

$\eta_b(2S)$ 

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

OMITTED FROM SUMMARY TABLE

Quantum numbers shown are quark-model predictions.

 **$\eta_b(2S)$  MASS**

<u>VALUE (MeV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b><math>9999.0 \pm 3.5^{+2.8}_{-1.9}</math></b>	26k	<sup>1</sup> MIZUK	12	BELL $e^+e^- \rightarrow \gamma\pi^+\pi^- +$ hadrons
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
$9974.6 \pm 2.3 \pm 2.1$	$11 \pm 4$	<sup>2,3</sup> DOBBS	12	$\Upsilon(2S) \rightarrow \gamma$ hadrons
<sup>1</sup> Assuming $\Gamma_{\eta_b(2S)} = 4.9$ MeV. Not independent of the corresponding mass difference measurement.				
<sup>2</sup> Obtained by analyzing CLEO III data but not authored by the CLEO Collaboration.				
<sup>3</sup> Assuming $\Gamma_{\eta_b(2S)} = 5$ MeV. Not independent of the corresponding mass difference measurement.				

 **$m\Upsilon(2S) - m\eta_b(2S)$** 

<u>VALUE (MeV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b><math>24.3 \pm 3.5^{+2.8}_{-1.9}</math></b>	26k	<sup>4</sup> MIZUK	12	BELL $e^+e^- \rightarrow \gamma\pi^+\pi^- +$ hadrons
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
$48.7 \pm 2.3 \pm 2.1$	$11 \pm 4$	<sup>5,6</sup> DOBBS	12	$\Upsilon(2S) \rightarrow \gamma$ hadrons
<sup>4</sup> Assuming $\Gamma_{\eta_b(2S)} = 4.9$ MeV. Not independent of the corresponding mass measurement.				
<sup>5</sup> Obtained by analyzing CLEO III data but not authored by the CLEO Collaboration.				
<sup>6</sup> Assuming $\Gamma_{\eta_b(2S)} = 5$ MeV. Not independent of the corresponding mass measurement.				

 **$\eta_b(2S)$  WIDTH**

<u>VALUE (MeV)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;24</b>	90	MIZUK	12	BELL $e^+e^- \rightarrow \gamma\pi^+\pi^-$ hadrons

 **$\eta_b(2S)$  DECAY MODES**

<u>Mode</u>	<u>Fraction (<math>\Gamma_i/\Gamma</math>)</u>
$\Gamma_1$ hadrons	seen

**$\eta_b(2S)$  BRANCHING RATIOS**

<b><math>\Gamma(\text{hadrons})/\Gamma_{\text{total}}</math></b>	<b><math>\Gamma_1/\Gamma</math></b>
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<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>seen</b>	26k	MIZUK	12	BELL $e^+e^- \rightarrow \gamma\pi^+\pi^-$ hadrons
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
seen		<sup>7</sup> DOBBS	12	$\Upsilon(2S) \rightarrow \gamma$ hadrons

<sup>7</sup> Obtained by analyzing CLEO III data but not authored by the CLEO Collaboration.

 **$\eta_b(2S)$  REFERENCES**

DOBBS	12	PRL 109 082001	S. Dobbs <i>et al.</i>	
MIZUK	12	PRL 109 232002	R. Mizuk <i>et al.</i>	(BELLE Collab.)