

## ACADEMIC PROGRAMME

*In keeping with its objective of developing skill and expertise in Mathematical Modelling and Computer Simulation in the country, CSIR-4PI maintains an active academic programme. The activities span the entire spectrum from Ph D guidance to undergraduate/postgraduate student projects to specialized courses. The recently introduced Student Programme for Advancement of Research Knowledge (SPARK) is intended to provide a unique opportunity to bright and motivated students of reputed Universities to carry out their major project/thesis work and advance their research knowledge in mathematical modelling and simulation of complex systems. Students and professionals from a wide spectrum of organizations including industries across the country have been benefiting from our various academic programmes over the years. CSIR-4PI is very actively engaged with the AcSIR (Academy of Scientific and Innovative Research) PhD program in Mathematical and Information Science.*

### Inside

- ***Ph D Programme***
- ***Thesis/Project by M. Tech/BE/MCA students***
- ***Faculty Participation***



## Ph D Programme

### *Anil Earnest*

**Sunilkumar T C**, (AcSIR), Geodynamics of Plate-Boundary Zones

**Silpa K**, (AcSIR), Crustal Deformation and Earthquake Cycles

### *Goswami P*

**Mohapatra G N**, (Berhampur University), Impact of Local Climate Variability and Anthropogenic Processes in Extreme Weather Events over India

**Kantha Rao**, (Mangalore University), Multi-scale Modelling and Analysis of Surface and Soil processes over the Indian Region.

**Shiv Narayan Nisad**, (Mangalore University), Analysis and Modeling of Sustainability over India under Different Scenarios of Climate Change and Socio-Economic Conditions

**Sumana Sarkar**, (Mangalore University), Multisector Application of Seasonal Forecast: Crop yield, Vector-Borne Diseases and High Impact Weather Events over India

**Shaktidhar Nayak**, (AcSIR), Development and Evaluation of a Model Configuration for Local Climate Projection over India

Eswari V, (GSI), Analysis of Impact of Climate Change on Wind Regimes and Implications for Wind Energy potential over the Monsoon Region.

### *Gouda K C*

Nagaraj Bhat (VTU), Weather Informatics using Remote Sensing & GIS.

Radhika T V (VTU), Efficient and Large-Scale Climate Simulation Analysis in Cloud Computing Cluster

### *Parvez I A*

**Sushant Shekhar**, (AcSIR), Seismic Wave Propagation in Non Homogeneous Anisotropic Incompressible Media.

**Ramiz Raja Mir**, (AcSIR), Evolution of Crustal and Mantle Structure in Kashmir Himalaya.

**Farrukh Altaf**, (AcSIR), Integrated Natural Disaster Assessment using GIS applications in Kashmir Himalayas.

### *Patra G K*

**Siddhartha Saha**, Security in a Distributed Environment

*Patra G K* and Sarda N L (IIT Bombay)

**Ashapura Marndi**, (AcSIR), Scientific Data Analysis and Data Intensive Research

Sangeeta Iyer K and *Patra G K (Co-guide)*

Santhana Lakshmi S, Design of Cryptographic Protocols using Computational Intelligence Techniques

Supriya M, Trust Building in Distributed Storage using Cryptography

Prathap G and Pradhan S C (IIT KGP)

**Senthilkumar V**, Small Scale Effect on Structural Behaviour of Carbon Nanotubes

### *Rajendran K*

**Ipsita Putatunda**, (AcSIR), Methods of Physical Assimilation for Short Range Numerical Weather Prediction.

**Jayasankar C B** (AcSIR), Climate Change Modeling Studies

Kulkarni Shashikant (IIT Bombay), Downscaling over Monsoon Region

### *Ramesh K V*

**Alfred Johnny**, (AcSIR), Simulation of Indian Summer Monsoon using CMIP5 Climate Simulations

**Safeer K B**, (AcSIR), Evaluation of Upper Ocean Variability Simulated by IPCC Climate Simulations

Edwin Raj E, (UPASI TRF TRI) Climate Impact Assessment on Tea Production over South India

### *Sajani Surendran*

**Arya V B** (AcSIR), Analysis of meteorological and aerosol observations

**Stella Jes Varghese** (AcSIR), Computational modeling of coupled climate system

Nithin Patil (IIT Bombay), Aerosol Radiative Forcing and Impact on Climate

### *Sridevi Jade*

**Shrungeshwara T S** (Kuvempu University), Active deformation and water vapor studies in Indian subcontinent

*Sridevi Jade* and Ashok Kumar

Prakash Burman (Tezpur Univeristy), Estimation of Precipitable Water Vapor and Crustal deformation in Northeast India

**Sridevi Jade** and Malay Mukul (IIT Bombay)

Kutubuddin Ansari (IIT Bombay), Modelling of Global Positioning System (GPS) based surface deformation using Dislocations

Ravi Babu (VIT) and **Tejpal Singh (Co-guide)**

Nisha (VIT), Remote sensing/GIS applications in mineral spectra identification

**Vijayan M S M**

**Shimna K.** (AcSIR), Seismo-ionospheric coupling and upper atmospheric perturbations induced by acoustic gravity waves

**Vijayan M S M and Senthilkumar V (Co-guide)**

**Lalit Kumar**, (AcSIR), Finite Element Modelling of deformation of the Indian plate

Ashok Kumar and **Vijayan M S M (Co-Guide)**

Jagat Dwipendra Ray, Space based geodetic study on active tectonics and seasonal perturbations in interseismic deformation of North-East India

