+K^-\pi^+\pi^-) \times \Gamma(e^+e^-)/\Gamma_{total}$ **$\Gamma_{63}\Gamma_1/\Gamma$**

NODE=M074R39
NODE=M074R39

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<20	90	ABLIKIM	21AW	BES3	$e^+e^- \to K^+K^-\pi^+\pi^-$

$\Gamma(K^+K^-\pi^+\pi^-\pi^0) \times \Gamma(e^+e^-)/\Gamma_{total}$ **$\Gamma_{64}\Gamma_1/\Gamma$**

NODE=M074R40
NODE=M074R40

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<43	90	ABLIKIM	21AW	BES3	$e^+e^- \to K^+K^-\pi^+\pi^-\pi^0$

$\Gamma(K^+K^+K^-K^-) \times \Gamma(e^+e^-)/\Gamma_{total}$ **$\Gamma_{65}\Gamma_1/\Gamma$**

NODE=M074R41
NODE=M074R41

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<3.8	90	ABLIKIM	21AW	BES3	$e^+e^- \to 2K^+2K^-$

$\Gamma(K^+K^+K^-K^-\pi^0) \times \Gamma(e^+e^-)/\Gamma_{total}$ **$\Gamma_{66}\Gamma_1/\Gamma$**

NODE=M074R42
NODE=M074R42

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<2.1	90	ABLIKIM	21AW	BES3	$e^+e^- \to 2K^+2K^-\pi^0$

$\Gamma(p\bar{p}\pi^+\pi^-) \times \Gamma(e^+e^-)/\Gamma_{total}$ **$\Gamma_{67}\Gamma_1/\Gamma$**

NODE=M074R43
NODE=M074R43

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<7.2	90	ABLIKIM	21AW	BES3	$e^+e^- \to p\bar{p}\pi^+\pi^-$

$\Gamma(p\bar{p}\pi^+\pi^-\pi^0) \times \Gamma(e^+e^-)/\Gamma_{total}$ **$\Gamma_{68}\Gamma_1/\Gamma$**

NODE=M074R44
NODE=M074R44

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<15	90	ABLIKIM	21AW	BES3	$e^+e^- \to p\bar{p}\pi^+\pi^-\pi^0$

$\Gamma(\Lambda\overline{\Lambda}) \times \Gamma(e^+e^-)/\Gamma_{total}$ **$\Gamma_{70}\Gamma_1/\Gamma$**

NODE=M074R36
NODE=M074R36

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<0.8 × 10^{-3}	90	[1] ABLIKIM	21AS	BES3	$e^+e^- \to \psi(4260)$

[1] From a measurement of the $e^+e^- \to \Lambda\overline{\Lambda}$ cross section between 3.5 and 4.6 GeV. NODE=M074R36;LINKAGE=A

$\Gamma(\Sigma^+\overline{\Sigma}^-) \times \Gamma(e^+e^-)/\Gamma_{total}$ **$\Gamma_{71}\Gamma_1/\Gamma$**

NODE=M074R69
NODE=M074R69

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<72.4 × 10^{-3}	90	[1] ABLIKIM	24AH	BES3	$e^+e^- \to \Sigma^+\overline{\Sigma}^-$

[1] Interference effect between resonance and continuum amplitudes is considered. Two solutions from the fit. NODE=M074R69;LINKAGE=A

$\Gamma(\Xi^0\overline{\Xi}^0) \times \Gamma(e^+e^-)/\Gamma_{total}$ **$\Gamma_{53}\Gamma_1/\Gamma$**

NODE=M074R72
NODE=M074R72

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<40.4 × 10^{-3}	90	[1] ABLIKIM	24CD	BES3	$e^+e^- \to \psi(4230)$

[1] From a fit to $e^+e^- \to \Xi^0\overline{\Xi}^0$ cross sections. NODE=M074R72;LINKAGE=A

$\Gamma(\Xi^-\overline{\Xi}^+) \times \Gamma(e^+e^-)/\Gamma_{total}$ **$\Gamma_{54}\Gamma_1/\Gamma$**

NODE=M074R35
NODE=M074R35

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<25.1 × 10^{-3}	90	[1] ABLIKIM	23BK	BES3	$e^+e^- \to \psi(4230)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$< 2.7 \times 10^{-4}$	90	[2] ABLIKIM	20C	BES3	$e^+e^- \to \Xi^-\overline{\Xi}^+$

[1] From a fit to $e^+e^- \to \Xi^-\overline{\Xi}^+$ cross sections. NODE=M074R35;LINKAGE=A
[2] Superseded by ABLIKIM 23BK. NODE=M074R35;LINKAGE=B

$\Gamma(pK^-\overline{\Lambda}+\text{c.c.}) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ $\Gamma_{72}\Gamma_1/\Gamma$

NODE=M074R67
NODE=M074R67

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
$<1.3\times10^{-3}$	90	[1] ABLIKIM	23BL	BES3	$e^+e^- \to \psi(4230)$

[1] From a fit to $e^+e^- \to pK^-\overline{\Lambda}+$ c.c. cross sections.

