



Contribution ID: 386

Type: **Presentation**

## A High Efficiency Cosmic Ray Veto Detector for the Mu2e Experiment at Fermilab

*Wednesday, 2 August 2017 15:00 (15 minutes)*

The Mu2e experiment is designed to search for the charged-lepton flavor-violating process,  $\mu^-$  to a  $e^-$ , with unprecedented sensitivity. The single 105-MeV electron that results from this process can be mimicked by cosmic-ray muons or their products entering the detector. An active veto detector surrounding the apparatus is used to detect incoming cosmic-ray muons. To reduce the backgrounds to the required level it must have an average efficiency of 99.99% and excellent hermeticity over a large area. The detector consists of four layers of scintillator counters, each with two embedded wavelength-shifting fibers, whose light is detected by silicon photomultipliers. The design and expected performance of the cosmic ray veto detector will be described.

**Primary author:** Prof. DUKES, E. Craig (University of Virginia)

**Presenter:** Prof. DUKES, E. Craig (University of Virginia)

**Session Classification:** Particle Detectors

**Track Classification:** Particle Detectors