Abstract Submitted
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The Parity Violating Asymmetries of Backgrounds in the Q_{weak} Experiment[1] KATHERINE MYERS, The George Washington University, QWEAK COLLABORATION — The Q_{weak} Collaboration at Jefferson Lab will perform the first direct measurement of the proton's weak charge, Q_W^p, to a precision of 4%. At tree level, the weak mixing angle is related to the weak charge of the proton by Q_W^p=1-4sin$^2\,\theta_W$, leading to a 0.3% measurement of sin$^2\,\theta_W$ at low energy - making this the best low energy measurement to date. The parity-violating asymmetry in elastic electron-proton scattering will be measured and is expected to be small, $\sim$ 250 ppb. To reach the experimental goals, systematic uncertainties must be measured precisely. One particular systematic uncertainty is background contributions to the experimental asymmetry. Q_{weak} will take data in integrating mode, which requires that the asymmetry-weighted backgrounds be well understood. The largest source of asymmetry-weighted background is expected to come from the target windows. Elastic e-Aluminum and e-Beryllium yields and parity-violating asymmetries must therefore be measured to subtract target window background contributions to the measured asymmetry. The simulation of these window asymmetries and other backgrounds will be discussed.

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