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Global Analysis of SSAs and the Impact of the EIC on Tensor Charge Extractions

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The analysis of single transverse-spin asymmetries (SSAs) gives us tremendous insight into the internal structure of hadrons. For example, the Sivers and Collins effects in semi-inclusive deep-inelastic scattering (SIDIS), Sivers effect in Drell-Yan, and the Collins effect in electron-positron annihilation have been widely investigated over many years in order to perform 3D momentum-space tomography. In addition, observables like Λ_N in proton-proton collisions are of interest due to their sensitivity to quark-gluon correlations. In this talk I will discuss our results on the first global fit of SSA data from SIDIS, Drell-Yan, $e+e-$ annihilation into hadron pairs, and proton-proton collisions. I will also report on a study based on these results of the impact the EIC will have on extracting the nucleon tensor charge. This is an important quantity that sits at the intersection of TMD studies, beyond the Standard Model physics, and lattice QCD.

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