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First ALICE measurement of $B^\pm \rightarrow J/\psi + K^\pm$ in pp collisions

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The B^\pm meson is the most frequently produced beauty meson in proton-proton (pp) collisions at the LHC. Measuring its production cross-section is important for two reasons. First, it allows for testing of perturbative quantum chromodynamics calculations. Second, the B^\pm meson cross-section measurement provides an essential reference for measurements of the nuclear modification factor (R_{AA}) in heavy-ion collisions. Here, we present the first preliminary results from ALICE on the B^\pm meson cross-section measured in the $J/\psi + K^\pm$ channel, covering the previously unexplored region at low pT and midrapidity ($|y| < 0.9$). Achieving this measurement for the first time in Run 3 has been made possible by two critical advancements: the high statistics from increased luminosity recorded by ALICE in Run 3, and the improved vertex resolution provided by the upgraded Inner Tracking System, which enables the reconstruction of B^\pm meson candidates.

Category

Experiment

Collaboration (if applicable)

ALICE

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