

A Better Angle on Hadron Transverse Momentum Distributions at the EIC

I discuss a new TMD-sensitive observable q_* for semi-inclusive DIS that is defined purely in terms of lab-frame angles, enabling an order-of-magnitude improvement in experimental resolution for probing the 3D structure of the nucleon and the fragmentation process at the EIC. This proposal is inspired by the ϕ_η^* observable that has enabled the LHC experimental collaborations to resolve transverse-momentum distributions in Drell-Yan production at the permille level, and goes beyond it e.g. by including the effect of spin asymmetries. I close by discussing the prospects of extending the observable to final-state jets, and review recent progress in turning the observable into a TMD sensitive energy correlator measurement.

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