

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

Thursday, 31 May 2012 16:30 (20 minutes)

The Compact Muon Solenoid (CMS) is fully equipped to measure hard probes in the di-muon decay channel in the high multiplicity environment of nucleus-nucleus collisions. Such probes are especially relevant for studying the quark-gluon plasma since they are produced at early times and propagate through the medium, mapping its evolution. CMS has measured the nuclear modification factors of  $Y(1S)$  in PbPb collisions at  $\sqrt{s_{NN}} = 2.76$  TeV. A suppression of  $Y(1S)$  mesons is observed in PbPb collisions, compared to the yield in pp collisions scaled by the number of inelastic nucleon-nucleon collisions. Furthermore, a suppression of the excited Y-states has been measured with respect to the  $Y(1S)$  state, expressed in a double ratio  $[Y(2S+3S)/Y(1S)]_{PbPb}/[Y(2S+3S)/Y(1S)]_{pp}$  which is found to be  $0.31^{+0.19}_{-0.15}(stat.) \pm 0.03(syst.)$ . Results from the 2010 data taking period are reported and an outlook on the 2011 data analysis will be given.

## Summary

The LHC opens up a new era of precision measurements of the bottomonium family of states. We report the results of the first detailed upsilon studies in heavy-ion collisions, obtained with the CMS experiment.

**Primary author:** MIRONOV, camelia (LLR/Ecole polytechnique)

**Presenter:** MIRONOV, camelia (LLR/Ecole polytechnique)

**Session Classification:** Parallel VA: Quarkonia