

Biological Physics Division Fachverband Biologische Physik (BP)

Stefan Diez
TU Dresden
B CUBE - Center for Molecular
Bioengineering
Arnoldstrasse 18
01307 Dresden
diez@bcube-dresden.de

Claudia Veigel
Ludwig-Maximilians-Universität
Abteilung Zelluläre Physiologie
Schillerstrasse 44
80336 München
claudia.veigel@med.uni-
muenchen.de

Helmut Grubmüller
MPI for Biophysical Chemistry
Am Fassberg 11
37077 Goettingen
hgrubmu@gwdg.de

Overview of Invited Talks and Sessions

(Lecture Rooms: HÜL 386 and ZEU 250; Posters P1 and P3)

Plenary Talks related to BP

PV XI	Wed	14:00–14:45	HSZ 01	Motions in the molecular machinery powering life — ●GERHARD HUMMER
PV XVII	Thu	14:00–14:45	HSZ 02	Optical Antennas for Enhanced Light-Matter Interactions — ●LUKAS NOVOTNY
PV XVIII	Fri	8:30– 9:15	HSZ 01	Optical Tweezers: Gene Regulation, Studied One Molecule at a Time — ●STEVEN BLOCK

Invited and Topical Talks

BP 1.1	Mon	9:30–10:00	HÜL 386	What determines the path of kinesin motors along the microtubules? — ●ZEYNEP ÖKTEN
BP 2.7	Mon	11:15–11:45	ZEU 250	Single molecule torque and twist measurements probe the key players of the central dogma — ●JAN LIPFERT
BP 4.1	Mon	15:00–15:30	HÜL 386	Role of membrane elasticity in clathrin-mediated endocytosis — SANDRINE MORLOT, SALEEM MOHAMMED, NICOLAS CHIARUTTINI, VALENTINA GALLI, MARIUS KLEIN, LUÌS DINIS, MARTIN LENZ, GIOVANNI CAPPELLO, ●AURÉLIEN ROUX
BP 5.7	Mon	16:30–17:00	ZEU 250	Particle-based stochastic computer simulations of biological systems — ●ULRICH SCHWARZ
BP 20.1	Tue	13:00–13:30	HÜL 386	Catch bond interaction between glycosaminoglycans and cell surface sulfatase Sulfl — ALEXANDER HARDER, ANN-KRISTIN MOELLER, FABIAN MILZ, PHILLIPP NEUHAUS, VOLKER WALHORN, THOMAS DIERKS, ●DARIO ANSELMETTI
BP 20.6	Tue	14:45–15:15	HÜL 386	Synthetic mechanobiology: Dissecting and rewiring force-based signaling — ●SANJAY KUMAR
BP 23.1	Wed	9:30–10:00	HÜL 386	Intermediate filaments - mechanical building blocks and dynamic elements of the cell — ●SARAH KÖSTER
BP 24.1	Wed	9:30–10:00	ZEU 250	Collaboration between biomolecules: A physical analysis — ●ULRICH GERLAND
BP 24.5	Wed	10:45–11:15	ZEU 250	Gene expression in embryos: from single molecules to network dynamics — ●THOMAS GREGOR
BP 27.1	Wed	14:00–14:30	ZEU 250	Legged locomotion. - From biology to mechanics and return. — ●REINHARD BLICKHAN
BP 28.1	Wed	15:00–15:30	HÜL 386	Single Molecule Mechanics of Proteins — ●MATTHIAS RIEF
BP 31.1	Wed	17:00–17:30	ZEU 250	Active torque generation by the actomyosin cortex — ●STEPHAN GRILL
BP 33.1	Thu	9:30–10:00	HÜL 386	Self-Focusing of the Ran Gradient in Mitosis: Signaling, Mechanics, and Spindle Size — ●DANIEL NEEDLEMAN, DOOGIE OH
BP 38.1	Thu	15:00–15:30	HÜL 386	Analyzing integrin's force transduction using novel biosensors — ●CARSTEN GRASHOFF

BP 43.1 Fri 9:30–10:00 ZEU 250 **The Dynamics of Neuronal Circuits** — ●FRED WOLF

Invited talks of the joint symposium SYMS

See SYMS for the full program of the symposium.

