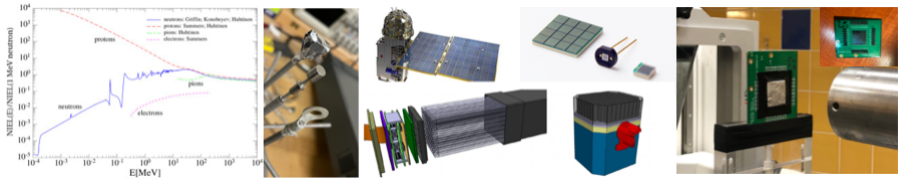

Contribution ID: **25** Type: **not specified**

SiPM applications in novel SmallSat missions for gamma-ray astronomy

Thursday 28 April 2022 14:35 (25 minutes)

MoonBEAM and StarBurst are two novel SmallSat designs for missions in the field of gamma-ray astronomy. Given their size constraints, these types of spacecraft highly favor the use of SiPMs over PMTs in their scintillation-based detector designs. However, the one major problem for SiPM detector designs is operational lifetime given that SiPM power draw increases significantly with radiation damage. This can begin to exceed spacecraft power requirements after just a year in low Earth orbit. I will provide an overview of the MoonBEAM and StarBurst missions as well as the viability studies for SiPM use that were explored during their design phase.

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Session Classification: Future Applications

Track Classification: Space Applications