

The AugerPrime Radio Detector

Tuesday, May 25, 2021 7:48 AM (18 minutes)

The Pierre Auger Observatory measures the spectrum of cosmic rays at energies well beyond 10^{19} eV with unprecedented accuracy. Currently, it is being upgraded to increase its mass-composition sensitivity. The upgrade includes the installation of a radio antenna on top of each of the 1661 autonomously operating water-Cherenkov detector stations, covering an area of 3000km^2 . The radio antennas are fully integrated within the existing detector stations. This allows sharing the (particle-) trigger and wireless data acquisition system.

An introduction to the AugerPrime Radio Detector, its design and technical implementation, will be given. The first data taken with a prototype array are presented and ongoing calibration efforts discussed. Furthermore, first results of the expected performance, investigated with an end-to-end simulation study, are shown. Based on this, the scientific potential of coincident detection with the Auger radio and particle detectors is highlighted.

TIPP2020 abstract resubmission?

No, this is an entirely new submission.

Funding information

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Session Classification: Experiments: Space and Particle Astrophysics

Track Classification: Experiments: Experiments: Space and particle astrophysics