Contribution ID: **24** Type: **not specified**

Assembly and validation of SiPM optical modules for the Schwarzschild-Couder Medium Size Telescope proposed for the CTA observatory.

Friday, 22 June 2018 10:15 (20 minutes)

Silicon Photomultipliers are particularly suitable as optical units of Imaging Air Cherenkov Telescopes to detect the fast and low-intensity Cherenkov signal emitted by high energy atmospheric showers. The third generation of high density NUV SiPMs (NUV-HD3) produced by Fondazione Bruno Kessler (FBK) in collaboration with INFN have been used to equip optical modules intended to be integrated on a possible upgrade of the focal plane camera of the Schwarzschild-Couder Telescope prototype (pSCT) in the framework of the Cherenkov Telescope Array (CTA) project.
NUV-HD3 SiPMs are 6x6mm^2 devices based on 40x40µm^2 microcells with excellent photo detection efficiency for the NUV wavelengths. More than 40 optical modules, each composed of a matrix of 4x4 SiPMs, have been assembled and tested in the laboratories of INFN to be integrated on the pSCT camera. In this contribution we report on the development and on the assembly of the optical modules, on their validation and on their integration of the pSCT camera.

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Session Classification: Instrumentation for Astroparticle Experiments