

## 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.*

### Inside

- **Publications in Journals**
- **Publications in Books/Proceedings**
- **Presentations in Conferences/ Symposia/ Workshops/ Seminars**
- **Internal Reports**
- **Participation in Conferences/ Symposias/ Workshops/ Training Programmes**
- **Invited Talks**





## 5.1 Publications in Journals

**Goswami P and Ramesh K V**, The expanding Indian Desert: Assessment through Weighted Epochal Trend Ensemble, *Current Science*, 94 (4), 476-480, February, 2008 .

**Sri Niwas, Gupta P K, and Gaur V K**, Straightforward Inversion of MT data using a normalized Impedance Function, *Geophysics*, Vol.72 (1),F.19-F.24, 2007.

**Imtiyaz A Parvez**, On the Bayesian Analysis of the Earthquake Hazard in the North-East Indian Peninsula, *Natural Hazard*, 40, 397-412, 2007.

**Kumar S**, Rao B N and B Pradhan, Effect of Impactor Parameters and Laminate Characteristics on Impact Response and Damage in Curved Composite Laminates, *Journal of Reinforced Plastics and Composites*, Vol. 26, No. 13, 2007, pp. 1273-1290.

**Kumar S and Prathap G**, Mesh Distortion, Locking and the use of Metric Trial Functions for Displacement Type Finite Elements, *Structural Engineering and Mechanics*, Vol. 29, No. 3, 2008, pp. 289-300.

**Mohapatra G N**, Panda U S and Mohanty P K, Annual Cycle of Surface Meteorological and Solar Energy Parameters over Orissa, *Indian Journal of Radio & Space Physics*, 36, 2007, 128-144.

**Mukul M**, Jaiswal M and Singhvi A K, Timing of Recent Out-of-sequence Active Deformation in the Frontal Himalayan Wedge: Insights from the Darjiling Sub-Himalaya, India, *Geology*, 35 (11), p. 999-1002, 2007.

Singh Vimal, Tandon S K, Singh Vaibhava, **Mukul M**, and Edit Thomó-Bozsó E, Characterization and Development of the Jhajara Thrust: an Example of Neotectonic Activity in the Pinjaur Dun, NW Himalayas, *Current Science*, 94 (5), 623-628, 2008.

**Patra G K, Anil Kumar V and Thangavelu R P**, Secure Chaotic Synchronization Using Negative Feedback of Super-positioned Signals, *Lecture Notes in Computer Science*, 4812, 193-207, 2007

**Patra G K, Anil Kumar V and Thangavelu R P**, A New Concept of Key Agreement Using Chaos-synchronization based Parameter Estimation, *Lecture Notes in Computer Science*, 4812, 263-266, 2007.

**Prathap G, S Manju and Senthilkumar V**, The

Unsymmetric Finite Element Formulation and Variational InCorrectness, *Structural Engineering and Mechanics*, 26 (1), pp 31-42, 2007.

**Ramesh K V and Goswami P**, Reduction in Spatial and Temporal Extent of Monsoon rainfall, *Geophy Res Lett*, Vol 34, L 23704 doi:10.1029/2007GL031613, Dec, 2007.

**Ramesh K V** and R Krishnan, Near-surface and Sub-surface Oceanic Response Associated with the Evolution of ENSO Events, *International Journal of Ecology and Development*, 3 (S05), 45-70, 2007.

**Sridevi Jade, Mukul M**, Bhattacharyya A K, **Vijayan M S M, Jaganathan S**, Kumar A, Tiwari R P, Kumar A, Kalita S, Sahu S C, Krishna AP, Gupta S S, Murthy M V R L and **Gaur V K**, Estimates of Interseismic Deformation in Northeast India from GPS Measurements, *Earth and Planetary Science Letters*, 263/3-4, 221-234, DOI:10.1016/j.epsl.2007.08.031, 2007.

**Sridevi Jade and Vijayan M S M**, GPS based Atmospheric Precipitable Water Vapor Estimation using Meteorological Parameters Interpolated from NCEP Global Reanalysis Data, *Journal Geophy Res*, 113, doi:10.1029/2007JD008758, 2008.