SYMS 1.1	Wed	9:30–10:00	HSZ 02	Imaging and manipulation of single functional molecules on surfaces — ●LEONHARD GRILL
SYMS 1.2	Wed	10:00–10:30	HSZ 02	Adiabatic quantum motors — ●FELIX VON OPPEN
SYMS 1.3	Wed	10:30–11:00	HSZ 02	Operation of molecular devices and machines on surfaces — ●SAW WAI HLA
SYMS 1.4	Wed	11:15–11:45	HSZ 02	Driving and Controlling Molecular Surface Rotors with a Terahertz Electric Field — ●RAYMOND DEAN ASTUMIAN
SYMS 1.5	Wed	11:45–12:15	HSZ 02	Unidirectional motion by inelastic electron tunneling — ●KARL-HEINZ ERNST

Invited talks of the joint symposium SYCP

See SYCP for the full program of the symposium.

SYCP 1.1	Thu	9:30–10:00	HSZ 02	Why do polymer collapse and polymer topology frustrate each other — ●ALEXANDER Y. GROSBERG
SYCP 1.2	Thu	10:00–10:30	HSZ 02	Nanoscopy of nuclear Genome Structure — ●CHRISTOPH CREMER
SYCP 1.3	Thu	10:30–11:00	HSZ 02	Blood Clotting Inspired Polymer Physics — ●ALFREDO ALEXANDER-KATZ
SYCP 1.4	Thu	11:15–11:45	HSZ 02	Modeling dynamic spatial genome organization in yeast — ●CHRISTOPHE ZIMMER
SYCP 1.5	Thu	11:45–12:15	HSZ 02	Ring polymers in the melt state: the physics of crumpling — ●RALF EVERAERS, ANGELO ROSA

Invited talks of the joint symposium SYGP

See SYGP for the full program of the symposium.

SYGP 1.1	Thu	15:00–15:30	HSZ 02	Noisy invasions: large fluctuations in stochastic invasion models — ●BARUCH MEERSON
SYGP 1.2	Thu	15:30–16:00	HSZ 02	Fractal clustering of inertial particles in random velocity fields — ●BERNHARD MEHLIG, KRISTIAN GUSTAVSSON
SYGP 1.3	Thu	16:00–16:30	HSZ 02	Stochastic population dynamics on rugged fitness landscapes — ●JOACHIM KRUG
SYGP 1.4	Thu	16:45–17:15	HSZ 02	Modeling cancer as a stochastic process — ●TIBOR ANTAL
SYGP 1.5	Thu	17:15–17:45	HSZ 02	Von Neumann's growth model: from statistical mechanics to cell metabolism — ●ANDREA DE MARTINO

Sessions

BP 1.1–1.12	Mon	9:30–13:00	HÜL 386	Molecular Motors
BP 2.1–2.12	Mon	9:30–13:00	ZEU 250	DNA/RNA and related enzymes
BP 3.1–3.4	Mon	11:00–12:40	CHE 89	Symposium SKM Dissertation-Prize 2014
BP 4.1–4.7	Mon	15:00–17:00	HÜL 386	Membranes and Vesicles I
BP 5.1–5.7	Mon	15:00–17:00	ZEU 250	Protein structure and dynamics I
BP 6.1–6.12	Mon	17:30–19:30	P3	Posters: Membranes and vesicles
BP 7.1–7.48	Mon	17:30–19:30	P3	Posters: Cell adhesion, mechanics and migration
BP 8.1–8.10	Mon	17:30–19:30	P3	Posters: Active cell and tissue mechanics
BP 9.1–9.6	Mon	17:30–19:30	P3	Posters: Biotechnology and bioengineering
BP 10.1–10.10	Tue	9:30–12:30	P1	Posters: Molecular Motors
BP 11.1–11.15	Tue	9:30–12:30	P1	Posters: Cytoskeleton
BP 12.1–12.13	Tue	9:30–12:30	P1	Posters: Imaging
BP 13.1–13.8	Tue	9:30–12:30	P1	Posters: DNA/RNA and related enzymes
BP 14.1–14.19	Tue	9:30–12:30	P1	Posters: Protein Structure and dynamics

