

Heavy Flavor Averaging group (HFLAV) - November 2016
 Compilation of B^+ Baryonic Branching Fractions ($\times 10^{-6}$) - UL at 90% CL
 In PDG2014 New since PDG2014 (preliminary) New since PDG2014 (published)

RPP#	Mode	PDG2014 Avg.	BABAR	Belle	LHCb	Our Avg.
417	$p\bar{p}\pi^+$	1.62 ± 0.20	$1.69 \pm 0.29 \pm 0.26$ † [1]	$1.60^{+0.22}_{-0.19} \pm 0.12$ [2]		$1.62^{+0.21}_{-0.20}$
417	$p\bar{p}\pi^+$ §				$1.07 \pm 0.11 \pm 0.11$ [3]	1.07 ± 0.16
420	$p\bar{p}K^+$	5.9 ± 0.5	$6.7 \pm 0.5 \pm 0.4$ † [4]	$5.54^{+0.27}_{-0.25} \pm 0.36$ [2]	$4.46 \pm 0.21 \pm 0.27$ ¶ [5]	5.14 ± 0.25
421	$\Theta^{++}\bar{p}$ ¹	< 0.091	< 0.09 [4]	< 0.091 [6]		< 0.09
422	$f_J(2221)K^+$ ²	< 0.41		< 0.41 [6]		< 0.41
423	$p\bar{\Lambda}(1520)$	< 1.5	< 1.5 [4]		$0.315 \pm 0.048 \pm 0.027$ [3]	0.315 ± 0.055
425	$p\bar{p}K^{*+}$	$3.6^{+0.8}_{-0.7}$	$5.3 \pm 1.5 \pm 1.3$ † [1]	$3.38^{+0.73}_{-0.60} \pm 0.39$ ‡ [7]		$3.64^{+0.79}_{-0.70}$
426	$f_J(2221)K^{*+}$ ²	< 0.77	< 0.77 [1]			< 0.77
427	$p\bar{\Lambda}$	< 0.32		< 0.32 [8]		< 0.32
429	$p\bar{\Lambda}\pi^0$	$3.00^{+0.7}_{-0.6}$		$3.00^{+0.61}_{-0.53} \pm 0.33$ [9]		$3.00^{+0.69}_{-0.62}$
430	$p\bar{\Sigma}(1385)^0$	< 0.47		< 0.47 [9]		< 0.47
431	$\Delta^+\bar{\Lambda}$	< 0.82		< 0.82 [9]		< 0.82
433	$p\bar{\Lambda}\pi^+\pi^-$ (NR)	5.9 ± 1.1		$5.92^{+0.88}_{-0.84} \pm 0.69$ [10]		$5.92^{+1.12}_{-1.09}$
434	$p\bar{\Lambda}\rho^0$	4.8 ± 0.9		$4.78^{+0.67}_{-0.64} \pm 0.60$ [10]		$4.78^{+0.90}_{-0.88}$
435	$p\bar{\Lambda}f_2(1270)$	2.0 ± 0.8		$2.03^{+0.77}_{-0.72} \pm 0.27$ [10]		$2.03^{+0.82}_{-0.77}$
436	$\Lambda\bar{\Lambda}\pi^+$	< 0.94		< 0.94 § [11]		< 0.94 §
437	$\Lambda\bar{\Lambda}K^+$	3.4 ± 0.6		$3.38^{+0.41}_{-0.36} \pm 0.41$ ‡ [11]		$3.38^{+0.58}_{-0.55}$
438	$\Lambda\bar{\Lambda}K^{*+}$	$2.2^{+1.2}_{-0.9}$		$2.19^{+1.13}_{-0.88} \pm 0.33$ § [11]		$2.19^{+1.18}_{-0.94}$
439	$\bar{\Delta}^0 p$	< 1.38		< 1.38 § [2]		< 1.38 §
440	$\Delta^+\bar{p}$	< 0.14		< 0.14 § [2]		< 0.14 §

Results for LHCb are relative BF's converted to absolute BF's.

† Charmonium decays to $p\bar{p}$ have been statistically subtracted.

