

## KNOWLEDGE PRODUCTS: PUBLICATIONS, PRESENTATIONS.....

Knowledge creation, knowledge enhancement, knowledge dissemination and knowledge management have been among the core activities of C-MMACS. Ever since its inception, CMMACS has maintained a high knowledge output in terms of publications and other scientific programmes-knowledge synthesis and exchange through conferences, workshops, brainstorming sessions, etc.

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## 5.1 Publications in Journals

**Anil Kumar V, Jayalekshmy P S, Patra G K, Thangavelu R P**, On Remote Exploitation of TCP Sender for Low-rate Flooding Denial-of-Service Attack, *IEEE Communication Letters*, 13 (1), 46-48, 2009.

Rajendran K, Rajendran C P, **Anil Earnest**, Ravi Prasad G V, Dutta K, Ray D K, Anu R, Age Estimates of Coastal Terraces in the Andaman and Nicobar Islands and their Tectonic Implications, *Tectonophysics*, 455(1-4), 53-60, DOI: 10.1016/j.tecto.2008.05.004.

Heintz M, Kumar V P, **Gaur V K**, Priestly K, Rai S S and Prakasam K S, Anisotropy of the India Lithospheric Mantle, *Geophys. J. Int.*, doi:10.1111/j.1365-246X.2009.04395, 2009.

**Goswami P** and **Gouda K C**, Comparative Evaluation of two Ensembles for Long-range, High-resolution Forecast of Monsoon Rainfall, *Monthly Weather Review*, 137 (9), 2893-2907, 2009.

**Goswami P** and **Ramesh K V**, Extreme Rainfall Events: Vulnerability Analysis for Disaster Management and Observation System Design, *Current Science*, 94 (8), 1037-43, 2008.

**Goswami P** and **Barua J**, Simulation of Daily Values of Suspended Particulate Matter over Delhi, *Monthly Weather Review*, 136 (9), 3597-3607, 2008.

Singh Vimal, Tandon S K, Singh Vaibhava, **Mukul M** and Edit Tamó-Bozsó E, Characterization and Development of the Jhajara Thrust: An Example of Neotectonic Activity in the Pinjaur Dun, NW Himalayas. *Current Science*. 623-628, 2008.

**Parvez I A**, Anup K Sutar, **Mridula M**, Mishra S K and Rai S S, Coda Q Estimates on the Andaman Islands using Local Earthquakes, *Pure and Applied Geophysics* 165, 1861-1878, 2008.

**Parvez I A**, Seismic Hazard in Asia, *Current Science*, 95 (8), 1006-1007, 2008.

Chatelain Jean-Luc, Bertrand Guillier and **Parvez I A**, False Site Effects: The Anjar Case, Following the 2001 Bhuj (India) Earthquake, *Seismological Research Letters*, 79 (6) 816-819, 2008.

**Prathap G**, Manju S and **Senthilkumar V**, The Unsymmetric Finite Element Formulation and Variational InCorrectness-Discussion, *Structural Engineering and Mechanics*, 28 (6), pp 771-771 2008.

**Prathap G** and **Senthilkumar V**, Making Sense of the Quadrilateral Area Coordinate Membrane Elements, *Computer Methods, Applied Mechanics and Engineering* 197(49-50), 4379-4382, 2008.

**Rajendran K**, and Kitoh A, Indian Summer Monsoon in Future Climate Projection by a Super High Resolution Global Model, *Current Science*, 95(11), 1560-1569, 2008.

**Rajendran K**, Kitoh A, Mizuta R, **Sajani S**, and Nakazawa T, High Resolution Simulation of Mean Convection and its Intraseasonal Variability over the Tropics in MRI/JMA 20-km Mesh AGCM, *J. Climate*, 21(15), 3722-3739, 2008.

Liu P, Kajikawa Y, Wang B, Kitoh A, Yasunari, T, Li T, Annamalai H, Fu X, Kikuchi K, Mizuta R, **Rajendran K**, Waliser D E, and Kim D, Tropical Intraseasonal Variability in the MRI-20km60I, AGCM, *J. Climate*, 22(8), 2006-2022, 2009.

