# $\psi(3770)$

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

## $\psi(3770)$ MASS

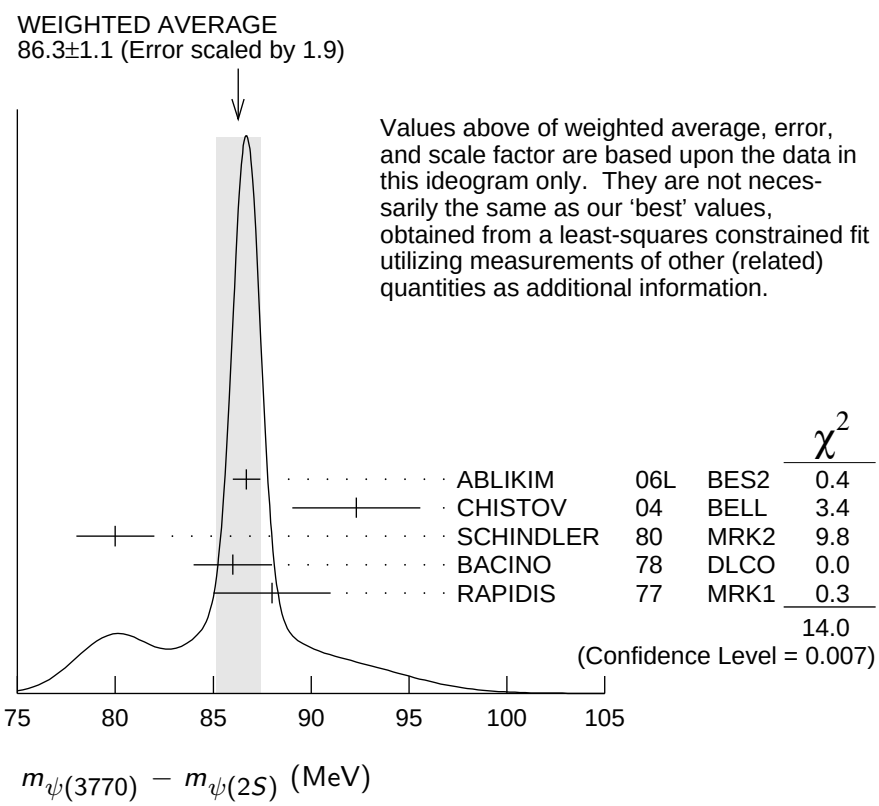
From $m_{\psi(2S)}$ and mass difference below.

| VALUE (MeV) | DOCUMENT ID |
|---|---|
| **3772.4±1.1 OUR FIT** Error includes scale factor of 1.8. | |

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

| VALUE (MeV) | EVTS | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **86.3±1.1 OUR FIT** Error includes scale factor of 1.8. | | | | | |
| **86.3±1.1 OUR AVERAGE** Error includes scale factor of 1.9. See the ideogram below. | | | | | |
| 86.7±0.7 | | ABLIKIM | 06L | BES2 | $e^+e^- \to$ hadrons |
| 92.3±3.0±1.3 | 34 | CHISTOV | 04 | BELL | $B^+ \to \psi(3770) K^+$ |
| 80 ±2 | | SCHINDLER | 80 | MRK2 | $e^+e^-$ |
| 86 ±2 | | [1] BACINO | 78 | DLCO | $e^+e^-$ |
| 88 ±3 | | RAPIDIS | 77 | MRK1 | $e^+e^-$ |

[1] SPEAR $\psi(2S)$ mass subtracted (see SCHINDLER 80).



