



# ❖ CSSTEAP Newsletter ❖

Quarterly Newsletter of Centre for Space Science and Technology Education in Asia and the Pacific (Affiliated to UN)

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## ADVISORY AND GOVERNING BOARD MEETINGS OF CSSTEAP

The seventh meeting of Advisory Committee (AC) and tenth meeting of Governing Board (GB) of CSSTEAP were held on May 9 and 11, 2005 respectively at CSSTEAP Hqrs. Dehradun. Ms Alice Lee of United Nations-OOSA, Vienna chaired the AC meeting. Mr Wisjnu P. Marsis (LAPAN Indonesia), Prof KI Oyama (Japan), Dr S Namasivayam (Director, ACCIMT, Sri Lanka), Mr Sjaak Beerens (ITC, The Netherlands), Mr V Sundararamaiah (Scientific Secretary, ISRO), Dr Martein Molenaar (Rector, ITC, The Netherlands), Dr Sanjay S Limaye (Wisconsin, USA), Dr Sant Prasad (IMD, New Delhi), Dr Karl Harmsen, Director, CSSTEAP; Dy. Director, CSSTEAP, Course Directors and Course coordinators and several senior officials of Department of Space attended the AC meeting. The committee took a review of the Centre's technical and academic activities of past one year. Various issues like implementation of Board of Studies (BOS) recommendations, research activities in the form of awarding of M.Tech fellowship of the program at the centre, membership of the AC, issue of responses of feedback of the past students of CSSTEAP of different courses etc., were discussed. The AC appreciated the efforts of the Centre for excellent progress made and expressed satisfaction at the achievements and also for support of the host country. The AC also noted the committed effort of the Centre, in particular its Director and the host



CSSTEAP Governing Board Members and other special invitees

institutions namely IIRS (NRSA), SAC, PRL have made the centre reach such high levels. The AC endorsed the courses, future programmes and technical activities of the Centre. On May 10, 2005 there was an Adhoc-consultant meeting with a view to nominate Mr Madhavan Nair, representative of India in the GB as the next Chairperson of the GB. The GB member of DPR Korea, Indonesia, Kazakhstan, Kyrgyzstan, Malaysia, Mongolia, Myanmar, Nauru, Nepal, Philippines Republic of Korea, Sri Lanka, and Uzbekistan the CSSTEAP GB Observers of UN-OOSA and ITC were present in the meeting. Mr. Kartar Singh Bhalla, representative from Nauru chaired the meeting. Mr Madhavan Nair's name was endorsed and

✓ *Advisory and Governing Board Meetings of CSSTEAP*

✓ *Quikscat Scatterometer Wind Data Impact On Tropical Cyclone  
Forecasts by A Mesoscale Model*

✓ *Ninth Remote Sensing & GIS PG Course*



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*CSSTEAP AC members with other Dignitaries*

unanimously nominated as Chairperson of CSSTEAP GB which had support from all the GB members and therefore it is resolved that Mr Madhavan Nair be invited as the newly elected Chairperson of the Governing Board. Also that this resolution be tabled at the 10<sup>th</sup> GB Meeting for the election process to be completed and to pave way for Mr Madhavan Nair to be the newly elected Chairperson. The GB meetings on May 11, 2005 was chaired by Shri. Mahdavan Nair, Chairman Governing Board CSSTEAP and Secretary, Department of Space, Govt. of India. Members of Governing Board viz., Dr Igor Ibragimov (Uzbekcosmos, Uzbekistan), Mr Kartar Singh Bhalla (Hony. Consul General of Nauru), Mr H.E. Han Chang En (Ambassador, DPR Korea), Mr Tara Prasad Pokharel (Royal Nepalese Embassy, Nepal),

