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, Karnataka University, Dharwad)
- Mathematical and Computational Biology
  (Convener: Satabha 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
- Dipendra Prasad, IIT, Bombay
- 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, Karnataka University, Dharwad
- Dipendra Prasad, IIT, Bombay
- Sushil Gorai, IISER Kolkata
- Francis Su, Harvey Mudd College, USA

**Invited Speakers:**
- Abhijit Banerjee, University of Kalyani
- Krishnendu Gongopadhyay, IISER Mohali
- Riddhi Shah, JNU Delhi
- Ajay K. Sharma, CUJ Jammu
- R. Balasubramanian, IMSc, Chennai
- Pooja Singla, IIT Kanpur
- Indranath Sengupta, IIT Gandhinagar
- Kumar Murti, Université de Montréal, Canada
- David Kalaj, University of Montenegro, Montenegro
- P. M. Patil, Karnataka University, Dharwad
- Dipendra Prasad, IIT, Bombay
- Jaikumar Radhakrishnan, TIFR Bombay
- Saket Saurabh, IMSc, Chennai

**Symposia Speakers:**
- Arvind Ayyer, IISc Bangalore
- David Kalaj, University of Montenegro, Montenegro
- R. Balasubramanian, IMSc, Chennai
- David Kalaj, University of Montenegro, Montenegro
- G.P. Balakumar, IIT Palakkad
- Pooja Singla, IIT Kanpur
- R. Sivaguru, TIFR-CAM Bangalore
- Indranath Sengupta, IIT Gandhinagar
- T. Sugawa, Tohoku University, Japan
- Dipendra Prasad, IIT, Bombay
- G. D. Veerappa Gowda, TIFR-CAM Bangalore

For registration and more details, kindly visit: 35ms2020.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

**Address for Communication:**
- Prof. Jugal K. Prajapat (Convener)
- Dr. Vipul Kakkar (Organizing Secretary)
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

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

Pre-Conference Symposia

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

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of Speaker</th>
<th>Title of talk</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jaikumar Radhakrishnan</td>
<td>Ruzsa-Szemredi graphs and multiparty communication complexity</td>
<td>10:30 am</td>
</tr>
<tr>
<td>2</td>
<td>Saket Saurabh</td>
<td>Two Families theorem in Graph Theory and Combinatorics</td>
<td>11:30 am</td>
</tr>
<tr>
<td>3</td>
<td>Arvind Ayyer</td>
<td>Toppleable permutations, exceedances and acyclic orientations</td>
<td>2:00 pm</td>
</tr>
<tr>
<td>4</td>
<td>Sourav Chakraborty</td>
<td>Degree vs Sparsity of flat polynomials that approximate Boolean functions</td>
<td>3:00 pm</td>
</tr>
</tbody>
</table>
2. Mathematical and Computational Biology (Convener: Sitabhra Sinha, IMSc Chennai)  
(18 registered participants)

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

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

<table>
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<tr>
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<th>Time</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Keshab Chandra Bakshi CMI</td>
<td>An analogue of Hall’s Marriage Theorem for subfactors</td>
<td>10:30-11:30 am</td>
</tr>
<tr>
<td>2</td>
<td>Rahul Vaidyanathan IISER Bhopal</td>
<td>Rokhlin Dimension and Equivariant bundles</td>
<td>11:30 am -12:30 pm</td>
</tr>
<tr>
<td>3</td>
<td>Panchugopal Bikram NISER</td>
<td>Neveu decomposition and non-commutative Ergodic type Theorem</td>
<td>2:00-3:00 pm</td>
</tr>
<tr>
<td>4</td>
<td>Ved Prakash Gupta JNU</td>
<td>Ideals and Lie ideals of certain tensor products of normed algebras</td>
<td>3:00-4:00 pm</td>
</tr>
<tr>
<td>5</td>
<td>Kunal Krishna Mukherjee, IITM</td>
<td>Ob bounded coordinates in GNS spaces</td>
<td>4:00-5:00 pm</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of Speaker (Chair)</th>
<th>Title of talk</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Indranath Sengupta IIT Gandhinagar (Chair: Chanchal Kumar, IISER Mohali)</td>
<td>Some problems in Combinatorial Commutative Algebra</td>
<td>11:30-12:30 pm</td>
</tr>
<tr>
<td>2</td>
<td>Punita Batra HRI Allahabad (Chair: Sudhir Ghorpade, IIT Bombay)</td>
<td>Integrable representations of loop toroidal Lie algebras</td>
<td>10:00-11:00 am</td>
</tr>
<tr>
<td>3</td>
<td>Pooja Singla IIT Kanpur (Chair: Amit Kulshrestha, IISER Mohali)</td>
<td>Projective representations of discrete Heisenberg groups</td>
<td>2:30-3:30 pm</td>
</tr>
<tr>
<td>4</td>
<td>Maneesh Thakur ISI, Bangalore (Chair: Kapil Paranjape, IISER Mohali)</td>
<td>The group of rational points of simple algebraic groups</td>
<td>4:00-5:00 pm</td>
</tr>
</tbody>
</table>
### 5. Complex Analysis (Convener: S. K. Sahoo, IIT Indore) (59 registered participants)

