

Measurement of charged particle jet cross-section and properties in proton-proton collisions at 2.76 TeV with ALICE

Jet is the collection of concentrated final state hadrons produced from the fragmentation of hard scattered parton in high energy hadronic, leptonic or heavy-ion collision. In proton-proton (pp) collisions, measurement of jet production cross-sections and jet properties provide validation for perturbative Quantum Chromo Dynamics (pQCD) and gives detailed insight into the parton to jet fragmentation process. These measurements also stand as vacuum reference for similar measurements in heavy-ion collisions where the created hot and dense medium modifies the jet fragmentation.

We will report the measurements of charged particle jet production cross-sections and jet properties observables such as the charged particle multiplicity distribution inside leading jet, leading charged particle jet size and the radial momentum distribution in pp collisions at $\sqrt{s} = 2.76$ TeV with ALICE. The sequential recombination anti-kT algorithm is used for jet reconstruction using charged particles with $p_T \geq 0.15$ GeV/c into account. Jets are reconstructed for resolution parameter (R) 0.2, 0.4 and 0.6 in the range $5 \text{ GeV}/c < p_T < 70 \text{ GeV}/c$. Results will be compared to predictions from Monte Carlo event generators.

Summary

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