ACTIVITY REPORT

(January-April 2022)

1 ICTS ACTIVITIES

Summary of Programming Activities *(For details see following pages)*

Programs/Discussion Meetings held: 11

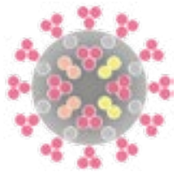
Academic visitors to ICTS-TIFR: 25

Seminars and colloquia: *(For details see Annexure – A)*

Summary of Research Activities *(For details see Annexure - B)*

Papers published: 24

arXiv submissions: 16



ICTS academic activities, particularly programs and discussion meetings, are now being held online as well as in the hybrid format.

Ia. PROGRAMS

All programs were held online unless mentioned

Future Flavours: Prospects for Beauty, Charm and Tau Physics
Organizers: **B. Ananthanarayan, Thomas Browder, Amol Dighe, Jim Libby, Namit Mahajan, Gagan Mohanty, Soumitra Nandi, Nita Sinha, Sanjay Kumar Swain, Guy Wilkinson** | 25 April-6 May 2022

Classical and Quantum Transport Processes: Current State and Future Directions
Organizers: **Alberto Imparato, Anupam Kundu, Carlos Mejia-Monasterio, Lamberto Rondoni** | 17-28 January 2022

Fifth Bangalore School on Population Genetics and Evolution
Organizers: **Deepa Agashe, Kavita Jain** | 17-28 January 2022

Kavli Asian Winter School (KAWS) on Strings, Particles and Cosmology
Organizers: **Francesco Benini, Bartek Czech, Dongmin Gang, Sungjay Lee, Cheng Peng, Pavel Putrov, Loganayagam R, Aninda Sinha, Tadashi Takayanagi, Masahito Yamazaki** | 10-23 January 2022

Physics of the Early Universe (Hybrid)
Organizers: **Robert Brandenberger, Jerome Martin, Subodh Patil, L. Sriramkumar** | 3-12 January 2022

Ib. DISCUSSION MEETINGS

Waves, Instabilities and Mixing in Rotating and Stratified Flows
Organizers: **Thierry Dauxois, Sylvain Joubaud, Manikandan Mathur, Philippe Odier, Anubhab Roy** | 4-8 April 2022

APS Satellite Meeting at ICTS (Hybrid)
Organizers: **Ranjini Bandyopadhyay, Subhro Bhattacharjee, Arindam Ghosh, Shobhana Narasimhan, Sumantra Sarkar** | 15-18 March 2022

Complex Lagrangian Problems of Particles in Flows
Organizers: **Massimo Cencini, Kristian Gustafsson, Filippo De Lillo, Samriddhi Sankar Ray** | 14-18 March 2022

Workshop on Climate Studies (Hybrid)
Organizers: **Rama Govindarajan, Sandeep Juneja, Ramalingam Saravanan, Sandip Trivedi** | 1-3 March 2022

Statistical Physics: Recent advances and Future directions
Organizers: **Sakuntala Chatterjee, Kavita Jain, Tridib Sadhu** | 14-15 February 2022

Neuroscience, Data Science and Dynamics
Organizers: **Amit Apte, Neelima Gupte, Ramakrishna Ramaswamy** | 7-10 February 2022

Ic. LECTURE SERIES

INFOSYS-ICTS TURING LECTURES
How Stable is the Earth's Climate
J. Srinivasan (Divecha Centre for Climate Change, Indian Institute of Science, Bengaluru) | 1-3 March 2022

TMC DISTINGUISHED LECTURES
Finite Quotients of 3-Manifold Groups
Melanie Matchett Wood (Harvard University)
Video release: 30 March 2022; **Interactive session**: 20 April 2022

Id. VISITS OF SCIENTISTS

Due to the COVID-19 situation, ICTS hosted fewer visitors. However, the following researchers joined ICTS remotely/in person during January-April 2022.

