NODE=S091

B_c^+

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

Quantum numbers shown are quark-model predictions.

NODE=S091

B_c^+ MASS

NODE=S091M

NODE=S091M

VALUE (MeV)			DOCUMENT ID		TECN	COMMENT
6274.47± 0.27± 0.17			[1] AAIJ	20R	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •						
6274.28±	1.40±	0.32	[2] AAIJ	17L	LHCB	Repl. by AAIJ 20R
6274.0 ±	1.8 ±	0.4	[3] AAIJ	14AQ	LHCB	Repl. by AAIJ 20R
6276.28±	1.44±	0.36	[4] AAIJ	13AS	LHCB	Repl. by AAIJ 20R
6273.7 ±	1.3 ±	1.6	[5] AAIJ	12AV	LHCB	Repl. by AAIJ 20R
6275.6 ±	2.9 ±	2.5	[6] AALTONEN	08M	CDF	$p\overline{p}$ at 1.96 TeV
6300 ±	14 ±	5	[6] ABAZOV	08T	D0	$p\overline{p}$ at 1.96 TeV
6285.7 ±	5.3 ±	1.2	[6] ABULENCIA	06C	CDF	Repl. by AALTONEN 08M
6400	±390	±130	[7] ABE	98M	CDF	$p\overline{p}$ at 1.8 TeV
6320	± 60		[8] ACKERSTAFF	98O	OPAL	$e^+e^- \to Z$

[1] AAIJ 20R uses the $B_c^+ \to J/\psi\pi^+$, $J/\psi\pi^+\pi^-\pi^+$, $J/\psi p\overline{p}\pi^+$, $J/\psi D_s^+$, $J/\psi D^0 K^+$ and $B_s^0\pi^+$ modes. NODE=S091M;LINKAGE=E

[2] Measured using $B_c^+ \to J/\psi D^0 K^+$ decays. NODE=S091M;LINKAGE=C

[3] Uses $B_c^+ \to J/\psi p\overline{p}\pi^+$ decays. NODE=S091M;LINKAGE=AI

[4] AAIJ 13AS uses the $B_c^+ \to J/\psi D_s^+$. NODE=S091M;LINKAGE=B

[5] AAIJ 12AV uses the $B_c^+ \to J/\psi\pi^+$ mode and also measures the mass difference $M(B_c^+) - M(B^+) = 994.6 \pm 1.3 \pm 0.6$ MeV/c^2. NODE=S091M;LINKAGE=AA

[6] Measured using a fully reconstructed decay mode of $B_c \to J/\psi\pi$. NODE=S091M;LINKAGE=AN

[7] ABE 98M observed $20.4^{+6.2}_{-5.5}$ events in the $B_c^+ \to J/\psi(1s)\ell\nu_\ell$ with a significance of > 4.8 standard deviations. The mass value is estimated from $m(J/\psi(1S)\ell)$. NODE=S091M;LINKAGE=A

[8] ACKERSTAFF 98O observed 2 candidate events in the $B_c^+ \to J/\psi(1S)\pi^+$ channel with an estimated background of 0.63 ± 0.20 events. NODE=S091M;LINKAGE=D

$m_{B_c^+} - m_{B_s^0}$

NODE=S091A01

NODE=S091A01

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
907.75±0.37±0.27	[1] AAIJ	20R	LHCB	pp at 7, 8, 13 TeV

[1] AAIJ 20R uses the $B_c^+ \to J/\psi\pi^+$, $J/\psi\pi^+\pi^-\pi^+$, $J/\psi p\overline{p}\pi^+$, $J/\psi D_s^+$, $J/\psi D^0 K^+$ and $B_s^0\pi^+$ modes. NODE=S091A01;LINKAGE=A

B_c^+ MEAN LIFE

NODE=S091T

NODE=S091T

→ UNCHECKED ←

VALUE (10^{-12} s)			DOCUMENT ID		TECN	COMMENT
0.510 ±0.009 OUR EVALUATION			(Produced by HFLAV)			
0.510 ±0.009 OUR AVERAGE						
0.541	±0.026	±0.014	[1] SIRUNYAN	18BY	CMS	pp at 8 TeV
0.5134	±0.0110	±0.0057	[2,3] AAIJ	15G	LHCB	pp at 7, 8 TeV
0.509	±0.008	±0.012	[4] AAIJ	14G	LHCB	pp at 8 TeV
0.452	±0.048	±0.027	[3] AALTONEN	13	CDF	$p\overline{p}$ at 1.96 TeV
0.448	$^{+0.038}_{-0.036}$	±0.032	[5] ABAZOV	09H	D0	$p\overline{p}$ at 1.96 TeV
0.463	$^{+0.073}_{-0.065}$	±0.036	[5] ABULENCIA	06O	CDF	$p\overline{p}$ at 1.96 TeV
0.46	$^{+0.18}_{-0.16}$	±0.03	[5] ABE	98M	CDF	$p\overline{p}$ 1.8 TeV

[1] The lifetime is measured using the decays $B_c^+ \to J/\psi\pi^+$ and $B^+ \to J/\psi K^+$. NODE=S091T;LINKAGE=C

[2] Also measures the width difference $\Delta\Gamma = \Gamma_{B_c^+} - \Gamma_{B^+} = 4.46 \pm 0.14 \pm 0.07$ mm^{-1} c. NODE=S091T;LINKAGE=AA

[3] Uses fully reconstructed $B_c^+ \to J/\psi\pi^+$ decays. NODE=S091T;LINKAGE=AL

[4] Measured using $B_c^+ \to J/\psi\mu^+\nu_\mu X$ decays. NODE=S091T;LINKAGE=B

[5] The lifetime is measured from the $J/\psi e$ decay vertices. NODE=S091T;LINKAGE=A

B_c^+ DECAY MODES × B($\overline{b} \to B_c$)

NODE=S091215;NODE=S091

NODE=S091

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.

	Mode	Fraction (Γ_i/Γ)	Confidence level	
Γ_1	$J/\psi(1S)\ell^+\nu_\ell$ anything	seen		CLUMP=A;DESIG=1;OUR EVAL; → UNCHECKED ←
Γ_2	$J/\psi(1S)\mu^+\nu_\mu$	seen		DESIG=19;OUR EVAL;→ UNCHECKED ←
Γ_3	$J/\psi(1S)\tau^+\nu_\tau$	seen		DESIG=32;OUR EVAL;→ UNCHECKED ←
Γ_4	$J/\psi(1S)\pi^+$	seen		DESIG=2;OUR EVAL;→ UNCHECKED ←
Γ_5	$J/\psi(1S)K^+$	seen		DESIG=14;OUR EVAL;→ UNCHECKED ←
Γ_6	$J/\psi(1S)\pi^+\pi^0$			DESIG=56
Γ_7	$J/\psi(1S)\pi^+\pi^+\pi^-$	seen		DESIG=3;OUR EVAL;→ UNCHECKED ←
Γ_8	$J/\psi(1S)K^+\pi^-\pi^+$			DESIG=51
Γ_9	$J/\psi(1S)K^+K^-K^+$			DESIG=52
Γ_{10}	$J/\psi(1S)a_1(1260)$	not seen		DESIG=4;OUR EVAL;→ UNCHECKED ←
Γ_{11}	$J/\psi(1S)K^+K^-\pi^+$	seen		DESIG=17;OUR EVAL;→ UNCHECKED ←
Γ_{12}	$J/\psi(1S)\pi^+\pi^+\pi^+\pi^-\pi^-$	seen		DESIG=18;OUR EVAL;→ UNCHECKED ←
Γ_{13}	$\psi(2S)\pi^+$	seen		DESIG=11;OUR EVAL;→ UNCHECKED ←
Γ_{14}	$\psi(2S)\pi^+\pi^-\pi^+$			DESIG=53
Γ_{15}	$\psi(2S)K^+K^-\pi^+$			DESIG=54
Γ_{16}	$J/\psi(1S)D^0K^+$	seen		DESIG=22;OUR EVAL;→ UNCHECKED ←
Γ_{17}	$J/\psi(1S)D^*(2007)^0K^+$	seen		DESIG=23;OUR EVAL;→ UNCHECKED ←
Γ_{18}	$J/\psi(1S)D^*(2010)^+K^{*0}$	seen		DESIG=24;OUR EVAL;→ UNCHECKED ←
Γ_{19}	$J/\psi(1S)D^+K^{*0}$	seen		DESIG=25;OUR EVAL;→ UNCHECKED ←
Γ_{20}	$J/\psi(1S)D_s^+$	seen		DESIG=12;OUR EVAL;→ UNCHECKED ←
Γ_{21}	$J/\psi(1S)D_s^{*+}$	seen		DESIG=13;OUR EVAL;→ UNCHECKED ←
Γ_{22}	$J/\psi(1S)p\overline{p}\pi^+$	seen		DESIG=20;OUR EVAL;→ UNCHECKED ←
Γ_{23}	$\chi_{c0}\pi^+$			DESIG=26
Γ_{24}	$\chi_{c1}\pi^+$			DESIG=58
Γ_{25}	$\chi_{c2}\pi^+$			DESIG=57
Γ_{26}	$p\overline{p}\pi^+$	not seen		DESIG=21;OUR EVAL;→ UNCHECKED ←
Γ_{27}	D^0K^+	seen		DESIG=27;OUR EVAL;→ UNCHECKED ←
Γ_{28}	$D^0\pi^+$	not seen		DESIG=28;OUR EVAL;→ UNCHECKED ←
Γ_{29}	$D^{*0}\pi^+$	not seen		DESIG=29;OUR EVAL;→ UNCHECKED ←
Γ_{30}	$D^{*0}K^+$	not seen		DESIG=31;OUR EVAL;→ UNCHECKED ←
Γ_{31}	$D_s^+\overline{D}^0$	$<7.2\times10^{-4}$	90%	DESIG=33
Γ_{32}	$D_s^+D^0$	$<3.0\times10^{-4}$	90%	DESIG=35
Γ_{33}	$D^+\overline{D}^0$	$<1.9\times10^{-4}$	90%	DESIG=36
Γ_{34}	D^+D^0	$<1.4\times10^{-4}$	90%	DESIG=37
Γ_{35}	$D_s^{*+}\overline{D}^0$	$<5.3\times10^{-4}$	90%	DESIG=38
Γ_{36}	$D_s^+\overline{D}^*(2007)^0$	$<4.6\times10^{-4}$	90%	DESIG=39
Γ_{37}	$D_s^{*+}D^0$	$<9\times10^{-4}$	90%	DESIG=40
Γ_{38}	$D_s^+D^*(2007)^0$	$<6.6\times10^{-4}$	90%	DESIG=41
Γ_{39}	$D^*(2010)^+\overline{D}^0$	$<3.8\times10^{-4}$	90%	DESIG=5
Γ_{40}	$D^*(2010)^+\overline{D}^0$, $D^{*+} \to D^+\pi^0/\gamma$	not seen		DESIG=49;OUR EVAL;→ UNCHECKED ←
Γ_{41}	$D^+\overline{D}^*(2007)^0$	$<6.5\times10^{-4}$	90%	DESIG=42
Γ_{42}	$D^*(2007)^+D^0$	$<2.0\times10^{-4}$	90%	DESIG=50
Γ_{43}	$D^*(2010)^+D^0$, $D^{*+} \to D^+\pi^0/\gamma$	not seen		DESIG=43;OUR EVAL;→ UNCHECKED ←
Γ_{44}	$D^+D^*(2007)^0$	$<3.7\times10^{-4}$	90%	DESIG=44
Γ_{45}	$D_s^{*+}\overline{D}^*(2007)^0$	$<1.3\times10^{-3}$	90%	DESIG=45
Γ_{46}	$D_s^{*+}D^*(2007)^0$	$<1.3\times10^{-3}$	90%	DESIG=46
Γ_{47}	$D^*(2010)^+\overline{D}^*(2007)^0$	$<1.0\times10^{-3}$	90%	DESIG=47
Γ_{48}	$D^*(2010)^+D^*(2007)^0$	$<7.7\times10^{-4}$	90%	DESIG=48
Γ_{49}	D^+K^{*0}	not seen		DESIG=6;OUR EVAL;→ UNCHECKED ←

