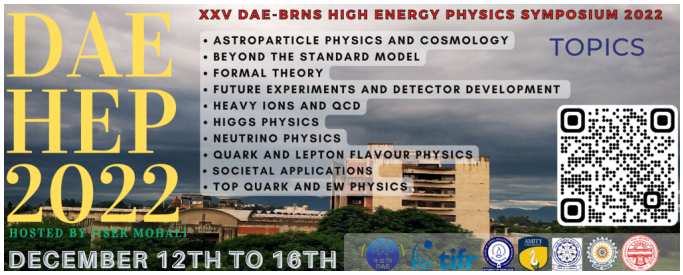

Contribution ID: **767** Type: **Plenary Talk**

Astroparticle physics with GRAPES-3 experiment: current status and future

Wednesday 14 December 2022 09:30 (30 minutes)

The GRAPES-3 experiment located in Ooty, Tamil Nadu is the major cosmic ray observation facility in India. It operates 24x7 with an array of 400 plastic scintillator detectors of 1 m^2 area each and a 560 m^2 area large muon telescope to sample the electromagnetic and muonic components of cosmic ray showers respectively. It allows us to study high energy phenomena from 10 TeV to 10 PeV energy range including the measurements of cosmic ray energy spectrum and composition while providing an overlap with various direct measurements in space, cosmic ray anisotropy and gamma ray source searches from a near-equatorial location. In addition, the muon telescope is designed to record muon flux above 1 GeV energy from 169 directions covering 2.3 sr sky at a rate of 3 million muons per minute, thus providing high statistical measurements of the cosmic ray modulation induced by solar and atmospheric phenomena on short time scales. An overview of the recent results on cosmic ray composition, cosmic ray anisotropy, angular resolution, long term solar anisotropy as well as thunderstorm phenomena along with detector & electronics developments will be presented.

Session

Plenary

Author: Dr MOHANTY, Pravata Kumar (Tata Institute of Fundamental Research)

Presenter: Dr MOHANTY, Pravata Kumar (Tata Institute of Fundamental Research)

Session Classification: Plenary