

$\psi(4415)$

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

$\psi(4415)$ MASS

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
4415 ± 5 OUR AVERAGE			
4414.6 ± 3.4 ± 6.1	ABLIKIM	23BH BES3	$e^+e^- \rightarrow D_s^{*+} D_s^{*-}$
4415.1 ± 7.9	¹ ABLIKIM	08D BES2	$e^+e^- \rightarrow$ hadrons
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
4412 ± 15	² MO	10 RVUE	$e^+e^- \rightarrow$ hadrons
4411 ± 7	³ PAKHLOVA	08A BELL	10.6 $e^+e^- \rightarrow D^0 D^- \pi^+ \gamma$
4425 ± 6	⁴ SETH	05A RVUE	$e^+e^- \rightarrow$ hadrons
4429 ± 9	⁵ SETH	05A RVUE	$e^+e^- \rightarrow$ hadrons
4417 ± 10	BRANDELIK	78C DASP	e^+e^-
4414 ± 7	SIEGRIST	76 MRK1	e^+e^-

¹ Reanalysis of data presented in BAI 02C. From a global fit over the center-of-mass energy region 3.7–5.0 GeV covering the $\psi(3770)$, $\psi(4040)$, $\psi(4160)$, and $\psi(4415)$ resonances. Phase angle fixed in the fit to $\delta = (234 \pm 88)^\circ$.

² Reanalysis of data presented in BAI 00 and BAI 02C. From a global fit over the center-of-mass energy 3.8–4.8 GeV covering the $\psi(4040)$, $\psi(4160)$ and $\psi(4415)$ resonances and including interference effects.

³ Systematic uncertainties not estimated.

⁴ From a fit to Crystal Ball (OSTERHELD 86) data.

⁵ From a fit to BES (BAI 02c) data.

$\psi(4415)$ WIDTH

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
110 ± 22 OUR AVERAGE	Error includes scale factor of 2.3.		
122.5 ± 7.5 ± 8.1	ABLIKIM	23BH BES3	$e^+e^- \rightarrow D_s^{*+} D_s^{*-}$
71.5 ± 19.0	⁶ ABLIKIM	08D BES2	$e^+e^- \rightarrow$ hadrons
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
118 ± 32	⁷ MO	10 RVUE	$e^+e^- \rightarrow$ hadrons
77 ± 20	⁸ PAKHLOVA	08A BELL	10.6 $e^+e^- \rightarrow D^0 D^- \pi^+ \gamma$
119 ± 16	⁹ SETH	05A RVUE	$e^+e^- \rightarrow$ hadrons
118 ± 35	¹⁰ SETH	05A RVUE	$e^+e^- \rightarrow$ hadrons
66 ± 15	BRANDELIK	78C DASP	e^+e^-
33 ± 10	SIEGRIST	76 MRK1	e^+e^-

⁶ Reanalysis of data presented in BAI 02C. From a global fit over the center-of-mass energy region 3.7–5.0 GeV covering the $\psi(3770)$, $\psi(4040)$, $\psi(4160)$, and $\psi(4415)$ resonances. Phase angle fixed in the fit to $\delta = (234 \pm 88)^\circ$.

⁷ Reanalysis of data presented in BAI 00 and BAI 02C. From a global fit over the center-of-mass energy 3.8–4.8 GeV covering the $\psi(4040)$, $\psi(4160)$ and $\psi(4415)$ resonances and including interference effects.

⁸ Systematic uncertainties not estimated.

⁹ From a fit to Crystal Ball (OSTERHELD 86) data.

¹⁰ From a fit to BES (BAI 02c) data.

$\psi(4415)$ DECAY MODES

Due to the complexity of the $c\bar{c}$ threshold region, in this listing, “seen” (“not seen”) means that a cross section for the mode in question has been measured at effective \sqrt{s} near this particle’s central mass value, more (less) than 2σ above zero, without regard to any peaking behavior in \sqrt{s} or absence thereof. See mode listing(s) for details and references.

