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Assessing the perturbative accuracy of TMD distributions

Wednesday, 7 June 2023 09:00 (40 minutes)

In this talk I will present an accurate analysis of the theoretical accuracy of the resummation of large logarithms.

Focusing on double-logarithmic (or Sudakov) resummation relevant to the case of TMD factorisation in Drell-Yan production, I will single out the single sources of theoretical uncertainties.

Specifically, I will show how the introduction of the so-called resummation scale at the level of the running of the strong coupling is able to capture the theoretical uncertainty due to the resummation of large logarithms of the transverse momentum q_T embedded in the evolution of the TMD distributions.

In view of this analysis, I will make direct contact with the q_T -resummation formalism shedding light on the origin of the theoretical uncertainties considered in that context.

This will finally allow me to highlight limitations and advantages of the two approaches (TMD factorisation and q_T resummation) to the Sudakov resummation.

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