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Test of hadronic interaction models with data from the Pierre Auger Observatory

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Abstract content

The Pierre Auger Observatory allows the measurement of both longitudinal profiles and lateral particle distributions of high energy showers. The former trace the overall shower development, mainly of the electromagnetic component close to the core, and the latter reflect the particle densities in the tail of the shower far away from the core, and are sensitive to both the muonic and electromagnetic components. Combining the two complementary measurements, predictions of air shower simulations are tested. In particular the muon component of the tank signals, which is sensitive to hadronic interactions at high energy, is studied with several independent methods. Implications for the simulation of hadronic interactions at ultra-high energy are discussed.

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

The Pierre Auger Collaboration

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 385-388

Primary author(s) : THE PIERRE AUGER COLLABORATION, - (The Pierre Auger Observatory); Dr. ENGEL, Ralph (Forschungszentrum Karlsruhe)

Presenter(s) : Dr. ENGEL, Ralph (Forschungszentrum Karlsruhe)

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