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An Introduction to the Mu2e Experiment and Preparation Status in the Year 2021[1]

CHARLES JENKINS[2], University of South Alabama

The Mu2e Experiment will search for Charged Lepton Flavor Violation (CLFV) in the process of a coherent neutrinoless mu- N ->e- N transition. This process is allowed under the Standard Model in the presence of neutrino mixing; albeit, at unobservable rates (branching ratio below 10^{-50}). The sensitivity of the Mu2e experiment is a factor of 10^4 improvement over the current limit. This search both compliments and extends current searches for muon to electron+gamma at MEG and new physics searches at the LHC. Another interesting process that Mu2e will search for is the neutrionless conversion of stopped negative muons into positrons: mu- N ->e+ N'. This process violates both lepton flavor and lepton number (LNV) and would provide proof that neutrinos are Majorana particles. A description of the Mu2e Experiment and an update on this experiment's preparation status in the year 2021 will be presented.

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