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Probing medium response by measuring (anti-)proton to pion ratio and charged particles radial profile with jet in Pb-Pb and pp collisions at $\sqrt{s_{\rm NN}}$ = 5.02 TeV with ALICE Primary tabs View(active tab)

Tuesday 24 September 2024 18:10 (20 minutes)

Comparisons of jet production in Pb–Pb collisions compared to pp collisions at LHC energies provide vital information on both jet quenching in the quark-gluon plasma (QGP) and on the medium response to the jet. Jet quenching models with a hydrodynamic medium response predict an enhancement of soft particle production at large angles from the jet axis. However, the mechanism of soft particle production at large angles still remains elusive. Measurements of particle composition within jets, jet hadrochemistry, may provide new experimental insights on the medium response of the QGP. In this poster, we present the results of particle density profile ρ for charged particles, as well as the ratios of (anti-)protons to charged pions as a function of their transverse momenta and distance from the jet axis. Particle identification (PID) is performed by utilizing the Time Projection Chamber, the Time of Flight detector, and the Inner Tracking System of ALICE. Jets are reconstructed from charged particles with the anti- algorithm with several jet resolution parameters. These jets are selected with $p_{\rm T}^{jet\ ch} > 60$ GeV/c after subtraction of the underlying event. The obtained results will be compared with theoretical models containing medium response to understand the mechanisms of soft particle production away from the jet axis.

Category

Experiment

Collaboration

ALICE

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