B^*

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

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 $(m_{B^\pm} + m_{B^0})/2$.

VALUE (MeV)	*DOCUMENT ID*
5324.9±1.8 OUR FIT	

$m_{B^*} - m_B$

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
45.78±0.35 OUR FIT					
45.78±0.35 OUR AVERAGE					
46.2 ±0.3 ±0.8		[1] ACKERSTAFF	97M	OPAL	$e^+e^- \to Z$
45.3 ±0.35±0.87	4227	[1] BUSKULIC	96D	ALEP	E_{cm}^{ee}= 88–94 GeV
45.5 ±0.3 ±0.8		[1] ABREU	95R	DLPH	E_{cm}^{ee}= 88–94 GeV
46.3 ±1.9	1378	[1] ACCIARRI	95B	L3	E_{cm}^{ee}= 88–94 GeV
46.4 ±0.3 ±0.8		[2] AKERIB	91	CLE2	$e^+e^- \to \gamma X$
45.6 ±0.8		[2] WU	91	CSB2	$e^+e^- \to \gamma X, \gamma \ell X$
45.4 ±1.0		[3] LEE-FRANZINI	90	CSB2	$e^+e^- \to \Upsilon(5S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
52 ±2 ±4	1400	[4] HAN	85	CUSB	$e^+e^- \to \gamma e X$

[1] u, d, s flavor averaged.

[2] These papers report E_γ 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.

[3] LEE-FRANZINI 90 value is for an admixture of B^0 and B^+. They measure 46.7 ± 0.4 ± 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.

[4] HAN 85 is for E_{cm} = 10.6–11.2 GeV, giving an admixture of B^0, B^+, and B_s.

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

VALUE (MeV)	*CL%*	*DOCUMENT ID*	*TECN*	*COMMENT*
<6	95	ABREU	95R DLPH	E_{cm}^{ee}= 88–94 GeV

B^* DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$B\gamma$	dominant

*B** REFERENCES

ACKERSTAFF	97M	ZPHY C74 413	K. Ackerstaff+	(OPAL Collab.)
BUSKULIC	96D	ZPHY C69 393	+Casper, De Bonis, Decamp+	(ALEPH Collab.)
ABREU	95R	ZPHY C68 353	+Adam, Adye, Agasi+	(DELPHI Collab.)
ACCIARRI	95B	PL B345 589	+Adam, Adriani, Aguilar-Benitez+	(L3 Collab.)
AKERIB	91	PRL 67 1692	+Barish, Cown, Eigen, Stroynowski+	(CLEO Collab.)
WU	91	PL B273 177	+Franzini, Kanekal, Tuts+	(CUSB II Collab.)
LEE-FRANZINI	90	PRL 65 2947	+Heintz, Lovelock, Narain, Schamberger+	(CUSB II Collab.)
HAN	85	PRL 55 36	+Klopfenstein, Mageras+	(COLU, LSU, MPIM, STON)