1. **Kandaswamy Subramanian** (Inter-University Centre for Astronomy and Astrophysics (IUCAA))
2. **Maitreyee Kulkarni** (Mathematical Institute of the University of Bonn, Germany)
3. **Jacop P Matherne** (Mathematical Institute of the University of Bonn, Germany)
4. **Urna Basu** (Raman Research Institute, Bengaluru)
5. **Raghu Mahajan** (Stanford University)
6. **Mahesh Bandi** (Okinawa Institute of Science and Technology, Japan)
7. **Amiya Mishra** (TIFR, Mumbai)
8. **Sayantan Choudhury** (School of Physical Sciences, Institute of Physical Science, Bhubaneswar)
9. **Shailesh Lal**
10. **Martin James**
11. **Soham Bhattacharyya** (Max Planck Institute, Hannover, Germany)
12. **Jaikumar Radhakrishnan** (TIFR, Mumbai)
13. **Darshan Joshi** (Harvard University, USA)
14. **Akshit Goyal** (Massachusetts Institute of Technology, USA)
15. **Mostafizur Rahman** (IIT, Gandhinagar)
16. **Swetha Bhagwat** (Hawking Fellow, University of Birmingham, UK)
17. **Sumit Kumar** (Max Planck Institute for Gravitational Physics, Hannover, Germany)
18. **Atharv Deokule** (TIFR, Mumbai)
19. **Aswin Balasubramanian** (Rutgers University, New Jersey, USA
20. **Faruk Abdulla** (Harish-Chandra Research Institute, Allahabad)
21. **Suman Jyoti De** (Harish-Chandra Research Institute, Allahabad)
22. **M.A Sofi** (Kashmir University, Srinagar)
23. **Gautam Menon** (Institute for Mathematical Sciences, Chennai)
24. **Mandar Inamdar** (IIT, Bombay)
25. **Pramod Pullarkat** (Raman Research Institute, Bengaluru)

Ie. NEWS ON GRANTS, AWARDS AND FELLOWSHIPS

ICTS faculty member RIDDHIPRATIM BASU was awarded the **SERB MATRICS grant**. The SERB MATRICS grants are given by the Department of Science and Technology, Government of India, for research in theoretical sciences for a period of three years.

ICTS faculty member MANAS KULKARNI was featured in the book *75 Under 50: Scientists Shaping Today's India*, published by the Department of Science and Technology, Government of India. This coffee table book, highlighting 75 scientists below 50 years of age, was released on National Science Day, as part of DST's golden jubilee celebrations.

ICTS faculty member ANUPAM KUNDU received the **SERB MATRICS grant**. Anupam was also awarded the **SERB-Core Research Grant (SERB-CRG)**.

ICTS faculty member SAMRIDDHI SHANKAR RAY received the **SERB-Core Research Grant (SERB-CRG)**.

NASI Platinum Jubilee Senior Scientist at ICTS, MYTHILY RAMASWAMY was awarded the prestigious **P.C. Mahalanobis Medal of the Indian National Science Academy (INSA)** in 2021. This medal is a lifetime achievement award given in recognition of her many contributions to mathematics.

ICTS-Infosys Madhava Chair Professor ASHOKE SEN was awarded the prestigious **Atul Chandra Gupta Distinguished Alumnus Award of the Presidency University Association**.

ICTS joint faculty SASHI THUTUPALLI has become an **Associate Editor for *EPJ E: Soft Matter and Biological Physics***. *EPJ E* was founded by Pierre-Gilles de Gennes and is a core part of the European Physical Journal (EPJ) list comprising 16 journals across physics and related fields, published jointly by Springer Nature, EDP Sciences and the Italian Physical Society, and supported by 25 national physical societies.

II ICTS PEOPLE

IIa FACULTY

1. Riddipratim Basu was promoted to the position of Associate Professor.
2. Bijay Agarwalla (IISER Pune) joined ICTS-TIFR as a Faculty Associate.

