

Dynamics and Statistical Physics Division Fachverband Dynamik und Statistische Physik (DY)

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The Dynamics and Statistical Physics Division covers theoretical and experimental activities in all areas of statistical physics, quantum dynamics and many-body systems, nonlinear dynamics and pattern formation, data analysis and machine learning as well as active matter, fluid physics, soft matter, and complex fluids. The DY Division has strong links and joint sessions with the Divisions of Biological Physics (BP), Chemical Physics and Polymers (CPP), Socio- and Econophysics (SOE), and Low Temperatures (TT).

Overview of Invited Talks and Sessions

(Lecture halls HÜL/0186, ZEU/0160, ZEU/0118, and ZEU/0114; Poster P5-ZEU/0250)

Invited Talks

DY 7.1	Mon	9:30–10:00	ZEU/0114	Fast Rare Events in Exit Times Distributions of Jump Processes — ●RAFFAELLA BURIONI
DY 7.6	Mon	11:15–11:45	ZEU/0114	Large deviations in resetting Brownian motions — ●SATYA MAJUMDAR
DY 8.5	Mon	10:30–11:00	ZEU/0118	Mean-field approach to finite-size fluctuations in coupled oscillator systems — ●OLEH OMELCHENKO, GEORG GOTTWALD
DY 15.1	Mon	15:00–15:30	ZEU/0114	Monte Carlo Simulation Methods for Rare-Event Sampling — ●WOLFHARD JANKE
DY 17.8	Mon	17:00–17:30	ZEU/0160	Topological transition in filamentous cyanobacteria: from motion to structure — ●MARCO MAZZA
DY 19.1	Tue	9:30–10:00	HÜL/S186	Mechanics of entangled fibers — ●OLIVIER POULIQUEN, AUBIN ARCHAMBAULT, IGNACIO ANDRADE, JEROME CRASSOUS, HENRI LHUISSIER, JOËL MARTHELOT
DY 21.7	Tue	11:15–11:45	ZEU/0114	Why Life Is Hot — ●TANJA SCHILLING, PATRICK WARREN, WILSON POON
DY 28.1	Tue	14:00–14:30	ZEU/0118	Geometry of turbulent mixing in thermal convection — ●JÖRG SCHUMACHER
DY 29.5	Tue	15:00–15:30	ZEU/0160	Designing topological edge states in bacterial active matter — YOSHIHITO UCHIDA, DAIKI NISHIGUCHI, ●KAZUMASA A. TAKEUCHI
DY 34.1	Wed	9:30–10:00	ZEU/0160	Active turbulence and odd viscosity in a colloidal chiral active system in bulk and in patterned environments — JOSCHA MECKE, YONGXIANG GAO, ●MARISOL RIPOLL
DY 37.1	Wed	11:15–11:45	ZEU/0118	Topological defects in 2D amorphous ensembles — ●PETER KEIM
DY 40.1	Wed	15:00–15:30	ZEU/0114	Learning the statistical folding of bacterial chromosomes — ●CHASE BROEDERSZ
DY 49.1	Thu	9:30–10:00	ZEU/0160	Active memory and non-reciprocity as pathways to pattern formation in conserved scalar fields — ●SUROPRIYA SAHA, VAISHNAVI GAJENDRAGAD
DY 55.1	Thu	15:00–15:30	ZEU/0160	Out-of-equilibrium synthetic cells: the future of active matter — ●LAURA ALVAREZ
DY 55.3	Thu	15:45–16:15	ZEU/0160	Chemotactic like behavior in by active Brownian particles: from single particles to to polymers — ●HIDDE VUIJK

DY 55.5	Thu	16:45–17:15	ZEU/0160	From non-reciprocal torques towards shape-flexible and responsive prototypic worms — ●HOLGER STARK, JEANINE SHEA
DY 59.7	Fri	11:15–11:45	HÜL/S186	Anyon dynamics in driven topologically ordered quantum systems — ●FRANCESCO PETIZIOL
DY 62.1	Fri	9:30–10:00	ZEU/0160	Morphogenesis, transport, and computation in micro-scale swarms — ●AKIRA KAKUGO

Invited Talks of the joint Symposium SKM Dissertation Prize 2026 (SYSD)

See SYSD for the full program of the symposium.