‡ The charmonium mass region has been vetoed.

§ Di-baryon mass is less than 2.85 GeV/c.

¶ Includes contribution where $p\bar{p}$ is produced in charmonia decays.

¹ $\Theta(1540)^{++} \rightarrow K^+p$ (pentaquark candidate).

² In this product of BF's, all daughter BF's not shown are set to 100%.

Heavy FLavor AVeraging group (HFLAV) - November 2016
 Compilation of B^0 Baryonic Branching Fractions ($\times 10^{-6}$) - UL at 90% CL
 In PDG2014 New since PDG2014 (preliminary) New since PDG2014 (published)

RPP#	Mode	PDG2014 Avg.	BABAR	Belle	LHCb	Our Avg.
407	$p\bar{p}$	$0.015^{+0.007}_{-0.005}$	< 0.27 [12]	< 0.11 [8]	$0.0147^{+0.0062+0.0035}_{-0.0051-0.0014}$ [13]	$0.0150^{+0.0070}_{-0.0050}$
409	$p\bar{p}K^0$	2.66 ± 0.32	$3.0 \pm 0.5 \pm 0.3$ † [1]	$2.51^{+0.35}_{-0.29} \pm 0.21$ ‡ [7]		$2.66^{+0.34}_{-0.32}$
410	$\Theta^+\bar{p}$ §	< 0.05	< 0.05 [1]	< 0.23 [6]		< 0.05
411	$f_J(2221)K^0$ ¶	< 0.45	< 0.45 [1]			< 0.45
412	$p\bar{p}K^{*0}$	$1.24^{+0.28}_{-0.25}$	$1.47 \pm 0.45 \pm 0.40$ † [1]	$1.18^{+0.29}_{-0.25} \pm 0.11$ ‡ [7]		$1.24^{+0.28}_{-0.25}$
413	$f_J(2221)K^{*0}$ ¶	< 0.15	< 0.15 [1]			< 0.15
414	$p\bar{\Lambda}\pi^-$	3.14 ± 0.29	$3.07 \pm 0.31 \pm 0.23$ [14]	$3.23^{+0.33}_{-0.29} \pm 0.29$ [9]		$3.14^{+0.29}_{-0.28}$
415	$p\bar{\Sigma}(1385)^-$	< 0.26		< 0.26 [9]		< 0.26
416	$\Delta^0\bar{\Lambda}$	< 0.93		< 0.93 [9]		< 0.93
417	$p\bar{\Lambda}K^-$	< 0.82		< 0.82 [15]		< 0.82
418	$p\bar{\Sigma}^0\pi^-$	< 3.8		< 3.8 [15]		< 3.8
419	$\bar{\Lambda}\Lambda$	< 0.32		< 0.32 [8]		< 0.32
420	$\bar{\Lambda}\Lambda K^0$	$4.8^{+1.0}_{-0.9}$		$4.76^{+0.84}_{-0.68} \pm 0.61$ ‡ [11]		$4.76^{+1.04}_{-0.91}$
421	$\Lambda\bar{\Lambda}K^{*0}$	$2.5^{+0.9}_{-0.8}$		$2.46^{+0.87}_{-0.72} \pm 0.34$ ‡ [11]		$2.46^{+0.93}_{-0.80}$

Results for LHCb are relative BF's converted to absolute BF's.

† Charmonium decays to $p\bar{p}$ have been statistically subtracted.

‡ The charmonium mass region has been vetoed.

§ $\Theta(1540)^+ \rightarrow pK^0$ (pentaquark candidate).

¶ In this product of BF's, all daughter BF's not shown are set to 100%.