Γ_{50}	$D^+\overline{K}^{*0}$	not seen	DESIG=7;OUR EVAL;→ UNCHECKED ←
Γ_{51}	$D_s^+ K^{*0}$	not seen	DESIG=8;OUR EVAL;→ UNCHECKED ←
Γ_{52}	$D_s^+\overline{K}^{*0}$	not seen	DESIG=9;OUR EVAL;→ UNCHECKED ←
Γ_{53}	$D_s^+\phi$	not seen	DESIG=10;OUR EVAL;→ UNCHECKED ←
Γ_{54}	K^+K^0	not seen	DESIG=15;OUR EVAL;→ UNCHECKED ←
Γ_{55}	$B_s^0\pi^+$ / B($\overline{b}\to\ B_s$)	seen	DESIG=16;OUR EVAL;→ UNCHECKED ←
Γ_{56}	$B_s^0\pi^+$		DESIG=55
Γ_{57}	$\pi^+\mu^+\mu^-$		DESIG=59
Γ_{58}	$D_s^+\mu^+\mu^-$		DESIG=60

B_c^+ BRANCHING RATIOS

NODE=S091225

$\Gamma(J/\psi(1S)\ell^+\nu_\ell\text{anything})/\Gamma_{\text{total}}\times B(\overline{b}\to\ B_c)$ $\Gamma_1/\Gamma\times B$

NODE=S091R1
NODE=S091R1

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
8.2±1.3 OUR AVERAGE		Error includes scale factor of 1.4.			
$8.8\pm1.0\pm0.2$		[1,2] AALTONEN	16A	CDF	$p\overline{p}$ at 1.96 TeV
$5.2^{+2.4}_{-2.1}$		[3] ABE	98M	CDF	$p\overline{p}$ 1.8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<16	90	[4] ACKERSTAFF	98O	OPAL	$e^+e^-\to\ Z$
<19	90	[5] ABREU	97E	DLPH	$e^+e^-\to\ Z$
<12	90	[6] BARATE	97H	ALEP	$e^+e^-\to\ Z$

[1] AALTONEN 16A reports $[\Gamma(B_c^+\to\ J/\psi(1S)\ell^+\nu_\ell\text{anything})/\Gamma_{\text{total}}\times B(\overline{b}\to\ B_c)]$ / $[B(\overline{b}\to\ B^+)]$ / $[B(B^+\to\ J/\psi(1S)K^+)] = 0.211\pm0.012^{+0.021}_{-0.020}$ which we multiply by our best values $B(\overline{b}\to\ B^+) = (40.8\pm0.7)\times10^{-2}$, $B(B^+\to\ J/\psi(1S)K^+) = (1.020\pm0.019)\times10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best values. NODE=S091R1;LINKAGE=E

[2] AALTONEN 16A also measures the cross-section $\sigma(B_c)\times B(B_c\to\ J/\psi\mu\nu_\mu) = 0.60\pm0.09$ nb and estimates the total cross-section $\sigma(B_c)$ to be in the range 25 ± 4 to 52 ± 8 nb for $p_T(B_c) > 6$ GeV/c and $|y(B_c)| < 1$. NODE=S091R1;LINKAGE=F

[3] ABE 98M result is derived from the measurement of $[\sigma(B_c)\times B(B_c\to\ J/\psi(1S)\ell\nu_\ell)]$ / $[\sigma(B^+)\times B(B^+\to\ J/\psi(1S)K^+)] = 0.132^{+0.041}_{-0.037}(\text{stat})\pm0.031(\text{sys})^{+0.032}_{-0.020}(\text{lifetime})$ by using PDG 98 values of $B(b\to\ B^+)$ and $B(B^+\to\ J/\psi(1S)K^+)$. NODE=S091R1;LINKAGE=C

[4] ACKERSTAFF 98O reports $B(Z\to\ B_cX)/B(Z\to\ q\overline{q})\times B(B_c\to\ J/\psi(1S)\ell\nu_\ell) < 6.95\times10^{-5}$ at 90%CL. We rescale to our PDG 98 values of $B(Z\to\ b\overline{b})$. NODE=S091R1;LINKAGE=D

[5] ABREU 97E value listed is for an assumed $\tau_{B_c} = 0.4$ ps and improves to 1.6×10^{-4} for $\tau_{B_c} = 1.4$ ps. NODE=S091R1;LINKAGE=A

[6] BARATE 97H reports $B(Z\to\ B_cX)/B(Z\to\ q\overline{q})\cdot B(B_c\to\ J/\psi(1S)\ell\nu_\ell) < 5.2\times10^{-5}$ at 90%CL. We rescale to our PDG 96 values of $B(Z\to\ b\overline{b})$. A $B_c^+\to\ J/\psi(1S)\mu^+\nu_\mu$ candidate event is found, compared to all the known background sources 2×10^{-3}, which gives $m_{B_c} = 5.96^{+0.25}_{-0.19}$ GeV and $\tau_{B_c} = 1.77\pm0.17$ ps. NODE=S091R1;LINKAGE=B

$\Gamma(J/\psi(1S)\tau^+\nu_\tau)/\Gamma(J/\psi(1S)\mu^+\nu_\mu)$ Γ_3/Γ_2

NODE=S091R29
NODE=S091R29

VALUE	DOCUMENT ID		TECN	COMMENT
0.71±0.17±0.18	[1] AAIJ	18C	LHCB	pp at 7, 8 TeV

[1] AAIJ 18C uses $\tau^+\to\ \mu^+\nu_\mu\overline{\nu}_\tau$ mode to obtain the ratio value. NODE=S091R29;LINKAGE=A

$\Gamma(J/\psi(1S)\pi^+)/\Gamma_{\text{total}}\times B(\overline{b}\to\ B_c)$ $\Gamma_4/\Gamma\times B$

NODE=S091R2
NODE=S091R2

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
seen		[1] AABOUD	21	ATLS	pp at 8 TeV
seen		[2] AAIJ	15M	LHCB	pp at 8 TeV
seen		[3] KHACHATRY...	15AA	CMS	pp at 7 TeV
seen		AALTONEN	13	CDF	$p\overline{p}$ at 1.96 TeV
seen		[4] AAIJ	12AV	LHCB	pp at 7 TeV
seen		AALTONEN	08M	CDF	$p\overline{p}$ at 1.96 TeV
seen		ABAZOV	08T	D0	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<2.4\times10^{-4}$	90	[5] ACKERSTAFF	98O	OPAL	$e^+e^-\to\ Z$
$<3.4\times10^{-4}$	90	[6] ABREU	97E	DLPH	$e^+e^-\to\ Z$
$<8.2\times10^{-5}$	90	[7] BARATE	97H	ALEP	$e^+e^-\to\ Z$
$<2.0\times10^{-5}$	95	[8] ABE	96R	CDF	$p\overline{p}$ 1.8 TeV

