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Typ: Talk

Measurement of the jet mass and angularities in Pb-Pb collisions at 5.02 TeV with ALICE

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In recent years jet substructure observables have been used at the LHC as instruments to search for new physics and test perturbative and non-perturbative processes in QCD. In heavy-ion collisions, these jet substructure observables can additionally elucidate the production and evolution of the QCD medium. The jet mass is one such observable that probes the momentum transfer scale of the initial hard scattering. Additionally, the generalized jet angularities summarize the jet substructure using two continuous parameters which differentially weight the jet constituents' relative angle and p_T . One jet angularity configuration, the jet thrust, has been compared to the jet mass and has shown surprising differences in comparison with models. ALICE has performed a new measurement for both observables using an identical jet sample to study this difference more closely. The ALICE tracking system's high-precision capability provides a unique opportunity at LHC energies to measure jets at lower p_T . We report the generalized jet mass and jet angularities using charged-particle tracks in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV with ALICE. Various jet angularity parameters are investigated for the jet resolution parameter $R = 0.2$. Results are compared to pp collisions and theoretical models.

Experiment/Theory

ALICE

Affiliation

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Sitzung Einordnung: Parallel: Jets and their modification in QCD Matter

Track Klassifizierung: Jets and their modification in QCD matter