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Status and Prospects of the Auger Engineering Radio Array

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The Auger Engineering Radio Array (AERA) is a low-energy extension of the Pierre Auger Observatory. It is used to detect radio emission from extensive air showers in the 30 - 80 MHz frequency band. A focus of interest is the dependence of the radio emission on shower parameters such as the energy and the distance to the shower maximum. After three phases of deployment, AERA now consists of 153 autonomous radio stations with different spacings, covering an area of about 17 km². The size, station spacings, and geographic location at the same site or near other Auger low-energy detector extensions, are all targeted at cosmic ray energies above 10¹⁷ eV. The array allows us to explore different technical schemes to measure the radio emission as well as to cross calibrate our measurements with the established baseline detectors of the Auger Observatory. We will report on the most recent technological developments and experimental results obtained with AERA.

Collaboration

Pierre Auger

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