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## Comparison of Fluka-2006 Monte Carlo Simulation and Flight data for the ATIC detector

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### Abstract content

We have performed a detailed Monte Carlo (MC) simulation for the Advanced Thin Ionization Calorimeter (ATIC) detector using the MC code FLUKA-2006 which is capable of simulating particles up to 10 PeV. The ATIC detector has completed two successful balloon flights from McMurdo, Antarctica lasting a total of more than 35 days. ATIC is designed as a multiple, long duration balloon flight, investigation of the cosmic ray spectra from below 50 GeV to near 100 TeV total energy; using a fully active Bismuth Germanate(BGO) calorimeter. It is equipped with a large mosaic of silicon detector pixels capable of charge identification, and, for particle tracking, three projective layers of x-y scintillator hodoscopes, located above, in the middle and below a 0.75 nuclear interaction length graphite target. Our simulations are part of an analysis package of both nuclear (A) and energy dependences for different nuclei interacting in the ATIC detector. The MC simulates the response of different components of the detector such as the Si-matrix, the scintillator hodoscopes and the BGO calorimeter to various nuclei. We present comparisons of the FLUKA-2006 MC calculations with GEANT calculations and with the ATIC CERN data and ATIC flight data.

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

ATIC 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 75-78

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