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CA CTA Consortium

TI Design concepts for the Cherenkov Telescope Array CTA: an advanced facility for ground-based high-energy gamma-ray astronomy

SO EXPERIMENTAL ASTRONOMY

LA English

DT Article

DE Ground based gamma ray astronomy; Next generation Cherenkov telescopes; Design concepts

ID INDUCED AIR-SHOWERS; MAGIC TELESCOPE; COSMIC-RAYS; OPTICAL-SYSTEM; 1ST DETECTION; RADIATION; TEV; BURSTS; SIMULATION; PARTICLES

AB Ground-based gamma-ray astronomy has had a major breakthrough with the impressive results obtained using systems of imaging atmospheric Cherenkov telescopes. Ground-based gamma-ray astronomy has a huge potential in astrophysics, particle physics and cosmology. CTA is an international initiative to build the next generation instrument, with a factor of 5-10 improvement in sensitivity in the 100 GeV-10 TeV range and the extension to energies well below 100 GeV and above 100 TeV. CTA will consist of two arrays (one in the north, one in the south) for full sky coverage and will be operated as open observatory. The design of CTA is based on currently available technology. This document reports on the status and presents the major design concepts of CTA.

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