IIb STUDENTS

GRADUATE PROGRAM

1. Spring 2022 semester for Physical Sciences started from 11 January 2022. Classes continue to be conducted online via Zoom and Moodle. A few of the classes were conducted in the hybrid mode following all the COVID guidelines.

2. Apart from the ICTS courses, students have registered for the various courses from IISc, TIFR Colaba, TIFR CAM, TIFR Hyderabad and NCBS.

3. **Final year students**

    a. DAE has approved a twelve-month extension with full stipend for all final year students, i.e. 5th-year students in the PhD programs and 6th-year students in the Integrated PhD programs.

    b. Atharv Deokule, a student of Abhishek Dhar, successfully submitted his thesis on 25 March 2022.

4. **Graduate Studies Admissions 2022**

    a. Applications have been invited for the GS 2022 program in Physics (both PhD and Int. PhD programs) through TIFR GS channel.

    b. Invitation of applications for the CAM-ICTS Joint PhD program from GATE & CSIR UGC NET streams was completed on 7 April 2022. https://www.icts.res.in/graduate-studies/mathematics.

    c. 29 candidates have been shortlisted for the interview through the TIFR GS Maths entrance test. The online interviews are scheduled on 27, 28 April 2022.

5. **Quantitative Biology Course**

    a. The course titled 'Physics of Living Matter' was introduced in the January-April semester. The course will be taught by Vijay Kumar Krishnamurthy and Archisman Raju. It will give an introduction to stochastic processes, self-organized pattern formation, active matter, spin models, and dynamical systems by giving biological examples at various different scales.

POSTDOCTORAL PROGRAM

1. The following offers were made for the Fall 2022 hiring cycle:

Name	Research Group	Current Affiliation	Current Designation
Anurag Kaushal	String Theory and Quantum Gravity	TIFR, Mumbai	PhD Research Scholar
Nava Gaddam	String Theory and Quantum Gravity	Utrecht Univeristy, The Netherlands	Postdoctoral Researcher
Asrat Demise	String Theory and Quantum Gravity	University of Chicago, USA	Research Assistant
Arun Kumar Varanasi	Fluid Dynamics and Turbulence	JNCASR, Bengaluru	PhD Research Scholar
Subham Ghosh	Fluid Dynamics and Turbulence	IISc, Bengaluru	PhD Research Scholar
Sanjay CP	Fluid Dynamics and Turbulence	IIT, Madras	PhD Research Scholar
Prateek Anand	Fluid Dynamics and Turbulence	JNCASR, Bengaluru	PhD Research Scholar
Krishnendu NV	Astronomical Relativity	Max Planck Institute for Gravitational Physics, Hanover, Germany	Junior Scientist/ Postdoc

VISITING STUDENTS PROGRAM

1. The process of shortlisting students for the ICTS Long Term Visiting Students Program 2022 is on. https://www.icts.res.in/academic/long-term-visiting-student-program

2. Offer letters to 18 students for the ICTS S.N. Bhatt Memorial Excellence Fellowship Program 2022 have been sent. https://www.icts.res.in/academic/summer-research-program.

III | OUTREACH

KAAPI WITH KURIOSITY

The lecture series has been temporarily renamed Kuriosity During Kuarantine. All the lectures are being livestreamed on the ICTS YouTube channel, unless otherwise mentioned.

Perspectives in Math and Art
Speaker: Supurna Sinha (Raman Research Institute, Bengaluru) | 24 April 2022 | JN Tata Auditorium

Tilings
Speaker: Mahuya Datta (Indian Statistical Institute, Kolkata) | 27 March 2022

Taming the Transient Sky
Speaker: Varun Bhalerao (IIT Bombay) | 28 February 2022

The Story of Climate Change
Speaker: R Shankar (The Institute of Mathematical Sciences, Chennai) | 9 January 2022

MATHS CIRCLE INDIA

ICTS is leading a pan-TIFR effort to seed Maths Circles for talented middle school students across the country. To establish proof of concept, ICTS has conducted 7 online Maths Circle India sessions during January-April 2022.

