

Abstract Submitted
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Nonperturbative Transverse Momentum Effects in p+p and p+A Collisions at PHENIX MICHAEL SKOBY, University of Michigan, PHENIX COLLABORATION — Due to the non-Abelian nature of QCD, there is a prediction that quarks can become correlated across colliding protons in hadron production processes sensitive to nonperturbative transverse momentum effects. Measuring the evolution of nonperturbative transverse momentum widths as a function of the hard interaction scale can help distinguish these effects from other possibilities. Collins-Soper-Sterman evolution comes directly from the proof of transverse-momentum-dependent (TMD) factorization for processes such as Drell-Yan, semi-inclusive deep-inelastic scattering, and e+e- annihilation and predicts nonperturbative momentum widths to increase with hard scale. Experimental results from proton-proton and proton-nucleus collisions, in which TMD factorization is predicted to be broken, will be presented. The results show that these widths decrease with hard scale, suggesting possible effects from TMD factorization breaking.

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