

## Meetings and Workshops

### Intensive Course on Applications of Remotely Sensed Data on Ocean Colour, April 3-7, 1995

This course was sponsored by the DOD alongwith COSTED, IOC, JGOFS, ROSTAS, SAREC, SCOR, START and UNESCO, which was attended by fifty scientists, including 22 from 18 other countries. The instructors were Prof. S. Satyendranath, Dalhousie University, and Prof. Trevor Platt, Bedford Instt of Oceanography. The topics included a hierarchy of models and algorithms to estimate primary production, determination of total water column productivity, extrapolation of local algorithms to regional and basin scales and use of ocean colour in modelling of mixed-layer processes and biogeochemistry of the ocean. There were also five invited talks by participants on instrumentation and sensors and six on the application of ocean colour data. The organization of the course was timely as the launch of the SeaWiFS and other satellites would soon provide considerable amount of data, which would call for extensive modelling and analysis.

### CSIR Brain Storming Meeting on IGBP GAIM, April 8 1995

A brainstorming meeting was organised by the Indian National Committee for IGBP to hammer out a research agenda for Global Analy-

sis, Interpretation and Modelling (GAIM) areas of IGBP. The meeting also sought to evaluate and suggest effective research strategies and to identify viable research groups.

The meeting was chaired by Prof. V. K. Gaur, Distinguished Scientist, C-MMACS, who underlined the need for developing incisive analytical tools and software for the analysis and interpretation of historical data as well as model results. Dr. Deekshatalu, Chairman, National Committee, IGBP expressed his concern over the poor modelling environment in the country and stressed the need for establishing a modern computeraided facility which would provide extensive archival of various data sets that are now available. Dr. K. S. Yajnik, Co-ordinator, GAIM presenting a plan for GAIM activities, outlined its major components and their interconnections. He also highlighted the modelling requirements for synthesizing the various elements of the International JGOFS.

Dr. Trevor Platt, Bedford Instt of Oceanography, identified the Arabian sea as a potential area for research related to regional ocean dynamics. Dr. Subha Satyendranath, Dalhousie University, emphasized the need for critical evaluation of various models using different data sets. In the concluding session several recommendations were made, such as effective steps to create adequate trained manpower, creation of a centralized resource facility for high speed computing and data management, and use of a hierarchy of models as

a research strategy. Also, it was felt desirable to adopt a single largescale model for numerical experimentation to facilitate comparison, evaluation and intergroup interaction. Several areas were identified for designing new programmes in the future.

### Molecular Modelling and Drug Design, October 9-13, 1995

With growing activity in the economic and industrial sectors, it is imperative that we prepare ourselves to meet the challenges thrown by liberalisation policies (eg. GATT). Expertise in the field of modelling in general, and designing of molecules such as drugs in particular, presently available in the country is inadequate and not commensurate with the present day requirements. Understanding the range of technologies and software tools can make a qualitative change in problem-solving activity related to drug design, vaccine production and other strategic bioactive compounds, and can accelerate discoveries of such molecules to a significant extent. Keeping this in view, C-MMACS organised the course to familiarize the researchers with the molecular modelling methods and designing of new molecules. Total of 29 candidates attended the course (6 from the industrial sector, 8 from the academic institutions and 15 from 8 CSIR laboratories).

The principal faculty for the course was Prof. W.F. van Gunsteren from ETH, Switzerland, who is one of the few authorities on molecular modelling. He is responsible for developing GROMOS software which is widely used by scientists all over the world. He was assisted by Mr. Walter Scott, also from ETH Zurich, who handled the software-packages and computer related activities and the hands-on sessions. In addition, several scientists and technicians from C-MMACS helped in conducting these sessions smoothly and effectively.

Prof. P. Balram of the Indian Institute of

Science, Bangalore gave a Lead-Lecture for the course, and Dr. Anneliese Palmer, Biosym Technologies from Australia also discussed her work on HIV1-protease involving exhaustive application of BIOSYM Software.

### JGOFS PI Meeting, January 3, 1996

A meeting of the JGOFS (India) Project Investigators (PI) and associated scientists was held at C-MMACS on 3rd January, 1996 to discuss the presentation details for the Monitoring Committee meeting on the 4th January, 1996. Dr. Krishnaswami suggested that the presentations should focus on how the various JGOFS (India) objectives are being achieved through the measurements made. He also discussed the important results obtained till then and areas and measurements where more emphasis should be placed.

All the scientists felt that the JGOFS (India) has brought together a well knit multidisciplinary team and that this team should propose to DOD a major JGOFS like initiative in the Bay of Bengal. It was decided to present this suggestion to the Monitoring Committee.

### Internet: Concepts, Techniques, Services and Applications, March 26-27, 1996

Internet has revolutionised science in many ways. Today, due to Internet, we are in a position to attack complex problems in a collaborative way irrespective of geographical remoteness. In order to stimulate interest in and to increase the awareness of Internet among CSIR laboratories, C-MMACS organised a two-day programme on "Internet: Concepts, Techniques, Services and Application" on 26-27 March 1996, which was attended by over 30 scientists from 16 laboratories.

The principal speakers were Mr. H. Krishna-

murthy, SERC, IISc and Mr. Gopi Garge, ER-NET, IISc. In addition, Dr. Chandra Gupt from CSIR HQ discussed CSIR's plans to network all CSIR laboratories. Mr. Adesh Gupta, Sun Microsystems gave an overview of Java, the new programming tool for Internet. The programme concluded with an on-line demonstration of the World Wide Web, made possible with the support of VSNL Bangalore, where Mr. Gopi Garge took the audience on a guided tour of Internet.

