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Revised Energy Spectra for Primary Elements, H - Si, above 50 GeV from the ATIC-2 Science Flight

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Abstract content

The Advanced Thin Ionization Calorimeter (ATIC) long duration balloon experiment had a successful science flight accumulating 18 days of data (12/02 - 1/03) during a single circumnavigation in Antarctica. ATIC measures the energy spectra of elements from H to Fe in primary cosmic rays using a fully active Bismuth Germanate calorimeter preceded by a carbon target, with embedded scintillator hodoscopes, and a silicon matrix charge detector at the top. Preliminary results from ATIC have been reported in previous conferences. The revised results reported here are derived from a new analysis of the data with improved charge resolution, lower background and revised energy calibration. The raw energy deposit spectra are de-convolved into primary energy spectra and extrapolated to the top of the atmosphere. We compare these revised results to previous data and comment upon the astrophysical interpretation of the data.

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

The ATIC Collaboration

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 31-34

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