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SpinQuest in 10 Minutes

Tuesday, 9 July 2024 08:00 (15 minutes)

The E1039/SpinQuest experiment at Fermi National Accelerator Laboratory uses a 120 GeV proton beam from the Main Injector, incident upon transversely polarized protons and deuterons using NH_3 and ND_3 targets, respectively. SpinQuest will perform the first measurement of the Sivers asymmetry in Drell-Yan \(pp\) and \(pd\) scattering from sea quarks, thereby contributing to the world data to extract the Sivers function for the light sea quarks. This function describes the correlation between the momentum direction of the struck quark and the spin of its parent nucleon. A non-vanishing Sivers function for the sea quarks is evidence that there is sea quark orbital angular momentum (OAM). There are additional opportunities to study transverse-spin effects with the SpinQuest experiment, particularly the transverse single-spin asymmetry (TSSA) in \(J/\psi \) production. An update on the current status and progress of the experiment will be given.

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