



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

### $\psi(4040)$ MASS

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>4039 <math>\pm</math> 1 OUR ESTIMATE</b>			
<b>4039.6 <math>\pm</math> 4.3</b>	<sup>1</sup> ABLIKIM	08D BES2	$e^+e^- \rightarrow$ hadrons
• • • We do not use the following data for averages, fits, limits, etc. • • •			
4034 $\pm$ 6	<sup>2</sup> MO	10 RVUE	$e^+e^- \rightarrow$ hadrons
4037 $\pm$ 2	<sup>3</sup> SETH	05A RVUE	$e^+e^- \rightarrow$ hadrons
4040 $\pm$ 1	<sup>4</sup> SETH	05A RVUE	$e^+e^- \rightarrow$ hadrons
4040 $\pm$ 10	BRANDELIK	78C DASP	$e^+e^-$

<sup>1</sup> 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  $\delta = (130 \pm 46)^\circ$ .

<sup>2</sup> 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.

<sup>3</sup> From a fit to Crystal Ball (OSTERHELD 86) data.

<sup>4</sup> 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>
<b>80 <math>\pm</math> 10 OUR ESTIMATE</b>			
<b>84.5 <math>\pm</math> 12.3</b>	<sup>5</sup> ABLIKIM	08D BES2	$e^+e^- \rightarrow$ hadrons
• • • We do not use the following data for averages, fits, limits, etc. • • •			
87 $\pm$ 11	<sup>6</sup> MO	10 RVUE	$e^+e^- \rightarrow$ hadrons
85 $\pm$ 10	<sup>7</sup> SETH	05A RVUE	$e^+e^- \rightarrow$ hadrons
89 $\pm$ 6	<sup>8</sup> SETH	05A RVUE	$e^+e^- \rightarrow$ hadrons
52 $\pm$ 10	BRANDELIK	78C DASP	$e^+e^-$

<sup>5</sup> 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  $\delta = (130 \pm 46)^\circ$ .

<sup>6</sup> 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.

<sup>7</sup> From a fit to Crystal Ball (OSTERHELD 86) data.

<sup>8</sup> 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  $2\sigma$  above zero, without regard to any peaking behavior in  $\sqrt{s}$  or absence thereof. See mode listing(s) for details and references.

Mode	Fraction ( $\Gamma_i/\Gamma$ )	Confidence level
$\Gamma_1$ $e^+e^-$	$(1.07 \pm 0.16) \times 10^{-5}$	
$\Gamma_2$ $D\bar{D}$	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	
$\Gamma_{11}$ $D\bar{D}\pi$ (excl. $D^*\bar{D}$ )		
$\Gamma_{12}$ $D^0D^-\pi^+ + \text{c.c.}$ (excl. $D^*(2007)^0\bar{D}^0 + \text{c.c.}$ , $D^*(2010)^+D^- + \text{c.c.}$ )	not seen	
$\Gamma_{13}$ $D\bar{D}^*\pi$ (excl. $D^*\bar{D}^*$ )	not seen	
$\Gamma_{14}$ $D^0\bar{D}^{*-}\pi^+ + \text{c.c.}$ (excl. $D^*(2010)^+D^*(2010)^-$ )	seen	
$\Gamma_{15}$ $D_s^+D_s^-$	seen	
$\Gamma_{16}$ $J/\psi(1S)$ hadrons		
$\Gamma_{17}$ $J/\psi\pi^+\pi^-$	$< 4 \times 10^{-3}$	90%
$\Gamma_{18}$ $J/\psi\pi^0\pi^0$	$< 2 \times 10^{-3}$	90%
$\Gamma_{19}$ $J/\psi\eta$	$(5.2 \pm 0.7) \times 10^{-3}$	
$\Gamma_{20}$ $J/\psi\pi^0$	$< 2.8 \times 10^{-4}$	90%
$\Gamma_{21}$ $J/\psi\pi^+\pi^-\pi^0$	$< 2 \times 10^{-3}$	90%
$\Gamma_{22}$ $\chi_{c1}\gamma$	$< 3.4 \times 10^{-3}$	90%
$\Gamma_{23}$ $\chi_{c2}\gamma$	$< 5 \times 10^{-3}$	90%
$\Gamma_{24}$ $\chi_{c1}\pi^+\pi^-\pi^0$	$< 1.1 \%$	90%
$\Gamma_{25}$ $\chi_{c2}\pi^+\pi^-\pi^0$	$< 3.2 \%$	90%
$\Gamma_{26}$ $h_c(1P)\pi^+\pi^-$	$< 3 \times 10^{-3}$	90%
$\Gamma_{27}$ $\phi\pi^+\pi^-$	$< 3 \times 10^{-3}$	90%
$\Gamma_{28}$ $\Lambda\bar{\Lambda}\pi^+\pi^-$	$< 2.9 \times 10^{-4}$	90%
$\Gamma_{29}$ $\Lambda\bar{\Lambda}\pi^0$	$< 9 \times 10^{-5}$	90%
$\Gamma_{30}$ $\Lambda\bar{\Lambda}\eta$	$< 3.0 \times 10^{-4}$	90%
$\Gamma_{31}$ $\Sigma^+\bar{\Sigma}^-$	$< 1.3 \times 10^{-4}$	90%
$\Gamma_{32}$ $\Sigma^0\bar{\Sigma}^0$	$< 7 \times 10^{-5}$	90%
$\Gamma_{33}$ $\Xi^+\bar{\Xi}^-$	$< 1.6 \times 10^{-4}$	90%

