

Prospects for charm RAA in PbPb collisions at LHC via $D0 \rightarrow K\pi$ reconstruction in ALICE

The main goal of the ALICE experiment is the investigation of the properties of strongly-interacting matter in a very high density deconfined state, that is thought to be formed in Pb-Pb collisions at LHC. The ALICE experiment has collected Pb-Pb data at $\sqrt{s_{NN}} = 2.76$ TeV and p-p data both at $\sqrt{s} = 7$ and 2.76 TeV. In Pb-Pb collisions, heavy quarks are sensitive probes to test the medium properties, as they are formed at shorter time scale with respect to the deconfines state. These quarks can interact with the medium via collisional and radiative energy loss. The nuclear modification factor (RAA), obtained comparing p-p and Pb-Pb pT-differential distributions, allows to measure the effect of in-medium energy loss.

We will present the prospects for the first open charm energy loss measurement, considering the $D0$ in $K\pi$ decay channel. The reconstruction of this decay channel exploits the excellent tracking, vertexing and particle identification capabilities of the ALICE experiment.

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Track Classification: Heavy flavor and quarkonia production