

ORGANISATION

A1.1 MANAGEMENT COMMITTEE

Chairman
Dr S K Joshi,
Director-General,
CSIR

Members and Invitees
Dr J Das, Scientist, IICB
Dr B N Desai, Director, NIO
Prof V K Gaur, Distinguished Scientist, CSIR
Dr V B Kaujalgi, Professor and Coordinator, IIM, Bangalore
Dr A P Mitra, Bhatnagar Fellow,

NPL
Shri V C Mohan, Regional Director, ONGC, Madras
Prof R Narasimha, Director, NAL
Dr T S R Prasada Rao, Director, IIP
Dr A V Rama Rao, Director, IICT
Dr N V Raman Director, SERC, Madras
Dr R N Singh, Scientist, NGRI Representative of ASSOCHEM.

Member-Secretary
Dr K S Yajnik, C-MMACS

A1.2 SCIENTIFIC STAFF

Indira Dr N K
James Dr M I
Mahua Sinha M
Raghunath M D
Sharada M K
Sudhakar B
Yajnik Dr K S

Prof M Shankar Rao, IISc, Bangalore
Dr N Somasekhara, IISc, Bangalore
Dr M D Zingde, NIO, RC, Bombay.

Associates

Dr (Ms) Chitra Dutta, IICB, Calcutta
Shri S A Faruqi, NEERI, Nagpur
Dr P Goswami, IIT, Kanpur
Dr B Jagannadh, IICT, Hyderabad
Dr T R Krishna Mohan, CCMB, Hyderabad
Dr B V Kumar, NML, Jamshedpur
Dr (Ms) Ranjana Mehrotra, NISTADS, Delhi
Dr (Ms) Roshan Sasikumar, RRL, Trivandrum
Dr S Savithri, RRL, Trivandrum
Dr Somadutta Sinha, CCMB, Hyderabad.

Fellow/SRF

Maya Rai
Phanikumar Dr M S
Ruvva Koteswara Rao
Shankar Doraiswamy
Sujatha Amin Shashikanth
Swathi Dr P S
Thangavelu R P

Senior Associates

Dr Gangan Pratap, NAL, Bangalore
Prof P S Moharir, NGRI, Hyderabad

A1.3 DEGREES AWARDED

Mr M D Raghunath, C-MMACS has been awarded M.Sc (Engg) degree for the thesis titled "A Computer

Model for Regional Ground Water Flow" by the Indian Institute of Science, Bangalore.

PROJECTS AND SERVICES

A2.1 R&D PROJECTS

A2.1A SPONSORED PROJECTS

The project details appear in the following sequence: title, sponsor and value (Rs/lakhs).

- 1 Ocean modelling studies; DOD; 150
- 2 Coastal pollution modelling; DOD; 19.52
- 3 Feasibility study of application of mathematical modelling to switch gear design; L & T; 1.53

A2.1B COLLABORATIVE PROJECTS

- 1 Pre- & post-processing packages for general purpose finite element package with NAL
- 2 Parallel version for linear solvers for a general purpose finite element package with NAL
- 3 Computer simulation of airframe

Yajnik Dr K S
Member,

- 1) the Council, the Court and the Finance Committee, Indian Institute of Science, Bangalore.
- 2) the Governing Council, Indira Gandhi Institute of Development Research, Bombay.
- 3) the Research Council, NGRI, Hyderabad.
- 4) the Research Council, SERC, Gaziabad.
- 5) the Academic Council, Cochin University of Science and Technology, Cochin.
- 6) Working Group on Atmospheric and Marine Sciences, Indo-US S & T subcommission.

and turbomachinery components or NC machining with NAL

- 4 Studies in geological fluid mechanics with NGRI
- 5 Modelling of radiative-convective heat transfer in laser welding with NML
- 6 Statistical modelling of mechanical behaviour of ferrous alloys with NML
- 7 Development of software package for simulation of solidification in castings with RRL, Trivandrum

A2.1C INHOUSE PROJECTS

- 1 Studies in stochastic modelling and data analysis
- 2 Augmentation of computing facilities
- 3 Modelling of transport sector with special emphasis on civil aviation
- 7) Standing Advisory Committee, Dept. of Appl. Mech., IIT Delhi.
- 8) National Committee for IGBP, New Delhi.
- 9) Steering Committee on Remote Sensing for Ocean Development, DOD, Delhi.
- 10) Steering Committee of Coastal Ocean Modelling and Prediction System Programme, DOD, Delhi.
- 11) Editorial Board, Proceedings (Math. Sciences), Indian Academy of Sciences, Bangalore.
- 12) Editorial Board, Journal of Aeronautical Society of India.
- 13) Editorial Advisory Board, Computational Fluid Dynamics Journal, Tokyo, Japan.