Mode	Fraction (Γ_i/Γ)	Confidence level
Γ_1 $D\bar{D}$	seen	
Γ_2 $D^0\bar{D}^0$	seen	
Γ_3 D^+D^-	seen	
Γ_4 $D^*\bar{D} + \text{c.c.}$	seen	
Γ_5 $D^*(2007)^0\bar{D}^0 + \text{c.c.}$	seen	
Γ_6 $D^*(2010)^+D^- + \text{c.c.}$	seen	
Γ_7 $D^*\bar{D}^*$	seen	
Γ_8 $D^*(2007)^0\bar{D}^*(2007)^0 + \text{c.c.}$	seen	
Γ_9 $D^*(2010)^+D^*(2010)^- + \text{c.c.}$	seen	
Γ_{10} $D^0D^-\pi^+$ (excl. $D^*(2010)^+D^-$ +c.c.)	< 2.3 %	90%
Γ_{11} $D\bar{D}_2^*(2460) \rightarrow D^0D^-\pi^+ + \text{c.c.}$	(10 ± 4) %	
Γ_{12} $D^0D^{*-}\pi^+ + \text{c.c.}$	< 19 %	90%
Γ_{13} $D_1(2420)\bar{D} + \text{c.c.}$	possibly seen	
Γ_{14} $D_s^+D_s^-$	not seen	
Γ_{15} $\omega\chi_{c2}$	possibly seen	
Γ_{16} $D_s^{*+}D_s^- + \text{c.c.}$	seen	
Γ_{17} $D_s^{*+}D_s^{*-}$	seen	
Γ_{18} $\psi_2(3823)\pi^+\pi^-$	possibly seen	
Γ_{19} $\psi(3770)\pi^+\pi^-$	possibly seen	
Γ_{20} $J/\psi\eta$	< 6 × 10 ⁻³	90%
Γ_{21} $\chi_{c1}\gamma$	< 8 × 10 ⁻⁴	90%
Γ_{22} $\chi_{c2}\gamma$	< 4 × 10 ⁻³	90%
Γ_{23} $\Lambda\bar{\Lambda}$	< 3.1 × 10 ⁻⁶	90%
Γ_{24} $\Xi^-\Xi^+$	< 4 × 10 ⁻⁵	90%
Γ_{25} $pK^-\bar{\Lambda} + \text{c.c.}$	< 6 × 10 ⁻⁶	90%
Γ_{26} $\omega\pi^0$	not seen	
Γ_{27} $\omega\eta$	not seen	
Γ_{28} e^+e^-	(5.3 ± 1.2) × 10 ⁻⁶	
Γ_{29} $\mu^+\mu^-$	(1.1 ± 0.5) × 10 ⁻⁵	

$\psi(4415)$ PARTIAL WIDTHS

$\Gamma(e^+e^-)$				Γ_{28}
VALUE (keV)	DOCUMENT ID	TECN	COMMENT	
0.58 ± 0.07 OUR ESTIMATE				
0.35 ± 0.12	11 ABLIKIM	08D BES2	$e^+e^- \rightarrow \text{hadrons}$	

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

0.4 to 0.8	¹² MO	10	RVUE	$e^+e^- \rightarrow$ hadrons
0.72 ± 0.11	¹³ SETH	05A	RVUE	$e^+e^- \rightarrow$ hadrons
0.64 ± 0.23	¹⁴ SETH	05A	RVUE	$e^+e^- \rightarrow$ hadrons
0.49 ± 0.13	BRANDELIK	78C	DASP	e^+e^-
0.44 ± 0.14	SIEGRIST	76	MRK1	e^+e^-

¹¹ Reanalysis of data presented in BAI 02C. From a global fit over the center-of-mass energy region 3.7–5.0 GeV covering the $\psi(3770)$, $\psi(4040)$, $\psi(4160)$, and $\psi(4415)$ resonances. Phase angle fixed in the fit to $\delta = (234 \pm 88)^\circ$.

¹² Reanalysis of data presented in BAI 00 and BAI 02C. From a global fit over the center-of-mass energy 3.8–4.8 GeV covering the $\psi(4040)$, $\psi(4160)$ and $\psi(4415)$ resonances and including interference effects. Four sets of solutions are obtained with the same fit quality, mass and total width, but with different e^+e^- partial widths. We quote only the range of values.

¹³ From a fit to Crystal Ball (OSTERHELD 86) data.

