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Jet production measurements with the ALICE Experiment in pp collisions at the LHC

Measurements of inclusive jet production cross sections in proton-proton (pp) collisions provide a direct test of predictions of perturbative quantum chromodynamics. They also provide a baseline for measurements in heavy ion collisions. Jets are the collimated spray of particles originating from the fragmentation of hard scattered partons in the collision. They are defined by clustering algorithms in each event and represent the physical properties of partons from the hard scattering. It is therefore important to understand the performance of clustering algorithms that can be used in pp and A-A collision studies.

The ALICE detector at the LHC has excellent tracking capabilities for charged particles over a wide range of transverse momenta and can be used for studying jet properties. We will present the performance of k_t, anti-k_t, SISCone and UA1 cone finder clustering algorithms for charged particle jet reconstruction using the ALICE detector at midrapidity in proton-proton collisions at the LHC. We will also compare our results with PYTHIA simulations.

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Track Classification: Jets