

# The Radio Detector of the Pierre Auger Observatory – status and expected performance

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As part of the ongoing AugerPrime upgrade of the Pierre Auger Observatory, we are deploying short aperiodic loaded loop antennas (SALLAs) measuring radio signals from extensive air showers in the 30-80 MHz band on each of the 1660 surface detector stations. This new Radio Detector of the Observatory allow us to measure the energy in the electromagnetic cascade of inclined air showers with zenith angles larger than  $65^\circ$ . The water-Cherenkov detectors, in turn, perform a virtually pure measurement of the muon component of inclined air showers. The combination of both thus extends the mass sensitivity of the upgraded Observatory to high zenith angles and therefore enlarges the sky coverage of mass-sensitive measurements at the highest energies while at the same time allowing us to cross-check the performance of the established detectors with an additional measurement technique. In this contribution, we will outline the design and capabilities of the Radio Detector, report on its current status and initial results from the first deployed stations, and illustrate its expected performance with a detailed, end-to-end simulation study.

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