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Vector boson production in p+Pb and Pb+Pb collisions measured with ATLAS at the LHC

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Electroweak boson production processes (W, Z and photon) provide access to the earliest moments of heavy ion collisions. Furthermore, because they do not undergo strong interactions, they are sensitive to the initial-state geometry of the collision and potentially the details of the nuclear parton distribution functions (PDF). ATLAS results on vector boson yields have demonstrated binary collision scaling in Pb+Pb collisions. In p+Pb collisions, the measurement of vector bosons provides possible constraints on the nuclear PDF and insights into the details of the initial collision geometry. We report on the latest results of vector boson production in p+Pb collisions at $\sqrt{s_{NN}}=5.02$ TeV and Pb+Pb collisions at $\sqrt{s_{NN}}=2.76$ TeV. In p+Pb collisions, production yields and lepton charge asymmetry of W bosons are presented as a function of pseudorapidity of the charged lepton and centrality. Photon and Z yields are presented differentially as a function of transverse momentum, rapidity and centrality. The vector boson yields are compared to calculations incorporating different PDF sets, as well as different centrality calculations.

On behalf of collaboration:

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