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Precision Measurement of the Proton's Weak Charge

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The QWeak collaboration has used parity-violating elastic electron-proton scattering at very low momentum transfer to precisely measure the proton's weak charge. The weak charge is cleanly predicted within the Standard Model, with minimal theoretical uncertainty. Thus, this measurement provides an avenue for a sensitive search for beyond-the-Standard Model (BSM) physics. The final results for the weak charge will be presented, as well as the extracted values of the vector weak couplings of the up and down quarks, and the weak mixing angle. We will also discuss implications for BSM physics at the multi-TeV energy scale.

[1](QWeak Collaboration)