



International Conference on

Mathematical & Statistical Modeling in Innovative Areas

23rd and 24th August, 2025



Organised by:

Department of Mathematics,
Adarsh College, Rajdhawanwar

Sponsored by:

Jharkhand State Higher Education Council Department of Higher and Technical
Education, Govt. of Jharkhand

Presentation Schedule – Technical Session

Session Chairperson: **Dr. Ashish Jha**
Co-Chairperson: **Dr. Kaushik Halder**
Rapporteur: **Vivek Tiwari**

Date: 23 August 2025
Time: **04:30 pm – 07:30 pm**
Venue: **Room No- 101**
Time Allotted: 08 min Presentation +
02 min Q&A

Sl. No.	Name of Delegate	Title of Paper
1	<i>Nivedita Kumari, Bimal Kumar Mishra</i>	Fractional derivative epidemic model and sensitivity analysis on the transmission dynamics of malware in networks using Caputo- fractional order
2	<i>Satyarth Satyam</i>	A Review of Mathematical Tools and Models for Enhancing Cyber security in Industrial Applications
3	<i>Satyarth Gyan Prakash, Varsha Kumari</i>	Towards a Secure Digital Future: The Convergence of AI, ML, Blockchain, and IoT in Cybersecurity
4	<i>Slok Kumar Goyal, Avinash Kumar</i>	Reinforcement Learning Approach to Safe Digital Data in Cybersecurity
5	<i>Saurav Kumar and Ajit Kumar Keshri</i>	An Optimization-Driven Adaptive Security Framework for DDoS Mitigation in IoT Networks
6	Malini Dean	Digital Commerce Meets Digital Rumors: Modeling the Macroeconomic Impacts in the Indian Context
7	<i>Ajay Kisku, Rohit Kumar Deswali, Shivendra Kr. Verma, Archana Reena Dhan</i>	Security and Privacy in IoT: A Systematic Analysis of Recent Research Trends
8	<i>Neha Keshri</i>	Modeling Energy Dynamics in Wireless Sensor Networks Using an SLBRS Epidemic Framework
9	<i>Prasant Kumar Nayak, Subhashree Ram, Saktiprasad Mohanty</i>	A Mathematical Modeling and Sensitivity Analysis Approach to Evaluate Signature-Based Antivirus Effectiveness in Networked Systems
10	<i>Prasant Kumar Nayak, Subhashree Ram, Saktiprasad Mohanty</i>	A Mathematical Analysis of Antivirus Effectiveness in Computer Networks Using a Modified SEIR Epidemic Model
11	<i>Ambika Rajak</i>	Artificial intelligence and the future of e-commerce
12	<i>Anil Kumar Sinha, Ankit Kumar, Khusboo Mishra and B. K. Mishr</i>	Hybrid Search Systems: Using Artificial Intelligence (AI) and Machine Learning (ML)
13	<i>Akash Pandey, Sounak Paul, Soumya Ray</i>	Momentix-A Smart Video Summarization technique using Generative AI
14	<i>Vibha Kumari, Upendra Prasad, Bimal Kumar Mishra</i>	Internet of Things (IoT) scanners for cyber defence in the healthcare sector
15	<i>Pankaj Kumar, Bimal Kumar Mishra, Pankaj Rai</i>	Optimizing Smart Health Systems with Advanced Delay Differential Equations: A Predictive Analytics Approach
16	<i>Bishwa Sagar, Ashish Kumar Jha, Mohit Kumar</i>	Context-Aware Multi-Agent Reinforcement Learning for Energy-Efficient Duty-Cycling in Heterogeneous IoT Networks
17	<i>Ritesh Kumar Thakur, Mansaf Alam</i>	IoT Security Framework against cyber-Threat

18	<i>Debasish Dey, Shreyansh Kumar, Shalu kumari, Chinmoy Kar, Radha Tamal Goswami</i>	A Gesture and Voice-Driven Virtual Mouse with Integrated Chatbot Support
19	<i>Gholam Mursalin Ansari, Samya Meherr</i>	AI in Computer Vision
20	<i>Khushboo Mishra, Deepa Sonal</i>	Development and Deployment of Nano-Sensor Networks for Real-Time Soil Nutrient Monitoring in Precision Agriculture
21	<i>Pooja Kumari</i>	Leveraging Artificial Intelligence to Optimize Efficiency and Transparency in the Public Distribution System
22	<i>Kr Madhusudan Raja, Angad Kumar, Roshan Kumar</i>	Artificial Intelligence and Ethics: Ethical Algorithms and Philosophical Perspectives