NODE=M074R67;LINKAGE=A

$\Gamma(\Lambda\overline{\Xi}^+K^-+\text{c.c.}) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ $\Gamma_{73}\Gamma_1/\Gamma$

NODE=M074R70
NODE=M074R70

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
$<24.9\times10^{-3}$	90	[1] ABLIKIM	24AL	BES3	$e^+e^- \to \Lambda\overline{\Xi}^+K^-$ + c.c.

[1] A fit to the Born cross section of $e^+e^- \to \Lambda\overline{\Xi}^+K^-$ + c.c. including interference with the continuum. Two solutions from the fit.

NODE=M074R70;LINKAGE=A

$\Gamma(\Sigma^0\overline{\Xi}^+K^-+\text{c.c.}) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ $\Gamma_{74}\Gamma_1/\Gamma$

NODE=M074R71
NODE=M074R71

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
$<1.6\times10^{-3}$	90	[1] ABLIKIM	24AL	BES3	$e^+e^- \to \Sigma^0\overline{\Xi}^+K^-$ + c.c.

[1] A fit to the Born cross section of $e^+e^- \to \Sigma^0\overline{\Xi}^+K^-$ + c.c. including interference with the continuum. Two solutions from the fit.

NODE=M074R71;LINKAGE=A

$\Gamma(\chi_{c1}\gamma) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ $\Gamma_{77}\Gamma_1/\Gamma$

NODE=M074G03
NODE=M074G03

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<1.4	90	[1] HAN	15	BELL	10.58 $e^+e^- \to \chi_{c1}\gamma$

[1] Using B($\eta \to \gamma\gamma$) = (39.41 ± 0.21)%.

NODE=M074G03;LINKAGE=A

$\Gamma(\chi_{c2}\gamma) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ $\Gamma_{78}\Gamma_1/\Gamma$

NODE=M074G04
NODE=M074G04

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<4.0	90	[1] HAN	15	BELL	10.58 $e^+e^- \to \chi_{c2}\gamma$

[1] Using B($\eta \to \gamma\gamma$) = (39.41 ± 0.21)%.

NODE=M074G04;LINKAGE=A

$\psi(4230)$ $\Gamma(i) \times \Gamma(e^+e^-)/\Gamma^2(\text{total})$

NODE=M074245

$\Gamma(D^0D^*(2010)^-\pi^+ + \text{c.c.})/\Gamma_{\text{total}} \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ $\Gamma_{41}/\Gamma \times \Gamma_1/\Gamma$

NODE=M074R11
NODE=M074R11

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<0.42\times10^{-6}$	90	[1] PAKHLOVA	09	BELL	$e^+e^- \to D^0D^{*-}\pi^+$

[1] Using 4263^{+8}_{-9} MeV for the mass of $\psi(4260)$.

NODE=M074R11;LINKAGE=PA

$\psi(4230)$ BRANCHING RATIOS

NODE=M074225

$\Gamma(\eta_c(1S)\pi^+\pi^-)/\Gamma_{\text{total}}$ Γ_3/Γ

NODE=M074R56
NODE=M074R56

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	[1] ABLIKIM	21B	BES3	$e^+e^- \to \pi^+\pi^-\eta_c$

[1] Not seen in $e^+e^- \to \pi^+\pi^-\eta_c$ at $\sqrt{s}$ = 4.226 GeV with a 90% C.L. upper limit on the cross section of 16.8 pb.

NODE=M074R56;LINKAGE=A

$\Gamma(\eta_c(1S)\pi^+\pi^-\pi^0)/\Gamma_{\text{total}}$ Γ_4/Γ

NODE=M074R55
NODE=M074R55

VALUE	DOCUMENT ID		TECN	COMMENT
seen	[1] ABLIKIM	21B	BES3	$e^+e^- \to \pi^+\pi^-\pi^0\eta_c$

[1] Seen as a peak in the $e^+e^- \to \pi^+\pi^-\pi^0\eta_c$ cross section with a peak value of $46.1^{+9.5}_{-9.4}$ ± 6.6 pb at $\sqrt{s}$ = 4.226 GeV.

NODE=M074R55;LINKAGE=A

$\Gamma(J/\psi\pi^+\pi^-)/\Gamma_{\text{total}}$ Γ_5/Γ

NODE=M074R51
NODE=M074R51

VALUE	DOCUMENT ID		TECN	COMMENT
seen	[1] ABLIKIM	22AM	BES3	$e^+e^- \to \pi^+\pi^- J/\psi$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
seen	[2] ABLIKIM	17B	BES3	$e^+e^- \to \pi^+\pi^- J/\psi$

[1] From a three-resonance fit to the Born cross section in the range $\sqrt{s}$ = 3.7730–4.7008 GeV.