Session 12
Conducted by: Eeshan vikram Modak, Sayantan Chakraborty, Neha Sangwan, Soumyajit Pyne, Vidya Sagar, Piyush Srivastava | **Interactive session**: 15 April 2022

Session 11
Conducted by: Shane D'Mello, Jotsaroop Kaur, Vaibhav Vaish, Bishwadeep Karmakar | **Interactive session**: 25 March 2022

Session 10
Conducted by: Shane D'Mello, Chetan Balwe, Jotsaroop Kaur, Vaibhav Vaish, Bishwadeep Karmakar | **Interactive session**: 4 March 2022

Session 9
Conducted by: Vaibhav Vaish, Jotsaroop Kaur, Chetan Balwe, Shane D'mello, Neeraja Sahasrabudhe | **Interactive session**: 18 February 2022

Session 8
Conducted by: Jotsaroop Kaur, Chetan Balwe, Vaibhav Vaish, Neeraja Sahasrabudhe | **Interactive session**: 4 February 2022

Session 7
Conducted by: Ashutosh Roy Choudhury, Jaimin Patel, Roktim Mascharak, Amitava Bhattacharya | **Interactive session**: 21 January 2022

Session 6
Conducted by: Ashutosh Roy Choudhury, Arnab Roy, Jaimin Patel, Amitava Bhattacharya | **Interactive session**: 7 January 2022

ANNEXURE - A

The following are the details of seminars and colloquia during the period January-April 2022. All seminars and colloquia were held online.

Magnetic Fields from the Early Universe | Kandaswamy Subramanian (IUCAA, Pune) | 27 April 2022

Statistical Properties of Single and Multiple Active Particles | Prashant Singh (ICTS-TIFR, Bengaluru) | 27 April 2022

Framing Anomalies in TQFT | Chris Elliott (UMass Amherst, USA) | 22 April 2022

Revisiting the Flat Space Hologram | Sabrina Pasterski (Perimeter Institute, USA) | 20 April 2022

Nonlocal Calderón Problem | Tuhin Ghosh (Universitat Bielefeld, Germany) | 18 April 2022

The GW/DT Correspondence, Resurgence, and Geometry | Arpan Saha (ICMAT) | 14 April 2022

Non-Trivial Connections Between One-Dimensional Topological Phases and Exclusion Dynamics | Adhip Agarwala (IIT Kanpur) | 14 April 2022

Jackiw-Teitelboim Gravity in the Second Order Formalism | Sunil Sake (TIFR, Mumbai) | 13 April 2022

Critical Non-Fermi-Liquid Metal in Overdoped Random t-J Model | Darshan Joshi (Harvard University, USA) | 7 April 2022

Consumer-Resource Models: Mechanistic Insights into Microbial Community Ecology | Akshit Goyal (Massachusetts Institute of Technology, USA) | 5 April 2022

Non-Invertible Symmetries from Higher Gauging | Shu-Heng Shao (Stony Brook University, USA) | 1 April 2022

Real Holomorphic Sections of Deligne-Hitchin Moduli Spaces and Integrable PDEs | Sebastian Heller (Institute of Differential Geometry, Hannover) | 24 March 2022

Black Holes as Non-Isometric Codes | Chris Akers (Massachusetts Institute of Technology, USA) | 23 March 2022

Why Radioastronomers Need to Understand Holonomy/Wilson Loops | Joseph Samuel (ICTS - TIFR, Bengaluru) | 17 March 2022

Harnessing S-Duality in N=4 SYM & Supergravity as SL(2,Z)-Averaged Strings | Eric Perlmutter (IPhT (Saclay) | 16 March 2022

Surveying Complex Energy Landscapes Using Different Flavors of Coarse-Graining | Debayan Chakraborty (The University of Texas at Austin, USA) | 14 March 2022

