

## Biological Physics Division Fachverband Biologische Physik (BP)

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### Overview of Invited Talks and Sessions

(Lecture halls H1 and H6; Posters P)

#### Invited Talks

BP 1.1	Mon	10:00–10:30	H1	<b>Physics-Informed Deep Learning for Characterizing Perturbed Cell Growth</b> — ●ROBERT ENDRES, HENRY CAVANAGH, ROB LIND, ANDREAS MOSBACH, GABRIEL SCALLIET
BP 2.1	Mon	11:30–12:00	H1	<b>PINCH-1 promotes migration in extracellular matrices and influences the mechano-phenotype</b> — ●CLAUDIA TANJA MIERKE
BP 3.1	Thu	10:00–10:30	H1	<b>SARS-CoV-2 induced membrane remodeling in infected cells revealed by in celullo cryo-ET</b> — STEFFEN KLEIN, LIV ZIMMERMANN, SOPHIE WINTER, MIRKO CORTESE, MORITZ WACHSMUTH-MELM, CHRISTOPHER NEUFELDT, BERATI CERIKAN, MEGAN STANIFER, STEEVE BOULANT, RALF BARTENSCHLAGER, ●PETR CHLANDA
BP 6.1	Thu	13:30–14:00	H6	<b>How do lipids and proteins diffuse in cell membranes, and what do the diffusion experiments actually measure?</b> — ●ILPO VATTULAINEN
BP 7.1	Thu	15:00–15:30	H6	<b>Shaping embryos through controlled tissue phase transitions</b> — ●OTGER CAMPAS

#### Invited talks of the joint symposium Topological constraints in biological and synthetic soft matter (SYSM)

See SYSM for the full program of the symposium.

SYSM 1.1	Mon	10:00–10:30	Audimax 1	<b>Interphase Chromatin Undergoes a Local Sol-Gel Transition Upon Cell Differentiation</b> — ●ALEXANDRA ZIDOVSKA
SYSM 1.2	Mon	10:30–11:00	Audimax 1	<b>Topological Tuning of DNA Mobility in Entangled Solutions of Supercoiled Plasmids</b> — ●JAN SMREK, JONATHAN GARAMELLA, RAE ROBERTSON-ANDERSON, DAVIDE MICHIELETTO
SYSM 1.3	Mon	11:15–11:45	Audimax 1	<b>Dynamics of macromolecular networks under topological and environmental constraints: some outstanding challenges</b> — ●DIMITRIS VLASSOPOULOS
SYSM 1.4	Mon	11:45–12:15	Audimax 1	<b>Supercoiling in a Protein Increases its Stability</b> — ●JOANNA SULKOWSKA, SZYMON NIEWIECZERZAL
SYSM 1.5	Mon	12:15–12:45	Audimax 1	<b>Topology for soft matter photonics</b> — ●IGOR MUSEVIC

#### Invited talks of the joint symposium SKM Dissertation Prize 2021 (SYSD)

See SYSD for the full program of the symposium.

SYSD 1.1	Mon	10:00–10:25	Audimax 2	<b>Avoided quasiparticle decay from strong quantum interactions</b> — ●RUBEN VERRESEN, RODERICH MOESSNER, FRANK POLLMANN
SYSD 1.2	Mon	10:25–10:50	Audimax 2	<b>Co-evaporated Hybrid Metal-Halide Perovskite Thin-Films for Optoelectronic Applications</b> — ●JULIANE BORCHERT

SYSD 1.3	Mon	10:55–11:20	Audimax 2	<b>Attosecond-fast electron dynamics in graphene and graphene-based interfaces</b> — ●CHRISTIAN HEIDE
SYSD 1.4	Mon	11:20–11:45	Audimax 2	<b>The thermodynamics of stochastic systems with time delay</b> — ●SARAH A.M. LOOS
SYSD 1.5	Mon	11:50–12:15	Audimax 2	<b>First Results on Atomically Resolved Spin-Wave Spectroscopy by TEM</b> — ●BENJAMIN ZINGSEM

### Invited talks of the joint symposium The Physics of CoViD Infections (SYCO)

See SYCO for the full program of the symposium.

SYCO 1.1	Mon	13:30–14:00	Audimax 1	<b>A Tethered Ligand Assay to Probe SARS-CoV-2:ACE2 Interactions</b> — MAGNUS BAUER, SOPHIA GRUBER, ADINA HAUSCH, LUKAS MILLES, THOMAS NICOLAUS, LEONARD SCHENDEL, PILAR LOPEZ NAVAJAS, ERIK PROCKO, DANIEL LIETHA, RAFAEL BERNADI, HERMANN GAUB, ●JAN LIPFERT
SYCO 1.2	Mon	14:00–14:30	Audimax 1	<b>From molecular simulations towards antiviral therapeutics against COVID-19</b> — ●REBECCA WADE
SYCO 1.3	Mon	14:45–15:15	Audimax 1	<b>The physical phenotype of blood cells is altered in COVID-19</b> — MARKĚTA KUBÁNKOVÁ, MARTIN KRÄTER, BETTINA HOHBERGER, ●JOCHEN GUCK
SYCO 1.4	Mon	15:15–15:45	Audimax 1	<b>Extended lifetime of respiratory droplets in a turbulent vapor puff and its implications on airborne disease transmission</b> — ●DETLEF LOHSE, KAI LEONG CHONG, CHONG SHEN NG, NAOKI HORI, MORGAN LI, RUI YANG, ROBERTO VERZICCO
SYCO 1.5	Mon	15:45–16:15	Audimax 1	<b>Beyond the demographic vaccine distribution: Where, when and to whom should vaccines be provided first?</b> — ●BENNO LIEBCHEN, JENS GRAUER, FABIAN SCHWARZENDAHL, HARTMUT LÖWEN

### Prize talks of the joint Awards Symposium (SYAW)

See SYAW for the full program of the symposium.

