



Samriddhi Sankar Ray

Curriculum Vitae

Personal Information

Date of Birth 13 November, 1981
Citizenship Indian

Current Position

Reader International Center for Theoretical Sciences (ICTS-TIFR),
Tata Institute of Fundamental Research,
Bangalore, India.

Contact Details

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Correspondence

International Center for Theoretical Sciences,
Tata Institute of Fundamental Research,
Survey No. 151, Shivakote,
Hesaraghatta Hobli,
Bangalore 560089, India.

Education

2010 **PhD in Physics**

Department of Physics, Indian Institute of Science, Bangalore, India.

Thesis Title: *Statistical Studies of Fluid, Passive-Scalar, and Burgers Turbulence*

Thesis Advisor: *Professor Rahul Pandit*

2006 **MS in Physics**

Department of Physics, Indian Institute of Science, Bangalore, India.

2003 **BSc in Physics**

Presidency College, Calcutta University, Calcutta, India

Research Positions

July 2015 – **Reader**

present International Center for Theoretical Sciences (ICTS-TIFR)
Tata Institute of Fundamental Research,
Bangalore, India.

January 2013 – **Junior Faculty**

June 2015 International Center for Theoretical Sciences (ICTS-TIFR)
Tata Institute of Fundamental Research,
Bangalore, India.

April 2010 – **Post-doctoral Fellow**

December 2012 Laboratoire Lagrange,
Observatoire de la Côte d'Azur, CNRS,
Nice, France.

Professional Experience

- Visiting Professor, **Observatoire de la Côte d'Azur, CNRS, Nice**, France, May–June 2018.
- Visiting Professor, **Fédération Doebelin, University of Nice, Sophia-Antipolis** France, September–October 2017.
- Visitor to **University of Rome Tor Vergata, Rome**, France, May 2015.
- Visitor to **Observatoire de la Côte d'Azur, CNRS, Nice**, France, May 2015.
- Visitor to **NORDITA, Stockholm**, Sweden, June 2014.
- Visitor to **Observatoire de la Côte d'Azur, CNRS, Nice**, France, May–June 2014.
- Visitor to **Observatoire de la Côte d'Azur, CNRS, Nice**, France, May–June 2013.
- Visitor to **Max-Planck-Institute for Dynamics and Self-Organization, Göttingen**, Germany, October–November 2011.
- Visitor to **Max-Planck-Institute for Dynamics and Self-Organization, Göttingen**, Germany, May 2010.
- Visitor to **Laboratoire Poncelet, Moscow**, Russia, September 2008.
- Scientific Secretary, **Problems of Turbulence: 50 years after the Turbulence Colloquium Marseille 1961**, Marseille, France, September, 2011.
- Referees for the journals, including **Physical Review Letters**, **Physical Review E**, **Europhysical**

Journal B, Physica D, Proceedings of the Royal Society, Journal of Fluid Mechanics, Journal of Statistical Mechanics and Nonlinearity.

Principal Research Interests

- Fluid, magnetohydrodynamic, passive-scalar, and Burgers turbulence.
- Inertial (finite-sized) particles in turbulent flows with special application to coalescence processes in clouds.
- Truncated systems, thermalization, and statistical mechanics of turbulent flows.
- Singularities in the Euler equation.
- Multiphase Flows.

Current Group Members

Post-doctoral Fellows

1. Dr Priyanka Maiti, PhD (Indian Institute of Technology, Kharagpur), 2017 –

PhD Students

1. Rahul Kumar Singh (2018 –)
2. Sugan Durai Murugan (2020 –)

Former Group Members

Post-doctoral Fellows

1. Dr Jason Picardo, PhD (Indian Institute of Technology, Chennai), 2017-2019.
Now: Assistant Professor, Department of Chemical Engineering, Indian Institute of Technology Bombay, Mumbai, India.
2. Dr Divya Venkataraman, PhD (University of Genoa), 2014-2016.
Now: Assistant Professor, Department of Mathematics, Institute of Chemical Technology, Mumbai, India.