**Sridevi Jade, Saigeetha A J and Vijayan M S M**, Estimates of Anomalies in Triangular Area between GPS Stations, *Coordinates*, March 2008

**Sridevi Jade, Vijayan M S M** Gupta S S, **Kumar P D and Gaur V K**, Arumugam S, Effect of the M 9.3 Sumatra-Andaman Islands Earthquake of 26 December 2004 at Several Permanent and Campaign GPS Stations in the Indian continent, *International Journal of Remote Sensing*, 28 (13-1) 3045-3054, 2007.

## 5.2 Publications in Books/Proceedings

Sivapoornam S, **Anil Kumar V** and Iyengar N Ch S N, Analysis and Mitigation of Reflector based Distributed Denial of Service Attacks, Proceeding of *International Conference on Soft Computing and Intelligent Systems*, Jabalpur.

**Goswami P, Patra G K, Gouda K C** and Prakash V S, Long-range, High-resolution Forecast of Monsoon Rainfall, *Understanding & Forecasting of Monsoon (Book)* ed. P N Vinayachandran, NAM S & T Centre, New Delhi.

**Goswami P**, A Multi-scale Forecast Platform *Proceedings of METOC*, Cochin, 21-22 May, 2007.



**Goswami P** and **Gouda K C**, Advance Dynamical Forecasting of Onset of Monsoon Rainfall over India, *Proceedings of Int. Conf on Asian Variability during the Past Global Changes (AMV-PGC)*, Kumaun University, Nainital, 11-14 September 2007.

**Goswami P** and **Ramesh K V**, Extreme Rainfall Events & Monsoon Intensity: A Case Study of the Tail Wagging the Dog, *Proceedings of Int. Conf on Asian Variability during the Past Global Changes (AMV-PGC)*, Kumaun University, Nainital, 11-14 September 2007.

**Gouda K C** and **Goswami P**, Forecasting of Monsoon Rainfall Category at Long-range & High Spatial Resolution, *Proceedings of Int. Conf on Asian Variability during the Past Global Changes (AMV-PGC)*, Kumaun University, Nainital, 11-14 September, 2007.

**Gouda K C**, **Himesh S** and **Goswami P**, Comparison of Two Strategies for Simulation of Extreme Rainfall Events, *Proceedings of First International Workshop on Prevention and Mitigation of Meteorological Disasters in Southeast Asia*, 3-5 March, 2008, Kyoto, Japan.

**Imtiyaz A Parvez**, Mridula M, Mishra S K and Rai S S, Coda Q Estimates on the Andaman Islands using Local Earthquakes. *XXIV General Assembly of the International Union of Geodesy and Geophysics (IUGG-2007) Meeting* held at Perugia, Italy, 2-13 July, 2007.

**Imtiyaz A Parvez**, Romanelli, F and Panza G F, Ground Motion at Bedrock Level in Delhi city from Himalayan Earthquake Scenarios, *XXIV General Assembly of the International Union of Geodesy and Geophysics (IUGG-2007) Meeting* held at Perugia, Italy, 2-13 July, 2007.

**Kalyani C** and **Ramesh K V**, Influence of Monsoon Circulation on Upper Ocean Variability, *Proceedings of International Conference of Asian Monsoon Variability during the Past Global Changes (AMV-PGC)*, Kumaun University, Nainital, 11-14 September, 2007.

**Kalyani C**, **Ramesh K V** and **Swathi P S**, Heat Content Variations of the Indian Ocean and its Relation with Air-sea Parameters, *IUGG-XXIV General Assembly*, Perugia, Italy, 7-13 July, 2007.

Mohanty P K, Pradhan Y, Nayak S R, Panda U S and **Mohapatra G N**, Sediment Dispersion in the Bay of Bengal, Springer Verlag Gmbh Book

Publication (ISBN 1402066457), VOL 1, February 2008.

