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Assessing QGP momentum scales with energy correlators

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Correlation functions of energy flow operators have been recently proposed as a tool to identify the onset of colour coherence within the jets. As a promising exploration avenue to unveil the scales of the Quark-Gluon Plasma, it has yet to be demonstrated how the medium back-reaction to the jet propagation will blur such identification. In this work, by using a perturbative prescription to describe the jet-medium interactions and its re-scatterings, we show which weight of the normalised two-point correlator can maximise the separation between the wide range of momentum scales that go into the development of an in-medium jet: in-medium radiation and medium-recoiling particles. Additionally, we also explore the energy correlators' sensitivity to the different medium response momentum scales and their thermalization.

Experiment/Theory

Theory/Phenomenology

Affiliation

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