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The Mu2e experiment at Fermilab

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Lepton flavor is a conserved quantity of nature in the standard model. With the discovery of neutrino oscillation, charged lepton flavor violation (CLFV) is predicted to exist by various New Physics theories beyond the standard model. The Mu2e experiment at Fermilab will search for the CLFV process of neutrinoless muon to electron conversion in the field of a nucleus. Mu2e aims to measure the CLFV process to the precision of 10^{-17} , which is an improvement of four orders of magnitude over the current best limit of 7×10^{-13} (90% CL) by the SINDRUMII experiment. I will present the Mu2e detector apparatus and beam, the signals and main backgrounds, as well as its current status, goal of the Mu2e Run 1 and the schedule.

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