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# The Mu2e experiment at Fermilab: a search for lepton flavor violation

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The Mu2e experiment at Fermilab will search for the charged lepton flavor violating process of neutrinoless $\mu \rightarrow e$ coherent conversion in the field of an aluminum nucleus. About $7 \cdot 10^{17}$ muons, provided by a dedicated muon beam line in construction at Fermilab, will be stopped in 3 years in the aluminum target. The corresponding single event sensitivity will be $2.5 \cdot 10^{-17}$. In this presentation, a brief overview of the physics explored by the $\mu \rightarrow e$ conversion will be given, followed by a description of the Mu2e experimental apparatus and the expected detector performance.

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