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The two-point energy correlator in the QGP: from gamma+jet to inclusive jets

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Energy correlators have been proposed as a new approach to jet substructure in proton-proton and heavy-ion collisions. In this work, we extend our previous calculations of the two-point energy correlator of heavy-ion gamma-tagged jets to include several effects essential for understanding the behavior of this observable in inclusive heavy-ion jets measurements. Through a semi-analytic approach, we incorporate the hydrodynamic expansion of the QGP, jet broadening, selection bias due to energy loss, and provide a description of the confinement transition. Our outcomes offer a crucial first step toward bridging the gap between the experimental and theoretical study of energy correlators in heavy-ion collisions.

Category

Theory

Collaboration

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