

New Perspectives



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Design and Fabrication of the Cosmic Ray Veto for the Mu2e Experiment

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The Muon-to-Electron Conversion Experiment (Mu2e) at Fermilab will search for the charged-lepton flavor-violating process of a neutrino-less conversion of a muon to electron in the presence of a nucleus. It will do so with an expected sensitivity that improves upon current limits of four orders of magnitude. Such sensitivity will require less than one expected background event over the lifetime of the experiment. The largest background are cosmic rays entering the experimental hall and producing an electron at the expected signal energy. To mitigate this otherwise indistinguishable process, the Mu2e Cosmic Ray Veto (CRV) is designed to veto cosmic rays with 99.99% efficiency while having low dead time in a high intensity environment. The Mu2e CRV is currently being fabricated at the University of Virginia and this talk will discuss the design and fabrication process.

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