

Biological Physics Division Fachverband Biologische Physik (BP)

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Overview of Invited Talks and Sessions

(Lecture rooms H1028, H1058 and H2013; Poster A, B and C)

Plenary Talks of BP

PLV V	Tue	8:30– 9:15	H 0105	Upside-Down and Inside-Out: Biomechanics of Cell Sheet Folding — •RAYMOND GOLDSTEIN
PLV XII	Thu	14:00–14:45	H 0105	From Atomistic Simulations into the Mouse: Learning how to exploit bacterial adhesives as nanoscale probes to map the mechanical strain of tissue fibers. — •VIOLA VOGEL, SIMON ARNOLDINI, ALESSANDRA MOSCAROLI, MAMTA CHABRIA, MANUEL HILBERT, SAMUEL HERITIG, ROGER SCHIBLI, MARTIN BEHE

Invited Talks

BP 1.1	Mon	9:30–10:00	H 1028	Thermodynamics and kinetics of protein aggregation from atomistic simulations — •BIRGIT STRODEL
BP 2.5	Mon	10:30–11:00	H 1058	Light-based tools for investigating cell-ECM and cell-cell interactions — •ARANZAZU DEL CAMPO
BP 3.7	Mon	11:15–11:45	H 2013	Morphology control by active fluid flows — •KAREN ALIM
BP 5.6	Mon	16:15–16:45	H 1028	Synchronization of synthetic gene oscillators — •LEV TSIMRING
BP 6.4	Mon	15:45–16:15	H 1058	Broken detailed balance in active biopolymer assemblies — •CHASE BROEDERSZ
BP 7.1	Mon	15:00–15:30	H 2013	Evolution of quantitative traits and non-equilibrium matrix ensembles — SIMONE POMPEI, TORSTEN HELD, •MICHAEL LÄSSIG
BP 11.1	Tue	9:30–10:00	H 1028	Cryo-Electron Tomography: Method Development and Application on Cell-Cell Junctions and Nuclear Exploration — •ACHILLEAS FRANGAKIS
BP 12.5	Tue	10:30–11:00	H 1058	Atomistic Simulation of Biomolecular Function: Ribosomal translation, Intrinsically Disordered Proteins, and a Dynasome Perspective — •HELMUT GRUBMÜLLER
BP 16.7	Wed	11:15–11:45	H 1028	Computer simulation of collective phenomena that alter the topology of membranes — •MARCUS MÜLLER
BP 17.5	Wed	10:30–11:00	H 1058	Tension build-up and membrane deformations in actin-membrane biomimetic systems — •CÉCILE SYKES
BP 18.1	Wed	9:30–10:00	H 2013	Dynamics of cellular metabolism, size, and motility — •SANDER TANS
BP 21.1	Wed	15:00–15:30	H 1028	Emergent Dynamics of Active Particles — •ROLAND G. WINKLER

BP 22.4	Wed	15:45–16:15	H 1058	Complex shapes and dynamics of red blood cells in shear flow under physiological conditions — JOHANNES MAUER, SIMON MENDEZ, LUCA LANOTTE, MANOUK ABKARIAN, GERHARD GOMPPER, •DMITRY A. FEDOSOV
BP 23.6	Wed	16:15–16:45	H 2013	Illuminating physical cues for the early embryogenesis of a simple model organism — •MATTHIAS WEISS
BP 27.1	Thu	9:30–10:00	H 1028	Size and Mechanical Scaling of Blood Platelets — AASTHA MATHUR, SANDRA CORREIA, SERGE DMITRIEFF, ROMAIN GIBEAUX, IANA KALININA, TOOBA QUIDWAI, JONAS RIES, •FRANCOIS NEDELEC
BP 28.5	Thu	10:30–11:00	H 1058	Multiplexed Magnetic Tweezers: From DNA Mechanics to Retroviral Integration — •JAN LIPPERT, FRANZISKA KRIEGEL, WILLEM VANDERLINDEN, PHILIPP WALKER
BP 29.7	Thu	11:15–11:45	H 2013	Protein Pattern Formation: Rethinking Nonlinear Dynamics — •ERWIN FREY
BP 33.4	Thu	15:45–16:15	H 1028	Dynamics and instabilities of contractile actin networks in artificial cells — •KINNERET KEREN
BP 34.1	Thu	15:00–15:30	H 1058	How do we learn? Synaptic Plasticity across multiple time scales — •WULFRAM GERSTNER
BP 35.6	Thu	16:15–16:45	H 2013	Out-of-equilibrium response of soft and biological matter to forces and deformation — •CLAUS HEUSSINGER
BP 36.1	Fri	9:30–10:00	H 1028	Physical forces driving migration, division and folding in epithelial sheets — •XAVIER TREPAT
BP 38.3	Fri	10:00–10:30	H 2013	The role of dynamin twist in membrane fission — MARTINA PANNUZZO, ZACHARY A. MCDARGH, •MARKUS DESERNO

