

Status and prospects of the Auger Radio Detector

Tuesday, 26 July 2022 17:00 (15 minutes)

To find and understand the sources of ultra-high-energy cosmic rays necessitates to measure the properties of these particles with high precision. One of the objectives of the upgrade of the Pierre Auger Observatory is to increase in particular the mass sensitivity of the observatory and to identify the particle types with unprecedented precision. Part of this upgrade is the Radio Detector (RD): radio antennas, sensitive in the frequency band from 30 to 80 MHz will be added to each Surface Detector station of the observatory, thus, forming a 3000 km² radio detector with almost 1700 detector stations. Each station is equipped with two loop antennas, one oriented parallel to the geomagnetic field and the other perpendicular to it. We present the expected performance of the detector systems, derived from detailed end-to-end simulations. An engineering array with ten stations has been installed in fall 2019 in order to verify the calibration and air shower reconstruction procedures. We will present the status of the activities and give an outlook on the installation and commissioning process for the world's largest radio array for cosmic rays.

Primary authors: HOERANDEL, Joerg (Radboud University Nijmegen); PIERRE AUGER COLLABORATION

Presenter: HOERANDEL, Joerg (Radboud University Nijmegen)

Session Classification: Parallel 1

Track Classification: CRI