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Exploring Hadronic Interactions Beyond Collider Energies: Insights from the Pierre Auger Observatory

Thursday 12 October 2023 11:00 (25 minutes)

Astroparticles open exciting new horizons in the realm of particle physics research by exploring energy regimes beyond the reach of traditional accelerators. The study of ultra-high-energy cosmic rays involves the observation of the air showers they generate in the atmosphere, offering a unique tool to investigate the most energetic particles in the Universe. The Pierre Auger Observatory, as the largest cosmic-ray air shower detector, employs an innovative hybrid approach that enables simultaneous monitoring of the longitudinal development of air showers in the atmosphere and the detection of particles at ground level. This methodology significantly enhances precision in characterizing air showers, driving advancements in cosmic-ray research. Despite these achievements, substantial uncertainties persist in modeling hadronic interactions at ultra-high energies. Results that are most relevant for elucidating the characteristics of hadronic interactions in the ultra-high energy regime will be presented.

Is this abstract from experiment?

Yes

Name of experiment and experimental site

Pierre Auger Observatory, Malargüe, Mendoza, Argentina.

Is the speaker for that presentation defined?

Yes

Details

Analisa Gabriela Mariazzi
Instituto de Fisica La Plata CONICET - UNLP, Argentina
https://www.iflp.unlp.edu.ar

Internet talk

No

Author: Dr MARIAZZI, Analisa Gabriela (Instituto de Fisica La Plata CONICET-UNLP)

Presenter: Dr MARIAZZI, Analisa Gabriela (Instituto de Fisica La Plata CONICET-UNLP)

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