

$\psi(4160)$

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

$\psi(4160)$ MASS

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
4153 ± 3 OUR ESTIMATE			
4191.7± 6.5	¹ ABLIKIM 08D BES2 $e^+ e^- \rightarrow$ hadrons		
• • • We do not use the following data for averages, fits, limits, etc. • • •			
4193 ± 7	² MO 10 RVUE $e^+ e^- \rightarrow$ hadrons		
4151 ± 4	³ SETH 05A RVUE $e^+ e^- \rightarrow$ hadrons		
4155 ± 5	⁴ SETH 05A RVUE $e^+ e^- \rightarrow$ hadrons		
4159 ± 20	BRANDELIK 78C DASP $e^+ e^-$		
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 $\delta = (293 \pm 57)^\circ$.			
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 From a fit to Crystal Ball (OSTERHELD 86) data.			
⁴ From a fit to BES (BAI 02C) data.			

$\psi(4160)$ WIDTH

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
103 ± 8 OUR ESTIMATE			
71.8±12.3	⁵ ABLIKIM 08D BES2 $e^+ e^- \rightarrow$ hadrons		
• • • We do not use the following data for averages, fits, limits, etc. • • •			
79 ± 14	⁶ MO 10 RVUE $e^+ e^- \rightarrow$ hadrons		
107 ± 10	⁷ SETH 05A RVUE $e^+ e^- \rightarrow$ hadrons		
107 ± 16	⁸ SETH 05A RVUE $e^+ e^- \rightarrow$ hadrons		
78 ± 20	BRANDELIK 78C DASP $e^+ e^-$		
⁵ 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 $\delta = (293 \pm 57)^\circ$.			
⁶ 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.			
⁷ From a fit to Crystal Ball (OSTERHELD 86) data.			
⁸ From a fit to BES (BAI 02C) data.			

$\psi(4160)$ 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
$\Gamma_1 e^+ e^-$	$(8.1 \pm 0.9) \times 10^{-6}$	
$\Gamma_2 D\bar{D}$	seen	
$\Gamma_3 D^0\bar{D}^0$	seen	
$\Gamma_4 D^+D^-$	seen	
$\Gamma_5 D^*\bar{D} + \text{c.c.}$	seen	
$\Gamma_6 D^*(2007)^0\bar{D}^0 + \text{c.c.}$	seen	
$\Gamma_7 D^*(2010)^+D^- + \text{c.c.}$	seen	
$\Gamma_8 D^*\bar{D}^*$	seen	
$\Gamma_9 D^*(2007)^0\bar{D}^*(2007)^0$	seen	
$\Gamma_{10} D^*(2010)^+D^*(2010)^-$	seen	
$\Gamma_{11} D^0D^-\pi^++\text{c.c. (excl.)}$ $D^*(2007)^0\bar{D}^0+\text{c.c.},$ $D^*(2010)^+D^-+\text{c.c.})$	not seen	
$\Gamma_{12} D\bar{D}^*\pi+\text{c.c. (excl. } D^*\bar{D}^*)$	seen	
$\Gamma_{13} D^0D^{*-}\pi^++\text{c.c. (excl.)}$ $D^*(2010)^+D^*(2010)^-$	not seen	
$\Gamma_{14} D_s^+D_s^-$	not seen	
$\Gamma_{15} D_s^{*+}D_s^-+\text{c.c.}$	seen	
$\Gamma_{16} J/\psi\pi^+\pi^-$	$< 3 \times 10^{-3}$	90%
$\Gamma_{17} J/\psi\pi^0\pi^0$	$< 3 \times 10^{-3}$	90%
$\Gamma_{18} J/\psi K^+K^-$	$< 2 \times 10^{-3}$	90%
$\Gamma_{19} J/\psi\eta$	$< 8 \times 10^{-3}$	90%
$\Gamma_{20} J/\psi\pi^0$	$< 1 \times 10^{-3}$	90%
$\Gamma_{21} J/\psi\eta'$	$< 5 \times 10^{-3}$	90%
$\Gamma_{22} J/\psi\pi^+\pi^-\pi^0$	$< 1 \times 10^{-3}$	90%
$\Gamma_{23} \psi(2S)\pi^+\pi^-$	$< 4 \times 10^{-3}$	90%
$\Gamma_{24} \chi_{c1}\gamma$	$< 7 \times 10^{-3}$	90%
$\Gamma_{25} \chi_{c2}\gamma$	$< 1.3 \%$	90%
$\Gamma_{26} \chi_{c1}\pi^+\pi^-\pi^0$	$< 2 \times 10^{-3}$	90%
$\Gamma_{27} \chi_{c2}\pi^+\pi^-\pi^0$	$< 8 \times 10^{-3}$	90%
$\Gamma_{28} h_c(1P)\pi^+\pi^-$	$< 5 \times 10^{-3}$	90%
$\Gamma_{29} h_c(1P)\pi^0\pi^0$	$< 2 \times 10^{-3}$	90%
$\Gamma_{30} h_c(1P)\eta$	$< 2 \times 10^{-3}$	90%
$\Gamma_{31} h_c(1P)\pi^0$	$< 4 \times 10^{-4}$	90%
$\Gamma_{32} \phi\pi^+\pi^-$	$< 2 \times 10^{-3}$	90%

