



$$I(J^P) = \frac{1}{2}(\frac{1}{2}^+) \text{ Status: } *$$

OMITTED FROM SUMMARY TABLE

ABREU 95V observe an excess of same-sign $\Xi^\mp \ell^\mp$ events in jets, which they interpret as $\Xi_b \rightarrow \Xi^- \ell^- \bar{\nu}_\ell X$. They find that the probability for these events to come from non- b -baryon decays is less than 5×10^{-4} and that Λ_b decays can account for less than 10% of these events.

In the quark model, Ξ_b^0 and Ξ_b^- are an isodoublet (usb, dsb) state; the lowest Ξ_b^0 and Ξ_b^- ought to have $J^P = 1/2^+$. None of I, J , or P have actually been measured.

Ξ_b MEAN LIFE

This is actually a measurement of the average lifetime of b -baryons that decay to a jet containing a same-sign $\Xi^\mp \ell^\mp$ pair. Presumably the mix is mainly Ξ_b , with some Λ_b .

“OUR EVALUATION” is an average using rescaled values of the data listed below. The average and rescaling were performed by the Heavy Flavor Averaging Group (HFAG) and are described at <http://www.slac.stanford.edu/xorg/hfag/>. The averaging/rescaling procedure takes into account correlations between the measurements and asymmetric lifetime errors.

VALUE (10^{-12} s)	EVTS	DOCUMENT ID	TECN	COMMENT
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1.42^{+0.28}_{-0.24} OUR EVALUATION

1.48 ^{+0.40} _{-0.31} ± 0.12		¹ ABDALLAH	05C DLPH	$e^+ e^- \rightarrow Z^0$
1.35 ^{+0.37} _{-0.28} ^{+0.15} _{-0.17}		² BUSKULIC	96T ALEP	$e^+ e^- \rightarrow Z$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
1.5 ^{+0.7} _{-0.4} ± 0.3	8	³ ABREU	95V DLPH	Repl. by ABDALLAH 05C

¹ Used the decay length of Ξ^- accompanied by a lepton of the same sign.
² Excess $\Xi^- \ell^-$, impact parameters.
³ Excess $\Xi^- \ell^-$, decay lengths.

Ξ_b DECAY MODES

Mode	Fraction (Γ_i/Γ)	Scale factor
$\Gamma_1 \quad \Xi^- \ell^- \bar{\nu}_\ell X \times B(\bar{b} \rightarrow \Xi_b)$	$(3.9 \pm 1.2) \times 10^{-4}$	1.4

Ξ_b BRANCHING RATIOS

$\Gamma(\Xi^- \ell^- \bar{\nu}_\ell \times B(\bar{b} \rightarrow \Xi_b))/\Gamma_{\text{total}}$	Γ_1/Γ
<u>VALUE (units 10^{-4})</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
3.9±1.2 OUR AVERAGE	Error includes scale factor of 1.4.
3.0±1.0±0.3	ABDALLAH 05C DLPH $e^+ e^- \rightarrow Z^0$
5.4±1.1±0.8	BUSKULIC 96T ALEP Excess $\Xi^- \ell^-$ over $\Xi^- \ell^+$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●	
5.9±2.1±1.0	ABREU 95V DLPH Repl. by ABDALLAH 05C

Ξ_b REFERENCES

ABDALLAH 05C EPJ C44 299	J. Abdallah <i>et al.</i>	(DELPHI Collab.)
BUSKULIC 96T PL B384 449	D. Buskulic <i>et al.</i>	(ALEPH Collab.)
ABREU 95V ZPHY C68 541	P. Abreu <i>et al.</i>	(DELPHI Collab.)