

NECTAR: New Electronics for the Cherenkov Telescope Array

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The international CTA consortium is currently in the preparatory phase for the development of the next-generation Cherenkov Telescope Array (CTA), based on the return of experience from the three major current-generation arrays H.E.S.S., MAGIC and VERITAS. To achieve an unprecedented sensitivity and energy range for TeV gamma rays, a new kind of flexible and powerful yet inexpensive front-end hardware will be required for the order of 100000 channels of photodetectors in up to 100 telescopes. One possible solution is the NECTAr (New Electronics for the Cherenkov Telescope Array) system, based on the integration of as much as possible of the front-end electronics (amplifiers, fast analogue samplers, memory and ADCs) into a single ASIC for very fast readout performance and a significant reduction of the cost and the power consumption per channel, while offering a high degree of flexibility both for the triggering and the readout of the telescope. The current status of its development will be presented, along with newest results from measurements and simulation studies.

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