

BOTTOM BARYONS

($B = -1$)

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

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 $m = 5619.60 \pm 0.17$ MeV

$m_{\Lambda_b^0} - m_{B^0} = 339.2 \pm 1.4$ MeV

$m_{\Lambda_b^0} - m_{B^+} = 339.72 \pm 0.28$ MeV

Mean life $\tau = (1.471 \pm 0.009) \times 10^{-12}$ s

$c\tau = 441.0 \mu\text{m}$

$A_{CP}(\Lambda_b \rightarrow p\pi^-) = -0.025 \pm 0.029$ ($S = 1.2$)

$A_{CP}(\Lambda_b \rightarrow pK^-) = -0.025 \pm 0.022$

$\Delta A_{CP}(pK^-/\pi^-) = 0.014 \pm 0.024$

$A_{CP}(\Lambda_b \rightarrow p\bar{K}^0\pi^-) = 0.22 \pm 0.13$

$\Delta A_{CP}(J/\psi p\pi^-/K^-) = (5.7 \pm 2.7) \times 10^{-2}$

$A_{CP}(\Lambda_b \rightarrow \Lambda K^+\pi^-) = -0.53 \pm 0.25$

$A_{CP}(\Lambda_b \rightarrow \Lambda K^+K^-) = -0.28 \pm 0.12$

$\Delta A_{CP}(\Lambda_b^0 \rightarrow pK^-\mu^+\mu^-) = (-4 \pm 5) \times 10^{-2}$

$\Delta A_{CP}(\Lambda_b^0 \rightarrow p\pi^-\pi^+\pi^-) = (1.1 \pm 2.6) \times 10^{-2}$

$\Delta A_{CP}(\Lambda_b^0 \rightarrow (p\pi^-\pi^+\pi^-)_{LBM}) = (4 \pm 4) \times 10^{-2}$

$\Delta A_{CP}(\Lambda_b^0 \rightarrow pa_1(1260)^-) = (-1 \pm 4) \times 10^{-2}$

$\Delta A_{CP}(\Lambda_b^0 \rightarrow N(1520)^0\rho(770)^0) = (2 \pm 5) \times 10^{-2}$

$\Delta A_{CP}(\Lambda_b^0 \rightarrow \Delta(1232)^{++}\pi^-\pi^-) = (0.1 \pm 3.3) \times 10^{-2}$

$\Delta A_{CP}(\Lambda_b^0 \rightarrow pK^-\pi^+\pi^-) = (3.2 \pm 1.3) \times 10^{-2}$

$\Delta A_{CP}(\Lambda_b^0 \rightarrow (pK^-\pi^+\pi^-)_{LBM}) = (3.5 \pm 1.6) \times 10^{-2}$

$\Delta A_{CP}(\Lambda_b^0 \rightarrow N(1520)^0K^*(892)^0) = (5.5 \pm 2.5) \times 10^{-2}$

$\Delta A_{CP}(\Lambda_b^0 \rightarrow \Lambda(1520)\rho(770)^0) = (1 \pm 6) \times 10^{-2}$

$\Delta A_{CP}(\Lambda_b^0 \rightarrow \Delta(1232)^{++}K^-\pi^-) = (4.4 \pm 2.7) \times 10^{-2}$

$\Delta A_{CP}(\Lambda_b^0 \rightarrow pK_1(1410)^-) = (5 \pm 4) \times 10^{-2}$

$\Delta A_{CP}(\Lambda_b^0 \rightarrow pK^-K^+\pi^-) = (-7 \pm 5) \times 10^{-2}$

$\Delta A_{CP}(\Lambda_b^0 \rightarrow pK^-K^+K^-) = (0.2 \pm 1.9) \times 10^{-2}$

$\Delta A_{CP}(\Lambda_b^0 \rightarrow \Lambda(1520)\phi(1020)) = (4 \pm 6) \times 10^{-2}$

$\Delta A_{CP}(\Lambda_b^0 \rightarrow (pK^-)_{highmass}\phi(1020)) = (-0.7 \pm 3.4) \times 10^{-2}$

$\Delta A_{CP}(\Lambda_b^0 \rightarrow (pK^-K^+K^-)_{LBM}) = (2.7 \pm 2.4) \times 10^{-2}$