NODE=M074R51;LINKAGE=A

[2] From a three-resonance fit. Superseded by ABLIKIM 22AM.

NODE=M074R51;LINKAGE=B

$\Gamma(J/\psi f_0(980),\ f_0(980) \to \pi^+\pi^-)/\Gamma(J/\psi\pi^+\pi^-)$ Γ_6/Γ_5

NODE=M074R02
NODE=M074R02

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.17±0.13	[1] LEES	12AC	BABR	10.58 $e^+e^- \to \gamma\pi^+\pi^- J/\psi$

[1] Systematic uncertainties not estimated.

NODE=M074R02;LINKAGE=LE

$\Gamma(T_{c\bar{c}1}(3900)^{\pm}\pi^{\mp},\ T^{\pm}_{c\bar{c}1}\to J/\psi\pi^{\pm})/\Gamma(J/\psi\pi^+\pi^-)$ Γ_7/Γ_5

NODE=M074R01
NODE=M074R01

VALUE	DOCUMENT ID		TECN	COMMENT
0.215±0.033±0.075	[1] ABLIKIM	13T	BES3	$e^+e^-\to\pi^+\pi^- J/\psi$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.29 ±0.08	[2] LIU	13B	BELL	$e^+e^-\to\gamma\pi^+\pi^- J/\psi$

[1] Assuming that the cross section of $e^+e^-\to\pi^+\pi^- J/\psi$ is fully due to the $\psi(4260)$.
NODE=M074R01;LINKAGE=AB
[2] Systematic error not evaluated.
NODE=M074R01;LINKAGE=A

$\Gamma(J/\psi\pi^0\pi^0)/\Gamma_{\text{total}}$ Γ_8/Γ

NODE=M074R50
NODE=M074R50

VALUE	DOCUMENT ID		TECN	COMMENT
seen	[1] ABLIKIM	20N	BES3	$e^+e^-\to\pi^0\pi^0 J/\psi$

[1] From a fit to the cross section $e^+e^-\to\pi^0\pi^0 J/\psi$ at center-of-mass energies between 3.808 and 4.600 GeV.
NODE=M074R50;LINKAGE=A

$\Gamma(J/\psi K^0_S K^0_S)/\Gamma_{\text{total}}$ Γ_{10}/Γ

NODE=M074R27
NODE=M074R27

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	SHEN	14	BELL	9.4–10.9 $e^+e^-\to\gamma K^0_S K^0_S J/\psi$

$\Gamma(J/\psi\eta)/\Gamma_{\text{total}}$ Γ_{11}/Γ

NODE=M074R52
NODE=M074R52

VALUE	DOCUMENT ID		TECN	COMMENT
seen	[1] ABLIKIM	24T	BES3	$e^+e^-\to\eta J/\psi$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
seen	ABLIKIM	20O	BES3	$e^+e^-\to\eta J/\psi$

[1] Supersedes ABLIKIM 20O.
NODE=M074R52;LINKAGE=A

$\Gamma(J/\psi\eta\pi^0)/\Gamma_{\text{total}}$ Γ_{15}/Γ

NODE=M074R28
NODE=M074R28

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	ABLIKIM	15Q	BES3	4.0–4.6 $e^+e^-\to J/\psi\eta\pi^0$

$\Gamma(\psi(2S)\pi^+\pi^-)/\Gamma_{\text{total}}$ Γ_{17}/Γ

NODE=M074R53
NODE=M074R53

VALUE	DOCUMENT ID		TECN	COMMENT
seen	[1] ABLIKIM	17V	BES3	$e^+e^-\to\pi^+\pi^-\psi(2S)$

[1] From a fit to the cross section for $e^+e^-\to\pi^+\pi^-\psi(2S)\to 2(\pi^+\pi^-)\ell^+\ell^-$ obtained from 16 center-of-mass energies between 4.008 and 4.600 GeV and comprising 5.1 fb^{-1}.
NODE=M074R53;LINKAGE=A

$\Gamma(\psi(2S)\pi^+\pi^-)/\Gamma(J/\psi\pi^+\pi^-)$ Γ_{17}/Γ_5

NODE=M074R30
NODE=M074R30

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
(0.11±0.03±0.03) to (0.55± 0.18 ± 0.19)	[1] ZHANG	17C	RVUE	$e^+e^-\to\pi^+\pi^- J/\psi$ or $\psi(2S)$

[1] From a combined fit of BELLE, BABAR and BES3 $e^+e^-\to\pi^+\pi^- J/\psi$ and $e^+e^-\to\pi^+\pi^-\psi(2S)$ data.
NODE=M074R30;LINKAGE=A

$\Gamma(\chi_{c0}\omega)/\Gamma_{\text{total}}$ Γ_{19}/Γ

NODE=M074R48
NODE=M074R48

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
seen	180	[1] ABLIKIM	15C	BES3	$e^+e^-\to\omega\chi_{c0}$

