



Contribution ID: 128

Type: Talk in Parallel Session at DIS2013

Final state measurements in top pair events produced at LHC

Tuesday 23 April 2013 15:20 (20 minutes)

The large centre-of-mass energy available at the proton-proton collider LHC allows for the copious production of top quark pairs in association with other final state particles at high transverse momentum. The ATLAS experiment has measured several final state observables that are sensitive to additional parton radiation in top anti-top quark final states. Examples are the multiplicity of jets for various transverse momentum thresholds or the probability to emit jets above a given threshold in a fixed rapidity region. These measurements are compared to modern Monte Carlo generators based on NLO QCD matrix element of LO multi-leg matrix elements and with systematic model parameter variations. The data are able to constrain the uncertainty on the modelling of the top pair production mechanism.

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Session Classification: WG4: QCD and HFS

Track Classification: QCD and Hadronic Final States