## $\psi(3770)$ WIDTH

| VALUE (MeV) | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|
| **25.2±1.8 OUR FIT** | | | | |
| **26.3±1.9 OUR AVERAGE** | | | | |
| 26.9±2.4±0.3 | ABLIKIM | 06L | BES2 | $e^+e^- \to$ hadrons |
| 24 ±5 | SCHINDLER | 80 | MRK2 | $e^+e^-$ |
| 24 ±5 | BACINO | 78 | DLCO | $e^+e^-$ |
| 28 ±5 | RAPIDIS | 77 | MRK1 | $e^+e^-$ |

## $\psi(3770)$ DECAY MODES

In addition to the dominant decay mode to $D\overline{D}$, $\psi(3770)$ 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 |
|---|---|---|---|
| $\Gamma_1$ | $D\overline{D}$ | (85 ±5 ) % | |
| $\Gamma_2$ | $D^0\overline{D}^0$ | (48.7 ±3.2 ) % | |
| $\Gamma_3$ | $D^+D^-$ | (36.1 ±2.8 ) % | |
| $\Gamma_4$ | $J/\psi\pi^+\pi^-$ | ( 1.93±0.28) $\times 10^{-3}$ | |
| $\Gamma_5$ | $J/\psi\pi^0\pi^0$ | ( 8.0 ±3.0 ) $\times 10^{-4}$ | |
| $\Gamma_6$ | $J/\psi\eta$ | ( 9 ±4 ) $\times 10^{-4}$ | |
| $\Gamma_7$ | $J/\psi\pi^0$ | < 2.8 $\times 10^{-4}$ | CL=90% |
| $\Gamma_8$ | $\gamma\chi_{c0}$ | ( 7.3 ±0.9 ) $\times 10^{-3}$ | |
| $\Gamma_9$ | $\gamma\chi_{c1}$ | ( 2.9 ±0.6 ) $\times 10^{-3}$ | |
| $\Gamma_{10}$ | $\gamma\chi_{c2}$ | < 9 $\times 10^{-4}$ | CL=90% |
| $\Gamma_{11}$ | $e^+e^-$ | ( 9.8 ±1.2 ) $\times 10^{-6}$ | S=1.1 |
| $\Gamma_{12}$ | $K^0_S K^0_L$ | < 1.2 $\times 10^{-5}$ | CL=90% |
| $\Gamma_{13}$ | $2(\pi^+\pi^-)$ | < 1.12 $\times 10^{-3}$ | CL=90% |
| $\Gamma_{14}$ | $2(\pi^+\pi^-)\pi^0$ | < 1.06 $\times 10^{-3}$ | CL=90% |
| $\Gamma_{15}$ | $\eta\pi^+\pi^-$ | < 1.24 $\times 10^{-3}$ | CL=90% |
| $\Gamma_{16}$ | $\omega\pi^+\pi^-$ | < 6.0 $\times 10^{-4}$ | CL=90% |
| $\Gamma_{17}$ | $\eta 3\pi$ | < 1.34 $\times 10^{-3}$ | CL=90% |
| $\Gamma_{18}$ | $\eta' 3\pi$ | < 2.44 $\times 10^{-3}$ | CL=90% |
| $\Gamma_{19}$ | $K^+K^-\pi^+\pi^-$ | < 9.0 $\times 10^{-4}$ | CL=90% |
| $\Gamma_{20}$ | $\phi\pi^+\pi^-$ | < 4.1 $\times 10^{-4}$ | CL=90% |
| $\Gamma_{21}$ | $\phi f_0(980)$ | < 4.5 $\times 10^{-4}$ | CL=90% |
| $\Gamma_{22}$ | $K^+K^-\pi^+\pi^-\pi^0$ | < 2.36 $\times 10^{-3}$ | CL=90% |
| $\Gamma_{23}$ | $\eta K^+K^-$ | < 4.1 $\times 10^{-4}$ | CL=90% |
| $\Gamma_{24}$ | $\omega K^+K^-$ | < 3.4 $\times 10^{-4}$ | CL=90% |
| $\Gamma_{25}$ | $2(K^+K^-)$ | < 6.0 $\times 10^{-4}$ | CL=90% |
| $\Gamma_{26}$ | $\phi K^+K^-$ | < 7.5 $\times 10^{-4}$ | CL=90% |

