



Contribution ID: 232

Type: **not specified**

SST-1M: Design, Performance, and Commissioning Results of a Single-Mirror Small Size Telescope for Gamma-ray Astrophysics

Tuesday, 12 September 2023 18:15 (15 minutes)

SST-1M is a single-mirror Small Size Telescope prototype developed by a consortium of institutes from Poland, Switzerland and the Czech Republic. The design of the SST-1M follows the Davies-Cotton design, with a 9.42m^2 multi-segment mirror. With a wide field of view of 9 degrees, SST-1M is designed to detect gamma rays in the energy range between 1 and 300 TeV. The two SST-1Ms that have been built are equipped with the DigiCam camera, which features a fully digital readout and trigger system using 250 MHz ADC, and a compact Photo-Detector Plane composed of 1296 pixels, each made of a hexagonal light guide coupled to a silicon photomultiplier.

Two SST-1M telescopes are currently being commissioned at the Ondrejov Observatory in the Czech Republic, where they have collected numerous hours of observations, accumulating valuable data and successfully observing Cerenkov events in stereo.

This contribution will present an overview of the telescope and camera design. Performance evaluation of the SST-1M telescopes will be discussed. Additionally, preliminary results obtained from the commissioning data collected at the observatory will be shown.

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Session Classification: GRA: Gamma Ray Astronomy