SYSD 1.1	Mon	9:30–10:00	HSZ/0002	Stochastic-Calculus Approach to Non-equilibrium Statistical Physics — ●CAI DIEBALL
SYSD 1.2	Mon	10:00–10:30	HSZ/0002	Nonuniform magnetic spin textures for sensing, storage and computing applications — ●SABRI KORALTAN
SYSD 1.3	Mon	10:30–11:00	HSZ/0002	Anomalous Quantum Oscillations beyond Onsager’s Fermi Surface Paradigm — ●VALENTIN LEEB
SYSD 1.4	Mon	11:00–11:30	HSZ/0002	Coherent Control Schemes for Semiconductor Quantum Systems — ●EVA SCHÖLL
SYSD 1.5	Mon	11:30–12:00	HSZ/0002	On stochastic thermodynamics under incomplete information: Thermodynamic inference from Markovian events — ●JANN VAN DER MEER

Invited Talks of the joint Symposium The Sustainability Challenge: A Decade of Transformation (SYSC)

See SYSC for the full program of the symposium.

SYSC 1.1	Mon	15:00–15:30	HSZ/AUDI	Open-Endedness and Community-Based Approaches to Sustainability Challenges — ●HIROKI SAYAMA
SYSC 1.2	Mon	15:30–16:00	HSZ/AUDI	Education as a Social Tipping Element: Evidence from Climate and Physics Education Research — ●THOMAS SCHUBATZKY
SYSC 1.3	Mon	16:00–16:30	HSZ/AUDI	Mechanistic and Material Perspectives on Enzymatic Hydrolysis of Semicrystalline Polyesters — ●BIRTE HÖCKER
SYSC 1.4	Mon	16:45–17:15	HSZ/AUDI	Decarbonization Options for Industry — ●UWE RIEDEL
SYSC 1.5	Mon	17:15–17:45	HSZ/AUDI	Impacts of Cosmic Dust and Space Debris in the Terrestrial Atmosphere — ●JOHN PLANE

Invited Talks of the joint Symposium Fluids with Broken Time-Reversal Symmetry: Odd/Hall Viscosity between Active Matter and Electron Flows (SYBS)

See SYBS for the full program of the symposium.

SYBS 1.1	Tue	9:30–10:00	HSZ/AUDI	Odd viscosity in three-dimensional fluids: flows, wakes, and eddies — ●TALI KHAIN
SYBS 1.2	Tue	10:00–10:30	HSZ/AUDI	Odd viscosity in two-dimensional hydrodynamic electron transport — ●IGOR GORNYI, DMITRY POLYAKOV
SYBS 1.3	Tue	10:30–11:00	HSZ/AUDI	Odd slip on chiral active surfaces — ●ANDREJ VILFAN, YUTO HOSAKA
SYBS 1.4	Tue	11:15–11:30	HSZ/AUDI	Parity-odd transport in electron fluids — ●JOHANNA ERDMENGER
SYBS 1.5	Tue	11:30–11:45	HSZ/AUDI	Curved Odd Elasticity — LAZAROS TSALOUKIDIS, YUAN ZHOU, JACK BINYSH, NIKTA FAKHRI, CORENTIN COULAIS, ●PIOTR SURÓWKA

Invited Talks of the joint Symposium France: Soft, Active and Alive: Emergent Properties in Living Matter (SYGF)

See SYGF for the full program of the symposium.

SYGF 1.1	Wed	15:00–15:30	HSZ/AUDI	Liquid crystal geometries in type I collagen-based tissues — ●NADINE NASSIF
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SYGF 1.2	Wed	15:30–16:00	HSZ/AUDI	Self-organization of the cytoplasm by physical instabilities — •JAN BRUGUES
SYGF 1.3	Wed	16:00–16:30	HSZ/AUDI	From morphogenesis to space partitioning by microtubules and molecular motors. — •MANUEL THERY
SYGF 1.4	Wed	16:45–17:15	HSZ/AUDI	More than the sum: how composite interfaces govern function — •ALBA DIZ-MUÑOZ
SYGF 1.5	Wed	17:15–17:45	HSZ/AUDI	Swimming and Swarming of Intelligent Active Particles — SEGUN GOH, PRIYANKA IYER, RAJENDRA SINGH NEGI, •GERHARD GOMPPER
SYGF 1.6	Wed	17:45–18:15	HSZ/AUDI	Perturbing the collective motion of fish with challenging environments — •AURÉLIE DUPONT

Invited Talks of the joint Symposium Tipping Points in Social and Climate Systems (SYTP)

See SYTP for the full program of the symposium.

