Abstract Submitted
for the DNP16 Meeting of
The American Physical Society

PHENIX Low Momentum Direct Photon Analysis WENQING FAN, Stony Brook University, PHENIX COLLABORATION — The PHENIX experiment operates with one of the major detectors at the RHIC collider. One of the major goals of PHENIX is to identify and study Quark Gluon Plasma (QGP). Direct photons turn out to be an excellent probe due to their small interaction cross section with the collision produced medium hence carrying information of its properties from the space-time production points. In the PHENIX direct photon measurement, a large excess of low-p_T photons in Au+Au collisions at 200 GeV is discovered compared to reference p+p collisions, which has been interpreted as thermal radiation from the QGP and hadron-gas (HG) medium. At the same time the excess photons have a large azimuthal anisotropy, expressed as Fourier coefficients v2 and v3. Measurements at a lower collision energy may provide new insight on the origin of the low-p_T direct photons. In the experiment the current effort is to reduce the experimental uncertainties in Au+Au and p+p collisions via the photons external conversion to di-electron pairs, and measure the direct photon yield in Cu+Au and p+Au collisions at 200 GeV as well as the yield in Au+Au collisions at lower 39 GeV and 62.4 GeV. We will present the improvements and the status of the ongoing analyses.

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Date submitted: 01 Jul 2016 Electronic form version 1.4