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EFT-based factorization of jet quenching observables in heavy ion collisions

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Using an open quantum system EFT approach we derive a factorization formula for the cross-section of inclusive jet production in heavy ion collisions as a series with an increasing number of independently radiating subject functions resolved by the Quark Gluon Plasma medium, convolved with perturbative matching coefficients. In a strongly coupled system, each term in this series is a distinct non-perturbative object that depends on jet measurements such as its radius and transverse momentum as well as medium scales, temperature, and size. This approach provides a systematic formalism for computing higher-order corrections of energy loss observables.

Category

Theory

Collaboration

Primary author: Dr MEHTAR-TANI, Yacine (Brookhaven National Laboratory)

Co-authors: SINGH, BALBEER (Physical Research Laboratory); RINGER, Felix; VAIDYA, varun

Presenter: Dr MEHTAR-TANI, Yacine (Brookhaven National Laboratory)

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