



XXIV QUARK MATTER DARMSTADT 2014

Contribution ID: 262

Type: Poster

Measurement of electrons from charm and beauty-hadron decays in p-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV with ALICE at the LHC

Tuesday, 20 May 2014 16:30 (2 hours)

The characterisation of the Quark-Gluon Plasma (QGP), the deconfined state of strongly-interacting matter produced in high-energy heavy-ion collisions, is the main purpose of ALICE at the LHC. Because of their large masses, charm and beauty quarks are mostly produced in initial hard partonic interactions and thus can be used to probe the medium created in such collisions. The p_T differential heavy-flavour yield is an observable sensitive to the energy loss of heavy quarks in the hot and dense medium. In addition to the QGP, the presence of cold nuclear matter in the initial state may affect the production of heavy-flavour hadrons. To quantify these effects and confirm the role of final-state effects in Pb-Pb collisions, a reference measurement in p-Pb collisions is necessary. Electrons from semileptonic decays of heavy-flavour hadrons can be used to measure charm and beauty quark production. The measurement of heavy-flavour decay electrons at mid-rapidity in p-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV with ALICE will be presented. The performance of the electron identification using the Time Projection Chamber (TPC) and the Time-of-Flight (TOF) detector of the ALICE central barrel will be demonstrated. After subtraction of the background electrons, the nuclear modification factor R_{pPb} of heavy-flavour decay electrons will be shown and discussed in the context of theoretical predictions including the effects due to the nuclear modification of the parton distribution functions.

On behalf of collaboration:

ALICE

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Session Classification: Poster session

Track Classification: Open Heavy Flavour and Quarkonia