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Investigation of Angular Distributions of Drell-Yan Dimuons in p+p and p+d Interactions with the E906/SeaQuest Experiment CHRISTINE AIDALA, Los Alamos National Laboratory, FNAL E906/SEAQUEST COLLABORATION — Striking $cos2\phi$ dependences in pion-induced Drell-Yan measurements were first observed in the 1980s, and proton- induced Drell-Yan measurements by the Fermilab E866 experiment on deuterium and hydrogen targets published in 2007 and 2009 reported smaller but non-zero azimuthal dependences of the Drell-Yan pairs. These azimuthal effects have been attributed to a correlation between the spin and transverse momentum of transversely polarized quarks within an unpolarized nucleon, parametrized by the Boer-Mulders transverse-momentum-dependent distribution function, with additional contributions from QCD effects. With data taking planned to start in the summer of 2011, the E906/SeaQuest experiment will use a 120 GeV/c proton beam extracted from the Fermilab Main Injector on liquid hydrogen and deuterium targets, extending the kinematic coverage of its predecessor experiment E866 to higher parton momentum fraction. Measurement of the dimuon angular distributions will also allow the Lam-Tung relation to be tested in an extended kinematic range compared to E866. The status of data taking and prospects for measurement of the angular distributions of Drell-Yan pairs will be presented.

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