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A Measurement of the Average Longitudinal Development Profile of Cosmic Ray Air Showers from 10^{17}eV to 10^{20}eV

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Abstract content

Ultra High Energy Cosmic Rays (UHECRs) have an energy many times greater than that of particles accelerated in colliders. The Extended Air Showers (EAS) resulting from their interaction in the atmosphere give us the opportunity to study not only Cosmic Rays but also these extremely energetic cascades.

A method to calculate the Average Longitudinal Shower profile has been applied to the High Resolution Fly's Eye Detector (HiRes) data. A complete detector simulation was used to throw CORSIKA (QGSJET) showers which are then analyzed using the same technique. The main features of the average showers are compared to the Monte Carlo as a function of energy. Systematic errors in the reconstruction of the profile are considered.

If this papers is presented for a collaboration, please specify the collaboration

High Resolution Fly's Eye

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 4 (HE part 1), pages 405-408

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