

Biological Physics Division Fachverband Biologische Physik (BP)

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Overview of Invited Talks and Sessions

(Lecture halls H44 and H46; Poster P3 and P4)

Invited Talks

BP 3.7	Mon	11:15–11:45	H44	Killing to survive - how protein-lipid interactions drive programmed cell death — ●KRISTYNA PLUHACKOVA
BP 4.1	Mon	9:30–10:00	H46	Spatiotemporal organization of bacterial biofilm formation and functions — ●KNUT DRESCHER
BP 7.1	Mon	15:00–15:30	H44	Single-molecule dynamic structural biology with Graphene Energy Transfer — ●PHILIP TINNEFELD, ALAN SZALAI, GIOVANNI FERRARI, LARS RICHTER, INGRID TESSMER, ANDRES VERA-GOMEZ, IZABELA KAMINSKA
BP 8.6	Mon	16:15–16:45	H46	In situ control of cells and multicellular structures at the microscale by two-photon lithography — ●CHRISTINE SELHUBER-UNKEL
BP 11.1	Tue	9:30–10:00	H44	Network connectivity determines the mechanisms responsible for cytoskeletal elasticity — ●MARTIN LENZ
BP 15.1	Tue	11:45–12:15	H44	Does Oncology Need Physics of Cancer? — ●JOSEF KÁS
BP 18.1	Wed	9:30–10:00	H44	Mechanical Imprints of Cell Competition — ●BENOIT LADOUX
BP 19.8	Wed	11:30–12:00	H46	Rolling vesicles: From confined rotational flows to surface-enabled motion — ●LAURA R. ARRIAGA, PAULA MAGRINYA, PABLO PALACIOS, PABLO LLOMBART, RAFAEL DELGADO-BUSCALIONI, ALFREDO ALEXANDER-KATZ, JUAN L. ARAGONES
BP 20.6	Wed	16:30–17:00	H44	Centrosome positioning in cell migration and immune response — ●HEIKO RIEGER
BP 22.1	Wed	15:00–15:30	H46	From DNA Nanotechnology to biomedical insight: Towards single-molecule spatial omics — ●RALF JUNGMANN
BP 25.1	Thu	9:30–10:00	H44	Oncogenic signaling and stiffness sensing — ●JOHANNA IVASKA
BP 26.6	Thu	11:00–11:30	H46	Theory for sequence selection via phase separation and oligomerization — ●CHRISTOPH WEBER
BP 29.1	Thu	15:00–15:30	H44	Community-driven software and data training for computational biology — ●TOBY HODGES
BP 30.5	Thu	16:00–16:30	H46	Topology in biological matter - are there double knots in proteins or maybe even more complicated knots? Prediction and in vitro verification. — ●JOANNA I SULKOWSKA
BP 31.1	Fri	9:30–10:00	H44	Wave propagation in systems of active filaments — ●KIRSTY Y. WAN
BP 35.1	Fri	13:15–14:00	H2	Active control of forces, movement and shape: from biological to non-living systems — ●ULRICH S. SCHWARZ

Invited Talks of the joint Symposium Physics of Embryonic Development Across Scales: From DNA to Organisms (SYED)

See SYED for the full program of the symposium.

SYED 1.1	Mon	9:30–10:00	H1	Emergent crystalline order in a developing epithelium — KARTIK CHHAJED, NATALIE DYE, MARKO POPOVIĆ, ●FRANK JÜLICHER
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SYED 1.2	Mon	10:00–10:30	H1	A tissue rigidity phase transition shapes morphogen gradients — CAMILLA AUTORINO, DIANA KHOROMSKAIA, BERNAT COROMINAS-MURTRA, ZENA HADJIVASILIOU, ●NICOLETTA PETRIDOU
SYED 1.3	Mon	10:30–11:00	H1	Building quantitative dynamical landscapes of developmental cell fate decisions — ●DAVID RAND
SYED 1.4	Mon	11:15–11:45	H1	Control of lumen geometry and topology by the interplay between pressure and cell proliferation rate — ●ANNE GRAPIN-BOTTON, BYUNG HO LEE, MASAKI SANO, DANIEL RIVELINE, KANA FUJI, TETSUYA HIRAIWA
SYED 1.5	Mon	11:45–12:15	H1	Chromosomes as active communication and memory machines — ●LEONID A. MIRNY

Invited Talks of the joint SKM Dissertationspreis 2025 (SYSD)

See SYSD for the full program of the symposium.

