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Organization and Analysis of Data from the Qweak Experiment[1]
DAN CARGILL, DAMON SPAYDE, Hendrix College, QWEAK COLLABORATION — The Qweak experiment, which was conducted at the Thomas Jefferson National Accelerator Facility in a collaboration consisting of over twenty institutions, measured the small parity violating asymmetry occurring in elastic e-p scattering at low four-momentum transfer. This asymmetry will be used to calculate a precise value for the proton's weak charge. The Standard Model firmly predicts this weak charge based on the running of the weak mixing angle from the Z0 pole (where it is anchored by precise measurements) down to low energies. Through testing this prediction the Qweak experiment hopes to either constrain or reveal possible new physics beyond the Standard Model. Because of the small size of the predicted asymmetry and the precise nature of the measurement, over 2000 hours of data were taken. In order to help organize and store this data, a database has been implemented containing averages over sets of this data. It must be organized in such a way as to allow the quick and easy retrieval of data by collaborators with minimal knowledge of the database language. Tools for aggregating and expanding parts of this database as well as data analysis will be discussed.

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