

## Biological Physics Division Fachverband Biologische Physik (BP)

Gerhard Gompper  
Institute of Complex Systems  
Forschungszentrum Jülich  
52425 Jülich  
g.gompper@fz-juelich.de  
dpg-bp@fz-juelich.de

Frauke Gräter  
Heidelberg Institute Theor. Studies  
Schlosswolfsbrunnenweg 35  
69118 Heidelberg  
frauke.graeter@h-its.org

Joachim Rädler  
Ludwig-Maximilians-Universität  
Geschwister Scholl Platz 1  
80539 München  
raedler@lmu.de

### Overview of Invited Talks and Sessions

(Lecture halls HÜL 386, SCH A251, and ZEU 250; Poster P2-EG, P2-10G, P2-20G, P2-30G, and P2-40G)

#### Invited Talks

BP 1.1	Mon	9:30–10:00	HÜL 386	<b>Spontaneous and driven active matter flows</b> — ●ERIC CLEMENT
BP 4.5	Mon	10:30–11:00	ZEU 250	<b>How do lipids and proteins diffuse in cell membranes, and what do the diffusion experiments actually measure?</b> — ●ILPO VATTULAINEN
BP 5.1	Mon	15:00–15:30	HÜL 386	<b>Mirror-enhanced fluorescence for superresolution imaging and spectroscopy</b> — ●KATRIN G. HEINZE, HANNAH S. HEIL, BENJAMIN SCHREIBER, MARKUS SAUER
BP 6.4	Mon	15:45–16:15	SCH A251	<b>Density waves, jamming and dynamic arrest in growing microbial communities</b> — ●OSKAR HALLATSCHKE
BP 7.6	Mon	16:30–17:00	ZEU 250	<b>Optoregulated force application to individual cellular receptors using molecular motors</b> — ●ARÁNZAZU DEL CAMPO
BP 12.7	Tue	11:30–12:00	HÜL 386	<b>Physics of Growth: Another Form of Active Matter</b> — ●JENS ELGETI
BP 13.1	Tue	9:30–10:00	SCH A251	<b>On another plane: curling and buckling in epithelia</b> — ●GUILLAUME CHARRAS, JONATHAN FOUCHARD, TOM WYATT, ANA LISICA, NARGESS KHALILGHARIBI, PIERRE RECHO, AMSHA PROAG, MAGALI SUZANNE, BUZZ BAUM, ALEXANDRE KABLA
BP 14.5	Tue	10:30–11:00	ZEU 250	<b>Could the cytoskeleton influence liquid-liquid phase separation?</b> — ●ERIC DUFRESNE
BP 21.1	Wed	9:30–10:00	HÜL 386	<b>Cellular mechanosensing within synthetic 3D extracellular matrices</b> — ●BRITTA TRAPPMANN
BP 22.7	Wed	11:30–12:00	SCH A251	<b>The mechanical stability of proteins regulates their translocation rate into the cell nucleus</b> — ●SERGI GARCIA-MANYES
BP 23.4	Wed	10:30–11:00	ZEU 250	<b>Mechanical signalling in cell fate choice</b> — ●KEVIN CHALUT
BP 26.6	Wed	16:30–17:00	SCH A251	<b>3 D Classification of Red Blood Cells in microchannels</b> — ●CHRISTIAN WAGNER
BP 28.1	Wed	15:00–15:30	ZEU 250	<b>Eavesdropping on fluctuation-driven transport in living matter</b> — ●MATTHIAS WEISS
BP 30.1	Thu	9:30–10:00	HÜL 386	<b>Active behaviors of cellular monolayers.</b> — ●BENOIT LADOUX
BP 31.7	Thu	11:30–12:00	SCH A251	<b>Predicting Protein and RNA Structures via data inference: from Potts models to machine learning</b> — ●ALEXANDER SCHUG
BP 33.5	Thu	10:30–11:00	ZEU 250	<b>Atomistic ensembles of proteins and soft matter complexes from MD simulations and solution scattering data</b> — MILOS T IVANOVIC, MARKUS R HERMANN, ●JOCHEN S HUB
BP 35.4	Thu	15:45–16:15	HÜL 386	<b>Super-resolution microscopy with DNA molecules</b> — ●RALF JUNG-MANN
BP 36.4	Thu	15:45–16:15	SCH A251	<b>Mechanical properties of intermediate filaments at high strains</b> — JOHANNA FORSTING, JULIA KRAXNER, CHARLOTTA LORENZ, ANNA SCHEPERS, ●SARAH KÖSTER
BP 37.1	Thu	15:00–15:30	ZEU 250	<b>Growth, death, and adaptation of bacterial cells: a quantitative analysis</b> — ●ULRICH GERLAND
BP 38.1	Fri	9:30–10:00	HÜL 386	<b>Physical phenotyping of cells in microfluidic systems</b> — ●JOCHEN GUCK

BP 42.1 Fri 12:30–13:15 HSZ 02 **Physics of active droplets** — ●FRANK JÜLICHER

### Invited talks of the joint symposium SYSD

See SYSD for the full program of the symposium.