SYTP 1.1	Thu	15:00–15:30	HSZ/AUDI	Social Tipping in Heterogeneous and Polarized Populations — •SARA CONSTANTINO, SONKE EHRET, ELKE WEBER, SONJA VOGT, CHARLES EFFERSON
SYTP 1.2	Thu	15:30–16:00	HSZ/AUDI	Tipping points and regime shifts in coupled social-climate systems — •CHRIS BAUCH
SYTP 1.3	Thu	16:00–16:30	HSZ/AUDI	How to tune Earth system models toward tipping? — •SEBASTIAN BATHIANY, NIKLAS BOERS
SYTP 1.4	Thu	16:45–17:15	HSZ/AUDI	Algorithmic amplification and contextual sensitivity in political information exposure — IRIS DAMIÃO, ANA VRANIC, PAULO ALMEIDA, LÍLIA PERFEITO, •JOANA GONÇALVES DE SÁ
SYTP 1.5	Thu	17:15–17:45	HSZ/AUDI	The complex interplay between democracy and platform power — •PHILIPP LORENZ-SPREEN

Sessions

DY 1.1–1.2	Sun	16:00–18:15	HSZ/0004	Tutorium: Physics of Behavior (joint session SOE/TUT/DY)
DY 2.1–2.5	Mon	9:30–12:15	HSZ/0003	Focus Session: New Routes to Localization and Quantum Non-Ergodicity I (joint session TT/DY)
DY 3.1–3.11	Mon	9:30–12:30	HSZ/0101	Quantum-Critical Phenomena (joint session TT/DY)
DY 4.1–4.11	Mon	9:30–12:45	BAR/SCHÖ	Active Matter I (joint session BP/CPP/DY)
DY 5.1–5.10	Mon	9:30–12:45	GÖR/0226	Focus Session: Physics of Behavior (joint session SOE/DY)
DY 6.1–6.13	Mon	9:30–13:00	HÜL/S186	Machine Learning in Dynamics and Statistical Physics I
DY 7.1–7.10	Mon	9:30–12:45	ZEU/0114	Focus Session: Large Deviations and Rare Events I
DY 8.1–8.10	Mon	9:30–12:30	ZEU/0118	Nonlinear Dynamics, Synchronization, and Chaos
DY 9.1–9.10	Mon	9:30–12:15	ZEU/0160	Statistical Physics far from Thermal Equilibrium I
DY 10.1–10.5	Mon	9:30–11:00	ZEU/0260	Wetting, Fluidics and Liquids at Interfaces and Surfaces I (joint session CPP/DY)
DY 11.1–11.5	Mon	11:30–12:45	ZEU/0260	Wetting, Fluidics and Liquids at Interfaces and Surfaces II (joint session CPP/DY)
DY 12.1–12.6	Mon	15:00–18:00	CHE/0089	Focus Session: Relaxation Timescales in Open Quantum Systems (joint session TT/DY)
DY 13.1–13.9	Mon	15:00–17:30	CHE/0091	Focus Session: New Routes to Localization and Quantum Non-Ergodicity II (joint session TT/DY)
DY 14.1–14.13	Mon	15:00–18:30	HÜL/S186	Machine Learning in Dynamics and Statistical Physics II
DY 15.1–15.12	Mon	15:00–18:30	ZEU/0114	Focus Session: Large Deviations and Rare Events II
DY 16.1–16.13	Mon	15:00–18:30	ZEU/0118	Droplets, Wetting, and Microfluidics (joint session DY/CPP)
DY 17.1–17.12	Mon	15:00–18:30	ZEU/0160	Active Matter II (joint session DY/BP/CPP)
DY 18.1–18.12	Tue	9:30–12:45	BAR/SCHÖ	Active Matter III (joint session BP/CPP/DY)
DY 19.1–19.10	Tue	9:30–12:45	HÜL/S186	Franco-German Session on Granular Matter I
DY 20.1–20.5	Tue	9:30–11:00	ZEU/LICH	Focus Session: Water – from Atmosphere to Space I (joint session CPP/DY)
DY 21.1–21.11	Tue	9:30–12:45	ZEU/0114	Stochastic Thermodynamics
DY 22.1–22.10	Tue	9:30–12:15	ZEU/0118	Pattern Formation

