

**National Conference on Advances in Applied Mathematics and Statistics
(NCAAMS 2017)
CONFERENCE REPORT**

The “National Conference on Advances in Applied Mathematics and Statistics” (NCAAMS-2017) was organized by the Department of Mathematics, Mata Sundri College For Women (University of Delhi) on 7-8 September, 2017. The conference was sponsored by Department of Science and Technology(DST-SERB) and Defence Research and Development Organization (DRDO), The inauguration ceremony was held on 7th September at Mata Sahib Kaur Auditorium in the college premises. The principal Dr. Kawarjit Kaur welcomed the chief guest and other distinguished guests. The chief guest Dr.(Mrs) Pankaj Mittal, Additional Secretary-I, University Grants Commission appreciated the efforts and talked about the significance of team work for the success of every event. Dr. Preeti Ahuja and S.Prithipal Singh Sawhney, honorable Members, Governing Body and the guests of honour Prof. Sudhir R. Ghorpade, IIT, Mumbai and Prof. B.K. Dass, University of Delhi graced the function with their presence. The objective of organizing the conference was to enhance the knowledge of every participant while providing a vibrant and dynamic platform to renowned researchers and academicians to present research papers followed by discussions to enable dissemination of recent advances in various fields of mathematics. The conference addressed prevalent key questions on the subject of applied mathematics and statistics and attempted to bridge the gap between academia and industry. The two day event was attended by over 125 research scholars and delegates from renowned institutions of India including Central/ State universities such as University of Delhi, Jamia Millia Islamia University, South Asian University, Amity University (Noida), University of Allahabad, IIT’s, NIT’s and several others. There was international participation as well with two speakers from Italy and one from U.A.E. The keynote address was delivered by Prof. Ayman Badawi, American University of Sharjah, U.A.E and the plenary talk by Prof. Stefano Innamorati, University of L’Aquila, Italy. Prof. Madhu Raka, Punjab University, Prof. C.S.Lalitha, University of Delhi, Dr. Indivar Gupta, DRDO, Prof. Fulvio Zuanni, University of L’Aquila, Italy and many other speakers discussed many facets of applied mathematics and statistics with emphasis on both theory and applications to the real world problems. Session wise details are provided below.

Programme

Day 1: September 7, 2017

9.00 am	Registration
10.00-11.00 am	Inauguration Venue: Mata Sahib Kaur Auditorium
11.00-11.30 am	High Tea
	Session I Venue: Mata Sahib Kaur Auditorium
11.30 am -1:00 pm	Keynote Address Chair: Prof. Sudhir Ghorpade <i>Graphs associated to commutative rings</i> Ayman Badawi, American University of Sharjah, UAE
	Plenary Talk Chair: Prof. Ayman Badawi <i>On two-intersection sets in the three dimensional projective space on a finite field of order q</i> Stefano Innamorati, University of L’Aquila, Italy
1.00-2.00 pm	Lunch
	Session II: Invited Talks Venue: Mata Gujri Hall Chair: Prof. Stefano Innamorati
2.00-3.30 pm	<i>Some nonlinear time-series models and their applications</i> Prajneshu, IASRI, Delhi
	<i>Inversion Techniques in Solving Industrial Problems</i> S.S. Raghuvanshi, AMD Hyderabad
	<i>Many facets of affine Grassmann codes</i> Sudhir R. Ghorpade, IIT, Mumbai
3.30-3.45 pm	Tea Break
	Session III: Paper Presentations
3.45-4.45 pm	Parallel Sessions

Day 2: September 8, 2017

	Session I: Invited talks Venue: Mata Gujri Hall Chair: Prof. Ayman Badawi
	<i>Convergence of Solution Sets in Vector Optimization</i> C.S. Lalitha, University of Delhi (South Campus)

