

A single photoelectron calibration system for the NectarCAM camera of the Cherenkov Telescope Array Medium-Sized Telescopes

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This contribution aims to introduce the single photoelectron system designed to calibrate the camera of the Medium-Sized Telescopes of the Cherenkov Telescope Array (CTA). This system will allow us to measure accurately the gain of the camera's photodetection chain and to constrain the systematic uncertainties on the energy reconstruction of gamma rays detected by CTA. The system consists of a white painted screen, a fishtail light guide, a flasher and an XY motorization to allow movement. The flashes, guided by the fishtail, mimic the Cherenkov radiation and illuminate the focal plane under the screen homogeneously. Then, through the XY motorisation, the screen is moved across the entire focal plane of the NectarCAM camera, which consists of 1855 photo-multiplier tubes. In this contribution, we present the calibration system and the study on its optimum scan positions required to cover the full camera effectively. Finally, we will show the results of the calibration data analysis and discuss the performance of the system.

Keywords

Cherenkov Telescope Array, NectarCAM, Medium-Sized Telescopes, single photoelectron calibration system

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