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Production and properties of the $B_c(2S)$ and $B^*c(2S)$ states

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We reported the production and properties studies of the $B_c(2S)$ and $B^*c(2S)$ states, based on an event sample of pp collisions at a center-of-mass energy of 13 TeV, collected by CMS detector and corresponding to an integrated luminosity of 143 fb^{-1} . The excited states are reconstructed in the $B_c\pi^+\pi^-$ decay. The production rate of $B_c(2S)$ and $B^*c(2S)$ respect to the base state B_c as estimated within the acceptance of the detector. The relative rate of the two mesons respect to each other is also estimated as well as the shape of the invariant mass of the pion-pion system.

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