



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

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 |
|-----------------------------|-------------|
| 5325.1 ± 0.5 OUR FIT | |

$m_{B^*} - m_B$

| VALUE (MeV) | EVT5 | 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 | $e^+ e^- \rightarrow Z$ |
| 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 | $e^+ e^- \rightarrow \gamma X$ |
| 45.6 ± 0.8 | | ² WU 91 | CSB2 | $e^+ e^- \rightarrow \gamma X, \gamma \ell X$ |
| 45.4 ± 1.0 | | ³ 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 | ⁴ HAN 85 | CUSB | $e^+ e^- \rightarrow \gamma e X$ |
|------------|------|---------------------|------|----------------------------------|

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 $46.7 \pm 0.4 \pm 0.2$ MeV for an admixture of $B^0, B^+,$ and B_s , and use the shape of the photon line to separate the above value.

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) |
|--------------------------|--------------------------------|
| $\Gamma_1 \quad B\gamma$ | 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) |
