

# $\psi(3770)$

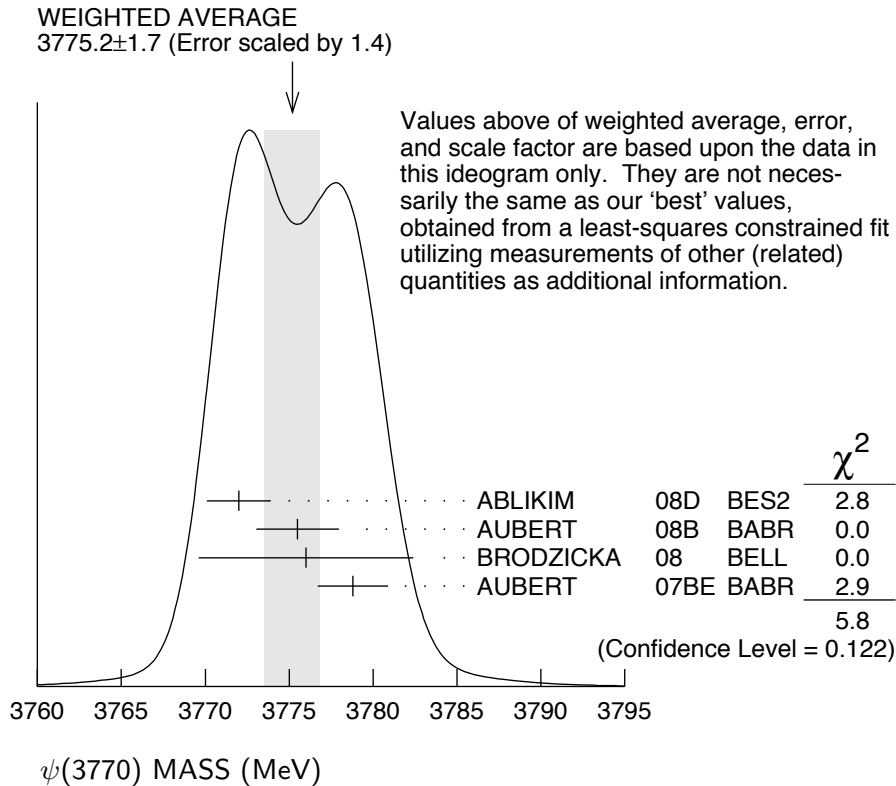
$$J^{PC} = 0^{-}(1^{-}-)$$

## $\psi(3770)$ MASS (MeV)

OUR FIT includes measurements of  $m_{\psi(2S)}$ ,  $m_{\psi(3770)}$ , and  $m_{\psi(3770)} - m_{\psi(2S)}$ .

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b>3772.92 ± 0.35 OUR FIT</b>				Error includes scale factor of 1.1.
<b>3775.2 ± 1.7 OUR AVERAGE</b>				Error includes scale factor of 1.4. See the ideogram below.
3772.0 ± 1.9		<sup>1</sup> ABLIKIM	08D BES2	$e^+e^- \rightarrow$ hadrons
3775.5 ± 2.4 ± 0.5	57	AUBERT	08B BABR	$B \rightarrow D\bar{D}K$
3776 ± 5 ± 4	68	BRODZICKA	08 BELL	$B^+ \rightarrow D^0\bar{D}^0K^+$
3778.8 ± 1.9 ± 0.9		AUBERT	07BE BABR	$e^+e^- \rightarrow D\bar{D}\gamma$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
3778.4 ± 3.0 ± 1.3	34	CHISTOV	04 BELL	Sup. by BRODZICKA 08

<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  $\delta = 0^\circ$ .



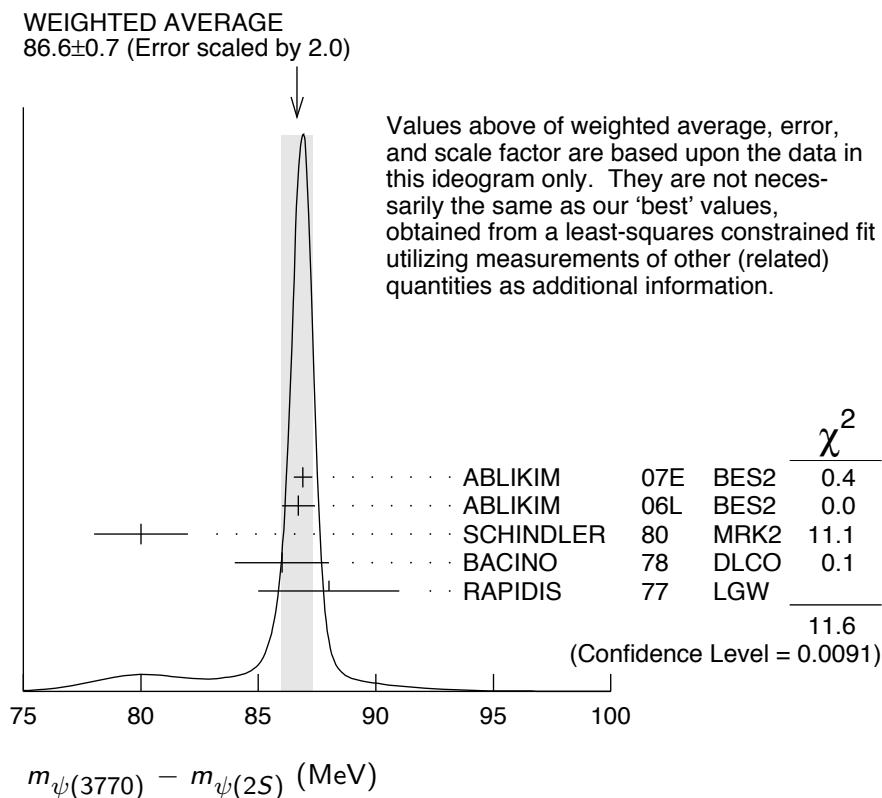
### $m_{\psi(3770)} - m_{\psi(2S)}$

OUR FIT includes measurements of  $m_{\psi(2S)}$ ,  $m_{\psi(3770)}$ , and  $m_{\psi(3770)} - m_{\psi(2S)}$ .

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
<b>86.83 ± 0.35 OUR FIT</b>	Error includes scale factor of 1.1.		
<b>86.6 ± 0.7 OUR AVERAGE</b>	Error includes scale factor of 2.0. See the ideogram below.		
86.9 ± 0.4	<sup>2</sup> ABLIKIM	07E	BES2 $e^+e^- \rightarrow$ hadrons
86.7 ± 0.7	ABLIKIM	06L	BES2 $e^+e^- \rightarrow$ hadrons
80 ± 2	SCHINDLER	80	MRK2 $e^+e^-$
86 ± 2	<sup>3</sup> BACINO	78	DLCO $e^+e^-$
88 ± 3	RAPIDIS	77	LGW $e^+e^-$

<sup>2</sup> BES-II  $\psi(2S)$  mass subtracted (see ABLIKIM 06L).

<sup>3</sup> SPEAR  $\psi(2S)$  mass subtracted (see SCHINDLER 80).



### $\psi(3770)$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b>27.3 ± 1.0 OUR FIT</b>				
<b>27.6 ± 1.0 OUR AVERAGE</b>				
30.4 ± 8.5		<sup>4</sup> ABLIKIM	08D	BES2 $e^+e^- \rightarrow$ hadrons
27 ± 10 ± 5	68	BRODZICKA	08	BELL $B^+ \rightarrow D^0 \bar{D}^0 K^+$
28.5 ± 1.2 ± 0.2		ABLIKIM	07E	BES2 $e^+e^- \rightarrow$ hadrons
23.5 ± 3.7 ± 0.9		AUBERT	07BE	BABR $e^+e^- \rightarrow D \bar{D} \gamma$

26.9 ± 2.4 ± 0.3	ABLIKIM	06L	BES2	$e^+ e^- \rightarrow$ hadrons
24 ± 5	SCHINDLER	80	MRK2	$e^+ e^-$
24 ± 5	BACINO	78	DLCO	$e^+ e^-$
28 ± 5	RAPIDIS	77	LGW	$e^+ e^-$

<sup>4</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  $\delta = 0^\circ$ .

