Dr. Homi Bhabha / IUPAP Award Lecture

Cosmic-rays with IceCube and IceTop at the South Pole

By

Prof. Thomas K. Gaisser

University of Delaware, USA

20 January 2017 at 5:30 P.M.

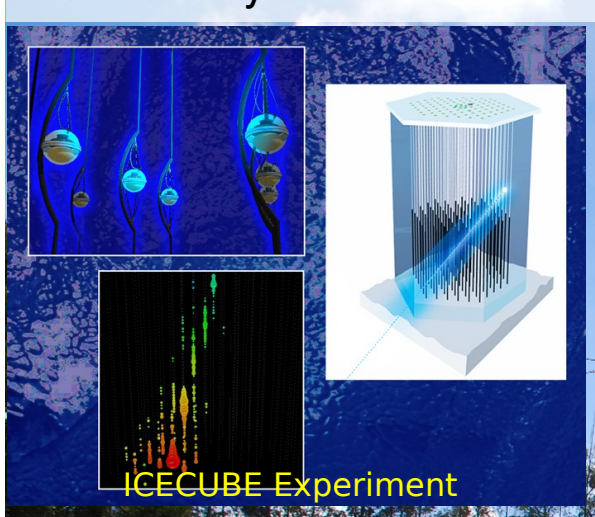
Venue : Dr. Homi Bhabha Auditorium, TIFR

Abstract:

The IceCube is a 1 km^3 Neutrino Observatory of 5160 detectors embedded in Antarctic ice at depths from 1.5 to 2.5 km and a surface array of 162 detectors. The IceCube studies high-energy astrophysical neutrinos. IceCube is also a 3-D air-shower detector, capable of reconstructing cosmic-ray events of energy from 10^{15} to 10^{18} eV. This energy is of great interest because it spans a transition from sources in MilkyWay to extra-galactic sources at higher energies. IceTop detectors also respond to cosmic-rays of lower energy and provide information on the activity of the Sun. Results on precise measurements of energy spectrum and composition by IceTop and IceCube will be explained. Cosmic-ray induced background for neutrino astronomy in IceCube, and the possibility of using IceTop as a cosmic-ray veto will also be explained.

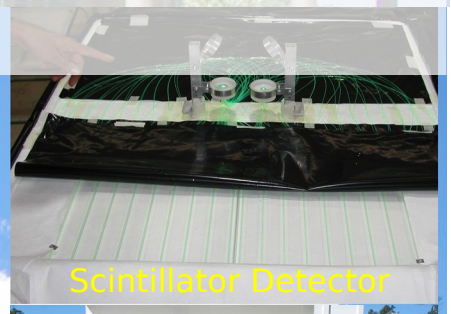
About the speaker:

Professor Thomas K. Gaisser is an internationally renowned scientist in the field of astroparticle physics. After graduation, he pursued research in high energy physics for Ph.D. from Brown University. Prof. Gaisser has made seminal contributions to astroparticle physics, including EAS, hadronic interactions, muons and neutrinos. He is a member of American Physical Society, and recipient of several awards including O'Ceallaigh medal, and von Humboldt prize. He is the third winner of the Homi Bhabha Award instituted by TIFR and IUPAP.



ICECUBE Experiment

Cosmic Ray Shower



Scintillator Detector

Winter School 2016

Proportional Counter

Proportional Counter Testing

GRAPES-3 Experiment, Ooty

http://grapes-3.tifr.res.in

Contact : pro@tifr.res.in, 22782500