



$$I(J^P) = \frac{1}{2}(1^-)$$

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

### **$B^*$ MASS**

From mass difference below and the average of our  $B$  masses  $(m_{B^\pm} + m_{B^0})/2$ .

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>
<b>5325.1 ± 0.5 OUR FIT</b>	

  

<b><math>m_{B^*} - m_B</math></b>				
<u>VALUE (MeV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>45.78 ± 0.35 OUR FIT</b>				
<b>45.78 ± 0.35 OUR AVERAGE</b>				
46.2 ± 0.3 ± 0.8		<sup>1</sup> ACKERSTAFF 97M	OPAL	$e^+e^- \rightarrow Z$
45.3 ± 0.35 ± 0.87	4227	<sup>1</sup> BUSKULIC 96D	ALEP	$E_{cm}^{ee} = 88-94$ GeV
45.5 ± 0.3 ± 0.8		<sup>1</sup> ABREU 95R	DLPH	$E_{cm}^{ee} = 88-94$ GeV
46.3 ± 1.9	1378	<sup>1</sup> ACCIARRI 95B	L3	$E_{cm}^{ee} = 88-94$ GeV
46.4 ± 0.3 ± 0.8		<sup>2</sup> AKERIB 91	CLE2	$e^+e^- \rightarrow \gamma X$
45.6 ± 0.8		<sup>2</sup> WU 91	CSB2	$e^+e^- \rightarrow \gamma X, \gamma \ell X$
45.4 ± 1.0		<sup>3</sup> LEE-FRANZINI 90	CSB2	$e^+e^- \rightarrow \Upsilon(5S)$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
52 ± 2 ± 4	1400	<sup>4</sup> HAN 85	CUSB	$e^+e^- \rightarrow \gamma eX$
<sup>1</sup> $u, d, s$ flavor averaged.				
<sup>2</sup> These papers report $E_\gamma$ in the $B^*$ center of mass. The $m_{B^*} - m_B$ is 0.2 MeV higher. $E_{cm} = 10.61-10.7$ GeV. Admixture of $B^0$ and $B^+$ mesons, but not $B_s$ .				
<sup>3</sup> LEE-FRANZINI 90 value is for an admixture of $B^0$ and $B^+$ . They measure $46.7 \pm 0.4 \pm 0.2$ MeV for an admixture of $B^0, B^+,$ and $B_s$ , and use the shape of the photon line to separate the above value.				
<sup>4</sup> HAN 85 is for $E_{cm} = 10.6-11.2$ GeV, giving an admixture of $B^0, B^+,$ and $B_s$ .				

$$|(m_{B^{*+}} - m_{B^+}) - (m_{B^{*0}} - m_{B^0})|$$

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

### **$B^*$ DECAY MODES**

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

## ***B\**** REFERENCES

ACKERSTAFF	97M	ZPHY C74 413	K. Akerstaff <i>et al.</i>	(OPAL Collab.)
BUSKULIC	96D	ZPHY C69 393	D. Buskulic <i>et al.</i>	(ALEPH Collab.)
ABREU	95R	ZPHY C68 353	P. Abreu <i>et al.</i>	(DELPHI Collab.)
ACCIARRI	95B	PL B345 589	M. Acciarri <i>et al.</i>	(L3 Collab.)
AKERIB	91	PRL 67 1692	D.S. Akerib <i>et al.</i>	(CLEO Collab.)
WU	91	PL B273 177	Q.W. Wu <i>et al.</i>	(CUSB II Collab.)
LEE-FRANZINI	90	PRL 65 2947	J. Lee-Franzini <i>et al.</i>	(CUSB II Collab.)
HAN	85	PRL 55 36	K. Han <i>et al.</i>	(COLU, LSU, MPIM, STON)

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