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Electroweak boson production in heavy ion collisions with the ATLAS detector

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Electroweak bosons produced in p+Pb and Pb+Pb collisions are excellent tools to probe a variety of initial state effects on hard processes involving nuclei. These effects include the nuclear modification of the partonic momentum structure and the energy loss of the incoming partons participating in a hard scattering. These probes are also important for serving as a standard candle against which to calibrate centrality in Pb+Pb collisions, thus putting measurements of jet suppression in these collisions into a proper context. In this talk, we present two new results from the ATLAS detector at the LHC: (1) Prompt photon production in the recently collected high-statistics 8.16 TeV p+Pb collision data. Photon yields are reported over a broad kinematic range, $25 < p_T^\gamma < 500$ GeV and $|\eta^{\text{lab}}| < 2.37$, and the production rates are compared to an extrapolated pp reference based on existing 8 TeV collision data. (2) High-statistics measurement of W boson production, new at this collision energy, both in 5.02 TeV Pb+Pb collisions.

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