

$\psi(4040)$

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

$\psi(4040)$ MASS

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
4039 \pm 1 OUR ESTIMATE			
4039.6 \pm 4.3	¹ ABLIKIM	08D BES2	$e^+e^- \rightarrow$ hadrons
• • • We do not use the following data for averages, fits, limits, etc. • • •			
4034 \pm 6	² MO	10 RVUE	$e^+e^- \rightarrow$ hadrons
4037 \pm 2	³ SETH	05A RVUE	$e^+e^- \rightarrow$ hadrons
4040 \pm 1	⁴ SETH	05A RVUE	$e^+e^- \rightarrow$ hadrons
4040 \pm 10	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 $\delta = (130 \pm 46)^\circ$.

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.

$\psi(4040)$ WIDTH

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
80 \pm 10 OUR ESTIMATE			
84.5 \pm 12.3	⁵ ABLIKIM	08D BES2	$e^+e^- \rightarrow$ hadrons
• • • We do not use the following data for averages, fits, limits, etc. • • •			
87 \pm 11	⁶ MO	10 RVUE	$e^+e^- \rightarrow$ hadrons
85 \pm 10	⁷ SETH	05A RVUE	$e^+e^- \rightarrow$ hadrons
89 \pm 6	⁸ SETH	05A RVUE	$e^+e^- \rightarrow$ hadrons
52 \pm 10	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 $\delta = (130 \pm 46)^\circ$.

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.

$\psi(4040)$ 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 e^+e^-	$(1.07 \pm 0.16) \times 10^{-5}$	
Γ_2 $D\bar{D}$	seen	
Γ_3 $D^0\bar{D}^0$	seen	
Γ_4 D^+D^-	seen	
Γ_5 $D^*\bar{D} + \text{c.c.}$	seen	
Γ_6 $D^*(2007)^0\bar{D}^0 + \text{c.c.}$	seen	
Γ_7 $D^*(2010)^+D^- + \text{c.c.}$	seen	
Γ_8 $D^*\bar{D}^*$	seen	
Γ_9 $D^*(2007)^0\bar{D}^*(2007)^0$	seen	
Γ_{10} $D^*(2010)^+D^*(2010)^-$	seen	
Γ_{11} $D\bar{D}\pi$ (excl. $D^*\bar{D}$)		
Γ_{12} $D^0D^-\pi^+ + \text{c.c.}$ (excl. $D^*(2007)^0\bar{D}^0 + \text{c.c.}$, $D^*(2010)^+D^- + \text{c.c.}$)	not seen	
Γ_{13} $D\bar{D}^*\pi$ (excl. $D^*\bar{D}^*$)	not seen	
Γ_{14} $D^0\bar{D}^{*-}\pi^+ + \text{c.c.}$ (excl. $D^*(2010)^+D^*(2010)^-$)	seen	
Γ_{15} $D_s^+D_s^-$	seen	
Γ_{16} $J/\psi(1S)$ hadrons		
Γ_{17} $J/\psi\pi^+\pi^-$	$< 4 \times 10^{-3}$	90%
Γ_{18} $J/\psi\pi^0\pi^0$	$< 2 \times 10^{-3}$	90%
Γ_{19} $J/\psi\eta$	$(5.2 \pm 0.7) \times 10^{-3}$	
Γ_{20} $J/\psi\pi^0$	$< 2.8 \times 10^{-4}$	90%
Γ_{21} $J/\psi\pi^+\pi^-\pi^0$	$< 2 \times 10^{-3}$	90%
Γ_{22} $\chi_{c1}\gamma$	$< 3.4 \times 10^{-3}$	90%
Γ_{23} $\chi_{c2}\gamma$	$< 5 \times 10^{-3}$	90%
Γ_{24} $\chi_{c1}\pi^+\pi^-\pi^0$	$< 1.1 \%$	90%
Γ_{25} $\chi_{c2}\pi^+\pi^-\pi^0$	$< 3.2 \%$	90%
Γ_{26} $h_c(1P)\pi^+\pi^-$	$< 3 \times 10^{-3}$	90%
Γ_{27} $\phi\pi^+\pi^-$	$< 3 \times 10^{-3}$	90%
Γ_{28} $\Lambda\bar{\Lambda}\pi^+\pi^-$	$< 2.9 \times 10^{-4}$	90%
Γ_{29} $\Lambda\bar{\Lambda}\pi^0$	$< 9 \times 10^{-5}$	90%
Γ_{30} $\Lambda\bar{\Lambda}\eta$	$< 3.0 \times 10^{-4}$	90%
Γ_{31} $\Sigma^+\bar{\Sigma}^-$	$< 1.3 \times 10^{-4}$	90%
Γ_{32} $\Sigma^0\bar{\Sigma}^0$	$< 7 \times 10^{-5}$	90%

