

Factorization for energy-energy correlator in heavy-ion collision

Energy-Energy correlators (EEC) have been identified as robust observables for quantifying the properties of quark gluon plasma (QGP) created in high energy nuclear collision experiments. Despite the remarkable precision obtained in proton-proton (pp) collision by utilizing the Effective Field Theory (EFT) framework, comparable accuracy in heavy-ion collisions (HIC) remains elusive. In this regard, we employ Soft-Collinear Effective Theory (SCET) to establish factorization for EE correlators in HICs. The factorization allows us to express EEC in terms of a universal function that incorporates microscopic physics of the medium and observable dependent jet function. For a single scattering we recover GLV results at NLO and infer that radiative corrections to this result obey the BFKL evolution equation.

Category

Theory

Collaboration

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