## Abstract Submitted for the PSF11 Meeting of The American Physical Society

Photoproduction at Relativistic Heavy Ion Collider with STAR<sup>1</sup>

AN MADAGODAHETTIGE DON University of Creighton — Relativistic

DILAN MADAGODAHETTIGE DON, University of Creighton — Relativistic heavy ions carry strong transverse electromagnetic fields which can be treated as sources of quasi-real virtual photons. The ions interact through photon-Pomeron and photon-photon collisions at impact parameter more than twice the nuclear radius, so hadronic interactions are suppressed. We present recent results of the STAR experiment at RHIC on  $\rho^0(770)$  production in AuAu collisions at various energies. Also we present a new measurement of  $J/\psi$  photoproduction in 200 (GeV) AuAu collisions at RHIC. The  $p_T$  distribution of the  $J/\psi$  mesons peaks at very low  $p_T$ , consistent with expectations for coherent photoproduction. Both the photoproduction cross section and the  $J/\psi$  rapidity distribution are expected to show the effects of gluon shadowing. A measurement of the ratio of  $J/\psi$  to  $\rho^0$  meson cross sections in 200 (GeV) AuAu collisions, as well as a distribution of rapidity within |y| < 1 for the  $J/\psi$  mesons are presented.

<sup>1</sup>Author: Dilan Madagodahettige Don (Creighton University) for the STAR Collaboration

Dilan Madagodahettige Don University of Creighton

Date submitted: 29 Sep 2011 Electronic form version 1.4