Heavy FLavor AVeraging group (HFLAV) - December 2017

Compilation of Λ_b^0 Branching Fractions ($\times 10^{-6}$) - UL at 90% CL

Preliminary Updated results not included in PDG Live as of Dec. 31, 2017

RPP#	Mode	PDG2017 Avg.	CDF	LHCb	Our Avg.
12	$\bar{K}^0 p\pi^-$	13.0 ± 4.0		$12.6 \pm 1.9 \pm 0.9 \pm 3.4 \pm 0.5$ [§] [1]	12.6 ± 4.0
13	$K^0 pK^-$	< 3.5		< 3.5 [1]	< 3.5
33	$p\pi^-$	4.3 ± 0.8	$3.5 \pm 0.6 \pm 0.9$ [2]		3.5 ± 1.1
34	pK^-	5.1 ± 0.9	$5.6 \pm 0.8 \pm 1.5$ [2]		5.6 ± 1.7
37	$\Lambda\mu^+\mu^-$	1.08 ± 0.28	$1.73 \pm 0.42 \pm 0.55$ [3]	$0.96 \pm 0.16 \pm 0.25$ [4]	1.08 ± 0.27
38	$\Lambda\gamma$	< 1300	< 1300 [5]		< 1300
39	$\Lambda\eta$	9^{+7}_{-5}		$9.3^{+7.3}_{-5.3}$ [¶] [6]	$9.3^{+7.3}_{-5.3}$
40	$\Lambda\eta'$	< 3.1		< 3.1 [6]	< 3.1
41	$\Lambda\pi^+\pi^-$	4.7 ± 1.9		$4.6 \pm 1.2 \pm 1.4 \pm 0.6$ [†] [2] [7]	4.6 ± 1.9
42	$\Lambda K^+\pi^-$	5.7 ± 1.3		$5.6 \pm 0.8 \pm 0.8 \pm 0.7$ [†] [2] [7]	5.6 ± 1.3
43	ΛK^+K^-	16.1 ± 2.3		$15.9 \pm 1.2 \pm 1.2 \pm 2.0$ [†] [2] [7]	15.9 ± 2.6
44	$\Lambda\phi$	2.0 ± 0.5		$5.18 \pm 1.04 \pm 0.35^{+0.67}_{-0.62}$ [‡] [3] [8]	$5.18^{+1.29}_{-1.26}$
	$\Lambda p\pi^-\mu^+\mu^-$			$0.069 \pm 0.019 \pm 0.011^{+0.013}_{-0.010}$ [†] [9]	$0.069^{+0.026}_{-0.024}$
	$\Lambda p\pi^-\pi^+\pi^-$			$19.0 \pm 0.6 \pm 1.0 \pm 1.6 \pm 0.7$ [1] [10]	19.0 ± 2.1
	$\Lambda pK^-\pi^+\pi^-$			$45.5 \pm 0.8 \pm 2.0 \pm 3.9 \pm 1.7$ [1] [10]	45.5 ± 4.8
	$\Lambda pK^-K^+\pi^-$			$3.7 \pm 0.3 \pm 0.4 \pm 0.3 \pm 0.1$ [1] [10]	3.7 ± 0.6
	$\Lambda pK^-K^+K^-$			$11.4 \pm 0.3 \pm 0.7 \pm 1.0 \pm 0.5$ [1] [10]	11.4 ± 1.4

Channels with no RPP# are not reported by PDG.
Results for CDF and LHCb are relative BFs converted to absolute BFs.
[†] Last quoted uncertainty is due to the precision with which the normalization channel branching fraction is known.
[‡] Third uncertainty is related to external inputs.
[§] Third uncertainty is from the ratio of fragmentation fractions $f_{\Lambda_b^0}/f_d$, and the fourth is due to the uncertainty on $\mathcal{B}(B^0 \to K^0\pi^+\pi^-)$.
[¶] Result at 68% CL.
[1] Third uncertainty is from $\mathcal{B}(\Lambda_b \to \Lambda_c^+ p\pi^-)$, and the fourth is due to the uncertainty on $\mathcal{B}(\Lambda_c^+ \to pK^-\pi^+)$.
[2] Normalization taken directly from LHCb paper.
[3] Difference w.r.t. PDG value under investigation.