[1] AABOUD 21 reports a measurement of $B(B_c^+ \to J/\psi\pi^+)$ / $B(B^+ \to J/\psi K^+) \cdot f_c/f_u = (0.34 \pm 0.04^{+0.06}_{-0.02} \pm 0.01)$ %, at $p_T > 13$ GeV and $|y| < 2.3$. NODE=S091R2;LINKAGE=G

[2] AAIJ 15M reports a measurement of $B(B_c^+ \to J/\psi\pi^+)$ / $B(B^+ \to J/\psi K^+) \cdot f_c/f_u = (0.683 \pm 0.018 \pm 0.009)$% at $p_T(B) < 20$ GeV and $2.0 < y(B) < 4.5$. NODE=S091R2;LINKAGE=E

[3] KHACHATRYAN 15AA reports a measurement of $B(B_c^+ \to J/\psi\pi^+)$ / $B(B^+ \to J/\psi K^+) \cdot f_c/f_u = (0.48 \pm 0.05 \pm 0.03 \pm 0.05)$%, at $p_T > 15$ GeV and $|\eta(B)| < 1.6$. NODE=S091R2;LINKAGE=F

[4] AAIJ 12AV reports a measurement of $B(B_c^+ \to J/\psi\pi^+)/B(B^+ \to J/\psi K^+)$ $f_c/f_u = (0.68 \pm 0.10 \pm 0.03 \pm 0.05)$% at $p_T(B) > 4$ GeV and $2.5 < \eta(B) < 4.5$. NODE=S091R2;LINKAGE=AA

[5] ACKERSTAFF 98O reports $B(Z \to B_c X)/B(Z \to q\bar{q}) \times B(B_c \to J/\psi(1S)\pi^+) < 1.06 \times 10^{-4}$ at 90%CL. We rescale to our PDG 98 values of $B(Z \to b\bar{b})$. NODE=S091R2;LINKAGE=D

[6] ABREU 97E value listed is for an assumed $\tau_{B_c} = 0.4$ ps and improves to 2.7×10^{-4} for $\tau_{B_c} = 1.4$ ps. NODE=S091R2;LINKAGE=A

[7] BARATE 97H reports $B(Z \to B_c X)/B(Z \to q\bar{q}) \cdot B(B_c \to J/\psi(1S)\pi) < 3.6 \times 10^{-5}$ at 90%CL. We rescale to our PDG 96 values of $B(Z \to b\bar{b})$. NODE=S091R2;LINKAGE=B

[8] ABE 96R reports $B(b \to B_c X)/B(b \to B^+ X) \cdot B(B_c^+ \to J/\psi(1S)\pi^+)/B(B^+ \to J/\psi(1S)K^+) < 0.053$ at 95%CL for $\tau_{B_c} = 0.8$ ps. It changes from 0.15 to 0.04 for 0.17 ps$< \tau_{B_c} <$ 1.6 ps. We rescale to our PDG 96 values of $B(b \to B^+) = 0.378 \pm 0.022$ and $B(B^+ \to J/\psi(1S)K^+) = 0.00101 \pm 0.00014$. NODE=S091R2;LINKAGE=C

$\Gamma(J/\psi(1S)\pi^+)/\Gamma(J/\psi(1S)\mu^+\nu_\mu)$ Γ_4/Γ_2

NODE=S091R17
NODE=S091R17

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
4.69±0.28±0.46	[1] AAIJ	14W	LHCB	pp at 7 TeV

[1] AAIJ 14W reports also a measurement $B(B_c^+ \to J/\psi\pi^+)$ / $B(B_c^+ \to J/\psi\mu^+\nu_\mu) = 0.271 \pm 0.016 \pm 0.016$ in the region $m_{J/\psi\mu^+} > 5.3$ GeV. NODE=S091R17;LINKAGE=A

$\Gamma(J/\psi(1S)K^+)/\Gamma(J/\psi(1S)\pi^+)$ Γ_5/Γ_4

NODE=S091R14
NODE=S091R14

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.079±0.007±0.003		AAIJ	16AF	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.069±0.019±0.005	50	AAIJ	13BY	LHCB	Repl. by AAIJ 16AF

$\Gamma(J/\psi(1S)\pi^+\pi^0)/\Gamma(J/\psi(1S)\pi^+)$ Γ_6/Γ_4

NODE=S091R65
NODE=S091R65

VALUE	DOCUMENT ID		TECN	COMMENT
2.80±0.15±0.19	AAIJ	24L	LHCB	pp at 7, 8, 13 TeV

$\Gamma(J/\psi(1S)\pi^+\pi^+\pi^-)/\Gamma_{total} \times B(\bar{b} \to B_c)$ $\Gamma_7/\Gamma \times B$

NODE=S091R3
NODE=S091R3

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
seen		AAIJ	12Y	LHCB	pp at 7 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<5.7 \times 10^{-4}$	90	[1] ABREU	97E	DLPH	$e^+e^- \to Z$

[1] ABREU 97E value listed is independent of 0.4 ps$< \tau_{B_c} <$ 1.4 ps. NODE=S091R3;LINKAGE=A

$\Gamma(J/\psi(1S)\pi^+\pi^+\pi^-)/\Gamma(J/\psi(1S)\pi^+)$ Γ_7/Γ_4

NODE=S091R01
NODE=S091R01

VALUE	DOCUMENT ID		TECN	COMMENT
2.4 ±0.4 OUR AVERAGE				
$2.55 \pm 0.80 \pm 0.33^{+0.04}_{-0.01}$	KHACHATRY...15AA		CMS	pp at 7 TeV
2.41±0.30±0.33	AAIJ	12Y	LHCB	pp at 7 TeV

$\Gamma(J/\psi(1S)a_1(1260))/\Gamma_{total} \times B(\bar{b} \to B_c)$ $\Gamma_{10}/\Gamma \times B$

NODE=S091R4
NODE=S091R4

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.2 \times 10^{-3}$	90	[1] ACKERSTAFF	98O	OPAL	$e^+e^- \to Z$

[1] ACKERSTAFF 98O reports $B(Z \to B_c X)/B(Z \to q\bar{q}) \times B(B_c \to J/\psi(1S)a_1(1260)) < 5.29 \times 10^{-4}$ at 90%CL. We rescale to our PDG 98 values of $B(Z \to b\bar{b})$. NODE=S091R4;LINKAGE=D

$\Gamma(J/\psi(1S)K^+K^-\pi^+)/\Gamma_{total} \times B(\bar{b} \to B_c)$ $\Gamma_{11}/\Gamma \times B$

NODE=S091R03
NODE=S091R03

VALUE	DOCUMENT ID		TECN	COMMENT
seen	[1] AAIJ	13CA	LHCB	pp at 7, 8 TeV

[1] A signal yield of 78 ± 14 decays is reported with a significance of 6.2 standard deviations using an integrated luminosity of 3 fb^{-1} data. NODE=S091R03;LINKAGE=AA

$\Gamma(J/\psi(1S)K^+K^-\pi^+)/\Gamma(J/\psi(1S)\pi^+)$ Γ_{11}/Γ_4

NODE=S091R04
NODE=S091R04

VALUE	DOCUMENT ID		TECN	COMMENT
0.53±0.10±0.05	[1] AAIJ	13CA	LHCB	pp at 7, 8 TeV

[1] A signal yield of 78 ± 14 decays is reported with a significance of 6.2 standard deviations using an integrated luminosity of 3 fb^{-1} data.

NODE=S091R04;LINKAGE=AA

$\Gamma(J/\psi(1S)\pi^+\pi^+\pi^+\pi^-\pi^-)/\Gamma(J/\psi(1S)\pi^+)$ Γ_{12}/Γ_4

NODE=S091R16
NODE=S091R16

VALUE	DOCUMENT ID		TECN	COMMENT
1.74±0.44±0.24	[1] AAIJ	14P	LHCB	pp at 7, 8 TeV

[1] A signal yield of 32 ± 8 decays is reported with a significance of 4.5 standard deviations.

