NAMIBIA UNIVERSITY
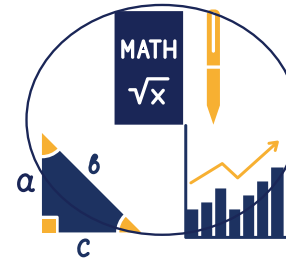## OF SCIENCE AND TECHNOLOGY

Faculty of Health, Natural Resources and Applied Sciences

Department of Mathematics, Statistics and Actuarial Science

1st International Conference on Mathematical and Statistical Sciences(ICMSS-1)

Theme: Towards Multi-disciplinary Problem-Solving Research Advancements

🕐 03 - 04 July 2023

📅 6th Floor, High-Tech Transfer Plaza Select (HTTPS), NUST Lower Campus, Windhoek, Namibia

Programme

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ON RESEARCH SCIENCE & TECHNOLOC

1st International Conference on Mathematical and Statistical Sciences(ICMSS-1)

Monday, 03 July 2023	
07:30	Registration
09:00-10:00	**CONFERENCE OPENING CEREMONY** **Venue: HTTPS Plaza, NUST Lower Campus**
	Director of Ceremony: Prof. Rakesh Kumar
09:00-09:10	**Welcoming Remarks** by Dr Erold Naomab, Vice Chancellor, Namibia University of Science and Technology (NUST)
09:10-09:20	**Guest Speaker:** Ms Natalie Russmann, Konrad Adenauer Stiftung (KAS) Resident Representative
09:20-09:40	**Keynote Speaker**: Dr Reinhold Kamati, Technical Expert at the Bank of Namibia
09:40-09:50	**Vote of Thanks** by Dr Onesmus Shuungula, Executive Dean (FHNRAS)
09:50-10:15	**Tea Break**
10:15-10:55	**Plenary Speaker: Professor Oluwole D. Makinde, Stellenbosch University, South Africa** **Topic:** Mechanism of Fuel Flow in Automobile's Exhaust Catalytic Converter: A Mathematical Model Chair: Professor Tadeusz Czachorski (Polish Academy of Sciences, Poland
10:55-11:35	**Plenary Speaker: Professor (Dr.) Dhara Singh HOODA, GJ University of Science & Technology, India Topic: Information Theoretic Techniques for Dependence Analysis and Missing Data Estimation Chair: Professor V. Thangaraj (Vel Tech Dr RR & Dr RS Technical University, India**
11:35-11:40	**Break**
	Parallel Session 1

11:45-13:20	**1A: Applied Mathematics and Related Fields** Venue: HTTPS Plaza, NUST & Online Chairperson: **Prof AS Eegunjobi (NUST)** Co-Chairs: **Prof H Garg (Thapar Univ, (India) and Dr. S M Nuugulu (UNAM)**	**1B: Applied Statistics** Venue: HTTPS Plaza, NUST & Online Chairperson: **Prof Indra Rani (KUK, India)** Co-Chairs: **Dr D Ntirampeba (NUST) and Dr O Oyedele (UNAM)**	**1C: Multidisciplinary Research** Venue: **HTTPS Plaza, NUST & Online** Chairperson: **Prof Kalyan Das (NIFTEM, India)** Co-Chairs: **Prof Justice Emuoyibofarhe (Nigeria) and Dr Jacob Ong'ala (NUST)**	**1D: Queuing Theory and Applications** Physical Venue: HTTPS Plaza, NUST & Online Chairperson: **K Vytovtov (ASTU, Russia)** Co-Chairs: Dr **V Kumar (NIFTEM, India) and Dr SN Neossi-Nguetchue (NUST)**
11:45-12:05	**Numerical simulation of a phenomenon of silting up of river banks** Cyr-Séraphin Ngamouyih Moussata and Benjamin Mampassi, Marien Ngouabi University, **Congo**	**Estimation Using Graph Sampling: a New Approach** Prof (Dr) Diwakar Shukla, Dr. H.S. Gour Vishwavidyalaya, Sagar, **India**	**Applications of Binary Petri nets and Binary Reachability Trees** Dr. Gajendra Pratap Singh, Jawaharlal Nehru University, New Delhi, **India**	**Stochastic Queues with Reverse Balking and Reverse Reneging** Bhupender Kumar Som, GNIOT Institute of Management Studies, Greater Noida, **India**
12:05-12:20	**Topological indices of zero-divisor graph of Zn** Pradeep Singh, Maharishi Markandeshwar (Deemed to be University), **India**	**The Determinants of Housing prices in Namibia** Elisia Dula, University of Namibia, **Namibia**	**Learners' Perceptions of the Challenges and Improvement Strategies in Distance and Online Undergraduate Mathematics Learning in Nigeria** Comfort Reju, University of Lagos, **Nigeria**, Loyiso Jita, University of Free State, **South Africa**	**Transient analysis of M/M/1/N queue with encouraged arrivals** Bhupender Kumar Som, GNIOT Institute of Management Studies, **India,** Sunny Seth and Himanshu Goel, Jagan Institute of Management Studies, **India**
12:20-12:35	**Variational Optimisation Method and Applications to Meteorological Modelling** Gabriel Mbokoma, Sunday A. Reju, Nnenesi A. Kgabi and Benson Obabueki, Namibia University of Science and Technology, **Namibia**	**A General Framework for Generating Three-component Heavy-tailed Distributions** Patrick Osatohanmwen, Pan-Atlantic University, **Nigeria**	**Grey wolf optimization and its improved version: Application for Reliability Optimization** Doorgeshwaree Devi Heeramun, Deepika Garg and Alina Banerjee, GD Goenka University, **India**	**Flexible group service, Bernoulli Feedback and Bernoulli Vacation** Ayyappan G and Kalaiarasi S, Puducherry Technological University, **India**