$\Gamma_{34} \equiv \Gamma_{e^+e^-}$	$< 1.8$	$\times 10^{-4}$	90%
$\Gamma_{35} \equiv \Gamma_{\mu^+\mu^-}$	$(9 \pm 6)$	$\times 10^{-6}$	

### $\psi(4040)$ PARTIAL WIDTHS

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

$\Gamma_1$

VALUE (keV)	DOCUMENT ID	TECN	COMMENT
<b><math>0.86 \pm 0.07</math> OUR ESTIMATE</b>			
<b><math>0.83 \pm 0.20</math></b>	<sup>9</sup> ABLIKIM	08D BES2	$e^+e^- \rightarrow$ hadrons
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.6 to 1.4	<sup>10</sup> MO	10 RVUE	$e^+e^- \rightarrow$ hadrons
$0.88 \pm 0.11$	<sup>11</sup> SETH	05A RVUE	$e^+e^- \rightarrow$ hadrons
$0.91 \pm 0.13$	<sup>12</sup> SETH	05A RVUE	$e^+e^- \rightarrow$ hadrons
$0.75 \pm 0.15$	BRANDELIK	78C DASP	$e^+e^-$

<sup>9</sup> 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  $\delta = (130 \pm 46)^\circ$ .

<sup>10</sup> 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.

<sup>11</sup> From a fit to Crystal Ball (OSTERHELD 86) data.

<sup>12</sup> From a fit to BES (BAI 02C) data.

#### $\Gamma(\mu^+\mu^-)$

$\Gamma_{35}$

VALUE (keV)	DOCUMENT ID	TECN	COMMENT
<b><math>0.73 \pm 0.48 \pm 0.12</math></b>	<sup>13,14</sup> ABLIKIM	20AG BES3	$e^+e^- \rightarrow \mu^+\mu^-$

<sup>13</sup> 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  $\Gamma(\mu^+\mu^-) = \Gamma(e^+e^-)$ .

<sup>14</sup> From solution 1 of 8 with equal fit quality. Other solutions range from  $0.58 \pm 0.52 \pm 0.10$  to  $0.80 \pm 0.48 \pm 0.13$  keV.