Nakazawa T, and **Rajendran K**, Interannual Variability of Tropical Rainfall Characteristics and the Impact of the Altitude Boost from TRMM PR 3A25, Data, *J. Meteor. Soc. Japan*, 87A, 317-338, 2009.

Inoue T, Vila D, **Rajendran K**, Hamada A, Wu X, and Machado L, Life Cycle of Deep Convective System over the Eastern Tropical Pacific Observed by TRMM and GOES-W, *J. Meteor. Soc. Japan*, 87A, 381-391, 2009.

**Sharada M K, Swathi P S, Yajnik K S** and **Kalyani Devasena C**, Role of Biology in the Air-Sea Carbon Flux in the Bay of Bengal and Arabian Sea, *J. Earth Syst. Sci.* 117(4), 429-447, 2008.

Gahalaut V K, **Sridevi Jade**, Catherine J K, Gireesh R, **Ananda M B, Dileep Kumar P**, Narsaiah M, Jafri S S H, Ambikapathy A, et al., Deformation Modeling of Andaman Nicobar Region GPS Measurements of Post-Seismic Deformation in the Andaman-Nicobar Region Following the Giant 2004 Sumatra-Andaman Earthquake, *J. Geophys. Res.*, 113, B08401, DOI: 10.1029/2007JB005511, 2008.

Gahalaut V K, Catherine J K, **Sridevi Jade** Gireesh R, Gupta D C, Narsaiah M, Ambikapathy A, Bansal A, and Chadha R K, No Evidence of Unusually Large Post-Seismic Deformation in Andaman Region Immediately after 2004 Sumatra-Andaman Earthquake., *Geophys. Res. Lett.*, 35, L10307, doi:10.1029/2008GL033704, 2008.

**Surendra Kumar**, Analysis of Impact Response and Damage in Laminated Composite Shell Involving Large Deformation and Material Degradation, *Journal of Mechanics of Materials and Structures*, 3(9), 1741-1756, 2008.

## 5.2 Publication in Books/Proceedings

**Gaur V K**, Planetary Dynamos, *Astrophysics and Space Science Proceedings on Turbulence, Dynamics, Accretion Discs, Pulsars and Collective Plasma Processes*, Springer, 2009.

**Gaur V K**, The Indian Lithosphere, *Platinum Jubilee Volume of the Indian Academy of Sciences*, Springer India, 2009.

Rai S S, Prakasam K S and **Gaur V K**, Seismic Imaging of the Mantle Discontinuities Beneath India: from Archean Cratons to Himalayan Subduction Zone, *Phys. and Chem. of the Earth's Int.* (Ed. A K Gupta and S Dasgupta), Springer India Ltd., 151-161. 2009.

**Himesh S, Goswami P** and Goud B S, Role of Large-scale Reanalysis Fields in Simulation of Extreme Rainfall Events. *3rd WCRP International Conference on Reanalysis*, Tokyo, Japan, 28 Jan -1 Feb 2008.

**Malay Mukul, Sridevi Jade** and Matin A, Active Deformation in the Darjiling-Sikkim Himalaya based on 2000-2004 Geodetic Global Positioning System Measurements, P. Ghosh and S. Gangopadhyay (Eds.), *Numerical Methods and Models in Earth Science* Indian Statistical Institute Platinum Jubilee Volumes, New India Publishing Agency, New Delhi, 1-28, 2009.

Prabhas Pandey and **Parvez I A**, Seismic Microzonation: the Indian Scene, *Glimpses of Geoscience Research in India*, IUGS Book, 113-118, 2004-2008.

**Parvez I A**, Sutar A K, **Mridula M**, Mishra S K and Rai S S, Estimation of Coda Attenuation in the Andaman Islands using Local Earthquakes, *7<sup>th</sup> General Assembly of Asian Seismological Commission*, Tsukuba, Japan, 24-27 November, 2008.

**Parvez I A**, Romanelli F and Panza G F, Simulation of Earthquake Ground Motion in Delhi City from Himalayan Earthquake Scenarios at Rock Level, *7<sup>th</sup> General Assembly of Asian Seismological Commission*, Tsukuba, Japan, 24-27 November, 2008.

