

Highlights

- ❖ Extensive computations with TOPAZ and Modular Ocean Model to simulate seasonal and interannual variability of marine ecosystems and biogeochemical cycles in the Indian Ocean.
- ❖ Investigated the effect of a crucial parameter in the iron uptake process in the nutrient limitation and consequent effect on primary production.
- ❖ Simulated the presence and extent of oxygen minimum zones in the Arabian Sea well.
- ❖ Illustrated the inverse correlation between sea surface temperature and chlorophyll in data and model.
- ❖ Established the presence of a sink of 1.5 gigatonnes of carbon in temperate Eurasia by inversion of accurate greenhouse gas (GHG) measurements.
- ❖ Set up a new forward model for the transport of GHG from source regions specifically for the Asian region.
- ❖ 12th Successful year of Advance forecasting of Date of Onset of Monsoon
- ❖ 3rd Successful year of Hobli (Village Cluster) Level forecasting over Karnataka
- ❖ Fifth year of uninterrupted operation of CSIR Climate Observation and Modelling Network (COMoN)
- ❖ K C Gouda awarded Ph Ds from Mangalore University
- ❖ IPCC Assessment Report 5 Lead Authorship (Working Group I, Chapter 14)
- ❖ Multi-disciplinary SCI Publications: Climate Projection, Malaria Model, Air Pollution Model, etc
- ❖ Workshop on Harnessing Improved Weather and Climate Information for Renewable Energy Generation under Public Sector Linkages Program
- ❖ Establishment of GIS Lab
- ❖ Establishment of COMoN profiler at Leh, Siachen and Bhubaneswar
- ❖ A 360 TFLOP supercomputer and a state-of-the-art data center
- ❖ Filed the first International patent from CSIR-4PI (erstwhile C-MMACS) for security enhancement of Stream Control Transmission Protocol
- ❖ Three publications in the field of security assurance and homomorphic encryption
- ❖ Calibrated the small scale parameter for buckling analysis of carbon nanotube using Molecular Dynamic Simulation
- ❖ Symbolic computation was carried out using open source software Sage-Maxima and its reliability was validated for the continuum modeling
- ❖ GNSS based deformation modelling along the 2500 Km Himalayan arc from Ladakh Himalaya in the west to Arunachal Himalaya in the east

- ❖ 2004 M 9.3 Sumatra-Andaman Rupture Extent and Slip Distribution, and its Implications on the Regional Tectonics.
- ❖ Establishment of real-time data telemetry VSAT's for Andaman GNSS Network
- ❖ GPS measurements for landslide deformation monitoring,
- ❖ Seasonal perturbations in Inter-seismic deformation of North-East India.
- ❖ Absence of Intermontane valleys in the Nahan Salient of Western Indian Sub-Himalaya
- ❖ Seismic hazard and risks estimates for Himalayas and surrounding regions based on the Unified Scaling Law for Earthquakes
- ❖ Probabilistic seismic hazard assessment for Gujarat region of western India: An Application of a Bayesian extreme-value model of the Results
- ❖ Neo-Deterministic Seismic Hazard Map of India
- ❖ Crustal imaging of Dharwar Region across E-W Corridor
- ❖ Seismic Broadband Experiment in Kashmir Himalayas
- ❖ Finite Element Method to study deformation in porous thermoelastic material, wave Propagation in thermoelastic saturated porous medium, transient wave problem in thermoelastic saturated poro-viscoelastic medium
- ❖ 2004 M 9.3 Sumatra-Andaman rupture extent and slip distribution, and its implications on the regional tectonics.
- ❖ Source Process of the Sikkim Earthquake 18th September, 2011, Inferred from Tele-seismic Body-wave Inversion.
- ❖ Setting-up of coupled ocean-atmosphere General Circulation Model (CGCM) for climate and climate change studies
- ❖ Estimation of aerosol radiative forcing over India under various scenarios
- ❖ Physically based assessment of wind changes over Indian region under different scenarios of anthropogenic aerosol emissions
- ❖ Understanding of aerosol influence on interannual variability of monsoon rainfall
- ❖ Climate change impact on Indian monsoon extreme events
- ❖ Comparative study of IPCC AR5 climate model simulations of Indian Summer Monsoon Rainfall with respect to those of IPCC AR4
- ❖ Ultra high resolution global model climate change projection for India
- ❖ Downscaling of Indian summer monsoon rainfall using statistical models
- ❖ Delineating characteristics of rainfall and cloud over the tropics using high frequency satellite datasets
- ❖ Identification of dominant modes of the vertical profiles of atmospheric latent heating