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

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

B_c^+

$I(J^P) = 0(0^-)$
I, J, P need confirmation.

Quantum numbers shown are quark-model predictions.

Mass $m = 6274.47 \pm 0.32$ MeV
$m_{B_c^+} - m_{B_s^0} = 907.8 \pm 0.5$ MeV
Mean life $\tau = (0.510 \pm 0.009) \times 10^{-12}$ s

The following quantities are not pure branching ratios; rather the fractions $\Gamma_i/\Gamma \times$ B($\overline{b} \to B_c$). B_c^- modes are charge conjugates of the modes below.

B_c^+ DECAY MODES × B($\overline{b} \to B_c$)	Fraction (Γ_i/Γ)	Confidence level	p (MeV/c)
$J/\psi(1S)\ell^+\nu_\ell$ anything	seen		–
$J/\psi(1S)\mu^+\nu_\mu$	seen		2372
$J/\psi(1S)\tau^+\nu_\tau$	seen		1932
$J/\psi(1S)\pi^+$	seen		2370
$J/\psi(1S)K^+$	seen		2341
$J/\psi(1S)\pi^+\pi^+\pi^-$	seen		2350
$J/\psi(1S)a_1(1260)$	not seen		2169
$J/\psi(1S)K^+K^-\pi^+$	seen		2203
$J/\psi(1S)\pi^+\pi^+\pi^+\pi^-\pi^-$	seen		2309
$\psi(2S)\pi^+$	seen		2051
$J/\psi(1S)D^0K^+$	seen		1539
$J/\psi(1S)D^*(2007)^0K^+$	seen		1411
$J/\psi(1S)D^*(2010)^+K^{*0}$	seen		919
$J/\psi(1S)D^+K^{*0}$	seen		1122
$J/\psi(1S)D_s^+$	seen		1821
$J/\psi(1S)D_s^{*+}$	seen		1727
$J/\psi(1S)p\overline{p}\pi^+$	seen		1791
$\chi_{c0}\pi^+$	$(2.4^{+0.9}_{-0.8}) \times 10^{-5}$		2205
$p\overline{p}\pi^+$	not seen		2970
D^0K^+	seen		2837
$D^0\pi^+$	not seen		2858
$D^{*0}\pi^+$	not seen		2814

$D^{*0}K^+$	not seen			2792
$D_s^+\overline{D}^0$	< 7.2	$\times 10^{-4}$	90%	2483
$D_s^+ D^0$	< 3.0	$\times 10^{-4}$	90%	2483
$D^+\overline{D}^0$	< 1.9	$\times 10^{-4}$	90%	2521
$D^+ D^0$	< 1.4	$\times 10^{-4}$	90%	2521
$D_s^{*+}\overline{D}^0$	< 5.3	$\times 10^{-4}$	90%	2425
$D_s^+\overline{D}^*(2007)^0$	< 4.6	$\times 10^{-4}$	90%	2427
$D_s^{*+} D^0$	< 9	$\times 10^{-4}$	90%	2425
$D_s^+ D^*(2007)^0$	< 6.6	$\times 10^{-4}$	90%	2427
$D^*(2010)^+\overline{D}^0$	< 3.8	$\times 10^{-4}$	90%	2467
$D^*(2010)^+\overline{D}^0,\ D^{*+} \to D^+\pi^0/\gamma$	not seen			–
$D^+\overline{D}^*(2007)^0$	< 6.5	$\times 10^{-4}$	90%	2466
$D^*(2007)^+ D^0$	< 2.0	$\times 10^{-4}$	90%	–
$D^*(2010)^+ D^0,\ D^{*+} \to D^+\pi^0/\gamma$	not seen			2467
$D^+ D^*(2007)^0$	< 3.7	$\times 10^{-4}$	90%	2466
$D_s^{*+}\overline{D}^*(2007)^0$	< 1.3	$\times 10^{-3}$	90%	2366
$D_s^{*+} D^*(2007)^0$	< 1.3	$\times 10^{-3}$	90%	2366
$D^*(2010)^+\overline{D}^*(2007)^0$	< 1.0	$\times 10^{-3}$	90%	2410
$D^*(2010)^+ D^*(2007)^0$	< 7.7	$\times 10^{-4}$	90%	2410
$D^+ K^{*0}$	not seen			2783
$D^+\overline{K}^{*0}$	not seen			2783
$D_s^+ K^{*0}$	not seen			2751
$D_s^+\overline{K}^{*0}$	not seen			2751
$D_s^+\phi$	not seen			2727
$K^+ K^0$	not seen			3098
$B_s^0\pi^+$ / B($\overline{b} \to\ B_s$)	seen			–

$B_c(2S)^\pm$

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

Mass $m = 6871.2 \pm 1.0$ MeV

The following quantities are not pure branching ratios; rather the fractions $\Gamma_i/\Gamma \times$ B($\overline{b} \to\ B_c(2S)$).

$B_c(2S)^\pm$ DECAY MODES × B($\overline{b} \to\ B_c(2S)$)	Fraction (Γ_i/Γ)	p (MeV/c)
$B_c^+\pi^+\pi^-$	seen	504