| | | | | |
|---|---|---|---|---|
| $\Gamma_{27}$ | $2(K^+K^-)\pi^0$ | $<$ 2.9 | $\times 10^{-4}$ | CL=90% |
| $\Gamma_{28}$ | $p\overline{p}\pi^+\pi^-$ | $<$ 5.8 | $\times 10^{-4}$ | CL=90% |
| $\Gamma_{29}$ | $p\overline{p}\pi^+\pi^-\pi^0$ | $<$ 1.85 | $\times 10^{-3}$ | CL=90% |
| $\Gamma_{30}$ | $\eta p\overline{p}$ | $<$ 5.4 | $\times 10^{-4}$ | CL=90% |
| $\Gamma_{31}$ | $\omega p\overline{p}$ | $<$ 2.9 | $\times 10^{-4}$ | CL=90% |
| $\Gamma_{32}$ | $p\overline{p}K^+K^-$ | $<$ 3.2 | $\times 10^{-4}$ | CL=90% |
| $\Gamma_{33}$ | $\phi p\overline{p}$ | $<$ 1.3 | $\times 10^{-4}$ | CL=90% |
| $\Gamma_{34}$ | $\Lambda\overline{\Lambda}$ | $<$ 1.2 | $\times 10^{-4}$ | CL=90% |
| $\Gamma_{35}$ | $\Lambda\overline{\Lambda}\pi^+\pi^-$ | $<$ 2.5 | $\times 10^{-4}$ | CL=90% |
| $\Gamma_{36}$ | $\Lambda\overline{p}K^+$ | $<$ 2.8 | $\times 10^{-4}$ | CL=90% |
| $\Gamma_{37}$ | $\Lambda\overline{p}K^+\pi^+\pi^-$ | $<$ 6.3 | $\times 10^{-4}$ | CL=90% |
| $\Gamma_{38}$ | $\phi\eta$ | ( 3.1 $\pm$0.7 ) | $\times 10^{-4}$ | |
| $\Gamma_{39}$ | $\pi^+\pi^-\pi^0$ | not seen | | |
| $\Gamma_{40}$ | $\rho\pi$ | not seen | | |
| $\Gamma_{41}$ | $\omega\pi^0$ | not seen | | |
| $\Gamma_{42}$ | $\phi\pi^0$ | not seen | | |
| $\Gamma_{43}$ | $\rho\eta$ | not seen | | |
| $\Gamma_{44}$ | $\omega\eta$ | not seen | | |
| $\Gamma_{45}$ | $\rho\eta'$ | not seen | | |
| $\Gamma_{46}$ | $\omega\eta'$ | not seen | | |
| $\Gamma_{47}$ | $\phi\eta'$ | not seen | | |
| $\Gamma_{48}$ | $K^{*0}\overline{K}^0$ | not seen | | |
| $\Gamma_{49}$ | $K^{*+}K^-$ | not seen | | |
| $\Gamma_{50}$ | $b_1\pi$ | not seen | | |

## $\psi$(3770) PARTIAL WIDTHS

### $\Gamma(e^+e^-)$ — $\Gamma_{11}$

| VALUE (keV) | EVTS | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **$0.247^{+0.028}_{-0.025}$ OUR FIT** Error includes scale factor of 1.1. | | | | | |
| **$0.219^{+0.028}_{-0.022}$ OUR AVERAGE** | | | | | |
| $0.204\pm0.003^{+0.041}_{-0.027}$ | 1.427M | [2] BESSON | 06 | CLEO | $e^+e^-\to$ hadrons |
| $0.276\pm0.050$ | | SCHINDLER | 80 | MRK2 | $e^+e^-$ |
| $0.18\ \pm0.06$ | | BACINO | 78 | DLCO | $e^+e^-$ |
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | | |
| $0.37\ \pm0.09$ | | [3] RAPIDIS | 77 | MRK1 | $e^+e^-$ |

[2] BESSON 06 measure $\sigma(e^+e^-\to\psi(3770)\to$ hadrons$) = 6.38\pm0.08^{+0.41}_{-0.30}$ nb at $\sqrt{s}=3773\pm1$ MeV, and obtain $\Gamma_{ee}$ from the Born-level cross section calculated using $\psi(3770)$ mass and width from our 2004 edition.

