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A Study of the Front-End Electronics of the Compact High Energy Camera prototype for the Gamma-Ray Cherenkov Telescope Project of the Cherenkov Telescope Array

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Abstract

The Compact High Energy Camera (CHEC) is a camera-development project for the dual-mirror Small-Sized Telescopes (SST-2M) of the Cherenkov Telescope Array (CTA) [1].

Some of the components of the Front-End Electronics (FEE) of the CHEC are photo-sensors, preamplifiers, TARGET modules and a backplane board [2]. This study will focus on the signal generated by the preamplifier buffer boards in order to characterise the output waveform as well as to identify any faulty preamplifier channels depending on their output.

This research project will establish an automated waveform analysis procedure that will highlight any variation from the expected channel response and help ensure that each assembled CHEC has 2048 validated and uniform FEE channels.

References

[1] M.K. Daniel, et.al, (2013). A Compact High Energy Camera for the Cherenkov Telescope Array. *Power*, 10, 4.

[2] L. Tibaldo, et.al, (2017). The gamma-ray Cherenkov telescope for the Cherenkov telescope array. In *AIP Conference Proceedings*, Vol. 1792, No. 1, p. 080004

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