**Patra G K** and **Anil Kumar V**, Analysis of Synchronization using Chaotic Systems Sampled at Non-uniform Time-steps for use in Secure Communications, *Proceedings of the third Innovative Conference on Embedded Systems, Mobile Communication and Computing (ICEMC2)*, Infosys, Mysore, 11-14 August 2008.

**Patra G K** and **Anil Kumar V**, Computerized Chaos in Cryptography: Problems and solutions, *Proceedings of National Conference on Cryptography and Network Security*, VIT, Vellore, 18-19 Feb. 2009.

**Sajani S**, Nanjundiah R S, Krishna Moorthy K and **Rajendran K**, Regional Aerosol Direct Radiative Impact on Indian Summer Monsoon Precipitation, *Young Scientists of Asia Conclave, TWAS Regional Office for Central and South Asia*, JNCASR, Bangalore, India, 15-17 January 2009.

## 5.3 Presentations in Conference/ Symposium/Workshop

**Gouda K C** and **Goswami P**, Advance Prediction of Date of Onset of Monsoon: Dynamical Basis and Skill Evaluation. *The Second International Workshop on Prevention and Mitigation of Meteorological Disasters in Southeast Asia*, Bandung, Indonesia, 2-5 March, 2009.

**Gouda K C** and **Goswami P**, An Optimized AGCM Configuration for simulation of Asian Summer Monsoon, *DST sponsored Indo-China Workshop on Monsoon Asia Modelling Platform*, IIT Delhi, 19-20 March, 2009.

**Indira N K**, Measurement and analysis of CO<sub>2</sub> and CH<sub>4</sub>. DST Sponsored *Brainstorming Meeting on Planet Earth's Changing Climate and Imperatives for Research Initiatives, Issues and Programmes*, C-MMACS, 10-11 Dec., 2008.

**Kalyani Devasena C, Swathi P S** and **Sharada M K**, Equatorial Indian Ocean Upper Ocean Thermal Changes and the Influence of the Monsoon Variability, *International Symposium on Effects of Climate Change on the World's Oceans*, Gijon, Spain, 19-25 May 2008.

Suresh Raju C, Korak Saha, **Rajendran K**, and Krishna Moorthy K, Microwave Emissivity Over The Indian Desert Region., *International Conference on Megha-Tropiques Science and Applications*, Space Application Centre, Ahmedabad, India, 21-23 January 2009.



**Rajendran K**, Srinivasan J, and Shige S, ON THE VERTICAL STRUCTURE OF LATENT HEATING DERIVED FROM TRMM PR AND TMI DATASETS, *Megha-Tropiques International Conference*, Indian Space Research Organization, Bangalore, 23-25 March 2009.

**Rajendran K**, High Resolution Modeling of Indian Summer Monsoon and its Variability, *Indo-Chinese Workshop on Monsoon Asia Modelling Platform*, Indian Institute of Technology, Delhi, India, 19 March 2009.

Nakazawa T and **Rajendran K**, 10-year Climatology of Tropical Rainfall Characteristics from TRMM Data, *28th Conference on Hurricanes and Tropical Meteorology*, Orlando, Florida, USA, 28 Apr 2008-2 May 2008.

**Ramesh K V**, Weakening of Indian Summer Monsoon and Indian Ocean Warming, *Indo-China Workshop on Monsoon Asia Modelling Platform*, IIT Delhi, 19-20 March, 2009.

**Senthilkumar V**, Free Vibration Analysis of Unsymmetric 6-Noded Element under Mesh Distortion Adelaide, *XXII International Congress of Theoretical and Applied Mechanics*, Australia 24-30, August 2008.

**Sharada M K**, **Swathi P S** and **Yajnik K S**, Modelling of Ocean Carbon Cycle *DST sponsored Brain Storming Meeting on Planet Earth's Changing Climate Critical Research Issues*, CMMACS 10-11 December 2008.

**Sridevi Jade**, **Gaur V K**, **Raghavendra Rao H J**, **Vijayan M S M**, **Dileep Kumar P**, Long Term GPS Deformation Rates in the Karakoram Terrane of Ladakh, *Himalayan Karakoram Tibet Workshop*, August 2008.

