Contribution ID: **95** Type: **Parallel contribution**

Studies of Jet Quenching in PbPb Collisions at CMS

Wednesday, 10 August 2011 17:30 (30 minutes)

Jets are an important tool to probe the hot, dense medium which is produced in ultra-relativistic heavy ion collisions. Copious production of hard processes, well above the heavy ion background, occurs at the Large Hadron Collider due to the large increase in collision energy. The multipurpose Compact Muon Solenoid (CMS) detector is well designed to measure the hard scattering processes with its high quality calorimeters and high precision silicon tracker. Jet quenching has been studied in CMS in PbPb collisions at $\sqrt{s_{NN}} =\,2.76$˜TeV. As a function of centrality, dijet events with a high pT leading jet were found to have an increasing momentum imbalance that was significantly larger than those predicted by simulations. The angular distribution of jet fragmentation products has been explored by associating charged tracks with the dijets observed in the calorimeters. The calorimeter-based momentum imbalance is reflected in the associated track distributions, which show a softening and widening of the subleading jet fragmentation pattern. Studies of the missing transverse momentum projected on the jet axis have shown that the overall momentum balance can be recovered if tracks at low pT are included. In the PbPb data, but not in the simulations, a large fraction of the balancing momentum is carried by soft particles radiated at large angle relative to the jets.

Primary author: GROTHE, Monika (U Wisconsin)

Presenter: STEPHANS, george (Laboratory for Nuclear Science (LNS)-Massachusetts Inst. of Tec)

Session Classification: Heavy Ion Physics/Hot and Dense QCD

Track Classification: Heavy Ion Physics/Hot and Dense QCD