[1] From a 3-parameter fit of measured cross sections from $\sqrt{s}$ = 4.21–4.42 GeV to a phase-space modified Breit-Wigner function, using the decays $\chi_{c0}\to\pi^+\pi^-$, $\chi_{c0}\to K^+K^-$, and $\omega\to\pi^+\pi^-\pi^0$.
NODE=M074R48;LINKAGE=A

$\Gamma(h_c(1P)\pi^+\pi^-)/\Gamma_{\text{total}}$ Γ_{22}/Γ

NODE=M074R49
NODE=M074R49

VALUE	DOCUMENT ID		TECN	COMMENT
seen	ABLIKIM	17G	BES3	$e^+e^-\to\pi^+\pi^- h_c$

$\Gamma(h_c(1P)\pi^+\pi^-)/\Gamma(J/\psi\pi^+\pi^-)$ Γ_{22}/Γ_5

NODE=M074R25
NODE=M074R25

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.0	90	[1] PEDLAR	11	CLEO	$e^+e^-\to h_c(1P)\pi^+\pi^-$

[1] At $\sqrt{s}=4260$ MeV, PEDLAR 11 measures $\sigma(e^+e^-\to h_c(1P)\pi^+\pi^-)=32\pm17\pm6\pm6$ pb, where the errors are statistical, systematic, and due to uncertainty in B($\psi(2S)\to\pi^0 h_c(1P)$), respectively.
NODE=M074R25;LINKAGE=PE

$\Gamma(\phi\eta)/\Gamma_{\text{total}}$ Γ_{27}/Γ

NODE=M074R68
NODE=M074R68

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	ABLIKIM	23BT	BES3	$e^+e^-\to\phi\eta$

$\Gamma(D\overline{D})/\Gamma(J/\psi\pi^+\pi^-)$ Γ_{29}/Γ_5

NODE=M074R2
NODE=M074R2

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.0	90	[1] AUBERT	07BE	BABR	$e^+e^- \to D\overline{D}\gamma$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<4.0	90	CRONIN-HEN..	09	CLEO	e^+e^-

[1] Using 4259 ± 10 MeV for the mass and 88 ± 24 MeV for the width of $\psi(4260)$.

NODE=M074R2;LINKAGE=AU

$\Gamma(D^0\overline{D}^0)/\Gamma_{\text{total}}$ Γ_{30}/Γ

NODE=M074R12
NODE=M074R12

VALUE	DOCUMENT ID		TECN	COMMENT
possibly seen	[1] ABLIKIM	24BH	BES3	$e^+e^- \to D^0\overline{D}^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
not seen	AUBERT	09M	BABR	$e^+e^- \to D^0\overline{D}^0\gamma$
not seen	CRONIN-HEN..	09	CLEO	$e^+e^- \to D^0\overline{D}^0$
not seen	PAKHLOVA	08	BELL	$e^+e^- \to D^0\overline{D}^0\gamma$

[1] A precision measurement of the $e^+e^- \to D^0\overline{D}^0$ cross section shows complex structure in this mass region.

NODE=M074R12;LINKAGE=A

$\Gamma(D^+D^-)/\Gamma_{\text{total}}$ Γ_{31}/Γ

NODE=M074R13
NODE=M074R13

VALUE	DOCUMENT ID		TECN	COMMENT
possibly seen	[1] ABLIKIM	24BH	BES3	$e^+e^- \to D^+D^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
not seen	AUBERT	09M	BABR	$e^+e^- \to D^+D^-\gamma$
not seen	CRONIN-HEN..	09	CLEO	$e^+e^- \to D^+D^-$
not seen	PAKHLOVA	08	BELL	$e^+e^- \to D^+D^-\gamma$

[1] A precision measurement of the $e^+e^- \to D^+D^-$ cross section shows complex structure in this mass region.

NODE=M074R13;LINKAGE=A

$\Gamma(D^*\overline{D}+\text{c.c.})/\Gamma(J/\psi\pi^+\pi^-)$ Γ_{32}/Γ_5

NODE=M074R03
NODE=M074R03

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<34	90	AUBERT	09M	BABR	$e^+e^- \to \gamma D^*\overline{D}$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<45	90	CRONIN-HEN..	09	CLEO	e^+e^-

$\Gamma(D^*(2007)^0\overline{D}^0+\text{c.c.})/\Gamma_{\text{total}}$ Γ_{33}/Γ

NODE=M074R14
NODE=M074R14

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	CRONIN-HEN..	09	CLEO	$e^+e^- \to D^{*0}\overline{D}^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
not seen	AUBERT	09M	BABR	$e^+e^- \to D^{*0}\overline{D}^0\gamma$

$\Gamma(D^*(2010)^+D^-+\text{c.c.})/\Gamma_{\text{total}}$ Γ_{34}/Γ

NODE=M074R15
NODE=M074R15

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	CRONIN-HEN..	09	CLEO	$e^+e^- \to D^{*+}D^-$
not seen	PAKHLOVA	07	BELL	$e^+e^- \to D^{*+}D^-\gamma$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
not seen	AUBERT	09M	BABR	$e^+e^- \to D^{*+}D^-\gamma$

