

Open heavy-flavour hadron decay muon production with ALICE at the LHC

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The measurements of heavy-flavour (charm and beauty) production in proton-proton (pp) collisions at the LHC provide stringent test for perturbative Quantum Chromodynamics (pQCD) calculations. Furthermore, studies in pp collisions serve as a necessary baseline for similar measurements in proton-nucleus (p-A) and nucleus-nucleus (A-A) collisions in order to investigate the influence of cold- and hot-nuclear-matter effects on heavy-flavour production. In ALICE, measurements of open heavy-flavour can be performed at midrapidity and forward rapidity via semi-electronic and semi-muonic decays of heavy-flavour hadrons, respectively. The presence of Muon Forward Tracker in the upgraded ALICE detector for the LHC Run 3 provides vertexing capabilities to the Muon Spectrometer and enables to separate the open charm and beauty components. The impact of the medium formed in heavy-ion collisions on heavy quark production and dynamics can be quantified via the nuclear modification factor (R_{AA}) of muons from heavy-flavour hadron decays. The results in the measurement of R_{AA} point toward a significant heavy-quark energy loss at intermediate p_T . In this contribution, the latest measurements from Run 2 and the status from Run 3 of open heavy-flavour decay muon production at forward rapidity with ALICE will be presented.

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