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Quality control tests on the new frontend electronics for the Schwarzschild-Couder Telescope

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One of the proposed Medium-Sized Telescopes for the Cherenkov Telescope Array (CTA) is the dual mirror optics Schwarzschild-Couder Telescope (SCT). The prototype SCT camera is currently equipped with 24 SiPM modules each one made of 64 pixels. The upgrade of the current camera is in progress, with the aim of fully equipping the 177 SiPM modules. A new front-end electronics is being developed and tested in order to improve the noise performance and match CTA requirements. In this process, more than 11000 SiPMs and related electronics will be tested in the laboratories before the assembly on the telescope camera.

The SiPM Multichannel ASIC for high Resolutions cherenkov Telescope (SMART) has been developed by INFN to amplify the SiPM signals to be digitized and injected in the trigger logic based on the TARGET ASICs.

An experimental setup has been devised to test about 750 SMART, which will be used to equip the full camera of the prototype SCT. Each SMART was tested for proper operation in response to a laser pulse. In this contribution we present a detailed scheme of the test bench and the first results obtained on the quality control measurements.

Collaboration

SCT

Autore principale: TRIPODO, Giovanni (Istituto Nazionale di Fisica Nucleare)

Coautore: ARAMO, Carla (Istituto Nazionale di Fisica Nucleare); BISSALDI, Elisabetta (Istituto Nazionale di Fisica Nucleare); DI VENERE, Leonardo (INFN Bari); INCARDONA, Simone (Istituto Nazionale di Fisica Nucleare); GIORDANO, Francesco (BA); BITOSSO, Massimiliano; LOPORCHIO, Serena (INFN Bari); MARSELLA, Giovanni (Istituto Nazionale di Fisica Nucleare); PANTALEO, Francesca Romana; PAOLETTI, Riccardo (Istituto Nazionale di Fisica Nucleare); LICCIULLI, Francesco (Istituto Nazionale di Fisica Nucleare)

Relatore: TRIPODO, Giovanni (Istituto Nazionale di Fisica Nucleare)

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