10.00-11.30 am	<i>On sets of type $(m, m + q)_2$ in $PG(3, q)$</i> Fulvio Zuanni, University of L'Aquila, Aquila, Italy
	<i>Computational Hard Problems and their Application in Cryptography</i> Indivar Gupta, DRDO, Delhi
11.30-11.45 am	Tea
	Session II: Invited Talks Venue: Mata Gujri Hall Chair: Prof. Sudhir Ghorpade
11.45 am-1.15 pm	<i>Polynomial Matrices over Finite Fields with given Invariant Factor</i> Samrith Ram, IIT Delhi
	<i>Some sum form of functional equations related to entropies</i> Dhiraj Kumar Singh, Zakir Husain Delhi College, DU
	<i>Some special cyclic codes over a finite non-chain ring and their Gray images</i> Madhu Raka, Panjab University
1.15-2.00 pm	Lunch
	Session III: Paper Presentations
2.00-3.00 pm	Parallel Sessions
3.00 pm - 4.00 pm	Valedictory Function Venue: Mata Gujri Hall
4.00 pm	High Tea

Paper Presentations

Day 1: September 7, 2017- Timing: 3.45-4.45 pm

Parallel Session I: Applied Mathematics **Venue: Room No. 326** **Chair: Dr. S. S. Raghuvanshi, AMD Hyderabad**

- Applications to Robe's Problem*
Dr. Bhavneet Kaur
Assistant Professor, Lady Shri Ram College for Women (University of Delhi)
- Numerical Solution of Boundary Layer Problems*
Dr. Manoj Kumar
Associate Professor, Motilal Nehru National Institute of Technology, Allahabad
- Non-collinear libration points in CR3BP when less massive primary is an heteroge-neous oblate body with N-layers*
Dr. Kumari Shalini
Assistant Professor, Zakir Hussain Delhi College (University of Delhi)
- A New High Accuracy Numerical Method Based on Polynomial Cubic Spline Approx-imations for the System of 1D Quasi-Linear Hyperbolic Equations*
Gunjan Khurana
Research Scholar, Department of Applied Mathematics, South Asian University
- Compact Finite Difference Discretization with High Accuracy for the Solution of Fourth Order Parabolic Partial Differential Equation*
Deepti Kaur
Research Scholar, Department of Mathematics, University of Delhi
- Aitken Type Methods with High Efficiency*
Kriti Sethi
Research Scholar, South Asian University, Delhi

Parallel Session II: Statistics I **Venue: Room No. 211** **Chair: Dr. Mridula Budhraj, Shivaji College**

- Role of Guarantee Period in Randomly Censored Data*
Prof. Hare Krishna
Head, Department of Statistics, Ch. Charan Singh University, Meerut
- On Estimation of Inverse Rayleigh Progressive Type II Censored data with Binomial Removals*
Dr. Dharmendra Kumar
Assistant Professor, P.G.D.A.V. College (University of Delhi)
- Three-level Second-Order Designs Under Split-Plot Structure*
Dr. Archana Verma
Assistant Professor, Mata Sundri College for Women (University of Delhi)
- Increasing Dropout Rate in Randomly Censored Clinical Trials*
Neha Goel
Research Scholar, Department of Statistics, Ch. Charan Singh University, Meerut
- Discrete Perks Distribution and its Application*
Abhishek Tyagi
Research Scholar, Department of Statistics, Ch. Charan Singh University, Meerut

Parallel Session III: Statistics II **Venue: Room No. 311** **Chair: Dr. Poonam Garg, DDU**

- Bayesian Estimation of k-component Dynamic System Model with its Application*

Reetu Goel

Research Scholar, Department of Statistics, Ch. Charan Singh University, Meerut

2. *The Exponentiated Perks Distribution And its Application*

Neha Choudhary

Research Scholar, Department of Statistics, Ch. Charan Singh University, Meerut

3. *Cost-Benefit Analysis of a Three Unit Complex System with Load Sharing Units Working in Parallel*