$\psi(4160)$ PARTIAL WIDTHS

$\Gamma(e^+e^-)$

VALUE (keV)	DOCUMENT ID	TECN	COMMENT	Γ_1
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0.83±0.07 OUR ESTIMATE

0.48±0.22

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

0.4 to 1.1	¹⁰ MO	10	RVUE	$e^+e^- \rightarrow$ hadrons
0.83 ± 0.08	¹¹ SETH	05A	RVUE	$e^+e^- \rightarrow$ hadrons
0.84 ± 0.13	¹² SETH	05A	RVUE	$e^+e^- \rightarrow$ hadrons
0.77 ± 0.23	BRANDELIK	78C	DASP	e^+e^-

⁹ 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 $\delta = (293 \pm 57)^\circ$.

¹⁰ 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.

¹¹ From a fit to Crystal Ball (OSTERHELD 86) data.

¹² From a fit to BES (BAI 02C) data.

$\psi(4160)$ BRANCHING RATIOS

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

VALUE	DOCUMENT ID	TECN	COMMENT	Γ_2/Γ_8
0.02±0.03±0.02	AUBERT	09M	BABR	$e^+e^- \rightarrow \gamma D^{(*)}\bar{D}^{(*)}$

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

VALUE	DOCUMENT ID	TECN	COMMENT	Γ_3/Γ
seen	CRONIN-HEN..09	CLEO	$e^+e^- \rightarrow D^0\bar{D}^0$	
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	$e^+e^- \rightarrow D^0\bar{D}^0\gamma$

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

VALUE	DOCUMENT ID	TECN	COMMENT	Γ_4/Γ
seen	CRONIN-HEN..09	CLEO	$e^+e^- \rightarrow D^+D^-$	
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	$e^+e^- \rightarrow D^+D^-\gamma$

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

VALUE	DOCUMENT ID	TECN	COMMENT	Γ_6/Γ
seen	AUBERT	09M	BABR	$e^+e^- \rightarrow D^{*0}\bar{D}^0\gamma$
seen	CRONIN-HEN..09	CLEO	$e^+e^- \rightarrow D^{*0}\bar{D}^0$	

$\Gamma(D^*(2010)^+ D^- + \text{c.c.})/\Gamma_{\text{total}}$ Γ_7/Γ

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
seen	AUBERT 09M	BABR	$e^+ e^- \rightarrow D^{*+} D^- \gamma$
seen	CRONIN-HEN..09	CLEO	$e^+ e^- \rightarrow D^{*+} D^-$
seen	PAKHLOVA 07	BELL	$e^+ e^- \rightarrow D^{*+} D^- \gamma$

$\Gamma(D^* \bar{D} + \text{c.c.})/\Gamma(D^* \bar{D}^*)$ Γ_5/Γ_8

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.34 ± 0.14 ± 0.05	AUBERT 09M	BABR	$e^+ e^- \rightarrow \gamma D^{(*)} \bar{D}^{(*)}$

$\Gamma(D^*(2007)^0 \bar{D}^*(2007)^0)/\Gamma_{\text{total}}$ Γ_9/Γ

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
seen	AUBERT 09M	BABR	$e^+ e^- \rightarrow D^{*0} \bar{D}^{*0} \gamma$
seen	CRONIN-HEN..09	CLEO	$e^+ e^- \rightarrow D^{*0} \bar{D}^{*0}$

$\Gamma(D^*(2010)^+ D^*(2010)^-)/\Gamma_{\text{total}}$ Γ_{10}/Γ

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
seen	AUBERT 09M	BABR	$e^+ e^- \rightarrow D^{*+} D^{*-} \gamma$
seen	CRONIN-HEN..09	CLEO	$e^+ e^- \rightarrow D^{*+} D^{*-}$
seen	PAKHLOVA 07	BELL	$e^+ e^- \rightarrow D^{*+} D^{*-} \gamma$

$\Gamma(D^0 D^- \pi^+ + \text{c.c. (excl. } D^*(2007)^0 \bar{D}^0 + \text{c.c., } D^*(2010)^+ D^- + \text{c.c.}))/\Gamma_{\text{total}}$ Γ_{11}/Γ