NODE=S091R16;LINKAGE=A

$\Gamma(J/\psi(1S)D_s^+)/\Gamma_{\text{total}} \times B(\overline{b} \to B_c)$ $\Gamma_{20}/\Gamma \times B$

NODE=S091R69
NODE=S091R69

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
6.7±0.8±0.1	[1] AAIJ	24F	LHCB	pp at 7, 8, 13 TeV

[1] AAIJ 24F reports $[\Gamma(B_c^+ \to J/\psi(1S)D_s^+)/\Gamma_{\text{total}} \times B(\overline{b} \to B_c)]$ / $[B(\overline{b} \to B^+)]$ = (1.63 ± 0.15 ± 0.13) × 10^{-5} which we multiply by our best value $B(\overline{b} \to B^+)$ = (40.8 ± 0.7) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S091R69;LINKAGE=C

$\Gamma(J/\psi(1S)D_s^{*+})/\Gamma(J/\psi(1S)D_s^+)$ Γ_{21}/Γ_{20}

NODE=S091R71
NODE=S091R71

VALUE	DOCUMENT ID		TECN	COMMENT
1.91±0.20±0.07	AAIJ	24F	LHCB	pp at 7, 8, 13 TeV

$\Gamma(\psi(2S)\pi^+)/\Gamma(J/\psi(1S)\pi^+)$ Γ_{13}/Γ_4

NODE=S091R11
NODE=S091R11

VALUE	DOCUMENT ID		TECN	COMMENT
0.254±0.018±0.006	[1,2] AAIJ	24W	LHCB	pp at 7, 8 and 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.268±0.032±0.007±0.006	[3,4] AAIJ	15AY	LHCB	pp at 7, 8 TeV
0.250±0.068±0.014±0.006	[3] AAIJ	13AM	LHCB	Repl. by AAIJ 15AY

[1] The last uncertainty includes the uncertainties on the branching fractions of the leptonic J/ψ and $\psi(2S)$ decays (±0.005).

NODE=S091R11;LINKAGE=A

[2] Supersedes AAIJ 15AY.

NODE=S091R11;LINKAGE=B

[3] The last uncertainty is due to the uncertainty of the $B(\psi(2S) \to \mu^+\mu^-)/B(J/\psi \to \mu^+\mu^-)$ ratio measurement.

NODE=S091R11;LINKAGE=AA

[4] Replaced by AAIJ 24W.

NODE=S091R11;LINKAGE=C

$\Gamma(\psi(2S)\pi^+)/\Gamma(J/\psi(1S)\pi^+\pi^+\pi^-)$ Γ_{13}/Γ_7

NODE=S091R62
NODE=S091R62

VALUE	DOCUMENT ID		TECN	COMMENT
(3.5±0.6±0.2) × 10^{-2}	AAIJ	22P	LHCB	pp at 7, 8, 13 TeV

$\Gamma(\psi(2S)K^+K^-\pi^+)/\Gamma(J/\psi(1S)K^+K^-\pi^+)$ Γ_{15}/Γ_{11}

NODE=S091R61
NODE=S091R61

VALUE	DOCUMENT ID		TECN	COMMENT
(3.7±1.2±0.1) × 10^{-2}	AAIJ	22P	LHCB	pp at 7, 8, 13 TeV

$\Gamma(J/\psi(1S)K^+K^-K^+)/\Gamma(J/\psi(1S)K^+K^-\pi^+)$ Γ_9/Γ_{11}

NODE=S091R59
NODE=S091R59

VALUE	DOCUMENT ID		TECN	COMMENT
(7.0±1.8±0.2) × 10^{-2}	AAIJ	22P	LHCB	pp at 7, 8, 13 TeV

$\Gamma(J/\psi(1S)K^+\pi^-\pi^+)/\Gamma(J/\psi(1S)K^+K^-\pi^+)$ Γ_8/Γ_{11}

NODE=S091R60
NODE=S091R60

VALUE	DOCUMENT ID		TECN	COMMENT
0.35±0.06±0.01	AAIJ	22P	LHCB	pp at 7, 8, 13 TeV

$\Gamma(J/\psi(1S)K^+K^-\pi^+)/\Gamma(J/\psi(1S)\pi^+\pi^+\pi^-)$ Γ_{11}/Γ_7

NODE=S091R58
NODE=S091R58

VALUE	DOCUMENT ID		TECN	COMMENT
0.185±0.013±0.006	AAIJ	22P	LHCB	pp at 7, 8, 13 TeV

$\Gamma(\psi(2S)\pi^+\pi^-\pi^+)/\Gamma(J/\psi(1S)\pi^+\pi^+\pi^-)$ Γ_{14}/Γ_7

NODE=S091R63
NODE=S091R63

VALUE	DOCUMENT ID		TECN	COMMENT
(1.9±0.4±0.1) × 10^{-2}	AAIJ	22P	LHCB	pp at 7, 8, 13 TeV

$\Gamma(J/\psi(1S)D^0K^+)/\Gamma(J/\psi(1S)\pi^+)$ Γ_{16}/Γ_4

NODE=S091R05
NODE=S091R05

VALUE	DOCUMENT ID		TECN	COMMENT
0.432±0.136±0.028	AAIJ	17L	LHCB	pp at 7, 8 TeV

$\Gamma(J/\psi(1S)D^*(2007)^0K^+)/\Gamma(J/\psi(1S)D^0K^+)$ Γ_{17}/Γ_{16}

NODE=S091R20
NODE=S091R20

VALUE	DOCUMENT ID		TECN	COMMENT
5.1±1.8±0.4	AAIJ	17L	LHCB	pp at 7, 8 TeV

$\Gamma(J/\psi(1S)D^*(2010)^+K^{*0})/\Gamma(J/\psi(1S)D^0K^+)$ Γ_{18}/Γ_{16}

NODE=S091R21
NODE=S091R21

VALUE	DOCUMENT ID		TECN	COMMENT
2.10±1.08±0.34	AAIJ	17L	LHCB	pp at 7, 8 TeV

$\Gamma(J/\psi(1S)D^+K^{*0})/\Gamma(J/\psi(1S)D^0K^+)$ Γ_{19}/Γ_{16}

NODE=S091R22
NODE=S091R22

VALUE	DOCUMENT ID		TECN	COMMENT
0.63±0.39±0.08	AAIJ	17L	LHCB	pp at 7, 8 TeV

$\Gamma(J/\psi(1S)D_s^+)/\Gamma(J/\psi(1S)\pi^+)$ Γ_{20}/Γ_4

NODE=S091R12
NODE=S091R12

VALUE	DOCUMENT ID		TECN	COMMENT
2.8 ±0.4 OUR AVERAGE				
2.76±0.33±0.33	[1] AAD	22O	ATLS	pp at 13 TeV
2.90±0.57±0.24	AAIJ	13AS	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3.8 ±1.1 ±0.4	AAD	16H	ATLS	pp at 7, 8 TeV

[1] Supersedes the measurement of AAD 16H.

NODE=S091R12;LINKAGE=A

$\Gamma(J/\psi(1S)D_s^{*+})/\Gamma(J/\psi(1S)\pi^+)$ Γ_{21}/Γ_4

NODE=S091R19
NODE=S091R19

VALUE	DOCUMENT ID		TECN	COMMENT
5.33±0.61±0.74	AAD	22O	ATLS	pp at 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
10.4 ±3.1 ±1.6	AAD	16H	ATLS	Repl. by AAD 22O

$\Gamma(J/\psi(1S)D_s^{*+})/\Gamma(J/\psi(1S)D_s^+)$ Γ_{21}/Γ_{20}

NODE=S091R13
NODE=S091R13

VALUE	DOCUMENT ID		TECN	COMMENT
2.00±0.23 OUR AVERAGE				
1.93±0.24±0.09	[1] AAD	22O	ATLS	pp at 13 TeV
2.37±0.56±0.10	AAIJ	13AS	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$2.8\ ^{+1.2}_{-0.8}\ \pm0.3$	AAD	16H	ATLS	pp at 7, 8 TeV

[1] Supersedes the measurement of AAD 16H.

NODE=S091R13;LINKAGE=A

$\Gamma(J/\psi(1S)p\bar{p}\pi^+)/\Gamma(J/\psi(1S)\pi^+)$ Γ_{22}/Γ_4

NODE=S091R18
NODE=S091R18

VALUE	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.143^{+0.041}_{=0.036}}$	AAIJ	14AQ	LHCB	pp at 7, 8 TeV

$\Gamma(\chi_{c0}\pi^+)/\Gamma_{\text{total}}\times B(\bar{b}\to B_c)$ $\Gamma_{23}/\Gamma\times B$

NODE=S091R23
NODE=S091R23

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
$\mathbf{24.0^{+8.6}_{-7.6}\pm0.4}$	[1,2] AAIJ	16AT	LHCB	pp at 7 and 8 TeV

[1] AAIJ 16AT reports $[\Gamma(B_c^+\to\chi_{c0}\pi^+)/\Gamma_{\text{total}}\times B(\bar{b}\to B_c)]\times[\Gamma(\bar{b}\to B^+)/\Gamma_{\text{total}}] = (9.8^{+3.4}_{-3.0}\pm0.8)\times10^{-6}$ which we divide by our best value $\Gamma(\bar{b}\to B^+)/\Gamma_{\text{total}} = 0.408\pm0.007$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S091R23;LINKAGE=A

[2] The significance of the observed signal is 4.0 standard deviations.

NODE=S091R23;LINKAGE=B

$\Gamma(\chi_{c1}\pi^+)/\Gamma(\chi_{c2}\pi^+)$ Γ_{24}/Γ_{25}

NODE=S091R67
NODE=S091R67

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.49	90	AAIJ	24I	LHCB	pp at 7, 8 and 13 TeV

$\Gamma(\chi_{c2}\pi^+)/\Gamma(J/\psi(1S)\pi^+)$ Γ_{25}/Γ_4

NODE=S091R66
NODE=S091R66

VALUE	DOCUMENT ID		TECN	COMMENT
0.37±0.06±0.022	[1] AAIJ	24I	LHCB	pp at 7, 8 and 13 TeV

[1] The last uncertainty includes the knowledge of the $\chi_{c2}\to J/\psi\gamma$ branching fraction (±0.01).