Masters' Students (MS thesis)

1. Mohit Gupta (International Centre for Theoretical Sciences, Tata Institute of Fundamental Research, Bangalore) 2017-2019.
Now: Graduate Student, University of Minnesota, USA.
2. Lokahith Agasthya (Indian Institute of Science Education and Research, Pune), 2017-2018.
Now: Graduate Student, University of Rome, Tor Vergata, Rome, Italy.
3. Amal Roy (Indian Institute of Science, Bangalore), 2016-2017.
Now: Graduate Student, Indian Institute of Science, Bangalore, India.
4. Martin James (Indian Institute of Science, Bangalore), 2015-2016.
Now: Graduate Student, Max Planck Institute for Dynamics and Self-Organization, Göttingen, Germany.
5. Akhil Sivakumar (Indian Institute of Science, Bangalore), 2015-2016.
Now: Graduate Student, International Centre for Theoretical Sciences, Bangalore, India.

Batchelors' Students (BS thesis)

1. Ritwik Tom (Indian Institute of Science, Bangalore), 2016-2017.
Now: Graduate Student, Carnegie Mellon University, USA.

Visiting Students

1. Dheeraj Kumar [Now: Graduate Student, Sorbonne University, France.]

2. Deeksha Adil [Now: Graduate Student, Toronto University, Canada.]
3. Purba Chatterjee [Now: Graduate Student, University of Illinois at Urbana-Champaign, USA.]
4. Ashok Choudhary [Now: Graduate Student, West Virginia University, USA.]
5. Siddhartha Saha [Now: Graduate Student, Rutgers University, USA.]
6. Ankur Sharma [Now: Graduate Student, Indian Institute of Technology Kanpur, India.]
7. Himani Singhal [Now: Scientist, Shell Corporations, India.]
8. Ritwik Tom [Now: Graduate Student, Carnegie Mellon University, USA.]

List of Publications

50. *Constructing weak solutions by tyger purging in the Burgers equation*
Samriddhi Sankar Ray, S. D. Murugan, U. Frisch, S. Nazarenko and N. Besse.
ArXiv: 2001.04819
49. *Dynamics of a long chain in turbulent flows: Impact of vortices*
J. R. Picardo, R. Singh, **Samriddhi Sankar Ray** and D. Vincenzi.
ArXiv: 1912.11431
48. *Bridging Inertial and Dissipation Range Statistics in Rotating Turbulence*
S. K. Rathore, M. K. Sharma, **Samriddhi Sankar Ray** and S. Chakraborty.
ArXiv: 1912.08455
47. *Fluid dynamics in clouds: The sum of its parts*
S. Ravichandran, J. R. Picardo, **Samriddhi Sankar Ray** and R. Govindarajan.
Submitted: **Encyclopedia of Complexity**
46. *Lagrangian Irreversibility and Dissipation Statistics in Fully-Developed Turbulence*
J. R. Picardo, A. Bhatnagar, and **Samriddhi Sankar Ray**.
ArXiv: 1908.10931
45. *Analytic structure of solutions the one-dimensional Burgers equation with modified dissipation*
W. Pauls and **Samriddhi Sankar Ray**.
ArXiv: 1908.09579
44. *Elasto-inertial Chains in a Two-dimensional Turbulent Flow*
R. Singh, M. Gupta, J. R. Picardo, D. Vincenzi, and **Samriddhi Sankar Ray**.
ArXiv: 1908.08776
43. *Orientation dynamics of spheroids settling in turbulent flow*
P. Anand, **Samriddhi Sankar Ray**, and G. Subramanian.
ArXiv: 1907.02857
42. *Many-body Chaos in a Thermalised Fluid*
D. Kumar, S. Bhattacharjee, and **Samriddhi Sankar Ray**.
ArXiv: 1906.00016
41. *Turbulent route to two-dimensional soft crystals*
M. Gupta, P. Chaudhuri, J. Bec and **Samriddhi Sankar Ray**.
ArXiv: 1812.06487.