Time	Column 1	Column 2	Column 3	Column 4
12:35-12:50	**Digital technologies, Fourth Industrial Revolution and mathematics education nexus in emerging economies: A systematic analysis** Ruth Eegunjobi, Shihaleni Ndjaba and Rosalia Mwalundilange, IUM, **Namibia**	**An M/M/2 Queueing System with Differentiated Vacations Subject to Servers Breakdown** V Karthick and V Suvitha, SRM Institute of Science and Technology, **India**	**Optimal Policies for Replenishment, Pricing, Promotional efforts, and Preservation Investments for Deteriorating Items with Price- dependent Stochastic Demand** Mamta Keswani, Dr Harisingh Gaur Central University, **India**	**Numerical investigation on MAP/PH/1 Inventory Retrial Queueing System With Constant Retrial Rate, Single Vacation, Breakdown and Repair** G Ayyappan and S Meena, Puducherry Technological University, **India**
12:50-13:05	**Comparison of the WENO and RBF Methods for the Numerical Solution of the 2D Burgers Equation** S.N Neossi-Nguetchue, Namibia University of Science and Technology, **Namibia**	**M/M/c Heterogeneous Arrivals Queue with Two Kinds of Working Vacations and Impatient Customers.** Yohapriyadharsini R S and Suvitha V, SRM Institute of Science and Technology, **India**	**Pseudo Code and C++ Implementation of the Power Dominator Star Coloring Algorithms for Path and Cycles** S Mathangi and Sharmila Mary Arul, Saveetha School of Engineering, **India**	**M/M/1/N Queueing Model with Reverse Balking, Catastrophe and Restoration** Letta Nm Thomas, Rakesh Kumar, Adetayo Eegunjobi and David Iiyambo, Namibia University of Science and Technology, **Namibia**
13:05-13:20	**Magnetohydrodynamic Nanofluid Flow over Convectively Heated Plate on Radially Stretching Sheet Embedded on Porous Media** Kulow Alai, Kenyatta University Nairobi, **Kenya**, Maurine Wafula, United State International University (USIU), Nairobi, **Kenya** and Lawrence Njau, Department of Mathematics and Actuarial Science, Kenyatta University Nairobi, **Kenya**	**Algorithmic construction of Bayesian optimal block designs using the linear mixed effects model** Dibaba Bayisa Gemechu, Namibia University of Science and Technology, **Namibia**, Legesse Kassa Debusho, University of **South Africa, South Africa**, Linda M. Haines, University of Cape Town, **South Africa**	**Factors Influencing Adoption of UPI Payments by Indian Tourists: Extended UTAUT Model with Relative Advantage, Compatibility, Promotional Benefits, and Trust** Sweta Yadav and Gurjeet Kaur, University of Delhi, **India**	**M/M/1 queue with soft failures and N- Policy** Janani B, Rajalakshmi Institute of Technology, **India**
13:20-14:10	**LUNCH**			