[3] See also $\Gamma(e^+e^-)/\Gamma_{\rm total}$ below.

# $\psi(3770)$ BRANCHING RATIOS

## $\Gamma(D\overline{D})/\Gamma_{total}$ — $\Gamma_1/\Gamma$

| VALUE | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|
| **0.85 ±0.05 OUR AVERAGE** | | | | |
| 0.836±0.073±0.042 | ABLIKIM | 06L | BES2 | $e^+e^- \to D\overline{D}$ |
| 0.855±0.017±0.058 | [4] ABLIKIM | 06N | BES2 | $e^+e^- \to D\overline{D}$ |

## $\Gamma(D^0\overline{D}^0)/\Gamma_{total}$ — $\Gamma_2/\Gamma$

| VALUE | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|
| **0.487±0.032 OUR AVERAGE** | | | | |
| 0.467±0.047±0.023 | ABLIKIM | 06L | BES2 | $e^+e^- \to D^0\overline{D}^0$ |
| 0.499±0.013±0.038 | [4] ABLIKIM | 06N | BES2 | $e^+e^- \to D^0\overline{D}^0$ |

## $\Gamma(D^+D^-)/\Gamma_{total}$ — $\Gamma_3/\Gamma$

| VALUE | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|
| **0.361±0.028 OUR AVERAGE** | | | | |
| 0.369±0.037±0.028 | ABLIKIM | 06L | BES2 | $e^+e^- \to D^+D^-$ |
| 0.357±0.011±0.034 | [4] ABLIKIM | 06N | BES2 | $e^+e^- \to D^+D^-$ |

## $\Gamma(D^0\overline{D}^0)/\Gamma(D^+D^-)$ — $\Gamma_2/\Gamma_3$

| VALUE | EVTS | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **1.28±0.14 OUR AVERAGE** | | | | | |
| 1.27±0.12±0.08 | | ABLIKIM | 06L | BES2 | $e^+e^- \to D\overline{D}$ |
| 2.43±1.50±0.43 | 34 | [5] CHISTOV | 04 | BELL | $B^+ \to \psi(3770)K^+$ |

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

| VALUE (units $10^{-3}$) | EVTS | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **1.93±0.28 OUR AVERAGE** | | | | | |
| 1.89±0.20±0.20 | 231 ± 33 | ADAM | 06 | CLEO | $e^+e^- \to \psi(3770)$ |
| 3.4 ±1.4 ±0.9 | 17.8 ± 4.8 | BAI | 05 | BES2 | $e^+e^- \to \psi(3770)$ |

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

| VALUE (units $10^{-2}$) | EVTS | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **0.080±0.025±0.016** | 39 ± 14 | ADAM | 06 | CLEO | $e^+e^- \to \psi(3770)$ |

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

| VALUE (units $10^{-5}$) | EVTS | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **87±33±22** | 22 ± 10 | ADAM | 06 | CLEO | $e^+e^- \to \psi(3770)$ |

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

| VALUE (units $10^{-5}$) | CL% | EVTS | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|---|
| **<28** | 90 | <10 | ADAM | 06 | CLEO | $e^+e^- \to \psi(3770)$ |

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

| VALUE (units $10^{-3}$) | CL% | EVTS | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|---|
| **7.3±0.7±0.6** | | 274 ± 27 | [6] BRIERE | 06 | CLEO | $e^+e^- \to \psi(3770) \to \gamma +$ hadrons |
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | | | |
| < 44 | 90 | | [7] COAN | 06A | CLEO | $e^+e^- \to \psi(3770) \to \gamma\gamma J/\psi$ |

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

| VALUE (units $10^{-3}$) | EVTS | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **2.9±0.5±0.4** | | [8] BRIERE | 06 | CLEO | $e^+e^- \to \psi(3770) \to \gamma +$ 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 | [9] BRIERE | 06 | CLEO | $e^+e^- \to \psi(3770) \to \gamma +$ hadrons |
| 2.8±0.5±0.4 | 53 ± 10 | [7] COAN | 06A | CLEO | $e^+e^- \to \psi(3770) \to \gamma\gamma J/\psi$ |

