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Energy correlators for gluon splitting to heavy quarks

Energy correlators inside of high energy jets provide a powerful tool to image the intrinsic and emergent angular scales of QCD. They have the potential to provide unprecedented insight on the interplay between vacuum scales inside of a jet and its medium modification. Energy correlators of jets containing a gluon splitting to heavy quarks can provide unique experimental access to two- and three-point correlators with known parton flavors through jets tagged with heavy hadrons. We demonstrate how these correlators open up important new avenues in phenomenology. The interplay between the quark mass and medium effects gives the correlator a distinct formation time-dependent medium modification at small angles, while the clean access to the splitting has the potential to unveil effects from an anisotropic, flowing medium.

Category

Theory

Collaboration (if applicable)

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