Twistor Theory and Infinite-Dimensional Soft Symmetries | Tim Adamo (University of Edinburgh, UK) | 9 March 2022

Demazure Flags and it's Connections to Macdonald Polynomials and Mock Theta Functions | Rekha Biswal (University of Edinburgh, UK) | 3 March 2022,

An Introduction to Decomposition | Eric Sharpe (Virginia Tech) | 2 March 2022

Thermalization, Chaos and Hydrodynamics in Classical Hamiltonian Systems | Santhosh Ganapa (ICTS-TIFR, Bengaluru) | 2 March 2022

No Ensemble Averaging Below the Black Hole Threshold | Edward Witten (Institute for Advanced Study, USA) | 1 March 2022

Long Time Solution to the Euler Equations of Generalized Hydrodynamics for Periodic Integrable System | Atharv P Deokule (ICTS-TIFR, Bengaluru) | 24 February 2022

Emergent Times in Holography | Hong Liu (Massachusetts Institute of Technology, USA) | 23 February 2022

Tensionless Tales | Arjun Bagchi (IIT Kanpur) | 16 February 2022

Mixed-State Entanglement and Information Recovery in Evaporating Black Holes | Shreya Vardhan (Massachusetts Institute of Technology | 9 February 2022

Automorphic Spectra and the Conformal Bootstrap | Dalimil Mazac (Institute for Advanced Study, USA) | 2 February 2022

Lagrangian Statistics in High and Low Re Number Flows: From Filaments in Fully Developed Turbulence to Tracers in Bacterial Suspensions | Rahul Kumar Singh (ICTS-TIFR, Bengaluru) | 21 January 2022

Giant Spin-Orbit Torque from Strong Correlations | Shouvik Chatterjee (TIFR, Mumbai) | 12 January 2022

Transport and Correlations in One-Dimensional Interacting Particle Systems | Avijit Das (ICTS-TIFR, Bengaluru) | 12 January 2022

Null Surface Thermodynamics | Shahin Sheikh-Jabbari (IPM, Tehran) | 5 January 2022

COLLOQUIA

Falling Cat Demonstrations Go Sour | Andy Ruina (Cornell University, USA) | 25 April 2022

Strongly Correlated Phases in Models with Random Interactions | Darshan Joshi (Harvard University, USA) | 6 April 2022

The Ecology and Evolution of Microbiomes | Akshit Goyal (Massachusetts Institute of Technology, USA) | 4 April 2022

The Aging Program - Is the Human Life Expectancy Curve on the Cusp of Another Inflection? | Arvind Ramanathan (inStem, Bengaluru) | 28 March 2022

The Challenge of Climate Prediction: Scientific Certainty and Uncertainty | R. Saravanan (Texas A&M University, USA) | 7 February 2022

A New Generalization of Entanglement Entropy | Tadashi Takayanagi (Yukawa Institute for Theoretical Physics, Kyoto University, Japan) | 31 January 2022