NODE=S091R66;LINKAGE=A

$\Gamma(p\bar{p}\pi^+)/\Gamma_{\text{total}}$ Γ_{26}/Γ

NODE=S091R00
NODE=S091R00

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	[1] AAIJ	16K	LHCB	pp at 7, 8 TeV

[1] Measures the ratio $(f_c/f_u) \times B(B_c^+ \to p\bar{p}\pi^+) < 3.6 \times 10^{-8}$ at 95% CL, in the region $m(p\bar{p}) < 2.85$ GeV/c^2, where f_c (f_u) represents the fragmentation fraction of the b-quark into the B_c^+ (B_u^+) meson.

NODE=S091R00;LINKAGE=A

$\Gamma(D^0K^+)/\Gamma_{\text{total}} \times B(\bar{b} \to B_c)$ $\Gamma_{27}/\Gamma \times B$

NODE=S091R25
NODE=S091R25

VALUE (units 10^{-7})	DOCUMENT ID		TECN	COMMENT
$\mathbf{3.8^{+1.2}_{-1.0} \pm 0.1}$	[1] AAIJ	17AG	LHCB	pp at 7, 8 TeV

[1] AAIJ 17AG reports $[\Gamma(B_c^+ \to D^0K^+)/\Gamma_{\text{total}} \times B(\bar{b} \to B_c)] / [B(\bar{b} \to B^+)] = (9.3^{+2.8}_{-2.5} \pm 0.6) \times 10^{-7}$ which we multiply by our best value $B(\bar{b} \to B^+) = (40.8 \pm 0.7) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

NODE=S091R25;LINKAGE=A

$\Gamma(D^0\pi^+)/\Gamma_{\text{total}} \times B(\bar{b} \to B_c)$ $\Gamma_{28}/\Gamma \times B$

NODE=S091R26
NODE=S091R26

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{< 1.6 \times 10^{-7}}$	95	[1] AAIJ	17AG	LHCB	pp at 7, 8 TeV

[1] AAIJ 17AG reports $[\Gamma(B_c^+ \to D^0\pi^+)/\Gamma_{\text{total}} \times B(\bar{b} \to B_c)] / [B(\bar{b} \to B^+)] < 3.9 \times 10^{-7}$ which we multiply by our best value $B(\bar{b} \to B^+) = 40.8 \times 10^{-2}$.

NODE=S091R26;LINKAGE=A

$\Gamma(D^{*0}\pi^+)/\Gamma_{\text{total}} \times B(\bar{b} \to B_c)$ $\Gamma_{29}/\Gamma \times B$

NODE=S091R27
NODE=S091R27

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{< 4 \times 10^{-7}}$	95	[1] AAIJ	17AG	LHCB	pp at 7, 8 TeV

[1] AAIJ 17AG reports $[\Gamma(B_c^+ \to D^{*0}\pi^+)/\Gamma_{\text{total}} \times B(\bar{b} \to B_c)] / [B(\bar{b} \to B^+)] < 1.1 \times 10^{-6}$ which we multiply by our best value $B(\bar{b} \to B^+) = 40.8 \times 10^{-2}$.

NODE=S091R27;LINKAGE=A

$\Gamma(D^{*0}K^+)/\Gamma_{\text{total}} \times B(\bar{b} \to B_c)$ $\Gamma_{30}/\Gamma \times B$

NODE=S091R28
NODE=S091R28

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{< 4 \times 10^{-7}}$	95	[1] AAIJ	17AG	LHCB	pp at 7, 8 TeV

[1] AAIJ 17AG reports $[\Gamma(B_c^+ \to D^{*0}K^+)/\Gamma_{\text{total}} \times B(\bar{b} \to B_c)] / [B(\bar{b} \to B^+)] < 1.1 \times 10^{-6}$ which we multiply by our best value $B(\bar{b} \to B^+) = 40.8 \times 10^{-2}$.

NODE=S091R28;LINKAGE=A

$\Gamma(D_s^+\overline{D}^0)/\Gamma_{\text{total}} \times B(\bar{b} \to B_c)$ $\Gamma_{31}/\Gamma \times B$

NODE=S091R30
NODE=S091R30

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{< 1.4 \times 10^{-7}}$	90	[1] AAIJ	18P	LHCB	pp at 7, 8 TeV

[1] AAIJ 18P reports $[\Gamma(B_c^+ \to D_s^+\overline{D}^0)/\Gamma_{\text{total}} \times B(\bar{b} \to B_c)] / [B(\bar{b} \to B^+)] / [B(B^+ \to \overline{D}^0D^+)] < 0.9 \times 10^{-3}$ which we multiply by our best values $B(\bar{b} \to B^+) = 40.8 \times 10^{-2}$, $B(B^+ \to \overline{D}^0D^+) = 3.8 \times 10^{-4}$.

NODE=S091R30;LINKAGE=A

$\Gamma(D_s^+D^0)/\Gamma_{\text{total}} \times B(\bar{b} \to B_c)$ $\Gamma_{32}/\Gamma \times B$

NODE=S091R31
NODE=S091R31

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{< 6 \times 10^{-8}}$	90	[1] AAIJ	18P	LHCB	pp at 7, 8 TeV

[1] AAIJ 18P reports $[\Gamma(B_c^+ \to D_s^+D^0)/\Gamma_{\text{total}} \times B(\bar{b} \to B_c)] / [B(\bar{b} \to B^+)] / [B(B^+ \to \overline{D}^0D^+)] < 3.7 \times 10^{-4}$ which we multiply by our best values $B(\bar{b} \to B^+) = 40.8 \times 10^{-2}$, $B(B^+ \to \overline{D}^0D^+) = 3.8 \times 10^{-4}$.

NODE=S091R31;LINKAGE=A

$\Gamma(D^+\overline{D}^0)/\Gamma_{\text{total}} \times B(\bar{b} \to B_c)$ $\Gamma_{33}/\Gamma \times B$

NODE=S091R32
NODE=S091R32

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{< 3.0 \times 10^{-6}}$	90	[1] AAIJ	18P	LHCB	pp at 7, 8 TeV

[1] AAIJ 18P reports $[\Gamma(B_c^+ \to D^+\overline{D}^0)/\Gamma_{\text{total}} \times B(\bar{b} \to B_c)] / [B(\bar{b} \to B^+)] / [B(B^+ \to \overline{D}^0D^+)] < 1.9 \times 10^{-2}$ which we multiply by our best values $B(\bar{b} \to B^+) = 40.8 \times 10^{-2}$, $B(B^+ \to \overline{D}^0D^+) = 3.8 \times 10^{-4}$.

NODE=S091R32;LINKAGE=A

$\Gamma(D^+D^0)/\Gamma_{\text{total}} \times B(\bar{b} \to B_c)$ $\Gamma_{34}/\Gamma \times B$

NODE=S091R33
NODE=S091R33

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$< 1.9 \times 10^{-6}$	90	[1] AAIJ	18P	LHCB	Repl. by AAIJ 21AF

[1] AAIJ 18P reports $[\Gamma(B_c^+ \to D^+D^0)/\Gamma_{\text{total}} \times B(\bar{b} \to B_c)] / [B(\bar{b} \to B^+)] / [B(B^+ \to \overline{D}^0D^+)] < 1.2 \times 10^{-2}$ which we multiply by our best values $B(\bar{b} \to B^+) = 40.8 \times 10^{-2}$, $B(B^+ \to \overline{D}^0D^+) = 3.8 \times 10^{-4}$.

NODE=S091R33;LINKAGE=A

$\left[\Gamma(D_s^{*+}\overline{D}^0)+\Gamma(D_s^+\overline{D}^*(2007)^0)\right]/\Gamma_{\rm total}\times B(\overline{b}\to B_c)$ $(\Gamma_{35}+\Gamma_{36})/\Gamma\times B$

NODE=S091R34
NODE=S091R34

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<4\times10^{-7}$	90	[1] AAIJ	18P LHCB	Repl. by AAIJ 21AF

[1] AAIJ 18P reports $[\left[\Gamma(B_c^+\to D_s^{*+}\overline{D}^0)+\Gamma(B_c^+\to D_s^+\overline{D}^*(2007)^0)\right]/\Gamma_{\rm total}\times B(\overline{b}\to B_c)]$ / $[B(\overline{b}\to B^+)]$ / $[B(B^+\to\overline{D}^0D^+)]<2.8\times10^{-3}$ which we multiply by our best values $B(\overline{b}\to B^+)=40.8\times10^{-2}$, $B(B^+\to\overline{D}^0D^+)=3.8\times10^{-4}$.

NODE=S091R34;LINKAGE=A

$\left[\Gamma(D_s^{*+}D^0)+\Gamma(D_s^+D^*(2007)^0)\right]/\Gamma_{\rm total}\times B(\overline{b}\to B_c)$ $(\Gamma_{37}+\Gamma_{38})/\Gamma\times B$

NODE=S091R35
NODE=S091R35

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<5\times10^{-7}$	90	[1] AAIJ	18P LHCB	Repl. by AAIJ 21AF

[1] AAIJ 18P reports $[\left[\Gamma(B_c^+\to D_s^{*+}D^0)+\Gamma(B_c^+\to D_s^+D^*(2007)^0)\right]/\Gamma_{\rm total}\times B(\overline{b}\to B_c)]$ / $[B(\overline{b}\to B^+)]$ / $[B(B^+\to\overline{D}^0D^+)]<3.0\times10^{-3}$ which we multiply by our best values $B(\overline{b}\to B^+)=40.8\times10^{-2}$, $B(B^+\to\overline{D}^0D^+)=3.8\times10^{-4}$.