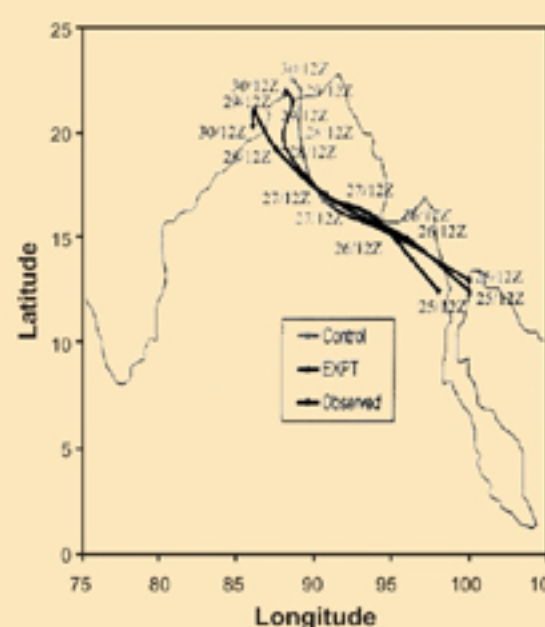
Mr Wisjnu P. Marsis (LAPAN, Indonesia), Dr. Chan Nyein (Dy. Minister, Ministry of S&T, Myanmar), Dr S Namasivayam (Director, ACCIMT, Sri Lanka), Mr. Iric Arribas (Embassy of Philippines, Philippines), Mohd. Shaharin Umar (High Commission, Malaysia), Ms Alice Lee (UN-OOSA, Vienna), Prof. Martien Molenaar (Rector, ITC, The Netherlands), Ms Veena S Rao (Additional Secretary, ISRO), Mr V Sundararamaiah (Scientific Secretary, ISRO), Dr V Jayaraman (Director, EOS, ISRO), Mr Mukund Rao (Dy. Director, EOS, ISRO), Mr Chandy Andrews (CCA, ISRO), Director, CSSTEAP, Course Directors of all courses and higher officials of various centres of Department of Space, Govt. of India attended the meeting. Several important issue like expansion of CSSTEAP in the Asia-Pacific region, review of the action items from the last GB meeting, the Centre's strategy for the research programme, commencement of 10 years completion of CSSTEAP etc were discussed. UN-OOSA representative, Ms. Alice Lee briefed about the outcome, in the form of recommendations of the seventh AC meeting to the GB members. Chairman GB outlined future strategy of the Centre and to make the Centre broad based with the involvement as many countries of Asia-Pacific region to join the Centre and to embark on obtaining international funding for the academic activities of the Centre. Chairman, GB thanked the UN in particular UN-OOSA, UN-ESCAP, UNESCO and all the GB

## **QUIKSCAT SCATTEROMETER WIND DATA IMPACT ON TROPICAL CYCLONE FORECASTS BY A MESOSCALE MODEL \***

The project describes the positive impact of QuikSCAT Scatterometer data on tropical cyclone analyses and forecasts using a mesoscale model (MM5).

QuikSCAT data is especially valuable because they are available in the data sparse genesis regions of tropical cyclones, and because they are available in cloudy and rainy conditions. The model used in the study, MM5 is known as fifth generation NCAR/Penn State Mesoscale model (MM5), which is the non-hydrostatic version of the model originally developed, by Anthes and Warner (1978). The Scatterometer Seawinds launched onboard QuikSCAT in June 1999, observes

Lt. Cdr. G. Rambabu, Indian Navy.



*Comparison of tracks of Cyclone 24-30 Oct 2001*

surface wind vectors over the ocean with the swath of 1800 km, which is more than three times wider than that of ERS Scatterometer. Hence, its large contribution to Numerical Weather Prediction (NWP) is expected.



In order to understand and investigate the impact of QuikSCAT Scatterometer wind data, simulation with and without assimilation of Scatterometer data has been performed for a few tropical cyclone cases during the period 1999 to 2003. For a cyclonic situation, data of few ships of opportunity and of some coastal or island stations are only available. For the assimilation of observed data into MM5, a few passes of

QuikSCAT at different times are available.

These additional data strengthen the initial data for assimilation. The results showed that the initial field with the inclusion of Scatterometer data was nearer to the actual situation. In the prediction experiment, it was also shown that the inclusion of satellite data improved the prediction up to 48 hrs. (see figure)

## NINTH REMOTE SENSING AND GIS PG COURSE

The ninth Post-Graduate Course on Remote Sensing and Geographic Information System (RS&GIS) of CSSTEAP, was conducted at Indian Institute of Remote Sensing (IIRS), Dehradun, from October 1, 2004 to June 30, 2005. Total 20 participants from 11 countries of Asia-Pacific Region (Bangladesh-1, Indonesia-1, Kyrgyz Republic-1, Mongolia-2, Myanmar-2, Nepal-2, Sri Lanka-3, Thailand-2, Uzbekistan-2, Vietnam-2 and India-2) participated in this course.

