

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

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Overview of Invited Talks and Sessions

(Lecture halls H3, H6, H19, and H20; Poster B2)

Prize talk and Plenary talks

PLV I	Mon	8:30– 9:15	H1	Linking the International System of Units to Fundamental Constants — •JOACHIM ULLRICH
PRV II	Mon	13:15–13:45	H1	Ultimate Rayleigh-Bénard and Taylor-Couette turbulence — •DETLEF LOHSE
PLV II	Mon	14:00–14:45	H1	Self-propelled topological defects in biological systems — •JULIA M YEO- MANS
PLV IV	Tue	8:30– 9:15	H1	Impact of Turbulence on Cloud Microphysics — •EBERHARD BODEN- SCHATZ
PLV IX	Wed	14:00–14:45	H2	Vestigial order in quantum materials — •JÖRG SCHMALIAN
PLV XIII	Thu	14:00–14:45	H2	The Physics of Inference and Community Detection — •CRISTOPHER MOORE
PLV XIV	Fri	8:30– 9:15	H1	Soft Matter: Topological constraints do matter — •KURT KREMER

Invited Talks

DY 3.1	Mon	9:30–10:00	H20	Collective behavior and self-organisation of active granular particles — •THORSTEN PÖSCHEL, MICHAEL ENGEL, CHRISTIAN SCHOLZ, HAROL TORRES
DY 5.1	Mon	10:00–10:30	H3	Direct numerical simulations towards ultimate turbulence — •RICHARD STEVENS, ROBERTO VERZICCO, DETLEF LOHSE
DY 12.1	Tue	9:30–10:00	H3	Active Cell Nematics: Architectures and flows. — •PASCAL SILBERZAN
DY 14.1	Tue	9:30–10:00	H19	The Fibonacci family of dynamical universality classes — •GUNTER M. SCHÜTZ
DY 18.1	Tue	10:00–10:30	H20	Bursting, amplitude explosions and mixed mode oscillations at the onset of shear flow turbulence — •BJÖRN HOF, CHAITANYA PARANJAPE, YOHANN DUGUET, VASUDEVAN MUKUND, NAZMI B BUDANUR
DY 25.1	Wed	9:30–10:00	H3	Why the desert is not flat — •KLAUS KROY
DY 29.1	Wed	9:30–10:00	H19	Dynamical localization in Z_2 lattice gauge theories — •DMITRY KOVRIZHIN
DY 30.1	Wed	10:00–10:30	H6	Fluctuations and responses in nonequilibrium fluids — •MATTHIAS KRÜGER
DY 32.1	Wed	15:00–15:30	H3	Phase-separation in an elastic matrix: from living cells to synthetic materials — •ÉRIC DUFRESNE
DY 36.1	Wed	15:00–15:30	H20	Quantum Machine Learning — •ANATOLE VON LILIENFELD
DY 40.1	Thu	9:30–10:00	H3	Non-Brownian diffusion: from disorder to physical insights — •RALF METZLER
DY 42.1	Thu	9:30–10:00	H20	Quantum dynamics in strongly correlated one-dimensional Bose gases — •HANNS-CHRISTOPH NÄGERL
DY 42.2	Thu	10:00–10:30	H20	Extreme Decoherence and Quantum Chaos — ZHENYU XU, AURÉLIA CHENU, LUIS PEDRO GARCÍA-PINTOS, JAVIER MOLINA-VILAPLANA, •ADOLFO DEL CAMPO

DY 42.10	Thu	12:30–13:00	H20	Semiclassical approach in Bose-Hubbard models: from universal spectral statistics to far-out-of-equilibrium dynamics — ●REMY DUBERTRAND
DY 57.1	Fri	9:30–10:00	H3	Toroidal droplets, active nematics and topological defects — ●ALBERTO FERNANDEZ-NIEVES
DY 59.1	Fri	9:30–10:00	H19	Energy landscape exploration approach for non-ergodic soft matter systems — ●MICHAEL SCHMIEDEBERG

Invited talks of the joint Symposium SKM Dissertation-Prize 2019

See SYSD for the full program of the symposium.

