Contribution ID : **1100** Type : **Oral**

Study of cosmic ray showers front and time structure with ARGO-YBJ

Friday, 6 July 2007 09:18 (0:12)

Abstract content

ARGO-YBJ is a full coverage Extensive Air Shower array located by the high-altitude cosmic rays laboratory of Yangbajing (4300 m a.s.l., Tibet, China). The detector consists of a layer of Resistive Plate Counters covering an area of about 5800 mˆ2 with 58x62 cmˆ2 unit cells. This design allows a detailed characterization of cosmic ray showers induced by primaries with energy in the range from 300 GeV up to 100 TeV. A set of well reconstructed data has been used in order to study the shower phenomenology and front structure with high time resolution (1 ns accuracy) and fine granularity. Simulated CORSIKA showers have been used and the detector response is taken into account in detail for this analysis. Several observables have been investigated in both real and simulated data and compared, aiming to derive hints on cosmic ray shower age, energy and mass composition. Results are presented and discussed.

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

ARGO-YBJ 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 139-142

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Session Classification : HE 1.2.A

Track Classification : HE.1.2.A