

## Weak boson production measured in PbPb and pp by CMS

*Thursday, May 26, 2011 3:00 PM (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. With its high precision, large acceptance for tracking and calorimetry, and a trigger scheme that allows the analysis of almost each minimum bias PbPb event by the high-level trigger, CMS is fully equipped to measure muons and electrons in the high multiplicity environment of nucleus-nucleus collisions. Electroweak boson production is an important benchmark process at hadron colliders. Precise measurements of 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. The status of the Z measurement in the electron decay channel, as well as the first observation of  $W \rightarrow \mu\nu$  in heavy ion collisions will be given. The heavy-ion results will be presented in the context of those obtained in pp collisions with the CMS detector.

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**Session Classification:** Electromagnetic probes

**Track Classification:** Electromagnetic probes