$\Gamma(D^*\overline{D}^*)/\Gamma(J/\psi\pi^+\pi^-)$ Γ_{35}/Γ_5

NODE=M074R04
NODE=M074R04

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<11	90	CRONIN-HEN..	09	CLEO	e^+e^-
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<40	90	AUBERT	09M	BABR	$e^+e^- \to \gamma D^*\overline{D}^*$

$\Gamma(D^*(2007)^0\overline{D}^*(2007)^0)/\Gamma_{\text{total}}$ Γ_{36}/Γ

NODE=M074R17
NODE=M074R17

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	CRONIN-HEN..	09	CLEO	$e^+e^- \to D^{*0}\overline{D}^{*0}$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
not seen	AUBERT	09M	BABR	$e^+e^- \to D^{*0}\overline{D}^{*0}\gamma$

$\Gamma(D^*(2010)^+D^*(2010)^-)/\Gamma_{\text{total}}$ Γ_{37}/Γ

NODE=M074R18
NODE=M074R18

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	CRONIN-HEN..	09	CLEO	$e^+e^- \to D^{*+}D^{*-}$
not seen	PAKHLOVA	07	BELL	$e^+e^- \to D^{*+}D^{*-}\gamma$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
not seen	AUBERT	09M	BABR	$e^+e^- \to D^{*+}D^{*-}\gamma$

$\Gamma(D^0 D^- \pi^+ + \text{c.c. (excl. } D^*(2007)^0 \overline{D}^{*0} + \text{c.c., } D^*(2010)^+ D^- + \text{c.c.}))/\Gamma_{\text{total}}$ Γ_{39}/Γ

NODE=M074R16
NODE=M074R16

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	PAKHLOVA	08A	BELL	10.6 $e^+ e^- \to D^0 D^- \pi^+ \gamma$

$\Gamma(D\overline{D}^*\pi + \text{c.c. (excl. } D^*\overline{D}^*))/\Gamma_{\text{total}}$ Γ_{40}/Γ

NODE=M074R22
NODE=M074R22

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	CRONIN-HEN..09		CLEO	$e^+ e^- \to D^* \overline{D} \pi$

$\Gamma(D\overline{D}^*\pi + \text{c.c. (excl. } D^*\overline{D}^*))/\Gamma(J/\psi\pi^+\pi^-)$ Γ_{40}/Γ_5

NODE=M074R05
NODE=M074R05

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<15	90	CRONIN-HEN..09		CLEO	$e^+ e^-$

$\Gamma(D^0 D^*(2010)^- \pi^+ + \text{c.c.})/\Gamma_{\text{total}}$ Γ_{41}/Γ

NODE=M074R54
NODE=M074R54

VALUE	DOCUMENT ID		TECN	COMMENT
seen	ABLIKIM	19R	BES3	$e^+ e^- \to \pi^+ D^0 D^{*-}$ + c.c.

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

not seen	PAKHLOVA	09	BELL	$e^+ e^- \to D^0 D^{*-} \pi^+ \gamma$

$\Gamma(D^0 D^*(2010)^- \pi^+ + \text{c.c.})/\Gamma(J/\psi\pi^+\pi^-)$ Γ_{41}/Γ_5

NODE=M074R10
NODE=M074R10

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<9	90	PAKHLOVA	09	BELL	$e^+ e^- \to D^0 D^{*-} \pi^+$

$\Gamma(D_1(2420)\overline{D} + \text{c.c.})/\Gamma_{\text{total}}$ Γ_{42}/Γ

NODE=M074R33
NODE=M074R33

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	[1] ABLIKIM	19AR	BES3	$e^+ e^- \to \pi^+ \pi^- D\overline{D}$

[1] Results from a measurement of $\sigma(e^+ e^- \to D_1(2420)\overline{D} + \text{c.c.})$ between $\sqrt{s} = 4.3$ and 4.6 GeV.

NODE=M074R33;LINKAGE=A

$\Gamma(D^*\overline{D}^*\pi)/\Gamma_{\text{total}}$ Γ_{43}/Γ

NODE=M074R24
NODE=M074R24

VALUE	DOCUMENT ID		TECN	COMMENT
seen	CRONIN-HEN..09		CLEO	$e^+ e^- \to D^* \overline{D}^* \pi$

$\Gamma(D^*\overline{D}^*\pi)/\Gamma(J/\psi\pi^+\pi^-)$ Γ_{43}/Γ_5

NODE=M074R06
NODE=M074R06

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<8.2	90	CRONIN-HEN..09		CLEO	$e^+ e^-$

$\Gamma(D_s^+ D_s^-)/\Gamma_{\text{total}}$ Γ_{45}/Γ

NODE=M074R19
NODE=M074R19

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	DEL-AMO-SA..10N		BABR	$e^+ e^- \to D_s^+ D_s^- \gamma$
not seen	CRONIN-HEN..09		CLEO	$e^+ e^- \to D_s^+ D_s^-$

