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Energy cross-calibration from the first CREAM flight : transition radiation detector versus calorimeter

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Abstract content

The Cosmic Ray Energetics and Mass (CREAM) balloon experiment had two successful flights in 2004/05 and 2005/06. It was designed to perform energy measurements from a few GeV up to 1000 TeV, taking advantage of different detection techniques. The first instrument, CREAM-I, combined a transition radiation detector (equipped with an array of proportional tubes and an acrylic Cherenkov device) with a calorimeter to provide independent energy measurements of cosmic ray nuclei. Each detector was calibrated with particle beams in a limited range of energies. In order to assess the absolute energy scale of the whole instrument and to investigate the systematic effects of each technique, a cross-calibration was performed by comparing the independent energy estimates on selected samples of Oxygen and Carbon nuclei.

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

CREAM-I 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. 2 (OG part 1), pages 333-336

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