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

| VALUE | EVTS | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **1.49±0.31±0.26** | 53 ± 10 | [10] COAN | 06A | CLEO | $e^+e^- \to \psi(3770) \to \gamma\gamma J/\psi$ |

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

| VALUE | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | |
| 2.5±0.6 | [11] BRIERE | 06 | CLEO | $e^+e^- \to \psi(3770)$ |

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

| VALUE (units $10^{-3}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<0.9** | 90 | [7] COAN | 06A | CLEO | $e^+e^- \to \psi(3770) \to \gamma\gamma J/\psi$ |
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | | |
| <2.0 | 90 | [12] BRIERE | 06 | CLEO | $e^+e^- \to \psi(3770) \to \gamma +$ hadrons |

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

| VALUE | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | | |
| >8 | 90 | [11] BRIERE | 06 | CLEO | $e^+e^- \to \psi(3770)$ |

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

| VALUE (units $10^{-5}$) | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|
| **0.98±0.12 OUR FIT** | Error includes scale factor of 1.1. | | | |
| **1.3 ±0.2** | RAPIDIS | 77 | MRK1 | $e^+e^-$ |

### $\Gamma(K^0_S K^0_L)/\Gamma_{total}$ — $\Gamma_{12}/\Gamma$

| VALUE (units $10^{-5}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **< 1.2** | 90 | [13] CRONIN-HEN.. | 06 | CLEO | $e^+e^- \to \psi(3770)$ |
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | | |
| <21 | 90 | [14] ABLIKIM | 04F | BES | $e^+e^- \to \psi(3770)$ |

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

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<11.2** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

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

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<10.6** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(\eta\pi^+\pi^-)/\Gamma_{total}$ — $\Gamma_{15}/\Gamma$

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<12.4** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

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

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<6.0** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(\eta 3\pi)/\Gamma_{total}$ — $\Gamma_{17}/\Gamma$

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<13.4** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(\eta' 3\pi)/\Gamma_{total}$ — $\Gamma_{18}/\Gamma$

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<24.4** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(K^+K^-\pi^+\pi^-)/\Gamma_{total}$ — $\Gamma_{19}/\Gamma$

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<9.0** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(\phi\pi^+\pi^-)/\Gamma_{total}$ — $\Gamma_{20}/\Gamma$

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<4.1** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(\phi f_0(980))/\Gamma_{total}$ — $\Gamma_{21}/\Gamma$

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<4.5** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(K^+K^-\pi^+\pi^-\pi^0)/\Gamma_{total}$ — $\Gamma_{22}/\Gamma$

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<23.6** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(\eta K^+K^-)/\Gamma_{total}$ — $\Gamma_{23}/\Gamma$

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<4.1** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(\omega K^+K^-)/\Gamma_{total}$ — $\Gamma_{24}/\Gamma$

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<3.4** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(2(K^+K^-))/\Gamma_{total}$ — $\Gamma_{25}/\Gamma$

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<6.0** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(\phi K^+K^-)/\Gamma_{total}$ — $\Gamma_{26}/\Gamma$

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<7.5** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(2(K^+K^-)\pi^0)/\Gamma_{total}$ — $\Gamma_{27}/\Gamma$

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<2.9** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(p\overline{p}\pi^+\pi^-)/\Gamma_{total}$ — $\Gamma_{28}/\Gamma$

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<5.8** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(p\overline{p}\pi^+\pi^-\pi^0)/\Gamma_{total}$ — $\Gamma_{29}/\Gamma$

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<18.5** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(\eta p\overline{p})/\Gamma_{total}$ — $\Gamma_{30}/\Gamma$

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<5.4** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(\omega p\overline{p})/\Gamma_{total}$ — $\Gamma_{31}/\Gamma$

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<2.9** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(p\overline{p}K^+K^-)/\Gamma_{total}$ — $\Gamma_{32}/\Gamma$

