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

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

OMITTED FROM SUMMARY TABLE

Quantum numbers neither measured nor confirmed.

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

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
6871.0±1.2±0.8±0.8	51	[1] SIRUNYAN	19M	CMS	pp at 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
not seen		[2] AAIJ	18AL	LHCB	pp at 8 TeV
6842 ±4 ±5	57	[3,4] AAD	14AQ	ATLS	pp at 7, 8 TeV

[1] The second systematic uncertainty reflects the PDG uncertainty on the B_c^+ mass. Observed in the decay mode $B_c(2S)^+ \to B_c^+\pi^+\pi^-$ ($B_c^+ \to J/\psi\pi^+$) with 6.5 standard deviations significance.

[2] AAIJ 18AL reports an upper limit on the ratio of production cross sections for $[\sigma(B_c(2S)^+)/\sigma(B_c^+)]\cdot B(B_c(2S)^+ \to B_c^+\pi^+\pi^-) < 0.04$–$0.09$ at 95% CL for the mass value reported by AAD 14AQ.

[3] Observed in the decay mode $B_c(2S)^+ \to B_c^+\pi^+\pi^-$ ($B_c^+ \to J/\psi\pi^+$) with 5.2 standard deviations significance.

[4] Might be the $B_c^*(2S)$.

$B_c(2S)^{\pm}$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$B_c^+\pi^+\pi^-$	seen

$B_c(2S)^{\pm}$ BRANCHING RATIOS

$\Gamma(B_c^+\pi^+\pi^-)/\Gamma_{\text{total}}$ Γ_1/Γ

VALUE	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
seen	57	[1] AAD	14AQ	ATLS	pp at 7, 8 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
not seen		[2] AAIJ	18AL	LHCB	pp at 8 TeV

[1] Observed with 5.2 standard deviations significance.

[2] AAIJ 18AL reports an upper limit on the ratio of production cross sections for $[\sigma(B_c(2S)^+)/\sigma(B_c^+)]\cdot B(B_c(2S)^+ \to B_c^+\pi^+\pi^-) < 0.04$–$0.09$ at 95% CL for the mass value reported by AAD 14AQ.

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

SIRUNYAN	19M	PRL 122 132001	A.M. Sirunyan *et al.*	(CMS Collab.)
AAIJ	18AL	JHEP 1801 138	R. Aaij *et al.*	(LHCb Collab.)
AAD	14AQ	PRL 113 212004	G. Aad *et al.*	(ATLAS Collab.)