

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
DEPARTMENT OF MATHEMATICS
INTERNATIONAL SYMPOSIUM ON RECENT ADVANCES IN COMPUTATIONAL ANALYSIS AND MODELLING
 Under the aegis of International Society for Analysis, its Application and Computation (ISAAC)
JUNE 20-24, 2022
 (Hybrid Mode)

Offline Venue: Room M-602, Department of Mathematics

INAUGURATION FUNCTION (June 20, 2022): Minutes to Minutes Program	
08:45 AM – 08:55 AM	Kulgeet
08:55 AM – 09:00 AM	Welcome address by Prof. S. K. Gupta, Co-convener
09:00 AM – 09:05 AM	Address by Prof. Uaday Singh, Convener
09:05 AM – 09:10 AM	Address by Prof. P. Bera, Head of Department
09:10 AM – 09:15 AM	Address by Prof. Apurbba Kumar Sharma, Dean Academic Affairs, IIT Roorkee
09:15 AM – 09:20 AM	Address by Prof. Uwe Kaehler, President ISAAC, University of Aveiro, Portugal,
09:20 AM – 09:25 AM	Inaugural address by Prof. M. Parida, Deputy Director, IIT Roorkee
09:25 AM – 09:30 AM	Vote of thanks by Prof. A. K. Nayak, Co-convener

Duration (IST)	Speaker	Title of Talk	Session Moderator
20th June, 2022			
09:30 AM- 11:00 AM	Prof. Martin Z. Bazant Professor of Chemical Engineering & Mathematics, Massachusetts Institute of Technology, USA	Learning Battery Physics from Images	Prof. Amit Agrawal Department of Mechanical Engineering, IIT Bombay
11:30 AM- 01:00 PM	Prof. (Retd.) Gadadhar Misra Department of Mathematics, IISc Bangalore	Which Homogeneous Operators are Subnormal	Prof. A. Swaminathan Department of Mathematics, IIT Roorkee
02:30 PM- 04:00 PM	Prof. (Retd.) Girija Jayaraman Center for Atmospheric Sciences, IIT Delhi	Modelling Arterial Flow Mechanics using Fourier Analysis	Prof. P. A. Lakshmi Narayana Department of Mathematics, IIT Hyderabad

04:30 PM- 06:00 PM	Prof. Alessio Figalli Department of Mathematics, ETH Zurich, Switzerland	Ubiquity of Optimal Transport	Prof. Manoranjan Parida Deputy Director, IIT Roorkee
21st June, 2022			
09:30 AM- 11:00 AM	Prof. M. Thamban Nair Department of Mathematics, IIT Madras	A Discrete Regularization Method for Fredholm Integral Equations of the First Kind	Prof. Rafikul Alam Department of Mathematics, IIT Guwahati
11:30 AM- 01:00 PM	Prof. Rama Govindrajan International Center for Theoretical Sciences (ICTS), Bangalore	Chaotic Orbits of Tumbling Ellipsoids	Prof. Rama Bhargava Director General, RCE, Roorkee
02:30 PM- 04:00 PM	Prof. Luigi Brugnano Department of Mathematics and Computer Science, University of Firenze, Italy	Recent Advances in the Geometric Integration of Differential Equation	Prof. S.C.S. Rao Department of Mathematics, IIT Delhi
04:30 PM- 06:00 PM	Prof. (Retd) Suresh Chandra Department of Mathematics, IIT Delhi	Mathematics Behind Machine Learning	Prof. V. Vetrivel Department of Mathematics, IIT Madras
06:15 PM- 07:30 PM	Paper Presentation		Prof. Sushil Kumar, SVNIT Surat
22nd June 2022			
09:30 AM- 11:00 AM	Prof. R. N. Mohapatra Department of Mathematics, University of Central Florida	Solution of Optimal Control Problems Governed by Mixed Variational-Hemivariational Inequalities Involving a Set-Valued Mapping	Prof. S. K. Mishra Institute of Sciences, Banaras Hindu University
11:30 AM- 01:00 PM	Prof. S. Thangavelu Department of Mathematics, IISc Bangalore	How Fast Fourier Transforms can Decay?	Prof. Uwe Kaehler President, ISAAC, University of Aveiro, Portugal
02:30 PM- 04:00 PM	Prof. Boris Mordukhovich Department of Mathematics, Wayne State University	Computational Optimization via Variational Analysis	Prof. Joydeep Dutta Department of Economic Sciences, IIT Kanpur
04:30 PM- 06:00 PM	Prof. S. K. Mishra Institute of Sciences, Banaras Hindu University	Unconstrained Optimization Problems and Applications	Prof. S. P. Yadav Department of Mathematics, IIT Roorkee
23rd June 2022			
09:30 AM- 11:00 AM	Prof. B. V. Rathish Kumar Department of Mathematics & Statistics, IIT Kanpur	A Look at High Resolution Global Atmospheric Modeling on Parallel Computers	Prof. S. N. Bora Department of Mathematics, IIT Guwahati
11:30 AM- 01:00 PM	Prof. Manuel Arana Jimenez Department of Statistics & Operations Research, Universidad de Cádiz	Interval and fuzzy numbers. Discussion on applications to optimization models, with the particular case of DEA	Prof. Aparna Mehra Department of Mathematics, IIT Delhi

