

Abstract Submitted
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Polarized multiple scattering effect in Qweak CIPRIAN GAL, Univ of Virginia — The Qweak experiment has measured the weak charge of the proton to unprecedented precision. In order to achieve this, all possible sources of systematic uncertainty had to be carefully controlled. This talk will present the work underpinning one of the leading systematic uncertainties in the measurement. Multiple scattering of transversely polarized electrons in the lead pre-radiator produced an additional asymmetry in the quartz integrating detectors. Analyzing powers inside the lead corresponding to Mott scattering and a two photon exchange model were implemented in a Geant4 simulation. A correction based on the physical differences between the left half and the right half of each Qweak detector was obtained. Potential implications to other parity violating experiments will be discussed.

Ciprian Gal
Univ of Virginia

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