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

not seen	PAKHLOVA	11	BELL	$e^+ e^- \to D_s^+ D_s^- \gamma$

$\Gamma(D_s^+ D_s^-)/\Gamma(J/\psi\pi^+\pi^-)$ Γ_{45}/Γ_5

NODE=M074R07
NODE=M074R07

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.7	95	DEL-AMO-SA..10N		BABR	10.6 $e^+ e^-$

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

<1.3	90	CRONIN-HEN..09		CLEO	$e^+ e^-$

$\Gamma(D_s^{*+} D_s^- + \text{c.c.})/\Gamma_{\text{total}}$ Γ_{46}/Γ

NODE=M074R20
NODE=M074R20

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	DEL-AMO-SA..10N		BABR	$e^+ e^- \to D_s^{*+} D_s^- \gamma$
not seen	CRONIN-HEN..09		CLEO	$e^+ e^- \to D_s^{*+} D_s^-$

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

not seen	PAKHLOVA	11	BELL	$e^+ e^- \to D_s^{*+} D_s^- \gamma$

$\Gamma(D_s^{*+} D_s^- + \text{c.c.})/\Gamma(J/\psi\pi^+\pi^-)$ Γ_{46}/Γ_5

NODE=M074R08
NODE=M074R08

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
< 0.8	90	CRONIN-HEN..09		CLEO	$e^+ e^-$

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

<44	95	DEL-AMO-SA..10N		BABR	10.6 $e^+ e^-$

$\Gamma(D_s^{*+}D_s^{*-})/\Gamma_{total}$ Γ_{47}/Γ

NODE=M074R21
NODE=M074R21

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	CRONIN-HEN..09		CLEO	$e^+e^- \to D_s^{*+}D_s^{*-}$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
not seen	PAKHLOVA	11	BELL	$e^+e^- \to D_s^{*+}D_s^{*-}\gamma$
not seen	DEL-AMO-SA..10N		BABR	$e^+e^- \to D_s^{*+}D_s^{*-}\gamma$

$\Gamma(D_s^{*+}D_s^{*-})/\Gamma(J/\psi\pi^+\pi^-)$ Γ_{47}/Γ_5

NODE=M074R09
NODE=M074R09

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
< 9.5	90	CRONIN-HEN..09		CLEO	e^+e^-
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<30	95	DEL-AMO-SA..10N		BABR	10.6 e^+e^-

$\Gamma(p\bar{p})/\Gamma(J/\psi\pi^+\pi^-)$ Γ_{48}/Γ_5

NODE=M074R1
NODE=M074R1

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.13	90	[1] AUBERT	06B	BABR	$e^+e^- \to p\bar{p}\gamma$

[1] Using 4259 ± 10 MeV for the mass and 88 ± 24 MeV for the width of $\psi(4260)$.

NODE=M074R1;LINKAGE=AU

$\Gamma(p\bar{p}\pi^0)/\Gamma(J/\psi\pi^+\pi^-)$ Γ_{49}/Γ_5

NODE=M074R00
NODE=M074R00

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<2 × 10^{-4}	90	ABLIKIM	17F	BES3	$e^+e^- \to \psi(4260) \to$ hadrons

OCCUR=2

$\Gamma(p\bar{p}\eta)/\Gamma_{total}$ Γ_{50}/Γ

NODE=M074R45
NODE=M074R45

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	ABLIKIM	21AN	BES3	$e^+e^- \to p\bar{p}\eta$

$\Gamma(p\bar{p}\omega)/\Gamma_{total}$ Γ_{52}/Γ

NODE=M074R46
NODE=M074R46

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	ABLIKIM	21AN	BES3	$e^+e^- \to p\bar{p}\omega$

$\Gamma(\omega\pi^0)/\Gamma_{total}$ Γ_{57}/Γ

NODE=M074R59
NODE=M074R59

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	ABLIKIM	22K	BES3	$e^+e^- \to \omega\pi^0$

$\Gamma(\omega\eta)/\Gamma_{total}$ Γ_{58}/Γ

NODE=M074R60
NODE=M074R60

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	ABLIKIM	22K	BES3	$e^+e^- \to \omega\eta$

$\Gamma(p\bar{p}p\bar{p})/\Gamma_{total}$ Γ_{69}/Γ

NODE=M074R58
NODE=M074R58

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	ABLIKIM	21D	BES3	4.0–4.6 $e^+e^- \to p\bar{p}p\bar{p}$

Radiative decays

NODE=M074310

$\Gamma(\eta_c(1S)\gamma)/\Gamma_{total}$ Γ_{75}/Γ

NODE=M074R29
NODE=M074R29

VALUE	DOCUMENT ID		COMMENT
possibly seen	[1] ABLIKIM	17W	$e^+e^- \to \gamma\eta_c(1S)$

[1] Significance ranges from 4.2 σ to as low as 1.5 σ for a flat component plus $\psi(4260)$ spectrum. Needs confirmation.