¹⁴ From a fit to BES (BAI 02C) data.

$\Gamma(\mu^+\mu^-)$ Γ_{29}

VALUE (keV)	DOCUMENT ID	TECN	COMMENT
$1.25 \pm 0.28 \pm 0.35$	^{15,16} ABLIKIM	20AG BES3	$e^+e^- \rightarrow \mu^+\mu^-$

¹⁵ From a fit to the $e^+e^- \rightarrow \mu^+\mu^-$ cross section between 3.8 and 4.6 GeV to the coherent sum of four resonant amplitudes assuming $\Gamma(\mu^+\mu^-) = \Gamma(e^+e^-)$.

¹⁶ From solution 1 of 8 with equal fit quality. Other solutions range from $1.24 \pm 0.28 \pm 0.35$ to $1.27 \pm 0.41 \pm 0.36$ keV.

$\psi(4415) \Gamma(i) \times \Gamma(e^+e^-) / \Gamma(\text{total})$

$\Gamma(J/\psi\eta) \times \Gamma(e^+e^-) / \Gamma_{\text{total}}$ $\Gamma_{20}\Gamma_{28}/\Gamma$

VALUE (eV)	CL%	DOCUMENT ID	TECN	COMMENT
< 3.6	90	WANG	13B BELL	$e^+e^- \rightarrow J/\psi\eta\gamma$

$\Gamma(\chi_{c1}\gamma) \times \Gamma(e^+e^-) / \Gamma_{\text{total}}$ $\Gamma_{21}\Gamma_{28}/\Gamma$

VALUE (eV)	CL%	DOCUMENT ID	TECN	COMMENT
< 0.47	90	¹⁷ HAN	15 BELL	$10.58 e^+e^- \rightarrow \chi_{c1}\gamma$

¹⁷ Using $B(\eta \rightarrow \gamma\gamma) = (39.41 \pm 0.21)\%$.

$\Gamma(\chi_{c2}\gamma) \times \Gamma(e^+e^-) / \Gamma_{\text{total}}$ $\Gamma_{22}\Gamma_{28}/\Gamma$

VALUE (eV)	CL%	DOCUMENT ID	TECN	COMMENT
< 2.3	90	¹⁸ HAN	15 BELL	$10.58 e^+e^- \rightarrow \chi_{c2}\gamma$

¹⁸ Using $B(\eta \rightarrow \gamma\gamma) = (39.41 \pm 0.21)\%$.

$\Gamma(\Lambda\bar{\Lambda}) \times \Gamma(e^+e^-) / \Gamma_{\text{total}}$ $\Gamma_{23}\Gamma_{28}/\Gamma$

VALUE (eV)	CL%	DOCUMENT ID	TECN	COMMENT
$< 1.8 \times 10^{-3}$	90	¹⁹ ABLIKIM	21AS BES3	$e^+e^- \rightarrow \psi(4415)$

¹⁹ From a measurement of the $e^+e^- \rightarrow \Lambda\bar{\Lambda}$ cross section between 3.5 and 4.6 GeV.

$$\Gamma(\Xi^- \bar{\Xi}^+) \times \Gamma(e^+ e^-) / \Gamma_{\text{total}} \quad \Gamma_{24} \Gamma_{28} / \Gamma$$

VALUE (eV)	CL%	DOCUMENT ID	TECN	COMMENT
<0.0217	90	²⁰ ABLIKIM	23BK BES3	$e^+ e^- \rightarrow \psi(4415)$

²⁰ From a fit to $e^+ e^- \rightarrow \Xi^- \bar{\Xi}^+$ cross sections.

$$\Gamma(p K^- \bar{\Lambda} + \text{c.c.}) \times \Gamma(e^+ e^-) / \Gamma_{\text{total}} \quad \Gamma_{25} \Gamma_{28} / \Gamma$$

VALUE (eV)	CL%	DOCUMENT ID	TECN	COMMENT
<3.4 × 10 ⁻³	90	²¹ ABLIKIM	23BL BES3	$e^+ e^- \rightarrow \psi(4415)$

²¹ From a fit to $e^+ e^- \rightarrow p K^- \bar{\Lambda} + \text{c.c.}$ cross sections.