<table>
<thead>
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<th>Time</th>
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<tbody>
<tr>
<td>1</td>
<td>G.P. Balakumar</td>
<td>Remarks on the higher dimensional Saita conjecture</td>
<td>17:20-18:00</td>
</tr>
<tr>
<td>2</td>
<td>Sushil Gorai</td>
<td>Polynomial approximation and analytic disks</td>
<td>11:20-12:00</td>
</tr>
<tr>
<td>3</td>
<td>R. Sivaguru</td>
<td>Removable CR Singularities</td>
<td>12:10-12:50</td>
</tr>
<tr>
<td>4</td>
<td>Toshiyuki Sugawa, Tohoku University, Japan</td>
<td>Conformally invariant metrics on Riemann surfaces and their applications</td>
<td>10:30-11:10 (+ 3.5hrs, Japan time 14:00)</td>
</tr>
<tr>
<td>5</td>
<td>David Kalaj</td>
<td>Minimizers and Kellogg’s theorem</td>
<td>16:30-17:10 (- 4.5 hrs, Podgorica time 12:00)</td>
</tr>
</tbody>
</table>

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

<table>
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<tr>
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<th>India Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kumar Murty</td>
<td>Mumford-Tate groups of mixed motives</td>
<td>9:00-9:50 am</td>
</tr>
<tr>
<td>2</td>
<td>Ananth Sankar</td>
<td>Finiteness results for reductions of Hecke orbits</td>
<td>10:00-10:50 am</td>
</tr>
<tr>
<td>3</td>
<td>R. Balasubramanian</td>
<td>Sumfree sets in groups of prime order</td>
<td>15:30-16:20 pm</td>
</tr>
<tr>
<td>4</td>
<td>Dipendra Prasad</td>
<td>Relations between cusp forms sharing Hecke eigenvalues</td>
<td>16:30-17:20 pm</td>
</tr>
<tr>
<td>5</td>
<td>Ken Ono</td>
<td>Variations of Lehmer’s Conjecture</td>
<td>19:30-20:20 pm</td>
</tr>
<tr>
<td>6</td>
<td>Ram Murty</td>
<td>An all-purpose Erdos-Kac Theorem</td>
<td>20:30-21:20 pm</td>
</tr>
<tr>
<td>7</td>
<td>R. Parimala</td>
<td>Simply connected groups and Hasse Principle</td>
<td>21:30-22:20 pm</td>
</tr>
</tbody>
</table>

### 7. Fluid Dynamics and PDE's (Convener: P. M. Patil, KU, Dharwad) (23 registered participants)

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>P. M. Patil</td>
<td>Triple Diffusive Mixed Convection Flows</td>
<td>10.00 - 10.40 am</td>
</tr>
<tr>
<td>2</td>
<td>G. D. Veerappa Gowda</td>
<td>First Order Partial Differential Equations with Discontinuous Coefficients</td>
<td>10.45 - 11.25 am</td>
</tr>
<tr>
<td>3</td>
<td>S. N Bora</td>
<td>Scattering of Ocean Waves by Porous Structures</td>
<td>12.00-12.40 pm</td>
</tr>
</tbody>
</table>
DAY-2: December 28, 2020

Chair: S. Ponusamy

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 having 10 to 12 presentations.
5. GBM: 5:30pm

DAY-3: December 29, 2020

Chair: C. S. Arvinda

1. Plenary Talk: 10:00 – 10:50am
   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. Prajapati (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)