

Abstract Submitted  
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**Overview of Jefferson Lab's  $Q_{Weak}$  Experiment** DAVID MACK, TJ-NAF, QWEAK COLLABORATION — Precision measurements of Standard Model-suppressed, weak-scale observables provide a window on potential new physics. An attractive observable which has never been directly measured is the proton neutral weak charge,  $Q_{Weak}^p$ , which measures the coupling of the Z boson to the proton. Because  $Q_{Weak}^p$  is proportional to the small quantity  $1 - 4\sin^2\theta_W$  at tree level, new parity-violating electron-quark interactions at the TeV scale could be revealed by an experiment with our modest 4% projected uncertainty. By measuring the parity-violating asymmetry in elastic  $e + p$  scattering at low momentum transfer, and utilizing bounds from the world's strange quark form factor program, the proton weak charge can be determined with relatively small hadronic interpretational ambiguities. After overviewing the physics case and the status of our construction efforts, commissioning activities and the time- scale for production data taking will be discussed.

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