SYSD 1.1 Mon 9:30–9:55 HSZ 02 **Disentangling transport in topological insulator thin films down to the nanoscale** — ●FELIX LÜPKE

SYSD 1.2 Mon 9:55–10:20 HSZ 02 **Spintronics with Terahertz Radiation: Probing and driving spins at highest frequencies** — ●TOM SEBASTIAN SEIFERT, TOBIAS KAMPFRATH

SYSD 1.3 Mon 10:20–10:45 HSZ 02 **Non-radiative voltage losses in organic solar cells** — ●JOHANNES BENDUHN

SYSD 1.4 Mon 10:45–11:10 HSZ 02 **Multivalent ions for tuning the phase behaviour of protein solutions** — ●OLGA MATSARSKAIA

SYSD 1.5 Mon 11:10–11:35 HSZ 02 **Network Dynamics under Constraints** — ●MALTE SCHRÖDER

SYSD 1.6 Mon 11:35–12:00 HSZ 02 **Exciton spectroscopy of van der Waals heterostructures** — ●PHILIPP NAGLER

### Invited talks of the joint symposium SYES

See SYES for the full program of the symposium.

SYES 1.1 Thu 9:30–10:00 HSZ 02 **Understanding the physical variables driving mechanosensing** — ●PERE ROCA-CUSACHS

SYES 1.2 Thu 10:00–10:30 HSZ 02 **Mechanics of life: Cellular forces and mechanics far from thermodynamic equilibrium** — ●TIMO BETZ

SYES 1.3 Thu 10:30–11:00 HSZ 02 **A hydrodynamic approach to collective cell migration in epithelial tissues** — ●JAUME CASADEMUNT

SYES 1.4 Thu 11:15–11:45 HSZ 02 **The spindle is a composite of two permeating polar gels** — DAVID ORIOLA, BENJAMIN DALTON, FRANZISKA DECKER, FRANK JULICHER, ●JAN BRUGUES

SYES 1.5 Thu 11:45–12:15 HSZ 02 **Adding magnetic properties to epitaxial graphene** — ●RODOLFO MIRANDA

SYES 2.1 Thu 15:00–15:30 HSZ 01 **Interactions in assemblies of surface-mounted magnetic molecules** — ●WOLFGANG KUCH

SYES 2.2 Thu 15:30–16:00 HSZ 01 **Towards phononic circuits based on optomechanics** — ●CLIVIA M. SOTOMAYOR-TORRES

SYES 2.3 Thu 16:00–16:30 HSZ 01 **Optical properties of 2D materials and heterostructures** — ●JANINA MAULTZSCH

SYES 2.4 Thu 16:45–17:15 HSZ 01 **Bringing nanophotonics to the atomic scale** — ●JAVIER AIZPURUA

SYES 2.5 Thu 17:15–17:45 HSZ 01 **Infrared signatures of the coupling between vibrational and plasmonic excitations** — ●ANNEMARIE PUCCI

### Invited talks of the joint symposium SYDW

See SYDW for the full program of the symposium.

SYDW 1.1 Thu 15:00–15:30 HSZ 02 **Statics and Dynamics of Soft Wetting** — ●BRUNO ANDREOTTI

SYDW 1.2 Thu 15:30–16:00 HSZ 02 **Modelling imbibition, dynamic wetting and evaporation on structured surfaces and porous coatings** — ●TATIANA GAMBARYAN-ROISMAN, NOEMI GHILLANI

SYDW 1.3 Thu 16:00–16:30 HSZ 02 **Droplets on shaped liquid and electrically switchable surfaces** — ●GLEN MCHALE

SYDW 1.4 Thu 16:45–17:15 HSZ 02 **Liquid-liquid Dewetting: From Spinodal Breakup to Dewetting Morphologies and Rates** — ●RALF SEEMANN, STEFAN BOMMER, ROGHAYEH SHIRI, SEBASTIAN JACHALSKI, DIRK PESCHKA, BARBARA WAGNER

SYDW 1.5 Thu 17:15–17:45 HSZ 02 **Droplet durotaxis and engulfment on yielding viscoelastic gels** — ●ANNE JUEL