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

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

$\Gamma_{22}\Gamma_1/\Gamma$

VALUE (eV)	CL%	DOCUMENT ID	TECN	COMMENT
<b><math>&lt; 2.9</math></b>	90	<sup>15</sup> HAN	15 BELL	$10.58 e^+e^- \rightarrow \chi_{c1}\gamma$

<sup>15</sup> 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
<b><math>&lt; 4.6</math></b>	90	<sup>16</sup> HAN	15 BELL	$10.58 e^+e^- \rightarrow \chi_{c2}\gamma$

<sup>16</sup> Using  $B(\eta \rightarrow \gamma\gamma) = (39.41 \pm 0.21)\%$ .

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

$\Gamma_{19}\Gamma_1/\Gamma$

VALUE (eV)	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$1.5 \pm 0.3$	<sup>17</sup> ABLIKIM	200 BES3	$e^+e^- \rightarrow \eta J/\psi$
$1.4 \pm 0.3$	<sup>18</sup> ABLIKIM	200 BES3	$e^+e^- \rightarrow \eta J/\psi$
$7.0 \pm 0.6$	<sup>19</sup> ABLIKIM	200 BES3	$e^+e^- \rightarrow \eta J/\psi$

<sup>17</sup> Solution 1 of three equivalent fit solutions using three resonant structures.

<sup>18</sup> Solution 2 of three equivalent fit solutions using three resonant structures.

<sup>19</sup> Solution 3 of three equivalent fit solutions using three resonant structures.

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

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

VALUE (units $10^{-8}$ )	DOCUMENT ID	TECN	COMMENT
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
$5.1 \pm 1.4 \pm 1.5$	<sup>20</sup> WANG	13B	BELL $e^+ e^- \rightarrow J/\psi\eta\gamma$
$12.8 \pm 2.1 \pm 1.9$	<sup>21</sup> WANG	13B	BELL $e^+ e^- \rightarrow J/\psi\eta\gamma$

<sup>20</sup> Solution I of two equivalent solutions in a fit using two interfering resonances. Mass and width fixed at 4039 MeV and 80 MeV, respectively.

<sup>21</sup> 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

$\Gamma(e^+ e^-) / \Gamma_{\text{total}}$   $\Gamma_1 / \Gamma$

VALUE (units $10^{-5}$ )	DOCUMENT ID	TECN	COMMENT
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
$\sim 1.0$	FELDMAN	77	MRK1 $e^+ e^-$

$\Gamma(D^0 \bar{D}^0) / \Gamma_{\text{total}}$   $\Gamma_3 / \Gamma$

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 $e^+ e^- \rightarrow D^0 \bar{D}^0 \gamma$

$\Gamma(D^+ D^-) / \Gamma_{\text{total}}$   $\Gamma_4 / \Gamma$

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 $e^+ e^- \rightarrow D^+ D^- \gamma$

$\Gamma(D \bar{D}) / \Gamma(D^* \bar{D} + \text{c.c.})$   $\Gamma_2 / \Gamma_5$

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

$\Gamma(D^0 \bar{D}^0) / \Gamma(D^*(2007)^0 \bar{D}^0 + \text{c.c.})$   $\Gamma_3 / \Gamma_6$

VALUE	DOCUMENT ID	TECN	COMMENT
$0.05 \pm 0.03$	<sup>22</sup> GOLDHABER	77	MRK1 $e^+ e^-$

<sup>22</sup> Phase-space factor ( $p^3$ ) explicitly removed.

$\Gamma(D^*(2007)^0 \bar{D}^0 + \text{c.c.}) / \Gamma_{\text{total}}$   $\Gamma_6 / \Gamma$

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

$\Gamma(D^*(2010)^+ D^- + \text{c.c.})/\Gamma_{\text{total}}$   $\Gamma_7/\Gamma$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>seen</b>	<sup>23</sup> ZHUKOVA 18	BELL	$e^+ e^- \rightarrow D^{*+} D^- \gamma$
<b>seen</b>	AUBERT 09M	BABR	$e^+ e^- \rightarrow D^{*+} D^- \gamma$
<b>seen</b>	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	$e^+ e^- \rightarrow D^{*+} D^- \gamma$
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<sup>23</sup> Supersedes PAKHLOVA 07.

