ARENA 2014



Contribution ID: 41

Type: not specified

First data analysis steps for the Askaryan Radio Array stations

Thursday, 12 June 2014 11:30 (20 minutes)

The Askaryan Radio Array (ARA) is one of the future neutrino observatories focusing on the detection of GZK-neutrinos with energies beyond 1017eV through secondary radio waves. Observing GZK-neutrinos is especially interesting because it is one of the few ways to investigate the CR-spectrum beyond the observed GZK-cutoff. These neutrinos, when reaching the earth, produce particle cascades in different media like ice and rock salt which, in case of the above mentioned energies, emit detectable radio waves through the Askaryan effect.

ARA is currently in the building phase and will be optimized to detect the radio emission from neutrino induced cascades with primary energies greater than 1017eV. A grid of 37 antenna clusters, spaced by 2 km, is planned to be deployed in the South Pole ice, at a depth of 200 m. The full ARA detector will cover an instrumented area of about 100 km2, and as built will be the most cost-effective neutrino detector in the energy range between 1017eV.

Three ARA stations, each consisting of 16 measurement antennas, and one prototype station are already deployed in the ice. All of them are functioning as independent detectors each with full detection and reconstruction capabilities.

In this contribution, the first analysis steps of data from two of the three stations are presented.

Primary author: MEURES, Thomas (o=ulb,ou=Institutions,dc=icecube,dc=wisc,dc=edu)

Presenter: MEURES, Thomas (o=ulb,ou=Institutions,dc=icecube,dc=wisc,dc=edu)

Session Classification: Th AM II

Track Classification: Thurs AM II - In-Ice Neutrino Detail