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Transverse Momentum Moments: From TMDs to collinear distributions

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In this presentation, I explore the connection between Transverse Momentum Dependent distributions (TMDs) and collinear distributions through the introduction and analysis of Transverse Momentum Moments (TMMs). These moments are defined as weighted integrals of TMDs over their transverse momentum with a cut-off scale. I illustrate that TMMs can be understood as equivalent to collinear distributions computed within a minimal subtraction scheme, with a perturbatively calculable factor enabling their transformation to the standard $\overline{\text{MS}}$-scheme. As a result, this framework presents promising opportunities for the simultaneous extraction of TMDs and PDFs in future research investigations. My focus will be on describing the characteristics of the zeroth, first, and second TMMs, accompanied by providing phenomenological results based on current TMD extractions.

Primary authors: PROKUDIN, Alexey (JLAb); VLADIMIROV, Alexey; SCIMEMI, Ignazio (Universidad Complutense Madrid); DEL RIO GARCIA, Oscar (Complutense University of Madrid)

Presenter: DEL RIO GARCIA, Oscar (Complutense University of Madrid)

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