$\Gamma(D^*(2010)^+ D^- + \text{c.c.})/\Gamma(D^*(2007)^0 \bar{D}^0 + \text{c.c.})$   $\Gamma_7/\Gamma_6$

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

$\Gamma(D^* \bar{D}^*)/\Gamma(D^* \bar{D} + \text{c.c.})$   $\Gamma_8/\Gamma_5$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>0.18 ± 0.14 ± 0.03</b>	AUBERT 09M	BABR	$e^+ e^- \rightarrow \gamma D^{(*)} \bar{D}^{(*)}$

$\Gamma(D^*(2007)^0 \bar{D}^*(2007)^0)/\Gamma_{\text{total}}$   $\Gamma_9/\Gamma$

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

$\Gamma(D^*(2007)^0 \bar{D}^*(2007)^0)/\Gamma(D^*(2007)^0 \bar{D}^0 + \text{c.c.})$   $\Gamma_9/\Gamma_6$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>32.0 ± 12.0</b>	<sup>24</sup> GOLDHABER 77	MRK1	$e^+ e^-$

<sup>24</sup> Phase-space factor ( $p^3$ ) explicitly removed.

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

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>seen</b>	<sup>25</sup> ZHUKOVA 18	BELL	$e^+ e^- \rightarrow D^{*+} D^{*-} \gamma$
<b>seen</b>	AUBERT 09M	BABR	$e^+ e^- \rightarrow D^{*+} D^{*-} \gamma$
<b>seen</b>	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	$e^+ e^- \rightarrow D^{*+} D^{*-} \gamma$
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<sup>25</sup> Supersedes PAKHLOVA 07.

$\Gamma(D^0 D^- \pi^+ + \text{c.c. (excl. } D^*(2007)^0 \bar{D}^0 + \text{c.c., } D^*(2010)^+ D^- + \text{c.c.))}/\Gamma_{\text{total}}$   $\Gamma_{12}/\Gamma$

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

$\Gamma(D \bar{D}^* \pi (\text{excl. } D^* \bar{D}^*))/\Gamma_{\text{total}}$   $\Gamma_{13}/\Gamma$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>not seen</b>	CRONIN-HEN..09	CLEO	$e^+ e^- \rightarrow D \bar{D}^* \pi$

$\Gamma(D^0 \bar{D}^{*-} \pi^+ + \text{c.c. (excl. } D^*(2010)^+ D^*(2010)^-))/\Gamma_{\text{total}}$   $\Gamma_{14}/\Gamma$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>seen</b>	PAKHLOVA 09	BELL	$e^+ e^- \rightarrow D^0 D^{*-} \pi^+ \gamma$

$\Gamma(D_s^+ D_s^-)/\Gamma_{\text{total}}$					$\Gamma_{15}/\Gamma$
<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>seen</b>		PAKHLOVA	11	BELL	$e^+ e^- \rightarrow D_s^+ D_s^- \gamma$
<b>seen</b>		DEL-AMO-SA..10N	BABR		$e^+ e^- \rightarrow D_s^+ D_s^- \gamma$
<b>seen</b>		CRONIN-HEN..09	CLEO		$e^+ e^- \rightarrow D_s^+ D_s^-$

$\Gamma(J/\psi \pi^+ \pi^-)/\Gamma_{\text{total}}$					$\Gamma_{17}/\Gamma$
<u>VALUE (units <math>10^{-3}</math>)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<4	90	COAN	06	CLEO	3.97–4.06 $e^+ e^- \rightarrow$ hadrons

$\Gamma(J/\psi \pi^0 \pi^0)/\Gamma_{\text{total}}$					$\Gamma_{18}/\Gamma$
<u>VALUE (units <math>10^{-3}</math>)</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

$\Gamma(J/\psi \eta)/\Gamma_{\text{total}}$					$\Gamma_{19}/\Gamma$
<u>VALUE (units <math>10^{-3}</math>)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>5.2±0.5±0.5</b>		<sup>26</sup> 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
<sup>26</sup> 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.					

