Abstract Submitted
for the APR11 Meeting of
The American Physical Society

Monte Carlo studies for neutrino detection from Minna Bluff and other mountainsides in Antarctica TAYLOR BARRELLA, University of California, Los Angeles, ABIGAIL VIEREGG, Harvard-Smithsonian Center for Astrophysics, DAVID SALTZBERG, University of California, Los Angeles, ANITA COLLABORATION — We present a simple Monte Carlo simulation for a possible neutrino detection experiment. The detector would be composed of an array of radio antennas on Minna Bluff, Antarctica, designed to detect Cherenkov radiation from ultra-high-energy neutrinos. The location, overlooking the Ross Ice Shelf, is ideal because of its proximity to McMurdo station. We show the validity of the results by comparing with the Monte Carlo simulation established for the ANITA (Antarctic Impulsive Transient Antenna) experiment. We also present new results on an attenuation length measurement of the ice shelf in the 200–1200 MHz range. Though the results predict less than one event per year, we discovered a possible alternative of placing the detector on the Transantarctic Mountains to overlook the deeper ice sheet.

Taylor Barrella
University of California, Los Angeles

Date submitted: 03 Jan 2011 Electronic form version 1.4