



$$I(J^P) = 0(1^-)$$

$I, J, P$  need confirmation. Quantum numbers shown are quark-model predictions.

### $B_s^*$ MASS

From mass difference below and the  $B_s^0$  mass.

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>5415.4 ± 1.4 OUR FIT</b>	Error includes scale factor of 2.5.		
<b>5415.8 ± 1.5 OUR AVERAGE</b>	Error includes scale factor of 2.6.		
5416.4 ± 0.4 ± 0.5	LOUVOT	09	BELL $e^+e^- \rightarrow \gamma(5S)$
5411.7 ± 1.6 ± 0.6	<sup>1</sup> AQUINES	06	CLEO $e^+e^- \rightarrow \gamma(5S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
5418 ± 1 ± 3	DRUTSKOY	07A	BELL Repl. by LOUVOT 09
5414 ± 1 ± 3	<sup>2</sup> BONVICINI	06	CLEO $e^+e^- \rightarrow \gamma(5S)$
<sup>1</sup> Utilized the beam constrained invariant mass peak positions for $B^*$ and $B_s^*$ to extract the measurement.			
<sup>2</sup> Uses 14 candidates consistent with $B_s$ decays into final states with a $J/\psi$ and a $D_s^{(*)-}$ .			

$$m_{B_s^*} - m_{B_s}$$

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>49.0 ± 1.5 OUR FIT</b>	Error includes scale factor of 2.0.		
<b>46.1 ± 1.5 OUR AVERAGE</b>			
45.7 ± 1.7 ± 0.7	<sup>3</sup> AQUINES	06	CLEO $e^+e^- \rightarrow \gamma(5S)$
47.0 ± 2.6	<sup>4</sup> LEE-FRANZINI 90	CSB2	$e^+e^- \rightarrow \gamma(5S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
48 ± 1 ± 3	<sup>5</sup> BONVICINI	06	CLEO Repl. by AQUINES 06
<sup>3</sup> Utilized the beam constrained invariant mass peak positions for $B^*$ and $B_s^*$ to extract the measurement.			
<sup>4</sup> LEE-FRANZINI 90 measure $46.7 \pm 0.4 \pm 0.2$ MeV for an admixture of $B^0, B^+,$ and $B_s$ . They use the shape of the photon line to separate the above value for $B_s$ .			
<sup>5</sup> Uses 14 candidates consistent with $B_s$ decays into final states with a $J/\psi$ and a $D_s^{(*)-}$ .			

$$|(m_{B_s^*} - m_{B_s}) - (m_{B^*} - m_B)|$$

<u>VALUE (MeV)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<6	95	ABREU	95R	DLPH $E_{cm}^{ee} = 88-94$ GeV

### $B_s^*$ DECAY MODES

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1 \quad B_s \gamma$	dominant

## **$B_s^*$** REFERENCES

LOUVOT	09	PRL 102 021801	R. Louvot <i>et al.</i>	(BELLE Collab.)
DRUTSKOY	07A	PR D76 012002	A. Drutskoy <i>et al.</i>	(BELLE Collab.)
AQUINES	06	PRL 96 152001	O. Aquines <i>et al.</i>	(CLEO Collab.)
BONVICINI	06	PRL 96 022002	G. Bonvicini <i>et al.</i>	(CLEO Collab.)
ABREU	95R	ZPHY C68 353	P. Abreu <i>et al.</i>	(DELPHI Collab.)
LEE-FRANZINI	90	PRL 65 2947	J. Lee-Franzini <i>et al.</i>	(CUSB II Collab.)

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