DY 23.1–23.12	Tue	9:30–12:45	ZEU/0160	Complex Fluids and Soft Matter (joint session DY/CPP)
DY 24.1–24.6	Tue	11:15–12:45	ZEU/LICH	Focus Session: Water – from Atmosphere to Space II (joint session CPP/DY)
DY 25.1–25.5	Tue	14:00–15:30	HÜL/S186	Franco-German Session on Granular Matter II
DY 26.1–26.5	Tue	14:00–15:30	ZEU/LICH	Focus Session: Water – from Atmosphere to Space III (joint session CPP/DY)
DY 27.1–27.6	Tue	14:00–15:30	ZEU/0114	Statistical Physics far from Thermal Equilibrium II
DY 28.1–28.4	Tue	14:00–15:15	ZEU/0118	Fluid Physics and Turbulence
DY 29.1–29.5	Tue	14:00–15:30	ZEU/0160	Active Matter IV (joint session DY/BP/CPP)
DY 30.1–30.12	Wed	9:30–12:45	CHE/0091	Nonequilibrium Quantum Systems I (joint session TT/DY)
DY 31.1–31.4	Wed	9:30–11:00	GÖR/0226	Networks, From Topology to Dynamics – Part I (joint session SOE/DY)
DY 32.1–32.12	Wed	9:30–12:45	HÜL/S186	Many-body Systems: Equilibration, Chaos, and Localization (joint session DY/TT)
DY 33.1–33.12	Wed	9:30–12:45	ZEU/0114	Statistical Physics of Biological Systems I (joint session DY/BP)
DY 34.1–34.10	Wed	9:30–12:30	ZEU/0160	Focus Session: Fluids with Broken Time-Reversal Symmetry – Odd/Hall Viscosity Between Active Matter and Electron Flows
DY 35.1–35.4	Wed	9:30–10:45	ZEU/0260	Focus Session: Water – from Atmosphere to Space IV (joint session CPP/DY)
DY 36.1–36.4	Wed	11:00–12:00	ZEU/0260	Focus Session: Water – from Atmosphere to Space V (joint session CPP/DY)
DY 37.1–37.5	Wed	11:15–12:45	ZEU/0118	Glasses and Glass Transition (joint session DY/CPP)
DY 38.1–38.9	Wed	15:00–17:30	HSZ/0105	Nonequilibrium Quantum Systems II (joint session TT/DY)
DY 39.1–39.3	Wed	15:00–15:45	GÖR/0226	Networks, From Topology to Dynamics – Part II (joint session SOE/DY)
DY 40.1–40.5	Wed	15:00–16:30	ZEU/0114	Statistical Physics of Biological Systems II (joint session DY/BP)
DY 41.1–41.16	Wed	15:00–18:00	P5	Poster: Nonlinear Dynamics, Granular Matter, and Machine Learning
DY 42.1–42.15	Wed	15:00–18:00	P5	Poster: Quantum Dynamics and Many-body Systems (joint session DY/TT)
DY 43.1–43.24	Wed	15:00–18:00	P5	Poster: Statistical Physics
DY 44.1–44.22	Wed	15:00–18:00	P5	Poster: Active Matter, Soft Matter, and Fluids
DY 45.1–45.6	Thu	9:30–11:15	GÖR/0226	Focus Session: Physics of AI – Part I (joint session SOE/DY)
DY 46.1–46.12	Thu	9:30–12:45	HÜL/S186	Many-body Quantum Dynamics I (joint session DY/TT)
DY 47.1–47.11	Thu	9:30–12:30	ZEU/0114	Statistical Physics: General I
DY 48.1–48.6	Thu	9:30–11:00	ZEU/0118	Nonlinear Dynamics and Time-Delay Systems
DY 49.1–49.11	Thu	9:30–12:45	ZEU/0160	Active Matter V (joint session DY/BP)
DY 50.1–50.7	Thu	10:15–12:45	BAR/0106	Focus Session: Controlling Microparticles and Biological Cells by Ultrasound (joint session BP/CPP/DY)
DY 51.1–51.6	Thu	11:15–12:45	ZEU/0118	Networks: From Topology to Dynamics – Part III (joint session DY/SOE)
DY 52.1–52.12	Thu	15:00–18:15	BAR/SCHÖ	Statistical Physics of Biological Systems III (joint session BP/DY)
DY 53.1–53.6	Thu	15:00–16:30	HÜL/S186	Many-body Quantum Dynamics II (joint session DY/TT)
DY 54.1–54.10	Thu	15:00–17:45	ZEU/0114	Statistical Physics: General II
DY 55.1–55.8	Thu	15:00–18:00	ZEU/0160	Focus Session: Emergent Transport in Active Systems (joint session DY/BP)
DY 56	Thu	18:00–19:00	ZEU/0160	Members' Assembly
DY 57.1–57.11	Fri	9:30–12:45	BAR/SCHÖ	Statistical Physics of Biological Systems IV (joint session BP/DY)
DY 58.1–58.10	Fri	9:30–12:45	GÖR/0226	Focus Session: Physics of AI – Part II (joint session SOE/DY)
DY 59.1–59.11	Fri	9:30–12:45	HÜL/S186	Quantum Chaos and Coherent Dynamics (joint session DY/TT)
DY 60.1–60.9	Fri	9:30–12:00	ZEU/0114	Critical Phenomena and Phase Transitions
DY 61.1–61.7	Fri	9:30–11:15	ZEU/0118	Brownian Motion and Anomalous Transport

DY 62.1–62.9	Fri	9:30–12:15	ZEU/0160	Active Matter VI (joint session DY/BP)
DY 63.1–63.5	Fri	11:30–12:45	ZEU/0118	Nonlinear Stochastic Systems
DY 64.1–64.1	Fri	13:15–14:00	HSZ/0002	Closing Talk (joint session CPP/BP/DY)

Members' Assembly of the Dynamics and Statistical Physics Division

Thursday 18:00–19:00 ZEU/0160