

39th M. Smoluchowski Symposium on Statistical Physics

Frontiers in Complexity Theory and Fractional Dynamics

Rome, Italy | 23–25 September 2026

Wednesday, 23/09

09:00 – 09:30		Opening Address 	
09:30 – 10:00	IT	Fast Rare Events in Exit-Time Statistics of Jump Processes	Raffaella Burioni
10:00 – 10:30	IT	Anomalous Diffusion, Non-Gaussianity and Long-Range Dependent Motion	Ralf Metzler
10:30 – 11:00	IT	Boltzmann Equations: From Random Exchange Models for the Distribution of Wealth to the Lorentz Gas	Enrico Scalas
11:00 – 11:30		Coffee Break 	
11:30 – 12:00	IT	Different Types of Random Motion and Generalized Fokker-Planck Equations	Luca Angelani
12:00 – 12:30	IT	Multimodality of Stationary States in Single-Well Potentials	Bartłomiej Dybiec
12:30 – 13:00	IT	Continuous-Time Random Walks with Resetting: Scaling Limits and Anomalous Diffusions	Luisa Beghin
13:00 – 14:00		Lunch Break 	
14:00 – 14:30	IT	Janus Percolation in Anisotropic Limited-Degree Networks	Lucilla de Arcangelis
14:30 – 15:00	IT	The Cost of Ignorance: Sparse Corruption and BBP-Type Transitions in Low-Rank Matrix Inference	Pierpaolo Vivo
15:00 – 15:30	IT	Preferential Attachment Graphs: Random Initial Degrees	Federico Polito
15:30 – 16:00	IT	Information Engine Fueled by First-Passage Times	Alberto Imparato

IT Invited Talk (25 min. + 5 min. Q & A)

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Thursday, 24/09

09:00 – 09:30	IT	The Real Butterfly Effect: From the Pop Culture to Mathematics and Physics	Angelo Vulpiani
09:30 – 10:00	IT	Burgers Equation and the Fermi-Pasta-Ulam-Tsingou Lattice	Stefano Ruffo
10:00 – 10:30	IT	Observers, Fluctuations and Fluctuation Theorems	Francesco Caravelli
10:30 – 11:00	IT	Formal Fluctuation-Response Relations for Non-Stationary Systems	Igor Sokolov
11:00 – 11:30	Coffee Break ☕		
11:30 – 12:00	IT	Heavy Distribution Tails and Explosive Moments in a Doubly-Stochastic Model of Cell Proliferation	Marek Kimmel
12:00 – 12:30	IT	Statistical Fluctuations of Large-Scale Mind States	Dante Chialvo
12:30 – 13:00	IT	Fractal and Multifractal Organisation of Neuroimaging Signals	Jeremi Ochab
13:00 – 14:00	Lunch Break 🍴		
14:00 – 14:30	IT	Non-Local Dynamic Boundary Conditions for Sticky Brownian Motions on Smooth Domains	Mirko D'Ovidio
14:30 – 15:00	IT	Superdiffusion in a System with a Thin Membrane	Tadeusz Kosztołowicz
15:00 – 15:30	IT	Analysis of Fractional Cauchy Problems with Some Probabilistic Applications	Enzo Orsingher
15:30 – 17:00	Poster Session 📅		
20:00 –	Conference Dinner 🍴		

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Poster Session — Thursday, 24/09

ID	Presenter	Poster Title
1	Erik Kalz	Unusual Transport in Odd-Diffusive Systems
2	Nir Schreiber	Conflict Between Ensembles in a System with Random Disorder on a Complete Graph
3	Prashanta Bauri	Reset-Controlled Thermodynamic Transition in an Inhomogeneous Brownian Information Engine
4	Mohammad Salar Ghasemi Nasab	Curvature-Driven Phase Behavior in a Vertex Model of Epithelial Tissues
5	Goutham R	Probabilities of Rare Events in Product Kernel Aggregation: An Exact Formula and Phase Diagram
6	Debasish Mondal	Feller Diffusion in an Interval: Inhomogeneous Fluctuation-Induced Asymmetric Escapes
7	Sheela Sheela	Study of Stochastic Thermodynamics and Dynamic Hysteresis in Autocatalytic Reaction Networks
8	Pablo Vidal Franco	Behavior of Hidden Nodes in Artificial Neural Networks Under Increasing Cognitive Load
9	Helder Larraguivel	Phase Diagram of Turing Pattern Formation
10	Enrique Puga Cital	Strong Violation of the Thermodynamic Uncertainty Relation in a Minimal Autonomous Heat Engine
11	Paweł Karbowiczek	Ferroelectric Twist-Bend Nematic Order from Competing Depolarization and Flexopolarization Energies

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Friday, 25/09

09:30 – 10:00	IT	Large Deviations for Linear Regression	Silvia Bartolucci
10:00 – 10:30	IT	Heterogeneous Diffusion and Its Connection to the Noisy Voter Model	Tobiasz Pietrzak
10:30 – 11:00	IT	Random Walks with Stochastic Resetting: A Discrete-Time Approach	Giuseppe D'Onofrio
11:00 – 11:30	Coffee Break ☕		
11:30 – 12:00	IT	Monte-Carlo Search for Nematic Liquid Crystals of Non-Standard Symmetries	Michał Cieřła
12:00 – 12:30	IT	A New Exact Fractal Mean-Field Analysis in Phase Transition	Fernando de Oliveira
12:30 – 13:00	IT	Estimation of Methylation Entropy Distribution in Genomics	Monika Kurpas
13:00 – 14:00	Conference Closing & Lunch 🍴👥		

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