

Abstract for an Invited Paper
for the DNP11 Meeting of
The American Physical Society

Soft and Hard Probes of Lead+Lead Collisions at the LHC with the ATLAS Detector

BRIAN COLE, Columbia University

Heavy ion collisions at the LHC provide an opportunity to study the properties of strongly interacting matter at the highest temperatures ever created in the laboratory. The ATLAS detector with its large acceptance calorimetry, extensive silicon tracking, and large-acceptance muon spectrometers is well suited to study both soft/collective observables and high- p_T /hard observables in Lead+Lead collisions. ATLAS accumulated about $8 \mu b^{-1}$ of data during the Fall 2010 LHC heavy ion run. Results will be presented from the analysis of that data set on charged particle multiplicity and pseudo-rapidity distributions, charged particle elliptic and higher harmonic collective flow, single charged particle spectra and single particle suppression at high p_T , single jet and dijet production, and W, Z, and single muon production.