Heavy FLavor AVeraging group (HFLAV) - November 2016
 Compilation of B^+ and B^0 Baryonic Relative Branching Fractions
 In PDG2014 [New since PDG2014 \(preliminary\)](#) [New since PDG2014 \(published\)](#)

RPP#	Mode	PDG2014 Avg.	LHCb	Our Avg.
417	$\mathcal{B}(B^+ \rightarrow p\bar{p}\pi^+, m_{p\bar{p}} < 2.85 \text{ GeV}/c) / \mathcal{B}(B^+ \rightarrow J/\psi(\rightarrow p\bar{p})\pi^+)$		$12.0 \pm 1.2 \pm 0.3$ [3]	12.0 ± 1.2
420	$\mathcal{B}(B^+ \rightarrow p\bar{p}K^+) / \mathcal{B}(B^+ \rightarrow J/\psi(\rightarrow p\bar{p})K^+)$		$4.91 \pm 0.19 \pm 0.14$ [†] [5]	4.91 ± 0.24
420	$\mathcal{B}(B^+ \rightarrow p\bar{p}K^+) / \mathcal{B}(B^+ \rightarrow J/\psi K^+)$	$0.0104 \pm 0.0005 \pm 0.0001$	$0.0104 \pm 0.0005 \pm 0.0001$ ^{†‡} [5]	0.0100 ± 0.0010
423	$\mathcal{B}(B^+ \rightarrow \bar{\Lambda}(1520)(\rightarrow K^+\bar{p})p) / \mathcal{B}(B^+ \rightarrow J/\psi(\rightarrow p\bar{p})\pi^+)$		$0.033 \pm 0.005 \pm 0.007$ [3]	0.033 ± 0.009

[†] Includes contribution where $p\bar{p}$ is produced in charmonia decays.

[‡] Original experimental relative BF multiplied by the best values (PDG2014) of certain reference BFs. The first error is experimental, and the second is from the reference BFs.

References

- [1] B. Aubert *et al.*, (*BABAR* collaboration), Phys. Rev. **D76**, 092004, (2007), arXiv:0707.1648 [hep-ex].
- [2] J. T. Wei *et al.*, (Belle collaboration), Phys. Lett. **B659**, 80, (2008), arXiv:0706.4167 [hep-ex].
- [3] R. Aaij *et al.*, (LHCb collaboration), Phys. Rev. Lett. **113**, 141801, (2014), arXiv:1407.5907 [hep-ex].
- [4] B. Aubert *et al.*, (*BABAR* collaboration), Phys. Rev. **D72**, 051101, (2005), arXiv:hep-ex/0507012 [hep-ex].
- [5] R. Aaij *et al.*, (LHCb collaboration), Eur. Phys. J. **C73**, 2462, (2013), arXiv:1303.7133 [hep-ex].
- [6] M. Z. Wang *et al.*, (Belle collaboration), Phys. Lett. **B617**, 141, (2005), arXiv:hep-ex/0503047 [hep-ex].
- [7] J. H. Chen *et al.*, (Belle collaboration), Phys. Rev. Lett. **100**, 251801, (2008), arXiv:0802.0336 [hep-ex].
- [8] Y. T. Tsai *et al.*, (Belle collaboration), Phys. Rev. **D75**, 111101, (2007), arXiv:hep-ex/0703048 [hep-ex].
- [9] M. Z. Wang *et al.*, (Belle collaboration), Phys. Rev. **D76**, 052004, (2007), arXiv:0704.2672 [hep-ex].
- [10] P. Chen *et al.*, (Belle collaboration), Phys. Rev. **D80**, 111103, (2009), arXiv:0910.5817 [hep-ex].
- [11] Y. W. Chang *et al.*, (Belle collaboration), Phys. Rev. **D79**, 052006, (2009), arXiv:0811.3826 [hep-ex].
- [12] B. Aubert *et al.*, (*BABAR* collaboration), Phys. Rev. **D69**, 091503, (2004), arXiv:hep-ex/0403003 [hep-ex].
- [13] R. Aaij *et al.*, (LHCb collaboration), JHEP **10**, 005, (2013), arXiv:1308.0961 [hep-ex].
- [14] B. Aubert *et al.*, (*BABAR* collaboration), Phys. Rev. **D79**, 112009, (2009), arXiv:0904.4724 [hep-ex].
- [15] M. Z. Wang *et al.*, (Belle collaboration), Phys. Rev. Lett. **90**, 201802, (2003), arXiv:hep-ex/0302024 [hep-ex].