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Searching Ultra-High Energy Cosmic Neutrinos with ARA Detector

Wednesday, 14 September 2016 14:50 (15 minutes)

Detecting ultra-high energy neutrinos (UHECNs) with energies above 10^17eV, or the GZK neutrinos, is a fundamental problem in neutrino astronomy. By finding GZK neutrinos, not only the GZK process can be verified, but also provides valuable insights of the ultra-high energy cosmic rays.

When UHECNs interact with ice, radio signals at the frequencies of few hundreds of MHz will be generated due to the Askaryan effect. Askaryan Radio Array (ARA) is a dedicated experiment located in South Pole to detect those radio signals. Since 2011, there are three ARA stations deployed in South Pole and running continuouly.

We will present the current status of searching the UHECNs with ARA and constraints on ultra-high energy neutrino fluxes from gamma-ray bursts. Future plans will also be discussed.

Summary

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Session Classification: Poster Session (coffee at 15:00) & CERN Visit

Track Classification: Neutrinos