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Moller Polarimetry Simulation for Jefferson Lab Hall-A

Tuesday, 24 September 2019 11:20 (20 minutes)

The recently developed Jefferson Lab Hall-A moller polarimeter Geant4-based simulation [MolPol] is a vital tool in understanding the analyzing power of the polarimeter for parity experiments ranging from PREX-II at 1 GeV to future 11 GeV experiments. I'll discuss the application's role in the development of optics solutions, understanding of e- transportation through the polarimeter and the calculation of the analyzing power of a given optics tune; additionally, MolPol application development, issues and future challenges will be touched upon. Results against recently taken data at 2.137 GeV and 0.95 GeV show that data is qualitatively consistent with MolPol expectations.

Summary

Discussion of polarimetry application development within Geant4 software, review of simulation results, and comparison against recently taken polarimetry data.

Primary author: ERIC, King (Syracuse University)

Presenter: ERIC, King (Syracuse University)

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