

Inclusive jets and jet substructure in 2.76 TeV and 5.02 TeV pp and PbPb collisions with the ATLAS detector

Tuesday 7 February 2017 15:20 (20 minutes)

In relativistic heavy ion collisions, a hot medium with a high density of unscreened color charges is produced. Jets are produced at the early stages of this collision and are known to become attenuated as they propagate through the hot matter. One manifestation of this energy loss is a lower yield of jets emerging from the medium than expected in the absence of medium effects. ATLAS has provided a quantification of jet suppression by measurements of jet R_{AA} in the LHC Run 1. A factor of two suppression was observed in central heavy ion collisions with respect to pp collisions. R_{AA} was also found to exhibit only a weak rapidity dependence, and a slow (but significant) rise with increasing jet momentum. The high-statistics run 2 data of Pb+Pb and pp collisions provide the opportunity to extend the jet R_{AA} measurement, to evaluate the center-of-mass-energy dependence of this quantity and to explore new techniques for the study of jet substructure using subjets. This talk will presents the Run 1 results on inclusive jet production and new Run 2 results on inclusive jet suppression. It will furthermore presents new results on the measurement of jet substructure from the Run 2 data.

Preferred Track

Jets and High pT Hadrons

Collaboration

ATLAS

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Session Classification: Parallel Session 3.4: Jets and High pT Hadrons (III)

Track Classification: Jets and High pT Hadrons