Polarized Drell-Yan at SpinQuest/ Fermilab E1039

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— The SpinQuest (Fermilab E1039) experiment will measure an azimuthal asymmetry in the Drell-Yan production of $\mu^+ \mu^-$ pairs from 120 GeV/c proton interactions with polarized nucleons to extract the Sivers function for $\bar{u}$ and $\bar{d}$. A nonzero asymmetry would be smoking gun evidence for orbital angular momentum of the light sea-quarks: a possible contributor to the proton’s spin. Measurements of a transverse single spin asymmetry in the $J/\Psi$ background would also serve to constrain the gluon Sivers function over $0.05 < x_{\text{target}} < 0.2$. The polarized target, developed by Los Alamos National Labs and University of Virginia, uses Dynamic Nuclear Polarization to reach an average proton target polarization over 80%. After a brief introduction to the E1039 experimental apparatus and target, I will discuss upcoming physics at SpinQuest.

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2I previously submitted an abstract, but after doing so, my Advisor suggested I offer an abstract for a general talk- as no one else in our collaboration had yet done so. Sorry for any confusion with the double submission.