

## Monday, October 8

---

8:50 – 9:00	HOLGER STARK (Technische Universität Berlin) Opening remarks
9:00 – 9:35	RAYMOND KAPRAL (University of Toronto) Chemically-powered nanomotors: from single motor motion to collective dynamics
9:35 – 10:10	JEAN-FRANCOIS JOANNY (ESPCI Paris) Spontaneous flow of nematic tissue layers
10:10 – 10:30	ANNIE VIALLAT (CNRS, Aix-Marseille Université) The mechanical feedback between mucus and cilia dynamics drives the self-organisation of reconstituted bronchial epithelium

---

Coffee break

---

11:00 – 11:35	GERHARD GOMPPER (Forschungszentrum Jülich) Active Polymers and Filaments – From Single-Particle Dynamics to Collective Behavior
11:35 – 11:55	ÉTIENNE FODOR (University of Cambridge) Optimizing dissipation in active matter: dynamical phase transitions, clustering, and collective motion
11:55 – 12:15	CELIA LOZANO (Universität Konstanz) Dynamics of Active Particles in Viscoelastic Fluids

---

Lunch

---

14:00 – 14:35	JANINE SPLETTSTOESSER (Chalmers University of Technology, Gothenburg) Charge- and heat-dynamics of quantum dots driven out of equilibrium
14:35 – 15:10	BERND KRAUSKOPF (University of Auckland) Dynamic complexity of two coupled photonic nanocavities
15:10 – 15:30	SOPHIA HELMRICH (Technische Universität Berlin) Valley polarization in mono- and bilayer MoTe <sub>2</sub>

---

Coffee break

---

16:00 – 16:35	AHSAN NAZIR (University of Manchester) Performance of quantum heat engine cycles at strong reservoir coupling
16:35 – 17:10	CHRISTIAN FLINDT (Aalto University) Lee-Yang zeros in condensed matter physics: theory and experiment
17:10 – 17:30	JAVIER CERRILLO (Technische Universität Berlin) Laser cooling of trapped ions: A quantum fluctuation theorem perspective

---

18:00 – open	Poster session and buffet
--------------	---------------------------

---

## Tuesday, October 9

---

- 9:00 – 9:35      STEFAN EGELHAAF (Heinrich-Heine-Universität Düsseldorf)  
Anomalous diffusion due to an external potential, crowding or obstacles
- 9:35 – 10:10     ISTVAN ZALAN KISS (Saint Louis University)  
Decoding Network Structure in Lab-on-Chip Cells with Synchronization of Electrochemical Oscillators
- 10:10 – 10:30    RAINER KLAGES (Queen Mary University of London)  
Cellular automaton models for time-correlated random walks
- 

Coffee break

---

- 11:00 – 11:35    CHRISTOPH F. SCHMIDT (Georg-August-Universität / Duke University)  
Statistical physics of active biological matter
- 11:35 – 11:55    TIM HERPICH (University of Luxembourg)  
Collective power: Minimal model for thermodynamics of nonequilibrium phase transitions
- 11:55 – 12:15    SEBASTIAN RESTREPO (Technische Universität Berlin)  
From quantum heat engines to laser cooling: Floquet theory beyond the Born-Markov approximation
- 

Lunch

---

- 14:00 – 14:35    KLAUS KROY (Universität Leipzig)  
Soft dynamic landscapes emerging from turbulent particulate flows
- 14:35 – 15:10    JÖRG RÖTTLER (University of British Columbia, Vancouver)  
The nonequilibrium physics of driven amorphous materials: plasticity and memory effects
- 15:10 – 15:30    ISABELLA GUIDO (MPI Göttingen)  
Beating of synthetic flagella systems
- 

Coffee break

---

- 16:00 – 16:35    RALF STANNARIUS (Otto-von-Guericke-Universität Magdeburg)  
Role of grain shape anisotropy, softness and friction in granular flow
- 16:35 – 17:10    BENNO LIEBCHEN (Heinrich-Heine-Universität Düsseldorf)  
Self-Assembled Motility in Colloidal Clusters
- 17:10 – 17:30    TOMER GOLDFRIEND (ENS Paris)  
Screening, hyperuniformity, and instability in the sedimentation of irregular objects
- 

