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Results from Silicon Photo-Multiplier neutron irradiation test

Silicon photo-multipliers, often called “SiPM”, are semiconductor photon detectors built from a square matrix of avalanche photo-diodes on common silicon substrate. SiPM have been proposed for several different applications in High Energy Physics, in particular where a large detection granularity is needed. In this presentation the results of a radiation hardness test performed at the Frascati Neutron Generator are presented. Several SiPM of different manufacturers have been irradiated integrating up to 7x10ˆ10 1-MeV-equivalent neutrons per cmˆ2. Six devices produced by the IRST and four produced by the Hamamatsu have been tested with neutrons.
For the first time, their performance have been recorded during the neutron irradiation and a gradual deterioration of their properties was found to happen the order of 10ˆ8 1-MeV-quivalent
neutrons per cm2.

Summary (Additional text describing your work. Can be pasted here or give an URL to a PDF document):

http://df.unife.it/u/cibinett/Physics/FNG_summary.pdf

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