### $\psi(3770)$ DECAY MODES

In addition to the dominant decay mode to  $D\bar{D}$ ,  $\psi(3770)$  was found to decay into the final states containing the  $J/\psi$  (BAI 05, ADAM 06). ADAMS 06 and HUANG 06A searched for various decay modes with light hadrons and found a statistically significant signal for the decay to  $\phi\eta$  only (ADAMS 06).

Mode	Fraction ( $\Gamma_i/\Gamma$ )	Scale factor/ Confidence level
$\Gamma_1$ $D\bar{D}$	(93 $^{+8}_{-9}$ ) %	S=2.0
$\Gamma_2$ $D^0\bar{D}^0$	(52 ± 5) %	S=2.0
$\Gamma_3$ $D^+ D^-$	(41 ± 4) %	S=2.0
$\Gamma_4$ $J/\psi \pi^+ \pi^-$	(1.93 ± 0.28) × 10 <sup>-3</sup>	
$\Gamma_5$ $J/\psi \pi^0 \pi^0$	(8.0 ± 3.0) × 10 <sup>-4</sup>	
$\Gamma_6$ $J/\psi \eta$	(9 ± 4) × 10 <sup>-4</sup>	
$\Gamma_7$ $J/\psi \pi^0$	< 2.8 × 10 <sup>-4</sup>	CL=90%
$\Gamma_8$ $\gamma \chi_{c0}$	(7.3 ± 0.9) × 10 <sup>-3</sup>	
$\Gamma_9$ $\gamma \chi_{c1}$	(2.9 ± 0.6) × 10 <sup>-3</sup>	
$\Gamma_{10}$ $\gamma \chi_{c2}$	< 9 × 10 <sup>-4</sup>	CL=90%
$\Gamma_{11}$ $e^+ e^-$	(9.7 ± 0.7) × 10 <sup>-6</sup>	S=1.2
$\Gamma_{12}$ $K_S^0 K_L^0$	< 1.2 × 10 <sup>-5</sup>	CL=90%
$\Gamma_{13}$ $2(\pi^+ \pi^-)$	< 1.12 × 10 <sup>-3</sup>	CL=90%
$\Gamma_{14}$ $2(\pi^+ \pi^-) \pi^0$	< 1.06 × 10 <sup>-3</sup>	CL=90%
$\Gamma_{15}$ $2(\pi^+ \pi^- \pi^0)$	< 5.85 %	CL=90%
$\Gamma_{16}$ $\omega \pi^+ \pi^-$	< 6.0 × 10 <sup>-4</sup>	CL=90%
$\Gamma_{17}$ $3(\pi^+ \pi^-)$	< 9.1 × 10 <sup>-3</sup>	
$\Gamma_{18}$ $3(\pi^+ \pi^-) \pi^0$	< 1.37 %	
$\Gamma_{19}$ $3(\pi^+ \pi^-) 2\pi^0$	< 11.74 %	CL=90%
$\Gamma_{20}$ $\eta \pi^+ \pi^-$	< 1.24 × 10 <sup>-3</sup>	CL=90%
$\Gamma_{21}$ $\pi^+ \pi^- 2\pi^0$	< 8.9 × 10 <sup>-3</sup>	CL=90%
$\Gamma_{22}$ $\rho^0 \pi^+ \pi^-$	< 6.9 × 10 <sup>-3</sup>	CL=90%
$\Gamma_{23}$ $\eta 3\pi$	< 1.34 × 10 <sup>-3</sup>	CL=90%
$\Gamma_{24}$ $\eta 2(\pi^+ \pi^-)$	< 2.43 %	
$\Gamma_{25}$ $\eta' 3\pi$	< 2.44 × 10 <sup>-3</sup>	CL=90%
$\Gamma_{26}$ $K^+ K^- \pi^+ \pi^-$	< 9.0 × 10 <sup>-4</sup>	CL=90%
$\Gamma_{27}$ $\phi \pi^+ \pi^-$	< 4.1 × 10 <sup>-4</sup>	CL=90%
$\Gamma_{28}$ $K^+ K^- 2\pi^0$	< 4.2 × 10 <sup>-3</sup>	CL=90%

Γ <sub>29</sub>	$\phi\pi^0$	not seen		
Γ <sub>30</sub>	$\phi\eta$	$(3.1 \pm 0.7) \times 10^{-4}$		
Γ <sub>31</sub>	$4(\pi^+\pi^-)$	< 1.67	%	CL=90%
Γ <sub>32</sub>	$4(\pi^+\pi^-)\pi^0$	< 3.06	%	CL=90%
Γ <sub>33</sub>	$\phi f_0(980)$	< 4.5	$\times 10^{-4}$	CL=90%
Γ <sub>34</sub>	$K^+K^-\pi^+\pi^-\pi^0$	< 2.36	$\times 10^{-3}$	CL=90%
Γ <sub>35</sub>	$K^+K^-\rho^0\pi^0$	< 8	$\times 10^{-4}$	CL=90%
Γ <sub>36</sub>	$K^+K^-\rho^+\pi^-$	< 1.46	%	CL=90%
Γ <sub>37</sub>	$\omega K^+K^-$	< 3.4	$\times 10^{-4}$	CL=90%
Γ <sub>38</sub>	$\phi\pi^+\pi^-\pi^0$	< 3.8	$\times 10^{-3}$	CL=90%
Γ <sub>39</sub>	$K^{*0}K^-\pi^+\pi^0 + \text{c.c.}$	< 1.62	%	CL=90%
Γ <sub>40</sub>	$K^{*+}K^-\pi^+\pi^- + \text{c.c.}$	< 3.23	%	CL=90%
Γ <sub>41</sub>	$K^+K^-\pi^+\pi^-2\pi^0$	< 2.67	%	CL=90%
Γ <sub>42</sub>	$K^+K^-2(\pi^+\pi^-)$	< 1.03	%	CL=90%
Γ <sub>43</sub>	$K^+K^-2(\pi^+\pi^-)\pi^0$	< 3.60	%	CL=90%
Γ <sub>44</sub>	$\eta K^+K^-$	< 4.1	$\times 10^{-4}$	CL=90%
Γ <sub>45</sub>	$\rho^0 K^+K^-$	< 5.0	$\times 10^{-3}$	CL=90%
Γ <sub>46</sub>	$2(K^+K^-)$	< 6.0	$\times 10^{-4}$	CL=90%
Γ <sub>47</sub>	$\phi K^+K^-$	< 7.5	$\times 10^{-4}$	CL=90%
Γ <sub>48</sub>	$2(K^+K^-)\pi^0$	< 2.9	$\times 10^{-4}$	CL=90%
Γ <sub>49</sub>	$2(K^+K^-)\pi^+\pi^-$	< 3.2	$\times 10^{-3}$	CL=90%
Γ <sub>50</sub>	$K_S^0 K^-\pi^+$	< 3.2	$\times 10^{-3}$	CL=90%
Γ <sub>51</sub>	$K_S^0 K^-\pi^+\pi^0$	< 1.33	%	CL=90%
Γ <sub>52</sub>	$K_S^0 K^-\rho^+$	< 6.6	$\times 10^{-3}$	CL=90%
Γ <sub>53</sub>	$K_S^0 K^-\pi^+\pi^-$	< 8.7	$\times 10^{-3}$	CL=90%
Γ <sub>54</sub>	$K_S^0 K^-\pi^+\rho^0$	< 1.6	%	CL=90%
Γ <sub>55</sub>	$K_S^0 K^-\pi^+\eta$	< 1.3	%	CL=90%
Γ <sub>56</sub>	$K_S^0 K^-\pi^+\pi^-\pi^0$	< 4.18	%	CL=90%
Γ <sub>57</sub>	$K_S^0 K^-\pi^+\pi^-\eta$	< 4.8	%	CL=90%
Γ <sub>58</sub>	$K_S^0 K^-\pi^+2(\pi^+\pi^-)$	< 1.22	%	CL=90%
Γ <sub>59</sub>	$K_S^0 K^-\pi^+2\pi^0$	< 2.65	%	CL=90%
Γ <sub>60</sub>	$K_S^0 K^-\pi^+K^-\pi^+$	< 4.9	$\times 10^{-3}$	CL=90%
Γ <sub>61</sub>	$K_S^0 K^-\pi^+K^-\pi^+\pi^0$	< 3.0	%	CL=90%
Γ <sub>62</sub>	$K_S^0 K^-\pi^+K^-\pi^+\eta$	< 2.2	%	CL=90%
Γ <sub>63</sub>	$K^{*0}K^-\pi^+ + \text{c.c.}$	< 9.7	$\times 10^{-3}$	CL=90%
Γ <sub>64</sub>	$\rho\bar{\rho}\pi^0$	< 1.2	$\times 10^{-3}$	
Γ <sub>65</sub>	$\rho\bar{\rho}\pi^+\pi^-$	< 5.8	$\times 10^{-4}$	CL=90%
Γ <sub>66</sub>	$\Lambda\bar{\Lambda}$	< 1.2	$\times 10^{-4}$	CL=90%
Γ <sub>67</sub>	$\rho\bar{\rho}\pi^+\pi^-\pi^0$	< 1.85	$\times 10^{-3}$	CL=90%
Γ <sub>68</sub>	$\omega\rho\bar{\rho}$	< 2.9	$\times 10^{-4}$	CL=90%
Γ <sub>69</sub>	$\Lambda\bar{\Lambda}\pi^0$	< 1.2	$\times 10^{-3}$	CL=90%
Γ <sub>70</sub>	$\rho\bar{\rho}2(\pi^+\pi^-)$	< 2.6	$\times 10^{-3}$	CL=90%
Γ <sub>71</sub>	$\eta\rho\bar{\rho}$	< 5.4	$\times 10^{-4}$	CL=90%

