

Abstract Submitted
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Beam measurements using the Straw Tracking Detectors of the Fermilab Muon g-2 Experiment SASKIA CHARITY, University of Liverpool, FERMILAB MUON G-2 COLLABORATION — The Fermilab Muon g-2 experiment will measure the anomalous magnetic moment of the muon to a precision of 140 parts per billion, which is a factor of four improvement over the previous E821 measurement at Brookhaven. The experiment will also extend the search for the muon's electric dipole moment (EDM) by approximately two orders of magnitude with a sensitivity down to 10^{-21} e.cm. Both of these measurements are made by an analysis of the modulation of the decay rate of the higher-energy positrons from the (anti-)muon decays recorded by 24 calorimeters and 2 straw tracking detectors. The straw tracking detectors will be used to cross-calibrate the calorimeter, identify pileup and muons lost from the storage region, and to measure the beam-profile. A tracker measurement of the up-down modulation of positrons will be used in the EDM analysis. The performance of the tracking detectors in beam-tests, simulation and the first data from the g-2 experiment will be described and the expected performance in the physics data-taking in 2018/19 will be presented, particularly in the context of the experiment's sensitivity to a muon EDM.

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