$A_{FB}^\ell(\mu\mu) \text{ in } \Lambda_b \rightarrow \Lambda\mu^+\mu^- = -0.39 \pm 0.04$

$\Delta(A_{FB}^\ell(\mu\mu)) \text{ in } \Lambda_b \rightarrow \Lambda\mu^+\mu^- = -0.05 \pm 0.09$

$A_{FB}^h(p\pi) \text{ in } \Lambda_b \rightarrow \Lambda(p\pi)\mu^+\mu^- = -0.30 \pm 0.05$

$A_{FB}^{th} \text{ in } \Lambda_b \rightarrow \Lambda\mu^+\mu^- = 0.25 \pm 0.04$

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

For inclusive branching fractions, e.g., $\Lambda_b \rightarrow \bar{\Lambda}_c$ anything, the values usually are multiplicities, not branching fractions. They can be greater than one.

Λ_b^0 DECAY MODES	Fraction (Γ_i/Γ)	Scale factor/ Confidence level	<i>p</i> (MeV/c)
$J/\psi(1S)\Lambda \times B(b \rightarrow \Lambda_b^0)$	$(5.8 \pm 0.8) \times 10^{-5}$		1740
$p D^0 \pi^-$	$(6.3 \pm 0.7) \times 10^{-4}$		2370
$p D^0 K^-$	$(4.6 \pm 0.8) \times 10^{-5}$		2269
$p J/\psi \pi^-$	$(2.6^{+0.5}_{-0.4}) \times 10^{-5}$		1755
$p \pi^- J/\psi, J/\psi \rightarrow \mu^+ \mu^-$	$(1.6 \pm 0.8) \times 10^{-6}$		—
$p J/\psi K^-$	$(3.2^{+0.6}_{-0.5}) \times 10^{-4}$		1589
$P_c(4380)^+ K^-, P_c \rightarrow p J/\psi$	[a] $(2.7 \pm 1.4) \times 10^{-5}$		—
$P_c(4450)^+ K^-, P_c \rightarrow p J/\psi$	[a] $(1.3 \pm 0.4) \times 10^{-5}$		—
$\chi_{c1}(1P)pK^-$	$(7.6^{+1.5}_{-1.3}) \times 10^{-5}$		1242
$\chi_{c2}(1P)pK^-$	$(7.9^{+1.6}_{-1.4}) \times 10^{-5}$		1198
$p J/\psi(1S)\pi^+\pi^-K^-$	$(6.6^{+1.3}_{-1.1}) \times 10^{-5}$		1410
$p \psi(2S)K^-$	$(6.6^{+1.2}_{-1.0}) \times 10^{-5}$		1063
$\chi_{c1}(3872)pK^-, \chi_{c1}(3872) \rightarrow J/\psi\pi^+\pi^-$	$(1.23 \pm 0.33) \times 10^{-6}$		—
$\psi(2S)p\pi^-$	$(7.5^{+1.6}_{-1.4}) \times 10^{-6}$		1320
$p \bar{K}^0 \pi^-$	$(1.3 \pm 0.4) \times 10^{-5}$		2693
$p K^0 K^-$	$< 3.5 \times 10^{-6}$	CL=90%	2639
$\Lambda_c^+ \pi^-$	$(4.9 \pm 0.4) \times 10^{-3}$	S=1.2	2342
$\Lambda_c^+ K^-$	$(3.59 \pm 0.30) \times 10^{-4}$	S=1.2	2314
$\Lambda_c^+ a_1(1260)^-$	seen		2153
$\Lambda_c^+ D^-$	$(4.6 \pm 0.6) \times 10^{-4}$		1886
$\Lambda_c^+ D_s^-$	$(1.10 \pm 0.10) \%$		1833
$\Lambda_c^+ \pi^+ \pi^- \pi^-$	$(7.7 \pm 1.1) \times 10^{-3}$	S=1.1	2323
$\Lambda_c(2595)^+ \pi^-, \Lambda_c(2595)^+ \rightarrow \Lambda_c^+ \pi^+ \pi^-$	$(3.4 \pm 1.5) \times 10^{-4}$		2210

