



EVENT REPORT OF ICNDA 2024

1	TITLE OF EVENT:	2nd International Conference on Nonlinear Dynamics and Applications (ICNDA 2024)
2	ORGANIZED BY (DEPT/ (CLUB/BODY ETC):	Department of Mathematics, Sikkim Manipal Institute of Technology, SMU, Majitar, Sikkim, India
3	UNDER THE BANNER OF (DEPT./OFFICE/CELL ETC):	Department of Mathematics, Sikkim Manipal Institute of Technology, SMU, Majitar, Sikkim, India
4	COLLABORATION WITH:	NA
5	STUDENT EVENT: YES / NO	No
6	EXTERNALLY FUNDED: YES / NO	YES
7	IF EXTERNALLY FUNDED, THEN NAME OF FUNDING AGENCY	Science & Engineering Research Board (SERB), Govt. of India & Council of Scientific and Industrial Research (CSIR), Govt. of India
8	NATURE: INTERNAL PARTICIPANTS / EXTERNAL PARTICIPANTS / BOTH	Both Internal and External Participants
9	NO. OF PARTICIPANTS:	216
9A	INTERNAL:	32
9B	EXTERNAL	184
10	MODE: ONLINE / OFFLINE	Both Online and Offline
10A	IF ONLINE PROVIDE LINK	https://icnda.in/
11A	DATE FROM	21 st February 2024
11B	DATE TO:	23 rd February 2024
12	COORDINATOR:	Dr. Asit Saha Department of Mathematics Sikkim Manipal Institute of Technology, SMU, India & Prof. Santo Banerjee Department of Mathematical Sciences Politecnico di Torino, Italy
13	ATTACH LIST OF PARTICIPANTS / DELIGATES	Attached



RESOURCE PERSON(S):

SL. NO.	NAME	AFFILIATION
1	Prof. M. Lakshmanan F.N.A., FTWAS, Professor of Eminence & DST-SERB National Session Chair Title: Nonlinear Dynamics of Coupled Spin Torque Nano Oscillators.	Department of Nonlinear Dynamics, School of Physics, Bharathidasan University, Tiruchirapalli, India
2	Prof. Lamberto Rondoni Title: Finite size quantum multibarrier systems vs. boundary driven Zero Range models.	Department of Mathematical Sciences, Politecnico di Torino, Italy
3	Prof. Prasanta Chatterjee Title: Solutions of Nonlinear Partial Differential Equations and Applications.	Department of Mathematics, Visva-Bharati, Santiniketan, India
4	Prof. Juan J. Nieto Title: Fractional Dynamics and Applications.	Mathematical Analysis and Optimization of the University of Santiago de Compostela, Spain
5	Prof. Antonio Politi Emeritus Professor Title: Hamiltonian dynamics and neutral delay equations in laser systems.	School of Natural and Computing Sciences, University of Aberdeen, United Kingdom
6	Prof. Michael Small Title: Detecting dynamical transitions in observational time series data.	Mathematics and Statistics, The University of Western Australia, Australia
7	Prof. Prashanta Kumar Mandal Title: Role of mathematics and computer modelling on cardiovascular intervention.	Department of Mathematics, Visva-Bharati, West Bengal, India



8	Prof. Nareshpal Singh Saini Title: Ion-acoustic Nonlinear Structures in Multicomponent Superthermal Plasma.	Department of Physics, Guru Nanak Dev University, Amritsar, India
9	Dr. Nur Aisyah Binti Abdul Fataf Title: Harmonizing Chaos: Unveiling the Power of Chaotic System Synchronization in the IoT Age.	National Defence University of Malaysia, Malaysia
10	Dr. R. Sivaraj Title: Heat transfer optimization using machine learning.	Department of Mathematics, School of Advanced Sciences, Vellore Institute of Technology, India
11	Dr. A. Gowrisankar Title: A Spotlight on Global Warming of Future Earth!	Department of Mathematics, School of Advanced Sciences, Vellore Institute of Technology, India
12	Dr. Luca Sebastiano D'Acci Title: House prices power law distribution across cities.	Inter-university Department of Regional and Urban Studies and Planning, Politecnico di Torino, Italy
13	Dr. Rishi Raj Kairi Title: Transport of microbes in non-Newtonian nanofluid flow influenced by Marangoni convection.	Department of Mathematics, Cooch Behar Panchanan Barma University, West Bengal, India
14	Dr. Soumen Kundu Title: Mathematical Modelling: Development and Applications on Biological Systems.	Department of Mathematics (SAS), VIT AP University, Andhra Pradesh, India
15	Prof. Md. Golam Hafez Title: Acoustic solitary and shock waves around the super-critical values in unmagnetized plasmas.	Department of Mathematics, Chittagong University of Engineering and Technology, Bangladesh



