

Biological Physics Division Fachverband Biologische Physik (BP)

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Overview of Invited Talks and Sessions

(lecture rooms H 1028 and H 1058; Poster A)

Plenary, Keynote and Prize Talks related to BP

PV I	Mon	8:30– 9:15	H 0105	Survival in the face of the unknown: some lessons from bacteria — •STANISLAS LEIBLER
PV III	Mon	14:00–14:45	ER 270	Soft Matter and Life Sciences: Research with Neutrons — •DIETER RICHTER
PV XIX	Thu	13:15–14:00	H 0105	Mechanics and Growth of Tissues — •JEAN-FRANCOIS JOANNY
PV XX	Thu	14:00–14:45	H 0105	How superficial is adhesion? Common fundamentals of gecko, bac- teria, protein and thin film adhesion — •KARIN JACOBS
PV XXII	Thu	14:00–14:45	EW 201	3D imaging of lung tissue during total liquid ventilation — •CHRISTIAN SCHNABEL, SVEN MEISSNER, MARIA GAERTNER, EDMUND KOCH
PV XXIV	Fri	8:30– 9:15	H 0105	Role of van der Waals Interactions in Physics, Chemistry, and Biology — •MATTHIAS SCHEFFLER

Invited Talks

BP 1.1	Mon	9:30–10:00	H 1058	Friction and Hydration Repulsion Between Hydrogen-Bonding Sur- faces — •ROLAND NETZ
BP 2.1	Mon	9:30–10:00	H 1028	Membrane tension regulates motility by controlling lamellipodium organization — •JULIE PLASTINO
BP 1.7	Mon	11:30–12:00	H 1058	Cryo electron microscopy of biological materials — •WOLFGANG BAUMEISTER
BP 6.1	Mon	15:00–15:30	H 1028	Intercellular Interactions and the Mystery of Growth Control — •BORIS SHRAIMAN
BP 10.1	Tue	9:30–10:00	H 1058	Surface topology effect on cell interaction at the nanoscale — •GIUSEPPE BATTAGLIA
BP 13.1	Wed	9:30–10:00	H 1058	Chemo-mechanics of a ring-shaped helicase during unwinding — •MICHAEL SCHLIERF, GANGGANG WANG, XIAOJIANG CHEN, TAEKJIP HA
BP 14.1	Wed	9:30–10:00	H 1028	Membrane transformations in vesicles enclosing aqueous two-phase polymer solutions — •RUMIANA DIMOVA
BP 15.1	Wed	15:00–15:30	H 1058	Electron Paramagnetic Resonance in Protein Science — •MALTE DRESCHER
BP 16.1	Wed	15:00–15:30	H 1028	Molecular Crowding Creates Traffic Jams of Kinesin Motors On Microtubules — •CECILE LEDUC, KATHRIN PADBERG-GEHLE, VLADIMÍR VARGA, DIRK HELBING, STEFAN DIEZ, JONATHON HOWARD
BP 16.2	Wed	15:30–16:00	H 1028	Collective properties of molecular motors — •JEAN-FRANÇOIS JOANNY
BP 23.1	Thu	15:00–15:30	H 1028	Actin network architecture determines myosin motor activity — •LAURENT BLANCHONIN
BP 31.1	Fri	9:30–10:00	H 1058	High-speed imaging of organogenesis in entire zebrafish with SPIM — •JAN HUISKEN

Invited Talks of the Joint Symposium 100 Years of X-ray Diffraction

Organizers Leonore Wiehl, Gerhard Grübel and Joachim Rädler. For more details see SYXD.

SYXD 1.1	Mon	15:00–15:30	H 0105	Disputed discovery: The beginnings of X-ray diffraction in crystals — ●MICHAEL ECKERT
SYXD 1.2	Mon	15:30–16:00	H 0105	Why are quasicrystals quasiperiodic? — ●WALTER STEURER
SYXD 1.3	Mon	16:00–16:30	H 0105	Coherent Diffraction Imaging with Free-Electron Lasers — ●MASSIMO ALTARELLI
SYXD 1.4	Mon	16:30–17:00	H 0105	X-ray free-electron lasers - emerging opportunities for structural biology — ●ILME SCHLICHTING
SYXD 1.5	Mon	17:00–17:30	H 0105	Structure analysis by x-ray diffraction and x-ray imaging: beyond crystals, beyond averages, and beyond modeling — ●TIM SALDITT

Invited Talks of the Joint Symposium Control of Network Dynamics

Organizers Ekehard Schöll and Stefan Bornholdt. For more details see SYND.