SYSD 1.1	Mon	9:30–9:50	H2	Synchronization and Waves in Confined Complex Active Media — ●JAN FREDERIK TOTZ
SYSD 1.2	Mon	9:50–10:10	H2	Spin scattering of topologically protected electrons at defects — ●PHILIPP RÜSSMANN
SYSD 1.3	Mon	10:10–10:30	H2	Beyond the molecular movie: Revealing the microscopic processes behind photo-induced phase transitions — ●CHRIS W. NICHOLSON
SYSD 1.4	Mon	10:30–10:50	H2	Thermodynamic bounds on current fluctuations — ●PATRICK PIETZONKA
SYSD 1.5	Mon	10:50–11:10	H2	Lightwave-driven quasiparticle acceleration — ●FABIAN LANGER
SYSD 1.6	Mon	11:10–11:30	H2	Ultrafast plasmon-driven point-projection electron microscopy — ●JAN VOGELANG
SYSD 1.7	Mon	11:30–11:50	H2	Helimagnets, sand patterns and fingerprints linked by topology — ●PEGGY SCHÖNHERR

Invited talks of the joint Symposium Patterns in Nature: Origins, Universality, Functions

See SYPN for the full program of the symposium.

SYPN 1.1	Mon	15:00–15:30	H1	Engineering spatial-temporal organization of bacterial suspensions — ●IGOR ARONSON
SYPN 1.2	Mon	15:30–16:00	H1	Collective behaviour and pattern formation in phoretic active matter — ●RAMIN GOLESTANIAN
SYPN 1.3	Mon	16:00–16:30	H1	Control and selection of spatio-temporal patterns in complex systems — ●SVETLANA GUREVICH
SYPN 1.4	Mon	16:45–17:15	H1	Self-organization of Active Surfaces — ●FRANK JÜLICHER
SYPN 1.5	Mon	17:15–17:45	H1	Front instabilities can reverse desertification — ●EHUD MERON

Invited talks of the joint Symposium Geometry, Topology, and Condensed Matter

See SYGT for the full program of the symposium.

SYGT 1.1	Tue	9:30–10:00	H1	Thermal Properties of Vortices on Curved Surfaces — ●JOSÉ LORENZANA
SYGT 1.2	Tue	10:00–10:30	H1	Curvature-induced effects in manomagnets — ●DENIS SHEKA
SYGT 1.3	Tue	10:30–11:00	H1	Magnetization configurations and reversal of individual ferromagnetic nanotubes — ●MARTINO POGGIO
SYGT 1.4	Tue	11:15–11:45	H1	An experimental perspective on topology and nanoelectronics in graphene and related 2D materials. — ●IVAN J. VERA-MARUN
SYGT 1.5	Tue	11:45–12:15	H1	Roles of the curvature in two-dimensional nematic films — ●GAETANO NAPOLI

Invited talks of the joint Symposium Hydrodynamic Electronics: Transport in ultra-pure Quantum Systems

See SYHE for the full program of the symposium.

SYHE 1.1	Wed	9:30–10:00	H1	Hydrodynamic theory of dissipative magnetophonons — ●SEAN HARTNOLL
SYHE 1.2	Wed	10:00–10:30	H1	Unconventional transport in mesostructures of ultra-pure delafossite metals — ●ANDREW MACKENZIE
SYHE 1.3	Wed	10:30–11:00	H1	Topological Materials with liquid electrons — ●CLAUDIA FELSER
SYHE 1.4	Wed	11:15–11:45	H1	Hydrodynamic approach to electronic transport — ●BORIS NAROZHNY

SYHE 1.5 Wed 11:45–12:15 H1 **Electron hydrodynamics in graphene: introduction and status** — •DENIS BANDURIN

Invited talks of the joint Symposium Czech Republic as Guest of Honor

See SYCZ for the full program of the symposium.

SYCZ 1.1 Thu 9:30–10:00 H4 **Crystal symmetries and transport phenomena in antiferromagnets** — •TOMAS JUNGWIRTH

SYCZ 1.2 Thu 10:00–10:30 H4 **Terahertz subcycle charge and spin control** — •RUPERT HUBER

SYCZ 1.3 Thu 10:30–11:00 H4 **1D molecular system on surfaces** — •PAVEL JELINEK

SYCZ 1.4 Thu 11:15–11:45 H4 **Tunneling microscopy on insulators provides access to out-of-equilibrium charge states** — •JASCHA REPP

SYCZ 1.5 Thu 11:45–12:15 H4 **Occam’s razor and complex networks from brain to climate** — •JAROSLAV HLINKA

SYCZ 1.6 Thu 12:15–12:45 H4 **Long range temporal correlations in complex systems** — •HOLGER KANTZ

Invited talks of the joint Symposium Physics of Self-Organization in DNA Nanostructures

See SYDN for the full program of the symposium.

