

The SpinQuest (E1039) experiment at Fermilab

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Abstract :

The SpinQuest experiment (E1039) at Fermilab aims to extract Sivers functions for the light sea-quarks in the range of $0.1 < x_B < 0.5$ through Transverse Single Spin Asymmetry (TSSA) measurements from the Drell-Yan (DY) process, using an unpolarized 120 GeV proton beam interacting with polarized fixed target of either NH_3 or ND_3 . In addition to the DY TSSA measurements, J/ψ TSSAs will also be measured to extract the gluon Sivers function. The SpinQuest experiment will be put into a global context, considering its unique kinematic coverage, which will serve as a bridge between probing valence quarks and kinematics at future EIC experiments. The goals, as well as the importance of the measurements, will be discussed in detail.