Resummation, Evolution, Factorization 2022



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the Nucleon Energy Energy Correlator

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Understanding the nucleon structure is one primary goal of the EIC. We propose the novel nucleon-energyenergy-correlator (N-EEC) that encodes the partonic angular distribution within a nucleon, and provides an entirely new way to image the intrinsic 3-D structures including the spin. We establish the factorization formula for it, remarkably simple and clean, involving no fragmentation-functions nor jet clustering. The predicted N-EEC displays novel features including the angular version of the Bjorken-scaling and a striking confining transition, and is expected to open up many directions such as new probes to the hot/cold medium effect and deepen our understanding of the non-perturbative QCD.

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