

$\eta_b(2S)$

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

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>
$9999.0 \pm 3.5^{+2.8}_{-1.9}$	26k	¹ 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 ± 4	^{2,3} DOBBS	12	$\Upsilon(2S) \rightarrow \gamma$ hadrons
¹ Assuming $\Gamma_{\eta_b(2S)} = 4.9$ MeV. Not independent of the corresponding mass difference measurement.				
² Obtained by analyzing CLEO III data but not authored by the CLEO Collaboration.				
³ 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>
$24.3 \pm 3.5^{+2.8}_{-1.9}$	26k	⁴ 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 ± 4	^{5,6} DOBBS	12	$\Upsilon(2S) \rightarrow \gamma$ hadrons
⁴ Assuming $\Gamma_{\eta_b(2S)} = 4.9$ MeV. Not independent of the corresponding mass measurement.				
⁵ Obtained by analyzing CLEO III data but not authored by the CLEO Collaboration.				
⁶ 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>
<24	90	MIZUK	12	BELL $e^+e^- \rightarrow \gamma\pi^+\pi^-$ hadrons

 $\eta_b(2S)$ DECAY MODES

<u>Mode</u>	<u>Fraction (Γ_i/Γ)</u>
Γ_1 hadrons	seen

$\eta_b(2S)$ BRANCHING RATIOS

$\Gamma(\text{hadrons})/\Gamma_{\text{total}}$					Γ_1/Γ
<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
seen	26k	MIZUK	12	BELL	$e^+e^- \rightarrow \gamma\pi^+\pi^-$ hadrons
• • • We do not use the following data for averages, fits, limits, etc. • • •					
seen		⁷ DOBBS	12		$\Upsilon(2S) \rightarrow \gamma$ hadrons
⁷ 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.)