16	Prof. Pralay Kumar Karmakar Title: Acoustic modes inside white dwarfs.	Department of Physics, Tezpur University, Assam, India
17	Dr. Ahmed A. Abd El-Latif Title: Quantum and chaotic dynamical systems for multimedia cybersecurity.	Department of Computer Science, Menoufia university, Egypt
18	Dr. Rajeeb Dey Title: Modeling & Stability of Dyadic Interpersonal Relationship Indian Urban Societal Perspective.	Department of Electrical Engineering, National Institute of Technology Silchar, Assam, India
19	Dr. Sharanjeet Dhawani Title: Mathematical modelling of combat.	Department of Mathematics, CCS Haryana Agricultural University, India
20	Dr. Vignesh Dhakshinamoorthy Title: Discretization and impact of Fractional order in Nonlinear systems.	Department of Mathematics School of Engineering and Technology, CMR University, Karnataka, India
21	Dr. Devanjan Bhattacharya Title: AI applications in climate change data analytics.	The Bayes Centre, University of Edinburgh, United Kingdom
22	Dr. Matteo Colangeli Title: Non-equilibrium phase transitions in 3D billiards with a Maxwell demon.	Mathematical Physics, University of L'Aquila, Italy



2nd International Conference on Nonlinear Dynamics and Applications 2024
(ICNDA 2024)

Organized by:

Department of Mathematics
Sikkim Manipal Institute of Technology, SMU, Sikkim, India
Date: February 21-23, 2024



BRIEF DESCRIPTION/REPORT WITH GEO-TAGGED PHOTOGRAPH OR SCREEN SHOTS:

The Department of Mathematics at Sikkim Manipal Institute of Technology (SMIT), part of Sikkim Manipal University, orchestrated the 2nd International Conference on Nonlinear Dynamics and Applications (ICNDA 2024) [<http://icnda.in/>] in a hybrid format spanning from February 21st to 23rd, 2024, held at the institute premises in Majitar, Sikkim. The event attracted a convergence of scientists, engineers, and academicians, engaging in discussions across a diverse array of subjects, including Dynamical Systems, Mathematical Modeling, Chaos, Complexity, and Fractals, Pandemic Dynamics, Graphs and Applications, Plasma Dynamics and Applications, Space Plasmas, Fluid Dynamics and Nonlinear Flows, Fractional Systems and Applications, Communication and its Applications, Cryptography and Networks, Deep Learning and Machine Learning, Chaos and Complexity in Social Structures, Ecological, Biological and Biomedical Models and Applications, Signal Processing and Signal Analysis, Bifurcation Analysis and its Applications, Quantum Systems and Quantum Chaos, Financial Data and Applications, Genetic Algorithm, Optimization and Artificial Intelligence, Semiconductor Devices and Materials, Internet of Things and Smart Applications, and Nonlinear Effects on Climate Change. A total of 216 participants (94 physically present and 122 virtually attending) enriched the conference, representing diverse nations, including the United Kingdom, Russia, Jamaica, Iran, Bangladesh, Egypt, Mexico, Vietnam, Spain, Italy, Latvia, Indonesia, Serbia, the Philippines, and India.

The ICNDA 2024, generously sponsored by the Science & Engineering Research Board (SERB), Council of Scientific & Industrial Research (CSIR), and Sikkim Manipal Institute of Technology, with support from Sikkim State Council of Science & Technology and iBUS Digital Infrastructure, epitomized the convergence of scholarly excellence and technological innovation.

Amidst keen anticipation, ICNDA 2024 received an impressive influx of approximately 380 papers, reflecting the global interest and scholarly engagement in the field. From this pool of submissions, a meticulous selection process led to the creation of a distinguished collection of 180 papers for presentation. Notably, 157 of these outstanding research contributions were earmarked for publication in the esteemed "Springer proceedings in Physics," a publication indexed by Scopus, thereby ensuring broad visibility and scholarly impact.

The unfolding of ICNDA 2024 was marked by a meticulously organized series of 28 technical sessions, thoughtfully balanced between physical and virtual formats, to accommodate the diverse needs of participants. An illustrious array of distinguished scholars, hailing from both India and abroad, lent their expertise and guidance as presiding authorities over the technical sessions. Their collective wisdom and scholarly acumen added a profound dimension to the discourse, enriching the conference experience for all participants.

Distinguished delegates hailing from esteemed national and international institutes were extended invitations to share their profound scientific insights, experiences, and research findings encompassing various facets of nonlinear science and its applications across diverse fields. This

Web: <http://icnda.in/>, Contact: Organizing Secretary, ICNDA 2024, E-mail: icnda@smit.smu.edu.in, Mob: +91-90641 30710





initiative provided a unique platform for academicians, researchers, faculty members, and research scholars associated with the institute to delve into and deliberate upon the latest innovations and trends in the realms of Engineering, Physics, and Applied Mathematics. The conference featured keynote addresses delivered by six eminent speakers.