NODE=S091R35;LINKAGE=A

$\Gamma(D^*(2010)^+\overline{D}^0)/\Gamma_{\rm total}\times B(\overline{b}\to B_c)$ $\Gamma_{39}/\Gamma\times B$

NODE=S091R5
NODE=S091R5

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<6.2\times10^{-3}$	90	[1] BARATE	98Q ALEP	$e^+e^-\to Z$

[1] BARATE 98Q reports $B(Z\to B_cX)\times B(B_c\to D^*(2010)^+\overline{D}^0)<1.9\times10^{-3}$ at 90%CL. We rescale to our PDG 98 values of $B(Z\to b\overline{b})$.

NODE=S091R5;LINKAGE=A

$\left[\Gamma(D^*(2010)^+\overline{D}^0,\ D^{*+}\to D^+\pi^0/\gamma)+\Gamma(D^+\overline{D}^*(2007)^0)\right]/\Gamma_{\rm total}\times B(\overline{b}\to B_c)$ $(\Gamma_{40}+\Gamma_{41})/\Gamma\times B$

NODE=S091R36
NODE=S091R36

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<9\times10^{-6}$	90	[1] AAIJ	18P LHCB	Repl. by AAIJ 21AF

[1] AAIJ 18P reports $[\left[\Gamma(B_c^+\to D^*(2010)^+\overline{D}^0,\ D^{*+}\to D^+\pi^0/\gamma)+\Gamma(B_c^+\to D^+\overline{D}^*(2007)^0)\right]/\Gamma_{\rm total}\times B(\overline{b}\to B_c)]$ / $[B(\overline{b}\to B^+)]$ / $[B(B^+\to\overline{D}^0D^+)]<5.5\times10^{-2}$ which we multiply by our best values $B(\overline{b}\to B^+)=40.8\times10^{-2}$, $B(B^+\to\overline{D}^0D^+)=3.8\times10^{-4}$.

NODE=S091R36;LINKAGE=A

$\left[\Gamma(D^*(2010)^+D^0,\ D^{*+}\to D^+\pi^0/\gamma)+\Gamma(D^+D^*(2007)^0)\right]/\Gamma_{\rm total}\times B(\overline{b}\to B_c)$ $(\Gamma_{43}+\Gamma_{44})/\Gamma\times B$

NODE=S091R37
NODE=S091R37

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<3.4\times10^{-6}$	90	[1] AAIJ	18P LHCB	Repl. by AAIJ 21AF

[1] AAIJ 18P reports $[\left[\Gamma(B_c^+\to D^*(2010)^+D^0,\ D^{*+}\to D^+\pi^0/\gamma)+\Gamma(B_c^+\to D^+D^*(2007)^0)\right]/\Gamma_{\rm total}\times B(\overline{b}\to B_c)]$ / $[B(\overline{b}\to B^+)]$ / $[B(B^+\to\overline{D}^0D^+)]<2.2\times10^{-2}$ which we multiply by our best values $B(\overline{b}\to B^+)=40.8\times10^{-2}$, $B(B^+\to\overline{D}^0D^+)=3.8\times10^{-4}$.

NODE=S091R37;LINKAGE=A

$\Gamma(D_s^{*+}\overline{D}^*(2007)^0)/\Gamma_{\rm total}\times B(\overline{b}\to B_c)$ $\Gamma_{45}/\Gamma\times B$

NODE=S091R38
NODE=S091R38

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<1.7\times10^{-6}$	90	[1] AAIJ	18P LHCB	Repl. by AAIJ 21AF

[1] AAIJ 18P reports $[\Gamma(B_c^+\to D_s^{*+}\overline{D}^*(2007)^0)/\Gamma_{\rm total}\times B(\overline{b}\to B_c)]$ / $[B(\overline{b}\to B^+)]$ / $[B(B^+\to\overline{D}^0D^+)]<1.1\times10^{-2}$ which we multiply by our best values $B(\overline{b}\to B^+)=40.8\times10^{-2}$, $B(B^+\to\overline{D}^0D^+)=3.8\times10^{-4}$.

NODE=S091R38;LINKAGE=A

$\Gamma(D_s^{*+}D^*(2007)^0)/\Gamma_{\rm total}\times B(\overline{b}\to B_c)$ $\Gamma_{46}/\Gamma\times B$

NODE=S091R39
NODE=S091R39

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<3.1\times10^{-6}$	90	[1] AAIJ	18P LHCB	Repl. by AAIJ 21AF

[1] AAIJ 18P reports $[\Gamma(B_c^+\to D_s^{*+}D^*(2007)^0)/\Gamma_{\rm total}\times B(\overline{b}\to B_c)]$ / $[B(\overline{b}\to B^+)]$ / $[B(B^+\to\overline{D}^0D^+)]<2.0\times10^{-2}$ which we multiply by our best values $B(\overline{b}\to B^+)=40.8\times10^{-2}$, $B(B^+\to\overline{D}^0D^+)=3.8\times10^{-4}$.

NODE=S091R39;LINKAGE=A

$\Gamma(D^*(2010)^+ \overline{D}^*(2007)^0)/\Gamma_{total} \times B(\overline{b} \to B_c)$ $\Gamma_{47}/\Gamma \times B$

NODE=S091R40
NODE=S091R40

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<1.0 \times 10^{-4}$	90	[1] AAIJ	18P LHCB	Repl. by AAIJ 21AF

[1] AAIJ 18P reports $[\Gamma(B_c^+ \to D^*(2010)^+ \overline{D}^*(2007)^0)/\Gamma_{total} \times B(\overline{b} \to B_c)] / [B(\overline{b} \to B^+)] / [B(B^+ \to \overline{D}^0 D^+)] < 6.5 \times 10^{-1}$ which we multiply by our best values $B(\overline{b} \to B^+) = 40.8 \times 10^{-2}$, $B(B^+ \to \overline{D}^0 D^+) = 3.8 \times 10^{-4}$.

NODE=S091R40;LINKAGE=A

$\Gamma(D^*(2010)^+ D^*(2007)^0)/\Gamma_{total} \times B(\overline{b} \to B_c)$ $\Gamma_{48}/\Gamma \times B$

NODE=S091R41
NODE=S091R41

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$<2.0 \times 10^{-5}$	90	[1] AAIJ	18P LHCB	Repl. by AAIJ 21AF

[1] AAIJ 18P reports $[\Gamma(B_c^+ \to D^*(2010)^+ D^*(2007)^0)/\Gamma_{total} \times B(\overline{b} \to B_c)] / [B(\overline{b} \to B^+)] / [B(B^+ \to \overline{D}^0 D^+)] < 1.3 \times 10^{-1}$ which we multiply by our best values $B(\overline{b} \to B^+) = 40.8 \times 10^{-2}$, $B(B^+ \to \overline{D}^0 D^+) = 3.8 \times 10^{-4}$.

NODE=S091R41;LINKAGE=A

$\Gamma(D^+ K^{*0})/\Gamma_{total} \times B(\overline{b} \to B_c)$ $\Gamma_{49}/\Gamma \times B$

NODE=S091R06
NODE=S091R06

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$< 2.0 \times 10^{-7}$	90	[1] AAIJ	13R LHCB	pp at 7 TeV

[1] AAIJ 13R reports $[\Gamma(B_c^+ \to D^+ K^{*0})/\Gamma_{total} \times B(\overline{b} \to B_c)] / [B(\overline{b} \to B^+)] < 0.5 \times 10^{-6}$ which we multiply by our best value $B(\overline{b} \to B^+) = 40.8 \times 10^{-2}$.

NODE=S091R06;LINKAGE=AA

$\Gamma(D^+ \overline{K}^{*0})/\Gamma_{total} \times B(\overline{b} \to B_c)$ $\Gamma_{50}/\Gamma \times B$

NODE=S091R07
NODE=S091R07

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$< 1.6 \times 10^{-7}$	90	[1] AAIJ	13R LHCB	pp at 7 TeV

[1] AAIJ 13R reports $[\Gamma(B_c^+ \to D^+ \overline{K}^{*0})/\Gamma_{total} \times B(\overline{b} \to B_c)] / [B(\overline{b} \to B^+)] < 0.4 \times 10^{-6}$ which we multiply by our best value $B(\overline{b} \to B^+) = 40.8 \times 10^{-2}$.

NODE=S091R07;LINKAGE=AA

$\Gamma(D_s^+ K^{*0})/\Gamma_{total} \times B(\overline{b} \to B_c)$ $\Gamma_{51}/\Gamma \times B$

NODE=S091R08
NODE=S091R08

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$< 2.9 \times 10^{-7}$	90	[1] AAIJ	13R LHCB	pp at 7 TeV

[1] AAIJ 13R reports $[\Gamma(B_c^+ \to D_s^+ K^{*0})/\Gamma_{total} \times B(\overline{b} \to B_c)] / [B(\overline{b} \to B^+)] < 0.7 \times 10^{-6}$ which we multiply by our best value $B(\overline{b} \to B^+) = 40.8 \times 10^{-2}$.

