



Contribution ID: 13

Type: **Poster**

Ultra high energy cosmic ray detection using SiPMs (silicon photomultipliers)

Thursday 15 May 2025 22:20 (2 minutes)

The silicon photomultiplier (SiPM) is increasingly used in single-photon or few-photon based applications such as spectroscopy, quantum experiments and distance measurements (LIDAR). Also, it finds its niche in fast timing applications such as time of flight positron emission tomography (TOF-PET) and in high energy physics (HEP).

In astrophysics, SiPM arrays find their use in the development of near-UV telescopes for the observation from space or from ground level of the ultraviolet tracks (290-430 nm) associated with giant extensive air showers produced by ultra-high energy primaries propagating in the earth's atmosphere with highest time precision. The present paper presents our achievements in the development of SiPM array based instruments for the detection and characterization of the air showers generated in the atmosphere by collision of the high energy particles with the Earth atmosphere.

Eligibility for "Best presentation for young researcher" or "Best poster for young researcher" prize

No

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Session Classification: Posters