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ANITA: First Flight Overview and Detector Performance

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Abstract content

The ANtarctic Impulsive Transient Antenna (ANITA) searches for ultra high energy neutrinos interacting in the antarctic ice cap. It is a long duration balloon experiment composed of an array of broadband dual-polarized horn antennas that had its first science flight over Antarctica in December 2006 through January 2007. ANITA relies upon the Askaryan effect, in which a particle shower in a dense medium emits coherent Cherenkov radiation at radio wavelengths, for the detection of a neutrino induced shower. ANITA is designed to detect or constrain flux models of ultra high energy neutrinos created by the interaction of ultra high energy cosmic rays with the cosmic microwave background. In this paper we discuss the detector performance during the first ANITA flight and look specifically to the RF sensitivity and the angular resolution of the instrument.

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

ANITA

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. 5 (HE part 2), pages 1441-1444

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