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Development of a SiPM camera demonstrator for the Cherenkov Telescope Array observatory telescopes

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The Cherenkov Telescope Array (CTA) Consortium is developing the new generation of ground observatories for the detection of very-high energy gamma-rays.

The Italian Institute of Nuclear Physics (INFN) is contributing to the R&D of a possible solution for the Cherenkov photon cameras based on Silicon Photomultiplier (SiPM) detectors sensitive to near ultraviolet energies, produced by Fondazione Bruno Kessler (FBK). The concept, mechanics and readout electronics for SiPM modules which could equip a possible upgrade for the focal plane camera of the pSCT telescope, prototype of a CTA medium size telescope with Schwarzschild-Couder optics, are currently being developed.

This contribution reviews the development, the assembly and the performances of 4x4 SiPM modules intended to equip the pSCT camera upgrade.

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