Panda U S, Mohanty P K, Pal S R, **Mohapatra G N**, Mishra P and Jayaraman G, Mapping Lagoonal features and their variability: Field observations and Remote sensing Implication, Springer Verlag Gmbh Book Publication (ISBN1402066457), VOL 1, February 2008.

**Mukul M**, Kinematics of Wedge Scale Himalayan Deformation: Insights from Darjiling-Sikkim-Tibet (DaSiT) Wedge, Abstracts, *Proceedings of International Association for Gondwana Research Conference Series 5*, Indian Institute of Technology, Bombay, Powai, 59, 2008.

**Mukul M**, **Sridevi Jade** and Matin A, Active Deformation in the Darjiling-Sikkim Himalaya based on Geodetic Global Positioning System based Geodetic Measurements, Abstracts, *Proceedings of International Conference on Geology, Indian Scenario and Global Context*, Indian Statistical Institute Platinum Jubilee Volumes, World Scientific Publisher, Singapore, 2008

**Mukul M**, **Sridevi Jade**, Bhattacharyya A and **Gaur V K**, Active Deformation in the North Eastern India from GPS measurements: Abstracts, *3rd International Symposium on Geological Anatomy of East and South Asia IGCP516*, University of Delhi, Delhi, 8-14 October, 2007, p.110-112, 2007

**Mukul M**, **Sridevi Jade** and Matin A, Active Deformation in the Darjiling-Sikkim Himalaya based on Geodetic Global Positioning System Measurements, *International Conference on Geology*, GSI, ISI, Kolkata, January 2008.

**Patra G K**, **Anil Kumar V** and **Thangavelu R P**, Analysis of Synchronization-based Parameter Estimation Attack on Switched Bidirectional Chaotic Key Stream Generator, *International Conference on Information Processing ICIP-2007*, Bangalore, 298-307, 2007

**Patra G K**, Introduction to Parallel and High Performance Computing, Computational Fluid Dynamics with Trust on Atmospheric Sciences, *UGC Centre for Advance Studies in Fluid Mechanics*, Bangalore, 208-245, 2007.

**Rajendran K**, Kitoh A, and Mizuta R, Projected Change in Heavy Rainfall Occurrence during Indian Summer Monsoon Season on a 20-Km GCM, *Proc. Joint Conference on the 6th International Symposium on Asian Monsoon System (ISAM6) and the 9th East*



*Asian Climate Workshop (EAC9)*, 10-13 December 2007, ACROS Fukuoka, Japan.

**Rajendran K**, Kitoh A, and **Sajani S**, Convectively Coupled Equatorial Waves in a Very High Resolution TL 959L60 Atmospheric GCM, *Proc. Celebrating the Monsoon Conference*, 24-28 July 2007, IISc, Bangalore, India.

**Ramesh K V**, Numerical Methods and Parallel Computing, Computational Fluid Dynamics with Thrust on Atmospheric Sciences, *UGC Centre for Advance Studies in Fluid Mechanics, Bangalore, 2007*.

**Ramesh K V** and **Goswami P**, An Analysis of Reduction in Temporal and Spatial Extent of the Indian Summer Monsoon, *Proceedings of Int. Conference on Asian Variability during the Past Global Changes (AMV-PGC)*, Kumaun University, Nainital, September 11-14, 2007.

Chandrasekhar D V, Bürgmann R, **Sridevi Jade**, Kato T, Likhari S, Reddy C D, Schmidt D A and Sunil P S, Post-seismic Deformation of the 2001 Bhuj Earthquake from GPS, Gravity and InSAR Data Paper Number: G13A-0923, *AGU meeting*, December 2007

### 5.3 Presentation in Conference/ Symposium/Workshop

**Anil Kumar V**, Low-rate DoS Attacks, *8th Annual Applied Security Conference*, Canada, Vancouver, Canada, 18-20, April 2007.

Sivapoornam S, **Anil Kumar V** and Iyengar N Ch S N, Analysis and Mitigation of Reflector based Distributed Denial of Service Attacks, *International Conference on Soft Computing and Intelligent Systems*, Jabalpur.

