

Development of a Low-Frequency Antenna for Detection of Ultra-High Energy Cosmic Rays with ANITA-III

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The ANtarctic Impulsive Transient Antenna (ANITA) is a balloon-borne radiometer sensitive to broadband radiation from neutrinos interacting in ice and cosmic-ray air showers in the 200–1000 MHz range. The third flight of ANITA will achieve improved sensitivity through an upgraded triggering system and larger antenna array enabling the detection of an order of magnitude more ultra-high energy cosmic ray events over the first flight of ANITA and increased background rejection. Additionally, a prototypical drop-down antenna will record the first in-flight observations of cosmic-ray air showers at frequencies of 30–80 MHz. We report on the development of the low frequency antenna.

Primary author: Dr WISSEL, Stephanie (University of California, Los Angeles)

Presenter: Dr WISSEL, Stephanie (University of California, Los Angeles)