01:30 PM – 02:30 PM	Prof. M. Ruzhansky Department of Mathematics, Ghent University	Sub-elliptic Pseudo-Differential Calculus on Compact Lie Groups	Prof. Akhilesh Prasad Department of Mathematics and Computing, IIT(ISM), Dhanbad
02:30 PM- 04:00 PM	Prof. Andrew Rees Department of Mechanical Engineering, University of Bath	Modal Selection for Inclined Darcy-Benard Convection	Prof. K. M. Singh Mechanical and Industrial Engineering Department, IIT Roorkee
04:30 PM- 06:00 PM	Prof. Amiya Kumar Pani Department of Mathematics, IIT Bombay	On Fractional in Time Evolution Problems: Some Theoretical and Computational Studies	Prof. Subir Das Department of Mathematics, IIT(BHU), Varanasi.
24th June 2022			
09:30 AM- 11:00 AM	Prof. Adrian Bejan Department of Mechanical Engineering, Duke University	Time and Beauty	Prof. PVSN Murthy Department of Mathematics, IIT Kharagpur
11:30 AM- 01:00 PM	Dr. Jeff Hammond Principal Programming Models Architect, NVIDIA	Parallel Programming of CPU and GPUs using Standard Languages (Python, FORTRAN, C++)	Prof. Kusum Deep Department of Mathematics, IIT Roorkee
02:30 PM- 04:00 PM	Prof. Lucia Romani Department of Mathematics, University of Bologna,	Computational issues with planar and spatial Pythagorean-Hodograph curves	Prof. Sandip Banerjee Department of Mathematics, IIT Roorkee
04:30 PM- 06:00 PM	Paper Presentation		Prof. Sreedhara Rao Gunakala University of the West Indies, St. Augustine Campus

Selected Paper Presentations

S. No.	Session Moderator	Name	Date	Time	Title of Talk
1	Prof. Sushil Kumar	Rajat Verma	21.06.2022	06:15 PM - 06:33 PM	Numerical Simulations of Hydrodynamic Journal Bearings with Nanolubricants
2		Anjali	21.06.2022	06:35 PM - 06:53 PM	Effect of media permeability on the stability of non-isothermal Poiseuille flow in a fluid overlying a porous domain
3		Ranjita Guglani	21.06.2022	06:55 PM - 07:13 PM	A novel seventh order iterative method for solving multiple roots of nonlinear equations and its basins of attraction
4		Dr. Krishna Pada Das	21.06.2022	07:15 PM - 07:33 PM	Refugia and Harvesting Control Chaos-Conclusion drawn from a Food Chain Model
5	Dr. Sreedhar Rao	Nisha Pokharna	24.06.2022	04:30 PM - 04:48 PM	AN APPROXIMATION APPROACH TO OPTIMALITY AND DUALITY IN COMPLEX OPTIMIZATION PROBLEMS AND ITS APPLICATION TO BLIND EQUALIZATION
6		Ankit Kumar	24.06.2022	04:50 PM - 05:08 PM	Computing gravity-mediated quantum entanglement in continuous variable bipartite states
7		Muthu Meena Lakshmanan	24.06.2022	05:10 PM - 05:28 PM	Steinhaus type theorem for Nörlund-Euler- method of summability in Non-Archimedean Fields
8		Volkan Ala	24.06.2022	05:30 PM - 05:48 PM	NEW EXACT SOLUTIONS OF SPACE-TIME FRACTIONAL SCHRÖDINGER-HIROTA EQUATION