**Goswami P**, A Multi-scale Forecast Platform, *METOC*, Cochin, 21-22 May, 2007.

**Goswami P** and **Gouda K C**, Advance Dynamical Forecasting of Onset of Monsoon Rainfall over India, *Int. Conf on Asian Variability during the Past Global Changes (AMV-PGC)*, Kumaun University, Nainital, 11-14 September 2007.

**Goswami P** and **Ramesh K V**, Extreme Rainfall Events & Monsoon Intensity: A Case Study of the Tail Wagging the Dog, *Int. Conf on Asian Variability during the Past Global Changes (AMV-PGC)*, Kumaun University, Nainital, 11-14 September 2007.

**Gouda K C** and **Goswami P**, Forecasting of

Monsoon Rainfall Category at Long-range & High Spatial Resolution, *Int. Conf on Asian Variability during the Past Global Changes (AMV-PGC)*, Kumaun University, Nainital, 11-14 September, 2007.

**Gouda K C**, **Himesh S** and **Goswami P**, Comparison of Two Strategies for Simulation of Extreme Rainfall Events, *First International Workshop on Prevention and Mitigation of Meteorological Disasters in Southeast Asia*, 3-5 March, 2008, Kyoto, Japan.

**Imtiyaz A Parvez**, **Mridula M**, Mishra S K and Rai S S, Coda Q estimates on the Andaman Islands using Local Earthquakes, *XXIV General Assembly of the International Union of Geodesy and Geophysics (IUGG-2007)*, Perugia, Italy, 2-13 July, 2007.

**Imtiyaz A Parvez**, Romanelli F and Panza G F, Ground Motion at Bedrock Level in Delhi city from Himalayan Earthquake Scenarios, *XXIV General Assembly of the International Union of Geodesy and Geophysics (IUGG-2007)*, Perugia, Italy, 2-13 July, 2007.

**Imtiyaz A Parvez**, Site response in Ahmedabad City, Seismic Microzonation, *Gujarat State Disaster Management Authority (GSDMA) and Institute of Seismological Research (ISR)*, Ahmedabad, 26 October, 2007

**Indira N K**, Ramonet M et al., First analysis of the atmospheric CO<sub>2</sub> measurements at Hanle Observatory, Northern India. *14<sup>th</sup> WMO/IAEA Meeting of Experts on CO<sub>2</sub> and Other Greenhouse Gases and Related Traces Measurement Techniques*, Helsinki, Finland, 10-13 September 2007.

**Kalyani C** and **Ramesh K V**, Influence of Monsoon Circulation on Upper Ocean Variability, *International Conference of Asian Monsoon Variability during the Past Global Changes (AMV-PGC)*, Kumaun University, Nainital, 11-14 September, 2007.

**Kalyani C**, **Ramesh K V** and **Swathi P S**, Heat Content Variations of the Indian Ocean and its Relation with Air-sea Parameters, *IUGG-XXIV General Assembly*, Perugia, Italy, 7-13 July, 2007.

**Mukul M**, **Sridevi Jade**, Bhattacharyya A and **Gaur V K**, Active Deformation in the North Eastern India from GPS Measurements, *3rd International Symposium on Geological Anatomy of East and South Asia IGCP516*, University of Delhi, Delhi, 8-14 October, p.110-112, 2007

**Mukul M, Sridevi Jade** and Matin A, Active Deformation in the Darjiling-Sikkim Himalaya based on Geodetic Global Positioning System Measurements, *International Conference on Geology*, GSI, ISI, Kolkata, January 2008.

**Mukul M**, Kinematics of Wedge Scale Himalayan Deformation: Insights from Darjiling-Sikkim-Tibet (DaSiT) Wedge, Abstracts, *International Association for Gondwana Research Conference Series 5*, Indian Institute of Technology, Bombay, Powai, 59, 2008.

**Patra G K, Anil Kumar V and Thangavelu R P**, Secure Chaotic Synchronization using Negative Feedback of Super-positioned Signals, *Third International Conference on Information Systems Security (ICISS 2007)*, Delhi University, 16-20 December, 2007.

