



Contribution ID: 1033

Type: **Poster**

A prototype station of the IceCube-Gen2 Surface Array at the Pierre Auger Observatory

The detection of extensive air showers using radio antennas has evolved into a mature technique, complementing particle detector arrays by providing sensitivity to the longitudinal development of the showers and enabling an independent determination of the cosmic-ray energy. Both the Pierre Auger Observatory in Argentina and the IceCube Neutrino Observatory at the South Pole have been undergoing upgrades, including the integration of radio antennas. The next-generation neutrino detector IceCube-Gen2 will also feature a surface array for PeV-EeV cosmic-ray detection, consisting of scintillation detectors and radio antennas. Prototype stations for this upgrade have been in operation for several years at both, the South Pole and the Auger Observatory, enabling cross-checks and potentially a cross-calibration of the energy scales between the two experiments. In this contribution, we present an analysis of air showers observed with the radio antennas of the IceCube-Gen2 prototype station, coinciding with detections by the water-Cherenkov detectors of the densest part of the Pierre Auger Observatory's surface array, featuring a 433 m spacing.

Collaboration(s)

IceCube-Gen2, Pierre Auger

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Session Classification: PO-1

Track Classification: Cosmic-Ray Indirect