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 $\Gamma_i/\Gamma \times \mathrm{B}(\overline{b} \to B_c)$. B_c^- modes are charge conjugates of the modes below.

B_c^+ DECAY MODES $\times$ 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
$J/\psi(1S)\,D^0\,K^+$	seen		1539
$J/\psi(1S)\,D^*(2007)^0\,K^+$	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
$D^0\,K^+$	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
$B_s^0 \pi^+ / \, \mathrm{B}(\overline{b} \to \, B_s)$	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 $\Gamma_i/\Gamma \times \mathrm{B}(\overline{b} \to \, B_c(2S))$.

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