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Measurements of π , K, and p in jets in Pb–Pb collisions at $\sqrt{s_{\text{NN}}} = 5.02$ TeV with ALICE

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Energetic partons lose energy in the quark-gluon plasma (QGP) and then fragment and hadronize into showers of particles called jets. Measurements of the internal structure of these jets can constrain how energetic partons interact with the QGP. Though species-independent jet substructure measurements have made much progress recently, a complete understanding of the identified particle composition of the jet and its energy loss remains elusive. It has been predicted that the jet hadrochemical composition may be modified in Pb–Pb collisions due to jet-medium interactions and modified particle composition in the jet wake. Measurements of identified particles in jets can help discriminate between these potential parton-QGP interactions. In this poster, we will present progress towards extracting momentum-dependent π , K, and p ratios within jets and in the underlying event in Pb–Pb collisions at $\sqrt{s_{\text{NN}}} = 5.02$ TeV using dE/dx measurements from the ALICE Time Projection Chamber. This study aims at disentangling the potential effects of modified jet fragmentation in the medium from bulk effects.

Category

Experiment

Collaboration (if applicable)

ALICE

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