

Abstract Submitted
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Setup of polarized electron source for parity-violation experiments MARK DALTON, University of Virginia — Measurement of parity-violation in electron scattering has evolved to measuring sub- part-per-million asymmetries with a precision better than 10 parts-per-billion. This places strict requirements on the electron beam properties, which can only be met through careful configuration of the polarized electron source. In order to control systematics and keep corrections small, the cumulative helicity-correlated position differences of the beam on target are controlled at the level of 1 nm and helicity- correlated angle differences to the 1 nrad level. For the recent Qweak measurement, utilizing the highest power cryotarget ever constructed, a high helicity reversal rate of 960 Hz is required to reduce noise due to density changes in the liquid target. The need for fast reversal presents new challenges for the optimization of the reversal apparatus. In this talk, the setup of the Jefferson Lab polarized electron source for recent parity-violation experiments is discussed along with expected future developments.

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