

# Measuring gluon Sivers function at a future Electron-Ion Collider

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Sivers function describes the anisotropy of parton distributions inside a transversely polarized nucleon in the momentum space. The study of the largely unexplored gluon Sivers function (GSF) is important to obtain a complete picture of the 2+1D momentum structure of nucleons. It is proposed that the GSF can be studied through the single spin asymmetry (SSA) with collisions of electrons on transversely polarized protons at a future high energy, high luminosity Electron-Ion Collider (EIC). In this work, we have performed a systematic study on the feasibility of measuring gluon Sivers function through dihadron and dijet measurements. It will be shown that the behavior of gluon Sivers function can be well constrained at an EIC especially with the dijet probes.

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