$\Lambda_c(2625)^+ \pi^-$,	$(3.3 \pm 1.3) \times 10^{-4}$	2193
$\Lambda_c(2625)^+ \rightarrow \Lambda_c^+ \pi^+ \pi^-$		
$\Sigma_c(2455)^0 \pi^+ \pi^-$, $\Sigma_c^0 \rightarrow \Lambda_c^+ \pi^-$	$(5.7 \pm 2.2) \times 10^{-4}$	2265
$\Sigma_c(2455)^{++} \pi^- \pi^-$, $\Sigma_c^{++} \rightarrow \Lambda_c^+ \pi^+$	$(3.2 \pm 1.6) \times 10^{-4}$	2265
$\Lambda_c^+ p \bar{p} \pi^-$	$(2.65 \pm 0.29) \times 10^{-4}$	1805
$\Sigma_c(2455)^0 p \bar{p}$, $\Sigma_c(2455)^0 \rightarrow \Lambda_c^+ \pi^-$	$(2.4 \pm 0.5) \times 10^{-5}$	—
$\Sigma_c(2520)^0 p \bar{p}$, $\Sigma_c(2520)^0 \rightarrow \Lambda_c^+ \pi^-$	$(3.2 \pm 0.7) \times 10^{-5}$	—
$\Lambda_c^+ \ell^- \bar{\nu}_\ell$ anything	[b] $(10.9 \pm 2.2) \%$	—
$\Lambda_c^+ \ell^- \bar{\nu}_\ell$	$(6.2 \pm 1.4) \%$	2345
$\Lambda_c^+ \pi^+ \pi^- \ell^- \bar{\nu}_\ell$	$(5.6 \pm 3.1) \%$	2335
$\Lambda_c(2595)^+ \ell^- \bar{\nu}_\ell$	$(7.9 \pm 4.0) \times 10^{-3}$	2212
$\Lambda_c(2625)^+ \ell^- \bar{\nu}_\ell$	$(1.3 \pm 0.6) \%$	2195
$p h^-$	[c] $< 2.3 \times 10^{-5}$	CL=90% 2730
$p \pi^-$	$(4.5 \pm 0.8) \times 10^{-6}$	2730
$p K^-$	$(5.4 \pm 1.0) \times 10^{-6}$	2709
$p D_s^-$	$< 4.8 \times 10^{-4}$	CL=90% 2364
$p \mu^- \bar{\nu}_\mu$	$(4.1 \pm 1.0) \times 10^{-4}$	2730
$\Lambda \mu^+ \mu^-$	$(1.08 \pm 0.28) \times 10^{-6}$	2695
$p \pi^- \mu^+ \mu^-$	$(6.9 \pm 2.5) \times 10^{-8}$	2720
$\Lambda \gamma$	$(7.1 \pm 1.7) \times 10^{-6}$	2699
$\Lambda \eta$	$(9 \pm 7) \times 10^{-6}$	2670
$\Lambda \eta'(958)$	$< 3.1 \times 10^{-6}$	CL=90% 2611
$\Lambda \pi^+ \pi^-$	$(4.7 \pm 1.9) \times 10^{-6}$	2692
$\Lambda K^+ \pi^-$	$(5.7 \pm 1.3) \times 10^{-6}$	2660
$\Lambda K^+ K^-$	$(1.62 \pm 0.23) \times 10^{-5}$	2605
$\Lambda \phi$	$(9.8 \pm 2.6) \times 10^{-6}$	2599
$p \pi^- \pi^+ \pi^-$	$(2.11 \pm 0.23) \times 10^{-5}$	2715
$p K^- K^+ \pi^-$	$(4.1 \pm 0.6) \times 10^{-6}$	2612
$p K^- \pi^+ \pi^-$	$(5.1 \pm 0.5) \times 10^{-5}$	2675
$p K^- K^+ K^-$	$(1.27 \pm 0.14) \times 10^{-5}$	2524

 $\Lambda_b(5912)^0$ $J^P = \frac{1}{2} -$ Mass $m = 5912.20 \pm 0.21$ MeVFull width $\Gamma < 0.66$ MeV, CL = 90%

