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C-MMACS Academic Programme

In keeping with its objective of developing skill and expertise in Mathematical Modelling and Computer Simulation in the country, C-MMACS maintains an active academic programme. The activities span the entire spectrum from Ph.D. guidance to undergraduate/postgraduate student projects to specialized courses.

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. The year 2002-2003 also had a vibrant academic programme:

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Ph.D Programme

Ph.D Scholars

Seminars by Project Students

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Faculty Participation

Ph. D Programme

C-MMACS is recognized by Bangalore University for Ph.D Programme, many scientists from C-MMACS are recognized as guides by several other Universities.

Ph. D Scholars

S Raja (Guide: Dr G Prathap, Co-Guide: Prof P K Sinha)

R Muralikrishna (Guide: Dr G Prathap)

P V S Raju (Guide: Dr P Goswami, Co-Guide: U C Mohanty, IIT-Delhi)

Manoj Jaiswal (Guides: Malay Mukul, A K Singhvi, PRL, Ahmedabad

M.Tech Thesis/BE,MCA Projects Guided

Anil Kumar V
Denial of Service Attacks Using Sliding Windows (MCA Project).
M Jayagowri, D Radhika, SSIT Tumkur

Packet Sniffing and Fabrication - A Subterfuge (B E Project)
B N Nitin, Sachin Asoka, S Sanchana, K H Veena, RVCE College, Bangalore

Kalyani Devasena
Analysis and visualization of Numerical ocean model simulations using Matlab and Mexcdf interface (MCA Project).
S. Nighar Sulthana, Sri Krishna Devaraya University, Ananthapur, A.P

Parvez I A
Compilation of Homogeneous Earthquake Catalogue for the Indian Subcontinent. (MCA Project)
Geetha Bagga, JMPCCS, Bhandara, May 2002

Graphical user Interface (GUI) Tool for online Sorting of Earthquake Catalogue for the Indian Subcontinent (MCA Project).
C Prasanna Lakshmi and Y Lakshmi Devi, JNTU College of Engineering, June 2002

Bayesian Probabilities of Earthquake Occurrences in Northeast Indian Peninsula. (B E Project)
Praveena Gaddam, B.I.T.S., Pilani. June 2002

Malay Mukul

Grain Size and Shape Quantification of Rocks using Digital Image Analysis

(MCA Project)
B S Sharath, Malnad College of Engineering, Hassan

S Kavitha, National Institute of Engineering, Mysore

Patra G K
A Classical Implementation of Quantum Cryptography Protocal in Networked Environment (B E Project)
S A Vikas, Vidya Jaykar, T S Sathwick, M S Ramaiah Insitute of Technology

A Secure-Symmetric Encryption Scheme Using the RKGA and Simple Geometric Concepts (B E Project)
R Krishnan, BITS Pillani

Sharada M K
Modelling of Marine Ecosystem in Bay of Bengal (MCA Project)
Vineetha V, Mahatma Gandhi University

Sridevi Jade
Web Based GPS User Interface (MCA Project)
Berhampur University, Berhampur

Seminars by Project Students

Broadcast Traffic Estimation of Ethernet LAN, T Sindhu Lakshmi, Thiagarajar College of Engineering, Madurai, 07 February 2002

A Simulation Study on TCP Connection Control for Bandwidth Management of Internet Access Link, N Anitha, MSRIT, Bangalore, 21 March 2002

Compilation of Homogeneous Earthquake Catalogue for the Indian Subcontinent, Geetha Bagga, JMPCCS, Bhandara, 03 May 2002

Network Events Deduction from Raw TCP/IP Packets for Internet Congestion Control, Atiya Faiz Khan, JMPCCS, Bhandara, 03 May 2002

A Graphical user Interface (GUI) Tool for Online Sorting of Earthquake Catalogue for the Indian Subcontinent, C Prasanna Lakshmi & Y Lakshmi Devi, JNTU College of Engineering, 12 June 2002

A Classical Implementation of Quantum Cryptography Protocol in Networked Environment, Vikas S A, Vidya Jayakar, Sathwick T S, M S Ramaiah Institute of Technology, 19 June 2002

Denial of Service Attacks using Sliding Windows, Jayagowri M, Radhika D, Sri Siddhartha Institute of Technology, Tumkur, 19 June 2002

A Neural Network Based Atmospheric Analysis scheme Chandan Talukdar, SJCIT, Chikballapur, 20 June 2002

Packet Sniffing and Fabrication – A subterfuge, Nitin B N, Sachin Asoka, Sanchana S, Veena K H, RVCE College, 20 June 2002

Java Based Visualization Package and Internet Based Weather Forecasting, Krishna, Mallikarjnappa K S, Gulbarga University, Gulbarga, 27 June 2002

Bayesian Probabilities of Earthquake Occurrences in North-East Indian Peninsula, Praveena G, BITS, Pilani, 11 July 2002

