Abstract Submitted
for the APR20 Meeting of
The American Physical Society

Aging Studies of Scintillation Counters with Embedded Wavelength Shifting Fibers E. CRAIG DUKES, R. CRAIG GROUP, STEVEN BOI, University of Virginia, YURI OKSUZIAN, Argonne National Laboratory, MU2E COLLABORATION — 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 reduce backgrounds from cosmic ray muons, a cosmic ray veto consisting of counters made from scintillating plastic will be read out by wavelength-shifting fibers. The cosmic ray veto must have an overall detection efficiency of 99.99%. The the counters are designed to meet photoelectron yield requirements over a working lifetime of 10 years. Aging studies have been made to measure the temporal response of the light yield of the scintillator and transmission of light through optical fibers. Tests include radioactive sources studies with accelerated aging using an oven, non-accelerated aging studies over a period of three years, and test-beam measurements. A comparison to other aging measurements will be presented.

Edmond Dukes
Univ of Virginia

Date submitted: 14 Jan 2020 Electronic form version 1.4