

Heavy Ion measurements at ATLAS and CMS

Wednesday, 1 June 2016 15:20 (20 minutes)

Summary

The Quantum Chromodynamics (QCD) under extreme conditions in temperature or pressure predicts a new state of nuclear matter where quarks and gluons are not confined in hadrons: the quark and gluon plasma (QGP). This state is thought to have existed a few microseconds after the Big Bang. The QGP is created in the laboratory using heavy ion collisions, and its properties have been extensively studied at the SPS, the RHIC, and now at the LHC. In particular, it was shown at RHIC that QGP behaves as a perfect fluid. With 20 times higher energy, the LHC is a perfect tool to improve our knowledge of the strong interaction and QCD properties under extreme conditions. In addition, smaller colliding systems at LHC energies, like proton-proton (pp) and proton-nucleus (pA) collisions, exhibited similar behavior to nucleus-nucleus (AA) collisions. The LHC experiments have collected a large amount of data in pp, pA and AA collisions for different center of mass energies. Especially last year, proton-proton and heavy ion collisions at the highest energy delivered so far were recorded. Therefore, more precise studies and search for more rare probes of the hot and dense matter created at the collision is now possible. In this talk, the latest results from the ATLAS and CMS experiments in small systems and heavy ion collisions will be presented.

Presenter: GUILBAUD, Maxime (Rice Uni.)

Session Classification: QCD + Heavy Flavour