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The Qweak Experiment: Tracking Analysis<sup>1</sup> QUINN HAILES, None — The Qweak experiment is a search for new physics at the TeV scale through a measurement of the proton's weak charge, currently being conducted at Jefferson Lab. The experiment is a high precision measurement of the parity-violating asymmetry in elastic scattering at Q2 = 0.026GeV2 (Q2 = 4EE'sin2( $\theta/2$ )) using polarized electron beam on aluminum and liquid hydrogen targets. These polarized electrons will scatter universally but the forward angles are only analyzed due to the position of the detectors. Any deviation from the Standard Model would signal new physics. The Qweak group aims to carry out the first precision measurement of the weak charge: Q = 1 - 4sin2w. I have produced scripts, which provide knowledge on various kinematic variables: beam energy, scattering angle, scattering vertex, and momentum. These studies can determine whether the data analyzer is working properly and even corrects for different errors. Ultimately these scripts will analyze each and every run to determine a value for Q2.

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