

$B_J^*(5732)$   
or  $B^{**}$

$I(J^P) = ?(??)$   
 $I, J, P$  need confirmation.

OMITTED FROM SUMMARY TABLE

Signal can be interpreted as stemming from several narrow and broad resonances. Needs confirmation.

**$B_J^*(5732)$  MASS**

<u>VALUE (MeV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>5697 ± 9 OUR AVERAGE</b>				Error includes scale factor of 1.3. See the ideogram below.
5695 <sup>+17</sup> <sub>-19</sub>		<sup>1</sup> BARATE	98L ALEP	$e^+ e^- \rightarrow Z$
5704 ± 4 ± 10	1944	<sup>2</sup> BUSKULIC	96D ALEP	$E_{cm}^{ee} = 88-94$ GeV
5732 ± 5 ± 20	2157	ABREU	95B DLPH	$E_{cm}^{ee} = 88-94$ GeV
5681 ± 11	1738	AKERS	95E OPAL	$E_{cm}^{ee} = 88-94$ GeV

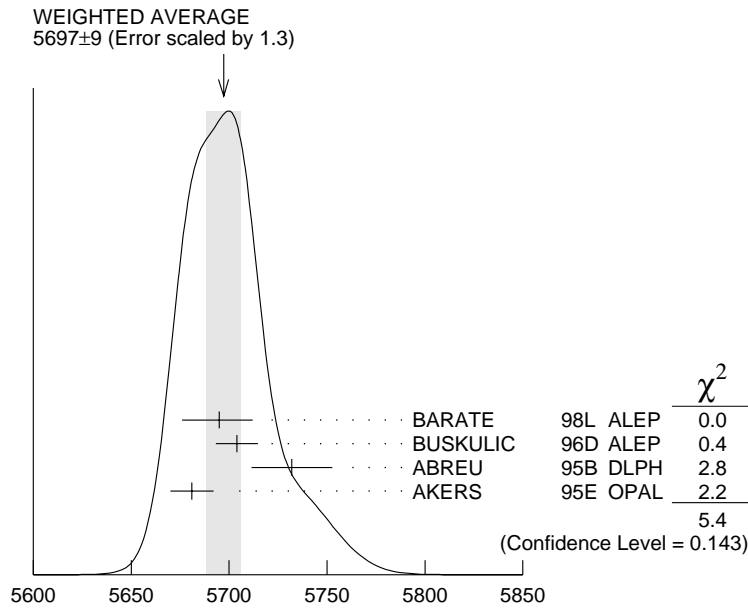
• • • We do not use the following data for averages, fits, limits, etc. • • •

5713 ± 2		<sup>3</sup> ACCIARRI	99N L3	$e^+ e^- \rightarrow Z$
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<sup>1</sup> BARATE 98L uses fully reconstructed  $B$  mesons to search for  $B^{**}$  production in the  $B\pi^\pm$  system. In the framework of heavy quark symmetry (HQS), they also measured the mass of  $B_2^*$  to be  $5739_{-11}^{+8+6}_{-4}$  MeV/ $c^2$  and the relative production rate of  $B(b \rightarrow B_2^* \rightarrow B^{(*)}\pi)/B(b \rightarrow B_{u,d}) = (31 \pm 9_{-5}^{+6})\%$ .

<sup>2</sup> Using  $m_{B\pi} - m_B = 424 \pm 4 \pm 10$  MeV.

<sup>3</sup> ACCIARRI 99N uses inclusive reconstructed  $B$  mesons to search for  $B^{**}$  production in the  $B^{(*)}\pi^\pm$  system. In the framework of HQET, they measured the mass of  $B_1^*$  and  $B_2^*$  to be  $5670 \pm 10 \pm 13$  MeV and  $5768 \pm 5 \pm 6$  with the  $B(b \rightarrow B^{**}) = (32 \pm 3 \pm 6) \times 10^{-2}$ . They also reported the evidence for the existence of an excited  $B$ -meson state or mixture of states in the region 5.9–6.0 GeV.



$B_J^*(5732)$  mass (MeV)

### $B_J^*(5732)$ WIDTH

VALUE (MeV)	EVTs	DOCUMENT ID	TECN	COMMENT
<b>128±18 OUR AVERAGE</b>				
145±28	2157	ABREU	95B DLPH	$E_{cm}^{ee} = 88-94$ GeV
116±24	1738	AKERS	95E OPAL	$E_{cm}^{ee} = 88-94$ GeV

### $B_J^*(5732)$ DECAY MODES

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1$ $B^* \pi + B \pi$	dominant

### $B_J^*(5732)$ REFERENCES

ACCIARRI	99N PL B465 323	M. Acciarri <i>et al.</i>	(L3 Collab.)
BARATE	98L PL B425 215	R. Barate <i>et al.</i>	(ALEPH Collab.)
BUSKULIC	96D ZPHY C69 393	D. Buskulic <i>et al.</i>	(ALEPH Collab.)
ABREU	95B PL B345 598	P. Abreu <i>et al.</i>	(DELPHI Collab.)
AKERS	95E ZPHY C66 19	R. Akers <i>et al.</i>	(OPAL Collab.)