A modern extraction of Sivers functions

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Abstract :

Artificial Neural Networks (ANNs) are quickly becoming an invaluable tool for information extraction and modeling. An unbiased ANN model can be built to make predictions of the Transverse Momentum-dependent Distributions (TMDs) based on global fit to Semi Inclusive Deep Inelastic Scattering (SIDIS) and Drell-Yan (DY) data. A preliminary analysis will be presented on the extraction of the Sivers functions using SIDIS and DY data and making predictions for future experiments with careful consideration of the bounds on the experimental errors, data sparsity, and complexity of phase-space.