

Measurement of open heavy-flavour production in p-Pb collisions with ALICE at the LHC

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The ALICE experiment is dedicated to study the properties of the strongly-interacting matter, usually referred to as the Quark-Gluon Plasma (QGP), created in high-energy heavy-ion collisions. Heavy quarks, i.e. charm and beauty, are produced in the initial stages of the collision via hard scattering processes. Thus they probe the full evolution of the system. Measurements in p-Pb collisions help understanding the Cold Nuclear Matter effects (CNM) such as modifications of the parton distribution function (PDF) in nuclei, energy loss and momentum broadening. Moreover, measurements of open heavy-flavour particles production as a function of charged-particle multiplicity in p-Pb collisions can provide information on the dependence of CNM effects on the collision geometry and on the density of final-state particles. Furthermore, the possible presence of collective effects in high-multiplicity p-Pb events could modify the spectra of heavy-flavour hadrons. In addition, these measurements allow us to study the interplay between the hard and soft processes in heavy-flavour production.

In ALICE, open heavy-flavour production is studied through the measurements of the heavy-flavour decay leptons, i.e. electrons and muons at central and forward rapidity respectively, and via the reconstruction of D-meson hadronic decays at central rapidity. In this contribution, recent measurements of open heavy-flavour production from p-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV collected during Run I and Run II of the LHC are presented. The focus will be on the measurements of the angular correlations with charged particles, multiplicity dependence of nuclear modification factor and relative yield as a function of multiplicity.

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