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Feasibility measurements of π^0 and neutron with ECal in MPD at NICA

Exploring the QCD phase diagram and searching for the QCD critical point are some of the main goals of heavy-ion collision experiments. The MultiPurpose Detector (MPD) is designed to study heavy-ion collisions at the Nuclotron-based heavy Ion Collider Facility (NICA) at JINR, Dubna. In this talk, we will present feasibility measurements of π^0 and neutron in Au+Au collisions at $\sqrt{s_{NN}} = 11$ GeV with ECal detector in MPD. Simulation results show that π^0 can be reconstructed powerfully down to about $p_t = 300$ MeV/c at ECal, and neutron can be identified relatively well by using the Machine Learning method. These feasibility studies shall help future measurements of π^0 , neutron and their correlations with other hadrons in real data.

Primary author: Dr ZHU, Xiangrong (Huzhou University)

Presenter: Dr ZHU, Xiangrong (Huzhou University)