



Contribution ID: 541

Type: Oral

Modification of the Jet Energy-Energy Correlator in Cold Nuclear Matter

We compute medium corrections to the energy-energy correlator (EEC) for jets in electron-nucleus collisions at leading order in the QCD coupling and the interaction of the jet with the medium. We derive an analytical expression for the modification of the EEC as a function of the opening angle and show that the modification is strongest at large angles within the jet cone. We obtain explicit results for the dependence of the modification on the jet energy, the scattering power of cold nuclear matter, and the path length within the medium. We extend our calculations to gluon jets in proton-nucleus collisions and compare our results with recent preliminary data for proton-lead collisions at the LHC. We also discuss the role of comovers on the EEC in p+Pb collisions.

Reference: arXiv:2411.04866

Category

Theory

Collaboration (if applicable)

Primary authors: Prof. MUELLER, Berndt (Duke University); Dr SIRIMANNA, Chathuranga (Duke University); FU, Yu (Duke university)

Presenter: FU, Yu (Duke university)

Track Classification: Jets