> # BOTTOM BARYONS
> # $(B = -1)$
> $\Lambda_b^0 = udb,\ \Xi_b^0 = usb,\ \Xi_b^- = dsb$

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

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

$\qquad$ Mass $m = 5624 \pm 9$ MeV   (S = 1.8)

$\qquad$ Mean life $\tau = (1.24 \pm 0.08) \times 10^{-12}$ s

$\qquad\qquad c\tau = 372\ \mu$m

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 B($b \to \Lambda_b$) and are evaluated for our value B($b \to \Lambda_b$) = $(10.1^{+3.9}_{-3.1})$%.

The branching fractions B(b-baryon $\to \Lambda \ell^- \overline{\nu}_\ell$ anything) and B($\Lambda_b^0 \to \Lambda_c^+ \ell^- \overline{\nu}_\ell$ anything) are not pure measurements because the underlying measured products of these with B($b \to \Lambda_b$) were used to determine 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)	Confidence level	p (MeV/c)
$J/\psi(1S)\Lambda$		$(4.7\pm2.8) \times 10^{-4}$		1744
$\Lambda_c^+ \pi^-$		seen		2345
$\Lambda_c^+ a_1(1260)^-$		seen		2156
$\Lambda_c^+ \ell^- \overline{\nu}_\ell$ anything	[p]	$(9.0^{+3.1}_{-3.8})$ %		−
$p\pi^-$		$< 5.0 \quad \times 10^{-5}$	90%	2732
pK^-		$< 5.0 \quad \times 10^{-5}$	90%	2711

b-baryon ADMIXTURE (Λ_b, Ξ_b, Σ_b, Ω_b)

Mean life $\tau = (1.20 \pm 0.07) \times 10^{-12}$ s

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 $B(b \to \Lambda_b)$ and are evaluated for our value $B(b \to \Lambda_b) = (10.1^{+3.9}_{-3.1})\%$.

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

b-baryon ADMIXTURE (Λ_b,Ξ_b,Σ_b,Ω_b)	Fraction (Γ_i/Γ)	p (MeV/c)
$p\mu^-\overline{\nu}$ anything	(4.9 ± 2.4) %	–
$\Lambda\ell^-\overline{\nu}_\ell$ anything	($3.1^{+1.0}_{-1.2}$) %	–
$\Lambda/\overline{\Lambda}$ anything	(35^{+12}_{-14}) %	–
$\Xi^- \ell^- \overline{\nu}_\ell$ anything	($5.5^{+2.0}_{-2.4}$) $\times 10^{-3}$	–