SYSD 1.1	Mon	9:30–10:00	H2	Nanoscale Chemical Analysis of Ferroic Materials and Phenomena — ●KASPER AAS HUNNESTAD
SYSD 1.2	Mon	10:00–10:30	H2	Advanced Excitation Schemes for Semiconductor Quantum Dots — ●YUSUF KARLI
SYSD 1.3	Mon	10:30–11:00	H2	Aspects and Probes of Strongly Correlated Electrons in Two-Dimensional Semiconductors — ●CLEMENS KUHNENKAMP
SYSD 1.4	Mon	11:00–11:30	H2	Mean back relaxation and mechanical fingerprints: simplifying the study of active intracellular mechanics — ●TILL MÜNKER
SYSD 1.5	Mon	11:30–12:00	H2	Coherent Dynamics of Atomic Spins on a Surface — ●LUKAS VELDMAN

Invited Talks of the joint Symposium AI in (Bio-)Physics (SYAI)

See SYAI for the full program of the symposium.

SYAI 1.1	Thu	9:30–10:00	H1	Predicting interaction partners and generating new protein sequences using protein language models — ●ANNE-FLORENCE BITBOL
SYAI 1.2	Thu	10:00–10:30	H1	Realizing Schrödinger’s dream with AI-enabled molecular dynamics — ●ALEXANDRE TKATCHENKO
SYAI 1.3	Thu	10:30–11:00	H1	Emergent behavior of artificial intelligence — ●STEFFEN RULANDS
SYAI 1.4	Thu	11:15–11:45	H1	AI in medical research - navigating complexity with AI — ●DANIEL TRUHN
SYAI 1.5	Thu	11:45–12:15	H1	Computational Modelling of Morphogenesis — ●DAGMAR IBER

Invited Talks of the joint Symposium Nonequilibrium Collective Behavior in Open Classical and Quantum Systems (SYQS)

See SYQS for the full program of the symposium.

SYQS 1.1	Thu	15:00–15:30	H1	Active quantum flocks — REYHANEH KHASSEH, SASCHA WALD, RODERICH MOESSNER, CHRISTOPH WEBER, ●MARKUS HEYL
SYQS 1.2	Thu	15:30–16:00	H1	Robust dynamics and function in stochastic topological systems — ●EVELYN TANG
SYQS 1.3	Thu	16:00–16:30	H1	Nonequilibrium Dynamics of Disorder-Driven Ultracold Fermi Gases — ●ARTUR WIDERA
SYQS 1.4	Thu	16:45–17:15	H1	Topological classification of driven-dissipative nonlinear systems — ●ODED ZILBERBERG, GRETA VILLA, KILIAN SEIBOLD, VINCENT DUMONT, GI-ANLUCA RASTELLI, MATEUSZ MICHAŁEK, ALEXANDER EICHLER, JAVIER DEL PINO
SYQS 1.5	Thu	17:15–17:45	H1	Learning dynamical behaviors in physical systems — ●VINCENZO VITELLI

Sessions

BP 1.1–1.3	Sun	16:00–18:15	H2	Hands-on Tutorial: AI Fundamentals for Research (joint session BP/TUT/DY/AKPIK)
BP 2.1–2.11	Mon	9:30–12:45	H37	Active Matter I (joint session DY/BP/PPP)