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
not seen	PAKHLOVA 08A	BELL	$e^+ e^- \rightarrow D^0 D^- \pi^+ \gamma$

$\Gamma(D \bar{D}^* \pi + \text{c.c. (excl. } D^* \bar{D}^*))/\Gamma_{\text{total}}$ Γ_{12}/Γ

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
seen	CRONIN-HEN..09	CLEO	$e^+ e^- \rightarrow D \bar{D}^* \pi$

$\Gamma(D^0 D^{*-} \pi^+ + \text{c.c. (excl. } D^*(2010)^+ D^*(2010)^-))/\Gamma_{\text{total}}$ Γ_{13}/Γ

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
not seen	PAKHLOVA 09	BELL	$e^+ e^- \rightarrow D^0 D^{*-} \pi^+ \gamma$

$\Gamma(D_s^+ D_s^-)/\Gamma_{\text{total}}$ Γ_{14}/Γ

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
not seen	PAKHLOVA 11	BELL	$e^+ e^- \rightarrow D_s^+ D_s^- \gamma$
not seen	DEL-AMO-SA..10N	BABR	$e^+ e^- \rightarrow D_s^+ D_s^- \gamma$
not seen	CRONIN-HEN..09	CLEO	$e^+ e^- \rightarrow D_s^+ D_s^-$

$\Gamma(D_s^{*+} D_s^{-} + \text{c.c.})/\Gamma_{\text{total}}$ Γ_{15}/Γ

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
seen	PAKHLOVA 11	BELL	$e^+ e^- \rightarrow D_s^{*+} D_s^- \gamma$
seen	DEL-AMO-SA..10N	BABR	$e^+ e^- \rightarrow D_s^{*+} D_s^- \gamma$
seen	CRONIN-HEN..09	CLEO	$e^+ e^- \rightarrow D_s^{*+} D_s^-$

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

<u>VALUE (units 10^{-3})</u>	<u>CL%</u>
<3	90

 Γ_{16}/Γ

<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
COAN	06	CLEO

4.12–4.2 $e^+e^- \rightarrow$ hadrons

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

<u>VALUE (units 10^{-3})</u>	<u>CL%</u>
<3	90

 Γ_{17}/Γ

<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
COAN	06	CLEO

4.12–4.2 $e^+e^- \rightarrow$ hadrons

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

<u>VALUE (units 10^{-3})</u>	<u>CL%</u>
<2	90

 Γ_{18}/Γ

<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
COAN	06	CLEO

4.12–4.2 $e^+e^- \rightarrow$ hadrons

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

<u>VALUE (units 10^{-3})</u>	<u>CL%</u>
<8	90

 Γ_{19}/Γ

<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
COAN	06	CLEO

4.12–4.2 $e^+e^- \rightarrow$ hadrons

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

<u>VALUE (units 10^{-3})</u>	<u>CL%</u>
<1	90

 Γ_{20}/Γ

<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
COAN	06	CLEO

4.12–4.2 $e^+e^- \rightarrow$ hadrons

 $\Gamma(J/\psi\eta')/\Gamma_{\text{total}}$

<u>VALUE (units 10^{-3})</u>	<u>CL%</u>
<5	90

 Γ_{21}/Γ

<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
COAN	06	CLEO

4.12–4.2 $e^+e^- \rightarrow$ hadrons

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

<u>VALUE (units 10^{-3})</u>	<u>CL%</u>
<1	90

 Γ_{22}/Γ

<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
COAN	06	CLEO

4.12–4.2 $e^+e^- \rightarrow$ hadrons

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

<u>VALUE (units 10^{-3})</u>	<u>CL%</u>
<4	90

 Γ_{23}/Γ

<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
COAN	06	CLEO

4.12–4.2 $e^+e^- \rightarrow$ hadrons

 $\Gamma(\chi_{c1}\gamma)/\Gamma_{\text{total}}$

<u>VALUE (units 10^{-3})</u>	<u>CL%</u>
<7	90

 Γ_{24}/Γ

<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
COAN	06	CLEO

4.12–4.2 $e^+e^- \rightarrow$ hadrons

 $\Gamma(\chi_{c2}\gamma)/\Gamma_{\text{total}}$

<u>VALUE (units 10^{-3})</u>	<u>CL%</u>
<13	90

 Γ_{25}/Γ

<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
COAN	06	CLEO

4.12–4.2 $e^+e^- \rightarrow$ hadrons

 $\Gamma(\chi_{c1}\pi^+\pi^-\pi^0)/\Gamma_{\text{total}}$

<u>VALUE (units 10^{-3})</u>	<u>CL%</u>
<2	90

 Γ_{26}/Γ

<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
COAN	06	CLEO

4.12–4.2 $e^+e^- \rightarrow$ hadrons

$\Gamma(\chi_{c2}\pi^+\pi^-\pi^0)/\Gamma_{\text{total}}$ Γ_{27}/Γ

<i>VALUE</i> (units 10^{-3})	<i>CL%</i>	<i>DOCUMENT ID</i>	<i>TECN</i>	<i>COMMENT</i>
<8	90	COAN	06	CLEO 4.12–4.2 $e^+e^- \rightarrow$ hadrons

