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Small-*x* **Factorization from Effective Field Theory**

Monday, 27 March 2023 11:30 (20 minutes)

We derive a factorization theorem that allows for resummation of small-x logarithms by exploiting Glauber operators in the soft collinear effective field theory. Our analysis is carried out for the hadronic tensor $W^{\mu\nu}$ in deep inelastic scattering, and leads to the definition of a new gauge invariant soft function $S^{\mu\nu}$ that describes quark and gluon emission in the central region. This soft function provides a framework for extending resummed calculations for coefficient functions to higher logarithmic orders. Our factorization also defines impact factors by universal collinear functions that are process independent, for instance being identical in small-x DIS and Drell-Yan.

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