Arti Tyagi

Research Scholar, Department of Statistics, Ch. Charan Singh University, Meerut

4. *A Two Non-Identical Unit Parallel System with Correlated Failure and Repair Times of Repair-Machine*

Vaishali

Research Scholar, Department of Statistics, Ch. Charan Singh University, Meerut

5. *A Discrete Parametric Markov-Chain Model of a Two Warm Standby System with Rest-Period of Repairman*

Parul Bhardwaj

Research Scholar, Department of Statistics, C.C.S. University Campus, Meerut

Parallel Session IV: Applied Algebra **Venue: Mata Gujri Hall** **Chair: Prof. Ruch Das, Dept. of Mathematics, DU**

1. *Perfect Codes in Poset Spaces and Poset Block Spaces*

Namita

Research Scholar, Department of Mathematics, University of Delhi

2. *Predicting Attacker behavior in Cyber Physical System (CPS) based on Stochastic Game*

K.C. Lalropuia

Research Scholar, University of Delhi

3. *Betti Numbers of Some Stanley-Reisner Rings Associated to Linear Codes*

Prasant Singh

Research Scholar, Department of Mathematics, IIT Bombay

4. *Restricted three-body problem when one of the primaries is an Ellipsoid*

Dr. Mohd. Javed Idrisi

Assistant Professor, Al-Falah University, Faridabad (Haryana)

Parallel Session V: Optimization/Analysis **Venue: Room No. 327** **Chair: Dr. Rama Verma, DU**

1. *An optimal rejuvenation scheme for maximizing reliability of wireless sensor networks*

Dr. Vandana Gupta

Assistant Professor, Department of Operational Research, University of Delhi

2. *Potfolio Optimization with Option: A Case Study*

Meena Baweja

Assistant Professor, Mata Sundri College for Women (University of Delhi)

3. *Economic Production Policy for an Inventory System under Reverse logistics and Inflation*

Dr. Himani Dem

Assistant Professor, SRM University Delhi NCR Campus, Modinagar

4. *Reliability study of LTE-Vehicular technology (LTE-V)*

Shivani Gupta

Research Scholar, University of Delhi

5. *Qualitative Uncertainty Principle for Gabor Transform on Certain Locally Compact Groups*

Jyoti Sharma

Research Scholar, Department of Mathematics, University of Delhi

Day 2: September 8, 2017- Timing: 2.00-3.00 pm

Parallel Session I: Applied Mathematics **Venue: Room No. 326** **Chair: Dr. Dhiraj Kumar Singh, DU**

1. *A Fuzzy Decision Making Method with Information Measures*

Dr. Anjali Munde

Assistant Professor, Amity University, Noida

2. *Elastodynamic Interactions of Laser Pulse in Microstretch Thermoelastic Mass Diffusion Medium with Dual Phase Lag Model*

Arvind Kumar

Research Scholar, Punjab Technical University, Jalandhar

3. *Wavelet Analysis for Ground Level Ozone*

Dimple Pruthi

Research Scholar, Guru Gobind Singh Indraprastha University, Delhi

4. *Time Series Analysis of HIV*

Aashima Bangia

Research Scholar, Guru Gobind Singh Indraprastha University, Delhi

5. *Neural Networks Implementations for Classification and Prediction*

Ishmita Loona

Indira Gandhi Delhi Technical University, Delhi

Parallel Session II: Applied Mathematics **Venue: Room No. 327** **Chair: Prof. Indivar Gupta, SAG ,DRDO**

1. *Investigation of Complexity and Chaos in Kraut Model*

Dr. Til Prasad Sarma

Associate Professor, Department of Education in Science and Mathematics N C E R T, Delhi

2. *Computational Thinking: An Algorithmic Approach to Solving Problems and Designing Systems*

Sangeeta Pathak

Vocational Center, Mata Sundri College for Women (University of Delhi)

