Abstract Submitted
for the DNP20 Meeting of
The American Physical Society

The Moller Experiment[1] RAJVEER SEEHRA, None, MOLLER COLLABORATION[2] — The Measurement of a Lepton – Lepton Electroweak Reaction, or MOLLER, aims to examine the weak charge of the electron through the parity – violating asymmetry in electron to electron scattering. This can be done at Jefferson Lab, using their particle accelerator to collide subatomic particles (via a liquid hydrogen target). The statistical findings of this asymmetry will provide a precise proportionality to the weak charge of an electron. The sensitivity exuded in this experiment is incredibly significant as we expect to optimize previous measurements of the electroweak mixing angle by a factor of 5. Currently, we work to improve the dimensions and structure of the pion detectors used in the apparatus. Each pion detector records hits that are statistically analyzed. The results are then examined through Python based code and used to improve the next set of simulations. Pion detector work progresses our understanding of how subatomic particle collisions tend to the electroweak mixing angle and are ultimately instrumental for the experiment.

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None

Date submitted: 31 Jul 2020 Electronic form version 1.4