The Course was formally inaugurated by Dr. R. Natarajan, Chairman, All India Council of Technical Education (AICTE), Govt. of India on October 12, 2004. Dr. R.R. Navalgund, Director, NRSA, Hyderabad, Dr. Karl Harmsen, Director, CSSTEAP, Dr. P.S. Roy, Deputy Director (RS & GIS, NRSA) and Dr. V.K.Dadhwal, Dean, IIRS also graced the occasion.

The entire Course is divided into three modules. Each module is of three months duration. The third module



*Valedictory function of 9th RS & GIS Course*

three which started from April 2004, is basically designed for carry out pilot project work by the Course participants. The objective of this module is to make the Course participants capable to carry out research on their own towards natural resources inventory management. The course participants learnt a great deal during this module. The broad topics of the pilot projects under taken by the course participants during this Module III are Crop inventory, Watershed Management, Desertification status, Flood Hazard Assessment, Landslide Hazard Assessment, Hydro-geological investigation, Coastal Zone Management, Wet land inventory, Urban Sprawl, Water Quality parameters of coastal shelf, Irrigated crop land inventory, Urban Land use, Urban pollution, Forest Resource Inventory, Forest Land use Planning, Land subsidence study using In-SAR and Environment Impact Assessment.

The valedictory function of the Course was held on June 29, 2005. Dr. V.K. Dadhwal, Dean IIRS welcome the Chief Guest and other dignitaries. Prof. Karl Harmsen, Director CSSTEAP presented the brief outline of the CSSTEAP. The Course report was presented by Course Director, Dr. S.K. Saha. Messages



*Course participants with Director, CSSTEAP, Dean IIRS & Course Coordinator*



## FOURTH PG COURSE ON SATELLITE METEOROLOGY AND GLOBAL CLIMATE

The fourth Post Graduate course on Satellite Meteorology & Global climate under the aegis of CSSTEAP (Affiliated to UN) was conducted during August 1, 2004 to April 30, 2005 at the new Bopal Campus of Space Applications Centre, Ahmedabad. Fifteen participants from 10 countries



*CSSTEAP SATMET - IV Course CD being released by Prof. Karl Harmsen, Director CSSTEAP*

of Asia-Pacific region attended the course.

The participants learnt a great deal during the 3 months (Feb-April, 2005) pilot project particularly about formulation of a problem relevant to their country specifying and acquiring satellite and conventional data (from web sites, met centres etc), processing and analysis and preparing the project report. All the pilot projects were evaluated both at Space Applications Centre by a committee of experts as well as at Andhra University by the faculty members of the Department of Meteorology & Oceanography.

The pilot project could be listed in following broad topics:

- Tropical cyclone and storm surge studies TRMM data and model
- Aerosol/dust storm studies using TOMS/MODIS data
- Drought monitoring
- Meso-scale studies using MM5



*Valedictory function of 4th SATMET Course*

- Validation of merged rainfall products
- Ocean process studies, regional climate models
- MODIS data utilization and validation

The topic for one year project work were identified after several discussions with the participants. The field of interest of the participants, the needs of the sponsoring organizations and the facilities available in the countries of participants for supporting the project work were taken into account while deciding the project.

The valedictory function of the SATMET-IV course was held on April 28, 2005. Prof. Vasant Gowariker, Former Secretary, Department of Science and Technology, GOI was the Chief Guest. The CSSTEAP diploma certificates and the merit certificates were given by the Chief Guest. Dr. K.N Shankara, Director SAC, Prof. Karl Harmsen, Director, CSSTEAP, faculty members, Senior Scientists/Engineers of SAC also attended the function. Mr. B.M Rao Course Director made a detailed presentation on the various activities carried out during the nine months course.

Out of the 15 participants, three passed with Distinction and twelve participants passed in first class. The first three rank holders are from India,



Nepal and Kyrgystan respectively. Prof. Gowariker called upon the participants to exploit the advanced technologies and apply the knowledge gained during the course and contribute to the national economy

and progress of the respective countries. He congratulated the faculty members in conducting the course and thus contributing to the augmentation of the national capabilities in the Asia-Pacific region.

