

$\eta_2(1870)$

$$I^G(J^{PC}) = 0^+(2^{-+})$$

$\eta_2(1870)$  MASS

| VALUE (MeV)                                                                   | EPTS | DOCUMENT ID | TECN     | COMMENT                                        |
|-------------------------------------------------------------------------------|------|-------------|----------|------------------------------------------------|
| <b>1842± 8 OUR AVERAGE</b>                                                    |      |             |          |                                                |
| 1835±12                                                                       |      | BARBERIS    | 00B      | 450 $pp \rightarrow p_f \eta \pi^+ \pi^- p_s$  |
| 1844±13                                                                       |      | BARBERIS    | 00C      | 450 $pp \rightarrow p_f 4\pi p_s$              |
| 1840±25                                                                       |      | BARBERIS    | 97B OMEG | 450 $pp \rightarrow p p 2(\pi^+ \pi^-)$        |
| 1875±20±35                                                                    |      | ADOMEIT     | 96 CBAR  | 1.94 $\bar{p}p \rightarrow \eta 3\pi^0$        |
| 1881±32±40                                                                    | 26   | KARCH       | 92 CBAL  | $e^+ e^- \rightarrow e^+ e^- \eta \pi^0 \pi^0$ |
| • • • We do not use the following data for averages, fits, limits, etc. • • • |      |             |          |                                                |
| 1860± 5±15                                                                    |      | ANISOVICH   | 00E SPEC | 0.9–1.94 $\bar{p}p \rightarrow \eta 3\pi^0$    |
| 1840±15                                                                       |      | BAI         | 99 BES   | $J/\psi \rightarrow \gamma \eta \pi^+ \pi^-$   |

$\eta_2(1870)$  WIDTH

| VALUE (MeV)                                                                   | EPTS | DOCUMENT ID | TECN     | COMMENT                                        |
|-------------------------------------------------------------------------------|------|-------------|----------|------------------------------------------------|
| <b>225±14 OUR AVERAGE</b>                                                     |      |             |          |                                                |
| 235±22                                                                        |      | BARBERIS    | 00B      | 450 $pp \rightarrow p_f \eta \pi^+ \pi^- p_s$  |
| 228±23                                                                        |      | BARBERIS    | 00C      | 450 $pp \rightarrow p_f 4\pi p_s$              |
| 200±40                                                                        |      | BARBERIS    | 97B OMEG | 450 $pp \rightarrow p p 2(\pi^+ \pi^-)$        |
| 200±25±45                                                                     |      | ADOMEIT     | 96 CBAR  | 1.94 $\bar{p}p \rightarrow \eta 3\pi^0$        |
| 221±92±44                                                                     | 26   | KARCH       | 92 CBAL  | $e^+ e^- \rightarrow e^+ e^- \eta \pi^0 \pi^0$ |
| • • • We do not use the following data for averages, fits, limits, etc. • • • |      |             |          |                                                |
| 250±25 <sup>+50</sup> <sub>−35</sub>                                          |      | ANISOVICH   | 00E SPEC | 0.9–1.94 $\bar{p}p \rightarrow \eta 3\pi^0$    |
| 170±40                                                                        |      | BAI         | 99 BES   | $J/\psi \rightarrow \gamma \eta \pi^+ \pi^-$   |

$\eta_2(1870)$  DECAY MODES

| Mode                            | Fraction ( $\Gamma_i/\Gamma$ ) |
|---------------------------------|--------------------------------|
| $\Gamma_1 \quad \eta \pi \pi$   | seen                           |
| $\Gamma_2 \quad a_2(1320) \pi$  | seen                           |
| $\Gamma_3 \quad f_2(1270) \eta$ | seen                           |
| $\Gamma_4 \quad a_0(980) \pi$   | seen                           |
| $\Gamma_5 \quad \gamma \gamma$  | seen                           |

$\eta_2(1870)$  BRANCHING RATIOS

| $\Gamma(a_2(1320)\pi)/\Gamma(f_2(1270)\eta)$             |                        |      |         |          | $\Gamma_2/\Gamma_3$                       |
|----------------------------------------------------------|------------------------|------|---------|----------|-------------------------------------------|
| VALUE                                                    | DOCUMENT ID            | TECN | COMMENT |          |                                           |
| <b>1.7 ±0.4 OUR AVERAGE</b>                              |                        |      |         |          |                                           |
| 1.60±0.40                                                | <sup>1</sup> ANISOVICH | 11   | SPEC    | 0.9–1.94 | $p\bar{p}$                                |
| 20.4 ±6.6                                                | BARBERIS               | 00B  |         | 450      | $pp \rightarrow p_f \eta \pi^+ \pi^- p_s$ |
| 4.1 ±2.3                                                 | ADOMEIT                | 96   | CBAR    | 1.94     | $\bar{p}p \rightarrow \eta 3\pi^0$        |
| <sup>1</sup> Reanalysis of ADOMEIT 96 and ANISOVICH 00E. |                        |      |         |          |                                           |

| $\Gamma(a_2(1320)\pi)/\Gamma(a_0(980)\pi)$ | $\Gamma_2/\Gamma_4$ |                                               |  |
|--------------------------------------------|---------------------|-----------------------------------------------|--|
| VALUE                                      | DOCUMENT ID         | COMMENT                                       |  |
| <b><math>32.6 \pm 12.6</math></b>          | BARBERIS 00B        | 450 $pp \rightarrow p_f \eta \pi^+ \pi^- p_s$ |  |

| $\Gamma(a_0(980)\pi)/\Gamma(f_2(1270)\eta)$ | $\Gamma_4/\Gamma_3$       |      |                     |
|---------------------------------------------|---------------------------|------|---------------------|
| VALUE                                       | DOCUMENT ID               | TECN | COMMENT             |
| <b><math>0.48 \pm 0.45</math></b>           | <sup>1</sup> ANISOVICH 11 | SPEC | 0.9–1.94 $p\bar{p}$ |

<sup>1</sup> Reanalysis of ADOMEIT 96 and ANISOVICH 00E.

| $\Gamma(\gamma\gamma)/\Gamma_{\text{total}}$ | $\Gamma_5/\Gamma$ |      |                                           |
|----------------------------------------------|-------------------|------|-------------------------------------------|
| VALUE                                        | DOCUMENT ID       | TECN | COMMENT                                   |
| <b>seen</b>                                  | KARCH 92          | CBAL | $e^+e^- \rightarrow e^+e^-\eta\pi^0\pi^0$ |

$\eta_2(1870)$  REFERENCES

|               |              |                              |                          |
|---------------|--------------|------------------------------|--------------------------|
| ANISOVICH 11  | EPJ C71 1511 | A.V. Anisovich <i>et al.</i> | (LOQM, RAL, PNPI)        |
| ANISOVICH 00E | PL B477 19   | A.V. Anisovich <i>et al.</i> |                          |
| BARBERIS 00B  | PL B471 435  | D. Barberis <i>et al.</i>    | (WA 102 Collab.)         |
| BARBERIS 00C  | PL B471 440  | D. Barberis <i>et al.</i>    | (WA 102 Collab.)         |
| BAI 99        | PL B446 356  | J.Z. Bai <i>et al.</i>       | (BES Collab.)            |
| BARBERIS 97B  | PL B413 217  | D. Barberis <i>et al.</i>    | (WA 102 Collab.)         |
| ADOMEIT 96    | ZPHY C71 227 | J. Adomeit <i>et al.</i>     | (Crystal Barrel Collab.) |
| KARCH 92      | ZPHY C54 33  | K. Karch <i>et al.</i>       | (Crystal Ball Collab.)   |