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Type: **Oral Presentation**

Search for jet quenching effects in high-multiplicity proton-proton collisions at 13 TeV with ALICE

Thursday 4 June 2020 10:35 (20 minutes)

Jet quenching is a possible consequence of the formation of a quark-gluon plasma (QGP) in collision systems, but to date no significant jet quenching has been observed in small systems. In this talk, the ALICE Collaboration reports results of a novel approach to jet-quenching measurements in high-multiplicity pp collisions at $\sqrt{s}=13$ TeV, searching for the broadening of the acoplanarity distribution measured by the semi-inclusive distribution of jets recoiling from a high-pT hadron. Charged-jet reconstruction is carried out using the anti-kT algorithm with $R=0.4$ and a data-driven statistical method is used to correct the measured jet yield for uncorrelated background, which includes multi-partonic interactions. High-multiplicity (HM) pp events are selected based on charged-particle multiplicity registered in forward scintillator detectors and their acoplanarity distributions are compared to that for Minimum Bias (MB) events. Significant broadening is observed in the acoplanarity distribution of HM events, consistent with jet quenching. However, qualitatively similar features are also seen in pp collisions generated by the PYTHIA which does not include the simulation of jet quenching or any other QGP effects. We will discuss the current status of this analysis, and prospects to understand the origin of this striking phenomenon.

Collaboration (if applicable)

ALICE

Track

Jets and High Momentum Hadrons

Contribution type

Contributed Talk

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