

Abstract Submitted  
for the APR13 Meeting of  
The American Physical Society

**Performance and Status of the ARIANNA Experiment for Detection of GZK Neutrinos** JOULIEN TATAR, Graduate Student, ARIANNA COLLABORATION — Dedicated high-energy neutrino telescopes based on optical Cherenkov techniques have been scanning the cosmos for about a decade. Consequently, neutrino flux limits have improved by several orders of magnitude in the TeV-PeV energy interval. At higher energies, detectors using radio Cherenkov techniques have produced aggressive limits on the neutrino flux. An experiment called ARIANNA is a novel concept for the next generation of astrophysical neutrino detection, which takes advantage of unique geophysical features of the Ross Ice Shelf in Antarctica will be described. Utilizing the radio Cherenkov technique, ARIANNA is designed to improve sensitivity to neutrinos with energies in excess of 100 TeV by at least a factor of 10 relative to current limits. It consists of a scalable array of autonomous stations with an inner-station spacing of 1 kilometer. The physics motivation for ARIANNA, which includes a measurement of the GZK neutrino flux, whose existence is relatively secure but frustratingly small, and the search for non-standard particle physics will be presented. The progress toward completion of the hexagonal radio array, initial analysis results and performance of three new stations deployed in December of 2012 will be reported.

Joulien Tatar  
Graduate Student

Date submitted: 03 Apr 2013

Electronic form version 1.4