Contribution ID: **66** Type: **Talk**

The Pierre Auger Observatory as a Test Environment

Tuesday 3 September 2024 16:20 (20 minutes)

The Pierre Auger Observatory (Auger), located in Malargüe, Mendoza, Argentina, spanning 3000 km² is the largest ultra-high-energy cosmic ray observatory in the world. In recent years, the Observatory has broadened its scope by hosting detectors in collaboration with other experiments and offering a platform for the research and development (R&D) of future detectors.
Key collaborations include FAST@Auger, GRAND@Auger, and IceCube@Auger, wherein these projects utilize Auger's infrastructure and strategic location as a testing ground for their future detectors. This collaborative environment fosters significant advancements in cosmic-ray research and enhances the capabilities of associated experiments by providing them with cross-correlated cosmic-ray data, triggering assistance, and infrastructure support speeding up their development significantly.
Other test environments at Auger benefit from the modifications of the Observatories' own surface detector (SD) stations for R&D purposes. One such initiative is the Project for Extreme PeVatron Searches (PEPS) @ Auger, which employs modified SD stations to search for extreme PeVatrons by looking for their signal in gamma rays. The modification of SD stations will also be used as an early-stage test bed for new detectors for the Global Cosmic Ray Observatory (GCOS), underscoring Auger's commitment to contributing to the next generation of cosmic-ray observatories. Lastly, while not located at the Pierre Auger Observatory, but rather its counterpart in the Northern Hemisphere, the Auger-led Auger@TA project is a deployment of Auger-like detectors within the Telescope Array experiment. The goal of this cross-calibration initiative is to bridge methodologies and enhance understanding of the scientific results of the two observatories. This presentation will delve into the strategic collaborations, R&D initiatives, and cross-calibration efforts facilitated by the Pierre Auger Observatory, highlighting its role in advancing the field of ultra-high-energy cosmic-ray research.

Internet talk

Yes

Is this an abstract from experimental collaboration?

Yes

Name of experiment and experimental site

Pierre Auger Observatory

Is the speaker for that presentation defined?

Yes

Details

Sonja Mayotte

Author: MAYOTTE, Sonja (Colorado School of Mines)

Presenter: MAYOTTE, Sonja (Colorado School of Mines)

Session Classification: Cosmology, Astrophysics, Gravity, Mathematical Physics

Track Classification: Main topics: Cosmology, Astrophysics, Gravity, Mathematical Physics