Abstract Submitted
for the OSS13 Meeting of
The American Physical Society

Direct Photon - Hadron Pair Correlations Measurement in Au+Au Collision at PHENIX NOWO RIVELI, Department of Physics and Astronomy Ohio University, PHENIX COLLABORATION — The direct photon - hadron pair correlations serve as an excellent probe of the hot and dense medium created in the heavy ion collision at RHIC. The unmodified photon is used as a reference for the modification of the jet energy by the medium. The low cross section of QCD Compton scattering that produces direct photon - quark pairs added with the enormous production of the background photons requires large amount of Au+Au events to allow a measurement with convincing statistical certainty. In 2010 (Run 10) PHENIX has collected 8.2 billion events of Au+Au collision with 200 GeV of center-of-mass energy per nucleon, a factor of 1.5 times larger than the same collision system collected in 2007 (Run 7). Improvement can also be achieved by event-by-event based methods that would reject large number of the background photons and thus increase the signal-to-background ratio. We will present a feasibility status of the event-by-event isolation cut application in Au+Au collisions and give a status report on the measurement of direct photon - hadron pair correlations.

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Date submitted: 01 Mar 2013 Electronic form version 1.4