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Vector boson and quarkonia production in proton-lead and lead-lead collisions with ATLAS at the LHC

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Photons and weak bosons do not interact strongly with the dense and hot medium formed in the nuclear collisions, thus should be sensitive to the nuclear modification of parton distribution functions (nPDFs). The in-medium modification of heavy quarkonium states plays an important role in studying the hot and dense medium formed in the larger collision systems. The ATLAS detector, optimized for searching new physics in proton-proton collisions, is especially well equipped to measure photons, Z, W bosons and quakonium in the high occupancy environment produced in heavy-ion collisions. We will present recent results on the prompt photon, Z, W boson and quarkonia yields as a function of centrality, transverse momentum and rapidity, from the ATLAS experiment.

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