14:10-14:50	Plenary Speaker: Professor Delfim FM Torres, Universite d' Aveiro, Portugal Topic – Mathematical Modeling of COVID-iuuhiicic19 and Optimal Control Industry Chair: Professor Samuel John (Namibia University of Science and Technology)			
14:50-15:30	Plenary Speaker: Professor Yuliya Gaidamaka, RUDN University, Russia Topic: Resource Loss Systems and Performance Analysis of Wireless Networks Chair: Professor Oluwatosin T. Mewomo (University of Kwazulu Natal, South Africa)			
15:30 -15: 50	**Tea Break**			
Parallel Session 2				
15:55-17:30	**2A: Applied Mathematics and Related Fields** Venue: HTTPS Plaza, NUST & Online Chairperson: Prof G C Rana (India) Co-Chairs: Prof A Singh Yadav (India) and Dr. Ram Singh (BGSBSU, India)	**2B: Applied Statistics** Venue: HTTPS Plaza, NUST & Online Chairperson: Prof SS Mishra (RMLAU Co- Chairs: Dr. UK Khedlekar (DHSGSU, India) and Dr. Blessings (IUM, Namibia)	**2C: Multidisciplinary Research** Venue: HTTPS Plaza, NUST & Online Chairperson: Prof Fungai Bhunu Shava (NUST, Namibia) Co-Chair: Prof Sandile Motsa (Eswatini)	**2D: Queuing Theory, and Related Fields** Venue: HTTPS Plaza, NUST & Online Chairperson: Prof G Ayyappan (PTUNIV, India) Co-Chairs: Dr. K Kumar (CUJ, India)
15:55-16:15	**A Generalization of Truncated S-Fractional Derivative and Applications to Fractional Differential Equations** Sushil Dhaneliya, ITM Goi Gwalior M.P., **India**, Dr. Manoj Sharma, RJIT BSF Tekanpur Gwalior (M.P.), **India**	**Application of Dummy Variable Regression Model in Business and Economics** Prof. Manoj Kumar Mishra, Salale University, **Ethiopia**	**Need of Cryptography: Introduction & Research Aspects** Dr Varun Shukla, PSIT, Kanpur, Uttar Pradesh, **India**	**Type I Heavy-Tailed Family of Generalized Burr III Distribution with Applications** Wilbert Nkomo, Broderick Olusegun Oluyede and Fastel Chipepa, Botswana International University of Sc and Technology, **Botswana**
16:15-16:30	**Penalised Portfolio Optimisation Models with Augmented Lagrangian** Kornelia David, Sunday A. Reju and S N. Neossi, Namibia University of Science and Technology, **Namibia**	**Dynamics of a virally infected phytoplankton and zooplankton system with delay,** Rakesh Kumar, Amanpreet Kaur, Shaheed bhagat Singh State University, Ferozepur, **India**, and Ajender Kumar Malik, UP Rajarshi Tandon Open University, **India**	**Deep learning classification algorithm for small laboratory animals' trajectories in Morris Water Maze** Patatchona Keyela, RUDN University, **Russia**, Oksana Streltsova, Tatevik Bezhanyan and Yuri Severyukhin, Joint Institute for Nuclear Research (MLIT JINR), **Russia**	**Transient Analysis of a Machine Repair Model with Hot Standbys and Retention of Reneged Machines** C K Anjali and Sreekanth Kolledath, Amrita School of Physical Sciences, **India**