$\Gamma_{72}$	$\rho^0 \rho \bar{p}$	< 1.7	$\times 10^{-3}$	CL=90%
$\Gamma_{73}$	$\rho \bar{p} K^+ K^-$	< 3.2	$\times 10^{-4}$	CL=90%
$\Gamma_{74}$	$\phi \rho \bar{p}$	< 1.3	$\times 10^{-4}$	CL=90%
$\Gamma_{75}$	$\Lambda \bar{\Lambda} \pi^+ \pi^-$	< 2.5	$\times 10^{-4}$	CL=90%
$\Gamma_{76}$	$\Lambda \bar{p} K^+$	< 2.8	$\times 10^{-4}$	CL=90%
$\Gamma_{77}$	$\Lambda \bar{p} K^+ \pi^+ \pi^-$	< 6.3	$\times 10^{-4}$	CL=90%
$\Gamma_{78}$	$\pi^+ \pi^- \pi^0$	not seen		
$\Gamma_{79}$	$\rho \pi$	not seen		
$\Gamma_{80}$	$\omega \pi^0$	not seen		
$\Gamma_{81}$	$\rho \eta$	not seen		
$\Gamma_{82}$	$\omega \eta$	not seen		
$\Gamma_{83}$	$\rho \eta'$	not seen		
$\Gamma_{84}$	$\omega \eta'$	not seen		
$\Gamma_{85}$	$\phi \eta'$	not seen		
$\Gamma_{86}$	$K^{*0} \bar{K}^0$	not seen		
$\Gamma_{87}$	$K^{*+} K^-$	not seen		
$\Gamma_{88}$	$b_1 \pi$	not seen		

### Radiative decays

$\Gamma_{89}$	$\gamma \pi^0$	< 2	$\times 10^{-4}$	CL=90%
$\Gamma_{90}$	$\gamma \eta$	< 1.5	$\times 10^{-4}$	CL=90%
$\Gamma_{91}$	$\gamma \eta'$	< 1.8	$\times 10^{-4}$	CL=90%

## CONSTRAINED FIT INFORMATION

An overall fit to the total width, a partial width, and 3 branching ratios uses 21 measurements and one constraint to determine 5 parameters. The overall fit has a  $\chi^2 = 17.9$  for 17 degrees of freedom.

The following *off-diagonal* array elements are the correlation coefficients  $\langle \delta p_i \delta p_j \rangle / (\delta p_i \cdot \delta p_j)$ , in percent, from the fit to parameters  $p_i$ , including the branching fractions,  $x_i \equiv \Gamma_i / \Gamma_{\text{total}}$ . The fit constrains the  $x_i$  whose labels appear in this array to sum to one.

$x_3$		98		
$x_{11}$		0	0	
$\Gamma$		0	0	-46
		$x_2$	$x_3$	$x_{11}$

	Mode	Rate (MeV)	Scale factor
$\Gamma_2$	$D^0 \bar{D}^0$	$14.1 \pm 1.4$	1.7
$\Gamma_3$	$D^+ D^-$	$11.2 \pm 1.1$	1.7
$\Gamma_{11}$	$e^+ e^-$	$(2.65 \pm 0.18) \times 10^{-4}$	1.3

## $\psi(3770)$ PARTIAL WIDTHS

$\Gamma(e^+e^-)$					$\Gamma_{11}$
<u>VALUE (keV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>0.265 ± 0.018 OUR FIT</b>	Error includes scale factor of 1.3.				
<b>0.259 ± 0.016 OUR AVERAGE</b>	Error includes scale factor of 1.2.				
0.22 ± 0.05		<sup>5</sup> ABLIKIM	08D	BES2	$e^+e^- \rightarrow$ hadrons
0.277 ± 0.011 ± 0.013		ABLIKIM	07E	BES2	$e^+e^- \rightarrow$ hadrons
0.203 ± 0.003 <sup>+0.041</sup> <sub>-0.027</sub>	1.427M	<sup>6</sup> BESSON	06	CLEO	$e^+e^- \rightarrow$ hadrons
0.276 ± 0.050		SCHINDLER	80	MRK2	$e^+e^-$
0.18 ± 0.06		BACINO	78	DLCO	$e^+e^-$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●					
0.37 ± 0.09		<sup>7</sup> RAPIDIS	77	LGW	$e^+e^-$
<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 $\delta = 0^\circ$ .					
<sup>6</sup> BESSON 06 (as corrected in BESSON 10) measure $\sigma(e^+e^- \rightarrow \psi(3770) \rightarrow$ hadrons) = $6.36 \pm 0.08^{+0.41}_{-0.30}$ nb at $\sqrt{s} = 3773 \pm 1$ MeV, and obtain $\Gamma_{ee}$ from the Born-level cross section calculated using $\psi(3770)$ mass and width from our 2004 edition, PDG 04.					
<sup>7</sup> See also $\Gamma(e^+e^-)/\Gamma_{\text{total}}$ below.					