Invited talks of the joint symposium SYBS

See SYBS for the full program of the symposium.

SYBS 1.1	Tue	9:30–10:00	H 0105	Bacterial collective behaviours — •KNUT DRESCHER
SYBS 1.2	Tue	10:00–10:30	H 0105	Nonlinear dynamics of beating cilia and flagella: Swimming, steering, and synchronization — •BENJAMIN M. FRIEDRICH
SYBS 1.3	Tue	10:30–11:00	H 0105	Learning to navigate in dynamic environments: animal behavior and artificial intelligence — •ANTONIO CELANI
SYBS 1.4	Tue	11:15–11:45	H 0105	Suspensions of active colloids — •CECILE COTTIN-BIZONNE, FÉLIX GINOT, ISAAC THEURKAUFF, CHRISTOPHE YBERT
SYBS 1.5	Tue	11:45–12:15	H 0105	Spontaneous chiral symmetry breaking in active fluids — •JÖRN DUNKEL

Invited talks of the joint symposium SYMS

See SYMS for the full program of the symposium.

SYMS 1.1	Mon	15:00–15:30	H 0105	Stochastic numerical algorithms: from molecular dynamics to big data analytics — •BENEDICT LEIMKUHLER
SYMS 1.2	Mon	15:30–16:00	H 0105	A Generally-Applicable Machine-Learning Scheme for Materials and Molecules — •MICHELE CERIOTTI
SYMS 1.3	Mon	16:00–16:30	H 0105	Girsanov reweighting for path ensembles and Markov state models — •BETTINA G. KELLER, LUCA DONATI, CARSTEN HARTMANN
SYMS 1.4	Mon	16:45–17:15	H 0105	Liquid State Theory Meets Deep Learning and Molecular Informatics — •ALPHA LEE
SYMS 1.5	Mon	17:15–17:45	H 0105	Computational high-throughput screening of drug-membrane thermodynamics — •TRISTAN BERAU

Sessions

BP 1.1–1.12	Mon	9:30–13:00	H 1028	Protein Structure and Dynamics
BP 2.1–2.12	Mon	9:30–13:00	H 1058	Biomaterials and Biopolymers (joint session BP/CPP)
BP 3.1–3.12	Mon	9:30–13:00	H 2013	Cell Adhesion and Migration, Multicellular Systems I
BP 4.1–4.12	Mon	10:00–13:15	BH-N 243	Active Matter DY I (joint session DY/CPP/BP)
BP 5.1–5.6	Mon	15:00–16:45	H 1028	Systems Biology & Gene Expression and Signalling