3. *Mathematical Analysis of SH-type Waves in a Parabolic Heterogeneous Structure of Orthotropic and Isotropic Media*

Parvez Alam

Research Scholar, IIT (Indian School of Mines), Dhanbad

4. *Combination-Combination projective synchronization of chaotic dynamical systems*

Aysha Ibraheem

Research Scholar, Department of Mathematics, University of Delhi

Parallel Session III: Statistics I

Venue: Room No. 211

Chair: Dr. Manish Kant Dubey, SAG, DRDO

1. *Ratio Estimation of the Mean under RRT Models*

Dr. Geeta Kalucha

Sr. Asst. Professor, P.G.D.A.V. College (University of Delhi)

2. *A Two Non- Identical Unit Standby System with Waiting Time Distribution of Re-pairman and FCFS Repair Discipline*

Dr. Pradeep Chaudhary

Assistant Professor, Ch. Charan Singh University, Meerut

3. *A Two Non- Identical Unit Standby System with Preventive Maintenance and Two Phase Repair by Two Repairmen*

Anika Sharma

Research Scholar, Department of Statistics, Ch. Charan Singh University, Meerut

4. *A two identical unit cold standby system with fault detection under repair*

Shivali Sharma

Research Scholar, Department of Statistics, Ch. Charan Singh University, Meerut

5. *Reliability Estimation in Load-Sharing System Model with Applications to Real Data*

Puneet Kumar Gupta

Research Scholar, Department of Statistics, University of Allahabad

Parallel Session IV: Statistics II/Analysis

Venue: Room No. 311

Chair: Prof. Fulvio Zuanni, University of L'Aquila

1. *Bayes Prediction of Poisson Regression Superpopulation Mean with a Non-Gamma Prio*

Dr. Priyanka Aggrawal

Assistant Professor, Hindu College (University of Delhi)

2. *Multi-stage optional unrelated question RRT Model*

Dr. Samridhi Mehta

Assistant Professor, Hindu College (University of Delhi)

3. *Stochastic Outlook of Two Non-Identical Unit Parallel System With Priority in Repair*

Rohit Patawa

Research Scholar, Department of Statistics, University of Allahabad, Allahabad

4. *Fixed Point Theorems for Compatible Mappings of Type (A) in Metric Spaces*

Monika

Research Scholar, Baba Mastnath University, Rohtak (Haryana)

5. *Fixed Points For Compatible Maps, Weakly Compatible Maps, (E.A) Property and CLRg Property*

Indu Bala

Research Scholar, Baba Mastnath University, Rohtak (Haryana)

Parallel Session V: Applied Mathematics **Venue: Mata Gujri Hall** **Chair: Dr Prof. Madhu Raka, Panjab University**

1. *Hankel Transform – An Interpretation tool in Earth Science*

Dr. Sunil K Garg

Senior Scientist, Madhya Pradesh Science and Technology

2. *Resonance in a Geo-centric Satellite due to Earth's Equatorial Ellipticity*

Dr. Sushil Yadav

Assistant Professor, Maharaja Agrasen College (University of Delhi)

3. *Existence of Periodic Orbits of the First Kind in the Restricted Problem of Three Bodies when the Smaller Primary Is Triaxial Rigid Body And The Bigger Primary An Oblate Spheroid*

Dr. Awadesh Kumar Podhar

Assistant Professor, Maharaja Agrasen College (University of Delhi)

4. *Restricted Three Body Problem with Stokes Drag Effect when one of the Primary is a Finite Straight Segment*

Satyendra Kumar Satya

Research Scholar, Vinoba Bhave University, Hazaribagh

The conference concluded with the valedictory function held on 8th September where the speakers and the participants shared their personal experiences over the past two days. The participants found the discussions illuminating and interesting interaction took place throughout the session. This was followed by distribution of participation certificates and the vote of thanks. It was an enriching experience for all the participants who were motivated for research in various disciplines of mathematical sciences.