Abstract Submitted
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Tracking and Vertex Reconstruction for MUSE[1] PETER SOLAZZO[2], George Washington Univ, MUON PROTON SCATTERING EXPERIMENT COLLABORATION — The MUon proton Scattering Experiment will make measurements of muon and electron elastic scattering on the proton.The experiment will access both charge states, enabling both comparison of mu+/mu- and e+/e- and direct measurement of the two-photon effect in a Q2 region relevant to the proton radius puzzle. MUSE will be the first experiment to produce muon proton scattering data in the region of interest with sufficient precision to address the proton radius puzzle. In order to achieve these aims, accurate reconstruction of particle tracks is essential. The collaboration's current intent to use the GenFit package, available at genfit.sourceforge.net, for all detectors, as well as developing independent trackers for each detector will be discussed. Creating multiple tracking programs will allow easier analysis of tracking performance in individual detectors as well as globally. Also discussed will be the current method of extracting the scattering angle using the tracks. This material is based upon work supported by the National Science Foundation under Grant No. NSF PHY-1714833. The MUSE experiment is supported by the Binational Science Foundation, the Department of Energy, NSF and PSI.

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