**Sridevi Jade**, Crustal Deformation Studies using GPS Geodesy, *Brain Storming Session on the Network of GPS Stations in the Peninsular Shield Region*, WIHG, Dehradun, October 2008.

**Sridevi Jade**, Precipitable Water Vapor (PWV) Estimation from GPS Data, *Brainstorming Meeting on Planet Earth's Changing Climate and Imperatives for Research Initiatives: Issues and Programmes*, C-MMACS, Bangalore, 10-11 December 2008.

**Sridevi Jade**, GPS Derived Deformation Rates (1996-2008) in Andaman and Nicobar Islands, *Brain Storming Session on Geodynamics of Andaman and Nicobar Region*, Port Blair, January 2009.

**Sridevi Jade**, National GPS Programme- Status, *Special Presentation, National Seismicity Programme*, MoES, Delhi, January 2009.

**Sridevi Jade**, GPS for Glacier Dynamics Studies, *Integrated Programme on Dynamics of Glaciers in Himalaya*, DST, Delhi, March 2009.

## 5.4 Internal Reports

**Surendra Kumar**, *Three-dimensional Non-linear Finite Element Analysis of Impact Response and Damage in Laminated Composite Shells*, RR CM 0804, September 2008.

Prabhas Pandey and **Parvez I A**, *Seismic Microzonation: The Indian Initiative*, PD CM0801, 2008.

**Prabhu N** and **Thangavelu R P**, *Design, Development and Management of Web Portal at C-MMACS*, TRCM0901, 31 March 2009.

**Parvez I A**, Fabio Romanelli and Giuliano F Panza, *Earthquake Ground Motion Simulation using Extended Source in Delhi City from Himalayan Earthquake Scenarios*, PD CM0802, 2008.

**Anil Kumar V**, **Patra G K**, **Jayalekshmy P S**, **Thangavelu R P**, *Analysis and Detection of a New Class of Denial-of-Service Attacks on the Internet*, PD CM0901, Feb. 2009

**Parvez I A** and Giuliano F Panza, *Neodeterministic Seismic Hazard Assessment in the Indian Megacities*, PP CM0801, 2008.

**Parvez I A** and Victor Bokov, *Development of Short-Term Earthquake Forecasting Scheme using Seismo-Synoptic Methods for the Territory of India*, PP CM0901, 2009.

**Parvez I A** and Vladimir G Kossobokov *Seismic Hazard and Risk Assessment Based on Pattern Recognition: Himalayas and Adjacent Territories*, PP CM0902, 2009.

**Senthilkumar V** and Pradhan S C, *Free Vibration Analysis of Folded Plates with Functionally Graded Materials using Finite Element Analysis*, PP CM0802, 2008.

**Indira N K**, **Swathi P S**, Bhatt B C, Yogesh Tiwari, **Gaur V K**, Peter Rayner, Phillippe Bousquet, Michel Ramonet, Martina Schmidt, Marc Delmitte, Fredric Chevallier, Phillippe Cias, Benoit Wastine, Morg





Logan, *Estimation of Carbon Fluxes and Design of Optimal Network of Measurement Stations in India*, PP CM0803, 2008.

## 5.5 Participation in Conference/ Symposia/Workshops/Seminars

### Surendra Kumar

Participated in ISAMPE National Conference on Composites (INCCOM-7), NAL Bangalore, 4-5 December, 2008.

### Suchanda Ray

National Symposium on Open Access and Building Institutional Repository (NSOBIR), NAL Bangalore, 21 January 2009.

Content to Intent, INFOVISION 2009, The Knowledge Summit, Bangalore, 22-23 January, 2009.

## 5.6 Invited talks

### Anil Kumar V

Network Traffic Analysis for Detection and Characterization of Malicious Incidents on the Internet, Electronic Corporation of India Limited (ECIL), Hyderabad, 7 Nov. 2008.

Detection and Characterization of Network Security Events at Internet-scale, the third Innovative Conference on Embedded System, Mobile Communication and Computing (ICEMC2), Infosys, Mysore, 11-14 Aug. 2008.

### P Goswami

Meeting on Fog Forecasting, IMD, New Delhi, 27-28 May 2008.

Meeting on Installation of Tower, NPL, New Delhi

Meeting on Regional Climate Modelling, ISRO, Bangalore, 19 August, 2008.

