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Performance of Enhanced Wavelength-shifting Fibers for the Mu2e Cosmic Ray Veto Detector

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The cosmic-ray-veto detector (CRV) for the Mu2e experiment consists of four layers of plastic scintillating counters read out by silicon photo-multipliers (SiPM) through wavelength-shifting fibers. This presentation reports the testing procedure and light properties of wavelength-shifting fibers with a diameter of 1.8 mm that were purchased to improve the CRV efficiency in certain critical regions. The measurements were performed using a custom-built scanner designed to ensure the fiber quality for the CRV. These results will be discussed and compared with the performance of the 1.4mm fibers used for the bulk of the CRV.

Are you are a member of the APS Division of Particles and Fields?

Yes

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