NODE=S091R08;LINKAGE=AA

$\Gamma(D_s^+ \overline{K}^{*0})/\Gamma_{total} \times B(\overline{b} \to B_c)$ $\Gamma_{52}/\Gamma \times B$

NODE=S091R09
NODE=S091R09

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$< 4 \times 10^{-7}$	90	[1] AAIJ	13R LHCB	pp at 7 TeV

[1] AAIJ 13R reports $[\Gamma(B_c^+ \to D_s^+ \overline{K}^{*0})/\Gamma_{total} \times B(\overline{b} \to B_c)] / [B(\overline{b} \to B^+)] < 1.1 \times 10^{-6}$ which we multiply by our best value $B(\overline{b} \to B^+) = 40.8 \times 10^{-2}$.

NODE=S091R09;LINKAGE=AA

$\Gamma(D_s^+ \phi)/\Gamma_{total} \times B(\overline{b} \to B_c)$ $\Gamma_{53}/\Gamma \times B$

NODE=S091R10
NODE=S091R10

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$< 3.3 \times 10^{-7}$	90	[1] AAIJ	13R LHCB	pp at 7 TeV

[1] AAIJ 13R reports $[\Gamma(B_c^+ \to D_s^+ \phi)/\Gamma_{total} \times B(\overline{b} \to B_c)] / [B(\overline{b} \to B^+)] < 0.8 \times 10^{-6}$ which we multiply by our best value $B(\overline{b} \to B^+) = 40.8 \times 10^{-2}$.

NODE=S091R10;LINKAGE=AA

$\Gamma(K^+ K^0)/\Gamma_{total} \times B(\overline{b} \to B_c)$ $\Gamma_{54}/\Gamma \times B$

NODE=S091R02
NODE=S091R02

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$< 4.6 \times 10^{-7}$	90	[1] AAIJ	13BS LHCB	pp at 7 TeV

[1] Derived from $\Gamma(K^+ K^0)/\Gamma \times B(\overline{b} \to B_c) / (B(B^+ \to K^0 \pi^+)\, B(\overline{b} \to B^+)) < 5.8\%$ at 90% CL using normalization mode $B(B^+ \to K^0 \pi^+) = (23.97 \pm 0.53 \pm 0.71) \times 10^{-6}$ and assuming a B production ratio $f(\overline{b} \to B_u^+) = 0.33$.

NODE=S091R02;LINKAGE=AA

$\Gamma(B_s^0 \pi^+ / B(\overline{b} \to B_s))/\Gamma_{total} \times B(\overline{b} \to B_c)$ $\Gamma_{55}/\Gamma \times B$

NODE=S091R15
NODE=S091R15

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
$2.37 \pm 0.31 \pm 0.11^{+0.17}_{-0.13}$	[1] AAIJ	13BU LHCB	pp at 7, 8 TeV

[1] The last uncertinty is due to the uncertainty of the B_c^+ lifetime measurument.

NODE=S091R15;LINKAGE=AA

$\Gamma(D_s^+ \overline{D}^0)/\Gamma_{total}$ Γ_{31}/Γ

NODE=S091R42
NODE=S091R42

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<7.2 \times 10^{-4}$	90	[1] AAIJ	21AF LHCB	pp at 13 TeV

[1] Uses $B(\overline{b} \to B_c)/B(\overline{b} \to B^+) = 0.76\%$ determined by AAIJ 19AI.

NODE=S091R42;LINKAGE=A

$\Gamma(D_s^+ D^0)/\Gamma_{total}$ Γ_{32}/Γ

NODE=S091R43
NODE=S091R43

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<3.0 \times 10^{-4}$	90	[1] AAIJ	21AF LHCB	pp at 13 TeV

[1] Uses $B(\overline{b} \to B_c)/B(\overline{b} \to B^+) = 0.76\%$ determined by AAIJ 19AI.

NODE=S091R43;LINKAGE=A

$\Gamma(D^+ \overline{D}^0)/\Gamma_{total}$ Γ_{33}/Γ

NODE=S091R44
NODE=S091R44

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<1.9 \times 10^{-4}$	90	[1] AAIJ	21AF LHCB	pp at 13 TeV

[1] Uses $B(\overline{b} \to B_c)/B(\overline{b} \to B^+) = 0.76\%$ determined by AAIJ 19AI.

NODE=S091R44;LINKAGE=A

$\Gamma(D^+ D^0)/\Gamma_{total}$ Γ_{34}/Γ

NODE=S091R45
NODE=S091R45

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<1.4 \times 10^{-4}$	90	[1] AAIJ	21AF LHCB	pp at 13 TeV

[1] Uses $B(\overline{b} \to B_c)/B(\overline{b} \to B^+) = 0.76\%$ determined by AAIJ 19AI.

NODE=S091R45;LINKAGE=A

$\Gamma(D_s^{*+} \overline{D}^0)/\Gamma_{total}$ Γ_{35}/Γ

NODE=S091R46
NODE=S091R46

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<5.3 \times 10^{-4}$	90	[1] AAIJ	21AF LHCB	pp at 13 TeV

[1] Uses $B(\overline{b} \to B_c)/B(\overline{b} \to B^+) = 0.76\%$ determined by AAIJ 19AI.

NODE=S091R46;LINKAGE=A

$\Gamma(D_s^+ \overline{D}^*(2007)^0)/\Gamma_{total}$ Γ_{36}/Γ

NODE=S091R47
NODE=S091R47

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<4.6 \times 10^{-4}$	90	[1] AAIJ	21AF LHCB	pp at 13 TeV

[1] Uses $B(\overline{b} \to B_c)/B(\overline{b} \to B^+) = 0.76\%$ determined by AAIJ 19AI.

NODE=S091R47;LINKAGE=A

$\Gamma(D_s^{*+} D^0)/\Gamma_{total}$ Γ_{37}/Γ

NODE=S091R48
NODE=S091R48

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<0.9 \times 10^{-3}$	90	[1] AAIJ	21AF LHCB	pp at 13 TeV

[1] Uses $B(\overline{b} \to B_c)/B(\overline{b} \to B^+) = 0.76\%$ determined by AAIJ 19AI.

NODE=S091R48;LINKAGE=A

$\Gamma(D_s^+ D^*(2007)^0)/\Gamma_{total}$ Γ_{38}/Γ

NODE=S091R49
NODE=S091R49

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<6.6 \times 10^{-4}$	90	[1] AAIJ	21AF LHCB	pp at 13 TeV

[1] Uses $B(\overline{b} \to B_c)/B(\overline{b} \to B^+) = 0.76\%$ determined by AAIJ 19AI.

NODE=S091R49;LINKAGE=A

$\Gamma(D^*(2010)^+ \overline{D}^0)/\Gamma_{total}$ Γ_{39}/Γ

NODE=S091R50
NODE=S091R50

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<3.8 \times 10^{-4}$	90	[1] AAIJ	21AF LHCB	pp at 13 TeV

[1] Uses $B(\overline{b} \to B_c)/B(\overline{b} \to B^+) = 0.76\%$ determined by AAIJ 19AI.

NODE=S091R50;LINKAGE=A

$\Gamma(D^*(2007)^+ D^0)/\Gamma_{total}$ Γ_{42}/Γ

NODE=S091R57
NODE=S091R57

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<2.0 \times 10^{-4}$	90	[1] AAIJ	21AF LHCB	pp at 13 TeV

[1] Uses $B(\overline{b} \to B_c)/B(\overline{b} \to B^+) = 0.76\%$ determined by AAIJ 19AI.

NODE=S091R57;LINKAGE=A

$\Gamma(D^+ \overline{D}^*(2007)^0)/\Gamma_{total}$ Γ_{41}/Γ

NODE=S091R51
NODE=S091R51

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<6.5 \times 10^{-4}$	90	[1] AAIJ	21AF LHCB	pp at 13 TeV

[1] Uses $B(\overline{b} \to B_c)/B(\overline{b} \to B^+) = 0.76\%$ determined by AAIJ 19AI.

NODE=S091R51;LINKAGE=A

$\Gamma(D^+ D^*(2007)^0)/\Gamma_{total}$ Γ_{44}/Γ

NODE=S091R52
NODE=S091R52

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<3.7 \times 10^{-4}$	90	[1] AAIJ	21AF LHCB	pp at 13 TeV

[1] Uses $B(\overline{b} \to B_c)/B(\overline{b} \to B^+) = 0.76\%$ determined by AAIJ 19AI.

NODE=S091R52;LINKAGE=A

$\Gamma(D_s^{*+}\overline{D}^{*}(2007)^0)/\Gamma_{total}$ Γ_{45}/Γ

NODE=S091R53
NODE=S091R53

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.3\times10^{-3}$	90	[1] AAIJ	21AF	LHCB	pp at 13 TeV

[1] Uses $B(\overline{b}\to B_c)/B(\overline{b}\to B^+) = 0.76\%$ determined by AAIJ 19AI.

