



Contribution ID: 70

Type: **not specified**

The Askaryan Radio Array

Friday 14 October 2011 14:00 (30 minutes)

The ARA collaboration is developing an array of radiofrequency antennas covering approx. 150 sq-km surface which will be installed in boreholes extending 200 m below the ice surface at the geographic South Pole. The antennas are sensitive to the weak, transient impulses given off by extremely high energy neutrino-induced cascades. The array geometry has been chosen to ensure the detection of the flux of neutrinos guaranteed by observations of the GZK cutoff by HiRes and the Pierre Auger Observatory. The first components of ARA have been installed during the austral summer of 2010-2011 and have proven that the South Pole site is an optimal environment for such a detector. After three years of operation, the full array sensitivity will exceed that of any other instrument in the 0.1-10 EeV energy range by an order of magnitude. The primary goal of the ARA experiment is to establish the absolute cosmogenic neutrino flux through a modest number of events. This talk will describe the array, its science goals, and give the current status of the project.

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Session Classification: Plenary Session

Track Classification: Plenary Session