

Abstract Submitted
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Preliminary Accelerated Aging Studies for the Mu2e Cosmic Ray Veto System TYLER LAM, Univ of Virginia — The Mu2e experiment will conduct a search for charged lepton flavor violation through observation of a neutrino-less muon to electron conversion. In order to prevent interference from cosmic ray muons, a cosmic ray veto shield (CRV) consisting of counters made from scintillating plastic will be read out by wavelength shifting fibers. To ensure cosmic rays are not mistakenly detected as false positive muon to electron conversions, the CRV must have a detection efficiency of 0.9999. Due to the long-term nature of this experiment, veto counters must continue to function efficiently for up to 10 years. Accelerated aging studies will measure the effects of aging on the light yield of scintillator and transmission of light through optical fibers. An oven will heat samples to simulate 10 years of aging in only 1 year, and studies on these samples will be conducted to measure the effect of aging. Tests include measuring the attenuation of light through the aged optical fiber using an LED flasher with a photodiode or spectrometer and measuring the response of aged counters to radioactive sources and cosmic rays.

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