Γ_{33}	$\Xi^+ \Xi^-$	< 1.6	$\times 10^{-4}$	90%
Γ_{34}	$\Xi^0 \Xi^0$	< 1.8	$\times 10^{-4}$	90%
Γ_{35}	$\mu^+ \mu^-$			

$\psi(4040)$ PARTIAL WIDTHS

$\Gamma(e^+ e^-)$ Γ_1

VALUE (keV)	DOCUMENT ID	TECN	COMMENT
0.86 ± 0.07 OUR ESTIMATE			
0.83 ± 0.20	⁹ ABLIKIM	08D BES2	$e^+ e^- \rightarrow$ hadrons
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.6 to 1.4	¹⁰ MO	10 RVUE	$e^+ e^- \rightarrow$ hadrons
0.88 ± 0.11	¹¹ SETH	05A RVUE	$e^+ e^- \rightarrow$ hadrons
0.91 ± 0.13	¹² SETH	05A RVUE	$e^+ e^- \rightarrow$ hadrons
0.75 ± 0.15	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 $\delta = (130 \pm 46)^\circ$.

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.

$\psi(4040) \Gamma(i) \times \Gamma(e^+ e^-) / \Gamma(\text{total})$

$\Gamma(\chi_{c1} \gamma) \times \Gamma(e^+ e^-) / \Gamma_{\text{total}}$ $\Gamma_{22} \Gamma_1 / \Gamma$

VALUE (eV)	CL%	DOCUMENT ID	TECN	COMMENT
< 2.9	90	¹³ HAN	15 BELL	$10.58 e^+ e^- \rightarrow \chi_{c1} \gamma$

¹³ Using $B(\eta \rightarrow \gamma \gamma) = (39.41 \pm 0.21)\%$.

$\Gamma(\chi_{c2} \gamma) \times \Gamma(e^+ e^-) / \Gamma_{\text{total}}$ $\Gamma_{23} \Gamma_1 / \Gamma$

VALUE (eV)	CL%	DOCUMENT ID	TECN	COMMENT
< 4.6	90	¹⁴ HAN	15 BELL	$10.58 e^+ e^- \rightarrow \chi_{c2} \gamma$

¹⁴ Using $B(\eta \rightarrow \gamma \gamma) = (39.41 \pm 0.21)\%$.

$\psi(4040) \Gamma(i) \times \Gamma(e^+ e^-) / \Gamma^2(\text{total})$

$\Gamma(J/\psi \eta) / \Gamma_{\text{total}} \times \Gamma(e^+ e^-) / \Gamma_{\text{total}}$ $\Gamma_{19} / \Gamma \times \Gamma_1 / \Gamma$

VALUE (units 10^{-8})	DOCUMENT ID	TECN	COMMENT
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• • • We do not use the following data for averages, fits, limits, etc. • • •

$5.1 \pm 1.4 \pm 1.5$ ¹⁵ WANG 13B BELL $e^+ e^- \rightarrow J/\psi \eta \gamma$

$12.8 \pm 2.1 \pm 1.9$ ¹⁶ WANG 13B BELL $e^+ e^- \rightarrow J/\psi \eta \gamma$

¹⁵ Solution I of two equivalent solutions in a fit using two interfering resonances. Mass and width fixed at 4039 MeV and 80 MeV, respectively.

¹⁶ Solution II of two equivalent solutions in a fit using two interfering resonances. Mass and width fixed at 4039 MeV and 80 MeV, respectively.

$\psi(4040)$ BRANCHING RATIOS $\Gamma(e^+e^-)/\Gamma_{\text{total}}$ Γ_1/Γ

VALUE (units 10^{-5})	DOCUMENT ID	TECN	COMMENT
~ 1.0	FELDMAN	77	MRK1 e^+e^-

 $\Gamma(D^0\bar{D}^0)/\Gamma_{\text{total}}$ Γ_3/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
seen	AUBERT	09M	BABR $e^+e^- \rightarrow D^0\bar{D}^0\gamma$
seen	CRONIN-HEN..09	CLEO	$e^+e^- \rightarrow D^0\bar{D}^0$
seen	PAKHLOVA	08	BELL $e^+e^- \rightarrow D^0\bar{D}^0\gamma$