SYDN 1.1 Thu 9:30–10:00 H1 **Functional DNA Nanostructures and Their Applications** — •ITAMAR WILLNER

SYDN 1.2 Thu 10:00–10:30 H1 **Gaining control of DNA-based nanodevices** — •FRANCESCO RICCI

SYDN 1.3 Thu 10:30–11:00 H1 **Self-assembly and optical properties of single molecule polymers on DNA origami** — •KURT GOTHELF

SYDN 1.4 Thu 11:15–11:45 H1 **DNA origami route to dynamic plasmonics** — •LAURA LIU

SYDN 1.5 Thu 11:45–12:15 H1 **DNA templated metal nanostructures** — •RALF SEIDEL

Sessions

DY 1.1–1.3 Sun 16:00–18:30 H3 **Tutorial: Statistical Physics Methods for Data Science in Physics (joint SOE/DY/ CPP/BP/jDPG) (joint session SOE/DY/TUT)**

DY 2.1–2.10 Mon 9:30–12:15 H8 **Responsive and Adaptive Systems (joint session CPP/DY)**

DY 3.1–3.11 Mon 9:30–12:45 H20 **Active Matter A (joint session DY/ CPP)**

DY 4.1–4.12 Mon 9:30–12:45 H22 **Nonequilibrium Quantum Many-Body Systems 1 (joint session TT/DY)**

DY 5.1–5.9 Mon 10:00–12:45 H3 **Convection**

DY 6.1–6.11 Mon 10:00–13:00 H19 **Dynamics in many-body systems: Equilibration and localization I (joint session DY/TT)**

DY 7.1–7.8 Mon 15:00–17:15 H14 **Interfaces and Thin Films (joint session CPP/DY)**

DY 8.1–8.10 Mon 15:00–17:45 H20 **Networks: From Topology to Dynamics (joint session DY/SOE)**

DY 9.1–9.9 Mon 15:30–18:00 H19 **Dynamics in many-body systems: Equilibration and localization II (joint session DY/TT)**

DY 10.1–10.5 Mon 16:15–17:30 H8 **Glasses and Glass Transition (joint session CPP/DY)**

DY 11.1–11.8 Tue 9:30–13:00 H2 **Focus Session: Quantum Dynamics of Kinetically Constrained Many-Body Systems (joint session TT/DY)**

DY 12.1–12.1 Tue 9:30–10:00 H3 **Talk Pascal Silberzan**

DY 13.1–13.12 Tue 9:30–13:00 H13 **Wetting, Fluidics and Liquids at Interfaces and Surfaces (joint session CPP/DY)**

DY 14.1–14.1 Tue 9:30–10:00 H19 **Talk Gunter M. Schütz**

DY 15.1–15.12 Tue 10:00–13:15 H3 **Pattern Formation**

DY 16.1–16.6 Tue 10:00–11:30 H6 **Quantum Dynamics, Decoherence and Quantum Information**