40. *Microorganisms Flock in a Turbulent Flow*
A. Gupta, A. Roy, A. Saha, and **Samriddhi Sankar Ray**.
ArXiv: 1812.10288.
39. *Statistics of Lagrangian Trajectories in Rotating Turbulence*
P. Maity, R. Govindarajan, and **Samriddhi Sankar Ray**.
Physical Review E, **100**, 043110 (2019).
38. *Droplet Collisions in Turbulence: Insights from a Burgers Vortex*
L. Aghasthya, J. R. Picardo, S. Ravichandran, R. Govindarajan, and **Samriddhi Sankar Ray**.
Physical Review E, **99**, 063107 (2019).
37. *Flow structures govern particle collisions in turbulence*
J. R. Picardo, L. Aghasthya, R. Govindarajan, and **Samriddhi Sankar Ray**.
Physical Review Fluids (Rapid), **4**, 032601(R) (2019).
36. *Preferential Sampling of Elastic Chains in Turbulent Flows*
J. R. Picardo, D. Vincenzi, N. Pal, and **Samriddhi Sankar Ray**.
Physical Review Letters, **121**, 244501 (2018).
35. *Inertial Ellipsoids in Homogeneous, Isotropic Turbulence*
A. Roy, A. Gupta, and **Samriddhi Sankar Ray**.
Physical Review E (Rapid), **98**, 021101(R) (2018).
34. *Light-cone spreading of perturbations and the butterfly effect in a classical spin chain*
A. Das, S. Chakrabarty, A. Dhar, A. Kundu, D. A. Huse, R. Moessner, **Samriddhi Sankar Ray**,
and S. Bhattacharjee.
Physical Review Letters, **121**, 024101 (2018)
33. *Non-intermittent Turbulence: Lagrangian Chaos and Irreversibility*
Samriddhi Sankar Ray.
Physical Review Fluids (Rapid), **3**, 072601(R) (2018).
32. *Droplets in isotropic turbulence: deformation and breakup statistics*
Samriddhi Sankar Ray and D. Vincenzi.
Journal of Fluid Mechanics, **852**, 313 (2018).
31. *Revisiting the SABRA Model: Statics and Dynamics*
R. Tom and **Samriddhi Sankar Ray**.
Europhysics Letters, **120**, 34002 (2018).
30. *Exotic multifractal conductance fluctuations in graphene*
K. R. Amin, **Samriddhi Sankar Ray**, N. Pal, R. Pandit, and A. Bid.
Communications Physics, **1**, 1 (2018).
29. *An Overview of the Statistical Properties of Two-dimensional Turbulence in Fluids with Particles, Conducting Fluids, Fluids with Polymer Additives, Binary-Fluid Mixtures, and Superfluids*
R. Pandit, D. Banerjee, A. Bhatnagar, M.-E. Brachet, A. Gupta, D. Mitra, N. Pal, P. Perlekar, **Samriddhi Sankar Ray**, V. Shukla, and D. Vincenzi.
Physics of Fluids, **29**, 111112 (2017)

28. *Enhanced droplet collision rates and impact velocities in turbulent flows: The effect of polydispersity and transient phases*
M. James and **Samriddhi Sankar Ray**.
Scientific Reports, **7**, 12231 (2017)
27. *The Onset of Thermalization in Finite-Dimensional Equations of Hydrodynamics*
D. Venkataraman and **Samriddhi Sankar Ray**.
Proceedings of the Royal Society, **473**, 20160585 (2017).
26. *Semi-flexible particles in isotropic turbulence*
A. Ali, E. L. C. M. Plan, **Samriddhi Sankar Ray**, and D. Vincenzi.
Physical Review Fluids (Rapid), **1**, 082402(R) (2016).
25. *Lagrangian Statistics for Navier-Stokes Turbulence under Fourier-mode reduction: Fractal and Homogeneous Decimations*
M. Buzzicotti, A. Bhatnagar, L. Biferale, A. S. Lanotte, and **Samriddhi Sankar Ray**.
New Journal of Physics, **18**, 113047 (2016).
24. *Dynamic multiscaling in magnetohydrodynamic turbulence*
Samriddhi Sankar Ray, G. Sahoo, and R. Pandit.
Physical Review E, **94**, 053101 (2016).
23. *Elastic turbulence in a shell model of polymer solution*,
Samriddhi Sankar Ray and D. Vincenzi.
Europhysics Letters, **114**, 44001 (2016).
22. *Intermittency in Fractal Fourier Hydrodynamics: Lessons from the Burgers Equation*,
M. Buzzicotti, L. Biferale, U. Frisch, and **Samriddhi Sankar Ray**.
Physical Review E, **93**, 033109 (2016).
21. *Abrupt growth of large aggregates by correlated coalescences in turbulent flow*,
J. Bec, **Samriddhi Sankar Ray**, E.-W. Saw, and H. Homann.
Physical Review E (Rapid), **93** 031102(R) (2016).
20. *Effect of Inertia on Model Flocks in a Turbulent Environment*,
A. Choudhary, D. Venkataraman and **Samriddhi Sankar Ray**.
Europhysics Letters, **112**, 24005 (2015) (*Editor's Choice*).
19. *Thermalised solutions, statistical mechanics and turbulence: An overview of some recent results*,
Samriddhi Sankar Ray.
Perspectives in Nonlinear Dynamics, Pramana - Journal of Physics, **84**, 395 (2015).
18. *Extreme fluctuations of the relative velocities between droplets in turbulent airflow*,
E.-W. Saw, G. P. Bewley, E. Bodenschatz, **Samriddhi Sankar Ray**, and J. Bec.
Physics of Fluids Letters, **26**, 111702 (2014).
17. *Transition from dissipative to conservative dynamics in equations of hydrodynamics*,
D. Banerjee and **Samriddhi Sankar Ray**.
Physical Review E (Rapid), **90**, 041001(R) (2014).

