Contribution ID: **52** Type: **Talk**

Development of an air shower array using plastic scintillators

Tuesday, 26 October 2021 16:30 (20 minutes)

A cosmic ray air shower array consisting of 7 plastic scintillation detectors is commissioned at an altitude of about 2200 meters above sea
level in the Eastern Himalayas (Darjeeling). The main goal is to study the origin, composition, and direction of primary cosmic rays at high altitudes. The detector array has a structure of the hexagon. Six detectors are kept at the vertices of a hexagon and
one at the center of it. The distance between two consecutive detectors is 8 meters. Each detector element consists of four plastic scintillators of dimension 50 cm $\times$ 50 cm $\times$ 1 cm making the total active area of 1 m $\times$ 1m. These scintillators are fabricated indigenously in the Cosmic Ray Laboratory (CRL), TIFR, Ooty, India. All four scintillators of a detector are coupled with a single Photo Multiplier Tube (PMT) using wavelength shifting (WLS) fibers. A custom-built module with seven inputs is used to generate the multi-fold trigger that detects a shower event. All the plastic scintillators are first characterized and tested in the lab. Continuous measurement of cosmic ray air shower is carried out from the end of January 2018 to April 2019. Details of fabrication of the detectors, experimental setup, techniques of measurement, and results
will be presented.

What is your experiment?

Cosmic ray

Primary author: ROY, Shreya (Bose Institute)

Co-authors: Mr CHAKRABORTY, Sayan (VECC); CHATTERJEE, Sayak (Bose Institute); BISWAS, Saikat (Bose Institute (IN)); DAS, Supriya (Bose Institute); GHOSH, Sanjay (Bose Institute); MAULIK, Dr. Atanu (Bose Institute); RAHA, Sibaji (Bose Institute)

Presenter: ROY, Shreya (Bose Institute)

Session Classification: Oral presentations

Track Classification: Others