These distinguished speakers collectively enriched the conference by offering profound insights into the interdisciplinary dimensions of nonlinear science, fostering a vibrant exchange of knowledge and ideas among the participants. In addition to the distinguished panel of six keynote speakers, the conference featured presentations by sixteen renowned researchers who delivered invited talks spanning various domains of nonlinear dynamics.

Photographs Section:

1. Inaugural Session



Lighting of auspicious diya by honorable Vice Chancellor(SMU), Chief Guest and Deligates



Inaugural song presentation by students and organizers.



Diya lighting by Keynote speakers in presence of Vice Chancellor & chief Guest





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Organized by:

Department of Mathematics
Sikkim Manipal Institute of Technology, SMU, Sikkim, India
Date: February 21-23, 2024



Majitar, Sikkim, India
5GM2+5V5, E Quad Portico, Majitar, Sikkim 737136, India
Lat 27.182913°
Long 88.501817°
21/02/24 10:52 AM GMT +05:30

Message form honourable Vice- Chancellor

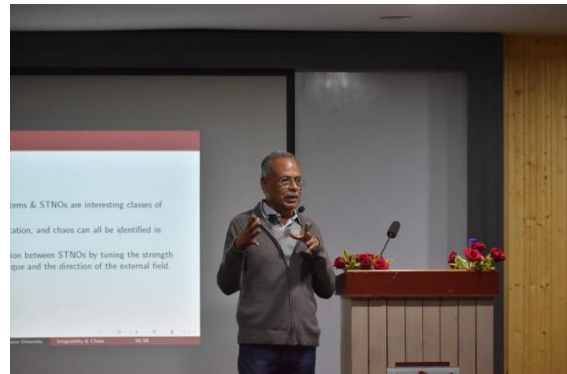


Felicitating Prof. M Laxmanan

2. Group Photo and Technical Sessions



Delegates, Young Scientists & participants gathering for the Group photo



Prof. M. Laxmanan delivering his Keynote Talk



Participants with Delegates



Prof. Rondoni discussing with Prof. Politi

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3. Cultural Events:



Beginning of cultural night ICNDA 2024



Bhutia Dance



Nepali Dance



Bhutia Group Dance



Yak Dance

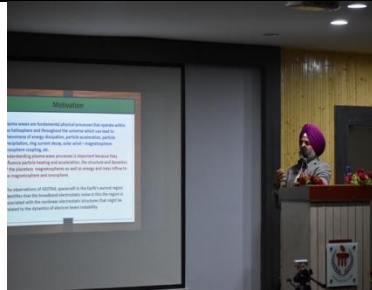


Nepali Folk Dance

4. Technical Sessions:



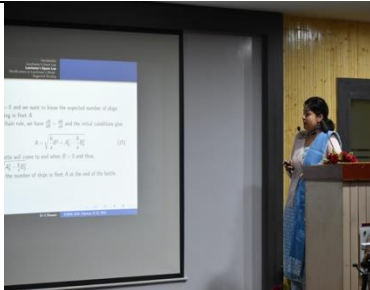
Invited talk by Dr. A. Gowrisankar



Invited talk by Prof. N S Saini



Keynote speech by Prof. L Rondoni



Invited Talk by Dr. S Dhawan

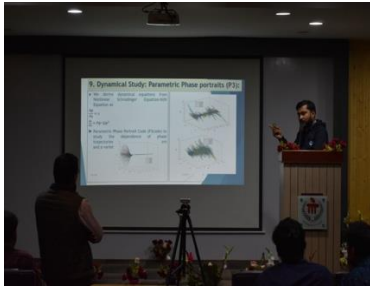


Virtual session with Prof. P Chatterjee



Paper Presentation of Young Researcher

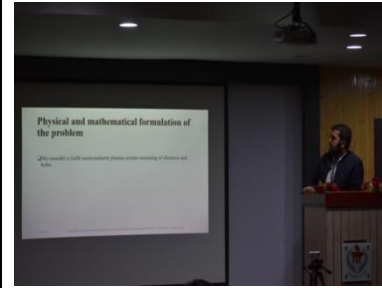




Presentation of Young Scientist



Presentation of Young Scientist



Presentation of Young Scientist

5. Valedictory Function:



Valedictory Session



Certificate distribution to participants



Concluding remark by Organizing Secretary

For more details you may explore the ICNDA 2024 website: <http://icnda.in/>. Hope your support, contribution and association will continue in future as well. We shall always remain obliged for your support. Department of Mathematics, SMIT, SMU, is planning to organize 3rd International Conference in Nonlinear Dynamics and Applications (ICNDA 2026) during February 2026.

Asit Saha
18-06-2024
 Dr. Asit Saha
Organizing Secretary

Dr. Asit Saha
Assistant Professor (SG)
Organizing Secretary, ICNDA 2024
Department of Mathematics,
Sikkim Manipal Institute of Technology
Sikkim Manipal University, East Sikkim 737136, India
Email: asit.s@smit.smu.edu.in / asitsaha125@gmail.com / asit_saha123@rediffmail.com