16. *Gravity-driven enhancement of heavy particle clustering in turbulent flow*,
J. Bec, H. Homann, and **Samriddhi Sankar Ray**.
Physical Review Letters, **112**, 184501 (2014).
15. *Multiscaling in Hall-Magnethydrodynamic Turbulence: Insights from a Shell Model*,
D. Banerjee, **Samriddhi Sankar Ray**, G. Sahoo, and R. Pandit,
Physical Review Letters, **111**, 174501 (2013).
14. *Sticky elastic collisions*,
J. Bec, S. Musacchio, and **Samriddhi Sankar Ray**,
Physical Review E, **87**, 063013 (2013).
13. *Real-space Manifestations of Bottlenecks in Turbulence Spectra*,
U. Frisch, **Samriddhi Sankar Ray**, G. Sahoo, D. Banerjee, and R. Pandit,
Physical Review Letters, **110**, 064501 (2013).
12. *Turbulence in Noninteger Dimensions by Fractal Fourier Decimation*,
U. Frisch, A. Pomyalov, I. Procaccia, and **Samriddhi Sankar Ray**,
Physical Review Letters, **108**, 074501 (2012).
11. *Nelkin scaling for the Burgers equation and the role of high-precision calculations*,
S. Chakraborty, U. Frisch, W. Pauls, and **Samriddhi Sankar Ray**,
Physical Review E (Rapid), **85**, 015301(R) (2012).
10. *Dynamic Multiscaling in Two-dimensional Turbulence*,
Samriddhi Sankar Ray, D. Mitra, P. Perlekar, and R. Pandit,
Physical Review Letters, **107**, 184503 (2011).
9. *Universality of scaling and multiscaling in turbulent symmetric binary fluids*,
Samriddhi Sankar Ray and A. Basu,
Physical Review E, **84**, 036316 (2011).
8. *Resonance phenomenon for the Galerkin-truncated Burgers and Euler equations*,
Samriddhi Sankar Ray, U. Frisch, S. Nazarenko, and T. Matsumoto,
Physical Review E, **84**, 016301 (2011).
7. *The Persistence Problem in Two-Dimensional Fluid Turbulence*,
P. Perlekar, **Samriddhi Sankar Ray**, D. Mitra, and R. Pandit,
Physical Review Letters, **106**, 054501 (2011).
6. *Extended Self Similarity works for the Burgers equation and why*,
S. Chakraborty, U. Frisch, and **Samriddhi Sankar Ray**,
Journal of Fluid Mechanics, **649**, 275 (2010).
5. *Statistical Properties of Turbulence: An Overview*,
R. Pandit, P. Perlekar, and **Samriddhi Sankar Ray**,
Pramana - Journal of Physics, **73**, 157 (2009).
4. *Entire solutions of hydrodynamical equations with exponential dissipation*,
C. Bardos, U. Frisch, W. Pauls, **Samriddhi Sankar Ray**, and E. S. Titi,
Communications in Mathematical Physics, **293**, 2, 519 (2009).

3. *Hyperviscosity, Galerkin truncation and bottlenecks in turbulence*,
U. Frisch, S. Kurien, R. Pandit, W. Pauls, **Samriddhi Sankar Ray**, A. Wirth, and J-Z Zhu,
Physical Review Letters, **101**, 144501 (2008).
2. *The Universality of Dynamic Multiscaling in Homogeneous, Isotropic Navier-Stokes and Passive-Scalar Turbulence*,
Samriddhi Sankar Ray, D. Mitra, and R. Pandit,
New Journal of Physics, **10**, 033003 (2008).
1. *Dynamic Multiscaling in Turbulence*,
R. Pandit, **Samriddhi Sankar Ray**, and D. Mitra,
European Physics Journal B **64**, 463 (2008).