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Co-Chairperson: **Dr. Anil Barnwal**

Rapporteur: **Ujjawal Ghosh**

Date: 23 August 2025

Time: **04:30 pm – 07:30 pm**

Venue: **Room No- 107**

Time Allotted: 08 min Presentation +
02 min Q&A

Sl. No.	Name of Delegate	Title of Paper
1	Bapan Parya, Dhrub Kumar Singh	An Integrated Inventory Model for Deteriorating Goods under Cooperative Procurement with Price and Stock-Driven Demand
2	Dhrub Kumar Singha and Swagat Tripathi	Deterministic Inventory Models for Deteriorating Products with Price-sensitive Demand and keeping single Warehouse and Shortages in view.
3	Somen Guha and Dhrub Kumar Singh	An inventory system with a Stock-Dependent Demand Rate, where the ordering cost and holding cost vary based on certain factors and parameters.
4	Vijeta Tigga	Supply Chain Management and Inventory Management: An Integrated Perspective
5	Aditya Kumar Singh, Abhay Kumar Jha	Impact of Vaccination and Quarantine in Corona Virus with the Help of SIQR Model through General Form of Non-Linear Incidence Rate
6	Ahan Chatterjee, Debtan Chowdhury, Soumyadeep Das Bhowmick, Chinmoy Kar, Sandipan Ghosal, and Radha Tamal Goswami	A Comparative Study Between VGG-19 and AlexNet on Leukemia Cancer Cell Detection
7	Ajit Kumar Keshri, Kunal Kumar, Yerra Shankar Rao	Mathematical Modelling of H5N1 Avian Influenza Dynamics Across Bird, Mammal, and Human Populations: Stability Analysis and Zoonotic Implications
8	Shafique Ahamad	Mathematical Modeling of Increase of Aphid Populations
9	Md Afzal Mansoori, Khushboo Mishra, Binay Kumar Mishra	Environmental persistence of nano-materials: long-term ecological risks and implications for sustainability.
10	Govind Kumar Jha, Meenu, Sarita Jha, Pardeep Kumar	Identifying region of attraction and sensitivity of SIQRS model
11	Santosh Kumar Lal	Disaster Management in the Context of Jharkhand
12	Satyarth Saurabh, Juhi Roy	Sustainable Chemistry in the Digital Age: Educators' Role in Computational Science and Environmental Change
13	Pardeep Kumar, Sarita Jha, Tripti Anand, Govind Kumar Jha	Antisynchronization of a Novel Cancer Cells Growth model
14	Rita Kumari, Anita Kumari	Comparative study between Linear and Minimal model on controlling diabetes mellitus
15	Rounak Kumar	When the Environment Suffers, So Does Health: India's Regional Crisis
16	Aditi Mishra	Role of education and health in achieving sustainable Development goals in India
17	Apeksha Prajapati	Nonlinear Modelling and Simulation of Air, Water and Soil Pollution



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Online Presentation Schedule – (Brazilian Scholars)

Session Chairperson: **Dr. Govind Jha**

Rapporteur: **Dr. Roshan Kumar**

Date: 23 August 2025

Time: **05:40 pm – 06:00 pm**

Venue: **Room No- 105**

Time Allotted: 08 min Presentation +
02 min Q&A

<u>Sl. No.</u>	<u>Name of Delegate</u>	<u>Title of Paper</u>
1	Pedro Augusto Yi Wei Leea, Isabelle Coelho Franca, Cristiane Mileo Batistela Gouvêaa, Ricardo Paulino Marquesa, José Roberto Castilho Piqueiraa	Simulation of Malware Propagation in Clustered Networks
2	Chandra Roy, Akhilesh Prasad, Govind Kumar Jha	The Wave Packet Transformation in the Framework of Quadratic-Phase Hankel Transformation



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Presentation Schedule – Technical Session

Session Chairperson: **Dr. Govind Jha**
Co-Chairperson: **Dr. Birendra Pratap**
Rapporteur: **Sri. Sanoj Mahto**