## $\psi(3770)$ BRANCHING RATIOS

$\Gamma(D\bar{D})/\Gamma_{\text{total}}$					$\Gamma_1/\Gamma = (\Gamma_2 + \Gamma_3)/\Gamma$
<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>0.93<sup>+0.08</sup><sub>-0.09</sub> OUR FIT</b>	Error includes scale factor of 2.0.				
<b>0.93<sup>+0.08</sup><sub>-0.09</sub> OUR AVERAGE</b>	Error includes scale factor of 2.1.				
0.849 ± 0.056 ± 0.018		<sup>8</sup> ABLIKIM	08B	BES2	$e^+e^- \rightarrow$ non- $D\bar{D}$
1.033 ± 0.014 <sup>+0.048</sup> <sub>-0.066</sub>	1.427M	<sup>9</sup> BESSON	06	CLEO	$e^+e^- \rightarrow$ hadrons
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●					
0.866 ± 0.050 ± 0.036		<sup>10,11</sup> ABLIKIM	07K	BES2	$e^+e^- \rightarrow$ non- $D\bar{D}$
0.836 ± 0.073 ± 0.042		<sup>11</sup> ABLIKIM	06L	BES2	$e^+e^- \rightarrow D\bar{D}$
0.855 ± 0.017 ± 0.058		<sup>11,12</sup> ABLIKIM	06N	BES2	$e^+e^- \rightarrow D\bar{D}$

$\Gamma(D^0\bar{D}^0)/\Gamma_{\text{total}}$					$\Gamma_2/\Gamma$
<u>VALUE</u>		<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>0.52 ± 0.05 OUR FIT</b>	Error includes scale factor of 2.0.				
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●					
0.467 ± 0.047 ± 0.023		ABLIKIM	06L	BES2	$e^+e^- \rightarrow D^0\bar{D}^0$
0.499 ± 0.013 ± 0.038		<sup>12</sup> ABLIKIM	06N	BES2	$e^+e^- \rightarrow D^0\bar{D}^0$

$\Gamma(D^+D^-)/\Gamma_{\text{total}}$					$\Gamma_3/\Gamma$
<u>VALUE</u>		<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>0.41 ± 0.04 OUR FIT</b>	Error includes scale factor of 2.0.				
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●					
0.369 ± 0.037 ± 0.028		ABLIKIM	06L	BES2	$e^+e^- \rightarrow D^+D^-$
0.357 ± 0.011 ± 0.034		<sup>12</sup> ABLIKIM	06N	BES2	$e^+e^- \rightarrow D^+D^-$

$\Gamma(D^0\bar{D}^0)/\Gamma(D^+D^-)$   $\Gamma_2/\Gamma_3$

<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>1.260±0.021 OUR FIT</b>				
<b>1.260±0.021 OUR AVERAGE</b>				
1.39 ±0.31 ±0.12		PAKHLOVA	08 BELL	10.6 $e^+e^- \rightarrow D\bar{D}\gamma$
1.78 ±0.33 ±0.24		AUBERT	07BE BABR	$e^+e^- \rightarrow D\bar{D}\gamma$
1.258±0.016±0.014		DOBBS	07 CLEO	$e^+e^- \rightarrow D\bar{D}$
1.27 ±0.12 ±0.08		ABLIKIM	06L BES2	$e^+e^- \rightarrow D\bar{D}$
2.43 ±1.50 ±0.43	34	<sup>13</sup> CHISTOV	04 BELL	$B^+ \rightarrow \psi(3770)K^+$

$\Gamma(J/\psi\pi^+\pi^-)/\Gamma_{\text{total}}$   $\Gamma_4/\Gamma$

<u>VALUE (units 10<sup>-3</sup>)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>1.93±0.28 OUR AVERAGE</b>				
1.89±0.20±0.20	231 ± 33	ADAM	06 CLEO	$e^+e^- \rightarrow \psi(3770)$
3.4 ±1.4 ±0.9	17.8 ± 4.8	BAI	05 BES2	$e^+e^- \rightarrow \psi(3770)$

$\Gamma(J/\psi\pi^0\pi^0)/\Gamma_{\text{total}}$   $\Gamma_5/\Gamma$

<u>VALUE (units 10<sup>-2</sup>)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>0.080±0.025±0.016</b>	39 ± 14	ADAM	06 CLEO	$e^+e^- \rightarrow \psi(3770)$

$\Gamma(J/\psi\eta)/\Gamma_{\text{total}}$   $\Gamma_6/\Gamma$

<u>VALUE (units 10<sup>-5</sup>)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>87±33±22</b>	22 ± 10	ADAM	06 CLEO	$e^+e^- \rightarrow \psi(3770)$

$\Gamma(J/\psi\pi^0)/\Gamma_{\text{total}}$   $\Gamma_7/\Gamma$

<u>VALUE (units 10<sup>-5</sup>)</u>	<u>CL%</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;28</b>	90	<10	ADAM	06 CLEO	$e^+e^- \rightarrow \psi(3770)$

$\Gamma(\gamma\chi_{c0})/\Gamma_{\text{total}}$   $\Gamma_8/\Gamma$

<u>VALUE (units 10<sup>-3</sup>)</u>	<u>CL%</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>7.3±0.7±0.6</b>		274 ± 27	<sup>14</sup> BRIERE	06 CLEO	$e^+e^- \rightarrow \psi(3770) \rightarrow \gamma + \text{hadrons}$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 44	90		<sup>15</sup> COAN	06A CLEO	$e^+e^- \rightarrow \psi(3770) \rightarrow \gamma\gamma J/\psi$

$\Gamma(\gamma\chi_{c1})/\Gamma_{\text{total}}$   $\Gamma_9/\Gamma$

<u>VALUE (units 10<sup>-3</sup>)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>2.9±0.5±0.4</b>		<sup>16</sup> BRIERE	06 CLEO	$e^+e^- \rightarrow \psi(3770) \rightarrow \gamma + \text{hadrons}, \gamma\gamma J/\psi$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3.9±1.4±0.6	54 ± 17	<sup>17</sup> BRIERE	06 CLEO	$e^+e^- \rightarrow \psi(3770) \rightarrow \gamma + \text{hadrons}$
2.8±0.5±0.4	53 ± 10	<sup>15</sup> COAN	06A CLEO	$e^+e^- \rightarrow \psi(3770) \rightarrow \gamma\gamma J/\psi$

$\Gamma(\gamma\chi_{c1})/\Gamma(J/\psi\pi^+\pi^-)$   $\Gamma_9/\Gamma_4$

<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>1.49±0.31±0.26</b>	53 ± 10	<sup>18</sup> COAN	06A CLEO	$e^+e^- \rightarrow \psi(3770) \rightarrow \gamma\gamma J/\psi$

$\Gamma(\gamma\chi_{c0})/\Gamma(\gamma\chi_{c1})$   $\Gamma_8/\Gamma_9$

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$2.5 \pm 0.6$		19 BRIERE	06	CLEO $e^+e^- \rightarrow \psi(3770)$

$\Gamma(\gamma\chi_{c2})/\Gamma_{total}$   $\Gamma_{10}/\Gamma$

<u>VALUE (units <math>10^{-3}</math>)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;0.9</b>	90	15 COAN	06A	CLEO $e^+e^- \rightarrow \psi(3770) \rightarrow \gamma\gamma J/\psi$
<2.0	90	20 BRIERE	06	CLEO $e^+e^- \rightarrow \psi(3770) \rightarrow \gamma + \text{hadrons}$

$\Gamma(\gamma\chi_{c0})/\Gamma(\gamma\chi_{c2})$   $\Gamma_8/\Gamma_{10}$

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
>8	90	19 BRIERE	06	CLEO $e^+e^- \rightarrow \psi(3770)$

$\Gamma(e^+e^-)/\Gamma_{total}$   $\Gamma_{11}/\Gamma$

<u>VALUE (units <math>10^{-5}</math>)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b><math>0.97 \pm 0.07</math> OUR FIT</b>				Error includes scale factor of 1.2.
<b><math>1.3 \pm 0.2</math></b>		RAPIDIS	77	LGW $e^+e^-$

$\Gamma(K_S^0 K_L^0)/\Gamma_{total}$   $\Gamma_{12}/\Gamma$

<u>VALUE (units <math>10^{-5}</math>)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt; 1.2</b>	90	21 CRONIN-HEN..06	CLEO	$e^+e^- \rightarrow \psi(3770)$
<21	90	22 ABLIKIM	04F	BES $e^+e^- \rightarrow \psi(3770)$

