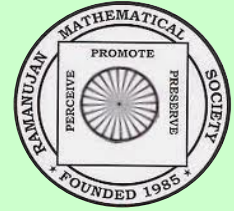# Ramanujan Mathematical Society
35th Annual Conference
December 28-30, 2020
Organized by

Department of Mathematics
Central University of Rajasthan, Kishangarh, Ajmer-305817

Second Announcement

The Ramanujan Mathematical Society (RMS), founded in 1985, has the main purpose of promoting Mathematics at all levels. From the year of inception, the Society has received immense support from mathematics fraternity both in India and abroad. Through its five publications: Journal of the RMS, Lecture Notes Series, Collected Works Series, Little Mathematical Treasures, and the Newsletter, the Society has been carrying out its unstinted efforts in the spread of Mathematics.

The 35th Annual Conference of the Ramanujan Mathematical Society will be organized as virtual/Online presentations due to COVID-19 pandemic. The conference aims to provide a platform to the experts in Mathematical Sciences, participating from diverse fields to interact with researchers from their own fields and from other disciplines to strengthen their participatory network nationally and internationally. The conference is intended for three days (December 28-30, 2020) with Plenary Lectures, Invited talks, and Paper Presentations by young researchers in all areas of Pure and Applied Mathematics. In addition, the following pre-conference symposia will be organized on December 27, 2020.

- Algebra
  (Convener: Dinesh Khurana, PU, Chandigarh)
- Functional Analysis
  (Convener: Kunal Krishna Mukherjee, IIT Madras)
- Fluid Dynamics and PDE
  (Convener: P. M. Patil, Karnatak University, Dharwad)
- Mathematical and Computational Biology
  (Convener: Sitabhra Sinha, IMSc Chennai)

- Complex Analysis
  (Convener: S. K. Sahoo, IIT Indore)
- Optimization
  (Convener: Joydeep Dutta, IIT Kanpur)
- Discrete Mathematics
  (Convener: Venkatesh Raman, IMSc Chennai)
- Special Functions and Number Theory
  (Convener: Sanoli Gun, IMSc Chennai)

Speakers:

Plenary Speakers:
- Satya Deo, HRI Allahabad
- K. Sandeep, TIFR-CAM Bangalore
- Kaushal Verma, IISc Bangalore

Invited Speakers:
- Abhijit Banerjee, University of Kalyani
- Krishnendu Gongopadhyay, IISER Mohali
- Riddhi Shah, JNU Delhi
- Ajay K. Sharma, CUJ Jammu
- Sanyasiraju VSS Yedida, IIT Madras

Symposia Speakers:
- Arvind Ayyer, IISc Bangalore
- R. Balasubramanian, IMSc, Chennai
- G.P. Balakumar, IIT Palakkad
- Punita Batra, HRI Allahabad
- S. N Bora, IIT Guwahati

- Sourav Chakraborty, ISI Kolkata
- Sushil Gorai, IISER Kolkata
- David Kalaj, University of Montenegro, Montenegro
- Ram Murthy, Queen's University, Canada
- Kumar Murty, University of Toronto, Canada
- Ken Ono, University of Virginia, USA
- R. Parimala, Emory University, USA
- P. M. Patil, Karnatak University, Dharwad
- Dipendra Prasad, IIT, Bombay
- Jaikumar Radhakrishnan, TIFR Bombay
- Saket Saurabh, IMSc, Chennai
- Indranath Sengupta, IIT Gandhinagar
- Pooja Singla, IIT Kanpur
- R. Sivaguru, TIFR-CAM Bangalore
- T. Sugawa, Tohoku University, Japan
- Maneesh Thakur, ISI Bangalore
- G. D. Veerappa Gowda, TIFR-CAM Bangalore

For registration and more details, kindly visit: 35rms2020.com

Registration Fee: There is no registration fee for participation. The registration fee for paper presentation is Rs. 500/- and for the participants who need certificate is Rs. 250/-.

Important dates:
- Last date for registration: December 20, 2020
- Last date for abstract submission: December 15, 2020.

