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Radio Frequency Attenuation Length Estimates In Ice from Antarctic and Greenlandic Radar Depth Sounding Data MARK STOCKHAM, University of Kansas, ANITA COLLABORATION — The balloon-borne Antarctic Impulsive Transient Antenna (ANITA) experiment is designed to detect in-ice neutrino collisions in Antarctica. These collisions produce radio waves that propagate upward to the suite of 32 horn antennas that constitute ANITA. The primary virtue of ANITA is the ability to simultaneously observe 1 million cubic kilometers of ice from its 38 kilometer altitude vantage point. The radio frequency signal strength observed at the balloon, however, depends on the radio frequency attenuation length of the ice through which the neutrino-generated signal must travel. Attenuation length is a location-specific ice property and varies mainly as a function of temperature and chemistry. The Center for Remote Sensing of Ice Sheets (CReSIS) project has data from many locations in Antarctica and Greenland produced by radar depth sounding. Using methods developed by analyzing the continuum signal in radar depth sounding data from Greenland, attenuation length estimates are compared to estimates derived from ice core data.

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