IISc Mathematics Initiative
Department of Mathematics
Indian Institute of Science
Bangalore

International Conference on
"Scientific Computation, Numerical Analysis and Applications"

July 18 – 21, 2005

Venue: Department of Mathematics, IISc., Bangalore
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MONDAY (18.07.2005)

8.30   9.30   Registration

Session I
Chairman: Bill Morton

9.30   10.15   Robin Young   *Isentropic Gas Dynamics with*
                 (University of   *Large Data*
                  Massachussetts)

10.15   11.00   Phoolan Prasad   *Riemann problem for kinematical*
                 (IISc, Bangalore)   *conservation Laws*

11.00   11.30   Tea

Session II
Chairman: Vanninathan

11.30   12.15   Adimurthy   *Hamilton – Jacobi equations*
                 (TIFR, Bangalore)

12.15   12.35   Abdul Samath   *A Neuro Approach to Solve Differential*
                 (Gandhigram Deemed   *Algebraic Equation*
                  University)

12.35   12.55   N. Kumaresan   *Optimal Control for Differential*
                 (Gandhigram Deemed   *Algebraic Systems using Neural*
                  University)   *Networks*

12.55   2.30   Lunch

Session III
Chairman: David Parker

2.30	3.15	Bill Morton (Oxford University, UK)	*Symplectic properties of familiar difference schemes.*
3.15	4.00	Vasudeva Murthy (TIFR Centre, Bangalore)	*Approximating far field boundary conditions for the heat equation and its applications to atmospherics.*

* Evening (6.00 pm - 8.00 pm): Dance Programme

TUESDAY (19.07.2005)

Session I
Chairman: Adimurthy

9.30	10.15	Philip Roe (Univ. of Michigan, USA)	*The Carbuncle-An unsolved CFD Mystery*
10.15	11.00	Osamu Inoue (Institute of Fluid Science Japan)	*Direct Numerical simulation of Aerodynamic Sound Generated by an Obstacle in a flow*
11.00	11.30	Tea	

Session II
Chairman: Philip L. Roe

11.30	12.15	Maria Lukacova (TU Hamburg, Gemany)	*Well-balanced finite volume evolution Galerkin scheme for multidimensional systems of hyperbolic balanced laws*
12.15	12.35	Sidhartha Misra (IISc, Bangalore)	*Godunov type methods for conservation laws with source terms*
12.35	12.55	Tirupathi Gudi (IITB, Mumbai)	*Discontinuous Galerkin Methods for Quasilinear Elliptic Partial Differential Equations*
12.55	2.30	Lunch	

Session III
Chairman: Maria Lukacova

| 2.30 | 3.15 | Kannan Moudgalya (IITB, Mumbai) | *Sliding behavior of a class of discontinuous DAE systems* |

| 3.15 | 3.45 | Girish Mittal (NAG, Mumbai) | *NAG-Combining mathematics & technology for enhanced performance* |

* Evening 7.30 pm: Banquet

WEDNESDAY (20.07.2005)

Session I
Chairman: **Volker Schulz**

| 9.30 | 10.15 | Anand Kumar (C-MMACS, Bangalore) | *Directionally Unbiased Numerical Schemes* |

| 10.15 | 11.00 | Linda Petzold (Univ. of California, USA) | *Bridging the scales in Biochemical Simulation* |

| 11.00 | 11.30 | Tea |

Session II
Chairman: V. D. Sharma

| 11.30 | 12.15 | Mohan Kadalbajoo (IITK, Kanpur) | *Numerical analysis of boundary value problems for singularity perturbed differential equation with delay as well as advance* |

| 12.15 | 12.35 | D. Vinayagam (Gandhigram Deemed University) | *Existence of Solutions of Stochastic Integrodifferential Inclusions in a Hilbert Space* |

| 12.35 | 12.55 | Dhanumjaya (IISc, Bangalore) | *Orthogonal Cubic Spline Collocation Method for the Cahn-Hilliard Equation* |

| 12.55 | 2.30 | Lunch |

Session III
Chairman: Debasish Ghose

2.30	3.15	V. D. Sharma (IIT, Mumbai)	*To be announced*
3.15	4.00	Soumyendu Raha (IISc, Bangalore)	*Spatial Discretization Based Damping in the Numerical Simulation of Flexible Multibody Systems*

THURSDAY (21.07.2005)
Session I
Chairman: A. K. Nandakumaran

9.30	10.15	V. Kumaran (IISc, Bangalore)	*Solution of the Boltzman equation, which is a non-linear integro-differential equations*
10.15	11.00	Volker Schulz (Univ. of Trier, Germany)	*Efficient solution of PDE constrained optimization problems*
11.00	11.30	Tea	

Session II
Chairman: **Osamu Inoue**

11.30	12.15	David Parker (Univ. of Edinburgh, UK)	*Shallow water waves and the Camassa-Holm equation*
12.15	12.35	V. V. K. Srinivas (IISc, Bangalore)	*Kinetic Relaxation Scheme for the System of Kinematic Conservation Laws*
12.35	12.55	Neeraja (S. V. University, Tirupathi)	*Unsteady Free Convection Flow Past a Vertical Porous Plate with Viscous Dissipation*
12.55	2.30	Lunch	

Session III
Chairman: Soumyendu Raha

2.30	3.15	Debasish Ghose (IISc, Bangalore)	*Trajectory optimization using non-linear programming and evolutionary algorithm*
3.15	4.00	Ratish Kumar (IITK, Kanpur)	*A computational study of Heat & Fluid flow in a complex ADDS*

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