16:30-16:45	**Upper bounds for the complex growth rates in the Darcy-Brinkman convection in a binary viscoelastic fluid saturated porous layer** Renu Bala, Madhu Aneja and Tania Bose, Chitkara University Institute of Engineering and Technology, **India**	**Stochastic Inventory Model for Imperfect production with FRW Scheme Under Uncertainties** Lalji Kumar, Harisingh Gour Cenral University Sagar, **India**	**The Digital Transformation of the Dairy Industry with Artificial Intelligence: A Systematic and Bibliometric Analysis** Mohit Malik, Vijay Kumar Gahlawat, National Institute of Food Technology Entrepreneurship and Management, **India**, Rahul Mor, University of Northampton, **United Kingdom**, Vijay Dahiyar, Maharaja Surajmal Institute, **India**	**Analysis of a Single Server Queueing Model with Working Vacation, Customer Impatience and Bernoulli Interruption** K.V Vijayashree and K. Ambika, Madras Institute of Technology, **India**
16:45-17:00	**Neural Networks Applications to Ecological Modelling** Nikodemus Amon, Sunday A. Reju and Benson Obabueki, Namibia University of Science and Technology, **Namibia**	**A comparison of the discrimination and calibration performance of the Logit-power and Pareto Families of Links in discrete survival models** Susan Maposa, Midlands State University, **Zimbabwe**, Alphonce Bere, Caston Sigauke, University of Venda, **South Africa**, and Charles Chimedza, Wits University, **South Africa**	**Optimal Analysis of a Sustainable Inventory Model for a Controllable Carbon Emission with Two Warehouse System and Hybrid Cash-Advance Payment** Ankur Saurav, Vijender Yadav and Chandra Shekhar, BITS PILANI, **India**	**Cost & Profit Analysis of Two- Dimensional state M/M/2 Queueing Model with Correlated Servers, Multiple Vacations, Balking and Catastrophes** Sharvan Kumar and Dr. Indra, Kurukshetra University, **India**
17:00-17:15	**Fractional Calculus Approach in RLC Circuit Using Miller and Ross Function** Kiran Sharma, Shri Venkateshwara University, **India**, Manoj Sharma, Rustamji Institute of Technology, **India**	**Artificial Intelligence Integrated Queuing Model for the Dairy Industry: A Conceptual Approach** Vijay Kumar Gahlawat, Mohit Malik, NIFTEM, **India**, Rahul Mor, University of Northampton, **United Kingdom,** Vijay Dahiy, Maharaja Surajmal Institute, **India**	**Impact of Mathematical Modelling for Control Strategies of Listeriosis Diseases in RTE Food** Kapil Toor and Kalyan Das, National Institute of Food Technology Entrepreneurship and Management, **India**	**Approximating Fixed Points of Nonexpansive Type Mappings via General Picard–Mann Algorithm** Rahul Shukla and Rekha Panicker, Walter Sisulu University, **South Africa**
17:15-17:30	**Dynamical analysis of a phytoplankton- zooplankton model with time delay** Dr. Rakesh Kumar, Shaheed Bhagat Singh State University, **India**, and Navneet Rana, Guru Nanak College, **India**	**Markov Chain Analysis for Rainfall Pattern Distribution : A Case Study** Ritu Gupta, Gurpreet Kaur, Amity University, **India**, Shashi Kant Mishra, Ministry of Earth Sciences, **India**	**Modelling of Flood Hazards in Zambezi Kwando Linyanti Basin, Namibia; a 1D Flood Hazard Model** Dianah Irenge, Sunday Reju, Namibia University of Science and Technology, **Namibia**, Nnenesi Kgabi, North West University, **South Africa**	**Genetic Algorithm for Redundant Multi- server Machine Repair System under Generalized Triadic Policy** Parmeet Kaur Chahal and Kamlesh Kumar, Central University of Jammu, **India**

