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

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Heavy-quark hadrons are used to study the properties of the partonic stages of a heavy-ion collision, where a quark-gluon plasma medium is created. We are investigating charm quark production in and outside of jets via angular correlations of trigger hadrons and associated electrons from heavy-flavor hadron decays. As a first step, we are investigating the 5.02 TeV p-Pb collisions, where in a previous analysis a difference of the strangeness production in jets compared to the underlying event for increasing collision system size was observed. With this new analysis, we aim at investigating the flavor-dependence of particle production in jets and the underlying event. In this contribution, the different analysis steps will be described, including the strategy of particle identification and rejection of background, such as electrons from photon conversions and Dalitz decays, in p-Pb collisions. The Time Projection Chamber (TPC) is used to identify electron candidates via differential energy loss (dE/dx) in the low momentum region.

Category

Experiment

Collaboration (if applicable)

ALICE Collaboration

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