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Next-to-Soft-virtual resummation for SIDIS to NNLO + NNLL

Semi inclusive deep inelastic scattering (SIDIS) process can provide insight into the internal structure of hadrons and also the dynamics of fragmentation of parton into hadrons. Often the perturbative predictions contain large threshold logarithms that need to be resummed to all orders in order make the predictions stable. In this work, we develop a formalise that will allow us to resum not only leading threshold logarithms but also subleading ones to all orders. We use renormalisation group equations and sudakov differential equations to obtain the results that are sensitive to these logarithms. We study their numerical impact at SIDIS experiments by performing the computations in two dimensional Mellin space. Our results improve the predictions.

Field of contribution

Phenomenology

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