

QCD@LHC2022

28 November 2022 to 2 December 2022
IJCLab Orsay, France

Contribution ID: 141

Type: not specified

TMD distributions at the next-to-leading power

Monday 28 November 2022 15:00 (15 minutes)

The transverse momentum dependent and collinear factorization theorems are independent approaches to the description of scattering cross-sections at high energy. They operate with different set of universal distributions, namely, the transverse momentum distributions (TMDs) and collinear distributions. However, these distributions are not entire independent. In the regime of large transverse momentum or small- b (where b is a Fourier conjugated parameter to the transverse momentum), TMDs can be factorized in the terms of collinear distributions. This relation is often refereed as “matching relation”, and is a consequence of operator product expansion. In this talk, I will present the small- b expansion for the Sivers, Boer-Mulders, worm-gear-T and worm-gear-L functions, up to next-to-leading order (NLO).

The majority of TMDs match the collinear distributions at higher twists. For that reason their consideration is cumbersome.

The usage of the matching relation is very important for the phenomenology. It allows to incorporate the already known functions into TMDs, and in this way, reduces the parametric freedom of TMD.

Declaration

I certify that I have checked that I am authorised to submit the abstract with the listed co-authors with their current affiliations

Change of Speaker

I understand that change of speaker is allowed provided that no participant gives more than one talk. Otherwise, we will ask the speaker to choose between one or the other abstract to be presented.

Primary author: RODINI, Simone (Ecole Polytechnique)

Presenter: RODINI, Simone (Ecole Polytechnique)

Session Classification: Parallel C - WG7: 1

Track Classification: WG7: Parton tomography from 1D to 5D