

## Highlights

- *WMO-standard measurements of greenhouse gases and analysis at 4 stations.*
- *Calibration facility GHG station at Hosakote oprational.*
- *Analysis of continuous data collected at Hanle*
- *Analysis of satellite data of oceanic chlorophyll, productivity and temperature to establish their relationship*
- *Detailed analysis of oceanic turbulence models and their ability to simulate the time series at WHOI site in the Arabian Sea*
- *Successful forecast of monsoon-2016, both onset and rainfall distribution*
- *The study on impact of data assimilation on heavy rainfall simulations using WRF model illustrated the sensitivity of assimilation results to background error statistics and improved forecast skill*
- *Modelling and simulation of high impact weather events (extreme rainfall, heatwave and cloud burst events, cyclones)*
- *Assessment of forecast skill and thermodynamic characterization of urban heavy rainfall events over Bengaluru*
- *Assessment of forecast skill of a mesoscale model for different cyclone intensity*
- *Study on relationship between antecedent soil moisture and monsoon rainfall over the Indian region*
- *Dr V Rakesh honoured with CSIR Young Scientist Award in June 2016 in the discipline Earth, Atmosphere, Ocean and Planetary Science*
- *Indo Australia Early and Mid-Career Researchers (EMCR) Fellowship awarded to K C Gouda by Indian National Science Academy (INSA), New Delhi*
- *Awarded Excellent grade for 12<sup>th</sup> FYP project ARiEES*
- *First ever crustal and mantle structure in the Kashmir Himalaya has been reported*
- *For India, first time SRTM heights are validated using GPS heights which has significant implications in Geosciences Research*
- *The Neo-Deterministic seismic hazard map for India is published with a 0.2° x 0.2° resolution using cellular crustal structure of 1°x 1°.*
- *Comprehensive study of crustal models and water vapor for Northeast India (2001-2013)*
- *Site specific micro-zonation of Srinagar city has been initiated*
- *CGNSS network in Indian subcontinent and Broad band seismic network in Kashmir Himalaya*
- *Nonlocal General Gradient Theory has been proposed with two length scale parameters for analysing nanostructure using nonlocal continuum models.*
- *The computational mechanics research activities are recognised by the National Institute of Technology, Trichy, India by awarding the Distinguished Alumnus Award*
- *Link between all India rainfall and north-west Pacific*
- *Local sea surface temperature-rainfall relationship over tropical oceans*
- *High-resolution climate change projections through dynamical downscaling*

- *Forecast of monsoon-2017 using CFSv2*
- *Aerosol-monsoon relationship over the Indian region*
- *Application of the new algorithm for TRMM latent heating data*
- *Estimation of regional Vertical Land Motion (VLM) to constrain the sea level rise*
- *Establishment of continuous mode geodetic observatory to study the Vertical Land Motion (VLM) for constraining the Sea Level Rise*
- *Lithosphere-Atmosphere-Ionospheric Coupling (LAIC): A multi-scale approach*
- *Seasonal hydrologic deformations over North-East India and Nepal Himalayas*
- *Sea level changes and geodetic variations due to Glacial Isostatic Adjustment*
- *Multi-scale simulation framework for earthquake physics studies: seismic-cycles at plate-boundary zones*
- *Indo-Burman Ranges: Myanmar sliver deformation and the locked sinking Indian lithosphere*
- *Crustal deformation followed by the Mw 7.7 January 26, 2001 Bhuj intra-plate earthquake*
- *Addition of 140 Teraflops to HPC Facility at CSIR-4PI (Ananta) initiated*
- *Usage of Ananta over 90 per cent during the year.*
- *CySeRo implementation completed as part of ARiEES 12FYP project*
- *MoU with Cognizant Technology Services Limited signed in the area of cyber security and Artificial Intelligence*
- *Cloud services implemented and ePashuhaat portal migrated*