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Study of Instrumental Asymmetries in Focal Plane Polarimeter¹ JONATHAN DEGANGE, SIMONA MALACE, MICHAEL PAOLONE, STEFFEN STRAUCH, DAVID TEDESCHI, University of South Carolina, JEFFERSON LAB HALL A COLLABORATION — Proton recoil polarization has been measured in the quasi-elastic ${}^{4}\text{He}(\vec{e}, e'\vec{p})$ reaction at $Q^{2} = 0.8$ and 1.3 $(\text{GeV}/c)^{2}$ in Jefferson Lab experiment E03-104. The induced polarization of the recoiling proton is a measure of the proton's final state interactions (FSI), and precise measurements are needed to constrain theoretical calculations. The proton polarization is extracted from asymmetries in angular distributions measured in the focal plane polarimeter (FPP) of the Hall A High Resolution Spectrometer. The process of extracting the induced polarization becomes complicated due to the presence of instrumental asymmetries in the FPP. Systematic studies of the detector response have shown inefficient regions in the FPP straw chambers. A novel technique for the extraction of induced polarization has been created in efforts of including only those proton tracks where the detector is equally efficient for both azimuthal angles ϕ and $\phi + \pi$, respectively. The procedure and results will be presented and described.

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