

Phi Meson Production in Small Systems at Forward Rapidity with the PHENIX Detector at RHIC

The production of phi mesons provides key information on the hot and dense state of the strongly interacting matter produced in high-energy heavy-ion collisions. They are sensitive to enhanced strangeness production in the medium. Measurements in different nucleus-nucleus collisions allow us to perform a systematic study of the nuclear medium effects on phi meson production. In addition to effects in hot matter, cold nuclear effects such as soft multiple parton rescattering or the modification of the parton distribution functions in nuclei may be important to interpret heavy-ion data. The PHENIX detector provides the capabilities to measure phi meson production in a wide range of transverse momentum and rapidity. We use these capabilities to measure phi meson production in $d+Au$, $p+Au$, $p+Al$ and ^3He+Au collisions at $\sqrt{s_{NN}} = 200$ GeV. The data can be compared with AMPT calculations to study the various cold nuclear medium effects involved in phi meson production. In this poster we present the status of the analysis.

Preferred Track

QCD in small systems

Collaboration

PHENIX

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