SYND 1.1	Thu	9:30–10:00	H 0105	Controlling Complex Networks with Compensatory Perturbations — ●ADILSON E. MOTTER
SYND 1.2	Thu	10:00–10:30	H 0105	Toward control, prediction, and optimization of biological and engineering complex networks — ●KAZUYUKI AIHARA
SYND 1.3	Thu	10:30–11:00	H 0105	Design of robust functional networks as complex combinatorial optimization problem — ●ALEXANDER S. MIKHAILOV
SYND 1.4	Thu	11:00–11:30	H 0105	Braess Paradox, (In-)Stability and Optimal Design: Nonlinear Dynamics of Modern Power Grids — ●MARC TIMME, DIRK WITTHAUT, MARTIN ROHDEN, ANDREAS SORGE
SYND 1.5	Thu	11:30–12:00	H 0105	Delay-Coupled Laser Networks: Complex Behavior, Synchronization and Applications — ●INGO FISCHER

Invited Talks of the Joint Symposium Origin of Life

Organizers Karin Jacobs, Karsten Kruse, Albrecht Ott and Ulrich Gerland. For more details see SYOL.

SYOL 1.1	Fri	9:30–10:00	H 0105	From sequence to function: Random polymerization and modular evolution of RNA — ●SUSANNA C. MANRUBIA
SYOL 1.2	Fri	10:00–10:30	H 0105	Spontaneous autocatalysis and periodic switching in a prebiotic broth — ●EVA WOLLRAB, SABRINA SCHERER, KARSTEN KRUSE, ALBRECHT OTT
SYOL 1.3	Fri	10:30–11:00	H 0105	Thermal solutions for molecular evolution — ●DIETER BRAUN
SYOL 1.4	Fri	11:00–11:30	H 0105	Systems chemistry: Self-replication and chiral symmetry breaking — ●GUENTER VON KIEDROWSKI

Invited Talks of the Joint Focus Session Systems Biology of Bacteria (with jDPG)

AGjDPG 4.1	Tue	9:30–10:00	E 020	Stochastic gene regulation strategies in bacteria — ●ULRICH GERLAND
AGjDPG 4.2	Tue	10:00–10:30	E 020	The evolutionary advantage of being round — ●OSKAR HALLATSCHKEK
AGjDPG 4.3	Tue	10:30–11:00	E 020	Optimal control strategies in living cells — ●MARKUS KOLLMANN
AGjDPG 4.4	Tue	11:00–11:30	E 020	Bacterial communication systems — ●ILKA BISCHOF

Invited Talks of the Joint Focus Session Statistics of Cellular Motion (with DY)

Organizers Carsten Beta, Peter Dieterich, Rainer Klages and Lutz Schimansky-Geier.

BP 11.1	Tue	9:30–10:00	H 1028	Data-driven modeling of cell trajectories: a do-it-yourself kit — ●HENRIK FLYVBJERG
BP 11.2	Tue	10:00–10:30	H 1028	The statistics of eukaryotic chemotaxis — ●EBERHARD BODENSCHATZ
BP 11.3	Tue	10:30–11:00	H 1028	Dynamics of directed cell migration — ●ALBRECHT SCHWAB, OTTO LINDEMANN, PETER DIETERICH

BP 11.4 Tue 11:00–11:30 H 1028 **Medley swimming of sleeping sickness parasites** — ●VASILY ZABURDAEV, SRAVANTI UPPALURI, THOMAS PFOHL, MARKUS ENGSTLER, RUDOLF FRIEDRICH, HOLGER STARK

Invited Talks of the Joint Focus Session Nonlinear Dynamics of the Heart (with DY)

Organizer Ulrich Parlitz.

DY 14.1 Wed 9:30–10:00 MA 001 **Modelling Excitation Contraction Coupling** — ●MARTIN FALCKE
 DY 14.2 Wed 10:00–10:30 MA 001 **Modeling of electrical and mechanical function of the heart** — ●ALEXANDER PANFILOV
 DY 14.3 Wed 10:30–11:00 MA 001 **Mechanisms for calcium alternans** — ●BLAS ECHEBARRIA, ENRIC ALVAREZ-LACALLE, CARLOS LUGO, ANGELINA PEÑARANDA, INMA R. CANTALAPIEDRA
 DY 14.4 Wed 11:00–11:30 MA 001 **Synchronization as a mechanism of chaos control; Applications to cardiac arrhythmias.** — ●FLAVIO H. FENTON, STEFAN LUTHER, PHILIP BITTIHN, DANIEL HORNING, EBERHARD BODENSCHATZ, ROBERT F. GILMOUR JR
 DY 14.5 Wed 11:30–12:00 MA 001 **Cardiac dynamics from a nonlinear system's perspective - from basic science to applications** — ●STEFAN LUTHER

Invited Talks of the Joint Focus Session Stress Relaxation in Polymers - From single molecules to biological cells (with CPP)

Organizers Robert Magerle and Klaus Kroy.

