

# Highlights of the Pierre Auger Observatory

*Monday 9 January 2023 09:45 (35 minutes)*

The Pierre Auger Observatory, located near Malargüe in the Argentinian province of Mendoza, is the world's largest cosmic ray detector ever built. In operation since 2004, the Pierre Auger Collaboration has published more than a hundred scientific papers covering a wide range of topics regarding the detection, origin, and nature of the most energetic particles of the Universe. In this contribution, we will present our latest results concerning the new feature of the cosmic ray spectrum for energies above  $2.5 \times 10^{18}$  eV, the anisotropy in the arrival directions of ultrahigh-energy cosmic rays, the determination of the nuclear mass composition, and the measurements of the muon content of extensive air showers. We will also show our results on the searches for ultrahigh-energy photons and neutrinos and our multimessenger studies. Finally, we will describe AugerPrime, the major upgrade of the Pierre Auger Observatory currently underway.

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