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Flasher and muon-based calibration of the GCT telescopes proposed for the Cherenkov Telescope Array

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The GCT is a dual-mirror Small-Sized-Telescope (SST-2M) prototype proposed for the Cherenkov Telescope Array (CTA). Calibration of the GCT's camera is primarily achieved with LED-based flasher units capable of producing ~ 4 ns (FWHM) pulses of 400 nm light across a large dynamic range, from 0.1 up to 1000 pe. The flasher units are housed in the four corners of the camera's focal plane and illuminate it via reflection from the secondary mirror. These flasher units are adaptable to allow several calibration scenarios to be accomplished: camera flat-fielding, linearity measurements (up to and past saturation), and gain estimates from both single pe measurements and from the photon statistics at various high illumination levels. In these proceedings, the performance of the GCT flashers is described, together with ongoing simulation work to quantify the efficiency of using muon rings as an end-to-end calibration for the optical throughput of the GCT.

Collaboration

CTA

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