$\Gamma(2(\pi^+\pi^-))/\Gamma_{total}$   $\Gamma_{13}/\Gamma$

<u>VALUE (units <math>10^{-4}</math>)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;11.2</b>	90	23 HUANG	06A	CLEO $e^+e^- \rightarrow \psi(3770)$
<48		24,25 ABLIKIM	07B	BES2 $e^+e^- \rightarrow \psi(3770)$

$\Gamma(2(\pi^+\pi^-\pi^0))/\Gamma_{total}$   $\Gamma_{14}/\Gamma$

<u>VALUE (units <math>10^{-4}</math>)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;10.6</b>	90	23 HUANG	06A	CLEO $e^+e^- \rightarrow \psi(3770)$
<62		24,25 ABLIKIM	07B	BES2 $e^+e^- \rightarrow \psi(3770)$

$\Gamma(2(\pi^+\pi^-\pi^0))/\Gamma_{total}$   $\Gamma_{15}/\Gamma$

<u>VALUE (units <math>10^{-3}</math>)</u>	<u>CL%</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;58.5</b>	90	305	ABLIKIM	08N	BES2 $e^+e^- \rightarrow \psi(3770)$



**$\Gamma(\omega\pi^+\pi^-)/\Gamma_{\text{total}}$**   **$\Gamma_{16}/\Gamma$**

VALUE (units $10^{-4}$ )	CL%	DOCUMENT ID	TECN	COMMENT
<b>&lt; 6.0</b>	90	<sup>23</sup> HUANG	06A	CLEO $e^+e^- \rightarrow \psi(3770)$
••• We do not use the following data for averages, fits, limits, etc. •••				
<55	90	<sup>26</sup> ABLIKIM	07I	BES2 $3.77 e^+e^-$

**$\Gamma(3(\pi^+\pi^-))/\Gamma_{\text{total}}$**   **$\Gamma_{17}/\Gamma$**

VALUE (units $10^{-4}$ )	DOCUMENT ID	TECN	COMMENT
<b>&lt;91</b>	24,25 ABLIKIM	07B	BES2 $e^+e^- \rightarrow \psi(3770)$

**$\Gamma(3(\pi^+\pi^-)\pi^0)/\Gamma_{\text{total}}$**   **$\Gamma_{18}/\Gamma$**

VALUE (units $10^{-4}$ )	DOCUMENT ID	TECN	COMMENT
<b>&lt;137</b>	24,25 ABLIKIM	07B	BES2 $e^+e^- \rightarrow \psi(3770)$

**$\Gamma(3(\pi^+\pi^-)2\pi^0)/\Gamma_{\text{total}}$**   **$\Gamma_{19}/\Gamma$**

VALUE (units $10^{-3}$ )	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
<b>&lt;117.4</b>	90	59	ABLIKIM	08N	BES2 $e^+e^- \rightarrow \psi(3770)$

**$\Gamma(\eta\pi^+\pi^-)/\Gamma_{\text{total}}$**   **$\Gamma_{20}/\Gamma$**

VALUE (units $10^{-4}$ )	CL%	DOCUMENT ID	TECN	COMMENT
<b>&lt;12.4</b>	90	<sup>23</sup> HUANG	06A	CLEO $e^+e^- \rightarrow \psi(3770)$

**$\Gamma(\pi^+\pi^-2\pi^0)/\Gamma_{\text{total}}$**   **$\Gamma_{21}/\Gamma$**

VALUE (units $10^{-3}$ )	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
<b>&lt;8.9</b>	90	218	ABLIKIM	08N	BES2 $e^+e^- \rightarrow \psi(3770)$

**$\Gamma(\rho^0\pi^+\pi^-)/\Gamma_{\text{total}}$**   **$\Gamma_{22}/\Gamma$**

VALUE (units $10^{-3}$ )	CL%	DOCUMENT ID	TECN	COMMENT
<b>&lt;6.9</b>	90	24,25 ABLIKIM	07F	BES2 $e^+e^- \rightarrow \psi(3770)$

**$\Gamma(\eta3\pi)/\Gamma_{\text{total}}$**   **$\Gamma_{23}/\Gamma$**

VALUE (units $10^{-4}$ )	CL%	DOCUMENT ID	TECN	COMMENT
<b>&lt;13.4</b>	90	<sup>23</sup> HUANG	06A	CLEO $e^+e^- \rightarrow \psi(3770)$

**$\Gamma(\eta2(\pi^+\pi^-))/\Gamma_{\text{total}}$**   **$\Gamma_{24}/\Gamma$**

VALUE (units $10^{-4}$ )	DOCUMENT ID	TECN	COMMENT
<b>&lt;243</b>	24,25 ABLIKIM	07B	BES2 $e^+e^- \rightarrow \psi(3770)$

**$\Gamma(\eta'3\pi)/\Gamma_{\text{total}}$**   **$\Gamma_{25}/\Gamma$**

VALUE (units $10^{-4}$ )	CL%	DOCUMENT ID	TECN	COMMENT
<b>&lt;24.4</b>	90	<sup>23</sup> HUANG	06A	CLEO $e^+e^- \rightarrow \psi(3770)$

**$\Gamma(K^+K^-\pi^+\pi^-)/\Gamma_{\text{total}}$**   **$\Gamma_{26}/\Gamma$**

VALUE (units $10^{-4}$ )	CL%	DOCUMENT ID	TECN	COMMENT
<b>&lt; 9.0</b>	90	<sup>23</sup> HUANG	06A	CLEO $e^+e^- \rightarrow \psi(3770)$
••• We do not use the following data for averages, fits, limits, etc. •••				
<48		24,25 ABLIKIM	07B	BES2 $e^+e^- \rightarrow \psi(3770)$

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

VALUE (units $10^{-4}$ )	CL%		DOCUMENT ID	TECN	COMMENT
<b>&lt; 4.1</b>	90	23	HUANG	06A	CLEO $e^+e^- \rightarrow \psi(3770)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<16		24,25	ABLIKIM	07B	BES2 $e^+e^- \rightarrow \psi(3770)$

$\Gamma(K^+K^-2\pi^0)/\Gamma_{\text{total}}$   $\Gamma_{28}/\Gamma$

VALUE (units $10^{-3}$ )	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
<b>&lt;4.2</b>	90	14	ABLIKIM	08N	BES2 $e^+e^- \rightarrow \psi(3770)$

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

VALUE (units $10^{-4}$ )			DOCUMENT ID	TECN	COMMENT
<b>&lt;5</b>		24,25	ABLIKIM	07B	BES2 $e^+e^- \rightarrow \psi(3770)$

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

VALUE (units $10^{-4}$ )			DOCUMENT ID	TECN	COMMENT
<b><math>3.1 \pm 0.6 \pm 0.3</math></b>		27	ADAMS	06	CLEO $3.773 e^+e^- \rightarrow \phi\eta$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<19		24,25	ABLIKIM	07B	BES2 $e^+e^- \rightarrow \psi(3770)$

$\Gamma(4(\pi^+\pi^-))/\Gamma_{\text{total}}$   $\Gamma_{31}/\Gamma$

VALUE (units $10^{-3}$ )	CL%		DOCUMENT ID	TECN	COMMENT
<b>&lt;16.7</b>	90	24,25	ABLIKIM	07F	BES2 $e^+e^- \rightarrow \psi(3770)$

$\Gamma(4(\pi^+\pi^-\pi^0))/\Gamma_{\text{total}}$   $\Gamma_{32}/\Gamma$

VALUE (units $10^{-3}$ )	CL%		DOCUMENT ID	TECN	COMMENT
<b>&lt;30.6</b>	90	24,25	ABLIKIM	07F	BES2 $e^+e^- \rightarrow \psi(3770)$

