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Development of new photon detection device for Cerenkov and fluorescence radiation

Recent progress on development of new solid state detectors allowed the use of finely pixelled photocathodes based on the use of silicon semiconductors. SiPM detectors seem to be an ideal tool for detection of Cerenkov and fluorescence light in spite of their not yet resolved criticism for operating temperature and intrinsic noise. The main disadvantage of SiPM in this case is the poor sensitivity in the wavelength range 300-400 nm, where the Cerenkov light and Fluorescence radiation are generated. We report on a new kind of finely pixelled detector based on the use of silicon substrate and Carbon Nanotube compounds, much more sensitive to the near UV radiation. Also if at the very beginning, the development of such detector appears very promising and useful for Astroparticle Physics, both in ground based array and in space experiments. First detectors are ready to be operated in conditions of measurements without signal amplification.

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