IICB Kolkata, 24 November -2 December 2009.

IHBT, Palampur, 6 -7 December, 2008.

CUSAT Cochin, 29 December 2008—01 January 2009.

CAS, IIT, New Delhi, 6-7 January 2009.

Indo-Norwegian Meeting at TERI, New Delhi

Meeting on Fog Forecasting, IAF, New Delhi.

### Imtiyaz A Parvez

Earthquake hazard studies in the Indian subcontinent; regional updates in the Strategic Planning Meeting of the Global Earthquake Model (GEM), Zurich, Switzerland, 15 June, 2008.

Seismic Zoning and Hazard Assessment in India and Adjacent Areas, C-MMACS colloquium, 18 July, 2008.

Seismic Zonation and Microzonation Studies in India, Institute of Physics of the Earth, Russian Academy of Sciences, Moscow, 18 September, 2008.

Assessing Earthquake Hazard in Andaman, Brainstorming Session on Geodynamics of Andaman and Nicobar Region, Ministry of Earth Sciences (MoES), PortBlair, 19 January, 2009.

Global Earthquake Model 1: a perspective from India, the kick off meeting of Global Earthquake Model-1 (GEM1), Canberra, Australia, 2 March, 2009.

### Indira N K

Measurement and Analysis of CO<sub>2</sub> and CH<sub>4</sub> C-MMACS Colloquium, 18 July 2008. <sup>2</sup> <sup>4</sup>

Statistical Analysis and Inversions of Data, IPE, Moscow, 26 Sept. 2008.

### K Rajendran

Modeling of Tropical Climate using a Super High Resolution Global Atmospheric Model, CAOS, Indian Institute of Science, Bangalore, 28 August 2008.

### V Senthilkumar

Mesh Distortion Immunity of Finite Elements Department of Mechanical Engineering, K.L.N College of Engineering, Sivagangai District, Tamilnadu 10 September 2008.

### P.S.Swathi

Oceanic Carbon Cycle, Workshop on Indo-Norwegian Research Cooperation on Climate Change, New Delhi, 3 Feb, 2009.



## 5.7 Conference/Workshops/Seminars/ Scientific Meetings, C-MMACS

Brain Storming Meeting on Planet Earth's Changing Climate : Critical Research Issues, December 2008

DST sponsored Brain Storming Meeting on Planet Earth's Changing Climate : Critical Research Issues was held during December 2008. During this meeting, it was decided that project proposals related to three broad research areas on climate change will be prepared by the participants and a few training programmes will be organized. Project proposals related to the issues discussed in this meeting are being prepared in collaboration with NIO Scientists to be submitted to DST.

Workshop Geodynamics of Andaman Nicobar Region organised by C-MMACS, 18-19 Jan 2009 at Port Blair.

A two-day long brainstorming session on "Geodynamics of Andaman Nicobar region" was organised by Dr Imtiyaz A Parvez, Scientist, C-MMACS, Bangalore on 18-19 January 2009 at Port Blair. About 30 participants from C-MMACS, NGRI, IIT-K, IIT-Kh, SOI, GSI, IMD, IISc, Manipur University, Pondicherry University, participated and presented the status of current knowledge on the geodynamics, tectonics, geodetic, seismological, geological, paleoseismological and earthquake safety of the Andaman Nicobar region. Apart from the progress made through the ongoing projects of various institutes, participants discussed what more needs to be done and what new projects to be taken up. In the last session, thrust areas were identified. It was realized that the geodynamics of the Andaman Nicobar region cannot be addressed in isolation without taking into account the tectonics of the back arc region, role of 90°E ridge and subducting oceanic floor. Proposed research in Andaman Nicobar can be divided in the following five major categories.

1. Crustal structure studies: delineation of deep structures by seismological (including ocean bottom seismometer), seismic, heat flow and gravity methods, and surface or shallow subsurface structures using GPR, shallow seismic, resistivity, geological methods, etc. A few seismic profiles across the subduction zone are absolutely essential for delineating the subsurface structures.
2. Earthquake occurrence processes: seismological, geodetic methods, and dating

of coral and paleoseismological and paleotsunami deposits. Relation between the earthquake occurrence and mud-volcano eruption in the Middle Andaman and volcano eruption at Barren island should also be investigated. Coral dating appears to be a good solution for inferring the past earthquake history.

