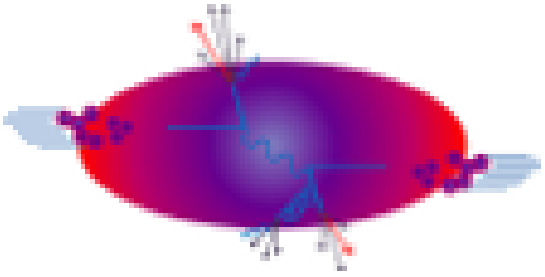

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Inclusive jet cross section measurement in ATLAS

Monday 18 April 2011 16:10 (25 minutes)

The inclusive jet cross section has been measured in proton-proton collisions at a centre-of-mass energy of 7 TeV using the ATLAS detector at the LHC. The full 2010 dataset has been used, consisting of a total integrated luminosity of 37 pb-1 . The anti-kt algorithm is used to identify jets with two jet radius parameters, R = 0.4 and R = 0.6. Jet shapes measurements are performed to validate the models for parton shower, fragmentation into hadrons, and the underlying event contributions contained in the event generators. The inclusive jet cross section measurement is presented as a function of jet transverse momentum and rapidity, for jets with transverse momentum from 20 GeV to 1.5 TeV in a rapidity range |y| < 4.4. The data are compared to expectations based on next-to-leading order QCD corrected for non-perturbative effects. In addition to a validation of the theory in a new kinematic regime, the data also provide sensitivity to parton distribution functions in a region where they are currently poorly constrained.

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