

## Measurement of electroweak boson production in PbPb collisions at 2.76TeV with CMS

*Tuesday, 29 May 2012 14:55 (20 minutes)*

The unprecedented centre-of-mass energy available at the LHC offers unique opportunities for studying the properties of the strongly-interacting QCD matter created in PbPb collisions at extreme temperatures and very low parton momentum fractions. The Compact Muon Solenoid (CMS) is fully equipped to measure leptonic decays of electroweak probes in the high multiplicity environment of nucleus-nucleus collisions. Electroweak boson production is an important benchmark process at hadron colliders. Precise measurements of W and Z production in heavy-ion collisions can help to constrain nuclear PDFs as well as serve as a standard candle of the initial state in PbPb collisions at the LHC energies. The inclusive and differential measurements of the Z boson yield in the muon decay channel will be presented, establishing that no modification is observed with respect to next-to-leading order pQCD calculations, scaled by the number of incoherent nucleon-nucleon collisions. Measurements of the yield of W to  $\mu\nu$  decays as a function of centrality and the W charge asymmetry as a function of rapidity show no modifications beyond isospin effects when compared to pp collisions. The status of the W and Z measurement in the electron decay channel will also be given. Results from the 2010 data taking period are reported and an outlook on the 2011 data analysis will be presented.

**Primary author:** BENHABIB, Lamia (LLR-Ecole Polytechnique)

**Presenter:** BENHABIB, Lamia (LLR-Ecole Polytechnique)

**Session Classification:** Parallel IIIC: Electroweak Probes