**Patra G K, Anil Kumar V and Thangavelu R P**, A New Concept of Key Agreement using Chaos-synchronization based Parameter Estimation, *Third International Conference on Information Systems Security (ICISS 2007)*, Delhi University, 16-20 December 2007.

**Patra G K, Anil Kumar V and Thangavelu R P**, Analysis of Synchronization-based Parameter Estimation Attack on Switched Bidirectional Chaotic Key Stream Generator, *International Conference on Information Processing (ICIP-2007)*, UVCE, Bangalore University, 10-12 August 2007.

Nakazawa T and **Rajendran K**, Interannual Variation or Effect of the Boost in TRMM 3A25 Data?, *The 3rd NASA/JAXA International TRMM Science Conference*, Las Vegas, Nevada, USA, 4-8 February 2008.

Nakazawa T and **Rajendran K**, Typhoon Landfall Mode in ERA-40 and JRA-25 Reanalysis Datasets. *3rd WCRP International Conference on Reanalysis*, University of Tokyo, Japan, 28 January-1 February 2008.

**Rajendran K**, Kitoh A, and Mizuta R, Projected Changes In Heavy Rainfall Occurrence during Indian Summer Monsoon Season in a 20-Km GCM, *ISAM6 & EAC9*, Fukuoka, Japan, 10-13 December 2007.

**Rajendran K**, Kitoh A, and Srinivasan J, The Effect Of SST Variation on Equatorial ITCZ in Aquaplanet General Circulation Models, *The Second APE Workshop*, Choshi, Japan, 13-15 November 2007.

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, TISV in MRI-20km60L AGCM, *MJO Workshop, New Approaches to Meet the Challenge of Madden-Julian Oscillation*. 5-7 November, 2007, Beckman Centre of the National Academies, Irvine, CA.

**Rajendran K**, Kitoh A, **Sajani S** and Nakazawa T, Convectively Coupled Equatorial Waves In A Very High Resolution TL 959L60 Atmospheric General Circulation Model, *Celebrating the Monsoon, an International Monsoon Conference*, IISc Bangalore, India, 24-28 July 2007.

**Sharada M K**, Seasonal Variability of Air-Sea Carbon Flux in the North Indian Ocean, *2nd Workshop on Ocean Processes in Relation to Changing Climate in Asia-Oceania*, Qingdao, China, 20-22 November, 2007.

Chandrasekhar D V, Bürgmann R, **Sridevi Jade**, Kato T, Likhari S, Reddy C D, Schmidt D A and Sunil P S, Postseismic Deformation of the 2001 Bhuj Earthquake from GPS, Gravity and InSAR Data, Paper Number: G13A-0923, *AGU meeting*, December 2007.

## 5.4 Internal Reports

**Imtiyaz A Parvez**, M Mridula, S K Mishra and S S Rai, *Coda Q estimates on the Andaman Islands using Local Earthquakes* RR CM 0704 April 2007

Madhukar K, Priya R, Shivakumar I S and **Ramamohan T R**, *Dynamics of a Periodically Forced Sphere in a Quiescent Fluid at Low Reynolds Number* RR CM 0705, April 2007.

**Sharada M K, Swathi P S and Yajnik K S**, *Performance of Nutrient Uptake Kinetics in the Arabian Sea Test-bed Framework based on JGOFS and Buoy Data*, RR CM 0706, April 2007.

Surendra Kumar and **Gangan Prathap**, *Mesh Distortion, Locking and the use of Metric Trial Functions for Displacement Type Finite Elements*, RR CM 0707, April 2007,

**Goswami P and Ramesh K V**, *The Expanding Indian Desert: Assessment through Weighted Epochal Trend Ensemble*, RR CM 0708, June 2007.

**Ramesh K V and Goswami P**, *The Shrinking Indian Summer Monsoon*, RR CM 0709, June 2007.

**G Prathap and V Senthilkumar**, *Making Sense of the Quadrilateral Area Coordinate Membrane Elements*, RR CM 0710, June 2007.



