

Investigating charm quark production in and outside jets using the ALICE detectors at the LHC

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Measurements of correlations between heavy-flavor decay electrons and charged particles are used to study heavy-flavor production in hadronic collisions, and to characterize the heavy-quark in-medium energy loss in heavy-ion collisions, where a quark-gluon plasma is created. We are investigating the charm quark production and interaction in the near and away side of the hadron-triggered jet and comparing it to the underlying event via angular correlations of trigger hadrons and associated electrons from heavy-flavor hadron decays. We exploit a sample of p-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV in order to study the onset of the partonic medium behavior with respect to the medium size. The analysis is performed exploiting the capabilities of the ALICE detectors. The ALICE Time Projection Chamber (TPC) detector is specifically used to identify electrons via ionization energy loss. A heavy-flavor electron sample is obtained after rejecting the background of electrons from photoconversion and light flavor hadrons. In this contribution we will show a hadron-electron correlation distribution in comparison to a hadron-hadron correlation distribution in a transverse-momentum range of $2 < p_T^e < 4$ GeV/c in different centralities.

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