Awards, Grants & Membership

- Life Member, Indian Physics Association (2019–).
- Cray Dr A P J Abdul Kalam HPC Award for Research (2019).
- ECR/2015/000361 grant from DST, India (2016-2019).
- PI of Airbus Group Corporate Foundation Chair in Mathematics of Complex Systems.
- Co-PI and Member, Indo-French Centre for Applied Mathematics (IFCAM).
Project : "Theoretical and Numerical Studies of Turbulence in Fluids".
- Funding from the European Research Council under the European Community's Seventh Framework Program (FP7/2007-2013 Grant Agreement No. 240579).
- Member, *European Cooperation in Science and Technology (COST) on Flowing Matter – Cost Action (COST MP1305)*
- Member, *European Cooperation in Science and Technology (COST) on Particles in Turbulence – Cost Action (COST MP0806)*.
- Member, *Optimal transport : Theory and Applications to cosmological Reconstruction and Image processing (ANR-OTARI)*.
- PRACE Project (2010-2011) : Awarded access to the PRACE (Partnership for Advanced Computing in Europe) Research Infrastructure for 50,000,000 core-hours on the JUGENE, IBM BlueGene/P, hosted by the Gauss-Centre for Supercomputing member site in Juelich, Germany.
- Young Fellow of the Indian Institute of Science, Bangalore (2000-2003), India.

Workshops, Conferences and Meetings Organised

18. *Sediment Transport in the Ocean and in Clouds* [Upcoming]
International Centre for Theoretical Sciences, Bangalore, India, September 2020.
Organisers: E. Meiburg, R. Govindarajan, and **Samriddhi Sankar Ray**
17. *Complex Lagrangian Problems of Particles in Flows* [Upcoming]
International Centre for Theoretical Sciences, Bangalore, India, September 2020.
Organisers: M. Cencini, K. Gustafsson, F. De Lillo, and **Samriddhi Sankar Ray**
16. *Fluids Day* [Upcoming]
International Centre for Theoretical Sciences, Bangalore, India, January 2020.
Organisers: R. Govindarajan, **Samriddhi Sankar Ray** and G. Tomar
15. *Indian Statistical Physics Community Meeting 2020* [Upcoming]
International Centre for Theoretical Sciences, Bangalore, India, February 2020.

- Organisers:** R. Bandyopadhyay, A. Dhar, K. Jain, R. Pandit, **Samriddhi Sankar Ray**, S. Sabhapandit, and P. Sharma.
14. *Symposium on Turbulence in Conference on Nonlinear Systems and Dynamics*
Indian Institute of Technology, Kanpur, India, December 2019.
Organiser and Chair: Samriddhi Sankar Ray.
 13. *Indian Statistical Physics Community Meeting 2019*
International Centre for Theoretical Sciences, Bangalore, India, February 2019.
Organisers: R. Bandyopadhyay, A. Dhar, K. Jain, R. Pandit, **Samriddhi Sankar Ray**, S. Sabhapandit, and P. Sharma.
 12. *Indian Statistical Physics Community Meeting 2018*
International Centre for Theoretical Sciences, Bangalore, India, February 2018.
Organisers: R. Bandyopadhyay, A. Dhar, K. Jain, R. Pandit, **Samriddhi Sankar Ray**, S. Sabhapandit, and P. Sharma.
 11. *Indian Statistical Physics Community Meeting 2017*
International Centre for Theoretical Sciences, Bangalore, India, February 2017.
Organisers: R. Bandyopadhyay, A. Dhar, K. Jain, R. Pandit, **Samriddhi Sankar Ray**, S. Sabhapandit, and P. Sharma.
 10. *CompFlu - 2016*
University of Hyderabad, **Hyderabad**, 2016.
Chair, Turbulence.
 9. *Indian Statistical Physics Community Meeting 2016*
International Centre for Theoretical Sciences, Bangalore, India, February 2016.
Organisers: A. Dhar, K. Jain, R. Pandit, **Samriddhi Sankar Ray**, and S. Sabhapandit.
 8. *Soft-matter: Young Investigators Meet*
Goa, India January 2016.
Mentor
 7. *Geodynamo Research (GDR) 2015*
International Centre for Theoretical Sciences, Bangalore, India, June 2015.
Organisers: E. Dormy, S. Fauve, **Samriddhi Sankar Ray**, B. Sreenivasan, and M. Verma.
 6. *The Nonlinear Physics of Complex Flows and Amorphous Solids*
International Centre for Theoretical Sciences, Bangalore, India, April 2015.
Organiser: Samriddhi Sankar Ray.
 5. *Chandrasekhar Lectures by Itamar Procaccia*
International Centre for Theoretical Sciences, Bangalore, India, April 2015.
Organiser: Samriddhi Sankar Ray.
 4. *Indian Statistical Physics Community Meeting 2015*
International Centre for Theoretical Sciences, Bangalore, India, February 2015.
Organisers: A. Dhar, K. Jain, R. Pandit, **Samriddhi Sankar Ray**, and S. Sabhapandit.

