Abstract Submitted
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Silicon Photomultiplier Optimization and Performance NINA MAZZARELLI, University of Virginia — As part of prototype testing for the Mu2e cosmic ray veto shield, the impact of silicon photomultiplier (SiPM) performance was studied over a range of experimental conditions. SiPMs were exposed to LED light pulses to determine response linearity as a function of exposed light intensity. Using the same light source, the dependence of photoelectron timing resolution on applied bias voltage was measured. The relationship between radiation exposure from a Cs-137 source and SiPM and electronic crosstalk levels was also measured. Other phenomena, including the contribution of after-pulsing and double peak resolution to readout resolution, were modeled as a function of time, amplitude, and over-voltage.

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