Contribution ID: **569** Type: **Poster**

Energy dependence of π0 suppression in Au+Au collisions

Previous RHIC results have shown that high-p_T mid-rapidity π^0 and η mesons are suppressed in central Au+Au collisions while they are not in d+Au collisions. Furthermore, direct photons in Au+Au collisions appear mostly unsuppressed as well, with a possible exception at very high p_T. This leads to the picture of a hot and dense medium in the final state. Measurements of d+Au collisions are crucial to understand the initial state in heavy-ion collisions. New d+Au data taken in 2008 improve the integrated luminosity by a factor of about 20 over the data from the 2003 run. This data set will allow much better constraints of the initial state and improve the significance of the direct photon measurement at high p_T. We will present the current status of the analysis and preliminary results on the production of $\pi 0$, η, and direct photons and discuss the interpretation of the results in the light of the results from Au+Au collisions.

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Track Classification: Pre-equilibrium and initial state physics