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**Statistical Data Analysis for the Qweak Experiment** GRACE TREES, DAMON SPAYDE, Hendrix College, QWEAK COLLABORATION — The Qweak experiment utilizes the concept of parity violation in weak interactions to ascertain the weak charge of the proton. Due to parity violation, electron-proton scattering results in an asymmetry of the electron scattering rate which can be discerned from detectors as the helicity of the beam is toggled. This asymmetry allows for the calculation of the weak charge of the proton, which then can be used to establish the value of the weak mixing angle. The weak mixing, or Weinberg, angle is a parameter of the Standard Model, thus any deviation from its predicted value would imply the existence of physics beyond the Standard Model. For this experiment, detector yields and beam parameter values were collected for every helicity state of the beam and from these recorded values asymmetries are calculated. After 2200 hours of data collection taken at the Thomas Jefferson Lab National Accelerator Facility, analysis of the collected data is underway. The data must be scrutinized to assure that it all belongs to the same statistical population. Properties such as the mean and standard deviation were calculated for different subsets of data in order to characterize their sample population. The results from the individual subsets were then compared.

Grace Trees
Hendrix College

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