

10th International Conference on Hard and Electromagnetic Probes of High-Energy Nuclear Collisions



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Type: Oral Presentation

Non-UPC production of dimuons from two-photon scattering in Pb+Pb collisions with the ATLAS detector

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Muon pairs produced via two-photon scattering processes in hadronic Pb+Pb collisions provide a potentially sensitive electromagnetic probe of the quark gluon plasma. First measurements by ATLAS and STAR of dileptons produced via two-photon scattering in non-ultra-peripheral (non-UPC) nucleus-nucleus collisions showed an unexpected centrality-dependent broadening of the angular correlation between the two leptons and/or of the two-lepton p_T distribution. ATLAS has recently measured dimuons produced via two-photon scattering in non-UPC Pb+Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV using an integrated luminosity of 1.9 nb^{-1} . This data set represents a factor of ~ 4 increase in statistics over the 2015 data set used for the first ATLAS measurement. The increased statistics allow new features to be observed in the data, as well as differential studies of the dependence of the pair-distribution on the transverse-momentum and pseudorapidity of the two muons. The results of the new measurement and the possible physics implications will be discussed.

Collaboration (if applicable)

ATLAS

Track

Electroweak Probes

Contribution type

Contributed Talk

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