

Abstract Submitted
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The Study on Test Beam Data of Mu2e Cosmic-Ray-Veto Scintillation Counter Prototype YONGYI WU, Univ of Virginia, MU2E COLLABORATION — Mu2e is an experiment studying flavor violation in charged lepton interactions through searching for neutrino-less muon to electron decay. In the experiment, cosmic ray muons are anticipated to be a major source of background. They can produce signals indistinguishable to the desired signals in the detector. To cut this background, a cosmic-ray-veto (CRV) system with a high vetoing efficiency has been designed. The veto consists of plastic scintillation counters, and a prototype counter was tested at Fermilab in 2013 using a pulsed beam of 120 GeV protons. The data were analyzed to study the features of the counter including single-channel time resolution, transversal light attenuation, photoelectron yields and the saturation effect of the SiPMs. The better understandings of the prototype's performance will contribute to design improvements enabling the experiment to reach the desired detecting efficiency in a cost-effective manner.

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