$\Lambda_b(5912)^0$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Lambda_b^0 \pi^+ \pi^-$	seen	86
$\Lambda_b(5920)^0$		$J^P = \frac{3}{2}^-$
Mass $m = 5919.92 \pm 0.19$ MeV (S = 1.1)		
Full width $\Gamma < 0.63$ MeV, CL = 90%		
$\Lambda_b(5920)^0$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Lambda_b^0 \pi^+ \pi^-$	seen	108
$\Lambda_b(6146)^0$		$J^P = \frac{3}{2}^+$
Mass $m = 6146.2 \pm 0.4$ MeV		
Full width $\Gamma = 2.9 \pm 1.3$ MeV		
Full width $\Gamma = 526.55 \pm 0.34$ MeV		
$\Lambda_b(6152)^0$		$J^P = \frac{5}{2}^+$
Mass $m = 6152.5 \pm 0.4$ MeV		
Full width $\Gamma = 2.1 \pm 0.9$ MeV		
Full width $\Gamma = 532.89 \pm 0.28$ MeV		
Full width $\Gamma = 6.34 \pm 0.32$ MeV		
Σ_b	$I(J^P) = 1(\frac{1}{2}^+)$ I, J, P need confirmation.	
Mass $m(\Sigma_b^+) = 5810.56 \pm 0.25$ MeV		
Mass $m(\Sigma_b^-) = 5815.64 \pm 0.27$ MeV		
$m_{\Sigma_b^+} - m_{\Sigma_b^-} = -5.06 \pm 0.18$ MeV		
$\Gamma(\Sigma_b^+) = 5.0 \pm 0.5$ MeV		
$\Gamma(\Sigma_b^-) = 5.3 \pm 0.5$ MeV		

Σ_b DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Lambda_b^0 \pi^-$	dominant	133
Σ_b^*	$I(J^P) = 1(\frac{3}{2}^+)$ I, J, P need confirmation.	
Mass $m(\Sigma_b^{*+}) = 5830.32 \pm 0.27$ MeV		
Mass $m(\Sigma_b^{*-}) = 5834.74 \pm 0.30$ MeV		
$m_{\Sigma_b^{*+}} - m_{\Sigma_b^{*-}} = -4.37 \pm 0.33$ MeV $(S = 1.6)$		
$m_{\Sigma_b^{*+}} - m_{\Sigma_b^+} = 19.73 \pm 0.18$		
$m_{\Sigma_b^{*-}} - m_{\Sigma_b^-} = 19.09 \pm 0.22$		
$\Gamma(\Sigma_b^{*+}) = 9.4 \pm 0.5$ MeV		
$\Gamma(\Sigma_b^{*-}) = 10.4 \pm 0.8$ MeV $(S = 1.3)$		
$m_{\Sigma_b^*} - m_{\Sigma_b} = 21.2 \pm 2.0$ MeV		
Σ_b^* DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Lambda_b^0 \pi^-$	dominant	159
$\Sigma_b(6097)^+$	$J^P = ??$	
Mass $m = 6095.8 \pm 1.7$ MeV		
Full width $\Gamma = 31 \pm 6$ MeV		
$\Sigma_b(6097)^+$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Lambda_b \pi^+ \times \mathcal{B}(b \rightarrow \Sigma_b(6097)^+)$	seen	—
$\Sigma_b(6097)^-$	$J^P = ??$	
Mass $m = 6098.0 \pm 1.8$ MeV		
Full width $\Gamma = 29 \pm 4$ MeV		
$\Sigma_b(6097)^-$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Lambda_b \pi^- \times \mathcal{B}(b \rightarrow \Sigma_b(6097)^-)$	seen	—
Ξ_b^0, Ξ_b^-	$I(J^P) = \frac{1}{2}(\frac{1}{2}^+)$ I, J, P need confirmation.	

$$\begin{aligned}
m(\Xi_b^-) &= 5797.0 \pm 0.6 \text{ MeV} \quad (S = 1.7) \\
m(\Xi_b^0) &= 5791.9 \pm 0.5 \text{ MeV} \\
m_{\Xi_b^-} - m_{\Lambda_b^0} &= 177.5 \pm 0.5 \text{ MeV} \quad (S = 1.6) \\
m_{\Xi_b^0} - m_{\Lambda_b^0} &= 172.5 \pm 0.4 \text{ MeV} \\
m_{\Xi_b^-} - m_{\Xi_b^0} &= 5.9 \pm 0.6 \text{ MeV} \\
\text{Mean life } \tau_{\Xi_b^-} &= (1.572 \pm 0.040) \times 10^{-12} \text{ s} \\
\text{Mean life } \tau_{\Xi_b^0} &= (1.480 \pm 0.030) \times 10^{-12} \text{ s}
\end{aligned}$$

