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The Askaryan Radio Array

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The Askar'yan Radio Array (ARA), a neutrino detector to be situated at the South Pole next to the IceCube detector, will be sensitive to ultrahigh-energy cosmic neutrinos above 0.1 EeV and will have the greatest sensitivity within the favored energy range from 0.1 EeV up to 10 EeV. Neutrinos of this energy are guaranteed by the current observations of the GZK-cutoff by the HiRes and the Pierre Auger Observatories. The detection method is based on Cherenkov emission by a neutrino induced cascade in the ice, coherent at radio wavelengths, which was predicted by Askar'yan in 1962 and verified in beam tests at SLAC in 2006.

The detector is planned to consist of 37 stations with 16 antennas each, deployed at depth of up to 200 m under the ice surface. During the last two polar seasons (2010 -2011, 2011 - 2012), a prototype station and a first detector station were successfully deployed and are taking data. These data have been and are currently being analyzed concerning different measurement conditions, which are the ambient noise background and the properties of the South Pole ice sheet. A worldwide collaboration of people is working on the planning, construction and data analysis of the detector array.

This presentation will give a report on the status of the ARA detector and show recent results from the recorded data.

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