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The ASTRI/CTA SST mini-array, a seed of the future Cherenkov Telescope Array

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The Cherenkov Telescope Array (CTA) is a large collaborative effort aimed at the design and operation of an observatory dedicated to the very high-energy gamma-ray astrophysics in the energy range 30 GeV - 100 TeV, which will yield about an order of magnitude improvement in the sensitivity with respect to the current major arrays (H.E.S.S., MAGIC, and VERITAS). Within this framework, the Italian National Institute for Astrophysics is leading the ASTRI project, whose main goals are the design and installation on Mt. Etna (Sicily) of an end-to-end dual-mirror prototype of the CTA small size telescope (SST) and the displacement at the CTA Southern site of a dual-mirror SST mini-array composed by seven units with a relative distance of about 300 m.
The innovative dual-mirror Schwarzschild-Couder optical solution adopted for the ASTRI Project allows us to substantially reduce the telescope plate-scale and, thus, to adopt silicon photo-multipliers as light-detectors.
The ASTRI/CTA SST mini-array is a wider international effort. The mini-array is sensitive in the energy range 1 - 100 TeV, with angular resolution of a few arcmin and energy resolution of about 10-15%, is well suited to study relatively bright sources (a few x 10-12 erg/cm2/s at 10 TeV) at very high energy.
Prominent sources such as extreme blazars, nearby well-known BL Lac objects, Galactic pulsar wind nebulae supernovae remnants, micro-quasars, and the Galactic Center can be observed in a previously unexplored energy range.
The ASTRI/CTA SST mini-array will extend the current IACTs sensitivity well above a few tens of TeV and, at the same time, will allows us to compare our results on a few selected targets with those of current (HAWC) and future high-altitude extensive air-shower detectors.

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