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Towards Pixel-Based Imaging of Transverse Momentum Distributions

Tuesday, 10 December 2024 14:50 (10 minutes)

In this talk, we introduce a new approach for parameterizing Transverse-Momentum Dependent PDF (TMDs). By treating TMDs as multidimensional images or tensors, we propose a pixel-based representation. This novel perspective offers a versatile framework for analyzing and manipulating TMDs, enabling us to leverage a wide range of image processing techniques.
We will demonstrate the effectiveness of our new approach by applying it to extract TMD-PDF and TMD-FF from Compass Multiplicities in Semi-inclusive DIS. We will present initial results, showcasing its potential to enhance our understanding of hadron structure. Additionally, we will discuss the benefits of this method, such as its flexibility, and computational efficiency. By treating TMDs as images, we unlock new possibilities for research and analysis in hadron physics.

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