BOTTOM, CHARMED MESONS
($B = C = \pm1$)

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

NODE=MXXX049

B_c^+

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

NODE=S091

Quantum numbers shown are quark-model predictions.

Mass $m = 6274.47 \pm 0.32$ MeV

NODE=S091M;DTYPE=M

$m_{B_c^+} - m_{B_s^0} = 907.8 \pm 0.5$ MeV

NODE=S091A01;DTYPE=D

Mean life $\tau = (0.510 \pm 0.009) \times 10^{-12}$ s

NODE=S091T;DTYPE=T;OUR EVAL; → UNCHECKED ←

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

NODE=S091215;NODE=S091

B_c^+ DECAY MODES × B($\overline{b} \rightarrow B_c$)	Fraction (Γ_i/Γ)	Confidence level	p (MeV/c)	
$J/\psi(1S)\ell^+\nu_\ell$ anything	seen		–	CLUMP=A;DESIG=1;OUR EVAL; → UNCHECKED ←
$J/\psi(1S)\mu^+\nu_\mu$	seen		2372	DESIG=19;OUR EVAL;→ UNCHECKED ←
$J/\psi(1S)\tau^+\nu_\tau$	seen		1932	DESIG=32;OUR EVAL;→ UNCHECKED ←
$J/\psi(1S)\pi^+$	seen		2370	DESIG=2;OUR EVAL;→ UNCHECKED ←
$J/\psi(1S)K^+$	seen		2341	DESIG=14;OUR EVAL;→ UNCHECKED ←
$J/\psi(1S)\pi^+\pi^+\pi^-$	seen		2350	DESIG=3;OUR EVAL;→ UNCHECKED ←
$J/\psi(1S)a_1(1260)$	not seen		2169	DESIG=4;OUR EVAL;→ UNCHECKED ←
$J/\psi(1S)K^+K^-\pi^+$	seen		2203	DESIG=17;OUR EVAL;→ UNCHECKED ←
$J/\psi(1S)\pi^+\pi^+\pi^+\pi^-\pi^-$	seen		2309	DESIG=18;OUR EVAL;→ UNCHECKED ←
$\psi(2S)\pi^+$	seen		2051	DESIG=11;OUR EVAL;→ UNCHECKED ←
$J/\psi(1S)D^0K^+$	seen		1539	DESIG=22;OUR EVAL;→ UNCHECKED ←
$J/\psi(1S)D^*(2007)^0K^+$	seen		1411	DESIG=23;OUR EVAL;→ UNCHECKED ←
$J/\psi(1S)D^*(2010)^+K^{*0}$	seen		919	DESIG=24;OUR EVAL;→ UNCHECKED ←
$J/\psi(1S)D^+K^{*0}$	seen		1122	DESIG=25;OUR EVAL;→ UNCHECKED ←
$J/\psi(1S)D_s^+$	seen		1821	DESIG=12;OUR EVAL;→ UNCHECKED ←
$J/\psi(1S)D_s^{*+}$	seen		1727	DESIG=13;OUR EVAL;→ UNCHECKED ←
$J/\psi(1S)p\overline{p}\pi^+$	seen		1791	DESIG=20;OUR EVAL;→ UNCHECKED ←
$p\overline{p}\pi^+$	not seen		2970	DESIG=21;OUR EVAL;→ UNCHECKED ←
D^0K^+	seen		2837	DESIG=27;OUR EVAL;→ UNCHECKED ←
$D^0\pi^+$	not seen		2858	DESIG=28;OUR EVAL;→ UNCHECKED ←
$D^{*0}\pi^+$	not seen		2814	DESIG=29;OUR EVAL;→ UNCHECKED ←
$D^{*0}K^+$	not seen		2792	DESIG=31;OUR EVAL;→ UNCHECKED ←
$D_s^+\overline{D}^0$	$<7.2 \times 10^{-4}$	90%	2483	DESIG=33
$D_s^+D^0$	$<3.0 \times 10^{-4}$	90%	2483	DESIG=35
$D^+\overline{D}^0$	$<1.9 \times 10^{-4}$	90%	2521	DESIG=36
D^+D^0	$<1.4 \times 10^{-4}$	90%	2521	DESIG=37
$D_s^{*+}\overline{D}^0$	$<5.3 \times 10^{-4}$	90%	2425	DESIG=38
$D_s^+\overline{D}^*(2007)^0$	$<4.6 \times 10^{-4}$	90%	2427	DESIG=39
$D_s^{*+}D^0$	$<9 \times 10^{-4}$	90%	2425	DESIG=40
$D_s^+D^*(2007)^0$	$<6.6 \times 10^{-4}$	90%	2427	DESIG=41
$D^*(2010)^+\overline{D}^0$	$<3.8 \times 10^{-4}$	90%	2467	DESIG=5
$D^*(2010)^+\overline{D}^0$, $D^{*+} \rightarrow D^+\pi^0/\gamma$	not seen		–	DESIG=49;OUR EVAL;→ UNCHECKED ←
$D^+\overline{D}^*(2007)^0$	$<6.5 \times 10^{-4}$	90%	2466	DESIG=42
$D^*(2007)^+D^0$	$<2.0 \times 10^{-4}$	90%	–	DESIG=50
$D^*(2010)^+D^0$, $D^{*+} \rightarrow D^+\pi^0/\gamma$	not seen		2467	DESIG=43;OUR EVAL;→ UNCHECKED ←

$D^{+} D^{*}(2007)^{0}$	$<3.7 \times 10^{-4}$	90%	2466	DESIG=44
$D_s^{*+} \overline{D}^{*}(2007)^{0}$	$<1.3 \times 10^{-3}$	90%	2366	DESIG=45
$D_s^{*+} D^{*}(2007)^{0}$	$<1.3 \times 10^{-3}$	90%	2366	DESIG=46
$D^{*}(2010)^{+} \overline{D}^{*}(2007)^{0}$	$<1.0 \times 10^{-3}$	90%	2410	DESIG=47
$D^{*}(2010)^{+} D^{*}(2007)^{0}$	$<7.7 \times 10^{-4}$	90%	2410	DESIG=48
$D^{+} K^{*0}$	not seen		2783	DESIG=6;OUR EVAL;→ UNCHECKED ←
$D^{+} \overline{K}^{*0}$	not seen		2783	DESIG=7;OUR EVAL;→ UNCHECKED ←
$D_s^{+} K^{*0}$	not seen		2751	DESIG=8;OUR EVAL;→ UNCHECKED ←
$D_s^{+} \overline{K}^{*0}$	not seen		2751	DESIG=9;OUR EVAL;→ UNCHECKED ←
$D_s^{+} \phi$	not seen		2727	DESIG=10;OUR EVAL;→ UNCHECKED ←
$K^{+} K^{0}$	not seen		3098	DESIG=15;OUR EVAL;→ UNCHECKED ←
$B_s^{0} \pi^{+}$ / B($\overline{b} \rightarrow B_s$)	seen		–	DESIG=16;OUR EVAL;→ UNCHECKED ←

$\boldsymbol{B_c(2S)^{\pm}}$

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

NODE=M217

Mass $m = 6871.2 \pm 1.0$ MeV

NODE=M217M;DTYPE=M

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

NODE=M217215;NODE=M217

$B_c(2S)^{\pm}$ DECAY MODES × B($\overline{b} \rightarrow B_c(2S)$)	Fraction (Γ_i/Γ)	p (MeV/c)	
$B_c^{+} \pi^{+} \pi^{-}$	seen	504	DESIG=1