$\psi(4415) \Gamma(i) \times \Gamma(e^+ e^-) / \Gamma^2(\text{total})$

$$\Gamma(D^0 D^{*-} \pi^+ + \text{c.c.}) / \Gamma_{\text{total}} \times \Gamma(e^+ e^-) / \Gamma_{\text{total}} \quad \Gamma_{12} / \Gamma \times \Gamma_{28} / \Gamma$$

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.99 × 10 ⁻⁶	90	²² PAKHLOVA 09	BELL	$e^+ e^- \rightarrow D^0 D^{*-} \pi^+$

²² Using 4421 ± 4 MeV for the mass of $\psi(4415)$.

$\psi(4415)$ BRANCHING RATIOS

$$\Gamma(D^0 \bar{D}^0) / \Gamma_{\text{total}} \quad \Gamma_2 / \Gamma$$

VALUE	DOCUMENT ID	TECN	COMMENT
seen	PAKHLOVA 08	BELL	$e^+ e^- \rightarrow D^0 \bar{D}^0 \gamma$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
not seen	AUBERT 09M	BABR	$e^+ e^- \rightarrow D^0 \bar{D}^0 \gamma$

$$\Gamma(D^+ D^-) / \Gamma_{\text{total}} \quad \Gamma_3 / \Gamma$$

VALUE	DOCUMENT ID	TECN	COMMENT
seen	PAKHLOVA 08	BELL	$e^+ e^- \rightarrow D^+ D^- \gamma$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
not seen	AUBERT 09M	BABR	$e^+ e^- \rightarrow D^+ D^- \gamma$

$$\Gamma(D^*(2007)^0 \bar{D}^0 + \text{c.c.}) / \Gamma_{\text{total}} \quad \Gamma_5 / \Gamma$$

VALUE	DOCUMENT ID	TECN	COMMENT
seen	AUBERT 09M	BABR	$e^+ e^- \rightarrow D^{*0} \bar{D}^0 \gamma$

$$\Gamma(D^*(2010)^+ D^- + \text{c.c.}) / \Gamma_{\text{total}} \quad \Gamma_6 / \Gamma$$

VALUE	DOCUMENT ID	TECN	COMMENT
seen	²³ ZHUKOVA 18	BELL	$e^+ e^- \rightarrow D^{*+} D^- \gamma$
seen	AUBERT 09M	BABR	$e^+ e^- \rightarrow D^{*+} D^- \gamma$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
seen	PAKHLOVA 07	BELL	$e^+ e^- \rightarrow D^{*+} D^- \gamma$

²³ Supersedes PAKHLOVA 07.

$$\Gamma(D \bar{D}) / \Gamma(D^* \bar{D}^*) \quad \Gamma_1 / \Gamma_7$$

VALUE	DOCUMENT ID	TECN	COMMENT
0.14 ± 0.12 ± 0.03	AUBERT 09M	BABR	$e^+ e^- \rightarrow \gamma D^{(*)} \bar{D}^{(*)}$

$\Gamma(D^* \bar{D} + \text{c.c.})/\Gamma(D^* \bar{D}^*)$				Γ_4/Γ_7
VALUE	DOCUMENT ID	TECN	COMMENT	
0.17 ± 0.25 ± 0.03	AUBERT	09M	BABR	$e^+ e^- \rightarrow \gamma D^{(*)} \bar{D}^{(*)}$

$\Gamma(D^*(2007)^0 \bar{D}^*(2007)^0 + \text{c.c.})/\Gamma_{\text{total}}$				Γ_8/Γ
VALUE	DOCUMENT ID	TECN	COMMENT	
seen	AUBERT	09M	BABR	$e^+ e^- \rightarrow D^{*0} \bar{D}^{*0} \gamma$

$\Gamma(D^*(2010)^+ D^*(2010)^- + \text{c.c.})/\Gamma_{\text{total}}$				Γ_9/Γ
VALUE	DOCUMENT ID	TECN	COMMENT	
seen	²⁴ ZHUKOVA	18	BELL	$e^+ e^- \rightarrow D^{*+} D^{*-} \gamma$
seen	AUBERT	09M	BABR	$e^+ e^- \rightarrow D^{*+} D^{*-} \gamma$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
seen	PAKHLOVA	07	BELL	$e^+ e^- \rightarrow D^{*+} D^{*-} \gamma$
²⁴ Supersedes PAKHLOVA 07.				

