Contribution ID: **14** Type: **not specified**

High-precision Møller Polarimetry at Jefferson Lab's Hall A

Thursday, 29 September 2022 11:30 (25 minutes)

The Thomas Jefferson National Accelerator Facility (JLab) operates the Continuous Electron Beam Accelerator Facility which produces a polarized electron beam which is delivered to four experimental halls and is utilized to probe the fundamental nature of matter. Parity-violating electron scattering experiments are one category of experiments that are run at JLab. For these experiments, knowledge of the beam polarization is a key source of systematic uncertainty. The Møller polarimeter, one of three polarimetry tools in experimental Hall A, operates by taking advantage of the QED spin asymmetry of Møller scattering of beam electrons on a magnetically saturated iron target foil. The upcoming MOLLER experiment has a high-precision polarimetry requirement of 0.42%. Here, I'll discuss the preparations underway and lessons learned during PREX-2 and CREX which will allow the Hall A Møller polarimeter to meet this requirement.

Category

Polarimetry

Primary author: KING, Eric (Temole University)

Presenter: KING, Eric (Temole University)

Session Classification: Polarimetry