

**$f_0(2330)$** 

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

OMITTED FROM SUMMARY TABLE

 **$f_0(2330)$  MASS**

| VALUE (MeV)                                                                   | DOCUMENT ID          | TECN      | COMMENT                                                                       |
|-------------------------------------------------------------------------------|----------------------|-----------|-------------------------------------------------------------------------------|
| • • • We do not use the following data for averages, fits, limits, etc. • • • |                      |           |                                                                               |
| $2312 \pm 7_{-3}^{+7}$                                                        | <sup>1</sup> ABLIKIM | 22AS BES3 | $J/\psi(1S) \rightarrow \gamma \eta \eta'$                                    |
| $2312 \pm 2_{-0}^{+10}$                                                       | <sup>2</sup> ABLIKIM | 22C BES3  | $J/\psi \rightarrow \gamma \eta' \eta' \rightarrow 4/5 \gamma 2(\pi^+ \pi^-)$ |
| $2419 \pm 64$                                                                 | <sup>3</sup> RODAS   | 22 RVUE   | $J/\psi(1S) \rightarrow \gamma (\pi \pi, K \bar{K})$                          |
| $2340 \pm 20$                                                                 | SARANTSEV            | 21 RVUE   | $J/\psi(1S) \rightarrow \gamma (\pi \pi, K \bar{K}, \eta \eta, \omega \phi)$  |
| $2314 \pm 25$                                                                 | <sup>4</sup> BUGG    | 04A RVUE  |                                                                               |
| $2337 \pm 14$                                                                 | ANISOVICH            | 00J SPEC  | $2.0 \bar{p} p \rightarrow \pi \pi, \eta \eta$                                |
| $\sim 2321$                                                                   | HASAN                | 94 RVUE   | $\bar{p} p \rightarrow \pi \pi$                                               |

<sup>1</sup> From a Breit-Wigner fit involving 9 resonances and a resonating exotic  $\eta_1(1855) \rightarrow \eta \eta'$   $P$ -wave.

<sup>2</sup> From a partial wave analysis of the systems  $(\gamma X)$ , with  $X \rightarrow \eta' \eta'$ , and  $(\eta' X)$ , with  $X \rightarrow \gamma \eta'$  in the decay  $J/\psi \rightarrow \gamma \eta' \eta'$ . The intermediate resonance  $X$  is parametrized by a constant-width, relativistic Breit-Wigner.

<sup>3</sup> T-matrix pole from coupled channel K-matrix fit to data on  $J/\psi \rightarrow \gamma \pi^0 \pi^0$  (ABLIKIM 15AE) and  $J/\psi \rightarrow \gamma K_S^0 K_S^0$  (ABLIKIM 18AA).

<sup>4</sup> Partial wave analysis of the data on  $p \bar{p} \rightarrow \bar{\Lambda} \Lambda$  from BARNES 00.

 **$f_0(2330)$  WIDTH**

| VALUE (MeV)                                                                   | DOCUMENT ID          | TECN      | COMMENT                                                                       |
|-------------------------------------------------------------------------------|----------------------|-----------|-------------------------------------------------------------------------------|
| • • • We do not use the following data for averages, fits, limits, etc. • • • |                      |           |                                                                               |
| $65 \pm 10_{-12}^{+3}$                                                        | <sup>1</sup> ABLIKIM | 22AS BES3 | $J/\psi(1S) \rightarrow \gamma \eta \eta'$                                    |
| $134 \pm 5_{-9}^{+30}$                                                        | <sup>2</sup> ABLIKIM | 22C BES3  | $J/\psi \rightarrow \gamma \eta' \eta' \rightarrow 4/5 \gamma 2(\pi^+ \pi^-)$ |
| $274 \pm 94$                                                                  | <sup>3</sup> RODAS   | 22 RVUE   | $J/\psi(1S) \rightarrow \gamma (\pi \pi, K \bar{K})$                          |
| $165 \pm 25$                                                                  | SARANTSEV            | 21 RVUE   | $J/\psi(1S) \rightarrow \gamma (\pi \pi, K \bar{K}, \eta \eta, \omega \phi)$  |
| $144 \pm 20$                                                                  | <sup>4</sup> BUGG    | 04A RVUE  |                                                                               |
| $217 \pm 33$                                                                  | ANISOVICH            | 00J SPEC  | $2.0 \bar{p} p \rightarrow \pi \pi, \eta \eta$                                |
| $\sim 223$                                                                    | HASAN                | 94 RVUE   | $\bar{p} p \rightarrow \pi \pi$                                               |

<sup>1</sup> From a Breit-Wigner fit involving 9 resonances and a resonating exotic  $\eta_1(1855) \rightarrow \eta \eta'$   $P$ -wave.

<sup>2</sup> From a partial wave analysis of the systems  $(\gamma X)$ , with  $X \rightarrow \eta' \eta'$ , and  $(\eta' X)$ , with  $X \rightarrow \gamma \eta'$  in the decay  $J/\psi \rightarrow \gamma \eta' \eta'$ . The intermediate resonance  $X$  is parametrized by a constant-width, relativistic Breit-Wigner.

<sup>3</sup> T-matrix pole from coupled channel K-matrix fit to data on  $J/\psi \rightarrow \gamma \pi^0 \pi^0$  (ABLIKIM 15AE) and  $J/\psi \rightarrow \gamma K_S^0 K_S^0$  (ABLIKIM 18AA).

<sup>4</sup> Partial wave analysis of the data on  $p \bar{p} \rightarrow \bar{\Lambda} \Lambda$  from BARNES 00.

**$f_0(2330)$  REFERENCES**

|           |      |                         |                              |                    |
|-----------|------|-------------------------|------------------------------|--------------------|
| ABLIKIM   | 22AS | PR D106 072012          | M. Ablikim <i>et al.</i>     | (BESIII Collab.)   |
| Also      |      | PR D107 079901 (errat.) | M. Ablikim <i>et al.</i>     | (BESIII Collab.)   |
| ABLIKIM   | 22C  | PR D105 072002          | M. Ablikim <i>et al.</i>     | (BESIII Collab.)   |
| RODAS     | 22   | EPJ C82 80              | A. Rodas <i>et al.</i>       | (JPAC Collab.)     |
| SARANTSEV | 21   | PL B816 136227          | A.V. Sarantsev <i>et al.</i> | (BONN, PNPI)       |
| ABLIKIM   | 18AA | PR D98 072003           | M. Ablikim <i>et al.</i>     | (BESIII Collab.)   |
| ABLIKIM   | 15AE | PR D92 052003           | M. Ablikim <i>et al.</i>     | (BESIII Collab.)   |
| BUGG      | 04A  | EPJ C36 161             | D.V. Bugg                    |                    |
| ANISOVICH | 00J  | PL B491 47              | A.V. Anisovich <i>et al.</i> | (RAL, LOQM, PNPI+) |
| BARNES    | 00   | PR C62 055203           | P.D. Barnes <i>et al.</i>    |                    |
| HASAN     | 94   | PL B334 215             | A. Hasan, D.V. Bugg          | (LOQM)             |

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