

11th International Conference on Hard and Electromagnetic Probes of High-Energy Nuclear Collisions



Beitrag ID: 268

Typ: Talk

Exploring the time axis within medium-modified jets

Donnerstag, 30. März 2023 09:20 (20 Minuten)

The fast evolution of the QGP makes its interaction with jets an inherently time-dependent process. However, this crucial dimension is missing from current jet quenching measurements, which hence provide a mere average quantification of the medium properties. In this talk, we propose that jet substructure observables allow access to the QGP time structure. By identifying the recursive steps of a novel jet clustering algorithm (the tau-algorithm) with the sequence of branchings of the parton shower, we obtain an adequate proxy for a time axis within the medium. This technique enables us to label jets according to their formation time and select populations with enhanced sensitivity to quenching effects. By analysing the subsequent splitting, we also explore the possibility of quantifying time-differential properties of the medium. Moreover, we show how this method minimizes the biases stemming from p_T - or $\Delta\eta$ -based selections. The techniques presented here constitute a definite step towards QGP tomographic measurements.

Experiment/Theory

Theory/Phenomenology

Affiliation

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

Track Klassifizierung: Jets and their modification in QCD matter