SYAW 1.1	Wed	13:30–14:00	Audimax 1	<b>Organic semiconductors - materials for today and tomorrow</b> — ●ANNA KÖHLER
SYAW 1.2	Wed	14:00–14:30	Audimax 1	<b>PbTe/CdTe nanocomposite as an attractive candidate for room-temperature infrared detectors</b> — ●GRZEGORZ KARCEWSKI
SYAW 1.3	Wed	14:40–15:10	Audimax 1	<b>Fingerprints of correlation in electronic spectra of materials</b> — ●LUCIA REINING
SYAW 1.4	Wed	15:10–15:40	Audimax 1	<b>Artificial Spin Ice: From Correlations to Computation</b> — ●NAËMI LEO
SYAW 1.5	Wed	15:40–16:10	Audimax 1	<b>From microwave optomechanics to quantum transport – carbon nanotubes as highly versatile hybrid devices</b> — ●ANDREAS K. HÜTTEL
SYAW 1.6	Wed	16:20–16:50	Audimax 1	<b>Quantum spin dynamics of a spin-1/2 antiferromagnetic Heisenberg-Ising chain</b> — ●ZHE WANG
SYAW 1.7	Wed	16:50–17:20	Audimax 1	<b>Imaging the effect of electron transfer at the atomic scale</b> — ●LAERTE PATERA

### Invited talks of the joint symposium Spain as Guest of Honor (SYES)

See SYES for the full program of the symposium.

SYES 1.1	Wed	13:30–13:40	Audimax 2	<b>DFMC-GEFES</b> — ●JULIA HERRERO-ALBILLOS
SYES 1.2	Wed	13:40–14:10	Audimax 2	<b>Towards Phononic Circuits based on Optomechanics</b> — ●CLIVIA M. SOTOMAYOR TORRES
SYES 1.3	Wed	14:10–14:40	Audimax 2	<b>Adding magnetic functionalities to epitaxial graphene</b> — ●RODOLFO MIRANDA
SYES 1.4	Wed	14:45–15:15	Audimax 2	<b>Bringing nanophotonics to the atomic scale</b> — ●JAVIER AIZPURUA
SYES 1.5	Wed	15:15–15:45	Audimax 2	<b>Hydrodynamics of collective cell migration in epithelial tissues</b> — ●JAUME CASADEMUNT

SYES 1.6 Wed 15:45–16:15 Audimax 2 **Understanding the physical variables driving mechanosensing** —  
•PERE ROCA-CUSACHS

### Invited talks of the joint symposium **Active nematics: From 2D to 3D (SYAN)**

See SYAN for the full program of the symposium.

SYAN 1.1 Fri 10:00–10:30 Audimax 1 **Corrugated patterns made from an active nematic sheet** — •ANIS SENOSSI, SHUNICHI KASHIDA, RAPHAËL VOITURIEZ, JEAN-CHRISTOPHE GALAS, ANANYO MAITRA, ESTEVEZ-TORRES ANDRÉ

SYAN 1.2 Fri 10:30–11:00 Audimax 1 **Wrinkling instability in 3D active nematics** — •ISABELLA GUIDO

SYAN 1.3 Fri 11:15–11:45 Audimax 1 **Three-dimensional active nematic defects and their energetics** —  
•MIHA RAVNIK

SYAN 1.4 Fri 11:45–12:15 Audimax 1 **Liquid-crystal organization of liver tissue** — •BENJAMIN M FRIEDRICH, HERNAN MORALES-NAVARRETE, ANDRE SCHOLICH, HIDE-NORI NONAKA, FABIAN SEGOVIA MIRANDA, STEFFEN LANGE, JENS KARSCHAU, YANNIS KALAZIDIS, FRANK JÜLICHER, MARINO ZERIAL

SYAN 1.5 Fri 12:15–12:45 Audimax 1 **Machine learning active nematic hydrodynamics** — •VINCENZO VITELLI

### Sessions

BP 1.1–1.4 Mon 10:00–11:15 H1 **Statistical physics of biological systems (joint session BP/DY)**

BP 2.1–2.4 Mon 11:30–12:45 H1 **Cytoskeleton**

BP 3.1–3.3 Thu 10:00–11:00 H1 **Protein Structure and Dynamics**

BP 4.1–4.11 Thu 11:15–12:15 P **Posters Biological Physics**

BP 5.1–5.5 Thu 11:45–13:00 H2 **Active Matter (joint session DY/BP/CPP)**

BP 6.1–6.4 Thu 13:30–14:45 H6 **Membranes and Vesicles**

BP 7.1–7.4 Thu 15:00–16:15 H6 **Cell Mechanics, Cell Adhesion and Migration, Multicellular Systems**

BP 8 Thu 18:00–19:00 MVBP **Annual General Meeting**

BP 9.1–9.5 Fri 11:15–12:30 H2 **Machine Learning in Dynamical Systems and Statistical Physics (joint session DY/BP)**

### Annual General Meeting of the Biological Physics Division

Thu 18:00–19:00 MVBP

- Bericht
- Wahl
- Verschiedenes