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Jet Substructure and Non-Perturbative Effects at RHIC Energies

Jet substructure has become a powerful tool in analyzing proton-proton collisions at the LHC. However, its implications for lower-energy jets at a collision energy of 200 GeV, as accessible at RHIC, remain largely unexplored. These lower-energy jets are more sensitive to non-perturbative effects such as hadronization and contributions from the underlying event, offering a unique opportunity to test and refine the current description of QCD jets.
In this talk, we present Monte Carlo predictions for light and heavy jets at 200 GeV for the sPHENIX experiment, focusing on two observables: jet angularities and the primary Lund Plane projection. We particularly explore the Dead Cone effect (suppressed collinear radiation around massive particles) and its possible signatures in the Lund Plane distributions, aiming to deepen our understanding of jet dynamics at intermediate energies.

Category

Experiment

Collaboration (if applicable)

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