\( \eta(1295) \) \( J^G(J^{PC}) = 0^+(0^-+) \)

See also the mini-review under non-\( q\bar{q} \) candidates. (See the index for the page number.)

### \( \eta(1295) \) MASS

<table>
<thead>
<tr>
<th>VALUE (MeV)</th>
<th>EVTS</th>
<th>DOCUMENT ID</th>
<th>TECN</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1294 ± 4</td>
<td>20k</td>
<td>ADAMS</td>
<td>01B E852</td>
<td>18 GeV ( \pi^- p \to K^+ K^- \pi^0 n )</td>
</tr>
<tr>
<td>1282 ± 5</td>
<td>9082</td>
<td>MANAK</td>
<td>00A MPS</td>
<td>18 ( \pi^- p \to \eta \pi^+ \pi^- n )</td>
</tr>
<tr>
<td>1299 ± 4</td>
<td>2100</td>
<td>ALDE</td>
<td>97B GAM4</td>
<td>100 ( \pi^- p \to \eta \pi^0 \pi^0 n )</td>
</tr>
<tr>
<td>1295 ± 4</td>
<td>91C</td>
<td>FUKUI</td>
<td>SPEC 8.95</td>
<td>8.95 ( \pi^- p \to \eta \pi^+ \pi^- n )</td>
</tr>
</tbody>
</table>

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

\~ 1275

**WEIGHTED AVERAGE**

1294 ± 4 (Error scaled by 1.6)

\( \chi^2 \)

\begin{align*}
&= 0.5 \\
&0.5 \\
&= 5.5 \\
&1.8 \\
&= 0.1 \\
&7.8
\end{align*}

(Confidence Level = 0.050)

\( \eta(1295) \) mass (MeV)
\( \eta(1295) \) WIDTH

<table>
<thead>
<tr>
<th>VALUE (MeV)</th>
<th>EVTS</th>
<th>DOCUMENT ID</th>
<th>TECN</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>55 ( \pm ) 5 OUR AVERAGE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>57 ( \pm ) 23 ( \pm ) 21</td>
<td>20k</td>
<td>ADAMS 01B E852</td>
<td>18 GeV ( \pi^- p \rightarrow K^+ K^- \pi^0 n )</td>
<td></td>
</tr>
<tr>
<td>66 ( \pm ) 13</td>
<td>9082</td>
<td>MANAK 00A MPS</td>
<td>18 ( \pi^- p \rightarrow \eta \pi^+ \pi^- n )</td>
<td></td>
</tr>
<tr>
<td>53 ( \pm ) 6</td>
<td></td>
<td>FUKUI 91C SPEC</td>
<td>8.95 ( \pi^- p \rightarrow \eta \pi^+ \pi^- n )</td>
<td></td>
</tr>
</tbody>
</table>

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

<40 | 2100 | ALDE 97B GAM4 | 100 \( \pi^- p \rightarrow \eta \pi^0 \pi^0 n \) |

\( \sim 70 \) | | STANTON 79 CNTR | 8.4 \( \pi^- p \rightarrow n \eta 2\pi \) |

\( \eta(1295) \) DECAY MODES

<table>
<thead>
<tr>
<th>Mode</th>
<th>Fraction (( \Gamma_i/\Gamma ))</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \Gamma_1 )</td>
<td>( \eta \pi^+ \pi^- )</td>
</tr>
<tr>
<td>( \Gamma_2 )</td>
<td>( a_0(980) \pi )</td>
</tr>
<tr>
<td>( \Gamma_3 )</td>
<td>( \gamma\gamma )</td>
</tr>
<tr>
<td>( \Gamma_4 )</td>
<td>( \eta \pi^0 \pi^0 )</td>
</tr>
<tr>
<td>( \Gamma_5 )</td>
<td>( \eta(\pi\pi) ) S-wave</td>
</tr>
<tr>
<td>( \Gamma_6 )</td>
<td>( \sigma \eta )</td>
</tr>
</tbody>
</table>