Tuesday, 04 July 2023

07:30 - 09:00	Registration
09:00-09:40	Plenary Speaker: Professor Dr Andreas Meister, University of Kassel, Germany Topic – Unconditionally Positive and Conservative Time Integration Schemes Chair: Professor Vijay Kumar Sehgal (Bundelkhand University, India)
09:40-10:20	Plenary Speaker: Associate Professor (Dr) Manoj Sharma, Rustamji Institute of Technology (BSF), Tekanpur, India Topic – Fractional order Linear Kinetic Equation Chair: Professor Dharm Singh Jat (Namibia University of Science and Technology)
10:20-10:40	Tea Break

Parallel Session 3

	3A: Applied Mathematics and Related Fields	3B: Reliability Theory and its Applications	3C: Multidisciplinary Applications of Mathematics	3D: Mathematics and Related Fields (Group-2)
10:45-12:35	Venue: **HTTPS Plaza, NUST & Online** Chairperson: **Professor Sylvanus Onjefu (NUST)** Co -Chair: **Prof Mallikarjun Pillalamarry (NUST)**	Venue: **HTTPS Plaza, NUST & Online** Chairperson: **Dr D Iiyambo (NUST)** Co-Chair: **Prof Kamlesh Shukla (India)**	Venue: **HTTPS Plaza, NUST & Online** Chairperson: **Dr Shihaleni Ndjaba (IUM)** Co-Chair: **Dr Azeta Ambrose (NUST)**	Venue: **HTTPS Plaza, NUST & Online** Chairperson: **Professor Joshua Abolarinwa (NUST)** Co-Chair: **Prof Guy-Alain Lusilan Zodi (NUST)**
10:45-11:05	**Applications of Multi Criteria Decision Making Techniques for the Medical Diagnosis of Vector-Borne Diseases** Vijay Kumar, MRIIRS, **India**	Reliability Availability Maintainability analysis and optimization for Pharmaceutical Industries Deepika Garg, GD Goenka University, **India**	Electronic-Word-of-Mouth in Online Markets Anu Gupta Aggarwal, University of Delhi, **India**	Customer Discouragement in Unreliable Single Server Double Orbit Retrial Queue Khushbu Antala, Sudeep Singh Sanga, NIT-SURAT, **India**, and Khushbu Antala, SVNIT SURAT, **India**
11:05-11:20	**Intuitionistic Fuzzy k-Ideals of Intra Regular Gamma semirings** Tilak Sharma, HPU Regional Centre Dharamshala(HP), **India**, Rajesh Kumar, Government College Dharamshala(HP), **India**	Integrating Testing Coverage, Effort and Change Point in a Software Reliability Growth Model: A Comprehensive Analysis Sudeep Kumar, Amity University Uttar Pradesh, **India**, Anu G Aggarwal, University of Delhi, **India** and Ritu Gupta, Amity University Uttar Pradesh, **India**	Exploration of autonomous vehicles in smart city environment Shubham Prakash, Begishev Vyacheslav Olegovich and Shubham Prakash, Peoples' Friendship University of Russia (RUDN University), **Russia**	Single server bulk service priority queue with Differentiate Breakdown, Repair, Close down, Set up and Multiple vacation G Ayyappan and S Nithya, Puducherry Technological University, **India**
11:20-11:35	**Wavelet Application to Geomagnetic Monitoring and Modelling of Power Networks** Ilenikemanya Ndadi and Sunday A. Reju, Namibia University of Science and Technology, **Namibia**	Inventory Control System for Seasonal Products for Small Retailers Priyanka Arora, SRM Institute of Science and Technology, **India**	Markov Models for Dimensionning and Provisioning of Battery Energy Storage Systems (BESS) for Off-Grid Green Mobile Network Base Station Sites Godlove Suila Kuaban, Tadeusz Czachórski, Institute of Theoretical and Applied Informatics, **Poland**, and Piotr Czekalski, Silesian University of Technology, **Poland**	Service control for an M/M/1 queueing system with a single unreliable server Nidhi Nidhi, NIT SURAT, **India**
11:35-11:50	**Opposition-Based Learning and Biogeography Based Optimization: Application for Reliability Optimization** Nakul Vashishth, Doorgeshwaree Devi Heeramun and Deepika Garg, GD Goenka University, **India**	Cost-Benefit Analysis of a Three Non- Identical Unit Standby System with Weibull Failure and Repair Laws Laxmi Raghuvanshi, Rakesh Gupta and Pradeep Chaudhary, C.C.S. University Meerut, **India**	Mathematical Analysis of Foot and Mouth Disease with Optimal Control: A Case study of FMD in Namibia Palivamwe Merolly Ndeevelo, Adetayo Samuel Eegunjobi and Nega Chere, Namibia University of Science and Technology, **Namibia**	Holistic Approaches in Queueing Analysis: Incorporating a Multi-Feature Queue with Failover Server, Multiple Vacations, Timely Feedback, Flexible Offering, Disruptions, and Restoration Ayyappan G, Puducherry Technological University, **India**, Sankeetha S, Saradha Gangadharan College, **India**