**Goswami P** and **Gouda K C**, *Objective, Application-specific determination of the Date of Onset of Monsoon based on Spatial Coverage*, RR CM 0711, June 2007.

**Goswami P**, **S Himesh** and **B S Goud**, *Relative Roles of Large and Small Scales in Simulation of Mesoscale Events*, RR CM 0712, August 2007.

**Goswami P**, **Gouda K C** and **R Kavitha**, *Improved Forecasting of Tropical Cyclone Intensity using Multi-grid Ensemble with a Global Circulation Model (GCM)*, RR CM 0713, October 2007.

**Goswami P** and **Tyagi A**, *Advance Forecasting of Onset, Duration and Hourly Fog Intensity over Delhi*, RR CM 0714, November 2007.

**Vikas Krishnia**, **Ramamohan T R** and **Imtiyaz A Parvez**, *Evidence of some Determinism in microtremordata*, RR CM 0715, July 2007.

**P Goswami** and **K C Gouda**, *Advance Forecasting of the date of Onset of Monsoon Dynamical Basis, Model Configuration and Skill Evaluation*, RR CM 0716, October 2007.

**Ramesh K V** and **Goswami P** *Equatorial Warming, Black Carbon Induced Cooling and the Stability of the Indian Summer Monsoon*, RR CM 0801 January 2008,

**Goswami P**, **Gouda K C** and **Ramesh K V**, *C-MMACS Long-range, High-resolution Forecasting of Monsoon Rainfall: Forecast Configuration and Multi-scale Evaluation of 2007 Monsoon*, RR CM 0802, January 2008.

**Patra G K**, **Anil Kumar V**, **Ramamohan T R** and **Thangavelu R P**, *Design of a Lightweight Key Agreement and Key Stream Generator Suitable for use in Constrained Devices*, PP CM 0702, October 2007

**Imtiyaz A Parvez** and **Giuliano F Panza**, *Neodeterministic Seismic Hazard Assessment in the Indian Megacities*, PP CM 0801, January 2008

**Anil Kumar V** and **Patra G K**, *A Report on the Second Meeting of the Sub-committees of C-MMACS Advisory Committee to Review R & D Projects*, Special Publication CM 0801, January 2008

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

**Imtiyaz A Parvez**

*International Workshop on Active faults in Bhuj,*

*Kutch*, Gujarat State Disaster Management Authority (GSDMA) and Institute of Seismological Research (ISR), Gandhinagar, 18-19 January, 2008.

*3rd Symposium of the International Geological Correlation Programme - Geological Anatomy of the East and South Asia (IGCP 516)*, Department of Geology, University of Delhi, Delhi, 8-14 October, 2007

## 5.6 Invited Talks

**Anil Kumar V**

*On Detecting ACK Spoofing Attacks*, Department of Electrical and Computer Science Engineering, University of British Columbia (UBC), Vancouver, Canada, 20 April 2007.

**Goswami P**

*Simulation of Earth's Weather and Climate*, National Meeting on Planetary Science, 25-27 July, 2007

*Strategies for Simulation of Monsoon Climate, Stakeholder Dialogues of Future Needs for Climate Modeling in India*, TERI, New Delhi, 26 Nov, 2007.

*C-MMACS Multi-scale Forecast Platform*, Institute of Atmospheric Science, Beijing, China, 11 December, 2007.

*Seasonal Forecasting of Monsoon*, CNRM, Toulouse, France, 9 January, 2008.

*Basic Attainable Skill in Seasonal Forecasting of Monsoon*, Lab for Dynamic Meteorology, Univ. Paris, 10 January, 2008.

**Mukul M**

*Global Positioning Studies in Northeast India. National Workshop on Earthquake Precursors*, Indian Meteorological Department, New Delhi, 28 June 2007.

*The Kinematics of Mountain Building: Implications for Seismicity and Seismic Hazard in Active Mountain Belts like the Himalaya*, Indian Institute of Science, Bangalore, 17 September 2007.

*Global Positioning System and its Applications*, Central Training Institute, IMD, Pashan, Pune, 11 December 2007.