DY 17.1–17.10 Tue 10:00–12:45 H19 **Statistical Physics (General) I**

DY 18.1–18.10 Tue 10:00–13:00 H20 **Fluid physics and turbulence**

DY 19.1–19.5 Tue 11:45–13:00 H6 **Complex Systems**

DY 20.1–20.7 Tue 14:00–15:45 H3 **Active Matter B (joint session DY/ CPP)**

DY 21.1–21.6 Tue 14:00–15:30 H6 **Statistical Physics (General) II**

DY 22.1–22.6	Tue	14:00–15:30	H19	Critical Phenomena and Phase Transitions
DY 23.1–23.6	Tue	14:00–15:30	H20	Stochastic Thermodynamics
DY 24.1–24.8	Tue	14:00–16:00	H23	Spintronics (joint session TT/MA/DY)
DY 25.1–25.10	Wed	9:30–12:30	H3	Granular Matter / Contact Dynamics
DY 26.1–26.12	Wed	9:30–13:00	H4	Active matter I (joint session BP/CPP/DY)
DY 27.1–27.11	Wed	9:30–12:45	H14	Complex Fluids and Colloids, Micelles and Vesicles (joint session CPP/DY)
DY 28.1–28.5	Wed	9:30–12:00	H17	Dynamics of Multilayer Networks I (Focus Session SOE/DY/BP) (joint session SOE/DY/BP)
DY 29.1–29.12	Wed	9:30–13:00	H19	Many-body Quantum Dynamics
DY 30.1–30.9	Wed	10:00–12:45	H6	Statistical Physics far from Thermal Equilibrium
DY 31.1–31.12	Wed	10:00–13:15	H20	Nonlinear Dynamics, Synchronization and Chaos
DY 32.1–32.15	Wed	15:00–19:15	H3	Complex Fluids and Soft Matter (joint session DY/CPP)
DY 33.1–33.9	Wed	15:00–17:30	H4	Statistical physics of biological systems I (joint session BP/DY)
DY 34.1–34.5	Wed	15:00–16:45	H17	Dynamics of Multilayer Networks II (Focus Session SOE/DY/BP) (joint session SOE/DY/BP)
DY 35.1–35.8	Wed	15:00–17:00	H18	Modeling and Simulation of Soft Matter I (joint session CPP/DY)
DY 36.1–36.13	Wed	15:00–18:45	H20	Condensed-matter simulations augmented by advanced statistical methodologies (joint session DY/CPP)
DY 37.1–37.6	Wed	15:30–17:00	H6	Quantum Chaos
DY 38.1–38.9	Wed	15:30–18:00	H19	Microswimmers (joint session DY/CPP)
DY 39.1–39.5	Wed	17:15–18:30	H6	Quantum matter: Chaos, correlation
DY 40.1–40.1	Thu	9:30–10:00	H3	Talk R. Metzler
DY 41.1–41.8	Thu	9:30–12:00	H13	Modeling and Simulation of Soft Matter II (joint session CPP/DY)
DY 42.1–42.10	Thu	9:30–13:00	H20	Focus: Many-Body Quantum Chaos
DY 43.1–43.12	Thu	10:00–13:15	H3	Anomalous diffusion / Brownian motion
DY 44.1–44.10	Thu	10:00–12:45	H19	Active Matter C (joint session DY/CPP)
DY 45.1–45.3	Thu	10:30–11:15	H6	The Physics of Power grids (joint session DY/SOE)
DY 46.1–46.4	Thu	11:30–12:30	H17	Energy Networks (joint SOE/DY) (joint session SOE/DY)
DY 47.1–47.9	Thu	15:00–17:30	H11	Statistical physics of biological systems II (joint session BP/DY)
DY 48.1–48.8	Thu	15:00–18:45	H17	Theory of Stochastic Processes with Applications in Biology (joint session SOE/BP/DY/AKjDPG)
DY 49.1–49.11	Thu	15:00–18:00	H23	Quantum-Critical Phenomena (joint session TT/DY)
DY 50.1–50.24	Thu	15:00–18:00	Poster B2	Poster: Nonlinear Systems, Patterns, Flows ..
DY 51.1–51.11	Thu	15:00–18:00	Poster B2	Poster: Stat. Phys., Comp. Meth
DY 52.1–52.13	Thu	15:00–18:00	Poster B2	Poster: Active Matter, Microswimmer, Microfluidics
DY 53.1–53.11	Thu	15:00–18:00	Poster B2	Poster Quantum Systems
DY 54.1–54.11	Thu	15:00–18:00	Poster B2	Poster: Complex, Fluids, Glasses, Granular
DY 55.1–55.14	Thu	15:00–18:00	Poster B2	Poster: Noneq. Stat. Phys., Stat. Bio. Phys., Brownian
DY 56	Thu	18:30–19:30	H3	Annual General Meeting of the Dynamics and Statistical Physics Division
DY 57.1–57.1	Fri	9:30–10:00	H3	Talk Alberto Fernandes-Nieves
DY 58.1–58.10	Fri	9:30–12:00	H11	Active matter II (joint session BP/CPP/DY)
DY 59.1–59.1	Fri	9:30–10:00	H19	Talk Michael Schmiedeberg
DY 60.1–60.7	Fri	10:00–11:45	H3	Statistical Physics in Biological Systems III
DY 61.1–61.8	Fri	10:00–12:15	H6	Microfluidics (joint session DY/CPP)
DY 62.1–62.7	Fri	10:00–11:45	H19	Glasses and Glass transition (joint session DY/CPP)
DY 63.1–63.6	Fri	10:00–11:30	H20	Modeling and Data Analysis
DY 64.1–64.1	Fri	12:30–13:15	H1	Closing talk (joint session BP/CPP/DY)

Annual General Meeting of the Dynamics and Statistical Physics Division

Do 4. April 18:30–19:30 H3

- Bericht
- Verschiedenes