

Measurements of charged particle spectra in $\sqrt{s_{NN}}=2.76$ PbPb collisions with the ATLAS detector at the LHC

Thursday, May 26, 2011 3:20 PM (20 minutes)

The measurement of charged particle spectra in heavy ion collisions is a direct way to study properties of hot and dense matter created in these interactions. The centrality dependence of the spectral shape is an important tool to understand the interplay between collective flow and energy loss mechanisms. The ATLAS detector at the LHC took lead-lead data at 2.76 TeV per nucleon-nucleon pair with an integrated luminosity of just over $9\mu\text{b}^{-1}$. The ATLAS inner detector consists of 3 layers of silicon pixel detectors and 4 double sided strip layers in the barrel regions, with pixel and strip discs covering the forward region out to $|\eta| = 2.5$. Due to the excellent capabilities of the ATLAS detector, and its stable operation during the first heavy ion run, these data allow measurements of the charged particle spectra and their ratios in different centrality bins over a wide range of transverse momenta and pseudorapidity. Comparison of ATLAS results to the results measured at lower energy will provide the opportunity to study the differences between the medium formed at the LHC and RHIC.

Primary author: Dr BARONCELLI, Toni (Physics Department University of ROMA TRE - Rome -Italy)

Presenter: MILOV, Alexander (Weizmann Institute of Science)

Session Classification: Jets

Track Classification: Jets