Ξ_b DECAY MODES	Fraction (Γ_i/Γ)	Scale factor/ Confidence level	p (MeV/c)
$\Xi^- \ell^- \bar{\nu}_\ell X \times B(\bar{b} \rightarrow \Xi_b^-)$	$(3.9 \pm 1.2) \times 10^{-4}$	S=1.4	-
$J/\psi \Xi^- \times B(b \rightarrow \Xi_b^-)$	$(1.02^{+0.26}_{-0.21}) \times 10^{-5}$		1782
$J/\psi \Lambda K^- \times B(b \rightarrow \Xi_b^-)$	$(2.5 \pm 0.4) \times 10^{-6}$		1631
$p D^0 K^- \times B(\bar{b} \rightarrow \Xi_b^-)$	$(1.7 \pm 0.6) \times 10^{-6}$		2374
$p \bar{K}^0 \pi^- \times B(\bar{b} \rightarrow \Xi_b^-)/B(\bar{b} \rightarrow B^0)$	$< 1.6 \times 10^{-6}$	CL=90%	2783
$p K^0 K^- \times B(\bar{b} \rightarrow \Xi_b^-)/B(\bar{b} \rightarrow B^0)$	$< 1.1 \times 10^{-6}$	CL=90%	2730
$p K^- K^- \times B(\bar{b} \rightarrow \Xi_b^-)$	$(3.7 \pm 0.8) \times 10^{-8}$		2731
$\Lambda \pi^+ \pi^- \times B(b \rightarrow \Xi_b^0)/B(b \rightarrow \Lambda_b^0)$	$< 1.7 \times 10^{-6}$	CL=90%	2781
$\Lambda K^- \pi^+ \times B(b \rightarrow \Xi_b^0)/B(b \rightarrow \Lambda_b^0)$	$< 8 \times 10^{-7}$	CL=90%	2751
$\Lambda K^+ K^- \times B(b \rightarrow \Xi_b^0)/B(b \rightarrow \Lambda_b^0)$	$< 3 \times 10^{-7}$	CL=90%	2698
$\Lambda_c^+ K^- \times B(\bar{b} \rightarrow \Xi_b^-)$	$(6 \pm 4) \times 10^{-7}$		2416
$\Lambda_b^0 \pi^- \times B(b \rightarrow \Xi_b^-)/B(b \rightarrow \Lambda_b^0)$	$(5.7 \pm 2.0) \times 10^{-4}$		99
$p K^- \pi^+ \pi^- \times B(b \rightarrow \Xi_b^0)/B(b \rightarrow \Lambda_b^0)$	$(1.9 \pm 0.4) \times 10^{-6}$		2766
$p K^- K^- \pi^+ \times B(b \rightarrow \Xi_b^0)/B(b \rightarrow \Lambda_b^0)$	$(1.73 \pm 0.32) \times 10^{-6}$		2704
$p K^- K^+ K^- \times B(b \rightarrow \Xi_b^0)/B(b \rightarrow \Lambda_b^0)$	$(1.8 \pm 1.0) \times 10^{-7}$		2620

