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Pair production of pseudoscalar and vector B_c mesons at the LHC

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On the basis of perturbative QCD and relativistic quark model we calculate cross sections of pair pseudoscalar and vector B_c mesons production in proton–proton interaction. Relativistic factors in the production amplitude connected with the relative motion of heavy quarks and the transformation law of the bound state wave function are taken into account. The gluon and quark propagators entering the production amplitude are expanded in the ratio of the relative quark momenta to the meson mass up to the second order. Relativistic corrections to the quark–antiquark bound state wave functions in the rest frame are considered by means of the Breit-like potential. It turns out that the examined effects significantly decrease nonrelativistic predictions for the cross section.

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