## FOURTH PG COURSE IN SPACE AND ATMOSPHERIC SCIENCE

The 4<sup>th</sup> Post Graduate Course on space and Atmospheric Science, which had begun at Physical Research Laboratory (PRL) on August 2, 2004, and concluded on April 30 2005. A valedictory function was held at K R Ramanathan Auditorium at



*Valedictory function of 4th Space Science PG course*

PRL on April 29, 2005.

Prof N V Vasani, Vice Chancellor of Nirma University, Ahmedabad graced the occasion as a Chief Guest. The programme started with a welcome address by Prof S Krishnaswami, Acting Director, PRL. Dr R N Misra, Course Coordinator, gave a brief account of CSSTEAP activities and also



*Course Participants with Faculty*



*Inaugural of Valedictory function*

the fourth course conducted on Space and Atmospheric Science. The input given by Prof. Karl Harmsen, Director CSSTEAP, was presented. The Chief Guest in his address expressed hope that the participants, who came all the way from far away places to attend the course, would carry the flame of knowledge with them and spread the goodwill generated during their stay at Ahmedabad.

Out of the nine course participants, who attended the course two each were from Mongolia and Uzbekistan, three from India and one each from Sri Lanka and Maldives.

The Chief Guest Prof N V Vasani gave away diploma certificates to the participants.

Four participants passed the course in first class, three in pass class and two obtained distinction. Mr Saraj Gunasekera from Sri Lanka stood first in class and was awarded certificate to this effect.

Mr Saraj Gunasekera from Sri Lanka and Ms Malini Agrawal from India spoke on behalf of the participants of their experiences about the course



## BACKGROUND OF CSSTEAP

In response to the UN General Assembly Resolution (45/72 of 11th December, 1990) endorsing the recommendations of UNISPACE-82 the United Nations Office for Outer Space Affairs (UN-OOSA) prepared a project document (A/AC.105/534) envisaging the establishment of Centres for Space Science & Technology Education in the developing countries. The Objective of the Centres is to enhance the capabilities of the member states in different areas of space science and technology that can advance their social and economic development. The first of such centres, named as Centre for Space Science & Technology Education in Asia & the Pacific (CSSTEAP) was established in India in November 1995. Department of Space, Government of India has made available appropriate facilities and expertise to the Centre through the Indian Institute of Remote Sensing (IIRS) Dehradun, Space Applications Centre (SAC) & Physical Research Laboratory (PRL) Ahmedabad. The Centre is an education and training institution that is capable of high attainments in the development and transfer of knowledge in the fields of space science & technology. The emphasis of the Centre is on in-depth education, training and application programmes, linkage to global programmes / databases; execution of pilot projects, continuing education and awareness and appraisal programmes. The Centre offers Post Graduate level and short courses in the fields of (a) Remote Sensing and Geographic Information System, (b) Satellite Communications and GPS, (c) Satellite Meteorology and Global Climate, (d) Space and Atmospheric Sciences. A set of standard curricula developed by the United Nations is adapted for the educational programmes.

### New Deputy Director of CSSTEAP

Shri G. Madhavan Nair, Chairman, CSSTEAP GB has assigned Dr. V.K. Dadhwal, Dean IIRS to the activities of CSSTEAP as Deputy Director, CSSTEAP, as an additional charge for three years with effect from 12<sup>th</sup> July, 2005.



He is a renowned scientist in the field of Agricultural Remote Sensing and Global Change Studies. Prior to joining IIRS as Dean during July 2004, he served Space Application Centre (Ahmedabad) for more than two decades. He has been conferred with various prestigious scientific awards for his outstanding contributions in the above fields.

### Forthcoming Courses

- Fifth 9 month Post Graduate course in Satellite Communications at SAC, Ahmedabad from August 1, 2005
- International short course on Geoinformatics for Sustainable Agriculture at IIRS, Dehradun during Aug 16-Sept 9, 2005
- Tenth 9 month Post Graduate course in RS & GIS at IIRS Dehradun from

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CSSTEAP welcomes the views and opinions of the readers of Newsletter. Short Communications on space science and technology education which may be relevant to Asia Pacific Region are also welcome. Views