BP 6.1–6.9	Mon	15:00–17:30	H 1058	Cytoskeletal Filaments I
BP 7.1–7.7	Mon	15:00–17:00	H 2013	Focus Session: Statistical Physics-Based Methods in Molecular Evolution - organized by Alexander Schug and Martin Weigt (joint session BP/DY)
BP 8.1–8.12	Mon	15:30–18:45	BH-N 243	Active Matter DY II (joint session DY/ CPP/ BP)
BP 9.1–9.42	Mon	17:30–19:30	Poster A	Postersession I
BP 10.1–10.61	Mon	17:30–19:30	Poster C	Postersession II
BP 11.1–11.12	Tue	9:30–13:00	H 1028	Bioimaging and Biopspectroscopy I
BP 12.1–12.12	Tue	9:30–13:00	H 1058	Computational Biophysics I
BP 13.1–13.3	Tue	12:30–13:15	MA 001	Evolutionary Game Theory (joint session SOE/DY/ BP)
BP 14.1–14.7	Tue	14:00–15:45	BH-N 243	Microswimmers DY I (joint session DY/ BP/ CPP)
BP 15.1–15.102	Tue	14:00–16:00	Poster B	Postersession III
BP 16.1–16.12	Wed	9:30–13:00	H 1028	Membranes and Vesicles I (joint session BP/ CPP)
BP 17.1–17.11	Wed	9:30–13:00	H 1058	Cell Mechanics I
BP 18.1–18.12	Wed	9:30–13:00	H 2013	Focus Session: Physics of Microbial Systems - organized by Tobias Bollenbach and Benedikt Sabass
BP 19.1–19.11	Wed	9:30–12:15	MA 001	Networks (joint session SOE/ CPP/ BP/ DY)
BP 20.1–20.13	Wed	10:00–13:30	BH-N 333	Statistical Physics of Biological Systems DY (joint session DY/ BP)
BP 21.1–21.9	Wed	15:00–17:30	H 1028	Microswimmers (joint session BP/ CPP/ DY)
BP 22.1–22.9	Wed	15:00–17:30	H 1058	Computational Biophysics II
BP 23.1–23.8	Wed	15:00–17:15	H 2013	Bioimaging and Biopspectroscopy II
BP 24.1–24.6	Wed	15:00–16:30	PC 203	Bioinspired Functional Materials, Biomaterials and Biopolymers (joint session CPP/ BP)
BP 25.1–25.12	Wed	15:30–18:45	BH-N 243	Active Matter DY III (joint session DY/ CPP/ BP)
BP 26	Wed	18:00–19:00	H 1028	Annual General Meeting of the BP Division (BP Mitgliederversammlung)
BP 27.1–27.10	Thu	9:30–12:45	H 1028	Cell Mechanics II
BP 28.1–28.12	Thu	9:30–13:00	H 1058	Single Molecule Biophysics
BP 29.1–29.12	Thu	9:30–13:00	H 2013	Statistical Physics of Biological Systems I (joint session BP/ DY)
BP 30.1–30.9	Thu	9:30–13:15	MA 001	Focus Session: Complex Contagion Phenomena I (joint session SOE/ DY/ BP)
BP 31.1–31.12	Thu	10:00–13:15	BH-N 243	Microswimmers DY II (joint session DY/ CPP/ BP)
BP 32.1–32.12	Thu	10:00–13:15	BH-N 334	Anomalous Diffusion (joint session DY/ BP)
BP 33.1–33.8	Thu	15:00–17:15	H 1028	Cytoskeletal Filaments II
BP 34.1–34.9	Thu	15:00–17:30	H 1058	Neuroscience
BP 35.1–35.8	Thu	15:00–17:15	H 2013	Statistical Physics of Biological Systems II (joint session BP/ DY)
BP 36.1–36.9	Fri	9:30–12:00	H 1028	Cell Adhesion and Migration, Multicellular Systems II
BP 37.1–37.10	Fri	9:30–12:00	H 1058	Active Matter (joint session BP/ CPP/ DY)
BP 38.1–38.9	Fri	9:30–12:00	H 2013	Membranes and Vesicles II (joint session BP/ CPP)
BP 39.1–39.13	Fri	9:30–13:15	MA 001	Focus Session: Complex Contagion Phenomena II (joint session SOE/ DY/ BP)

Annual General Meeting of the Biological Physics Division

Wednesday 14.3.2018 18:00–19:00 H1028

- Report of the current speaker team
- Award of the EPL poster prizes of the Biological Physics Division
- Miscellaneous