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A Systematic Study of Neutral Pion Production in Small and Asymmetric Systems at PHENIX

The suppression of neutral pion production in high-energy heavy-ion collisions was one piece of evidence of parton energy loss in the hot medium produced at RHIC and thus a convincing signature for the Quark-Gluon Plasma (QGP). The p(d)+A system had previously been considered as a baseline to study the cold nuclear matter effects that are also present in A+A collisions but are difficult to disentangle from the effects of the QGP. Recently, measurements from p(d)+A have indicated that there may be effects from a strongly interacting medium even in these systems. In further study of these interesting systems, RHIC collided ^{3}He+Au in 2014 and p+Au in 2015. A comparison of the p_T and centrality dependent yields, as well as R_{AA}, will contribute to the systematic study of these systems. In this poster, we report the π^0 yields and R_{AA} in ^{3}He+Au, d+Au, and p+Au collisions at $\sqrt{s_{NN}}$ = 200 GeV at PHENIX.

Preferred Track

Jets and High pT Hadrons

Collaboration

PHENIX

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