Heavy FLavor AVeraging group (HFLAV) - December 2017

Partial Branching Fractions of $\Lambda_b^0 \to \Lambda\mu^+\mu^-$ decays ($\times 10^{-7}$)

Preliminary Updated results not included in PDG Live as of Dec. 31, 2017

Mode	q^2 [GeV$^2/c^4$] [†] [‡]	PDG2017 Avg.	CDF	LHCb	Our Avg.
$\Lambda\mu^+\mu^-$	< 2.0	0.71 ± 0.27	$0.15 \pm 2.01 \pm 0.05$ [3]	$0.72^{+0.24}_{-0.22} \pm 0.14$ [11]	$0.71^{+0.27}_{-0.26}$
$\Lambda\mu^+\mu^-$	$[2.0, 4.3]$	$0.28^{+0.28}_{-0.21}$	$1.8 \pm 1.7 \pm 0.6$	$0.253^{+0.276}_{-0.207} \pm 0.046$ [11]	$0.281^{+0.286}_{-0.218}$
$\Lambda\mu^+\mu^-$	$[4.3, 8.68]$	0.5 ± 0.7	$-0.2 \pm 1.6 \pm 0.1$	$0.66 \pm 0.72 \pm 0.16$ [4]	0.51 ± 0.67
$\Lambda\mu^+\mu^-$	$[10.09, 12.86]$	2.2 ± 0.6	$3.0 \pm 1.5 \pm 1.0$	$2.08^{+0.42}_{-0.39} \pm 0.42$ [11]	$2.17^{+0.57}_{-0.55}$
$\Lambda\mu^+\mu^-$	$[14.18, 16.00]$	1.7 ± 0.5	$1.0 \pm 0.7 \pm 0.3$	$2.04^{+0.35}_{-0.33} \pm 0.42$ [11]	1.70 ± 0.44
$\Lambda\mu^+\mu^-$	> 16.00	7.0 ± 2.9	$7.0 \pm 1.9 \pm 2.2$		7.0 ± 2.9

Results for CDF and LHCb are relative BFs converted to absolute BFs.
[†] See the original paper for the exact $m^2(\mu^+\mu^-)$ selection.
[‡] The two LHCb measurements include additional binning not reported here.

Heavy FLavor AVeraging group (HFLAV) - December 2017

Compilation of Ξ_b^0 Branching Fractions ($\times 10^{-6}$)

Preliminary Updated results not included in PDG Live as of Dec. 31, 2017

RPP#	Mode	PDG2017 Avg.	LHCb		Our Avg.
4	$f_{\Xi_b^0}/f_d \mathcal{B}(\Xi_b^0 \to \bar{K}^0 p\pi^-)$	< 1.6	< 1.6	[1]	< 1.6
5	$f_{\Xi_b^0}/f_d \mathcal{B}(\Xi_b^0 \to \bar{K}^0 pK^-)$	< 1.1	< 1.1	[1]	< 1.1
10	$f_{\Xi_b^0}/f_{\Lambda_b^0} \mathcal{B}(\Xi_b^0 \to \Lambda\pi^+\pi^-)$	< 1.7	< 1.7	[7]	< 1.7
11	$f_{\Xi_b^0}/f_{\Lambda_b^0} \mathcal{B}(\Xi_b^0 \to \Lambda K^+\pi^-)$	< 0.8	< 0.8	[7]	< 0.8
12	$f_{\Xi_b^0}/f_{\Lambda_b^0} \mathcal{B}(\Xi_b^0 \to \Lambda K^+K^-)$	< 0.3	< 0.3	[7]	< 0.3
	$f_{\Xi_b^0}/f_{\Lambda_b^0} \mathcal{B}(\Xi_b^0 \to pK^-\pi^+\pi^-)$		$1.72 \pm 0.21 \pm 0.25 \pm 0.15 \pm 0.07$	[10]	1.72 ± 0.37
	$f_{\Xi_b^0}/f_{\Lambda_b^0} \mathcal{B}(\Xi_b^0 \to pK^-\pi^+K^-)$		$1.56 \pm 0.16 \pm 0.19 \pm 0.13 \pm 0.06$	[10]	1.56 ± 0.29
	$f_{\Xi_b^0}/f_{\Lambda_b^0} \mathcal{B}(\Xi_b^0 \to pK^-K^+K^-)$		< 0.25	[10]	< 0.25

