

Heavy Flavor Averaging Group  
April 2009

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

In PDG2008    New since PDG2008 (preliminary)    New since PDG2008 (published)

RPP#	Mode	PDG2008 Avg.	BABAR	Belle	CLEO	New Avg.
327	$p\bar{p}\pi^+$	$1.62 \pm 0.2$	$1.69 \pm 0.29 \pm 0.26$ †	$1.57_{-0.15}^{+0.17} \pm 0.12$ §	< 160	$1.60_{-0.17}^{+0.18}$
330	$p\bar{p}K^+$	$5.9 \pm 0.5$	$6.7 \pm 0.5 \pm 0.4$ †	$5.00_{-0.22}^{+0.24} \pm 0.32$ §		$5.48 \pm 0.34$
331	$\Theta^{++}\bar{p}$ <sup>1</sup>	< 0.091	< 0.09	< 0.091		< 0.09
332	$f_J(2221)K^+$ <sup>2</sup>	< 0.41		< 0.41		< 0.41
333	$p\bar{\Lambda}(1520)$	< 1.5	< 1.5			< 1.5
335	$p\bar{p}K^{*+}$	$6.6 \pm 2.3$	$5.3 \pm 1.5 \pm 1.3$ †	<span style="color: red;"><math>3.38_{-0.60}^{+0.73} \pm 0.39</math> ‡</span>		$3.64_{-0.70}^{+0.79}$
336	$f_J(2221)K^{*+}$ <sup>2</sup>	< 0.77	< 0.77			< 0.77
337	$p\bar{\Lambda}$	< 0.32		< 0.32	< 1.5	< 0.32
339	$p\bar{\Lambda}\pi^0$	$3.00_{-0.6}^{+0.7}$		$3.00_{-0.53}^{+0.61} \pm 0.33$		$3.00_{-0.62}^{+0.69}$
340	$p\bar{\Sigma}(1385)^0$	< 0.47		< 0.47		< 0.47
341	$\Delta^+\bar{\Lambda}$	< 0.82		< 0.82		< 0.82
344	$\Lambda\bar{\Lambda}\pi^+$	< 2.8		<span style="color: red;">&lt; 0.94 §</span>		< 0.94 §
345	$\Lambda\bar{\Lambda}K^+$	$2.9_{-0.8}^{+1.0}$		<span style="color: red;"><math>3.38_{-0.36}^{+0.41} \pm 0.41</math> ‡</span>		$3.38_{-0.55}^{+0.58}$
—	$\Lambda\bar{\Lambda}K^{*+}$	New		<span style="color: red;"><math>2.19_{-0.89}^{+1.13} \pm 0.33</math> §</span>		$2.19_{-0.95}^{+1.18}$
346	$\bar{\Delta}^0 p$	< 1.38		< 1.38 §	< 380	< 1.38 §
347	$\Delta^{++}\bar{p}$	< 0.14		< 0.14 §	< 150	< 0.14 §

§ Di-baryon mass is less than  $2.85 \text{ GeV}/c^2$ ; † Charmonium decays to  $p\bar{p}$  have been statistically subtracted;

‡ The charmonium mass region has been vetoed; <sup>1</sup>  $\Theta(1540)^{++} \rightarrow K^+p$  (pentaquark candidate);

<sup>2</sup> Product BF — daughter BF taken to be 100%

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RPP#	Mode	PDG2008 Avg.	BABAR	Belle	CLEO	New Avg.
328	$p\bar{p}$	$< 0.11$	$< 0.27$	$< 0.11$	$< 1.4$	$< 0.11$
330	$p\bar{p}K^0$	$2.7 \pm 0.4$	$3.0 \pm 0.5 \pm 0.3 \dagger$	$2.51^{+0.35}_{-0.29} \pm 0.21 \ddagger$		$2.66^{+0.34}_{-0.32}$
331	$\Theta^+\bar{p}^1$	$< 0.05$	$< 0.05$	$< 0.23$		$< 0.05$
332	$f_J(2221)K^0$ <sup>2</sup>	$< 0.45$	$< 0.45$			$< 0.45$
333	$p\bar{p}K^{*0}$	$1.5 \pm 0.6$	$1.47 \pm 0.45 \pm 0.40 \dagger$	$1.18^{+0.29}_{-0.25} \pm 0.11 \ddagger$		$1.24^{+0.28}_{-0.25}$
334	$f_J(2221)K^{*0}$ <sup>2</sup>	$< 0.15$	$< 0.15$			$< 0.15$
335	$p\bar{\Lambda}\pi^-$	$3.2 \pm 0.4$	$3.30 \pm 0.53 \pm 0.31$	$3.23^{+0.33}_{-0.29} \pm 0.29$	$< 13$	$3.25^{+0.36}_{-0.34}$
336	$p\bar{\Sigma}(1385)^-$	$< 0.26$		$< 0.26$		$< 0.26$
337	$\Delta^0\bar{\Lambda}$	$< 0.93$		$< 0.93$		$< 0.93$
338	$p\bar{\Lambda}K^-$	$< 0.82$		$< 0.82$		$< 0.82$
339	$p\bar{\Sigma}^0\pi^-$	$< 3.8$		$< 3.8$		$< 3.8$
340	$\Lambda\bar{\Lambda}$	$< 0.32$		$< 0.32$	$< 1.2$	$< 0.32$
—	$\Lambda\bar{\Lambda}K^0$	New		$4.76^{+0.84}_{-0.68} \pm 0.61 \ddagger$		$4.76^{+1.04}_{-0.91}$
—	$\Lambda\bar{\Lambda}K^{*0}$	New		$2.46^{+0.87}_{-0.72} \pm 0.34 \ddagger$		$2.46^{+0.93}_{-0.80}$

$\dagger$  Charmonium decays to  $p\bar{p}$  have been statistically subtracted;  $\ddagger$  The charmonium mass region has been vetoed; <sup>1</sup>  $\Theta(1540)^+ \rightarrow pK^0$  (pentaquark candidate); <sup>2</sup> Product BF — daughter BF taken to be 100%.

# Charmless Baryonic Decay References

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