Date: 24 August 2025
Time: **09:00 am – 10:00 am**
Venue: **Room No- 101**
Time Allotted: 08 min Presentation +
02 min Q&A

Sl. No.	Name of Delegate	Title of Paper
1	<i>Ayub Khan, Pardeep Kumar, Sarita Jha, Tripti Anand, Govind Kumar Jha</i>	<i>Impact of Micro-Organisms on Chaotic Behaviour Dynamical Model with Ceteris Paribus</i>
2	<i>Sitaram Pandey, Amitava Samanta</i>	Stock Market Price Forecasting Using the Long Short-Term Memory (LSTM) – An Application on Nifty 50 Index
3	<i>Ankit Dubey, A Dey, M Navya Pratyusha and R Kumar</i>	Managing Inventory Costs Under Pythagorean Uncertainty
4	<i>Arjun Kumar</i>	Optimizing the travel plan for Rajasthan's most famous tourism destinations using the floyd-warshall algorithm
5	<i>Ajit Kumar Keshri and Kumar Sachin Yadav</i>	Countering E-Commerce Rumors with S²IRC: A Counter-Rumor Strategy for Online Social Network Interventions



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Presentation Schedule – Technical Session

Session Chairperson: **Dr. Rakesh Bhatia**
Co-Chairperson: **Dr. B. K. Vishwakarma**
Rapporteur: **Sri. Manohar Thakur**

Date: 24 August 2025
Time: **02:00 pm – 04:00 pm**
Venue: **Room No- 101**
Time Allotted: 08 min Presentation +
02 min Q&A

Sl. No.	Name of Delegate	Title of Paper
1	Bimal Kumar Mishra	Mathematics Beyond the West: The Overlooked Contributions of Ancient Indian Scholars
2	Sudhir Kumar Sudhanshu	Contribution of Mathematics to Ancient Indian
3	Manoj Kumar	Contribution of Number Systems and Binary Logic Mathematics to Ancient Indian
4	Lalan Kumar Saw	Impact of Yagya kunda geometry on mental health of women.
5	Atul Kumar Gupta, Rajnish Kumar, Raj Shekhar Prasad,	Numerical Investigation of EMHD Nanofluid Flow over a Rotating Disk in Porous Medium with Convective Boundary Conditions: Buongiorno's Model
6	Prabhat Kumar Mandal	Stability and Sensitivity Analysis of Quarantine-Structured Epidemic Models
7	Rajnish Kumar a, Raj Shekhar Prasadb, Atul Kumar Guptaa	Analysis of flow of nanofluids through porous media over a vertical cone in the presence of pressure work
8	Ranjeet Kumar, Anamol Kumar Lal, Uma Shanker Singh	Predictive Modelling of Rainfall Variability and Water Security in Ranchi Using Prophet
9	Sanjit Kumar	"Mathematical Modeling and Simulation of Infectious Disease Spread Using Differential Equations for Public Health Applications"



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Session Chairperson: **Dr. Ashish Jha**
Co-Chairperson: **Sri. P. K. Chaudhary**
Rapporteur: **Sri. Manohar Thakur**

Date: 24 August 2025
Time: **09:00 am – 10:00 am**
Venue: **Room No- 105**
Time Allotted: 08 min Presentation +
02 min Q&A

Sl. No.	Name of Delegate	Title of Paper
1	Bishwajit Dhar	Scientific modelling: - Industrial Mathematics
2	Sarita Jha, Govind Kumar Jha	Global Stability of N-Dimensional Compartmental Model
3	Kalyani Mukherjee, Niranjan Kumar Mishra, Shibajee Singha Deo, Bimal Kumar Mishra	Fractional Epidemic Model SEIQRS on the Transmission of Tuberculosis Diseases in the Coal belt Area of Jharkhand
4	Smrita Pati	Effect of Velocity during Pulsatile Flow in Artery
5	Govind Kumar Jha, Akanksha, Neeraj Kumar, Sarita Jha	Analysis of Local Stability of a Nonlinear Discrete-Time Population Model involving Delay and Allee Effects
6	Priya Yadav, Abhishek Kumar, Nilam	Study of Stability Analysis of Delayed Fractional Order SVIR model with Saturated Incidence and Treatment Function
7	Sulekh Kumar, MD Shamsher Alam, Kamla Kumari, Momita Kundu	Platelets Detection using Machine Learning



