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Probing BSM and High-x Physics with SoLID at JLab

Friday, 1 June 2018 14:00 (20 minutes)

The SoLID spectrometer is being designed at JLab in order to provide a high luminosity and high-acceptance device for studies of parity-violation in deep inelastic scattering (PVDIS). The PVDIS studies will measure the vector-electron and axial-quark coupling, which is small in the Standard Model and thus provides a good test of BSM physics. In addition, the method provides a unique way to measure physics at large Bjorken x. Charge symmetry violation can be isolated with a deuterium target and an isovector EMC effect can be studied in a neutron-rich nucleus such as ^{48}Ca. In addition, quark-quark correlations can be isolated in higher-twist effects. With a proton target, the d/u PDF ratio can be measured directly without making corrections for nuclear targets. These topics will be reviewed in the context of recent theoretical and experimental developments.

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