Time				
11:50-12:05	**Optimizing Costs for the Multi-unit Machine Repair Problem with Primary and Secondary Repairer in the M/M/R+1 Configuration** Mahendra Devanda, Suman Kaswan and Chandra Shekhar, Birla Institute of Technology and Science, **India**	**A Byesian Study of a Two Non- Identical Unit Cold Standby System with Preparation for Repair and Corrrelated Failure and Repair Times** Vashali Saxena, Rakesh Gupta and Bhupendra Singh, C.C.S. University Meerut, **India**	**The Holiday Effect on Stock Return: an Empirical Evidence from the Tourism and Hospitality Industry of India** Gaurav Kumar, Prof. Bhartendu Singh and Jagadish Behera, Mizoram University, **India**	**V-modules, SSI-modules and Idempotent of hereditary pretorsion classes in σ[M]** Nega Chere, Namibia University of Science and Technology, **Namibia**
12:05-12:20	**Transient Solution of a Multi- Heterogeneous Servers' Queuing System with Impatience and Catastrophes** Sapana Sharma, Maharishi Markandeshwar Deemed to be University, **India,** Prof Rakesh Kumar, Namibia University of Science and Technology, **Namibia**	**Latent Growth Mixed Model Of The Progression Of Hiv Using Cd4 Counts: A Case Study Of Namibia** Samuel Ndungula And Victor Katoma, Namibia University of Science and Technology, **Namibia**	**Gesturing as a problem solving strategy in mathematics: The case of nonverbal reasoning** Beata Dongwi, St Paul's College, **Namibia**	**Gaussian and Weak Gaussian Gamma Semirings** Tilak Sharma, HPU Regional Centre Dharamshala (HP), **India**, Anuj Sharma, Government College Shillai, **India**
12:20-12:35	**Turning Nð–sets into Discrete Dynamical Systems** Alfred H Kamupingene, Triumphant College, Windhoek, Namibia Zechariah Mushaandja, Botswana International University of Science and Technology, Botswana	**A Partially Backlogged Two- Warehouse Inventory Model for Deteriorating Items With Selling Price and Time Sensitive Demand and Carbon Emission Under Green Technology Investment** Krishan Kumar Yadav, Ajay Singh Yadav and Shikha Bansal, SRM Institute of Science and Technology, **India**		**Dominator Sum Coloring Algorithm for Linear Graphs: Pseudo Code and C++ Implementation** V Indhumathi and Sharmila Mary Arul, Saveetha School of Engineering, **India**
12::35-14:00	**LUNCH**			
	Parallel Session 4			
14:00-15:35	**4A: Queueing Theory & Related Fields** Venue: HTTPS Plaza, NUST & Online Chairperson: **Prof Dmitry Kozyrev (Russia)** Co-Chair: **Dr Dibaba Gemechu (NUST)**	**4B: Inventory Management and Applications** Venue: **HTTPS Plaza, NUST & Online** Chairperson: **Prof C K Jaggi (India)** Co-Chair: **Prof Michael Mutingi (NUST)**	**4C: Multidisciplinary applications of Mathematics** Venue: HTTPS Plaza, NUST & Online Chairperson: **Prof Justice Emuoyibofarhe (Nigeria)** Co-Chair: **Dr Joseph Akande (NUST)**	**4D: Mathematics and Related Fields (Group-2)** Venue: HTTPS Plaza, NUST & Online Chairperson: **Professor Dipti Ranjan Sahu (NUST)** Co-Chair: **Prof David Uchezuba (NUST)**
14:00-14:20	**Sustainable EOQ Model for Weibull Deteriorating Items with Back-Ordering and Constant Demand** Chandra Shekhar, BITS Pilani, **India**	**Inventory Model with Non- instantaneous Deteriorating Items** A. K. Malik, UP Rajarshi Tandon Open University, Prayagraj (UP), **India**	**Profiling jobseekers in Senegal** Jean Pierre Adiouma Ndiaye, National Agency of Statistics, **Senegal**	**Analysis of phase type queueing system with startup times and single vacation** Ayyappan Govindan, Puducherry Technological University, **India**, Thilagavathy Karthikeyan, Hindustan Institute of Technology and Science (Deemed to be University), **India**
14:20-14:35	**Stochastic Modelling of a Multi-Layer HAP- LEO System for Energy Saving and Energy Harvesting through Semi-Markov Process** Raina Raj, Indian Institute of Technology Delhi, **India**	**Model of Partial Backlog Inventory for Deteriorating Goods in Two Warehouses with Quadratic Demand Under Inflationary Conditions** Krishan Pal, Ajay Singh Yadav and Seema Agarwal, SRMIST NCR Campus Modinagar Ghaziabad, **India**	**Bridging the Gap: Mathematical Modelling and Climate Change in Marine Ecosystems - A Systematic Examination** Ashish Mor and Kalyan Das, NIFTEM, **India**	**Analysis of MAP1, MAP2/P H1, P H2/2 with Working vacation, Re-service, Interrupted closedown, Unreliable server, Feedback and Impatient customers** Ayyappan Govindan, Puducherry Technological University, **India,** G. Archana Alias Gurulakshmi, Puducherry Technological University, **India**

