

# BOTTOM, CHARMED MESONS ( $B = C = \pm 1$ )

$$B_c^+ = c\bar{b}, B_c^- = \bar{c}b, \quad \text{similarly for } B_c^{*'}\text{'s}$$

**$B_c^+$**

$$I(J^P) = 0(0^-)$$

$I, J, P$  need confirmation.

Quantum numbers shown are quark-model predictions.

$$\text{Mass } m = 6275.1 \pm 1.0 \text{ MeV}$$

$$\text{Mean life } \tau = (0.507 \pm 0.009) \times 10^{-12} \text{ s}$$

$B_c^-$  modes are charge conjugates of the modes below.

<b><math>B_c^+</math> DECAY MODES <math>\times B(\bar{b} \rightarrow B_c)</math></b>	Fraction ( $\Gamma_i/\Gamma$ )	Confidence level	$P$ (MeV/c)
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The following quantities are not pure branching ratios; rather the fraction  $\Gamma_i/\Gamma \times B(\bar{b} \rightarrow B_c)$ .

$J/\psi(1S)\ell^+\nu_\ell$ anything	$(5.2^{+2.4}_{-2.1}) \times 10^{-5}$		—
$J/\psi(1S)\pi^+$	seen		2371
$J/\psi(1S)K^+$	seen		2341
$J/\psi(1S)\pi^+\pi^+\pi^-$	seen		2350
$J/\psi(1S)a_1(1260)$	$< 1.2$	$\times 10^{-3}$	90% 2170
$J/\psi(1S)K^+K^-\pi^+$	seen		2203
$J/\psi(1S)\pi^+\pi^+\pi^+\pi^-\pi^-$	seen		2309
$\psi(2S)\pi^+$	seen		2052
$J/\psi(1S)D_s^+$	seen		1822
$J/\psi(1S)D_s^{*+}$	seen		1728
$J/\psi(1S)\rho\bar{p}\pi^+$	seen		1792
$D^*(2010)^+\bar{D}^0$	$< 6.2$	$\times 10^{-3}$	90% 2467
$D^+K^{*0}$	$< 0.20$	$\times 10^{-6}$	90% 2783
$D^+\bar{K}^{*0}$	$< 0.16$	$\times 10^{-6}$	90% 2783
$D_s^+K^{*0}$	$< 0.28$	$\times 10^{-6}$	90% 2751
$D_s^+\bar{K}^{*0}$	$< 0.4$	$\times 10^{-6}$	90% 2751
$D_s^+\phi$	$< 0.32$	$\times 10^{-6}$	90% 2727
$K^+K^0$	$< 4.6$	$\times 10^{-7}$	90% 3098
$B_s^0\pi^+ / B(\bar{b} \rightarrow B_s)$	$(2.37^{+0.37}_{-0.35}) \times 10^{-3}$		—