NODE=M074R29;LINKAGE=A

$\Gamma(\eta_c(1S)\pi^0\gamma)/\Gamma_{total}$ Γ_{76}/Γ

NODE=M074R57
NODE=M074R57

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	[1] ABLIKIM	21B	BES3	$e^+e^- \to \gamma\pi^0\eta_c$

[1] Not seen in $e^+e^- \to \gamma\pi^0\eta_c$ at $\sqrt{s} = 4.226$ GeV with a 90% C.L. upper limit on the cross section of 11.2 pb.

NODE=M074R57;LINKAGE=A

$\Gamma(\chi_{c1}(3872)\gamma)/\Gamma_{total}$ Γ_{79}/Γ

NODE=M074R26
NODE=M074R26

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
seen		ABLIKIM	19V	BES3	$e^+e^- \to \gamma\chi_{c1}(3872)$
seen	20 ± 5	ABLIKIM	14	BES3	$e^+e^- \to J/\psi\pi^+\pi^-\gamma$

$\psi(4230)$ REFERENCES

NODE=M074

ABLIKIM	24AH	JHEP 2405 022	M. Ablikim *et al.*	(BESIII Collab.)	REFID=62688
ABLIKIM	24AL	JHEP 2407 258	M. Ablikim *et al.*	(BESIII Collab.)	REFID=62693
ABLIKIM	24BH	PRL 133 081901	M. Ablikim *et al.*	(BESIII Collab.)	REFID=62924
ABLIKIM	24CD	JHEP 2411 062	M. Ablikim *et al.*	(BESIII Collab.)	REFID=63037
ABLIKIM	24T	PR D109 092012	M. Ablikim *et al.*	(BESIII Collab.)	REFID=62671
ABLIKIM	23AE	PR D108 032004	M. Ablikim *et al.*	(BESIII Collab.)	REFID=62092
ABLIKIM	23AQ	JHEP 2308 159	M. Ablikim *et al.*	(BESIII Collab.)	REFID=62313
ABLIKIM	23BK	JHEP 2311 228	M. Ablikim *et al.*	(BESIII Collab.)	REFID=62437
ABLIKIM	23BL	JHEP 2312 027	M. Ablikim *et al.*	(BESIII Collab.)	REFID=62438
ABLIKIM	23BT	PR D108 112011	M. Ablikim *et al.*	(BESIII Collab.)	REFID=62516
ABLIKIM	23R	PR D107 072003	M. Ablikim *et al.*	(BESIII Collab.)	REFID=62062
ABLIKIM	23U	PR D107 092005	M. Ablikim *et al.*	(BESIII Collab.)	REFID=62065
ABLIKIM	23X	PRL 130 121901	M. Ablikim *et al.*	(BESIII Collab.)	REFID=62072
ABLIKIM	22AM	PR D106 072001	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61885
ABLIKIM	22AU	CP C46 111002	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61896
ABLIKIM	22K	JHEP 2207 064	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61648
ABLIKIM	21AJ	PR D104 052012	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61441
ABLIKIM	21AN	PR D104 092008	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61446
ABLIKIM	21AS	PR D104 L091104	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61454
ABLIKIM	21AW	PR D104 112009	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61479
ABLIKIM	21B	PR D103 032006	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61029
ABLIKIM	21D	PR D103 052003	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61031
ABLIKIM	20A	PR D101 012008	M. Ablikim *et al.*	(BESIII Collab.)	REFID=60210
ABLIKIM	20AG	PR D102 112009	M. Ablikim *et al.*	(BESIII Collab.)	REFID=60744
ABLIKIM	20C	PRL 124 032002	M. Ablikim *et al.*	(BESIII Collab.)	REFID=60215
ABLIKIM	20N	PR D102 012009	M. Ablikim *et al.*	(BESIII Collab.)	REFID=60338
ABLIKIM	20O	PR D102 031101	M. Ablikim *et al.*	(BESIII Collab.)	REFID=60344
ABLIKIM	19	PR D99 012003	M. Ablikim *et al.*	(BESIII Collab.)	REFID=59515
ABLIKIM	19AE	PR D99 072005	M. Ablikim *et al.*	(BESIII Collab.)	REFID=59856
ABLIKIM	19AI	PR D99 091103	M. Ablikim *et al.*	(BESIII Collab.)	REFID=59871
ABLIKIM	19AR	PR D100 032005	M. Ablikim *et al.*	(BESIII Collab.)	REFID=59910
ABLIKIM	19K	PR D99 019903 (errat.)	M. Ablikim *et al.*	(BESIII Collab.)	REFID=59611