3. *Soft-matter: Young Investigators Meet*
Pondicherry, India, December 2015.
Organisers: P. Chaudhury, **Samriddhi Sankar Ray** and S. Roy.
2. *Indian Statistical Physics Community Meeting 2014*
International Centre for Theoretical Sciences, Bangalore, India, February 2014.
Organisers: A. Dhar, K. Jain, R. Pandit, **Samriddhi Sankar Ray**, and S. Sabhapandit.
1. *Transport of Particles in Turbulent Flows: Experimental, Computational and Theoretical Investigations*
International Centre for Theoretical Sciences, Bangalore, India, October 2013.
Organisers: J. Bec, R. Pandit, and **Samriddhi Sankar Ray**.

(Selected) Invited Talks

76. *Thermalisation and Many-Body Chaos: Lessons from Truncated Hydrodynamics*,
Conference on Nonlinear Systems and Dynamics,
Kanpur, India 2019
75. *Thermalisation, Many-Body Chaos, and Weak Solutions in Truncated Hydrodynamics*,
Thermalization, Many body localization, and Hydrodynamics,
Bangalore, India 2019
74. *Cross-correlators: Probing Many-Body Chaos*,
Universal features of hydrodynamical, optical and wave turbulence,
Nice, France 2019
73. *Turbulent Advection of Elastic Chains*,
Discrete Simulations of Fluid Dynamics (DSFD 2019),
Bangalore, India 2019
72. *Lagrangian Intermittency, Irreversibility, and Flight Crashes*,
Perspectives in Nonlinear Dynamics,
São Paulo, Brazil 2019
71. *Interacting Particles in a Turbulent Flow: From Crystals to Flocks*,
Seminar, Indian Institute of Technology, Kharagpur, Department of Physics,
Kharagpur, India 2019.
70. *Interacting and Non-interacting Particles in a Turbulent Flow*,
Seminar, Jawaharlal Nehru University, Department of Physics,
New Delhi, India 2019.
69. *What makes the motion of small particles in turbulence special?*
Colloquium, Ashoka University, Department of Physics,
Sonapet, India 2019
68. *Particles in a Turbulent Flow: How Rain Drops Form?*
Colloquium, Presidency University, Department of Physics,
Kolkata, India 2019

67. *Interacting and Non-interacting Particles in a Turbulent Flow*,
Colloquium, Indian Institute of Science, Department of Physics,
Bangalore, India 2019
66. *Elastic Chains and Crystals in Turbulent Flows*,
Emerging Trends in Computational Fluid Dynamics,
Bangalore, India 2019
65. *The Decimated Navier-Stokes Equation*,
Seminar, Service de Physique de l'Etat Condensé, CEA Saclay,
Paris, France 2019
64. *Understanding Intermittency through Triad Suppressions*,
Colloquium, Ecole Normale Supérieure,
Paris, France 2019
63. *Turbulent Transport: Beyond the Spherical Particle Approximation*,
Seminar, Laboratoire Jean Perrin, Sorbonne University,
Paris, France 2019
62. *Interacting Particles in Turbulence: Chains, Crystals, and Flocking*,
Seminar, Laboratoire de Physique et Mécanique des Milieux Hétérogènes,
Paris, France 2019
61. *Interacting and Non-interacting Particles in a Turbulent Flow*,
Colloquium, NORDITA,
Stockholm, Sweden 2019
60. *New Approaches to Understand Intermittency*,
Seminar, University of Gothenburg, Department of Physics,
Gothenburg, Sweden 2019
59. *OTOC in Classical Models*,
Seminar, NORDITA,
Stockholm, Sweden 2019
58. *Interacting and Non-interacting Particles in a Turbulent Flow*,
Indo-French Workshop for Scientific Cooperation,
Nice, France 2019
57. *Understanding Turbulence through Computer Simulations*,
National Workshop,
Thanjavur, India 2018
56. *The Fascinating World of Turbulent Flows*
Einstein Lectures
Bangalore, India, August, 2018
55. *Decimated Navier-Stokes Turbulence*
Dynamics of Complex Systems
Bangalore, India, June 2018

