

Abhrajit Laskar

CONTACT INFORMATION

Ph.D. Student in Theoretical Physics
[Institute of Mathematical Sciences](#)
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RESEARCH INTERESTS

Active Soft Matter : Theory and Simulation in close collaboration with experiment. I use relevant statistical mechanics tools and numerical techniques to investigate non-equilibrium collective dynamics, assembly of active colloids, microswimmers and synthetic phoretic particles in viscous fluid.

PUBLICATIONS

1. [Abhrajit Laskar](#), R Adhikari. **Instabilities and oscillations of an elastic filament driven by an active colloid**. 2015. In preparation.
2. [Abhrajit Laskar](#), R Adhikari. **Brownian microhydrodynamics of active filaments**. *Soft Matter*. 2015. [Journal Link](#). Cover page [image](#).
3. [Abhrajit Laskar](#), Rajeev Singh, Somdeb Ghose, Gayathri Jayaraman, PB Sunil Kumar, R Adhikari. **Hydrodynamic instabilities provide a generic route to spontaneous biomimetic oscillations in chemomechanically active filaments**. *Nature, Scientific reports*. 2013. [Journal Link](#).
4. G Jayaraman, S Ramachandra, S Ghose, [Abhrajit Laskar](#), M Bhamla, PB Sunil Kumar and R Adhikari **Motility of Active Filaments due to Spontaneous Flow-Symmetry Breaking**. *Physical Review Letters* 109, 158302. 2012. [Journal Link](#).

REFERENCE

- **Prof. Ronojoy Adhikari** (Supervisor)
Institute of Mathematical Sciences, Chennai, India
Email-id : rjoy@imsc.res.in
- **Prof. P. B. Sunil Kumar**
Department of Physics, Indian Institute of Technology Madras
Email-id : sunil@iitm.ac.in

EDUCATION

- Integrated Ph.D** (2009 - present)
[Institute of Mathematical Sciences](#), Chennai, India
- Master's Thesis : Instability in Lattice Structure of Micro-organism
 - Supervisor : Prof. Ronojoy Adhikari

Bachelor of Sciences (2006 -2009)

Ramakrishna Mission Vidyamandira, University of Calcutta, West Bengal, India

- Major : Physics (qualified in 2009)
- Minors : Chemistry and Mathematics (qualified in 2008)

COMPUTATIONAL SKILL

- Programming and Mark-up Languages
Proficient : C, C++, Cython, Python
Familiar : Fortran
- Software
Proficient : MATLAB
Familiar : MATHEMATICA
- Visualization
Proficient : Open-Dx, Paraview
Familiar : Povray

TECHNICAL EXPERIENCE

1. Numerical methods for Stokes Flow
2. Monte-Carlo Simulation
3. Lattice Boltzmann Method

TEACHING EXPERIENCE

1. **Classical Mechanics** (Undergraduate course)
Teaching Assistant **IMSc** Sept. 2011 - Dec. 2011
2. **Statistical Mechanics** (Undergraduate course)
Teaching Assistant **IMSc** Jan. 2014 - Apr. 2014

AWARDS

- Poster presentation award in Compflu, 2014, JNCASR. Won 2nd prize in poster presentation and a five minute teaser talk.
- Joint Entrance Screening Test 2009 after Bachelors. Ranked 34, securing 98.56 percentile. Got offer from four research institutes for integrated course.
- Joint Admission Test For M.Sc. 2009. Ranked 42.
- National Graduate Physics Examination 2008-2009 (within national 1%).
- Secured 34th position in Physical Science, Junior Research Fellowship (NET - CSIR) 2011 December.

MISCELLANIOUS
ACTIVITIES

Conference, Workshop and School attended

- SERC Non-linear Dynamics winter school, Delhi University, India, Dec, 2009
- Gravitation and Cosmology School, HRI, Allahabad, India June, 2010
- Soft Condensed Matter School, SNBNCBS, Kolkata, India, Dec, 2010
- Unifying Concepts of Material, JNCASR, Bangalore, India, Jan, 2012
- Statistical Mechanics School, RRI, Bangalore, India, April, 2012
- Discrete Simulation of Fluid Dynamics, JNCASR, Bangalore, India, July, 2012
- Bayesian inference workshop, Bayes by the bay, Pondicherry, India, January, 2013
- Poster presentation, Conference On Condensed Matter And Biological Systems (CCMB13), BHU, Varanasi, India, January, 2013
- Poster presentation, Diversity and Complexity: Realm of Today's Statistical Physics, SINP, Kolkata, India, January, 2013
- Statistical Mechanics School, RRI, Bangalore, India, April, 2013
- Poster presentation, Summer School Fundamental Problems in Statistical Physics XIII, Leuven, Belgium, June, 2013
- Complex Fluids-2013, IITD, Delhi, India, December, 2013
- Poster presentation and local organiser, SMYIM, Pondicherry, January, 2014
- Poster presentation, SMYIM-2, Pondicherry, December, 2014
- Poster presentation, Complex fluids-2014, JNCASR, Bangalore, December, 2014
- Talk presentation, New Colloids discussion meeting, RRI, Bangalore, India, July, 2015
- Poster presentation, Non-equilibrium collective dynamics-2015, Potsdam, Germany, Oct, 2015

MORE
INFORMATION

More information and auxiliary documents can be found at
[Git-Hub Page](#).