\[ \tau(1D) \]

\[ I^G(J^P_C) = 0^{-(2--)} \]

Omitted from summary table.

\( J \) needs confirmation.

### \( \tau(1D) \) 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>10161.1±6.0±1.6</td>
<td>38</td>
<td>BONVICINI 04</td>
<td>CLE3</td>
<td>( \tau(3S) \rightarrow \gamma X )</td>
</tr>
</tbody>
</table>

### \( \tau(1D) \) Decay Modes

<table>
<thead>
<tr>
<th>Mode</th>
<th>Fraction (( \Gamma_i/\Gamma ))</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \Gamma_1 )</td>
<td>( \gamma \gamma \tau(1S) ) seen</td>
</tr>
<tr>
<td>( \Gamma_2 )</td>
<td>( \gamma \chi_{bJ}(1P) )</td>
</tr>
<tr>
<td>( \Gamma_3 )</td>
<td>( \eta \tau(1S) )</td>
</tr>
<tr>
<td>( \Gamma_4 )</td>
<td>( \pi^+ \pi^- \tau(1S) )</td>
</tr>
</tbody>
</table>

### \( \tau(2S) \) Branching Ratios

#### \( \Gamma(\eta \tau(1S))/\Gamma(\gamma \gamma \tau(1S)) \)

<table>
<thead>
<tr>
<th>VALUE</th>
<th>CL%</th>
<th>DOCUMENT ID</th>
<th>TECN</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;0.25</td>
<td>90</td>
<td>BONVICINI 04</td>
<td>CLE3</td>
<td>( \tau(3S) \rightarrow \gamma X )</td>
</tr>
</tbody>
</table>

#### \( \Gamma(\pi^+ \pi^- \tau(1S))/\Gamma(\gamma \gamma \tau(1S)) \)

<table>
<thead>
<tr>
<th>VALUE</th>
<th>CL%</th>
<th>DOCUMENT ID</th>
<th>TECN</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1.2</td>
<td>90</td>
<td>1 BONVICINI 04</td>
<td>CLE3</td>
<td>( \tau(3S) \rightarrow \gamma X )</td>
</tr>
</tbody>
</table>

1 Assuming \( J = 2 \).

### \( \tau(1D) \) References

BONVICINI 04 PR D70 032001 G. Bonvicini et al. (CLEO Collab.)

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