$\Xi'_b(5935)^-$

$$J^P = \frac{1}{2}^+$$

$$\text{Mass } m = 5935.02 \pm 0.05 \text{ MeV}$$

$$m_{\Xi'_b(5935)^-} - m_{\Xi_b^0} - m_{\pi^-} = 3.653 \pm 0.019 \text{ MeV}$$

$$\text{Full width } \Gamma < 0.08 \text{ MeV, CL} = 95\%$$

$\Xi_b'(5935)^-$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Xi_b^0 \pi^- \times B(\bar{b} \rightarrow \Xi_b'(5935)^-)/B(\bar{b} \rightarrow \Xi_b^0)$	(11.8 \pm 1.8) %	31
$\Xi_b(5945)^0$	$J^P = \frac{3}{2}^+$	
Mass $m = 5952.3 \pm 0.6$ MeV		
Full width $\Gamma = 0.90 \pm 0.18$ MeV		
$\Xi_b(5945)^0$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Xi_b^- \pi^+$	seen	78
$\Xi_b(5955)^-$	$J^P = \frac{3}{2}^+$	
Mass $m = 5955.33 \pm 0.13$ MeV		
$m_{\Xi_b(5955)^-} - m_{\Xi_b^0} - m_{\pi^-} = 23.96 \pm 0.13$ MeV		
Full width $\Gamma = 1.65 \pm 0.33$ MeV		
$\Xi_b(5955)^-$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Xi_b^0 \pi^- \times B(\bar{b} \rightarrow \Xi_b^*(5955)^-)/B(\bar{b} \rightarrow \Xi_b^0)$	(20.7 \pm 3.5) %	84
$\Xi_b(6227)$	$J^P = ??$	
Mass $m = 6226.9 \pm 2.0$ MeV		
Full width $\Gamma = 18 \pm 6$ MeV		
$\Xi_b(6227)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Lambda_b^0 K^- \times B(b \rightarrow \Xi_b(6227))/B(b \rightarrow \Lambda_b^0)$	$(3.20 \pm 0.35) \times 10^{-3}$	336
$\Xi_b^0 \pi^- \times B(b \rightarrow \Xi_b(6227))/B(b \rightarrow \Xi_b^0)$	(2.8 \pm 1.1) %	1.8 398

Ω_b^-

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

I, J, P need confirmation.

Mass $m = 6046.1 \pm 1.7$ MeV

$$m_{\Omega_b^-} - m_{\Lambda_b^0} = 426.4 \pm 2.2$$
 MeV

$$m_{\Omega_b^-} - m_{\Xi_b^-} = 247.3 \pm 3.2$$
 MeV

$$\text{Mean life } \tau = (1.64^{+0.18}_{-0.17}) \times 10^{-12}$$
 s

$$\tau(\Omega_b^-)/\tau(\Xi_b^-) \text{ mean life ratio} = 1.11 \pm 0.16$$

Ω_b^- DECAY MODES	Fraction (Γ_i/Γ)	Confidence level	p (MeV/c)
$J/\psi \Omega^- \times B(b \rightarrow \Omega_b)$	$(2.9^{+1.1}_{-0.8}) \times 10^{-6}$		1806
$p K^- K^- \times B(\bar{b} \rightarrow \Omega_b)$	$< 2.5 \times 10^{-9}$	90%	2866
$p \pi^- \pi^- \times B(\bar{b} \rightarrow \Omega_b)$	$< 1.5 \times 10^{-8}$	90%	2943
$p K^- \pi^- \times B(\bar{b} \rightarrow \Omega_b)$	$< 7 \times 10^{-9}$	90%	2915

b-baryon ADMIXTURE (Λ_b , Ξ_b , Ω_b)

These branching fractions are actually an average over weakly decaying b -baryons weighted by their production rates at the LHC, LEP, and Tevatron, branching ratios, and detection efficiencies. They scale with the b -baryon production fraction $B(b \rightarrow b\text{-baryon})$.

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

For inclusive branching fractions, e.g., $B \rightarrow D^\pm \text{anything}$, the values usually are multiplicities, not branching fractions. They can be greater than one.

b -baryon ADMIXTURE DECAY MODES (Λ_b , Ξ_b , Ω_b)	Fraction (Γ_i/Γ)	p (MeV/c)
$p \mu^- \bar{\nu} \text{anything}$	$(5.8^{+2.3}_{-2.0}) \%$	—
$p \ell \bar{\nu}_\ell \text{anything}$	$(5.6 \pm 1.2) \%$	—
$p \text{anything}$	$(70 \pm 22) \%$	—
$\Lambda \ell^- \bar{\nu}_\ell \text{anything}$	$(3.8 \pm 0.6) \%$	—
$\Lambda \ell^+ \nu_\ell \text{anything}$	$(3.2 \pm 0.8) \%$	—
$\Lambda \text{anything}$	$(39 \pm 7) \%$	—
$\Xi^- \ell^- \bar{\nu}_\ell \text{anything}$	$(6.6 \pm 1.6) \times 10^{-3}$	—

NOTES

[a] P_c^+ is a pentaquark-charmonium state.

[b] Not a pure measurement. See note at head of Λ_b^0 Decay Modes.

[c] Here h^- means π^- or K^- .