BP 3.1–3.12	Mon	9:30–13:00	H44	Computational Biophysics I
BP 4.1–4.6	Mon	9:30–11:15	H46	Bacterial Biophysics
BP 5.1–5.6	Mon	11:30–13:00	H46	Membranes and Vesicles I
BP 6.1–6.7	Mon	15:00–17:00	H37	Active Matter II (joint session BP/ CPP/DY)
BP 7.1–7.6	Mon	15:00–17:00	H44	Single Molecule Biophysics
BP 8.1–8.6	Mon	15:00–16:45	H46	Biomaterials, Biopolymers and Bioinspired Functional Materials I (joint session BP/ CPP)
BP 9.1–9.4	Mon	17:00–18:00	H46	Biomaterials, Biopolymers and Bioinspired Functional Materials II (joint session CPP/ BP)
BP 10.1–10.9	Tue	9:30–12:30	H43	Focus Session: Nonlinear Dynamics in Biological Systems I (joint session DY/ BP)
BP 11.1–11.7	Tue	9:30–11:30	H44	Cytoskeleton
BP 12.1–12.6	Tue	9:30–11:15	H46	Biomaterials, Biopolymers and Bioinspired Functional Materials III (joint session CPP/ BP)
BP 13.1–13.11	Tue	9:30–13:00	H47	Active Matter III (joint session DY/ BP/ CPP)
BP 14.1–14.25	Tue	10:00–12:30	P3	Poster Session I
BP 15.1–15.4	Tue	11:45–13:00	H44	Cell Mechanics I
BP 16.1–16.4	Tue	14:00–15:15	H43	Focus Session: Nonlinear Dynamics in Biological Systems II (joint session DY/ BP)
BP 17.1–17.82	Tue	18:00–20:30	P4	Poster Session II
BP 18.1–18.12	Wed	9:30–13:00	H44	Tissue Mechanics
BP 19.1–19.12	Wed	9:30–13:00	H46	Membranes and Vesicles II
BP 20.1–20.10	Wed	15:00–18:00	H44	Statistical Physics of Biological Systems I (joint session BP/ DY)
BP 21.1–21.9	Wed	15:00–17:30	H45	Networks, From Topology to Dynamics (joint session SOE/ BP/ DY)
BP 22.1–22.9	Wed	15:00–17:45	H46	Bioimaging
BP 23.1–23.1	Wed	18:00–20:00	P2	Poster Focus Session Chemical Imaging for the Elucidation of Molecular Structure (joint session O/ BP)
BP 24	Wed	18:15–19:15	H46	Members' Assembly
BP 25.1–25.12	Thu	9:30–13:00	H44	Cell Mechanics II
BP 26.1–26.9	Thu	9:30–12:15	H46	Synthetic life-like systems and Origins of Life
BP 27.1–27.7	Thu	15:00–17:30	H24	Focus Session Chemical Imaging for the Elucidation of Molecular Structure I (joint session O/ BP)
BP 28.1–28.9	Thu	15:00–17:45	H37	Microswimmers and Microfluidics (joint session DY/ BP/ CPP)
BP 29.1–29.11	Thu	15:00–18:00	H44	Focus Session: Innovations in Research Software Engineering (joint session BP/ DY)
BP 30.1–30.10	Thu	15:00–18:00	H46	Protein Structure and Dynamics
BP 31.1–31.12	Fri	9:30–13:00	H44	Active Matter IV (joint session BP/ CPP/ DY)
BP 32.1–32.13	Fri	9:30–13:00	H46	Computational Biophysics II
BP 33.1–33.7	Fri	10:30–12:45	H24	Focus Session Chemical Imaging for the Elucidation of Molecular Structure II (joint session O/ BP)
BP 34.1–34.5	Fri	11:30–13:00	H43	Statistical Physics in Biological Systems II (joint session DY/ BP)
BP 35.1–35.1	Fri	13:15–14:00	H2	Closing Talk (joint session BP/ CPP/ DY)

Members' Assembly of the Biological Physics Division

Wednesday 18:15–19:15 H46

- Report of the speaker team
- Election of a new member of the speaker team
- Any other business