**Sessions**

BP 1.1–1.11	Mon	9:30–13:00	HÜL 386	<b>Active Matter I (joint session BP/DY/ CPP)</b>
BP 2.1–2.10	Mon	9:30–12:45	SCH A251	<b>Focus: Phase Separation in Biological Systems I (joint session BP/ CPP)</b>
BP 3.1–3.7	Mon	9:30–11:15	ZEU 114	<b>Biopolymers, Biomaterials and Bioinspired Functional Materials (joint session CPP/ BP)</b>
BP 4.1–4.11	Mon	9:30–13:00	ZEU 250	<b>Membranes and Vesicles (joint session BP/ CPP)</b>
BP 5.1–5.7	Mon	15:00–17:15	HÜL 386	<b>Bioimaging and Biospectroscopy I</b>
BP 6.1–6.7	Mon	15:00–17:15	SCH A251	<b>Statistical Physics of Biological Systems I (joint session BP/ DY)</b>
BP 7.1–7.8	Mon	15:00–17:30	ZEU 250	<b>Biomaterials and Biopolymers (joint session BP/ CPP)</b>
BP 8.1–8.20	Mon	17:30–19:30	P2/1OG	<b>Poster I</b>
BP 9.1–9.27	Mon	17:30–19:30	P2/2OG	<b>Poster II</b>
BP 10.1–10.32	Mon	17:30–19:30	P2/3OG	<b>Poster III</b>
BP 11.1–11.11	Tue	9:30–13:15	GÖR 226	<b>Data analytics for dynamical systems I (Focus Session joint with DY and BP) (joint session SOE/ DY/ CPP/ BP)</b>
BP 12.1–12.11	Tue	9:30–13:00	HÜL 386	<b>Active Matter II (joint session BP/ DY/ CPP)</b>
BP 13.1–13.10	Tue	9:30–12:45	SCH A251	<b>Cell Mechanics I</b>
BP 14.1–14.10	Tue	9:30–12:45	ZEU 250	<b>Focus: Phase Separation in Biological Systems II (joint session BP/ CPP)</b>
BP 15.1–15.8	Tue	14:00–16:00	ZEU 160	<b>Active Matter III (joint session DY/ BP/ CPP)</b>
BP 16.1–16.19	Tue	14:00–16:00	P2/EG	<b>Poster IV</b>
BP 17.1–17.31	Tue	14:00–16:00	P2/1OG	<b>Poster V</b>
BP 18.1–18.27	Tue	14:00–16:00	P2/2OG	<b>Poster VI</b>
BP 19.1–19.32	Tue	14:00–16:00	P2/3OG	<b>Poster VII</b>
BP 20.1–20.26	Tue	14:00–16:00	P2/4OG	<b>Poster VIII</b>
BP 21.1–21.11	Wed	9:30–13:00	HÜL 386	<b>Cell Adhesion and Migration, Multicellular Systems I</b>
BP 22.1–22.11	Wed	9:30–13:00	SCH A251	<b>Single Molecule Biophysics (joint session BP/ CPP)</b>
BP 23.1–23.8	Wed	9:30–12:45	ZEU 250	<b>Focus: Physics of Stem Cells</b>
BP 24.1–24.9	Wed	10:00–12:30	ZEU 160	<b>Active Matter IV (joint session DY/ CPP/ BP)</b>
BP 25.1–25.8	Wed	15:00–17:15	HÜL 386	<b>Cell Mechanics II</b>
BP 26.1–26.8	Wed	15:00–17:30	SCH A251	<b>Focus: Biological Cells in Microfluidics I</b>
BP 27.1–27.9	Wed	15:00–17:45	ZEU 160	<b>Fluid Physics of Life (joint session DY/ BP)</b>
BP 28.1–28.8	Wed	15:00–17:30	ZEU 250	<b>Statistical Physics of Biological Systems II (joint session BP/ DY)</b>
BP 29	Wed	18:00–19:00	HÜL 386	<b>Annual General Assembly</b>
BP 30.1–30.11	Thu	9:30–13:00	HÜL 386	<b>Cell Adhesion and Migration, Multicellular Systemadhesion and Migration, Multicellular Systems II</b>
BP 31.1–31.11	Thu	9:30–13:00	SCH A251	<b>Computational Biophysics (joint session BP/ CPP)</b>
BP 32.1–32.10	Thu	9:30–12:45	ZEU 118	<b>Focus Session: Nonlinear Dynamics of the Heart I (joint session DY/ BP)</b>
BP 33.1–33.11	Thu	9:30–13:00	ZEU 250	<b>Protein Structure and Dynamics</b>
BP 34.1–34.6	Thu	14:00–15:45	ZEU 118	<b>Nonlinear Dynamics of the Heart II (joint session DY/ BP)</b>
BP 35.1–35.8	Thu	15:00–17:30	HÜL 386	<b>Bioimaging and Biospectroscopy II</b>
BP 36.1–36.8	Thu	15:00–17:30	SCH A251	<b>Cytoskeletal Filaments I</b>
BP 37.1–37.8	Thu	15:00–17:30	ZEU 250	<b>Systems Biology, Evolution and Neural Networks I</b>
BP 38.1–38.7	Fri	9:30–12:00	HÜL 386	<b>Focus: Biological Cells in Microfluidics II</b>
BP 39.1–39.7	Fri	9:30–12:00	SCH A251	<b>Cytoskeletal Filaments II</b>
BP 40.1–40.8	Fri	9:30–12:00	ZEU 250	<b>Systems Biology, Evolution and Neural Networks II</b>
BP 41.1–41.6	Fri	10:00–11:30	ZEU 160	<b>Active Matter V (joint session DY/ BP/ CPP)</b>
BP 42.1–42.1	Fri	12:30–13:15	HSZ 02	<b>Closing Talk (joint session BP/ DY/ CPP)</b>

**Annual General Meeting of the Biological Physics Division**

Wednesday 18:00–19:00 HÜL 386

- Bericht
- Verschiedenes