

$h_b(2P)$

$$I^G(J^{PC}) = 0^-(1^{+-})$$

Quantum numbers are quark model predictions. $C = -$ established by $\eta_b \gamma$ decay.

 $h_b(2P)$ MASS

<u>VALUE (MeV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$10259.8 \pm 0.5 \pm 1.1$	90k	¹ MIZUK	12 BELL	$e^+ e^- \rightarrow \pi^+ \pi^-$ hadrons
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$10259.8 \pm 0.6^{+1.4}_{-1.0}$	83.9k	² ADACHI	12 BELL	$10.86 e^+ e^- \rightarrow \pi^+ \pi^-$ MM

¹ Observed with 9 standard deviations significance.

² Superseded by MIZUK 12.

 $h_b(2P)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
Γ_1 hadrons	not seen
Γ_2 $\eta_b(1S)\gamma$	$(22 \pm 5) \%$
Γ_3 $\eta_b(2S)\gamma$	$(48 \pm 13) \%$

 $h_b(2P)$ 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>
not seen	83.9k	ADACHI	12 BELL	$10.86 e^+ e^- \rightarrow \pi^+ \pi^-$ MM
$\Gamma(\eta_b(1S)\gamma)/\Gamma_{\text{total}}$				Γ_2/Γ
<u>VALUE (units 10^{-2})</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$22.3 \pm 3.8^{+3.1}_{-3.3}$	10k	MIZUK	12 BELL	$e^+ e^- \rightarrow (\gamma)\pi^+ \pi^-$ hadrons
$\Gamma(\eta_b(2S)\gamma)/\Gamma_{\text{total}}$				Γ_3/Γ
<u>VALUE (units 10^{-2})</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$47.5 \pm 10.5^{+6.8}_{-7.7}$	26k	MIZUK	12 BELL	$e^+ e^- \rightarrow (\gamma)\pi^+ \pi^-$ hadrons

 $h_b(2P)$ REFERENCES

ADACHI	12	PRL 108 032001	I. Adachi <i>et al.</i>	(BELLE Collab.)
MIZUK	12	PRL 109 232002	R. Mizuk <i>et al.</i>	(BELLE Collab.)