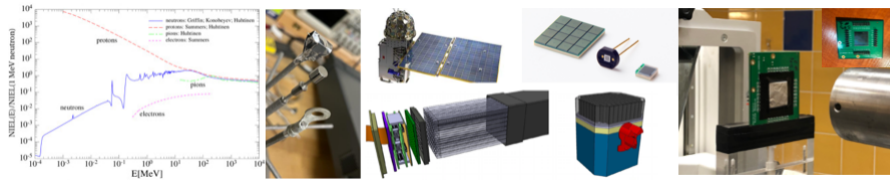


# SiPM Radiation: Quantifying Light for Nuclear, Space and Medical Instruments under Harsh Radiation Conditions



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## Irradiation of multi-channel SiPM arrays in Mu3e

*Tuesday 26 April 2022 14:05 (25 minutes)*

Mu3e is a novel experiment under preparation at PSI searching for lepton flavor violation in the neutrinoless  $\mu \rightarrow eee$  decay. To suppress accidental backgrounds a scintillating fiber timing detector read out with multi-channel SiPM arrays at both ends has been developed. The SiPM arrays will be exposed to a very high flux of low energy positrons ( $E \sim 10$  to  $50$  MeV) from  $\mu$  decays, which cause much more damage than MIPs. The expected dose during Phase I of the experiment is estimated around  $10^{11}$  neutron equivalent /  $\text{cm}^2$ . In this talk we will present our experience with the irradiated multi-channel SiPM arrays exposed at different doses and operated at different temperatures.

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