

Heavy Flavor Averaging Group
April 2008

Compilation of B_s Rare Branching Fractions
All branching fractions are in units of 10^{-6}

In PDG2006 New since PDG2006 (preliminary) New since PDG2006 (published)

RPP#	Mode	PDG2006 Avg.	Belle	CDF	D0	New Avg.
9	$\pi^+\pi^-$	< 170		$0.53 \pm 0.31 \pm 0.40$		0.53 ± 0.51
15	$\phi\phi$	14 ± 8		$14_{-5}^{+6} \pm 6 \dagger$		14_{-7}^{+8}
16	π^+K^-	< 210		$5.0 \pm 0.75 \pm 1.0$		5.00 ± 1.25
17	K^+K^-	< 59	< 310	$24.4 \pm 1.4 \pm 4.6$		24.4 ± 4.8
22	$\gamma\gamma$	< 148	< 8.7			< 8.7
23	$\phi\gamma$	< 120	57_{-15}^{+18+12}			57_{-18}^{+21}
24	$\mu^+\mu^-$	< 0.15		< 0.047	< 0.075	< 0.047
26	$e^\pm\mu^\mp$	< 6.1		< 6.1		< 6.1
27	$\mu^+\mu^-\phi$	< 47		< 2.3	< 3.2 \dagger	< 2.3

†Relative BF converted to absolute BF

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Compilation of B_s^0 Rare Relative Branching Fractions (UL 90% CL)

In PDG2006 New since PDG2006 (preliminary) New since PDG2006 (published)

RPP#	Mode	PDG2006 Avg.	CDF	D0	New Avg.
9	$f_s \mathcal{B}(B_s^0 \rightarrow \pi^+ \pi^-) / f_d \mathcal{B}(B^0 \rightarrow K^+ \pi^-)$		$0.007 \pm 0.004 \pm 0.005$		0.007 ± 0.006
15	$\mathcal{B}(B_s^0 \rightarrow \phi \phi) / \mathcal{B}(B_s^0 \rightarrow J/\psi \phi)$		$(10_{-4}^{+5} \pm 1) \times 10^{-3}$		10_{-6}^{+7}
16	$f_s \mathcal{B}(B_s^0 \rightarrow K^+ \pi^-) / f_d \mathcal{B}(B_d^0 \rightarrow K^+ \pi^-)$		$0.066 \pm 0.010 \pm 0.010$		0.066 ± 0.014
17	$f_s \mathcal{B}(B_s^0 \rightarrow K^+ K^-) / f_d \mathcal{B}(B_d^0 \rightarrow K^+ \pi^-)$		$0.324 \pm 0.019 \pm 0.041$		0.324 ± 0.045
27	$\mathcal{B}(B_s^0 \rightarrow \mu^+ \mu^- \phi) / \mathcal{B}(B_s^0 \rightarrow J/\psi \phi)$		$1.24 \pm 0.60 \pm 0.15$	$< 3.5 \times 10^{-3}$	1.24 ± 0.62

Charmless B_s Decays: CDF References

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