Grain Size and Shape Quantification of Rocks using Digital Image Analysis, Sharath B S and Kavitha S, Malnad College of Engg, Hassan, NIE Mysore, 30 July 2002

Redesign of a Weather Forecasting Code According to Soft Requirement Specifications, Preethi V R, Shankar Dora, Simanta Kalita, Chandan Talukdar, SSIT, Tumkur, Berhampur Univ., Madurai Kamaraj Univ., SJCIT, Chikballapur, 06 August 2002

Modelling of Marine Ecosystem in Bay of Bengal, 18 November 2002, Vineetha V, M G University Regional Centre, Cochin

Implementation of MPI-2 Tools for Complex Mathematical Simulations, Krishna Chaitanya Atkuru, BITS, Pilani, 10 December 2002

Investigation of Flows Around Sharp Corners Using a Flow Consistent Grid, Rajesh Thatha, BITS, Pilani, 13 December 2002

A Secure-Symmetric Encryption Scheme Using the RKGA and Simple Geometric Concepts, Krishnan R, BITS, Pilani, 16 December 2002

Courses at C-MMACS

Workshop on Use of GPS technology, GPS Data Analysis and Processing
March 24th –April 4th , 2003, Coordinator: Dr. Sridevi Jade

The Workshop, sponsored by Department of Science and Technology is aimed as a sequel to the project" Establishment of Continuous recording GPS systems in North-Eastern India" to empower the local scientists in the use of GPS technology. The objective of this workshop is to train host institute scientists to analyze GPS data collected at their respective permanent sites and help them to write research proposals to study regional tectonic units by setting up campaign mode stations and using the permanent site as a reference. There was an overwhelming response for the workshop with 2 to 3 participants from each of our collaborators

Training Programme for Newly Recruited Scientists of NIO in Mathematical Modelling and its Applications
01–31 July 2002, Coordinator: M K Sharada

Seventeen scientists from NIO, Goa participated in this training programme which covered basic mathematics and computer simulation techniques required for mathematical modelling in oceanography

Faculty Participation

DST Sponsored Workshop on Use of GPS technology, GPS Data Analysis and Processing
March 24th - April 4th, 2003

Sridevi Jade March 24, 2003, *GPS Geodesy, GPS Theory, Data Analysis, Global Kalman Filter Theory, GPS Applications*

M Mukul
March 25, 2003: *GPS Data Collection and Pre-Processing*

April 3, 2003: *Sources of Surface Deformation, The 5700 Trimble Receiver, Programming and Field usage*

NIO Training Programme, July 2002

V K Gaur *Methods and Philosophy of Science*

M K Sharada *Basic Introduction to Mathematical Modelling, Examples, Numerical Analysis*

K S Yajnik *Basic Introduction to Mathematical Modelling, Examples, Numerical Analysis*

Anand Kumar *Numerical Analysis*

Gangan Prathap *Methods and Philosophy of Science*

Sridevi Jade *Modeling and GPS*

R P Thangavelu *High Performance Computing and Applications*

Gopal Krishna Patra *High Performance Computing and Applications*

I A Parvez *Applications of Mathematical Modelling*

C Kalyani Devasena *Applications of Mathematical Modelling*

Krishna Mohan *Applications of Mathematical Modelling*

M Mukul *Response Modelling: Statistical Modelling of Non-Spatial Data*

Malay Mukul
Four Lecture Series at Department of Earth Sciences, Pondicherry University, Pondicherry (March 26-27, 2003)

Introduction to Deformation in Rocks.
Material Properties and Deformation Microstructures in Rocks

Aspects of Mesoscopic Deformation: Examples from Fold-and-Thrust Belts

Aspects of Wedge Scale Deformation: Examples from the Darjiling-Sikkim-Tibet (DaSiT) Himalayan Wedge

Parvez I A
Indian Academy of Sciences sponsored Refresher course on *Physics of Earthquakes* at Tezpur University, Tezpur (2-21 December, 2002)
Plate Tectonics -A review
Earthquake Parameters
Earthquake Focal Mechanism and Source parameters
Earthquake Hazard Studies and Microzonation
Receiver Function Analysis of Broad-Band Seismic data
Earthquake Location (Tutorials)
Seismic Analysis Code (Tutorials)
Determination of Fault Plane Solution (Tutorials)

Sridevi Jade
Workshop on Application of GPS in Geodynamics *at Geological Survey of India Training Institute, Lucknow, March 6-13, 2003*
GPS - Geodesy theory
GPS data processing theories and limitations

GAMIT theory
GPS studies related to Plate tectonics
GLOBK theory

Thangavelu R P
CEP Course on Internet and Intranet, *Centre for AirBorne Systems, Bangalore, August 5-9, 2002*
Options of Connecting: Web Connectivity/Infrastructure,