$\Gamma(J/\psi \pi^0)/\Gamma_{\text{total}}$					$\Gamma_{20}/\Gamma$
<u>VALUE (units <math>10^{-3}</math>)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<0.28	90	<sup>27</sup> 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
<sup>27</sup> 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.					

$\Gamma(J/\psi \pi^+ \pi^- \pi^0)/\Gamma_{\text{total}}$					$\Gamma_{21}/\Gamma$
<u>VALUE (units <math>10^{-3}</math>)</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

$\Gamma(\chi_{c1} \gamma)/\Gamma_{\text{total}}$					$\Gamma_{22}/\Gamma$
<u>VALUE (units <math>10^{-3}</math>)</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

$\Gamma(\chi_{c2} \gamma)/\Gamma_{\text{total}}$					$\Gamma_{23}/\Gamma$
<u>VALUE (units <math>10^{-3}</math>)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<17	90	COAN	06	CLEO	3.97–4.06 $e^+ e^- \rightarrow$ hadrons

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

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

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

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

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

VALUE (units $10^{-3}$ )	CL%	DOCUMENT ID	TECN	COMMENT
<3	90	<sup>28</sup> PEDLAR 11	CLEO	$e^+e^- \rightarrow h_c(1P)\pi^+\pi^-$

<sup>28</sup> 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.

$\Gamma(\phi\pi^+\pi^-)/\Gamma_{\text{total}}$   $\Gamma_{27}/\Gamma$

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

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

VALUE (units $10^{-4}$ )	CL%	DOCUMENT ID	TECN	COMMENT
<2.9	90	<sup>29</sup> ABLIKIM 13Q	BES3	$e^+e^- \rightarrow \psi(4040)$

<sup>29</sup> Assuming that interference effects between resonance and continuum can be neglected.

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

VALUE (units $10^{-4}$ )	CL%	DOCUMENT ID	TECN	COMMENT
<0.9	90	<sup>30</sup> ABLIKIM 13Q	BES3	$e^+e^- \rightarrow \psi(4040)$

<sup>30</sup> Assuming that interference effects between resonance and continuum can be neglected.

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

VALUE (units $10^{-4}$ )	CL%	DOCUMENT ID	TECN	COMMENT
<3.0	90	<sup>31</sup> ABLIKIM 13Q	BES3	$e^+e^- \rightarrow \psi(4040)$

<sup>31</sup> Assuming that interference effects between resonance and continuum can be neglected.

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

VALUE (units $10^{-4}$ )	CL%	DOCUMENT ID	TECN	COMMENT
<1.3	90	<sup>32</sup> ABLIKIM 13Q	BES3	$e^+e^- \rightarrow \psi(4040)$

<sup>32</sup> Assuming that interference effects between resonance and continuum can be neglected.

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

VALUE (units $10^{-4}$ )	CL%	DOCUMENT ID	TECN	COMMENT
<0.7	90	<sup>33</sup> ABLIKIM 13Q	BES3	$e^+e^- \rightarrow \psi(4040)$

<sup>33</sup> Assuming that interference effects between resonance and continuum can be neglected.

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

VALUE (units $10^{-4}$ )	CL%	DOCUMENT ID	TECN	COMMENT
<b>&lt;1.6</b>	90	<sup>34</sup> ABLIKIM	13Q	BES3 $e^+e^- \rightarrow \psi(4040)$

<sup>34</sup> Assuming that interference effects between resonance and continuum can be neglected.

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

VALUE (units $10^{-4}$ )	CL%	DOCUMENT ID	TECN	COMMENT
<b>&lt;1.8</b>	90	<sup>35</sup> ABLIKIM	13Q	BES3 $e^+e^- \rightarrow \psi(4040)$

<sup>35</sup> Assuming that interference effects between resonance and continuum can be neglected.

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