BOTTOM (BEAUTY) BARYONS
($B = -1$)

$\Lambda_b^0 = u\,d\,b$, $\Xi_b^0 = u\,s\,b$, $\Xi_b^- = d\,s\,b$

Λ_b^0

$I(J^P) = 0(\frac{1}{2}^+)$

$I(J^P)$ not yet measured; $0(\frac{1}{2}^+)$ is the quark model prediction.

Mass $m = 5641 \pm 50$ MeV

Mean life $\tau = (1.14 \pm 0.08) \times 10^{-12}$ s

$c\tau = 342$ μm

These branching fractions are actually an average over weakly decaying b-baryons weighted by their production rates in Z decay (or high-energy $p\overline{p}$), branching ratios, and detection efficiencies. They scale with the LEP Λ_b production fraction $\mathrm{B}(b \to \Lambda_b)$ and are evaluated for our value $\mathrm{B}(b \to \Lambda_b) = (13.2 \pm 4.1)\%$.

The branching fractions $\mathrm{B}(\Lambda_b^0 \to \Lambda \ell^- \overline{\nu}_\ell$ anything) and $\mathrm{B}(\Lambda_b^0 \to \Lambda_c^+ \ell^- \overline{\nu}_\ell$ anything) are not pure measurements because the underlying measured products of these with $\mathrm{B}(b \to \Lambda_b)$ were used to determine $\mathrm{B}(b \to \Lambda_b)$, as described in the note "Production and Decay of b-Flavored Hadrons."

Λ_b^0 **DECAY MODES**	Fraction (Γ_i/Γ)	p (MeV/c)
$J/\psi(1S)\Lambda$	(1.4 ± 0.9) %	1756
$p D^0 \pi^-$	seen	2383
$\Lambda_c^+ \pi^+ \pi^- \pi^-$	seen	2336
$p \mu^- \overline{\nu}$ anything	(3.7 ± 1.7) %	–
$\Lambda \ell^- \overline{\nu}_\ell$ anything	[n] (2.5 ± 0.5) %	–
$\Lambda_c^+ \ell^- \overline{\nu}_\ell$ anything	[n] (10.0 ± 3.0) %	–
$\Lambda / \overline{\Lambda}$ anything	($17 \ {}^{+11}_{-\ 8}$) %	–