$\Gamma(\phi f_0(980))/\Gamma_{\text{total}}$   $\Gamma_{33}/\Gamma$

VALUE (units $10^{-4}$ )	CL%		DOCUMENT ID	TECN	COMMENT
<b>&lt;4.5</b>	90	23	HUANG	06A	CLEO $e^+e^- \rightarrow \psi(3770)$

$\Gamma(K^+K^-\pi^+\pi^-\pi^0)/\Gamma_{\text{total}}$   $\Gamma_{34}/\Gamma$

VALUE (units $10^{-4}$ )	CL%		DOCUMENT ID	TECN	COMMENT
<b>&lt; 23.6</b>	90	23	HUANG	06A	CLEO $e^+e^- \rightarrow \psi(3770)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<111		24,25	ABLIKIM	07B	BES2 $e^+e^- \rightarrow \psi(3770)$

$\Gamma(K^+K^-\rho^0\pi^0)/\Gamma_{\text{total}}$   $\Gamma_{35}/\Gamma$

VALUE (units $10^{-4}$ )	CL%		DOCUMENT ID	TECN	COMMENT
<b>&lt;8</b>	90	26	ABLIKIM	07I	BES2 $3.77 e^+e^-$

$\Gamma(K^+K^-\rho^+\pi^-)/\Gamma_{\text{total}}$   $\Gamma_{36}/\Gamma$

VALUE (units $10^{-4}$ )	CL%		DOCUMENT ID	TECN	COMMENT
<b>&lt;146</b>	90	26	ABLIKIM	07I	BES2 $3.77 e^+e^-$

$\Gamma(\omega K^+ K^-)/\Gamma_{\text{total}}$   $\Gamma_{37}/\Gamma$

VALUE (units $10^{-4}$ )	CL%		DOCUMENT ID	TECN	COMMENT
<b>&lt; 3.4</b>	90	23	HUANG	06A	CLEO $e^+ e^- \rightarrow \psi(3770)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<66	90	26	ABLIKIM	07I	BES2 $e^+ e^-$

$\Gamma(\phi \pi^+ \pi^- \pi^0)/\Gamma_{\text{total}}$   $\Gamma_{38}/\Gamma$

VALUE (units $10^{-4}$ )	CL%		DOCUMENT ID	TECN	COMMENT
<b>&lt;38</b>	90	26	ABLIKIM	07I	BES2 $e^+ e^-$

$\Gamma(K^{*0} K^- \pi^+ \pi^0 + \text{c.c.})/\Gamma_{\text{total}}$   $\Gamma_{39}/\Gamma$

VALUE (units $10^{-4}$ )	CL%		DOCUMENT ID	TECN	COMMENT
<b>&lt;162</b>	90	26	ABLIKIM	07I	BES2 $e^+ e^-$

$\Gamma(K^{*+} K^- \pi^+ \pi^- + \text{c.c.})/\Gamma_{\text{total}}$   $\Gamma_{40}/\Gamma$

VALUE (units $10^{-4}$ )	CL%		DOCUMENT ID	TECN	COMMENT
<b>&lt;323</b>	90	26	ABLIKIM	07I	BES2 $e^+ e^-$

$\Gamma(K^+ K^- \pi^+ \pi^- 2\pi^0)/\Gamma_{\text{total}}$   $\Gamma_{41}/\Gamma$

VALUE (units $10^{-3}$ )	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
<b>&lt;26.7</b>	90	24	ABLIKIM	08N	BES2 $e^+ e^- \rightarrow \psi(3770)$

$\Gamma(K^+ K^- 2(\pi^+ \pi^-))/\Gamma_{\text{total}}$   $\Gamma_{42}/\Gamma$

VALUE (units $10^{-3}$ )	CL%		DOCUMENT ID	TECN	COMMENT
<b>&lt;10.3</b>	90	24,25	ABLIKIM	07F	BES2 $e^+ e^- \rightarrow \psi(3770)$

$\Gamma(K^+ K^- 2(\pi^+ \pi^-) \pi^0)/\Gamma_{\text{total}}$   $\Gamma_{43}/\Gamma$

VALUE (units $10^{-3}$ )	CL%		DOCUMENT ID	TECN	COMMENT
<b>&lt;36.0</b>	90	24,25	ABLIKIM	07F	BES2 $e^+ e^- \rightarrow \psi(3770)$

$\Gamma(\eta K^+ K^-)/\Gamma_{\text{total}}$   $\Gamma_{44}/\Gamma$

VALUE (units $10^{-4}$ )	CL%		DOCUMENT ID	TECN	COMMENT
<b>&lt;4.1</b>	90	23	HUANG	06A	CLEO $e^+ e^- \rightarrow \psi(3770)$

$\Gamma(\rho^0 K^+ K^-)/\Gamma_{\text{total}}$   $\Gamma_{45}/\Gamma$

VALUE (units $10^{-3}$ )	CL%		DOCUMENT ID	TECN	COMMENT
<b>&lt;5.0</b>	90	24,25	ABLIKIM	07F	BES2 $e^+ e^- \rightarrow \psi(3770)$

$\Gamma(2(K^+ K^-))/\Gamma_{\text{total}}$   $\Gamma_{46}/\Gamma$

VALUE (units $10^{-4}$ )	CL%		DOCUMENT ID	TECN	COMMENT
<b>&lt; 6.0</b>	90	23	HUANG	06A	CLEO $e^+ e^- \rightarrow \psi(3770)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<17		24,25	ABLIKIM	07B	BES2 $e^+ e^- \rightarrow \psi(3770)$

$\Gamma(\phi K^+ K^-)/\Gamma_{\text{total}}$   $\Gamma_{47}/\Gamma$ 

<u>VALUE (units <math>10^{-4}</math>)</u>	<u>CL%</u>		<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt; 7.5</b>	90	23	HUANG	06A	CLEO $e^+ e^- \rightarrow \psi(3770)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<24		24,25	ABLIKIM	07B	BES2 $e^+ e^- \rightarrow \psi(3770)$

 $\Gamma(2(K^+ K^-)\pi^0)/\Gamma_{\text{total}}$   $\Gamma_{48}/\Gamma$ 

<u>VALUE (units <math>10^{-4}</math>)</u>	<u>CL%</u>		<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt; 2.9</b>	90	23	HUANG	06A	CLEO $e^+ e^- \rightarrow \psi(3770)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<46		24,25	ABLIKIM	07B	BES2 $e^+ e^- \rightarrow \psi(3770)$

 $\Gamma(2(K^+ K^-)\pi^+ \pi^-)/\Gamma_{\text{total}}$   $\Gamma_{49}/\Gamma$ 

<u>VALUE (units <math>10^{-3}</math>)</u>	<u>CL%</u>		<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;3.2</b>	90	24,25	ABLIKIM	07F	BES2 $e^+ e^- \rightarrow \psi(3770)$

 $\Gamma(K_S^0 K^- \pi^+)/\Gamma_{\text{total}}$   $\Gamma_{50}/\Gamma$ 

<u>VALUE (units <math>10^{-3}</math>)</u>	<u>CL%</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;3.2</b>	90	18	ABLIKIM	08M	BES2 $e^+ e^- \rightarrow \psi(3770)$

 $\Gamma(K_S^0 K^- \pi^+ \pi^0)/\Gamma_{\text{total}}$   $\Gamma_{51}/\Gamma$ 

<u>VALUE (units <math>10^{-3}</math>)</u>	<u>CL%</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;13.3</b>	90	40	ABLIKIM	08M	BES2 $e^+ e^- \rightarrow \psi(3770)$

 $\Gamma(K_S^0 K^- \rho^+)/\Gamma_{\text{total}}$   $\Gamma_{52}/\Gamma$ 

<u>VALUE (units <math>10^{-3}</math>)</u>	<u>CL%</u>		<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;6.6</b>	90		ABLIKIM	09C	BES2 $e^+ e^- \rightarrow \psi(3770)$