Address for Communication:

    Prof. Jugal K. Prajapat (Convener)   **Dr. Vipul Kakkar (Ogranizing Secretary)**

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Ramanujan Mathematical Society
35th Annual Conference December 28-30, 2020

Organized by
Department of Mathematics
Central University of Rajasthan, Kishangarh, Ajmer- 305817

Conference Report
By
Academic Secretary
K. S. Charak

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The 35th Annual Conference hosted by Department of Mathematics, Central University of Rajasthan in online mode due to prevailing COVID-19 situation. This time there were 304 registered participants and from 96 to 269 participants participated by joining the online lectures at different timings. There were 82 research papers for presentation at the conference by young researchers. The detailed day to day report of the conference is as follows:

DAY-1: December 27, 2020

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Pre-Conference Symposiums

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1. **Discrete Mathematics (Convener: Venkatesh Raman, IMSc Chennai)**
    (30 registered participants)

S. No.	Name of Speaker	Title of talk	Time
1	Jaikumar Radhakrishnan TIFR Mumbai	Ruzsa-Szemredi graphs and multiparty communication complexity	10:30 am
2	Saket Saurabh IMSc Chennai	Two Families theorem in Graph Theory and Combinatorics	11:30 am
3	Arvind Ayyer IISc Bengaluru	Toppleable permutations, excedances and acyclic orientations	2:00 pm
4	Sourav Chakraborty ISI Kolkata	Degree vs Sparsity of flat polynomials that approximate Boolean functions	3:00 pm

2. Mathematical and Computational Biology (Convener: Sitabhra Sinha, IMSc Chennai)

(18 registered participants)

S. No.	Name of Speaker	Title of talk	India Time
1	Shakti N Menon IMSc Chennai	A unified mechanism for spatiotemporal patterns in somitogenesis	11:00 am-12:00 noon
2	Malay Benerjee IIT Kanpur	Challenges in Mathematical Modelling of the Pandemic	12:00 noon-1:00 pm
3	Anand Pathak IMSc Chennai	Uncovering functional correlates of structural organization in brain networks at multiple scales: From the worm to the human	3:30-4:30 pm
4	Zbigniew N Struzik Univ. of Tokyo, Japan	E/I	4:30-5:30 pm

3. Functional Analysis (Convener: Kunal Krishna Mukherjee, IIT Madras)

(51 registered participants)

S. No.	Name of Speaker	Title of talk	Time
1	Keshab Chandra Bakshi CMI	An analogue of Hall's Marriage Theorem for subfactors	10:30-11:30 am
2	Prahlad Vaidyanathan IISER Bhopal	Rokhlin Dimension and Equivariant bundles	11:30 am -12:30 pm
3	Panchugopal Bikram NISER	Neveu decomposition and non-commutative Ergodic type Theorem	2:00-3:00 pm
4	Ved Prakash Gupta JNU	Ideals and Lie ideals of certain tensor products of normed algebras	3:00-4:00 pm
5	Kunal Krishna Mukherjee, IITM	Ob bounded coordinates in GNS spaces	4:00-5:00 pm

4. Algebra (Convener: Dinesh Khurana, PU, Chandigarh)

(42 registered participants)

S. No.	Name of Speaker (Chair)	Title of talk	Time
1	Indranath Sengupta IIT Gandhinagar *(Chair: Chanchal Kumar, IISER Mohali)*	Some problems in Combinatorial Commutative Algebra	11:30-12:30 pm
2	Punita Batra HRI Allahabad *(Chair: Sudhir Ghorpade, IIT Bombay)*	Integrable representations of loop toroidal Lie algebras	10:00-11:00 am
3	Pooja Singla IIT Kanpur *(Chair: Amit Kulshrestha, IISER Mohali)*	Projective representations of discrete Heisenberg groups	2:30-3:30 pm
4	Maneesh Thakur ISI, Bangalore *(Chair: Kapil Paranjape, IISER Mohali)*	The group of rational points of simple algebraic groups	4:00-5:00 pm

5. Complex Analysis (Convener: S. K. Sahoo, IIT Indore) (59 registered participants)

S. No.	Name of Speaker	Title of talk	Time
1	G.P. Balakumar IIT Palakkad	Remarks on the higher dimensional Suita conjecture	17:20-18:00
2	Sushil Gorai IISER Kolkata	Polynomial approximation and analytic disks	11:20-12:00
3	R. Sivaguru TIFR Bangalore	Removable CR Singularities	12:10-12:50
4	Toshiyuki Sugawa, Tohoku University, Japan	Conformally invariant metrics on Riemann surfaces and their applications	10:30-11:10 (+ 3.5hrs, Japan time 14:00)
5	David Kalaj Univ. of Montenegro, Podgorica	Minimizers and Kellogg's theorem	16:30-17:10 (- 4.5 hrs, Podgorica time 12:00)

