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Overview of SiPM applications

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Multicell Geiger-mode avalanche photodiodes or silicon photomultipliers (SiPMs) have proven to be a sound alternative to other types of photodetectors in different fields, and their advantages can significantly overcome the performance previously achieved or enable new possibilities. Their development continues with the improvement of general properties, and/or the enhancement of determined characteristics to fulfil specific requirements for different applications. As the number of SiPM manufacturers rises, their properties improve, and more possibilities for readout appear in the market, an always increasing number of physics experiments tend to replace other type of photodetectors by SiPMs, or to employ them in innovative applications.
SiPMs have been successfully applied, or are being tested, in numerous applications in high energy physics (in calorimeters for CALICE, in T2K or in Cherenkov detectors), in astroparticle physics (such as MAGIC or EUSO), and in medical imaging, for example in the combination of PET and MR imaging modalities, or for time of flight PET. An overview of these and other applications will be given.

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