NODE=S091R53;LINKAGE=A

$\Gamma(D_s^{*+}D^{*}(2007)^0)/\Gamma_{total}$ Γ_{46}/Γ

NODE=S091R54
NODE=S091R54

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.3\times10^{-3}$	90	[1] AAIJ	21AF	LHCB	pp at 13 TeV

[1] Uses $B(\overline{b}\to B_c)/B(\overline{b}\to B^+) = 0.76\%$ determined by AAIJ 19AI.

NODE=S091R54;LINKAGE=A

$\Gamma(D^{*}(2010)^+\overline{D}^{*}(2007)^0)/\Gamma_{total}$ Γ_{47}/Γ

NODE=S091R55
NODE=S091R55

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<1.0\times10^{-3}$	90	[1] AAIJ	21AF	LHCB	pp at 13 TeV

[1] Uses $B(\overline{b}\to B_c)/B(\overline{b}\to B^+) = 0.76\%$ determined by AAIJ 19AI.

NODE=S091R55;LINKAGE=A

$\Gamma(D^{*}(2010)^+D^{*}(2007)^0)/\Gamma_{total}$ Γ_{48}/Γ

NODE=S091R56
NODE=S091R56

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<7.7\times10^{-4}$	90	[1] AAIJ	21AF	LHCB	pp at 13 TeV

[1] Uses $B(\overline{b}\to B_c)/B(\overline{b}\to B^+) = 0.76\%$ determined by AAIJ 19AI.

NODE=S091R56;LINKAGE=A

$\Gamma(B_s^0\pi^+)/\Gamma(J/\psi(1S)\pi^+)$ Γ_{56}/Γ_4

NODE=S091R64
NODE=S091R64

VALUE	DOCUMENT ID		TECN	COMMENT
$91\pm10\pm8.5$	[1] AAIJ	23M	LHCB	pp at 13 TeV

[1] The B_s^0 mesons are reconstructed via the decays $B_s^0\to J/\psi\phi$ and $B_s^0\to D_s^-\pi^+$. The third uncertainty includes systematic (±8) and imprecise knowledge of the branching fractions (±3).

NODE=S091R64;LINKAGE=A

$\Gamma(\pi^+\mu^+\mu^-)/\Gamma(J/\psi(1S)\pi^+)$ Γ_{57}/Γ_4

NODE=S091R68
NODE=S091R68

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.1\times10^{-4}$	90	AAIJ	24W	LHCB	pp at 7, 8 and 13 TeV

$\Gamma(D_s^+\mu^+\mu^-)/\Gamma_{total}\times B(\overline{b}\to B_c)$ $\Gamma_{58}/\Gamma\times B$

NODE=S091R70
NODE=S091R70

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<3.1\times10^{-8}$	90	[1] AAIJ	24F	LHCB	pp at 7, 8, 13 TeV

[1] AAIJ 24F reports $[\Gamma(B_c^+\to D_s^+\mu^+\mu^-)/\Gamma_{total}\times B(\overline{b}\to B_c)]\ /\ [B(\overline{b}\to B^+)] < 7.5\times10^{-8}$ which we multiply by our best value $B(\overline{b}\to B^+) = 40.8\times10^{-2}$.

NODE=S091R70;LINKAGE=B

POLARIZATION IN B_c^+ DECAY

NODE=S091230

In decays involving two vector mesons, one can distinguish among the states in which meson polarizations are both longitudinal (L) or both are transverse and parallel ($\|$) or perpendicular ($\perp$) to each other with the parameters Γ_L/Γ, $\Gamma_\perp/\Gamma$, and the relative phases $\phi_\|$ and $\phi_\perp$. See the definitions in the note on "Polarization in B Decays" review in the B^0 Particle Listings.

NODE=S091230

Γ_L/Γ in $B_c^+\to J/\psi D_s^{*+}$

NODE=S091FL1
NODE=S091FL1

VALUE	DOCUMENT ID		TECN	COMMENT
0.34 ± 0.09 OUR AVERAGE				
$0.30\pm0.10\pm0.04$	[1,2] AAD	22O	ATLS	pp at 13 TeV
0.48 ± 0.20	[3] AAIJ	13AS	LHCB	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.62 ± 0.24	[4] AAD	16H	ATLS	pp at 7, 8 TeV

[1] Supersedes the measurement of AAD 16H.

NODE=S091FL1;LINKAGE=B

[2] AAD 22O measures $1-\Gamma_L/\Gamma = 0.70\pm0.10\pm0.04$.

NODE=S091FL1;LINKAGE=C

[3] AAIJ 13AS measures $1-\Gamma_L/\Gamma = 0.52\pm0.20$.

NODE=S091FL1;LINKAGE=AA

[4] AAD 16H measures $1-\Gamma_L/\Gamma = 0.38\pm0.24$.

NODE=S091FL1;LINKAGE=A

$A_P(B_c^+)$

NODE=S091A00

$A_P(B_c^+) = [\sigma(B_c^-) - \sigma(B_c^+)] / [\sigma(B_c^-) + \sigma(B_c^+)]$

NODE=S091A00

VALUE (units 10^{-2})	DOCUMENT ID		TECN	COMMENT
-1.0 ± 1.0 OUR AVERAGE				
$-2.5\pm2.1\pm0.5$	[1] AAIJ	19AI	LHCB	pp at 7 TeV
$-0.5\pm1.1\pm0.4$	[1] AAIJ	19AI	LHCB	pp at 13 TeV

NODE=S091A00
NODE=S091A00

OCCUR=2

[1] Measured using B_c^+ semileptonic decays.

NODE=S091A00;LINKAGE=C

B_c^+ REFERENCES

NODE=S091

AAIJ	24F	JHEP 2402 032	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	24I	JHEP 2402 173	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	24L	JHEP 2404 151	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	24W	EPJ C84 468	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	23M	JHEP 2307 066	R. Aaij *et al.*	(LHCb Collab.)
AAD	22O	JHEP 2208 087	G. Aad *et al.*	(ATLAS Collab.)
AAIJ	22P	JHEP 2201 065	R. Aaij *et al.*	(LHCb Collab.)
AABOUD	21	PR D104 012010	M. Aaboud *et al.*	(ATLAS Collab.)
AAIJ	21AF	JHEP 2112 117	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	20R	JHEP 2007 123	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	19AI	PR D100 112006	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	18C	PRL 120 121801	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	18P	NP B930 563	R. Aaij *et al.*	(LHCb Collab.)
SIRUNYAN	18BY	EPJ C78 457	A.M. Sirunyan *et al.*	(CMS Collab.)
AAIJ	17AG	PRL 118 111803	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	17L	PR D95 032005	R. Aaij *et al.*	(LHCb Collab.)
AAD	16H	EPJ C76 4	G. Aad *et al.*	(ATLAS Collab.)
AAIJ	16AF	JHEP 1609 153	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	16AT	PR D94 091102	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	16K	PL B759 313	R. Aaij *et al.*	(LHCb Collab.)
AALTONEN	16A	PR D93 052001	T. Aaltonen *et al.*	(CDF Collab.)
AAIJ	15AY	PR D92 072007	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	15G	PL B742 29	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	15M	PRL 114 132001	R. Aaij *et al.*	(LHCb Collab.)
KHACHATRY...	15AA	JHEP 1501 063	V. Khachatryan *et al.*	(CMS Collab.)
AAIJ	14AQ	PRL 113 152003	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	14G	EPJ C74 2839	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	14P	JHEP 1405 148	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	14W	PR D90 032009	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	13AM	PR D87 071103	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	13AS	PR D87 112012	R. Aaij *et al.*	(LHCb Collab.)
Also		PR D89 019901 (errat.)	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	13BS	PL B726 646	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	13BU	PRL 111 181801	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	13BY	JHEP 1309 075	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	13CA	JHEP 1311 094	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	13R	JHEP 1302 043	R. Aaij *et al.*	(LHCb Collab.)
AALTONEN	13	PR D87 011101	T. Aaltonen *et al.*	(CDF Collab.)
AAIJ	12AV	PRL 109 232001	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	12Y	PRL 108 251802	R. Aaij *et al.*	(LHCb Collab.)
ABAZOV	09H	PRL 102 092001	V.M. Abazov *et al.*	(D0 Collab.)
AALTONEN	08M	PRL 100 182002	T. Aaltonen *et al.*	(CDF Collab.)
ABAZOV	08T	PRL 101 012001	V.M. Abazov *et al.*	(D0 Collab.)
ABULENCIA	06C	PRL 96 082002	A. Abulencia *et al.*	(CDF Collab.)
ABULENCIA	06O	PRL 97 012002	A. Abulencia *et al.*	(CDF Collab.)
ABE	98M	PRL 81 2432	F. Abe *et al.*	(CDF Collab.)
Also		PR D58 112004	F. Abe *et al.*	(CDF Collab.)
ACKERSTAFF	98O	PL B420 157	K. Ackerstaff *et al.*	(OPAL Collab.)
BARATE	98Q	EPJ C4 387	R. Barate *et al.*	(ALEPH Collab.)
PDG	98	EPJ C3 1	C. Caso *et al.*	(PDG Collab.)
ABREU	97E	PL B398 207	P. Abreu *et al.*	(DELPHI Collab.)
BARATE	97H	PL B402 213	R. Barate *et al.*	(ALEPH Collab.)
ABE	96R	PRL 77 5176	F. Abe *et al.*	(CDF Collab.)
PDG	96	PR D54 1	R. M. Barnett *et al.*	(PDG Collab.)

REFID=62831
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