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Probing the Low-x Structure of the Nucleus with the PHENIX Detector

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One of the fundamental goals of the PHENIX experiment is to understand the structure of cold nuclear matter, since this serves as the initial state for heavy-ion collisions. Knowing the initial state is vital for interpreting measurements from heavy-ion collisions. Moreover, the structure of the cold nucleus by itself is interesting since it is a test-bed for our understanding of QCD. In particular there is the possibility of novel QCD effects such as gluon saturation at low-x in the nucleus. At RHIC we can probe the structure of cold nuclear matter using d+Au collisions. We will present measurements of forward di-hadron correlations and inclusive J/Psi production, which seem to show some interesting effects in the cold nucleus, especially as one probes down to Bjorken x of about 10^{-3} in the Au nucleus.

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