

## SiPM-based Camera for Image Air Cherenkov Telescope of LHAASO

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The SiPM-based camera technology is designed and developed for the Wide Field of View Cherenkov Telescope Array (WFCTA) of the Large High Altitude Air Shower Observatory (LHAASO) in the paper. WFCTA consists of 18 Cherenkov telescopes. Each Cherenkov telescope consists of an array of  $32 \times 32$  SiPM array which cover a field of view  $14^\circ \times 16^\circ$  with a pixel size of  $0.5^\circ$ . The main scientific goal of WFCTA is to measure the ultra high energy cosmic ray composition and energy spectrum from 30 TeV to a couple of EeV. Because SiPM cannot be aging under strong light exposure, SiPM-based camera can be operated in half moon conditions, thus achieve a longer duty cycle than PMT-based camera, e.g. the duty cycle of SiPM-based camera is about 30%, while the PMT-based camera is about 10%. In addition to no aging due to strong light exposure, SiPM has more advantages like single photon counting response, high detection efficiency, high gain at low bias voltage and no sensitive to magnetic fields.

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