 $\Gamma(K_S^0 K^- 2\pi^+ \pi^-)/\Gamma_{\text{total}}$   $\Gamma_{53}/\Gamma$ 

<u>VALUE (units <math>10^{-3}</math>)</u>	<u>CL%</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;8.7</b>	90	39	ABLIKIM	08M	BES2 $e^+ e^- \rightarrow \psi(3770)$

 $\Gamma(K_S^0 K^- \pi^+ \rho^0)/\Gamma_{\text{total}}$   $\Gamma_{54}/\Gamma$ 

<u>VALUE (units <math>10^{-2}</math>)</u>	<u>CL%</u>		<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;1.6</b>	90		ABLIKIM	09C	BES2 $e^+ e^- \rightarrow \psi(3770)$

 $\Gamma(K_S^0 K^- \pi^+ \eta)/\Gamma_{\text{total}}$   $\Gamma_{55}/\Gamma$ 

<u>VALUE (units <math>10^{-2}</math>)</u>	<u>CL%</u>		<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;1.3</b>	90		ABLIKIM	09C	BES2 $e^+ e^- \rightarrow \psi(3770)$

 $\Gamma(K_S^0 K^- 2\pi^+ \pi^- \pi^0)/\Gamma_{\text{total}}$   $\Gamma_{56}/\Gamma$ 

<u>VALUE (units <math>10^{-3}</math>)</u>	<u>CL%</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;41.8</b>	90	23	ABLIKIM	08M	BES2 $e^+ e^- \rightarrow \psi(3770)$

$\Gamma(K_S^0 K^- 2\pi^+ \pi^- \eta)/\Gamma_{\text{total}}$   $\Gamma_{57}/\Gamma$

VALUE (units $10^{-2}$ )	CL%	DOCUMENT ID	TECN	COMMENT
<4.8	90	ABLIKIM	09C	BES2 $e^+ e^- \rightarrow \psi(3770)$

$\Gamma(K_S^0 K^- \pi^+ 2(\pi^+ \pi^-))/\Gamma_{\text{total}}$   $\Gamma_{58}/\Gamma$

VALUE (units $10^{-3}$ )	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
<12.2	90	4	ABLIKIM	08M	BES2 $e^+ e^- \rightarrow \psi(3770)$

$\Gamma(K_S^0 K^- \pi^+ 2\pi^0)/\Gamma_{\text{total}}$   $\Gamma_{59}/\Gamma$

VALUE (units $10^{-3}$ )	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
<26.5	90	17	ABLIKIM	08M	BES2 $e^+ e^- \rightarrow \psi(3770)$

$\Gamma(K_S^0 K^- K^+ K^- \pi^+)/\Gamma_{\text{total}}$   $\Gamma_{60}/\Gamma$

VALUE (units $10^{-3}$ )	CL%	DOCUMENT ID	TECN	COMMENT
<4.9	90	ABLIKIM	09C	BES2 $e^+ e^- \rightarrow \psi(3770)$

$\Gamma(K_S^0 K^- K^+ K^- \pi^+ \pi^0)/\Gamma_{\text{total}}$   $\Gamma_{61}/\Gamma$

VALUE (units $10^{-2}$ )	CL%	DOCUMENT ID	TECN	COMMENT
<3.0	90	ABLIKIM	09C	BES2 $e^+ e^- \rightarrow \psi(3770)$

$\Gamma(K_S^0 K^- K^+ K^- \pi^+ \eta)/\Gamma_{\text{total}}$   $\Gamma_{62}/\Gamma$

VALUE (units $10^{-2}$ )	CL%	DOCUMENT ID	TECN	COMMENT
<2.2	90	ABLIKIM	09C	BES2 $e^+ e^- \rightarrow \psi(3770)$

$\Gamma(K^{*0} K^- \pi^+ + \text{c.c.})/\Gamma_{\text{total}}$   $\Gamma_{63}/\Gamma$

VALUE (units $10^{-3}$ )	CL%	DOCUMENT ID	TECN	COMMENT	
<9.7	90	24,25	ABLIKIM	07F	BES2 $e^+ e^- \rightarrow \psi(3770)$

$\Gamma(\rho\bar{\rho}\pi^0)/\Gamma_{\text{total}}$   $\Gamma_{64}/\Gamma$

VALUE (units $10^{-4}$ )	DOCUMENT ID	TECN	COMMENT	
<12	24,25	ABLIKIM	07B	BES2 $e^+ e^- \rightarrow \psi(3770)$

$\Gamma(\rho\bar{\rho}\pi^+ \pi^-)/\Gamma_{\text{total}}$   $\Gamma_{65}/\Gamma$

VALUE (units $10^{-4}$ )	CL%	DOCUMENT ID	TECN	COMMENT	
< 5.8	90	23	HUANG	06A	CLEO $e^+ e^- \rightarrow \psi(3770)$

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

<16	24,25	ABLIKIM	07B	BES2	$e^+ e^- \rightarrow \psi(3770)$
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$\Gamma(\Lambda\bar{\Lambda})/\Gamma_{\text{total}}$   $\Gamma_{66}/\Gamma$

VALUE (units $10^{-4}$ )	CL%	DOCUMENT ID	TECN	COMMENT	
<1.2	90	23	HUANG	06A	CLEO $e^+ e^- \rightarrow \psi(3770)$

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

<4	90	24,25	ABLIKIM	07F	BES2	$e^+ e^- \rightarrow \psi(3770)$
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**$\Gamma(\rho\bar{\rho}\pi^+\pi^-\pi^0)/\Gamma_{\text{total}}$**   **$\Gamma_{67}/\Gamma$**

<u>VALUE (units <math>10^{-4}</math>)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;18.5</b>	90	<sup>23</sup> HUANG	06A	CLEO $e^+e^- \rightarrow \psi(3770)$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
<73		<sup>24,25</sup> ABLIKIM	07B	BES2 $e^+e^- \rightarrow \psi(3770)$

**$\Gamma(\omega\rho\bar{\rho})/\Gamma_{\text{total}}$**   **$\Gamma_{68}/\Gamma$**

<u>VALUE (units <math>10^{-4}</math>)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt; 2.9</b>	90	<sup>23</sup> HUANG	06A	CLEO $e^+e^- \rightarrow \psi(3770)$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
<30	90	<sup>26</sup> ABLIKIM	07I	BES2 $3.77 e^+e^-$

**$\Gamma(\Lambda\bar{\Lambda}\pi^0)/\Gamma_{\text{total}}$**   **$\Gamma_{69}/\Gamma$**

<u>VALUE (units <math>10^{-4}</math>)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;12</b>	90	<sup>26</sup> ABLIKIM	07I	BES2 $3.77 e^+e^-$

**$\Gamma(\rho\bar{\rho}2(\pi^+\pi^-))/\Gamma_{\text{total}}$**   **$\Gamma_{70}/\Gamma$**

<u>VALUE (units <math>10^{-3}</math>)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;2.6</b>	90	<sup>24,25</sup> ABLIKIM	07F	BES2 $e^+e^- \rightarrow \psi(3770)$

**$\Gamma(\eta\rho\bar{\rho})/\Gamma_{\text{total}}$**   **$\Gamma_{71}/\Gamma$**

<u>VALUE (units <math>10^{-4}</math>)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;5.4</b>	90	<sup>23</sup> HUANG	06A	CLEO $e^+e^- \rightarrow \psi(3770)$

**$\Gamma(\rho^0\rho\bar{\rho})/\Gamma_{\text{total}}$**   **$\Gamma_{72}/\Gamma$**

<u>VALUE (units <math>10^{-3}</math>)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;1.7</b>	90	<sup>24,25</sup> ABLIKIM	07F	BES2 $e^+e^- \rightarrow \psi(3770)$

