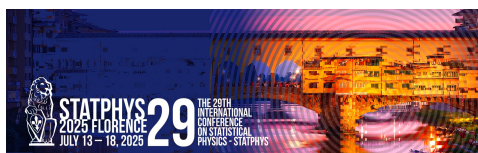


“COMPLEX FLOWS AND COMPLEX FLUIDS 2025”

Satellite Meeting StatPhys29

8-11 July 2025

Aula Marconi (CNR) - Piazzale Aldo Moro,7 - 00185, Rome (ITALY)



WORKSHOP PROGRAM

MEETING ROOM: Sala MARCONI

COFFEE BREAKS: Sala LAGUNA

Tuesday 8

MORNING SESSION

8.30 - 9.45 Registration and welcome coffee (SALA LAGUNA)

9.45 - 10.30 Invited: Antonio Celani “Learning to navigate in complex flows”

10.30 - 12.30 (8)

1. Jingran Qiu “Smart navigation of a gravity-driven glider with adjustable centre-of-mass”
2. Kristian Gustavsson “Efficient microswimmer navigation”
3. Chiara Calascibetta “Harnessing swarms to optimize transport of interacting active particles”
4. Diptabrata Paul “Experimental Realization of Autonomous Navigation of Active Microswimmer in Complex Flow Fields using Reinforcement Learning “
5. Minping Wan “Phase transitions of active tracer particles in two-dimensional isotropic turbulence”
6. Xander de Wit “Learning a dynamical system for Lagrangian particle trajectories using the Mori-Zwanzig formalism”
7. Hussein Aluie “The Multiscale Ocean Circulation”
8. Michele Buzzicotti “Generation and Reconstruction of Lagrangian Turbulence with Stochastic Generative Models”

12.30 - 14.00 LUNCH

AFTERNOON SESSION

14.00 - 14.45 Invited: Eva Kanso “Order and Chaos in Massive Schools of Fish”

14.45 - 16.00 (5)

1. Marco Edoardo Rosti “Turbulence in a fluid with variable viscosity”
2. Francesca Pelusi “Intermittency, dynamical regimes and role of emulsifiers in emulsions under Rayleigh-Bénard thermal convection”
3. Giacomo Guastella “Directional Fluidity induced by Asymmetric Wall Roughness”
4. Prasad Perlekar “Scale-by-scale energy transfers in bubbly flows”
5. Mirko Gallo “Fluctuating hydrodynamics description of phase change in fluids”

16.00 - 16.30 COFFEE BREAK

16.30 - 17.15 Invited: Cristina Marchetti “Active Phase Separation and Interfaces”

Wednesday 9

MORNING SESSION

9.00 - 9.45 Invited: Agnese Seminara “Octopus inspired multi-agent prediction and navigation in a turbulent environment”

9.45 - 10.30 (3)

1. Nicola Rigolli “Natural olfactory scene statistics in a model of turbulent odor dispersion”
2. Vishwanath Shukla “Collective Nutrient Search by Active Chemotactic Agents in Two Dimensional Flows “
3. Lorenzo Piro “Policy heterogeneity improves collective olfactory search in 3-D turbulence”

10.30 - 11.00 COFFEE BREAK

11.00 - 12.30 (6)

1. Carlo Massimo Casciola “Supramolecular Polymers for Turbulent Drag Reduction”
2. Victor Steinberg “Stochastic resonance in low-inertia viscoelastic channel flow”
3. Yi-Bao Zhang “Global drag reduction and local flow statistics in Taylor-Couette turbulence with dilute polymer additives”
4. Stefano Berti “Nonhomogeneous elastic turbulence in two-dimensional confined geometry”
5. Garg “Examining the dissipation range of polymeric turbulence”
6. Moritz Linkman “Subcritical transition to elastic turbulence in parallel shear flows: Recent progress”

12.30 - 14.00 LUNCH

AFTERNOON SESSION

14.00 - 14.45 Invited: Aurore Naso “Settling and collisions of ice crystals in turbulent clouds”

14.45 - 16.00 (5)

1. Jeremie Bec “Homogeneous turbophoresis of heavy particles”
2. Bernhard Mehlig “Inertia induces strong orientation fluctuations of non-spherical atmospheric particles”
3. Dylan Reynolds “On the stability of a collection of sedimenting spheres”
4. Marco Cialesi-Esposito “How small droplets form in turbulent multiphase flows”
5. Federico Toschi “Stochastic resonance of magnetic particles in turbulence”

