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## A Cosmic Ray Veto Detector for the Mu2e Experiment at Fermila

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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.

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