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Results from Pb+Pb Collisions with the ATLAS Detector at the LHC

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A broad program of measurements using heavy ion collisions is underway in ATLAS, with the aim of studying the properties of QCD matter at high temperatures and densities. This talk describes measurements performed using up to $9 \mu\text{b}^{-1}$ of lead-lead collision data provided at a nucleon-nucleon center-of-mass energy of 2.76 GeV by the Large Hadron Collider and collected by the ATLAS Detector during November and December 2010. We will be presenting results on inclusive charged particle multiplicities and elliptic flow to study the global features of the collisions as a function of centrality, pseudorapidity and transverse energy. Higher order Fourier coefficients will also be shown to assess the importance of more complicated event-wise geometric fluctuations. The study of the microscopic properties of the system will be addressed with high p_T probes. Muon measurements provide access to W and Z bosons which are potentially sensitive to modifications of the nuclear PDFs, as well as heavy flavor. Charged particle spectra, particularly at high p_T , are sensitive to the overall suppression of jets and their modified fragmentation. Finally, jet rates, asymmetries and fragmentation properties offer a more direct look at the physics of jet quenching than has been available at previous facilities.

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