Type: Oral

## Measurement of W and Z boson production in 5 TeV pp, p+Pb and Pb+Pb collisions with the ATLAS detector

Wednesday 8 February 2017 08:30 (20 minutes)

W and Z bosons are short lived and do not participate in the strong interaction. Thus their production yields, observed via dilepton decay channels in proton-lead and lead-lead collisions, provide direct tests of both binary collision scaling and the nuclear modification of parton distribution functions (nPDF). Proton-lead collisions further provide a relatively clean environment for benchmarking nPDFs. The ATLAS detector has a broad acceptance in the muon and electron channels, with excellent performance even in the high occupancy environment of central heavy-ion collisions. ATLAS has recorded 0.49 nb–1 of lead-lead data at a center-of-mass energy of 5.02 TeV per nucleon pair. W and Z production yields are expected to increase by a factor of eight relative to the available Run 1 data at 2.76 TeV. In addition the data can be compared directly to the 29 nb–1 of proton-lead data collected in Run 1. In this talk, W and Z yields, and lepton charge asymmetries from W decays, are presented differentially in rapidity and transverse momentum as a function of centrality in lead-lead and proton-lead collisions.

## **Preferred Track**

Initial State Physics and Approach to Equilibrium

## Collaboration

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