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Data Quality Control and Maintenance for the Qweak Experiment NICHOLAS HEINER, DAMON SPAYDE, Hendrix College, QWEAK COLLABORATION — The Qweak collaboration seeks to quantify the weak charge of a proton through the analysis of the parity-violating electron asymmetry in elastic electron-proton scattering. The asymmetry is calculated by measuring how many electrons deflect from a hydrogen target at the chosen scattering angle for aligned and anti-aligned electron spins, then evaluating the difference between the numbers of deflections that occurred for both polarization states. The weak charge can then be extracted from this data. Knowing the weak charge will allow us to calculate the electroweak mixing angle for the particular Q^2 value of the chosen electrons, which the Standard Model makes a firm prediction for. Any significant deviation from this prediction would be a prime indicator of the existence of physics beyond what the Standard Model describes. After the experiment was conducted at Jefferson Lab, collected data was stored within a MySQL database for further analysis. I will present an overview of the database and its functions as well as a demonstration of the quality checks and maintenance performed on the data itself. These checks include an analysis of errors occurring throughout the experiment, specifically data acquisition errors within the main detector array, and an analysis of data cuts.

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