$\Gamma(D \bar{D}_2^*(2460) \rightarrow D^0 D^- \pi^+ + \text{c.c.})/\Gamma_{\text{total}}$				Γ_{11}/Γ
VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT	
10.5 ± 2.4 ± 3.8	²⁵ PAKHLOVA	08A	BELL	$10.6 e^+ e^- \rightarrow D^0 D^- \pi^+ \gamma$
²⁵ Using 4421 ± 4 MeV for the mass and 62 ± 20 MeV for the width of $\psi(4415)$.				

$\Gamma(D^0 D^- \pi^+ (\text{excl. } D^*(2010)^+ D^- + \text{c.c.})/\Gamma(D \bar{D}_2^*(2460) \rightarrow D^0 D^- \pi^+ + \text{c.c.})$				Γ_{10}/Γ_{11}	
VALUE	CL%	DOCUMENT ID	TECN	COMMENT	
< 0.22	90	²⁶ PAKHLOVA	08A	BELL	$10.6 e^+ e^- \rightarrow D^0 D^- \pi^+ \gamma$
²⁶ Using 4421 ± 4 MeV for the mass and 62 ± 20 MeV for the width of $\psi(4415)$.					

$\Gamma(D_1(2420) \bar{D} + \text{c.c.})/\Gamma_{\text{total}}$				Γ_{13}/Γ
VALUE	DOCUMENT ID	TECN	COMMENT	
possibly seen	²⁷ ABLIKIM	19AR	BES3	$e^+ e^- \rightarrow \pi^+ \pi^- D \bar{D}$
²⁷ Evidence for $e^+ e^- \rightarrow D_1(2420) \bar{D} + \text{c.c.}$ between $\sqrt{s} = 4.3$ and 4.6 GeV, not necessarily resonant.				

$\Gamma(D_s^+ D_s^-)/\Gamma_{\text{total}}$				Γ_{14}/Γ
VALUE	DOCUMENT ID	TECN	COMMENT	
not seen	PAKHLOVA	11	BELL	$e^+ e^- \rightarrow D_s^+ D_s^- \gamma$
not seen	DEL-AMO-SA..10N	BABR		$e^+ e^- \rightarrow D_s^+ D_s^- \gamma$

$\Gamma(\omega \chi_{c2})/\Gamma_{\text{total}}$				Γ_{15}/Γ
VALUE	DOCUMENT ID	TECN	COMMENT	
possibly seen	ABLIKIM	16A	BES3	$e^+ e^- \rightarrow \gamma \pi^+ \pi^- \pi^0 \ell^+ \ell^-$

$\Gamma(D_s^{*+} D_s^- + \text{c.c.})/\Gamma_{\text{total}}$				Γ_{16}/Γ
VALUE	DOCUMENT ID	TECN	COMMENT	
seen	PAKHLOVA	11	BELL	$e^+ e^- \rightarrow D_s^{*+} D_s^- \gamma$
seen	DEL-AMO-SA..10N	BABR		$e^+ e^- \rightarrow D_s^{*+} D_s^- \gamma$

$\Gamma(D_s^{*+} D_s^{*-})/\Gamma_{\text{total}}$	VALUE	DOCUMENT ID	TECN	COMMENT	Γ_{17}/Γ
seen		ABLIKIM	23BH BES3	$e^+ e^- \rightarrow D_s^{*+} D_s^{*-}$	
••• We do not use the following data for averages, fits, limits, etc. •••					
not seen		PAKHLOVA	11 BELL	$e^+ e^- \rightarrow D_s^{*+} D_s^{*-} \gamma$	
not seen		DEL-AMO-SA..10N	BABR	$e^+ e^- \rightarrow D_s^{*+} D_s^{*-} \gamma$	

$\Gamma(\psi_2(3823)\pi^+\pi^-)/\Gamma_{\text{total}}$	VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	Γ_{18}/Γ
possibly seen	19	28	ABLIKIM	15S BES3	$e^+ e^- \rightarrow \pi^+\pi^-\chi_{c1}\gamma$	
²⁸ From a fit of $e^+ e^- \rightarrow \pi^+\pi^-\psi_2(3823)$, $\psi_2(3823) \rightarrow \chi_{c1}\gamma$ cross sections taken at \sqrt{s} values of 4.23, 4.26, 4.36, 4.42, and 4.60 GeV to the $\psi(4415)$ line shape.						