*An Introduction to the Global Positioning System (GPS) and its Applications*, Indian Statistical Institute, 28 January 2008.

The Kinematics of Himalayan Deformation through time: Current Understanding and Future Directions, Indian Institute of Science, Bangalore, 8 February 2008.

Contemporary Continental Deformation Studies using High Precision Geodetic GPS Measurements: Insights from the Indian plate, Indian Statistical Institute, Kolkata, 29 January 2008.

#### **Patra G K**

Invited talk series on "Information Security", Dept of Electronic Sciences, Berhampur University, Orissa, 26 November 2007.

#### **Imtiyaz A Parvez**

Site response studies in part of Delhi and Ahmedabad, Science and Technology in Disaster Management (Earthquake, Landslide and Tsunami) organized by National Disaster Management Authority, 2 April 2007.

Plate Tectonics, Earthquake Waves and Parameters, Department of Mathematical Sciences, Tezpur University, Tezpur, 14 May 2007.

Earthquake Source, Focal Mechanism, Seismometry, historical and modern seismometers, Department of Mathematical Sciences, Tezpur University, Tezpur, 15 May 2007

Probabilistic and Deterministic Seismic Hazard Assessment; background and applications, Department of Mathematical Sciences, Tezpur University, Tezpur, 16 May 2007.

Microzonation and Site Specific Ground Motion Modelling in Delhi City, Department of Mathematical Sciences, Tezpur University, Tezpur, 17 May 2007.

Microtremor array observation and site response in Ahmedabad, Department of Mathematical Sciences, Tezpur University, Tezpur, 18 May 2007

Site-specific Seismic Hazard: Estimation of Nonlinear Soil Behaviour, A brainstorming meeting on Outstanding Problems in Geo-Scientific Research; New Ideas and Approaches at C-MMACS, 14-feb-2008

### **5.7 Conference/Workshops/Seminars/Scientific Meetings at C-MMACS**

*Workshop on Combined Analysis of GPS data of North-East India Region, November 19-23, 2007, C-MMACS*

The DST Workshop on combined analysis of GPS data of North-East India Region was organised at C-MMACS during Nov. 19-23, 2007. It was meant to provide a platform for the researchers involved in the North East Indian GPS studies, to come out with a combined solution for the GPS velocity field of the North East India region. Selected scientists and research students from various institutes from the country attended this 5 day workshop.

A total 14 participants (lecturers/scientists or doctoral scholars) attended the workshop. Participants represented universities (Manipur University, Tezpur University, University of Jammu, Mizoaram University, Jagiroad College) as well as R&D organization (Durgapur Seismological Observatory, GB Pant Inst. of Him. Geology, Nat. Atmos. Res. Lab. and Nat. Geophys. Res. Ins)

The participants, through lectures and hands-on sessions, gained experience and know how to compute the velocity vectors for their respective sites. Finally they came out with a combined network solution for the entire set of sites in the North East Indian Geodetic GPS network. Participants earned new insights in defining and constraining the reference frame for finer velocity field computation.

Training Course Using Ambient Vibration Array Techniques for Site Characterization, November 26 to December 1 2007, at C-MMACS, Bangalore.

The training programme was conducted during November 26 to December 1 2007, at C-MMACS, Bangalore. Ambient vibration analysis methods has emerge as an important research tool. The interest in these methods originates from both the attractive cost benefit ratio and the straightforward data acquisition. Being a non-destructive passive technique these methods also complement geotechnical and/or active geophysical methods within highly populated regions.

A total of 14 participants (4 foreigner & 10 Indian), mainly, scientists, professors, research scholars from universities, R & D organizations/institutions attended the programme.

The main purpose of this course is to achieve the necessary understanding among the course participants for the problems related to these techniques. By doing so, we try to enable a correct usage of the software tools and to avoid misuse of these methods ("black-box usage").

