Contribution ID: **128** Type: **Oral**

The ARIANNA Neutrino Detector

Friday 11 August 2017 17:00 (15 minutes)

The ARIANNA experiment is designed to observe cosmogenic neutrinos with energies in excess of 10^16 eV. The design envisions a grid of over 1000 independent radio detector stations, using high-gain log-periodic dipole antennas just below the surface to measure the characteristic Askaryan radio pulses from particle cascades generated in the ice by these neutrinos. Spaced a kilometer apart, this array would effectively survey nearly 1000 cubic kilometers of Antarctic ice.

A pilot array has been operating on the Ross Ice-Shelf since December 2014. We will report on most recent results concerning the hardware performance, the search for neutrinos, detection of cosmic ray background, signal propagation in the ice, and the future potential of a large array.

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Session Classification: Neutrinos

Track Classification: Neutrinos (astrophysical, atmospheric)