



Contribution ID : 806

Type : Oral

## In-Ice radio detection of air shower cores

*Tuesday, 10 July 2007 10:54 (0:12)*

### Abstract content

Radio receivers (RICE, AURA) have been deployed to detect impulsive emissions from neutrino interactions in ice at South Pole. An alternative source of pulses is the cores of cosmic ray induced air showers. AIRES and CORSIKA simulations suggest that

10% of the primary cosmic ray energy enters the ice within 20 cm of the primary axis impact point. The resulting 5-10 m cascade will make Askaryan type pulses that can be detected by in-ice receivers. Strategies are discussed for deploying a modest number of antennas which could operate in coincidence with IceCube to validate the in-situ detection of Askaryan pulses and produce a new discriminant for studying cosmic ray primary composition for energies above  $10^{16}$  eV.

**If this papers is presented for a collaboration, please specify the collaboration**

### Summary

### Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olive, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 5 (HE part 2), pages 1029-1032

**Primary author(s) :** Dr. SECKEL, David (University of Delaware)

**Presenter(s) :** Dr. SECKEL, David (University of Delaware)

**Session Classification :** HE 1.5

**Track Classification :** HE.1.5