CPP 32.1 Thu 9:30–10:00 C 243 **Stress relaxation and chain dynamics in entangled polymer melts** — ●RALF EVERAERS
 CPP 32.5 Thu 10:45–11:15 C 243 **Slow stress relaxation in recoiling polymers** — ●ULRICH F. KEYSER
 CPP 32.9 Thu 12:00–12:30 C 243 **Cytoskeletal stress in collective cell migration** — ●XAVIER TREPAT

Sessions

BP 1.1–1.11 Mon 9:30–13:00 H 1058 **Proteins I**
 BP 2.1–2.12 Mon 9:30–13:00 H 1028 **Physics of Cells I**
 BP 3.1–3.14 Mon 9:30–13:15 MA 001 **Statistical Physics of Biological Systems I (with DY)**
 BP 4.1–4.5 Mon 15:00–17:30 H 0105 **Symposium SYXD: 100 years of X-ray diffraction: from the Laue experiment to new frontiers (with KR, CPP, DF, MA, MM, GP)**
 BP 5.1–5.10 Mon 15:00–17:30 H 1058 **Statistical Physics of Biological Systems II (with DY)**
 BP 6.1–6.9 Mon 15:00–17:30 H 1028 **Physics of Cells II**
 BP 7.1–7.42 Mon 17:30–19:30 Poster A **Posters: Proteins**
 BP 8.1–8.16 Mon 17:30–19:30 Poster A **Posters: Biopolymers and Biomaterials (with CPP)**
 BP 9.1–9.8 Tue 9:30–12:30 E 020 **Focus: Systems Biology of Bacteria (with jDPG)**
 BP 10.1–10.12 Tue 9:30–13:00 H 1058 **Biopolymers and Biomaterials (with CPP)**
 BP 11.1–11.11 Tue 9:30–13:30 H 1028 **Focus: Statistics of Cellular Motion (with DY)**
 BP 12.1–12.5 Wed 9:30–12:00 MA 001 **Focus: Nonlinear Dynamics of the Heart (with DY)**
 BP 13.1–13.12 Wed 9:30–13:00 H 1058 **DNA/RNA and Related Enzymes**
 BP 14.1–14.12 Wed 9:30–13:00 H 1028 **Membranes and Vesicles**
 BP 15.1–15.9 Wed 15:00–17:30 H 1058 **Proteins II**
 BP 16.1–16.8 Wed 15:00–17:30 H 1028 **Molecular Motors**
 BP 17.1–17.42 Wed 17:30–19:30 Poster A **Posters: Physics of Cells**
 BP 18.1–18.39 Wed 17:30–19:30 Poster A **Posters: Statistical Physics in Biological Systems**
 BP 19.1–19.5 Thu 9:30–12:00 H 0105 **Symposium SYND: Control of Network Dynamics (with DY and SOE)**
 BP 20.1–20.12 Thu 9:30–13:00 H 1058 **Regulation**
 BP 21.1–21.9 Thu 9:30–12:30 C 243 **Focus: Stress Relaxation in Polymers - From single molecules to biological cells (with CPP)**
 BP 22.1–22.10 Thu 15:00–17:30 H 1058 **Statistical Physics of Biological Systems III (with DY)**
 BP 23.1–23.7 Thu 15:00–17:00 H 1028 **Cytoskeletal Filaments**

BP 24.1–24.13	Thu	17:30–19:30	Poster A	Posters: DNA/RNA and Related Enzymes
BP 25.1–25.7	Thu	17:30–19:30	Poster A	Posters: Molecular Motors
BP 26.1–26.24	Thu	17:30–19:30	Poster A	Posters: Membranes and Vesicles
BP 27.1–27.16	Thu	17:30–19:30	Poster A	Posters: Cytoskeletal Filaments
BP 28.1–28.11	Thu	17:30–19:30	Poster A	Posters: Imaging
BP 29.1–29.10	Thu	17:30–19:30	Poster A	Posters: Regulation
BP 30.1–30.4	Fri	9:30–11:30	H 0105	Symposium SYOL: Origin of Life (with CPP and DY)
BP 31.1–31.7	Fri	9:30–11:30	H 1058	Imaging
BP 32.1–32.13	Fri	9:30–13:00	H 1028	Physics of Cells III

Annual General Meeting of the Biological Physics Division

Wednesday 19:00–20:00 H 1028

- Bericht der drei Sprecher
- Manöverkritik und Planung Frühjahrstagung Regensburg 2013
- Verschiedenes