54. *Non-spherical Particles and Chains in Turbulence*
Dynamics of Complex Systems
 Bangalore, India, June 2018
53. *Droplets in Isotropic Turbulence: Deformation and Break-up Statistics*
Indian Statistical Physics Community Meeting 2018
 Bangalore, India, February 2018
52. *Decimated Navier-Stokes Turbulence: Intermittency, Chaos, and an Emergent Reversibility*
Turbulence from Angstroms to Light Years
 Bangalore, India, January 2018
51. *Decimated Navier-Stokes Turbulence: Intermittency, Chaos, and an Emergent Reversibility*
Journal of Fluid Mechanics Symposia
 Bangalore, India, December 2017
50. *Decimated Navier-Stokes Turbulence*
Institute of Mathematical Sciences (IMSc)
 Chennai, India, May 2017
49. *Onset of thermalisation in hydrodynamic equations: Insights from the Burgers equation*
Indian Statistical Physics Community Meeting 2017
 Bangalore, India, February 2017
48. *Droplets in Turbulent Flows: Lessons for the Microphysics of Clouds*
Summer Research Program on Dynamics of Complex Systems
 Bangalore, India, July 2016
47. *Intermittency in Turbulent Flows: Time to Look in Fourier Space?*
Indian Statistical Physics Community Meeting 2016
 Bangalore, India, February 2016
46. *Settling, collisions, coalescences of inertial particles in turbulent flows*
CSAS - 2016
 Chennai, February 2016
45. *Abrupt Growth of Large Aggregates by Correlated Coalescences in a Turbulent Flow: Short Time Results*
CompFlu - 2016
 Pune, January 2016
44. *Abrupt growth of large aggregates by correlated coalescences in turbulent flow*
Growing Length Scale Phenomena in Condensed Matter Physics
 Bangalore, India, October 2015.
43. *Enhanced Settling and Droplet Growth in Inertial Particles in a Turbulent Flow*
Colloquium
Theoretical Sciences Unit, Jawaharlal Nehru Centre for Advanced Scientific Research,
 Bangalore, India, September 2015.

42. *Bottlenecks in Turbulence: Signatures in Physical Space*
European Turbulence Conference 15
Delft, The Netherlands, August 2015
41. *Settling and Coalescences of Inertial Particles in Turbulence*
Seminar
Department of Physics, Indian Institute of Technology Bombay, Mumbai, India, August 2015
40. *Inertial Particles: Implication for Clouds*
Colloquium
Interdisciplinary Programme (IDP) in Climate Studies, Indian Institute of Technology Bombay, Mumbai, India, August 2015.
39. *Settling, Collisions, and Coalescences: Droplets in a Turbulent Flow*
Seminar
University of Rome, Tor Vergatta, Rome, Italy, May 2015
38. *Gravitational Settling of Heavy Particles*
Indian Statistical Physics Community Meeting 2015
Bangalore, India, February 2015
37. *The dynamics of finite-sized particles in turbulent airflows*
Colloquium
International Center for Theoretical Sciences (ICTS-TIFR), Bangalore, India, February 2015
36. *Extreme fluctuations of the relative velocities between droplets in turbulent airflow*
CompFlu - 2014
Bangalore, December 2014
35. *Inertial particles in turbulent flows*
Colloquium
TIFR Center for Inter-disciplinary Sciences, Hyderabad, India, August 2014
34. *Gravity-driven enhancement of heavy particle clustering in turbulent flow*
Dynamic Days Asia Pacific 08
Chennai, India, July 2014.
33. *The dynamics of finite-sized particles in turbulent flows*
Seminar
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, India, July 2014
32. *Gravity-driven enhancement of heavy particle clustering in turbulent flow*
Dynamics of Particles in Flows
Stockholm, Sweden, June 2014
31. *Are thermalised solutions meaningful in the equations of hydrodynamics?*
Seminar
Indian Association for the Cultivation of Science Kolkata, India, April 2014