ABLIKIM	19R	PRL 122 102002	M. Ablikim *et al.*	(BESIII Collab.)	REFID=59765
ABLIKIM	19V	PRL 122 232002	M. Ablikim *et al.*	(BESIII Collab.)	REFID=59796
ABLIKIM	18N	PR D97 071101	M. Ablikim *et al.*	(BESIII Collab.)	REFID=58914
ABLIKIM	17B	PRL 118 092001	M. Ablikim *et al.*	(BESIII Collab.)	REFID=57755
ABLIKIM	17F	PL B771 45	M. Ablikim *et al.*	(BESIII Collab.)	REFID=57909
ABLIKIM	17G	PRL 118 092002	M. Ablikim *et al.*	(BESIII Collab.)	REFID=57915
ABLIKIM	17V	PR D96 032004	M. Ablikim *et al.*	(BESIII Collab.)	REFID=58029
Also		PR D99 019903 (errat.)	M. Ablikim *et al.*	(BESIII Collab.)	REFID=59611
ABLIKIM	17W	PR D96 051101	M. Ablikim *et al.*	(BESIII Collab.)	REFID=58212
GAO	17	PR D95 092007	X.Y. Gao, C.P. Shen, C.Z. Yuan		REFID=57991
ZHANG	17B	PR D96 054008	J. Zhang, J. Zhang		REFID=58219
ZHANG	17C	EPJ C77 727	J. Zhang, L. Yuan		REFID=58463
PDG	16	CP C40 100001	C. Patrignani *et al.*	(PDG Collab.)	REFID=57140
ABLIKIM	15C	PRL 114 092003	M. Ablikim *et al.*	(BESIII Collab.)	REFID=56401
ABLIKIM	15Q	PR D92 012008	M. Ablikim *et al.*	(BESIII Collab.)	REFID=56782
HAN	15	PR D92 012011	Y.L. Han *et al.*	(BELLE Collab.)	REFID=56816
ABLIKIM	14	PRL 112 092001	M. Ablikim *et al.*	(BESIII Collab.)	REFID=55647
SHEN	14	PR D89 072015	C.P. Shen *et al.*	(BELLE Collab.)	REFID=55944
ABLIKIM	13T	PRL 110 252001	M. Ablikim *et al.*	(BESIII Collab.)	REFID=55409
LIU	13B	PRL 110 252002	Z.Q. Liu *et al.*	(BELLE Collab.)	REFID=55410
WANG	13B	PR D87 051101	X.L. Wang *et al.*	(BELLE Collab.)	REFID=55377
LEES	12AC	PR D86 051102	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54750
PAKHLOVA	11	PR D83 011101	G. Pakhlova *et al.*	(BELLE Collab.)	REFID=53638
PEDLAR	11	PRL 107 041803	T. Pedlar *et al.*	(CLEO Collab.)	REFID=16787
DEL-AMO-SA...	10N	PR D82 052004	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=53532
AUBERT	09M	PR D79 092001	B. Aubert *et al.*	(BABAR Collab.)	REFID=52724
CRONIN-HEN...	09	PR D80 072001	D. Cronin-Hennessy *et al.*	(CLEO Collab.)	REFID=53114
PAKHLOVA	09	PR D80 091101	G. Pakhlova *et al.*	(BELLE Collab.)	REFID=53143
AUBERT	08S	PR D77 092002	B. Aubert *et al.*	(BABAR Collab.)	REFID=52242
LIU	08H	PR D78 014032	Z.Q. Liu, X.S. Qin, C.Z. Yuan		REFID=52296
PAKHLOVA	08	PR D77 011103	G. Pakhlova *et al.*	(BELLE Collab.)	REFID=52132
PAKHLOVA	08A	PRL 100 062001	G. Pakhlova *et al.*	(BELLE Collab.)	REFID=52134
YUAN	08	PR D77 011105	C.Z. Yuan *et al.*	(BELLE Collab.)	REFID=52135
AUBERT	07AK	PR D76 012008	B. Aubert *et al.*	(BABAR Collab.)	REFID=51908
AUBERT	07BE	PR D76 111105	B. Aubert *et al.*	(BABAR Collab.)	REFID=52074
AUBERT	07S	PRL 98 212001	B. Aubert *et al.*	(BABAR Collab.)	REFID=51724
PAKHLOVA	07	PRL 98 092001	G. Pakhlova *et al.*	(BELLE Collab.)	REFID=51628
WANG	07D	PRL 99 142002	X.L. Wang *et al.*	(BELLE Collab.)	REFID=51959
YUAN	07	PRL 99 182004	C.Z. Yuan *et al.*	(BELLE Collab.)	REFID=51960
AUBERT	06B	PR D73 012005	B. Aubert *et al.*	(BABAR Collab.)	REFID=51026
AUBERT,BE	06D	PR D74 091103	B. Aubert *et al.*	(BABAR Collab.)	REFID=51511
HE	06B	PR D74 091104	Q. He *et al.*	(CLEO Collab.)	REFID=51523
AUBERT,B	05I	PRL 95 142001	B. Aubert *et al.*	(BABAR Collab.)	REFID=50776