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CTA+: an Italian program to enhance the Southern Cherenkov Telescope Array Observatory

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The “CTA+” is a research program proposed by INAF, INFN, and Italian universities, in the context of the Italian Resilience and Recovery Plan (PNRR). The program, led by INAF, is aimed at enhancement of the Southern Cherenkov Telescope Array Observatory (CTAO-S) site to be constructed at Paranal, Chile. The approved and funded program has formally begun on January 1st, 2023, and must be completed no later than December 31st, 2025. The main goal is the construction of two Large Sized Telescopes (LSTs) at the CTAO-S, 5 Small Sized Telescopes (SSTs). In addition, a R&D program is foreseen to improve the technology for a future upgrade of the CTAO southern site. The baseline design of the mechanical structure of the foreseen LSTs will be based on the design of the northern site LSTs, apart from some changes to be compliant with the CTAO-S environmental specifications. In particular, the cameras will be almost identical to those of the northern LSTs. The procurement and the production of cameras sub-system has already begun though industrial contracts supervised by the CTA+ management, led by University of Siena, Politecnico di Bari and INFN. In this talk the current status and the main objectives of the project will be presented, with focus on the scientific implication and improvement achievable thanks to the CTA+ program.

Primary author: LOPORCHIO, Serena (INFN Bari)

Presenter: LOPORCHIO, Serena (INFN Bari)

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