30. *Turbulence: The Grand Challenge*
Seminar
Department of Physics, Indian Institute of Technology, Kanpur, India, March 2014.
29. *Turbulence in Fractal Dimensions: The Critical Dimension*
Indian Statistical Physics Community Meeting 2014
Bangalore, India, February 2014
28. *Sticky Elastic Collisions*
Soft-matter: Young Investigators Meet
Pondicherry, India, January 2014
27. *Are thermalised solutions meaningful in the equations of hydrodynamics?*
Colloquium
Tata Institute of Fundamental Research – Centre for Applicable Mathematics, Bangalore, India, October 2013
26. *Sticky Elastic Collisions*
Monthly StatPhys Meeting
International Centre for Theoretical Sciences — Tata Institute of Fundamental Research, Bangalore, India, September 2013
25. *Can Truncated Systems Help Us Understand Turbulence?*
Perspectives in Nonlinear Dynamics
Hyderabad, July 2013
24. *Sticky elastic collisions and the effect of hydrodynamic interactions*
Seminar
International Centre for Theoretical Sciences — Tata Institute of Fundamental Research, Bangalore, India, June 2012
23. *Statistical Mechanics and Turbulence*
Colloquium
International Centre for Theoretical Sciences — Tata Institute of Fundamental Research, Bangalore, India, June 2012
22. *Resonance phenomenon for the Galerkin-truncated Burgers and Euler equations*
Mathematics of particles and flows
Vienna, Austria, May–June 2012
21. *Sticky elastic collisions*
Particles in Turbulence
Leiden, Holland, May 2012
20. *Statistical Mechanics and Turbulence*
Seminar
Department of Physics, Indian Institute of Technology, Kanpur, India, January 2012
19. *Inertial Particles in Turbulent Flows and the Effect of Collisions*
Seminar
Department of Physics, Indian Institute of Technology, Kanpur, India, January 2012

18. *Statistical Mechanics and Turbulence*
Colloquium
Satyandra Nath Bose National Center for Basic Sciences, Kolkata, India, January 2012
17. *Statistical Mechanics and Turbulence*
Seminar
Saha Institute of Nuclear Physics, Kolkata, India, December 2011
16. *Statistical Mechanics and Turbulence*
Seminar
Indian Institute of Technology, Kharagpur, India, December 2011
15. *Resonant phenomenon for the Galerkin-truncated Burgers and Euler equations*
ICTS–TIFR Discussion Meeting on High Precision Computing
Bangalore, India, December 2011
14. *Sticky elastic collisions*
Rencontre Nicoise de Mecanique des Fluides
Nice, France, November 2011
13. *Gravitational settling of heavy particles*
Seminar
Max Planck Institute for Dynamics and Self-Organization, Göttingen, Germany, November 2011
12. *Gravitational settling of heavy particles*
Meeting of the ANR
Nice, France, October 2011
11. *The tyger phenomenon for the Galerkin truncated Burgers and Euler equations*
The solar course, the chemic force, and the speeding change of water
Stockholm, Sweden, October, 2011
10. *The Persistence Problem in Turbulence*
Fundamental Problems of Turbulence: 50 years after the Turbulence Colloquium Marseille 1961
Marseille, France, September, 2011
9. *Turbulence in Fractal Dimensions*
Seminar
Saha Institute of Nuclear Physics, Kolkata, India, July 2011
8. *Time Scales in Turbulent Flows in Two Dimensions*
Seminar
Max-Planck-Institute for Dynamics and Self-Organization, Göttingen, Germany, May, 2010
7. *The Universality of Dynamic Multiscaling*
Seminar
Saha Institute of Nuclear Physics, Kolkata, India, July 2009
6. *Thermalisation*
Turbulence and Statistical Mechanics
Les Houches, France, March 2009.

5. *Bottlenecks, thermalization and surprises in the Galerkin-truncated Burgers Equation*,
Seminar
Satyendra Nath Bose National Centre for Basic Sciences, Kolkata, India, October, 2008
4. *Surprises in the Galerkin-truncated Burgers Equation*
Transport in Hydrodynamical Flows: Numerical and Analytical Approaches
Moscow, Russia, September, 2008
3. *Dynamic Multiscaling in Turbulence*
Seminar
Max-Planck-Institute for Dynamics and Self-Organization Göttingen, Germany, July, 2008
2. *Galerkin-truncated Burgers Equation and Bottlenecks*
Rencontres Nicoises de Mecanique des Fluides
Nice, France, May 2008
1. *Burgers Equation and Hyperviscosity*
GdR Turbulence: Fundamental Aspects of Turbulence
Lyon, France March - April 2008