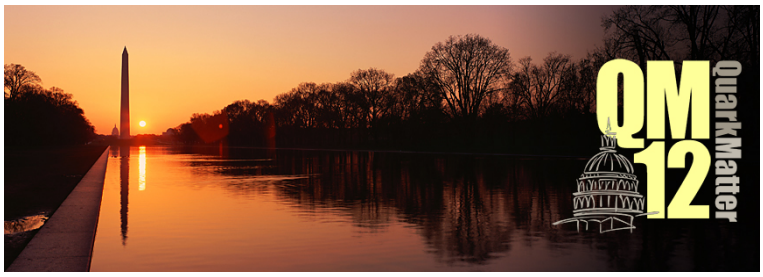

Contribution ID: **278** Type: **Poster**

Probing the Initial State with Coherent Vector Meson Scattering in STAR Ultraperipheral Au-Au Collisions

Thursday, 16 August 2012 16:00 (2 hours)

Ultraperipheral collision events are effectively photoproduction on nuclear targets. These events provide an ideal proving ground for new programs in e+A physics. For the first time, STAR has collected a large enough sample of rho mesons to study their diffractive interaction with Au nuclear targets in detail. The transverse momentum distribution of rho mesons is sensitive not only to the distribution of nucleons in the target, but the dominance of Pomeron exchange at RHIC energies makes this distribution sensitive to the gluon distribution in nuclei. We will describe our latest work on diffractive scattering of rho mesons on Au nuclei and its comparison to several calculations based on different gluon exchange mechanisms. We will also present recent results of the measurement of J/ψ photoproduction in 200 (GeV) AuAu collisions at RHIC. The pT distribution of the J/ψ mesons peaks at very low pT , consistent with expectations for coherent photoproduction.
Both the photoproduction cross section and the J/ψ rapidity distribution are expected to show the effects of gluon shadowing. We will present a measurement of the ratio of J/ψ to rho meson cross sections in 200 GeV AuAu collisions, as well as a distribution of J/ψ rapidity within | y |< 1. The measured results will be compared to theoretical models.

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Session Classification: Poster Session Reception

Track Classification: Pre-equilibrium and initial state dynamics