\( \eta(1295) \) \( \Gamma(i) \Gamma(\gamma\gamma)/\Gamma(\text{total}) \)

<table>
<thead>
<tr>
<th>VALUE (keV)</th>
<th>CL%</th>
<th>DOCUMENT ID</th>
<th>TECN</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;0.066</td>
<td>95</td>
<td>ACCIARRI 01G L3</td>
<td></td>
<td>183–202 ( e^+ e^- \rightarrow e^+ e^- \eta \pi^+ \pi^- )</td>
</tr>
</tbody>
</table>

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

<0.6 | 90 | AIHARA 88c TPC | | \( e^+ e^- \rightarrow e^+ e^- \eta \pi^+ \pi^- \) |

<0.3 | | ANTREASYAN 87 CBAL | | \( e^+ e^- \rightarrow e^+ e^- \eta \pi \pi \) |

\( \eta(1295) \) BRANCHING RATIOS

\( \Gamma(a_0(980)\pi)/\Gamma(\text{total}) \)

<table>
<thead>
<tr>
<th>VALUE</th>
<th>DOCUMENT ID</th>
<th>TECN</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>not seen</td>
<td>BERTIN 97 OBLX</td>
<td></td>
<td>0.0 ( \overline{\pi} p \rightarrow K^+ (K^0) \pi^+ \pi^- \pi^- )</td>
</tr>
</tbody>
</table>

seen | BIRMAN 88 MPS | | 8 \( \pi^- p \rightarrow K^+ K^0 \pi^- n \) |

large | ANDO 86 SPEC | | 8 \( \pi^- p \rightarrow \eta \pi^+ \pi^- n \) |

large | STANTON 79 CNTR | | 8.4 \( \pi^- p \rightarrow n \eta 2\pi \) |

\( \Gamma(a_0(980)\pi)/\Gamma(\eta \pi^0 \pi^0) \)

<table>
<thead>
<tr>
<th>VALUE</th>
<th>DOCUMENT ID</th>
<th>TECN</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.65 ( \pm ) 0.10</td>
<td>1 ALDE 97B GAM4</td>
<td></td>
<td>100 ( \pi^- p \rightarrow \eta \pi^0 \pi^0 n )</td>
</tr>
</tbody>
</table>

\( ^1 \) Assuming that \( a_0(980) \) decays only to \( \eta \pi \).
\[ \Gamma(\eta(\pi\pi)_{s\text{-wave}})/\Gamma(\eta\pi^0\pi^0) \]

\begin{tabular}{lll}
\textbf{VALUE} & \textbf{DOCUMENT ID} & \textbf{TECN} & \textbf{COMMENT} \\
0.35 \pm 0.10 & ALDE & 97B GAM4 & 100 \pi^- p \rightarrow \eta\pi^0\pi^0 n \\
\end{tabular}

\[ \Gamma(a_0(980)\pi)/\Gamma(\sigma\eta) \]

\begin{tabular}{lll}
\textbf{VALUE} & \textbf{EVTS} & \textbf{DOCUMENT ID} & \textbf{TECN} & \textbf{COMMENT} \\
0.48 \pm 0.22 & 9082 & MANAK & 00A MPS & 18 \pi^- p \rightarrow \eta\pi^+\pi^- n \\
\end{tabular}

\( \eta(1295) \) REFERENCES

- Acciarri et al. (L3 Collab.)
- Adams et al. (BNL E852 Collab.)
- Manak et al. (BNL E852 Collab.)
- Alde et al. (GAMS Collab.)
- Bertin et al. (OBELIX Collab.)
- Fukui et al. (SUGI, NAGO, KEK, KYOT+)
- Aihara et al. (TPC-2\gamma Collab.)
- Birman et al. (BNL, FSU, IND, MASP) JP
- Antreasyan et al. (Crystall Ball Collab.)
- Ando et al. (KEK, KYOT, NIRS, SAGA+) JP
- Stanton et al. (OSU, CARL, MCGI+) JP

OTHER RELATED PAPERS

- Anisovich et al.