3. Detailed plate motion: Using geodetic methods, dating of coral and paleoseismological and paleotsunami deposits, and development of geodynamic models, structure and thermal modelling using the above information, paleo-reconstruction for arc evolution.
4. Tsunami modelling: development of various scenarios for the island and coastal India regions. The modelling attempted so far is not detailed enough.
5. Structure safety and public awareness: Structural engineering research and improvement in practices, training and public awareness about earthquake, tsunami.

Considering the vast area of the island arc and poor logistics, it was suggested that people should work together with good coordination. It was noted that some of the studies needed (e.g., installation of seismometers and GPS for earthquake and deformation monitoring) are progressing well, and some others, like seismic studies dealing with subsurface structure, offshore and land gravity and magnetic observations, deployment of ocean bottom seismometers, detailed geological, geomorphological mapping of the region, microzonation of some identified region (e.g. Port Blair), need to be studied. Studies on Barren island volcano, earthquake safety and practices, public awareness, etc. are yet to be taken up. It was recommended that the remaining studies may also be taken up either with the funding from MoES or from other sources. For each study, persons to be involved were also identified.

GAMIT/GLOBK Advanced Users' Workshop, 7-10 March, 2009

C-MMACS hosted a four day "GAMIT/GLOBK Advances Users Workshop" catering to the requirements of Indian geodetic GPS researchers community. The workshop was funded by Min. of Earth Sciences, New Delhi. Prof. Robert W King, Principal Research Scientist, Department of Earth, Atmospheric, and Planetary Sciences,



Massachusetts Institute of Technology was invited as the faculty for the workshop.. He is primarily responsible for coding most of the core modules of GAMIT/GLOBK precise positioning software developed and maintained by MIT and widely used in our country.

The workshop was widely participated by almost all the premier research labs of the country working on precise positioning, tectonics and GPS signal propagation/delays. Workshop participants were there from various labs including IIT-Kanpur, GSI-Kolkata, ISM-Dhanbad, IT-Roorkee, IMD-New Delhi, MSU-Rajasthan, IIGM-Mumbai, Univ. of Manipur, WIHG-Dehradun, ISR-Ahemadabad, NGRI\_Hyderabad, IISC-Bangalore, Osmania Univ.-Hyderabad, BHU-Varanasi, Allahabad Univ., and CSIR CMMACS.

The workshop started with a keynote lecture by Prof. Gaur on decade on tectonic Geodesy research in India followed by Prof. King's introductory note on High-precision GPS data analysis. Later during the workshop extensive discussion lectures were conducted on the newer analysis options and refinements within the GAMIT/GLOBK followed by a primer on GPS data analysis. These were followed by hands-on tutorial sessions and further presentations on advanced options like Reference frames for velocity fields and time series, Models for height and water vapour measurements, Errors in Positioning, Issues in GPS Error Analysis, Modeling Errors in GPS Vertical Estimates and on TRACK: GAMIT Kinematic GPS processing module.

All the participants worked on the latest implementation of GAMIT/GLOBK making use of the C-MMACS computational facilities. The tutorial workshop ended with effective hands on sessions using auxiliary programs like 'tsview' and 'velview' for easier data management.

## 5.8 Guest Lectures

**Robert Pattb:** *Briefing SGI's Visualization Products and Solutions*, Global Professional Services, SGI, USA, 07 May 2008.

**Amitabh Joshi,** *Metapopulation Dynamics in the Laboratory*, Jawaharlal Nehru Centre for Advanced Scientific, Bangalore, 15 May 2008

**Maggy Heintz,** *Seismic Data Analysis and Acquisition*, Dept. of Earth Sciences, Cambridge, UK, 7-12 May 2008.

**Santhosh B S,** *Data Mining using SPSS Clementine*, SPSS South Asia, Bangalore, 21 May 2008

**Achinta Kumar Gogoi,** *Design of a Lightweight Kay Stream Generator using Basic Geometric Concepts*, Sikkim Manipal Institute of Technology, 23 May 2008