**$\Gamma(\rho\bar{\rho}K^+K^-)/\Gamma_{\text{total}}$**   **$\Gamma_{73}/\Gamma$**

<u>VALUE (units <math>10^{-4}</math>)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt; 3.2</b>	90	<sup>23</sup> HUANG	06A	CLEO $e^+e^- \rightarrow \psi(3770)$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
<11		<sup>24,25</sup> ABLIKIM	07B	BES2 $e^+e^- \rightarrow \psi(3770)$

**$\Gamma(\phi\rho\bar{\rho})/\Gamma_{\text{total}}$**   **$\Gamma_{74}/\Gamma$**

<u>VALUE (units <math>10^{-4}</math>)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;1.3</b>	90	<sup>23</sup> HUANG	06A	CLEO $e^+e^- \rightarrow \psi(3770)$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
<9		<sup>24,25</sup> ABLIKIM	07B	BES2 $e^+e^- \rightarrow \psi(3770)$

**$\Gamma(\Lambda\bar{\Lambda}\pi^+\pi^-)/\Gamma_{\text{total}}$**   **$\Gamma_{75}/\Gamma$**

<u>VALUE (units <math>10^{-4}</math>)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt; 2.5</b>	90	<sup>23</sup> HUANG	06A	CLEO $e^+e^- \rightarrow \psi(3770)$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
<39	90	<sup>24,25</sup> ABLIKIM	07F	BES2 $e^+e^- \rightarrow \psi(3770)$

$\Gamma(\Lambda\bar{p}K^+)/\Gamma_{\text{total}}$					$\Gamma_{76}/\Gamma$
VALUE (units $10^{-4}$ )	CL%	DOCUMENT ID	TECN	COMMENT	
<b>&lt;2.8</b>	90	23 HUANG	06A	CLEO	$e^+e^- \rightarrow \psi(3770)$

$\Gamma(\Lambda\bar{p}K^+\pi^+\pi^-)/\Gamma_{\text{total}}$					$\Gamma_{77}/\Gamma$
VALUE (units $10^{-4}$ )	CL%	DOCUMENT ID	TECN	COMMENT	
<b>&lt;6.3</b>	90	23 HUANG	06A	CLEO	$e^+e^- \rightarrow \psi(3770)$

<sup>8</sup> Neglecting interference.

<sup>9</sup> Obtained by comparing a measurement of the total cross section (corrected in BESSON 10) with that of  $D\bar{D}$  reported by CLEO in DOBBS 07.

<sup>10</sup> Using  $\sigma^{obs} = 7.07 \pm 0.58$  nb and neglecting interference.

<sup>11</sup> Not independent of ABLIKIM 08B.

<sup>12</sup> From a measurement of  $\sigma(e^+e^- \rightarrow D\bar{D})$  at  $\sqrt{s} = 3773$  MeV, using the  $\psi(3770)$  resonance parameters measured by ABLIKIM 06L.

<sup>13</sup> See ADLER 88C for older measurements of this quantity.

<sup>14</sup> Uses  $B(\psi(2S) \rightarrow \gamma\chi_{c0}) = 9.33 \pm 0.14 \pm 0.61\%$  from ATHAR 04,  $\psi(2S)$  mass and width from PDG 04, and  $\Gamma_{ee}(\psi(2S)) = 2.54 \pm 0.03 \pm 0.11$  keV from ADAM 06.

<sup>15</sup> Using  $\Gamma_{ee}(\psi(2S)) = (2.54 \pm 0.03 \pm 0.11)$  keV from ADAM 06 and taking  $\sigma(e^+e^- \rightarrow D\bar{D})$  from HE 05 for  $\sigma(e^+e^- \rightarrow \psi(3770))$ .

<sup>16</sup> Averages the two measurements from COAN 06A and BRIERE 06.

<sup>17</sup> Uses  $B(\psi(2S) \rightarrow \gamma\chi_{c1}) = 9.07 \pm 0.11 \pm 0.54\%$  from ATHAR 04,  $\psi(2S)$  mass and width from PDG 04, and  $\Gamma_{ee}(\psi(2S)) = 2.54 \pm 0.03 \pm 0.11$  keV from ADAM 06.

<sup>18</sup> Using  $B(\psi(3770) \rightarrow J/\psi\pi^+\pi^-) = (1.89 \pm 0.20 \pm 0.20) \times 10^{-3}$  from ADAM 06.

<sup>19</sup> Not independent of other results in BRIERE 06.

<sup>20</sup> Uses  $B(\psi(2S) \rightarrow \gamma\chi_{c2}) = 9.22 \pm 0.11 \pm 0.46\%$  from ATHAR 04,  $\psi(2S)$  mass and width from PDG 04, and  $\Gamma_{ee}(\psi(2S)) = 2.54 \pm 0.03 \pm 0.11$  keV from ADAM 06.

<sup>21</sup> Using  $\sigma(e^+e^- \rightarrow \psi(3770) \rightarrow \text{hadrons}) = (6.38 \pm 0.08^{+0.41}_{-0.30})$  nb from BESSON 06 and  $B(K_S^0 \rightarrow \pi^+\pi^-) = 0.6895 \pm 0.0014$ .

<sup>22</sup> Using  $B(K_S^0 \rightarrow \pi^+\pi^-) = 0.6860 \pm 0.0027$ .

<sup>23</sup> Using  $\sigma_{tot}(e^+e^- \rightarrow \psi(3770)) = 7.9 \pm 0.6$  nb at the resonance.

<sup>24</sup> Assuming that interference effects between resonance and continuum can be neglected.

<sup>25</sup> Using  $\sigma^{obs}(e^+e^- \rightarrow \psi(3770)) = 7.15 \pm 0.38$  nb.

<sup>26</sup> Using  $\sigma^{obs} = 7.15 \pm 0.27 \pm 0.27$  nb and neglecting interference.

<sup>27</sup> Comparing  $\sigma(e^+e^- \rightarrow \phi\eta)$  at  $\sqrt{s} = 3.773$  GeV and  $\sqrt{s} = 3.671$  GeV, and using  $\sigma(\psi(3770) \rightarrow D\bar{D}) = 6.39 \pm 0.20$  nb.

## ————— RADIATIVE DECAYS —————

$\Gamma(\gamma\pi^0)/\Gamma_{\text{total}}$					$\Gamma_{89}/\Gamma$
VALUE (units $10^{-4}$ )	CL%	DOCUMENT ID	TECN	COMMENT	
<b>&lt;2</b>	90	PEDLAR	09	CLE3	$\psi(2S) \rightarrow \gamma X$

$\Gamma(\gamma\eta)/\Gamma_{\text{total}}$					$\Gamma_{90}/\Gamma$
VALUE (units $10^{-4}$ )	CL%	DOCUMENT ID	TECN	COMMENT	
<b>&lt;1.5</b>	90	28 PEDLAR	09	CLE3	$\psi(2S) \rightarrow \gamma X$

$\Gamma(\gamma\eta')/\Gamma_{\text{total}}$					$\Gamma_{91}/\Gamma$
VALUE (units $10^{-4}$ )	CL%	DOCUMENT ID	TECN	COMMENT	
<1.8	90	<sup>28</sup> PEDLAR	09	CLE3 $\psi(2S) \rightarrow \gamma X$	
<sup>28</sup> Assuming maximal destructive interference between $\psi(3770)$ and continuum sources.					

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PEDLAR	09	PR D79 111101	T.K. Pedlar <i>et al.</i>	(CLEO Collab.)
ABLIKIM	08B	PL B659 74	M. Ablikim <i>et al.</i>	(BES Collab.)
ABLIKIM	08D	PL B660 315	M. Ablikim <i>et al.</i>	(BES Collab.)
ABLIKIM	08M	PL B670 179	M. Ablikim <i>et al.</i>	(BES Collab.)
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