16.00 - 16.30 COFFEE BREAK

16.30 - 17.15 POSTER SESSION

20.00 SOCIAL DINNER at [CAST-CINE BISTROT](#) ([Largo Marcello Mastroianni, 1 Roma](#))

Thursday 10

MORNING SESSION

9.00 - 10.30 (6)

1. Alfredo Soldati "Complex interface dynamics in drop-laden turbulence"
2. Giulio Foggi Rota "Interface dynamics of a turbulent water layer"
3. Hossameldin Abdelaziz "Matching small and large scales in weakly-porous grid flows"
4. Bruno Magacho "Hidden symmetry in 3D turbulence: Navier-Stokes vs Smagorinsky"
5. Alessandro Corbetta "Enhancing lattice kinetic schemes for fluid dynamics with Lattice-Equivariant Neural Networks"
6. Adrien Lopez "Turbulent Boundary Layer on Logarithmic Lattices"

10.30 - 11.00 COFFEE BREAK

11.00 - 12.30 (6)

1. Lucio Mauro Carenza "Rheology of a Chiral Active System"
2. Adriano Tiribocchi "Shapes and dynamic regimes of an active fluid droplet under confinement"
3. Lorenzo Caprini "Hydrodynamics of odd-interacting systems"
4. Fabio Cecconi "Beating Dynamics of Flagella Under Traveling-Wave Perturbations"
5. Anupam Gupta "Unveiling the Spatial Organization of Vortices in Active Turbulence"
6. Francesco Michele Ventrella "Collective dynamics of simple model microswimmers"

12.30 - 14.00 LUNCH

AFTERNOON SESSION

14.00 - 14.45 Invited: Davide Marenduzzo "Topological quasiparticles in active turbulence"

14.45 - 16.00 POSTER SESSION

16.00 - 16.30 COFFEE BREAK

16.30 - 17.15 Invited: William Irvine "Weaving tangled vortex webs"

FRIDAY 11

MORNING SESSION

9.00 - 9.45 Invited: Michael Wilczek “Emulating high-Reynolds-number flows with ensembles of lower-Reynolds-number flows”

9.45 - 10.30 (3)

1. Freddy Bouchet “Emulators of turbulent flows, atmosphere dynamics and extreme events”
2. Santiago Benavides “Triad phase dynamics determine flux in 2D turbulence”
3. Miguel Bustamante “Helical Triad Phase Synchronisation in Extreme 3D Navier-Stokes Flows”

10.30 - 11.00 COFFEE BREAK

11.00 - 12.30 (6)

1. Jeremiah Lübke “Coherent magnetic structures in various MHD turbulence systems and their impact on cosmic ray transport”
2. Miguel Onorato “Evidence of resonant interactions in ocean wave data”
3. Nicolas Mordant “Stratified turbulence forced by large scale internal waves: experiments in the Coriolis facility”
4. Vladimir Rosenhaus “Weak and strong turbulence in self-focusing and defocusing media”
5. Michal Shavit “Weak turbulence of internal gravity waves”
6. Victor Valadao “Scaling and Predictability in Surface Quasi-Geostrophic Turbulence”

12.30 - 14.00 LUNCH

AFTERNOON SESSION

14.00 - 14.45 Invited: Samriddhi Sankar Ray “Solving problems in hydrodynamic turbulence by leaning on ideas from many-body systems”

14.45 - 16.00 (5)

1. Michael Chertkov “Control of Small Spontaneous Turbulence Using Generative AI”
2. Lucas Huysmans, “Non-Uniqueness and Inadmissibility of the Vanishing Viscosity Limit of the Passive Scalar Transport Equation”
3. Vasanth Kumar Babu “Liquid-Droplet Coalescence: CNN-based Reconstruction of Flow Fields from Concentration Fields”
4. Andrés Cremades-Botella “Classically studied coherent structures only paint a partial picture of wall-bounded turbulence”
5. Xiao Xue “Discovery of intrinsic dynamics from kinetic data”

16.00 - 16.30 COFFEE BREAK

16.30 - 16.45 EPL PRIZE

16.45 - 17.30 Invited: Chao Sun “Experimental Investigation of Flowing Emulsions in Wall-Bounded Turbulence”