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The shower size spectrum reconstructed with KASCADE-Grande

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Abstract content

The Grande array as main part of the KASCADE-Grande experiment consists of 37x10 sqm scintillation detectors spread over an area of 700x700 sqm. Grande enables triggers and reconstruction of primary cosmic rays in the energy range of ~30 PeV to 1 EeV. This contribution discusses the reconstruction of the shower size spectrum, i.e. the total number of charged particles. The KASCADE-Grande set-up allows, for a subsample of the registered showers, detailed comparisons of the data with measurements of the original KASCADE array (252 detectors, 490 sqm sensitive area spread over 200x200 sqm) on an event-by-event basis. The obtained reconstruction accuracy of N_charged will be presented as well as the lateral charged particle distributions and the absorption length of the charged particle component. In the overlapping size region the resulting shower size spectra for different zenith angular ranges will be compared with the KASCADE size spectra.

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

KASCADE-Grande

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 195-198

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