*Brainstorming meeting on "Outstanding Problems in Geo-Scientific Research; New Ideas and*



*Approaches” under the Integrated Long Term Program (ILTP) of DST, February 14, 2008 at C-MMACS*

This brainstorming scientific meeting was organized to articulate some new directions for future collaborative researches under ILTP Earth Sciences. The rationale for this meeting was motivated by the observation that ILTP Earth Sciences programmes over the past few years have been largely incremental, building upon the strengths created over earlier phases of this programme. Participation in this meeting was proposed to be heavily weighted towards the inclusion of younger scientists below and about 45 years of age who could fruitfully contribute to this endeavour. A total of 15 delegates (13 from India and 2 from Russia) attended the meeting. There were three main objectives of the brainstorming meeting.

1. To appraise the progress and new developments at the Indo-Russian Joint Centre for Earthquake Research
2. To have in-depth discussions on the progress of ongoing researches under ILTP Earth Sciences, with Indian investigators.
3. To articulate, jointly with Indian collaborators, the possibility of new programmes being added to the ongoing ones.

## 5.8 Guest Lectures

**Amala Mahadevan**, *Biogeochemical Distributions in the Upper Ocean*, Boston University, USA, 10 August 2007.

**John M Dow**, *The International GNSS Service IGS: Supporting New Developments in Satellite Navigation and Applications*, ESA/European Space Operations Centre, Darmstadt, Germany, Chair, IGS Governing Board, 04 September 2007.

**Jean-Pierre Issartel**, *Identification of Pollution Emissions from Satellite Observations*, Centre d'Etude du Bourchet, France, 15 October 2007.

**Onkar Singh**, *Grid Computation using Mathematical Software*, Technical Support Manager, Wolfram Inc., 13 December 2007.

**R Krishnan**, *Internal Feedback and Monsoon Droughts*, IITM, Pune, 30 January 2008.

**Victor Smetacek**, *Ocean Iron Fertilization as a Mitigation Strategy Against Global Warming*, Alfred Wegener Institute for Polar and Marine Research,

Bremerhaven, Germany, Adjunct Scientist, NIO, Goa, 6 February 2008.

**P J Rayner**, *Quantitative Network Design for Inverse Problems: A Case Study for the Atmosphere*, LSCE, CNRS, France, 13 February 2008.

**Alexey Lyubushin**, *Periodicity and Synchronization Phenomena in Geophysical Time Series*, Russian Academy of Science, Moscow, 28 March 2008.

## 5.9 In-house Seminars

**Anand Kumar**, *Isotropic Numerical Schemes: An Unbased Simulation vs Biased Simulation*, 27 July 2007.

**V Anil Kumar**, *Network Security Research at C-MMACS*, 29 October 2007.

**Goswami P**, *A Dynamical Forecast Platform for Onset, Duration and Intensity of Fog*, 14 February 2007.

**Goswami P**, *Informational Ensemble And Limits Of Predictability*, 22 June 2007.

**Patra G K**, *Information Security Research @ C-MMACS*, 29 October 2007.

## 5.10 Visitors at C-MMACS

Robert Bo Ewald  
CEO, Silicon Graphics Inc, USA  
19 May 2007

Ruth Elizabeth, Neilan Edwards  
VC, Global Geodetic Observation System, NASA  
4 September 2007

Matt Higgins  
VP, Int. Federation of Surveyor, Australia  
4 September 2007

Chris Rizos  
Member, IGS Governing Board, Australia  
4 September 2007

John Milne Dow  
Chairman, Int GPS Service  
4 September 2007

Bruno Rouot, Issartel  
Attache for S& T, Alliance Francaise, Bangalore  
15 October 2007

Ciccarone Rene  
Director, Alliance Francaise, France  
15 October 2007



ENG LIM GOH  
CTO, SGI, USA  
23 November 2007

Jacques Sarrault  
President, LEAS, France  
6 December 2007

William John Trestrail  
VP, SGI, Australia  
18 January 2008

V S Smetack, Karen Liseuluttee  
Professor, Ins of Polar Marine Research, Germany  
5-7 February 2008

R J Rayner, Morag Logan  
Scientist, LSCE/IPSL, France  
6-22 February 2008

Alexey Lyubushin  
Scientist, Russian Academy of Science, Moscow  
10 March 2008

