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Study of baryon fragmentation in charged-particle jets in pp collisions with ALICE

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Studies of gluon fragmentation at LEP have shown hints that gluon-initiated jets produce more baryons than quark-initiated jets. Our current knowledge of fragmentation functions is almost exclusively based on fits to data from e^+e^- collisions and semi-inclusive deep inelastic scattering processes, both of which are mainly sensitive to quark fragmentation, leaving gluon fragmentation functions poorly constrained. Hadronic collisions at the LHC, however, produce data rich in gluon-initiated final states and offer excellent opportunities to study gluon fragmentation directly. In this poster, we present the potential for ALICE to investigate gluon fragmentation with unprecedented precision by measuring fragmentation into baryons and mesons in pp collisions at $\sqrt{s} = 13.6$ TeV.

Category

Experiment

Collaboration (if applicable)

ALICE

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