6. Special Functions and Number Theory (Convener: Sanoli Gun, IMSc Chennai)
(59 registered participants)

S. No.	Name of Speaker	Title of talk	India Time
1	Kumar Murty Fields Institute and Univ. of Toronto, Canada	Mumford-Tate groups of mixed motives	9:00-9:50 am
2	Ananth Sankar Univ. of Wisconsin-Madison, USA	Finiteness results for reductions of Hecke orbits	10:00-10:50 am
3	R. Balasubramanian IMSc, Chennai	Sumfree sets in groups of prime order	15:30-16:20 pm
4	Dipendra Prasad IIT Mumbai	Relations between cusp forms sharing Hecke eigenvalues	16:30-17:20 pm
5	Ken Ono Univ. of Virginia, USA	Variations of Lehmer's Conjecture	19:30-20:20 pm
6	Ram Murty Queen's University, Canada	An all-purpose Erdos-Kac Theorem	20:30-21:20 pm
7	R. Parimala Emory University, USA	Simply connected groups and Hasse Principle	21:30-22:20 pm

7. Fluid Dynamics and PDE's (Convener: P. M. Patil, KU, Dharwad)

(23 registered participants)

S. No.	Name of Speaker	Title of talk	India Time
1	P. M. Patil KU, Dharwad	Triple Diffusive Mixed Convection Flows	10.00 - 10. 40 am
2	G. D. Veerappa Gowda TIFR-CAM Bangalore	First Order Partial Differential Equations with Discontinuous Coefficients	10.45 - 11.25 am
3	S. N Bora IIT Guwahati	Scattering of Ocean Waves by Porous Structures	12.00- 12.40 pm

DAY-2: December 28, 2020

Chair: S. Ponnusamy

1. Inaugural of the conference by Hon'ble Vice Chancellor of CU Rajasthan
Prof. Neeraj Gupta: 10:00 – 11:00 am
2. Plenary Talk: 11:10am – 12'O Noon
Prof. Satya Deo, HRI Prayagraj (Allahabad)
Title of the talk: Vital Steps in Topological Tverberg Theorem
3. Invited Talk: 12:10 -12:40 pm
Dr. Krishnendu Gangopadhyay, IISER Mohali
Title of the talk: Real Unipotent Elements in Simple Lie Groups
4. Paper Presentations: 2:00 – 4:30 pm
There were four parallel sessions for paper presentation in Algebra (Chair: Vipul Kakar),
Complex Analysis (Chair: K. S. Charak), Dynamical Systems (Chair: Jitinder Kumar),
and
Functional Analysis (Chair: Swadesh Sahoo),
Each session having10 to 12 presentations.
5. GBM: 5:30pm

DAY-3: December 29, 2020

Chair: C. S. Arvinda

1. Plenary Talk: 10:00 – 10:50am
Prof. Kaushal Verma, IISc. Bangalore.
Title of the talk: The Capacity Metric and Suita's Conjecture
2. (i) Invited Talk: 11:00 -11:40 am
Prof. Riddhi Shah, JNU, Delhi
Title of the talk: The Structure of Cartan Subgroups in Lie Groups
(ii) Invited Talk: 11:50 am -12:30 pm
Prof. Abhijit Banerjee, University of Kalyani
Title of the talk: A survey on meromorphic function and its derivative or linear
differential polynomial sharing two values or a two elements set
3. Paper Presentations: 2:00 – 4:30 pm
There were four parallel sessions for paper presentation in
Fuzzy and Optimization (Chair: Vjay Yadav), Fluid Dynamics and PDE(Chair: Ram
Kishor), Discrete Mathematics and Number Theory (Chair:: Rakesh Kumar Parmar), and
Functional Analysis (Chair: C. Durairajan),
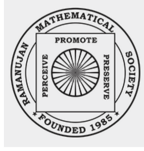Each session having 8 to 13 presentations.

DAY-4: December 30, 2020

Chair: C. Durairajan

1. Plenary Talk: 10:00 – 10:50am
   Prof. K Sandeep, TIFR-CAM, Bangalore.
   Title of the talk: Best Constants and Extremals and Related Problems
2. (i) Invited Talk: 11:00 -11:40 am
   Dr. Ajay Kumar, Central University of Jammu
   Title of the talk: On Component Structures of Spaces of Composition Operators
   (ii) Invited Talk: 11:50 am -12:30 pm
   Prof. Yedida VSS Sanyasiraju, IIT Madras
   Title of the talk: Shape Parameter Optimization of the RBF Functions for solving the PDE
3. Valedictory: 12:30 – 1:30 pm at 1:30 pm the President of RMS Prof. S. Ponnusamy declared the conference closed

Submitted to Secretary RMS for record.

Date: December 30, 2020.

CERTIFICATE OF APPRECIATION

Ramanujan Mathematical Society (RMS) appreciates the Department of Mathematics of Central University of Rajasthan and Professor Jugal K. Prajapat (Local Convener) and his team for organizing meticulously and successfully the 35th Annual Conference of RMS in online mode from December 28 to December 30, 2020 with Pre-conference Symposia on December 27, 2020, thereby supporting the cause of the Society.

December, 31, 2020   Academic Secretary, RMS

(Prof. K. S. Charak)