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Hard probes of heavy ion collisions with ATLAS

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This talk gives an overview of the latest hard process measurements in heavy ion collision systems with the ATLAS detector at the LHC, utilizing the high statistics 5.02 TeV Pb+Pb data collected in 2018. These include multiple measurements of jet production and structure, which probe the dynamics of the hot, dense Quark-Gluon Plasma formed in relativistic nucleus-nucleus collisions; measurements of electroweak boson production to constrain the modifications of nuclear parton densities and test the Glauber model and binary scaling picture of heavy ion collisions; and measurements of quarkonia and heavy flavor production to probe the QGP medium properties. A particular focus of the measurements is the systematic comparison of fully unfolded data to state of the art theoretical models.

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