

Probing jet hadrochemistry with measurements of π , K, and p in jets and the underlying event in Pb–Pb collisions at $\sqrt{s_{\text{NN}}} = 5.02$ TeV with ALICE

Friday 10 January 2025 11:30 (30 minutes)

Measurements of jet substructure observables in heavy-ion collisions can constrain how energetic partons interact with the medium. Though there has been remarkable progress in particle-species-inclusive jet substructure measurements, a complete understanding of the identified particle composition of the jet and its modification in heavy-ion collisions remains elusive. Jet quenching models predict that the jet hadrochemical composition may be modified in heavy-ion collisions due to jet-medium interactions and modified particle composition in the jet wake. Measurements of identified particles in jets can help discriminate between parton-QGP interaction mechanisms.

In this talk, we present the first measurements of π , K, and p ratios within jets and the underlying event as a function of particle transverse momentum in Pb–Pb collisions at $\sqrt{s_{\text{NN}}} = 5.02$ TeV. Enabled by the excellent PID capabilities of ALICE, this study aims to understand soft particle production mechanisms and distinguish modified jet fragmentation from bulk effects.

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Session Classification: Morning Session