Abstract Submitted
for the DNP19 Meeting of
The American Physical Society

Non-UPC production of dimuons from two-photon scattering in Pb+Pb collisions with the ATLAS detector[1] BENJAMIN GILBERT, Columbia University, ATLAS COLLABORATION — In relativistic heavy-ion collisions the intense electromagnetic fields of the nuclei provide a large flux of equivalent photons. This flux leads to photon-photon and photon-nucleus reactions at high center-of-mass energies. In ultra-peripheral collisions, the nuclei have large impact parameter, and the dominant interaction mechanism is through these photon-induced processes. These photon-induced processes may also occur in events with smaller impact parameter, resulting in dimuons produced in the same events in which a hot nuclear medium is formed. This talk presents ATLAS measurements of $\gamma + \gamma \to \mu\mu$ in non-UPC collisions. The dimuons exhibit a centrality-dependent broadening of their azimuthal angle correlations suggesting that such muons provide a new probe of the medium.

[1]DOE-FG02-86ER-40281

Benjamin Gilbert
Columbia University

Date submitted: 26 Jun 2019 Electronic form version 1.4