ANNEXURE - B

PAPERS PUBLISHED – 47

In Journals – 24

1. *Saturation of Large-Scale Dynamo in Anisotropically Forced Turbulence*, **Pallavi Bhat**. Monthly Notices of the Royal Astronomical Society, 509 (2), 2249–2257 (2022)
2. *Upper Tail Large Deviations of Regular Subgraph Counts in Erdős-Rényi Graphs in the Full Localized Regime*, **Anirban Basak, Riddhipratim Basu**. Comm. Pure Appl. Math., https://doi.org/10.1002/cpa.22036
3. *Thermodynamics and its Correlation with Dynamics in a Mean-Field Model and Pinned Systems: A Comparative Study Using Two Different Methods of Entropy Calculation*, Ujjwal Kumar Nandi, Palak Patel, Mohd Moid, Manoj Kumar Nandi, Shiladitya Sengupta, Smarajit Karmakar, Prabal K Maiti, **Chandan Dasgupta**, Sarika Maitra Bhattacharyya. J. Chem. Phys. 156 (1), 014503 (2022)
4. *Instability Driven by Settling and Evaporation in a Shear Flow: A Model for Asperitas Clouds*, S. Ravichandran, **Rama Govindarajan**. Phys. Rev. Fluids 7 (1), 010501, (2022)
5. *Heat Transport in an Ordered Harmonic Chain in Presence of a Uniform Magnetic Field*, **Junaid Bhat**, Gaëtan Cane, Cédric Bernardin, **Abhishek Dhar**. Journal of Statistical Physics 186, 2 (2022)
6. *Nonexistence of Bigeodesics in Planar Exponential Last Passage Percolation*. **Riddhipratim Basu**, Christopher Hoffman and Allan Sly. Commun. Math. Phys. 389, 1–30 (2022)
7. *An Effective Description of Momentum Diffusion in a Charged Plasma from Holography*, Temple He, **R. Loganayagam**, Mukund Rangamani, Julio Virrueta. Journal of High Energy Physics 2022 (01), 145 (2022)
8. *Inconsistency of Islands in Theories with Long-Range Gravity*, Hao Geng, Andreas Karch, Carlos Perez-Pardavila, **Suvrat Raju**, Lisa Randall, Marcos Riojas, Sanjit Shashi. Journal of High Energy Physics 2022 (01), 182 (2022)
9. *The Science Case for LIGO-India*, M. Saleem, Javed Rana, V. Gayathri, **Aditya Vijaykumar, Srashti Goyal**, Surabhi Sachdev, Jishnu Suresh, S. Sudhagar, Arunava Mukherjee, Gurudatt Gaur, Bangalore Sathyaprakash, Archana Pai, Rana X Adhikari, **P. Ajith**, Sukanta Bose. Classical and Quantum Gravity 39 (2) 025004 (2022)
10. *Constraints on Compact Dark Matter from Gravitational Wave Microlensing*, **S. Basak, A. Ganguly, K. Haris, S. Kapadia, A. K. Mehta, P. Ajith**. Astrophysical J. Lett. 926 (2) L28, (2022) **This work was published on the EurekaAlert! website.** https://www.eurekalert.org/news-releases/944246
11. *Holography from the Wheeler-DeWitt Equation*, **Chandramouli Chowdhury**, **Victor Godet**, Olga Papadoulaki, **Suvrat Raju**. Journal of High Energy Physics 2022 (03) 19 (2022). **This work was published on the EurekaAlert! website.** https://www.eurekalert.org/news-releases/945876
12. *Lessons from the Information Paradox*, S. Raju. Phys. Rep. 943, 1-80 (2022)
13. *Coadjoint Orbits and Kähler Structure: Examples From Coherent States*, **Rukmini Dey, Joseph Samuel,** Rithwik S. Vidyarthi. To appear in Reports in Mathematical Physics, arXiv:2105.14283
14. *Edge Fluctuations and Third-Order Phase Transition in Harmonically Confined Long-Range Systems*, **Jitendra Kethepalli**, **Manas Kulkarni, Anupam Kundu,** Satya N. Majumdar, David Mukamel, Gregory Schehr**,** J. Stat. Mech.: Mechanics and Experiment 2022, 033203 (2022)
15. *Transport of Condensing Droplets in Taylor-Green Vortex Flow in the Presence of Thermal Noise*, Anu V. S. Nath, Anubhab Roy, **Rama Govindarajan**, S. Ravichandran. Phys. Rev. E 105 (3), 035101 (2022)
16. *Time-Reversal-Broken Weyl Semimetal in the Hofstadter Regime*, Faruk Abdulla, Ankur

Das, **Sumathi Rao**, Ganpathy Murthy. SciPost Phys. Core 5, 014 (2022)