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Presentation Schedule – Technical Session

Session Chairperson: **Dr. G. M. Ansari**

Co-Chairperson: **Dr. A. K. Barnwal**

Rapporteur: **Sri. Sanoj Mahato**

Date: 24 August 2025

Time: **02:00 pm – 04:00 pm**

Venue: **Room No- 107**

Time Allotted: 08 min Presentation +
02 min Q&A

<u>Sl. No.</u>	<u>Name of Delegate</u>	<u>Title of Paper</u>
1	Shiv Kumar, Mahadeo Prasad, Ajay Kr. Verma, Arvind Kumar	Fuzzy Modeling in the Field of Agriculture
2	Karuna Kumari Mahato	Linear system of equations and their Applications in Balancing Chemical Equations
3	Hare Krishna, Deepak Sharma, Prashant Kr. Singh	Microstrip Wideband BSF with Triple IDC Loaded Resonator with Improved Attenuation and Notch Depth
4	Shiv Kumar, Mahadeo Prasad, Ajay Kr. Verma, Arvind Kumar	Theoretic aspects of fuzzy subsets
5	Pushpalata Khalkho, Ravi Bhushan, Abhishek Kumar, Ajay Kumar Verma	Developing a Mathematical model of Three phase Brushless Direct current motor (BLDCM) to control speed
6	Anil Kumar Barnwal	AI – A joint operation of Mathematics and Electronics
7	Prem Chand Saw	Mathematical Modelling Waves of Dilation and Waves of Distortion in Isotropic Elastic Media Using Lamé's Constants
8	Arti Mehta and Umendra Singh	An Inter-district Comparison of Learning Outcomes at Elementary Level in Jharkhand
9	Pallavi Kumari	Assessing the Impact of Soft Skills on Graduate Employability
10	Vivek Kumar Roy, Simran Sharma, Krishna Kumar, Sandhya Kumari	Uses of Mathematical Modeling in Determining Consumer's Behaviour:
11	Kaushik Haldar	Mathematical Modelling of Echo Chambers and Verified Account Attrition on Misinformation Control: A Prey-Predator-Super Predator Approach



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Online Presentation Schedule – Bangladeshi Scholars & Brazilian Scholars

Session Chairperson: **Dr. Govind Jha**
Co-Chairperson: **Dr. K. Haldar**
Rapporteur: **Sri. Vivek Kumar Roy**

Date: 24 August 2025
Time: **03:00 pm – 04:15 pm**
Venue: **Room No- 106**
Time Allotted: 08 min Presentation +
02 min Q&A

<u>Sl. No.</u>	<u>Name of Delegate</u>	<u>Title of Paper</u>
1	Shantunu Mondal, Rifah Tasnia, Md. Haider Ali Biswas	Analyzing Coral Reef Dynamics Through Optimal Control: Mitigating the Ecological Impact of Whale Hunting
2	Absana Tammim, Musammet Tahmina Akter, Md. Haider Ali Biswas	Degenerative Changes of the Spine Associated with External Disturbances Gradually Makes Disk Herniation: A Mathematical Model of Herniated Disk in Lumbar Spine
3	Arpa Afrin Mim, Md. Haider Ali Biswas	Mathematical Modeling for Efficient Reduction of Harmful Greenhouse Gases to Prestigious Carbon Gemstones
4	B.A. Nupur, F.A. Ritu and M. H. A. Biswas	Mathematical Modeling and Analysis of a Three Species Virotherapeutic Cancer Model with Saturated Incidence and Oncolytic Virus as Super Predator
5	Nazmoon Nahar, Md. Sirajul Islam, Md. Haider Ali Biswas	Eco-friendly Building Dynamics: A Mathematical Perspective for Healthier Urban Living
6	Rifah Tasnia, Shantunu Monda, Md. Haider Ali Biswas	Modeling the Microbiome-Gut-Brain Axis in Patients Suffering from PTSD
7	Isabelle Coelho Franco and José Roberto Castilho Piqueira	Superadditivity and superactivation of quantum communications channels
8	Sonal Honny	Data Management using Cloud Migration through ELK Stack Technology and AWS