## **M Tech/ME/MCA/BE Projects**

**Anil Kumar V**

Transport Layer Feature Enhancement in Linux Kernel, Chinmaya Mohini (M Sc), Pondicherry University, May 2014

A Customized Software Tool for Filtering and Analyzing Network Packets in a Linux based Distributed System, Sudeep Nesakumar S (M Tech), Vellore Institute of Technology, May 2014

Implementation of wget on SCTP, Navya Meriam Joseph, Rachana, Ranjani and Sithara (B E), New Horizon College of Engineering, VTU, July 2014

Database Design for Massive Network Traffic, Patrick E, (B Tech), Karunya University, March 2015

Simulation Studies on Buffer Sizing in Internet Routers Using NS3, Karthika S Nair, (MCA), Mahatma Gandhi University, January 2015

Client-Server Application Implementation on Stream Control Transmission Protocol, Akshita Sharma, Azeena Kulsum, Gopal Sharma and Nimisha Dutta, MVJ College of Engineering, VTU, July 2014

**Gouda K C**

Development of Electric Load Forecasting Model in different Climate Change Scenario, Vinutha H D (M Tech), SJB Institute of Technology (VTU), Bangalore, June 2014.

Weather Modeling and Simulation in cloud computing platform, Bhaavan M (M Tech), SJB Institute of Technology (VTU), Bangalore, June 2014.

Evaluation of High Resolution Weather Model for Regional Climate Studies, Indu B (M Tech), SJB Institute of Technology (VTU), Bangalore, June 2014.

Precision Agriculture Information System using Remote sensing Data and Dynamical crop model, Mukhesh Gowda (M Tech), SJB Institute of Technology (VTU), Bangalore, June 2014.

Assessment of water resource for KRS Reservoir using Remote Sensing and GIS Manumohan V H (M Tech), Karnataka Remote Sensing Application Centre (VTU), Bangalore, May 2014

Integrated geo-spatial approach for monitoring climate change and its impact over Bangalore Urban District, Shyla B (M Tech), Karnataka Remote Sensing Application Centre (VTU), June 2014.

Study of Impact of climate parameters on Sugarcane yield over Bvagalokot using Remote sensing, Shruthi Y (M Tech), Karnataka Remote Sensing Application Centre (VTU), June 2014

Modelling Impacts of Climate change on Road Infrastructure at Regional Scale, Pooja V (M Tech), SJB Institute of Technology (VTU), Bangalore, June 2014.

Development of software system for weather informatics, Shadiya Aman (M C A), Jyoti Nivas College (Bangalore University), Bangalore.

Development of Integrated system for weather and climate data analysis, Abhitha J (M C A), Jyoti Nivas College (Bangalore University), Bangalore.

A survey on the Hydro-meteorological disaster events over India, Smrutishree Lenka (M Sc), Ravenshaw University, Odisha

Virtualization Approaches and Migration Management in Cloud Computing, Anurag Patro and Dines Dwivedi (B Tech), National Institute of Technology, Rourkela, June 2014.

**Patra G K**

Implementation of public key cryptography, Shilpa A, Sweta Priya M, Tasmiya Sanam, Usha Shivappa Ambig, Don Bosco Institute of Technology, May 2014

Efficient Fully Homomorphic Encryption for Secured High Performance Computing, Nilotpal Chakraborty, Devi Ahilya University, May 2014

Secure Computation over Cloud using Fully Homomorphic Encryption, Anusha Biakanti, Anjana N B, Divya A, K Divya, CMR Institute of Technology, June 2014

Multiparty Key Agreement using Neural Cryptography, Vandana Arya, East Point Engineering & Technology, Bangalore, June 2014

**Rakesh V**

Analysis of remote sensing satellite data to study the thermodynamic processes of extreme weather events, Archana V, Indian Institute of Information Technology and Management, Kerala, India

Mathematical modeling and analysis of tropical cyclones over the Indian Ocean, Muhassin Babu M M, Indian Institute of Information Technology and Management, Kerala, India.

Analysis of trends in temperature during last century for major cities in Kerala, Athira V S, Indian Institute of Information Technology and Management, Kerala, India

**Ramesh K V**

Understanding the relationship between climate and pulses over India, Arti Mehta, SHIATS, Allahabad

Understanding the Variability and Trends in Pulses over India, Nidhi Kumari, SHIATS, Allahabad

Modelling the relationship between climate and ecosystem, Pathang V S, Indian Institute of Information Technology and Management Kerala.

Identification of 3d structure of hotwaves and data modelling, Jean Rose John, Indian Institute of Information Technology and Management Kerala

Modelling and simulation of reservoir water level and hydro power Generation, Vidhu Lakshmi K U, Indian Institute of Information Technology and Management Kerala Trivandrum

Modelling and structural analysis of three dimensional structure of rain events, Indhuja Nandan K, Indian Institute of Information Technology and Management Kerala Trivandrum.

**Senthilkumar V**

Nonlocal continuum mechanics and dispersion of plane waves, Tushar Chaudhary, B.Tech, IIT(BHU), July 2014

**Faculty participation****Academy of Scientific and Innovative Research**

**Patra G K**, High Performance Scientific Computing, January 2015 semester

**Rajendran K**, Tropical Meteorology and Monsoon, January 2015 semester