 $\Gamma(D^+D^-)/\Gamma_{\text{total}}$ Γ_4/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
seen	AUBERT	09M	BABR $e^+e^- \rightarrow D^+D^-\gamma$
seen	CRONIN-HEN..09	CLEO	$e^+e^- \rightarrow D^+D^-$
seen	PAKHLOVA	08	BELL $e^+e^- \rightarrow D^+D^-\gamma$

 $\Gamma(D\bar{D})/\Gamma(D^*\bar{D} + \text{c.c.})$ Γ_2/Γ_5

VALUE	DOCUMENT ID	TECN	COMMENT
0.24 ± 0.05 ± 0.12	AUBERT	09M	BABR $e^+e^- \rightarrow \gamma D^{(*)}\bar{D}$

 $\Gamma(D^0\bar{D}^0)/\Gamma(D^*(2007)^0\bar{D}^0 + \text{c.c.})$ Γ_3/Γ_6

VALUE	DOCUMENT ID	TECN	COMMENT
0.05 ± 0.03	¹⁷ GOLDHABER	77	MRK1 e^+e^-

¹⁷ Phase-space factor (p^3) explicitly removed. $\Gamma(D^*(2007)^0\bar{D}^0 + \text{c.c.})/\Gamma_{\text{total}}$ Γ_6/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
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

VALUE	DOCUMENT ID	TECN	COMMENT
seen	¹⁸ ZHUKOVA	18	BELL $e^+e^- \rightarrow D^{*+}D^-\gamma$
seen	AUBERT	09M	BABR $e^+e^- \rightarrow D^{*+}D^-\gamma$
seen	CRONIN-HEN..09	CLEO	$e^+e^- \rightarrow D^{*+}D^-$

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

seen PAKHLOVA 07 BELL $e^+e^- \rightarrow D^{*+}D^-\gamma$ ¹⁸ Supersedes PAKHLOVA 07. $\Gamma(D^*(2010)^+D^- + \text{c.c.})/\Gamma(D^*(2007)^0\bar{D}^0 + \text{c.c.})$ Γ_7/Γ_6

VALUE	DOCUMENT ID	TECN	COMMENT
0.95 ± 0.09 ± 0.10	AUBERT	09M	BABR $e^+e^- \rightarrow \gamma D^*\bar{D}$

$\Gamma(D^*\bar{D}^*)/\Gamma(D^*\bar{D} + \text{c.c.})$					Γ_8/Γ_5
VALUE	DOCUMENT ID	TECN	COMMENT		
0.18 ± 0.14 ± 0.03	AUBERT	09M	BABR	$e^+e^- \rightarrow \gamma D^{(*)}\bar{D}^{(*)}$	
$\Gamma(D^*(2007)^0\bar{D}^*(2007)^0)/\Gamma_{\text{total}}$					Γ_9/Γ
VALUE	DOCUMENT ID	TECN	COMMENT		
seen	AUBERT	09M	BABR	$e^+e^- \rightarrow D^{*0}\bar{D}^{*0}\gamma$	
seen	CRONIN-HEN..09	CLEO		$e^+e^- \rightarrow D^{*0}\bar{D}^{*0}$	
$\Gamma(D^*(2007)^0\bar{D}^*(2007)^0)/\Gamma(D^*(2007)^0\bar{D}^0 + \text{c.c.})$					Γ_9/Γ_6
VALUE	DOCUMENT ID	TECN	COMMENT		
32.0 ± 12.0	¹⁹ GOLDHABER	77	MRK1	e^+e^-	
¹⁹ Phase-space factor (p^3) explicitly removed.					
$\Gamma(D^*(2010)^+D^*(2010)^-)/\Gamma_{\text{total}}$					Γ_{10}/Γ
VALUE	DOCUMENT ID	TECN	COMMENT		
seen	²⁰ ZHUKOVA	18	BELL	$e^+e^- \rightarrow D^{*+}D^{*-}\gamma$	
seen	AUBERT	09M	BABR	$e^+e^- \rightarrow D^{*+}D^{*-}\gamma$	
seen	CRONIN-HEN..09	CLEO		$e^+e^- \rightarrow D^{*+}D^{*-}$	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
seen	PAKHLOVA	07	BELL	$e^+e^- \rightarrow D^{*+}D^{*-}\gamma$	
²⁰ Supersedes PAKHLOVA 07.					
$\Gamma(D^0D^-\pi^+ + \text{c.c. (excl. } D^*(2007)^0\bar{D}^0 + \text{c.c., } D^*(2010)^+D^- + \text{c.c.))}/\Gamma_{\text{total}}$					Γ_{12}/Γ
VALUE	DOCUMENT ID	TECN	COMMENT		
not seen	PAKHLOVA	08A	BELL	$e^+e^- \rightarrow D^0D^-\pi^+\gamma$	
$\Gamma(D\bar{D}^*\pi(\text{excl. } D^*\bar{D}^*))/\Gamma_{\text{total}}$					Γ_{13}/Γ
VALUE	DOCUMENT ID	TECN	COMMENT		
not seen	CRONIN-HEN..09	CLEO		$e^+e^- \rightarrow D\bar{D}^*\pi$	
$\Gamma(D^0\bar{D}^{*-}\pi^+ + \text{c.c. (excl. } D^*(2010)^+D^*(2010)^-))/\Gamma_{\text{total}}$					Γ_{14}/Γ
VALUE	DOCUMENT ID	TECN	COMMENT		
seen	PAKHLOVA	09	BELL	$e^+e^- \rightarrow D^0D^{*-}\pi^+\gamma$	
$\Gamma(D_s^+D_s^-)/\Gamma_{\text{total}}$					Γ_{15}/Γ
VALUE	DOCUMENT ID	TECN	COMMENT		
seen	PAKHLOVA	11	BELL	$e^+e^- \rightarrow D_s^+D_s^-\gamma$	
seen	DEL-AMO-SA..10N	BABR		$e^+e^- \rightarrow D_s^+D_s^-\gamma$	
seen	CRONIN-HEN..09	CLEO		$e^+e^- \rightarrow D_s^+D_s^-$	
$\Gamma(J/\psi\pi^+\pi^-)/\Gamma_{\text{total}}$					Γ_{17}/Γ
VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT	
<4	90	COAN	06	CLEO	$3.97\text{--}4.06 e^+e^- \rightarrow \text{hadrons}$

