

Heavy Flavor Averaging Group
August 2014

Compilation of B^+ Baryonic Branching Fractions
All branching fractions are in units of 10^{-6} ; limits are 90% CL

In PDG2014 New since PDG2014 (preliminary) New since PDG2014 (published)

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

§ Di-baryon mass is less than $2.85 \text{ GeV}/c$.

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

¶ Relative BF converted to absolute BF.

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

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

² Product BF — daughter BF taken to be 100%;

‡ The charmonium mass region has been vetoed;

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Compilation of B^0 Baryonic Branching Fractions
All branching fractions are in units of 10^{-6} ; limits are 90% CL

In PDG2014 New since PDG2014 (preliminary) New since PDG2014 (published)

RPP#	Mode	PDG2014 Avg.	BABAR	Belle	LHCb	New Avg.
407	$p\bar{p}$	$0.015^{+0.007}_{-0.005}$	< 0.27	< 0.11	$0.0147^{+0.0062+0.0035}_{-0.0051-0.0014}$	$0.0150^{+0.0070}_{-0.0050}$
409	$p\bar{p}K^0$	2.66 ± 0.32	$3.0 \pm 0.5 \pm 0.3$ †	$2.51^{+0.35}_{-0.29} \pm 0.21$ ‡		$2.66^{+0.34}_{-0.32}$
410	$\Theta^+\bar{p}$ ¹	< 0.05	< 0.05	< 0.23		< 0.05
411	$f_J(2221)K^0$ ²	< 0.45	< 0.45			< 0.45
412	$p\bar{p}K^{*0}$	$1.24^{+0.28}_{-0.25}$	$1.47 \pm 0.45 \pm 0.40$ †	$1.18^{+0.29}_{-0.25} \pm 0.11$ ‡		$1.24^{+0.28}_{-0.25}$
413	$f_J(2221)K^{*0}$ ²	< 0.15	< 0.15			< 0.15
414	$p\bar{\Lambda}\pi^-$	3.14 ± 0.29	$3.07 \pm 0.31 \pm 0.23$	$3.23^{+0.33}_{-0.29} \pm 0.29$		$3.14^{+0.29}_{-0.28}$
415	$p\bar{\Sigma}(1385)^-$	< 0.26		< 0.26		< 0.26
416	$\Delta^0\bar{\Lambda}$	< 0.93		< 0.93		< 0.93
417	$p\bar{\Lambda}K^-$	< 0.82		< 0.82		< 0.82
418	$p\bar{\Sigma}^0\pi^-$	< 3.8		< 3.8		< 3.8
419	$\bar{\Lambda}\Lambda$	< 0.32		< 0.32		< 0.32
420	$\bar{\Lambda}\Lambda K^0$	$4.8^{+1.0}_{-0.9}$		$4.76^{+0.84}_{-0.68} \pm 0.61$ ‡		$4.76^{+1.04}_{-0.91}$
421	$\Lambda\bar{\Lambda}K^{*0}$	$2.5^{+0.9}_{-0.8}$		$2.46^{+0.87}_{-0.72} \pm 0.34$ ‡		$2.46^{+0.93}_{-0.80}$

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

‡ The charmonium mass region has been vetoed.

¹ $\Theta(1540)^+ \rightarrow pK^0$ (pentaquark candidate).

² Product BF — daughter BF taken to be 100%.

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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	New Avg.
417	$\mathcal{B}(B^+ \rightarrow p\bar{p}\pi^+, m_{p\bar{p}} < 2.85 \text{ GeV}/c) / \mathcal{B}(B^+ \rightarrow J/\psi(\rightarrow p\bar{p})\pi^+)$		$12.0 \pm 1.2 \pm 0.3$	12.0 ± 1.2
420	$\mathcal{B}(B^+ \rightarrow p\bar{p}K^+) / \mathcal{B}(B^+ \rightarrow J/\psi(\rightarrow p\bar{p})\pi^+)$		$4.91 \pm 0.19 \pm 0.14$ †	4.91 ± 0.24
420	$\mathcal{B}(B^+ \rightarrow p\bar{p}K^+) / \mathcal{B}(B^+ \rightarrow J/\psi\pi^+)$	$0.0104 \pm 0.0005 \pm 0.0001$	$0.0104 \pm 0.0005 \pm 0.0001$ † §	0.0104 ± 0.0005
423	$\mathcal{B}(B^+ \rightarrow \bar{\Lambda}(1520)(\rightarrow K^+\bar{p})p) / \mathcal{B}(B^+ \rightarrow J/\psi(\rightarrow p\bar{p})\pi^+)$		$0.033 \pm 0.005 \pm 0.007$	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, the second is from reference BF.

Charmless Baryonic Decay References

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