Abstract Submitted
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Mu2e: A High-Sensitivity Charged Lepton Flavor-Violating Search at Fermilab[1] JAMES MILLER, Department of Physics, Boston University, MU2E COLLABORATION — The Mu2e Experiment at Fermilab will search for coherent, neutrino-less conversion of a muon into an electron in the field of a nucleus, $\mu^- + A \rightarrow A + e^-$, with a sensitivity improvement of a factor of 10,000 over existing limits. Such a charged lepton flavor-violating reaction probes new physics complementary to the LHC and can reach a scale unavailable by direct searches at either present or planned high energy colliders. The physics motivation for Mu2e will be presented, as well as the design of the muon beamline and spectrometer. The beamline employs a new design consisting of superconducting solenoids that will produce muons at high efficiency. A scheme by which the experiment can be mounted in the present Fermilab accelerator complex will be described. Prospects for increased sensitivity at future very high intensity sources, such as the Project X linac that is being proposed by Fermilab, will be discussed.

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