$\Gamma(J/\psi\pi^0\pi^0)/\Gamma_{\text{total}}$ Γ_{18}/Γ

<u>VALUE (units 10^{-3})</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<2	90	COAN	06	CLEO 3.97–4.06 $e^+e^- \rightarrow$ hadrons

 $\Gamma(J/\psi\eta)/\Gamma_{\text{total}}$ Γ_{19}/Γ

<u>VALUE (units 10^{-3})</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
5.2±0.5±0.5		²¹ ABLIKIM	12K	BES3 $e^+e^- \rightarrow \ell^+\ell^-2\gamma$

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

<7 90 COAN 06 CLEO 3.97–4.06 $e^+e^- \rightarrow$ hadrons

²¹ ABLIKIM 12K measure $\sigma(e^+e^- \rightarrow J/\psi\eta) = 32.1 \pm 2.8 \pm 1.3$ pb. They assume the $\eta J/\psi$ fully originates from $\psi(4040)$ decays.

 $\Gamma(J/\psi\pi^0)/\Gamma_{\text{total}}$ Γ_{20}/Γ

<u>VALUE (units 10^{-3})</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<0.28	90	²² ABLIKIM	12K	BES3 $e^+e^- \rightarrow \ell^+\ell^-2\gamma$

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

<2 90 COAN 06 CLEO 3.97–4.06 $e^+e^- \rightarrow$ hadrons

²² ABLIKIM 12K measure $\sigma(e^+e^- \rightarrow J/\psi\pi^0) < 1.6$ pb. They assume the $\eta J/\psi$ fully originates from $\psi(4040)$ decays.

 $\Gamma(J/\psi\pi^+\pi^-\pi^0)/\Gamma_{\text{total}}$ Γ_{21}/Γ

<u>VALUE (units 10^{-3})</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<2	90	COAN	06	CLEO 3.97–4.06 $e^+e^- \rightarrow$ hadrons

 $\Gamma(\chi_{c1}\gamma)/\Gamma_{\text{total}}$ Γ_{22}/Γ

<u>VALUE (units 10^{-3})</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
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• • • We do not use the following data for averages, fits, limits, etc. • • •

<11 90 COAN 06 CLEO 3.97–4.06 $e^+e^- \rightarrow$ hadrons

 $\Gamma(\chi_{c2}\gamma)/\Gamma_{\text{total}}$ Γ_{23}/Γ

<u>VALUE (units 10^{-3})</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
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• • • We do not use the following data for averages, fits, limits, etc. • • •

