Contribution ID: **68** Type: **Oral**

Measurement of cosmic ray energy spectrum and composition with IceCube

Wednesday, 11 September 2013 16:20 (20 minutes)

We report on the measurement of the all-particle cosmic ray energy spectrum and composition with IceCube. Results of two different techniques will be presented. The first result is a measurement of the all-particle cosmic ray energy spectrum in the energy range from 1.58 PeV to 1.26 EeV using the IceTop air shower array, which is the surface component of the IceCube Neutrino Observatory at the South Pole. The second result is a measurement of both cosmic ray energy spectrum and composition using neural network techniques and the full IceCube as a 3-dimensional cosmic ray detector. The measured energy spectrum exhibits clear deviations from a single power law above the knee around 4 PeV and below 1 EeV. In addition, the observed mean logarithmic mass is increasing up to at least 100 PeV.

Primary author: RUZYBAYEV, Bakhtiyar (University of Delaware)

Presenter: RUZYBAYEV, Bakhtiyar (University of Delaware)

Session Classification: High Energy Astrophysics III

Track Classification: High-Energy Astrophysics (includes all cosmic ray physics)