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Cosmic Ray Energetics And Mass (CREAM) Overview

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Abstract content

The Cosmic Ray Energetics And Mass balloon-borne experiment has accumulated 70 days of exposure during two successful flights in Antarctica. The instrument is configured with complementary and redundant particle detectors. Energy measurements are made with a transition radiation detector and an ionization calorimeter. Charge measurements are made with timing, pixelated Si, and Cherenkov detectors to provide powerful rejection of backscatter particles. High energy cosmic-ray data from the first two flights were collected over a wide energy range from ~ 10 GeV to ~ 1 PeV at an average altitude of ~ 38.5 km (~ 3.9 g/cm² atmospheric overburden). Preliminary analysis indicates the data extend above 100 TeV and follow reasonable power laws. All elements from protons to Fe nuclei are separated with excellent charge resolution. The payload recovered from the first flight has been refurbished and is being integrated in preparation for the third launch, scheduled for December 2007. Simultaneously, the payload recovered from the second flight is being refurbished for a subsequent fourth flight. Results from the ongoing analysis and future plans will be presented in this paper.

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

CREAM

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olive, 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 47-50

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