



Contribution ID: 109

Type: not specified

D-meson production in p-Pb collisions at the LHC with ALICE

Friday, 13 September 2013 17:40 (20 minutes)

At the beginning of 2013 ALICE collected data during the LHC p-Pb run at the energy of $\sqrt{s_{NN}}=5.02$ TeV. The measurement of D-meson production in this collision system is important to study the role of initial-state effects such as shadowing, saturation or k_T broadening. ALICE already measured a modification of the momentum distributions of charmed hadrons in central Pb-Pb collisions with respect to pp collisions providing evidence for heavy-quark energy loss in strongly interacting matter. To better quantify the effect of charm quark energy loss in the observed modification of the D-meson spectra in Pb-Pb, a precise characterization of the initial-state effects in cold nuclear matter is needed.

D mesons have been reconstructed via their hadronic decay channels in the central rapidity region.

The first measurement of the D_0 , D^+ , D^{*+} and D_{s^+} production cross sections in minimum bias p-Pb collisions and the transverse momentum dependence of their nuclear modification factors R_{pPb} will be presented.

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Session Classification: Parallel talks - Session 4B