$\Gamma(h_c(1P)\pi^+\pi^-)/\Gamma_{\text{total}}$ Γ_{28}/Γ

<i>VALUE</i> (units 10^{-3})	<i>CL%</i>	<i>DOCUMENT ID</i>	<i>TECN</i>	<i>COMMENT</i>
<5	90	13 PEDLAR	11	CLEO $e^+e^- \rightarrow h_c(1P)\pi^+\pi^-$

¹³ At $\sqrt{s} = 4170$ MeV, PEDLAR 11 measures $\sigma(e^+e^- \rightarrow h_c(1P)\pi^+\pi^-) = 15.6 \pm 2.3 \pm 1.9 \pm 3.0$ pb, where the errors are statistical, systematic, and due to uncertainty in $B(\psi(2S) \rightarrow \pi^0 h_c(1P))$, respectively.

$\Gamma(h_c(1P)\pi^0\pi^0)/\Gamma_{\text{total}}$ Γ_{29}/Γ

<i>VALUE</i> (units 10^{-3})	<i>CL%</i>	<i>DOCUMENT ID</i>	<i>TECN</i>	<i>COMMENT</i>
<2	90	14 PEDLAR	11	CLEO $e^+e^- \rightarrow h_c(1P)\pi^0\pi^0$

¹⁴ At $\sqrt{s} = 4170$ MeV, PEDLAR 11 measures $\sigma(e^+e^- \rightarrow h_c(1P)\pi^0\pi^0) = 3.0 \pm 3.3 \pm 1.1 \pm 0.6$ pb, where the errors are statistical, systematic, and due to uncertainty in $B(\psi(2S) \rightarrow \pi^0 h_c(1P))$, respectively.

$\Gamma(h_c(1P)\eta)/\Gamma_{\text{total}}$ Γ_{30}/Γ

<i>VALUE</i> (units 10^{-3})	<i>CL%</i>	<i>DOCUMENT ID</i>	<i>TECN</i>	<i>COMMENT</i>
<2	90	15 PEDLAR	11	CLEO $e^+e^- \rightarrow h_c(1P)\eta$

¹⁵ At $\sqrt{s} = 4170$ MeV, PEDLAR 11 measures $\sigma(e^+e^- \rightarrow h_c(1P)\eta) = 4.7 \pm 1.7 \pm 1.0 \pm 0.9$ pb, where the errors are statistical, systematic, and due to uncertainty in $B(\psi(2S) \rightarrow \pi^0 h_c(1P))$, respectively.

$\Gamma(h_c(1P)\pi^0)/\Gamma_{\text{total}}$ Γ_{31}/Γ

<i>VALUE</i> (units 10^{-3})	<i>CL%</i>	<i>DOCUMENT ID</i>	<i>TECN</i>	<i>COMMENT</i>
<0.4	90	16 PEDLAR	11	CLEO $e^+e^- \rightarrow h_c(1P)\pi^0$

¹⁶ At $\sqrt{s} = 4170$ MeV, PEDLAR 11 measures $\sigma(e^+e^- \rightarrow h_c(1P)\pi^0) = -0.7 \pm 1.8 \pm 0.7 \pm 0.1$ pb, where the errors are statistical, systematic, and due to uncertainty in $B(\psi(2S) \rightarrow \pi^0 h_c(1P))$, respectively.

$\Gamma(\phi\pi^+\pi^-)/\Gamma_{\text{total}}$ Γ_{32}/Γ

<i>VALUE</i> (units 10^{-3})	<i>CL%</i>	<i>DOCUMENT ID</i>	<i>TECN</i>	<i>COMMENT</i>
<2	90	COAN	06	CLEO 4.12–4.2 $e^+e^- \rightarrow$ hadrons

$\psi(4160)$ REFERENCES

PAKHLOVA	11	PR D83 011101	G. Pakhlova <i>et al.</i>	(BELLE Collab.)
PEDLAR	11	PRL 107 041803	T. Pedlar <i>et al.</i>	(CLEO 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.)
CRONIN-HEN... 09	PR D80 072001	D. Cronin-Hennessy <i>et al.</i>	(CLEO 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.)
COAN	06	PRL 96 162003	T.E. Coan <i>et al.</i>	(CLEO 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.)