Channels with no RPP# are not reported by PDG.
Results for LHCb are relative BFs converted to absolute BFs.

Heavy FLavor AVeraging group (HFLAV) - December 2017

Compilation of Ξ_b^- Branching Fractions ($\times 10^{-5}$)

Preliminary Updated results not included in PDG Live as of Dec. 31, 2017

RPP#	Mode	PDG2017 Avg.	LHCb		Our Avg.
6	$f_{\Xi_b^-} \mathcal{B}(\Xi_b^- \to pK^-K^-)/(f_u \mathcal{B}(B^- \to K^+K^-K^-))$	†	$265 \pm 35 \pm 47$	[12]	265 ± 58
	$f_{\Xi_b^-} \mathcal{B}(\Xi_b^- \to pK^-\pi^-)/(f_u \mathcal{B}(B^- \to K^+K^-K^-))$		$259 \pm 64 \pm 49$	[12]	259 ± 80
8	$\mathcal{B}(\Xi_b^- \to p\pi^-\pi^-)/(\mathcal{B}(\Xi_b^- \to pK^-K^-))$	< 0.56	< 0.56	[12]	< 0.56
	$f_{\Xi_b^-} \mathcal{B}(\Xi_b^- \to p\pi^-\pi^-)/(f_u \mathcal{B}(B^- \to K^+K^-K^-))$		< 147	[12]	< 147
9	$\mathcal{B}(\Xi_b^- \to pK^-\pi^-)/(\mathcal{B}(\Xi_b^- \to pK^-K^-))$	$0.98 \pm 0.27 \pm 0.09$	$0.98 \pm 0.27 \pm 0.09$	[12]	0.98 ± 0.28

Channels with no RPP# are not reported by PDG.
† PDG reports results multiplied by $\mathcal{B}(B^+ \to K^+K^-K^+)$ and $\mathcal{B}(\bar{b} \to B^+)$.

Heavy FLavor AVeraging group (HFLAV) - December 2017

Compilation of Ω_b^- Branching Fractions ($\times 10^{-5}$)

Preliminary Updated results not included in PDG Live as of Dec. 31, 2017

RPP#	Mode	PDG2017 Avg.	LHCb		Our Avg.
2	$f_{\Omega_b^-} \mathcal{B}(\Omega_b^- \to pK^-K^-)/(f_u \mathcal{B}(B^- \to K^+K^-K^-))$	†	< 18	[12]	< 18
3	$f_{\Omega_b^-} \mathcal{B}(\Omega_b^- \to pK^-\pi^-)/(f_u \mathcal{B}(B^- \to K^+K^-K^-))$	†	< 51	[12]	< 51
4	$f_{\Omega_b^-} \mathcal{B}(\Omega_b^- \to p\pi^-\pi^-)/(f_u \mathcal{B}(B^- \to K^+K^-K^-))$	†	< 109	[12]	< 109

† PDG reports results multiplied by $\mathcal{B}(B^+ \to K^+K^-K^+)$ and $\mathcal{B}(\bar{b} \to B^+)$.

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