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The Proton's Weak Charge D.S. ARMSTRONG, College of William & Mary, QWEAK COLLABORATION — The Qweak collaboration has embarked on a measurement, at Jefferson Lab, of the proton's vector neutral-current coupling, the weak charge. Electroweak interference leads to a parity-violating helicity-dependence (asymmetry) in the scattering of longitudinally polarized electrons from an unpolarized hydrogen target. The weak charge can be extracted from a measurement of this asymmetry at sufficiently low momentum transfer. This is the first experiment dedicated to a measurement of the weak charge, and will serve as sensitive test of the Standard Model prediction for this quantity. The anticipated result will have sensitivity to certain classes of new physics at the few TeV mass scale. An overview of the experimental approach will be presented, along with a status report on the data-taking and performance of the apparatus.

David Armstrong
College of William & Mary

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