BP 15.1–15.3	Tue	9:30–12:30	P1	Posters: Systems biology and neurosciences
BP 16.1–16.38	Tue	9:30–12:30	P1	Poster - Glasses / Stat. Phys. Bio. / Networks (joint DY/BP/ CPP/SOE)
BP 17.1–17.11	Tue	9:30–12:30	ZEU 146	Microswimmers (joint DY/BP)
BP 18.1–18.7	Tue	9:30–11:30	ZEU 118	Complex Fluids and Soft Matter (joint DY/ CPP/BP)
BP 19.1–19.5	Tue	9:30–11:30	HÜL 186	Focus Session: Dynamical Patterns in Neural Systems: From Brain Function to Dysfunction (joint DY/BP)
BP 20.1–20.9	Tue	13:00–16:00	HÜL 386	Cell adhesion, mechanics and migration I
BP 21.1–21.8	Tue	14:00–16:00	ZEU 250	Membranes and Vesicles II
BP 22.1–22.4	Tue	15:00–16:00	GÖR 226	Networks, From Topology to Dynamics I (joint SOE/DY/BP)
BP 23.1–23.12	Wed	9:30–13:00	HÜL 386	Cytoskeleton (joint BP/ CPP)
BP 24.1–24.5	Wed	9:30–11:15	ZEU 250	Systems biology
BP 25.1–25.9	Wed	9:30–12:00	ZEU 160	Statistical Physics in Biological Systems (joint DY/BP)
BP 26.1–26.7	Wed	11:45–13:30	ZEU 250	Multi-cellular systems and Physics of Cancer
BP 27.1–27.8	Wed	14:00–16:30	ZEU 250	Modelling of non-linear dynamics in biological movement (focus session, joint BP/DY)
BP 28.1–28.12	Wed	15:00–18:30	HÜL 386	Protein structure and dynamics II
BP 29.1–29.14	Wed	15:00–18:45	ZEU 118	Networks – Statistics and Dynamics (joint DY/BP/SOE)
BP 30.1–30.10	Wed	15:00–18:15	ZEU 222	Biomaterials and Biopolymers I (joint CPP/BP)
BP 31.1–31.5	Wed	17:00–18:30	ZEU 250	Cell adhesion, mechanics and migration II
BP 32	Wed	19:00–20:00	HÜL 386	BP Mitgliederversammlung
BP 33.1–33.9	Thu	9:30–12:30	HÜL 386	Active cell and tissue mechanics (focus session) I
BP 34.1–34.8	Thu	9:30–11:45	ZEU 250	Imaging
BP 35.1–35.5	Thu	9:30–12:15	HSZ 02	The Collapsed State of Polymers: From Physical Concepts to Applications and Biological Systems (Symposium SYCP, joint CPP/BP/DY)
BP 36.1–36.5	Thu	11:00–12:15	GÖR 226	Evolutionary Game Theory and Economic Models (joint SOE/BP/DY)
BP 37.1–37.3	Thu	12:15–13:00	GÖR 226	Networks, From Topology to Dynamics II (joint SOE/DY/BP)
BP 38.1–38.8	Thu	15:00–17:30	HÜL 386	Active cell and tissue mechanics (focus session) II
BP 39.1–39.8	Thu	15:00–17:30	ZEU 250	The Collapsed State of Polymers: From Physical Concepts to Applications and Biological Systems (accompanying session, joint CPP/BP/DY)
BP 40.1–40.5	Thu	15:00–17:45	HSZ 02	Stochastic Dynamics of Growth Processes in Biological and Social Systems (Symposium SYGP, joint DY/BP/SOE)
BP 41.1–41.13	Thu	15:00–18:45	ZEU 222	Biomaterials and Biopolymers II (joint CPP/BP)
BP 42.1–42.9	Fri	9:30–12:00	HÜL 386	Biotechnology and bioengineering
BP 43.1–43.8	Fri	9:30–11:45	ZEU 250	Neurosciences
BP 44.1–44.11	Fri	10:00–12:45	GÖR 226	Stochastic Dynamics of Growth Processes in Biological and Social Systems (accompanying session, joint DY/BP/SOE)

Annual General Meeting of the Biological Physics Division

Wednesday 19:00–20:00 HÜL 386

- Award of the EPL poster prizes for biological physics
- Report of the current speakers
- Lessons learned and spring meeting Berlin 2015
- Miscellaneous