14:35-14:50	**Steady-State Analysis of an M/M/1 Queue with Differentiated Vacations, Reverse Balking and Retention of Renege Customers** Miyanawathura Ihala Gamage Suranga Sampath, Wayamba University of Sri Lanka, **Sri Lanka**	**Stock Chain Management for Inventory Models** Deep Kamal Sharma and Om Pal Singh, SRMIST Delhi NCR Campus, **India**	**Small area estimation of consumption expenditure in Khomas region, Namibia using the Fay-Herriot EBLUP estimator** Selma Shifotoka, Dibaba Gemechu, Dismas Ntirampeba and Rakesh Kumar, Namibia University of Science and Technology, **Namibia**	**An investigation on M/PH/1 queueing model with single working vacation, breakdown, repair and standby Server** K Baby Saroja and V Suvitha, SRM Institute of Science and Technology, **India**
14:50-15:05	**Maximum Likelihood and Bayesian Estimation on M/M/1 Queueing Model with Balking** Himanshi Sharma and Gulab Singh Bura, Banasthali Vidyapith, **India**	**Two-Warehouse Inventory Models for Decaying Items with Inflation and Partial Backlogging** Vishakha Chaudhary, SRM Institute of Science and Technology, **India**	**Spares Parts Optimization of a Phased Mission Systems** Preeti Wanti Srivastava and Satya Rani, University of Delhi, **India**	**Optimizing inventory in business environments: Combining matrix analytical techniques with a cancellation policy, working vacation and working breakdown** G Ayyappan and N Arulmozhi, Puducherry Technological University, **India**
15:05-15:20	**Analysis of M[X1], M[X2]/G1, G2/1 Retrial Queueing System with Priority Services, Breakdown Delayed Repair and Bernoulli Vacation** Dr.G Ayyappan and Thamizhselvi P, **India**	**Economic Analysis of a Retrial Queueing System with Balking, Orbit Search, Multiple Vacation, and Unreliable Server** Suman Kaswan, Mahendra Devanda and Chandra Shekhar, Birla Institute of Technology and Science Pilani, **India**	**The correlation between depression and attitudes towards suicide amongst students of the University of Namibia Main Campus Windhoek** Hilma Dhiginina Vulikeni Kasheeta and Poonam Dhaka, University of Namibia, **Namibia**	**Incorporating Dynamic Market Potential in Product Diffusion Model under Uncertain Marketing Environment** Shiva, Neetu Gupta, J. C. Bose University of Science and Technology, **India**, Anu G. Aggarwal, University of Delhi, **India**
15:20-15:35	**Economical Order Inventory Policies for Perishable Items with Permissible Delay in Payment under Credit Policy and Effect of Advertisement, Time, and Price-Discount** Vijender Yadav, Ankur Saurav and Chandra Shekhar, Birla Institute of Technology and Science Pilani, **India**		**Understanding the impact of review and reviewer characteristics on reviewer popularity** Sanchita Aggarwal and Abhishek Tandon, University of Delhi , **India**	**On the Power Dominator Equitable Coloring of Wheel Graphs** Sharmila Mary Arul, Saveetha School of Engineering, **India**
15:40-16:10	**CLOSING SESSION**			