A2.2 SERVICES ON EXTERNAL COMMITTEES

SCIENTIFIC MEETINGS

TRAINING PROGRAMME ON NEXPERT 3-6 June 1991

C-MMACS organised a 4-day training programme (3-6 June 1991) on NEXPERT, the expert system shell. Mr Umesh Bhatia, TCS, Poona conducted the programme. Scientists from NML, NAL and C-MMACS participated and received instruction as well as hands-on experience in using NEXPERT.

COLLABORATIVE WORK WITH KGF ON GOLD MINE ANALYSIS 5 June 1991

A discussion on the statistical and graphical analysis of gold mine data from the Footwall Lode with a team from KGF was held on 5 June 1991 at C-MMACS. A second meeting with another KGF team comprising of Mr E M P Chetty, Dy Manager (Production), Mr M P Hegde, Chief Geologist and Mr K Rajaram on 9 July 1991 explored possibilities of extending the work done at C-MMACS to other problems of interest to KGF.

MEETING OF MATHEMATICAL MODELLING OF THE OCEAN 25-26 June 1991

A two-day meeting was organised by C-MMACS and the Department of Ocean Development to discuss ongoing activities and future plans in modelling problems of the Ocean. Prof V K Gaur, Secretary, Department of Ocean Development inaugurated this meeting which had 30 presentations and was attended by over 70 scientists from educational and R&D institutions.

TRAINING PROGRAMME ON SDRG-IDEAS 23 September - 3 October 1991

A training programme on a software package for solid modelling on-IRIS 4D.20 was organised by C-MMACS. About 15 scientists from NAL, CCMB and RRL attended this programme.

NATIONAL SEMINAR ON MATHEMATICAL MODELLING IN BIOLOGY AND CHEMISTRY 17-20 December 1991

A 4-day seminar was arranged at CCMB which was sponsored by C-MMACS. About 100 scientist from different CSIR laboratories in India participated. There were about 20 talks and poster presentations.

PAN-COMMONWEALTH AWARENESS WORKSHOP ON MATHEMATICAL MODELLING 24-29 February 1992

A 6-day workshop was organised by the Commonwealth Science Council, London in collaboration with CSIR. The Central Leather Research Institute, Madras and C-MMACS, Bangalore, jointly organised this workshop. The programme faculty and participants were from Europe, Asia, Africa, Caribbean and Australia. A technical session was held on the status of mathematical modelling in the participating countries. The presentations were on Water resources modelling, Models for environment and energy, Chemical process/plant modelling and simulation and Modelling of electrical and electronic systems.

SEMINARS



**A3.2 LECTURES AT
C-MMACS**

- 1 REMOTE SENSING OF PRIMARY PRODUCTION, Prof Shubha Satyendranath, Dalhousie University, Canada; 17 May 1991
- 2 CONVEX ARCHITECTURE, COMPILERS AND OPTIMISATION TECHNIQUES, Mr S Bhattacharjee, Wipro Infotech Ltd, Bangalore; 29 & 30 May 1991
- 3 TACTICAL AND STRATEGIC RESEARCH IN PETROLEUM EXPLORATION AND PRODUCTION: AN INDUSTRIAL EXPERIENCE, Dr Chandrashekar Lashmanan, BHP Research, Melbourne Laboratories, Australia; 24 Jul 1991
- 4 MATHEMATICAL MODELLING OF DISCONTINUITIES AND SLIP SURFACES, Mrs Sridevi, CBRI, Roorkee; 25 Jul 1991
- 5 CONVEX SYSTEMS, Dr Thomas Choong, Convex A/P Operations, Singapore; 29 Oct 1991
- 6 TIME SERIES ANALYSIS, Prof P S Moharir, NGRI, Hyderabad; four lectures; 23-25 Dec 1991
- 7 INVERSION TECHNIQUES, Prof P S Moharir, NGRI, Hyderabad; ten lectures; 23-25 Dec 1991
- 8 SOME APPLICATIONS OF COMPUTATIONAL FLUID DYNAMICS, Dr Ramesh Agarwal; 3 Jan 1992
- 9 MAKING UNIX MORE SECURE, Johnson Kuruvila, Central Research Laboratory, BEL, Bangalore; 13 Jan 1992
- 10 STEADY AND UNSTEADY METHODS FOR EULER EQUATIONS, Prof K W Morton, Oxford University, UK; 13 Jan 1992
- 11 THE CHARACTERIZATION & MODELLING OF LIQUID MEMBRANE EMULSION FOR REACTIVE SEPARATION, Dr P R Patnaik, IMTECH, Chandigarh; 5 Feb 1992
- 12 ON DIFFERENT METHODS & MECHANISMS TO UNDERSTAND THE STABILITY OF INCOMPRESSIBLE STRATIFIED FLUID FLOWS, Dr S S Parhi, IISc, Bangalore; 18 Feb 1992

For further information, write to

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