<17 90 COAN 06 CLEO 3.97–4.06 $e^+e^- \rightarrow$ hadrons

 $\Gamma(\chi_{c1}\pi^+\pi^-\pi^0)/\Gamma_{\text{total}}$ Γ_{24}/Γ

<u>VALUE (units 10^{-3})</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<11	90	COAN	06	CLEO 3.97–4.06 $e^+e^- \rightarrow$ hadrons

 $\Gamma(\chi_{c2}\pi^+\pi^-\pi^0)/\Gamma_{\text{total}}$ Γ_{25}/Γ

<u>VALUE (units 10^{-3})</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<32	90	COAN	06	CLEO 3.97–4.06 $e^+e^- \rightarrow$ hadrons

$\Gamma(h_c(1P)\pi^+\pi^-)/\Gamma_{\text{total}}$ Γ_{26}/Γ

VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT
<3	90	²³ PEDLAR 11	CLEO	$e^+e^- \rightarrow h_c(1P)\pi^+\pi^-$

²³ From several values of \sqrt{s} near the peak of the $\psi(4040)$, PEDLAR 11 measures $\sigma(e^+e^- \rightarrow h_c(1P)\pi^+\pi^-) = 1.0 \pm 8.0 \pm 5.4 \pm 0.2$ 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_{27}/Γ

VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT
<3	90	COAN 06	CLEO	$3.97\text{--}4.06 e^+e^- \rightarrow \text{hadrons}$

 $\Gamma(\Lambda\bar{\Lambda}\pi^+\pi^-)/\Gamma_{\text{total}}$ Γ_{28}/Γ

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
<2.9	90	²⁴ ABLIKIM 13Q	BES3	$e^+e^- \rightarrow \psi(4040)$

²⁴ Assuming that interference effects between resonance and continuum can be neglected.

 $\Gamma(\Lambda\bar{\Lambda}\pi^0)/\Gamma_{\text{total}}$ Γ_{29}/Γ

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
<0.9	90	²⁵ ABLIKIM 13Q	BES3	$e^+e^- \rightarrow \psi(4040)$

²⁵ Assuming that interference effects between resonance and continuum can be neglected.

 $\Gamma(\Lambda\bar{\Lambda}\eta)/\Gamma_{\text{total}}$ Γ_{30}/Γ

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
<3.0	90	²⁶ ABLIKIM 13Q	BES3	$e^+e^- \rightarrow \psi(4040)$

²⁶ Assuming that interference effects between resonance and continuum can be neglected.

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

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
<1.3	90	²⁷ ABLIKIM 13Q	BES3	$e^+e^- \rightarrow \psi(4040)$

²⁷ Assuming that interference effects between resonance and continuum can be neglected.

 $\Gamma(\Sigma^0\bar{\Sigma}^0)/\Gamma_{\text{total}}$ Γ_{32}/Γ

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
<0.7	90	²⁸ ABLIKIM 13Q	BES3	$e^+e^- \rightarrow \psi(4040)$

²⁸ Assuming that interference effects between resonance and continuum can be neglected.

 $\Gamma(\Xi^+\bar{\Xi}^-)/\Gamma_{\text{total}}$ Γ_{33}/Γ

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
<1.6	90	²⁹ ABLIKIM 13Q	BES3	$e^+e^- \rightarrow \psi(4040)$

²⁹ Assuming that interference effects between resonance and continuum can be neglected.

 $\Gamma(\Xi^0\bar{\Xi}^0)/\Gamma_{\text{total}}$ Γ_{34}/Γ

VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT
<1.8	90	³⁰ ABLIKIM 13Q	BES3	$e^+e^- \rightarrow \psi(4040)$

³⁰ Assuming that interference effects between resonance and continuum can be neglected.

$\psi(4040)$ REFERENCES

ZHUKOVA	18	PR D97 012002	V. Zhukova <i>et al.</i>	(BELLE Collab.)
HAN	15	PR D92 012011	Y.L. Han <i>et al.</i>	(BELLE Collab.)
ABLIKIM	13Q	PR D87 112011	Ablikim M. <i>et al.</i>	(BES III Collab.)
WANG	13B	PR D87 051101	X.L. Wang <i>et al.</i>	(BELLE Collab.)
ABLIKIM	12K	PR D86 071101	M. Ablikim <i>et al.</i>	(BES III Collab.)
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.)
Also		ZPHY C1 233	R. Brandelik <i>et al.</i>	(DASP Collab.)
FELDMAN	77	PRPL 33C 285	G.J. Feldman, M.L. Perl	(LBL, SLAC)
GOLDHABER	77	PL 69B 503	G. Goldhaber <i>et al.</i>	(Mark I Collab.)