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<3.2** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(\phi p\overline{p})/\Gamma_{total}$ — $\Gamma_{33}/\Gamma$

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<1.3** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(\Lambda\overline{\Lambda})/\Gamma_{total}$ — $\Gamma_{34}/\Gamma$

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<1.2** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(\Lambda\overline{\Lambda}\pi^+\pi^-)/\Gamma_{total}$ — $\Gamma_{35}/\Gamma$

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<2.5** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(\Lambda\overline{p}K^+)/\Gamma_{total}$ — $\Gamma_{36}/\Gamma$

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<2.8** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(\Lambda\overline{p}K^+\pi^+\pi^-)/\Gamma_{total}$ — $\Gamma_{37}/\Gamma$

| VALUE (units $10^{-4}$) | CL% | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|---|
| **<6.3** | 90 | [15] HUANG | 06A | CLEO | $e^+e^- \to \psi(3770)$ |

### $\Gamma(\phi\eta)/\Gamma_{total}$ — $\Gamma_{38}/\Gamma$

| VALUE (units $10^{-4}$) | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|
| **3.1±0.6±0.3** | [16] ADAMS | 06 | CLEC | 3.773 $e^+e^- \to \phi\eta$ |

[4] From a measurement of $\sigma(e^+e^- \to D\overline{D})$ at $\sqrt{s}$ = 3773 MeV, using the $\psi(3770)$ resonance parameters measured by ABLIKIM 06L.

[5] See ADLER 88C for older measurements of this quantity.

[6] Uses $B(\psi(2S) \to \gamma\chi_{c0})$ = 9.33 ± 0.14 ± 0.61 % from ATHAR 04, $\psi(2S)$ mass and width from PDG 04, and $\Gamma_{ee}(\psi(2S))$ = 2.54 ± 0.03 ± 0.11 keV from ADAM 06.

[7] Using $\Gamma_{ee}(\psi(2S))$ = (2.54 ± 0.03 ± 0.11) keV from ADAM 06 and taking $\sigma(e^+e^- \to D\overline{D})$ from HE 05 for $\sigma(e^+e^- \to \psi(3770))$.

[8] Averages the two measurements from COAN 06A and BRIERE 06.

[9] Uses $B(\psi(2S) \to \gamma\chi_{c1})$ = 9.07 ± 0.11 ± 0.54 % from ATHAR 04, $\psi(2S)$ mass and width from PDG 04, and $\Gamma_{ee}(\psi(2S))$ = 2.54 ± 0.03 ± 0.11 keV from ADAM 06.

[10] Using $B(\psi(3770) \to J/\psi\pi^+\pi^-)$ = (1.89 ± 0.20 ± 0.20) × $10^{-3}$ from ADAM 06.

[11] Not independent of other results in BRIERE 06.

[12] Uses $B(\psi(2S) \to \gamma\chi_{c2})$ = 9.22 ± 0.11 ± 0.46 % from ATHAR 04, $\psi(2S)$ mass and width from PDG 04, and $\Gamma_{ee}(\psi(2S))$ = 2.54 ± 0.03 ± 0.11 keV from ADAM 06.

[13] Using $\sigma(e^+e^- \to \psi(3770) \to$ hadrons) = $(6.38 \pm 0.08^{+0.41}_{-0.30})$ nb from BESSON 06 and $B(K^0_S \to \pi^+\pi^-)$ = 0.6895 ± 0.0014.

[14] Using $B(K^0_S \to \pi^+\pi^-)$ = 0.6860 ± 0.0027.

[15] Using $\sigma_{tot}(e^+e^- \to \psi(3770))$ = 7.9 ± 0.6 nb at the resonance.

[16] Comparing $\sigma(e^+e^- \to \phi\eta)$ at $\sqrt{s}$ = 3.773 GeV and $\sqrt{s}$ = 3.671 GeV, and using $\sigma(\psi(3770) \to D\overline{D})$ = 6.39 ± 0.20 nb.

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