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Studies of Radiation Damage to Silicon Photomultipliers

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We present results of radiation tests of 1.3×1.3 mm^2
and 2.0×2.0 mm^2 for Hamamatsu silicon photo-multiplier (SiPM) sensors. These studies were performed to evaluate the suitability of the Hamamatsu devices for use in the Mu2e Cosmic Ray Veto. Distinct sets of eight SiPMs
were exposed to four different 1 MeV neutron equivalent doses of 200
MeV protons. Measurements of the breakdown voltage, gain and noise
rates at different bias overvoltages, photoelectron thresholds, and LED
illumination levels were taken before and after irradiation.

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