17. *Failure of the Split Property in Gravity and the Information Paradox*, **Suvrat Raju.** *Class. Quantum Grav.* 39 064002 (2022)
18. *Improved Early-Warning Estimates of Luminosity Distance and Orbital Inclination of Compact Binary Mergers Using Higher Modes of Gravitational Radiation*, **Mukesh Kumar Singh**, Divyajyoti, **Shasvath J. Kapadia, Md Arif Shaikh**, **P. Ajith** Monthly Notices of the Royal Astronomical Society, stac852, MNRAS (2022)
19. *Lagrangian Manifestation of Anomalies in Active Turbulence*, **Rahul K. Singh, Siddhartha Mukherjee, Samriddhi Sankar Ray**, Phys. Rev. Fluids 7, 033101 (2022)
20. *Editorial: Scaling the Turbulence Edifice (Part 1)*, Jérémie Bec, Giorgio Krstulovic, Takeshi Matsumoto, **Samriddhi Sankar Ray** and Dario Vincenzi, Phil. Trans. R. Soc. A. 380 (2219), 20210101 (2022)
21. *Editorial: Scaling the Turbulence Edifice (part 2)*, Jérémie Bec, Giorgio Krstulovic, Takeshi Matsumoto, **Samriddhi Sankar Ray** and Dario Vincenzi, Phil. Trans. R. Soc. A.380 (2219), 20210102 (2022)
22. *Fundamental Limitations in Lindblad Descriptions of Systems Weakly Coupled to Baths,* D. Tupkary, **A. Dhar, M. Kulkarni**, A. Purkayastha. Phys. Rev. A 105 (3), 032208 (2022)
23. *Surface Tension as the Destabiliser of a Vortical Interface,* Rashmi Ramadugu, Prasad Perlekar, **Rama Govindarajan.** Journal of Fluid Mechanics 936, A45 (2022)
24. *Pullback Coherent and Squeezed States and Quantization*, **Rukmini Dey, Kohinoor Ghosh**. Symmetry, Integrability and Geometry: Methods and Applications (SIGMA) *-Contribution to the Special Issue on Mathematics of Integrable Systems: Classical and Quantum in honor of Leon Takhtajan*, 18, 028, (2022)

