

Top quark pair production cross section using the ATLAS detector at the LHC, top mass

Wednesday 27 August 2014 17:45 (25 minutes)

Summary

Measurements of the inclusive top quark pair production cross sections in proton-proton collisions with the ATLAS detector at the Large Hadron Collider are presented. The measurements are performed requiring one or two electrons or muons in the final state. Various experimental techniques are compared. The most precise result requires opposite sign electrons and muons and uses the full data-set at a centre-of-mass energy of 8 TeV in good agreement to a recent NNLO+NNLL QCD calculation. In addition, a differential measurement of the top transverse momentum and kinematic properties of the top-anti-top pair are discussed. This measurement requires one electron or muon in the final state and probes our understanding of top pair production in the TeV regime and is compared to recent Monte Carlo generators implementing LO and NLO matrix elements matched with parton showers and NLO QCD calculations. The data show sensitivity to parton density functions.

Presenter: Dr KIMURA, Naoki (Aristotle University of Thessaloniki)

Session Classification: Heavy quarks