## Seminar, Colloquium and Lecture

Application of the Storm Water Management Model in Estimating Combined Sewer Overflows

**Dr. Rajat Roy Chaudhuri**

Visiting Scientist, National Instt. of Ocean Technology, Madras, 20 March 1995

Graph Theory and its Significance in Modelling Physical and Chemical Sciences

**Mr. Yegna Narayan**

Annamalai University, Madras, 20 March 1995

Chaotic Dynamics of Brain Functions

**Prof.N. Pradhan**

NIMHANS, Bangalore, 10 April 1995

"New" Developments of Computer Architecture : Reincarnation of Old Ideas

**Dr. Ferenc Vajda**

Director, KFKI Res. Instt. for Measurements Computing Techniques, Hungarian Acad. of Sc., 20 April 1995

Paradigm and Performance of a Neural Network - Dynamical Model Hybrid Prediction Scheme

**Dr.P. Goswami**

C-MMACS, Bangalore, 2 May 1995

Determination of Parameters for Support Design in Underground Structures

**Dr.V.V.R. Prasad**

CMRI, Dhanbad, 16 June 1995

Cognitive Network and Long Range Prediction of Monsoon Rainfall

**Dr.P. Goswami**

C-MMACS, Bangalore, 10 July 1995

Application of the Transspectral Coherence Technique to Chaos and System Identification

**Dr. Prabhakara Vaidya**

Washington State University, 11 August 1995

Coastal Ecosystem Studies - Saline Water Invasion in Coastal-Fresh Water Aquifer

**Dr.J. Sundaresan**

CSIR, New Delhi, 4 Sept. 1995

All About Errors

**Dr.K.S.Yajnik**

C-MMACS, Bangalore, 24 Nov. 1995

Modelling of Crustal Deformation Associated with Earthquake Faulting

**Prof. Sarvajit Singh**

Maharshi Dayanand Univ., Rohtak, 20 Sept. 1995

Effect of Observations and Variables on Collinearity

**Prof.P. Bhimasankaram**

ISI, Calcutta, 6 Dec. 1995

El Nino Southern Oscillation : Mechanism and Predictability

**Prof.B.N. Goswami**

Centre for Atmospheric Sciences, IISc., Bangalore, 14 Dec. 1995

"Science (!) in Ancient India : Some Thoughts Observations"

**Dr.M.S. Phani Kumar**

C-MMACS, Bangalore, 15 Dec. 1995

"Project TERRAFORM - Bioforcing of an Atmosphere"

**Dr.P. Goswami**

C-MMACS, Bangalore, 4 Jan. 1996

Numerical Modelling and Simulation of Flows over Gas Turbine Blades

**Dr. Sriram Neelakantan,**  
*University of Texas, Austin, USA, 12 Jan. 1996*

Partitioning Finite Element Meshes for Parallel Computation

**Dr. Alex Pothen**  
*ICASE, Hampton, USA, 12 Jan. 1996*

Sub-Sahara Drought: Natural Variability or Irreversible Climate Change?

**Prof.J. Shukla**  
*Director, Centre for Ocean-Land and Atmosphere Studies and President Institute of Global Environmental and Society Maryland, USA, 16 Jan 1996*

Experimental Study of Turbulence in Isothermal and Stably Stratified Homogeneous Shear Flows

**Dr.M.V. Subba Rao**  
*IIT, Kanpur, 26 Feb. 1996*

Heat and Moisture Transport and Induced Stresses in Porous Media

**Dr. Pradeep Majumdar**  
*Associate Professor, Dept. of Mechanical Engg., North Illinois Univ., USA, 12 March 1996*

Casseygrams

**Dr. Prabhakar Vaidhya**  
*Associate Professor, Washington University, 22 March 1996*

16.6.95

Dr. Prabhakar Nair, UOP, USA, 11.7.95

Dr. A. Gopalakrishnan, AERB, Bombay, 14.7.95

Prof. K.S. Narasimhan, CFRI, Dhanbad, 9.9.95, 21.2.96

Dr. A.K. Chowdhary, CFRI, Dhanbad, 9.9.95, Nov.95

Dr. Sen, CFRI, Dhanbad, 9.9.95

Mr. Teo Lee Hock, GORE Assoc., Singapore, 25.1.96

Dr. J. Roy, CFRI, Dhanbad, 21.2.96

Dr. R. Dasgupta, CFRI, Dhanbad, 21.2.96

Dr. S.K. Hazra, CFRI, Dhanbad, 21.2.96

Dr. P.K. Nanda, CRRI, New Delhi

Prof. Roger Bilham, CIRES, Univ. of Colorado at Boulder, USA

Ms. Rebecca Bendick, CIRES, Univ. of Colorado at Boulder, USA

Mr. David Mencin, Univ. Navstar Consortium Boulder, USA

## Visitors

Mr. Dinesh Bansal, IEE, Nasik, 18.4.95

Dr. D.D. Sarma, NGRI, Hyderabad, June 95

Mr. M.L.N. Srinivas, GHCL, Bangalore, 14.6.95

Dr. V.V.R. Prasad, CMRI, Roorkee, 16.6.95

Dr. A.K. Dube, CMRI, Roorkee, 14.6.95,