ArXiv – 16

1. *Spirographic Motion in a Vortex*, Sumithra Reddy Yerasi, **Rama Govindarajan**, Dario Vincenzi, arXiv:2201.05448
2. *Probing Emergent QED in Quantum Spin Ice via Raman Scattering of Phonons: Shallow Inelastic Scattering and Pair Production*, Arnab Seth, **Subhro Bhattacharjee**, Roderich Moessner arXiv:2202.03455
3. *Localization and Delocalization in Networks with Varied Connectivity*, **Tamoghna Ray**, **Amit Dey**, **Manas Kulkarni** arXiv:2202.12240
4. *The Timbre of Hawking Gravitons: an Effective Description of Energy Transport from Holography*, Temple He, **R. Loganayagam**, Mukund Rangamani, **Akhil Sivakumar**, Julio Virrueta arXiv:2202.04079
5. *Normalization of ZZ Instanton Amplitudes in Minimal String Theory*, Dan Stefan Eniceicu, Raghu Mahajan, Chitraang Murdia, **Ashoke Sen** arXiv:2202.03448
6. *Snowmass White Paper: Bootstrapping String Theory*, **Rajesh Gopakumar**, Eric Perlmutter, Silviu S. Pufu, Xi Yin, arXiv:2202.07163
7. *Founder Effects and Dynamical Demographic Phases Due to Decreasing Intrinsic Fluctuations in Growing Populations*, Emanuele Crosato, Jeffrey N. Philippson, **Shashi Thutupalli**, Richard G. Morris, arXiv:2202.08394
8. *Can A Binary Neutron Star Merger in the Vicinity of a Supermassive Black Hole Enable a Detection of a Post-Merger Gravitational Wave Signal?* **Aditya Vijaykumar, Shasvath J. Kapadia, Parameswaran Ajith,** arXiv:2202.08673
9. *Thermoelectric Properties of Inversion Symmetry Broken Weyl Semimetal-Weyl Superconductor Hybrid Junctions,* Ruchi Saxena, Nirnoy Basak, Pritam Chatterjee, **Sumathi Rao**, Arijit Saha arXiv:2202.10237
10. *Arresting Classical Many-Body Chaos by Kinetic Constraints,* Aydin Deger, **Sthitadhi Roy**, Achilleas Lazarides, arXiv:2202.11726
11. *Resonant Energy Scales and Local Observables in the Many-Body Localised Phase,* Samuel J. Garratt, **Sthitadhi Roy** arXiv:2202.10482
12. *Scaling of Fock-Space Propagator and Multifractality Across the Many-Body Localization Transition*, Jagannath Sutradhar, Soumi Ghosh, **Sthitadhi Roy**, David E. Logan, Subroto Mukerjee, Sumilan Banerjee,arXiv:2203.07415
13. *A Splash in a One-Dimensional Cold Gas*, Subhadip Chakraborti, **Abhishek Dhar**, P. L. Krapivsky arXiv:2203.11097
14. *Quillen-Type Bundle and Geometric Prequantization on Moduli Space of the Seiberg-Witten Equations on Product of Riemann Surfaces*, **Rukmini Dey** arXiv:2203.15997
15. *Modeling Compact Binary Merger Waveforms Beyond General Relativity,* Gabriel S. Bonilla, **Prayush Kumar**, Saul A. Teukolsky arXiv:2203.14026
16. *D-Instanton Induced Superpotential*, Sergei Alexandrov, Atakan Hilmi Fırat, Manki Kim, **Ashoke Sen**, Bogdan Stefański jr arXiv:2204.02981

Consortium - 7

1. *All-Sky Search for Continuous Gravitational Waves From Isolated Neutron Stars Using Advanced LIGO and Advanced Virgo O3 Data*, The LIGO Scientific Collaboration, the Virgo Collaboration, the KAGRA Collaboration, R. Abbott, et. al. arXiv:2201.00697
2. *Search for Gravitational Waves from Scorpius X-1 With a Hidden Markov Model in O3 LIGO Data*, The LIGO Scientific Collaboration, the Virgo Collaboration, the KAGRA Collaboration, R. Abbott, et. al. arXiv:2201.10104
3. *First Joint Observation by the Underground Gravitational-Wave Detector, KAGRA, with GEO600,* The LIGO Scientific Collaboration, the Virgo Collaboration, the KAGRA Collaboration, R. Abbott, et.al. arXiv:2203.01270
4. *Search for Gravitational Waves Associated with Fast Radio Bursts Detected by CHIME/FRB During the LIGO - Virgo Observing Run O3a*, The LIGO Scientific Collaboration, the Virgo Collaboration, the KAGRA Collaboration, the CHIME/FRB Collaboration, R. Abbott et al. arXiv:2203.12038
5. *Constraints on Dark Photon Dark Matter Using Data from LIGO's and Virgo's Third Observing Run,* The LIGO Scientific Collaboration, the Virgo Collaboration, the KAGRA Collaboration, R. Abbott, et. al. Phys. Rev. D 105 (6), 063030 (2022) arXiv:2105.13085
6. *Search for Intermediate-Mass Black Hole Binaries in the Third Observing Run of Advanced LIGO and Advanced Virgo*, R. Abbott et. al., Astronomy & Astrophysics, 659, A84 (2022)
7. *Search for Continuous Gravitational Wave Emission from the Milky Way Center in O3 LIGO - Virgo Data,* The LIGO Scientific Collaboration, the Virgo Collaboration, the KAGRA Collaboration, R. Abbott, et. al. arXiv:2204.04523

ANNEXURE - B