$\Gamma(\psi(3770)\pi^+\pi^-)/\Gamma_{\text{total}}$	VALUE	DOCUMENT ID	TECN	COMMENT	Γ_{19}/Γ
possibly seen		²⁹ ABLIKIM	19AR BES3	$e^+ e^- \rightarrow \pi^+\pi^- D\bar{D}$	
²⁹ Observe $e^+ e^- \rightarrow \pi^+\pi^-\psi(3770)$ at $\sqrt{s} = 4.26, 4.36, \text{ and } 4.42$ GeV but cannot establish if continuum or resonant.					

$\Gamma(\omega\pi^0)/\Gamma_{\text{total}}$	VALUE	DOCUMENT ID	TECN	COMMENT	Γ_{26}/Γ
not seen		ABLIKIM	22K BES3	$e^+ e^- \rightarrow \omega\pi^0$	

$\Gamma(\omega\eta)/\Gamma_{\text{total}}$	VALUE	DOCUMENT ID	TECN	COMMENT	Γ_{27}/Γ
not seen		ABLIKIM	22K BES3	$e^+ e^- \rightarrow \omega\eta$	

$\psi(4415)$ REFERENCES

ABLIKIM	23BH	PRL 131 151903	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	23BK	JHEP 2311 228	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	23BL	JHEP 2312 027	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	22K	JHEP 2207 064	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	21AS	PR D104 L091104	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	20AG	PR D102 112009	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	19AR	PR D100 032005	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ZHUKOVA	18	PR D97 012002	V. Zhukova <i>et al.</i>	(BELLE Collab.)
ABLIKIM	16A	PR D93 011102	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	15S	PRL 115 011803	M. Ablikim <i>et al.</i>	(BESIII Collab.)
HAN	15	PR D92 012011	Y.L. Han <i>et al.</i>	(BELLE Collab.)
WANG	13B	PR D87 051101	X.L. Wang <i>et al.</i>	(BELLE Collab.)
PAKHLOVA	11	PR D83 011101	G. Pakhlova <i>et al.</i>	(BELLE Collab.)
DEL-AMO-SA...	10N	PR D82 052004	P. del Amo Sanchez <i>et al.</i>	(BABAR Collab.)
MO	10	PR D82 077501	X.H. Mo, C.Z. Yuan, P. Wang	(BHEP)
AUBERT	09M	PR D79 092001	B. Aubert <i>et al.</i>	(BABAR Collab.)
PAKHLOVA	09	PR D80 091101	G. Pakhlova <i>et al.</i>	(BELLE Collab.)
ABLIKIM	08D	PL B660 315	M. Ablikim <i>et al.</i>	(BES Collab.)
PAKHLOVA	08	PR D77 011103	G. Pakhlova <i>et al.</i>	(BELLE Collab.)
PAKHLOVA	08A	PRL 100 062001	G. Pakhlova <i>et al.</i>	(BELLE Collab.)
PAKHLOVA	07	PRL 98 092001	G. Pakhlova <i>et al.</i>	(BELLE Collab.)
SETH	05A	PR D72 017501	K.K. Seth	
BAI	02C	PRL 88 101802	J.Z. Bai <i>et al.</i>	(BES Collab.)
BAI	00	PRL 84 594	J.Z. Bai <i>et al.</i>	(BES Collab.)
OSTERHELD	86	SLAC-PUB-4160	A. Osterheld <i>et al.</i>	(SLAC Crystal Ball Collab.)
BRANDELIK	78C	PL 76B 361	R. Brandelik <i>et al.</i>	(DASP Collab.)
SIEGRIST	76	PRL 36 700	J.L. Siegrist <i>et al.</i>	(LBL, SLAC)