**Yves Deswarte,** *Safety and Security of Embedded Networks*, Researcher, LAAS-CNRS, Toulouse, France, 06 August 2008

**Yves Deswarte,** *Privacy-Enhancing Technologies for the Internet*, Laboratoire d'Analyse et d'Architecture des Systemes (LAAS-CNRS), France, 06 August 2008

**Srivatsan Lakshminarasimhan,** *A Study of the Flow and Deposition from Turbidity Currents*, Zeus Numeric Pvt Ltd, Pune, 22 September 2008

**Victor Bokov and Olga Bokova,** *Trigger Effect of Existential Variability of Atmospheric Circulation in Occurrence of Earthquakes*, Russian State Hydrometeorological University, Russia, 30 October 2008

**Murthy U S N,** *Mathematical Modelling of Biological Systems (Real time applications for the control of vector borne diseases through integrated information system)*, Indian Institute of Chemical Technology, Hyderabad, 11 November 2008

**Phani Murali Krishna R,** *Polaronic Effects in Low-dimensional Systems and Modelling of Nanostructures*, Supercomputer Education Research Centre, Indian Institute of Science, Bangalore, 22 January 2009

**Rogozhin E A,** *Earthquake Hazard Assessment using GIS Technology*, Institute of Physics of Earth, Russian Academy of Science, Moscow, 13 March 2009

**Lyubushin A A,** *Synchronization Phenomena in Geophysical Time Series and Bayesian Estimates of Seismic Hazard in India*, Russian Academy of Science, Moscow, 13 March 2009

**Hayashi S,** *The MRI-NHM Meso-scale Model: Features and Performance*, Metrological Research Institute (MRI), Japan, 25 March 2009





## 5.9 Visitors at C-MMACS

### **Richard Russell**

Sales, Edmonds, USA  
09 April 2008

### **Sivaram K**

National Geophysical Research Institute, Hyderabad  
29 April – 11 May 2008

### **Robert Patto**

Vice President, Global Professional Services, SGI,  
USA  
07 May 2008

### **Maggy Heintz**

Dept. of Earth Sciences, Cambridge, UK  
7-12 May 2008 and 16-18 May 2008

### **Bruno Michel Rouot**

Scientific Attache, French Embassy, 92 Avenue de  
Peyre Grosse, 34980 St Clement, France  
21 May 2008

### **Andrea Calamante**

Australia  
26 June 2008

### **Andrew Wyatt**

Australia  
26 June 2008

### **Christian Knoll**

Regional Sales Manager, Trimble Navigation India  
Pvt. Ltd., New Delhi  
27 June 2008

### **Yves Deswarte**

Researcher, LAAS-CNRS, Toulouse, France  
06 August 2008

### **Anand K R**

Director (System & JCES) ACIDS (WSOI)  
Kashmir House, New Delhi  
01 September 2008

### **Rear Admiral Samir Chakraborty**

Director, (System & JCES), HQ, IDS, New Delhi  
18 September 2008

### **Bokov Victor**

Russian Scientist  
29 October – 01 November 2008

### **Vorobyev Vladimir**

Russian Scientist  
29 October – 01 November 2008

### **Bokova Olga**

Russian Scientist  
29 October – 01 November 2008

### **Gregory Richard Ellis**

Scientist, Australia  
13 November 2008

### **Mathew John Harrison**

Scientist, GFDL, Princeton Forrestal Campus, New  
Jersey, USA  
05 December 2008

### **Andrew Wyatt**

CRAY Inc., Australia  
17 December 2008

### **Bhattacharjee B**

Member, National Disaster Management Authority,  
New Delhi  
24 February 2009

### **Olga V Pavlenko**

Scientist, Russian Academy of Science, Moscow  
04 – 13 March 2009

### **Evgeny A Rogozhin**

Deputy Director, Russian Academy of Sciences,  
Moscow  
04 – 13 March 2009

### **Alexey Lyubushin**

Chief Research Scientist, Moscow, Russia  
04 – 14 March 2009

### **Robert Wilson King, Jr**

Scientist, Massachusetts, USA  
06 – 11 March 2009

### **Krishna Singh**

Scientist, Institute De Ingenieria, Apartaadd, Mexico  
19 March 2009



