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The Compton Polarimeter in Hall C of Jefferson[1] AMRENDRA NARAYAN, Mississippi State University, HALL C COMPTON TEAM — A new Compton polarimeter was installed in Hall C at Jefferson Lab and used during the Qweak experiment which aims to measure the weak charge of proton with a precision of 4.1%. In this polarimeter the electron beam collides with green laser light stored in a low gain Fabry-Perot Cavity; the scattered electrons are detected in 4 planes of a novel diamond micro strip detector while the back scattered photons are detected in a lead tungstate crystal. We extract the beam polarization by fitting the experimental asymmetry for each detector strip to the corresponding asymmetry calculated in QED. During the experiment, we took data to cross-calibrate Moller and Compton polarimeters in Hall C. We will share our preliminary conclusions from this comparison. In this talk, we will also present the results from Monte Carlo studies performed to estimate the systematic uncertainties of the polarization measurement along with comparing results from two independent extraction of the polarization involving very different time scales. The Compton polarimeter has achieved the design goals of 1% statistical uncertainty per hour and we expect to achieve less than 1% systematic uncertainty.

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