18:00 – open      Poster session and buffet

---

## Wednesday, October 10

---

- 9:00 – 9:35 UDO SEIFERT (Universität Stuttgart)  
Entropy production in active systems
- 9:35 – 10:10 ERWIN FREY (Ludwig-Maximilians-Universität München)  
Protein Pattern Formation: Rethinking Nonlinear Dynamics
- 10:10 – 10:30 SARA DAL CENGIO (University of Barcelona)  
Beyond fluctuation-dissipation: A response theory for active fluids
- 

Coffee break

---

- 11:00 – 11:35 FRANK JÜLICHER (MPI Dresden)  
A critical point in tissue growth control
- 11:35 – 11:55 HENNING REINKEN (Technische Universität Berlin)  
Asymmetric pattern formation in microswimmer suspensions subjected to orienting external fields
- 11:55 – 12:15 HOLGER STARK (Technische Universität Berlin)  
GRK1558: a short retrospect
- 

Lunch

---

- 14:00 – 14:35 ANDREAS BAUSCH (Technische Universität München)  
Pattern Formation in Active Cytoskeletal Systems
- 14:35 – 15:10 IGOR ARONSON (Pennsylvania State University)  
Focusing and alignment of self-propelled particles in channels and nozzles
- 15:10 – 15:30 FELIX RÜHLE (Technische Universität Berlin)  
Squirmers microswimmers under gravity
- 

Coffee break

---

- 16:00 – 16:35 AVRAHAM BE'ER (Ben Gurion University)  
Recent news about bacterial swarming
- 16:35 – 16:55 ZAHRA ALIREZAEIZANJANI (Universität Potsdam)  
Statistics of a bacterial three-state swimming pattern
- 16:55 – 17:15 MAXIMILIAN SEYRICH (Technische Universität Berlin)  
Bacterial Chemotaxis: From Individual to Collective Dynamics
- 17:15 – 17:35 DIRK ALEXANDER KULAWIAK (Technische Universität Berlin)  
Poroelastic two-phase model for droplets of *Physarum polycephalum*
- 

18:30 – 21:30 Conference dinner on a boat on the river Havel

---

## Thursday, October 11

---

- 9:00 – 9:35      JAUME CASADEMUNT (University of Barcelona)  
Collective cell migration in epithelial fronts: active wetting and morphological instabilities
- 9:35 – 10:10    WOUTER-JAN RAPPEL (UC San Diego)  
Collective cell chemotaxis: from border cell migration to amoeboid motion
- 10:10 – 10:30   SETAREH DOLATI (Max Delbrück Center Berlin)  
On the relation between filament density, force generation and protrusion rate in mesenchymal cell motility
- 

Coffee break

---

- 11:00 – 11:35    ALAIN PUMIR (ENS and CNRS, Lyon)  
Dynamics in the actin cytoskeleton of chemotactic cells: spontaneous activity and transient response
- 11:35 – 11:55    PAOLO MALGARETTI (MPI Stuttgart)  
Confinement-induced dynamical regimes
- 11:55 – 12:15    PETER SCHALL (University of Amsterdam)  
Collective dynamics in driven amorphous materials and active transport
- 

Lunch

---

- 14:00 – 14:35    MICHAEL SCHMIEDEBERG (Friedrich-Alexander-Universität Erlangen-Nürnberg)  
Growth of Soft Quasicrystals
- 14:35 – 15:10    PIETRO TIERNO (University of Barcelona)  
Laning, Thinning and Thickening of Sheared Colloids in a Two-Dimensional Taylor-Couette Geometry
- 15:10 – 15:30    HELENA MASSANA-CID (University of Barcelona)  
Out-of-equilibrium annealing of travelling colloidal carpets
- 

Coffee break

---

- 16:00 – 16:20    DAVID RICHARD (Johannes Gutenberg-Universität Mainz)  
Understanding the crystallization kinetics and nucleation work for sheared liquids
- 16:20 – 16:55    ARJUN G. YODH (University of Pennsylvania, Philadelphia)  
Structure & Relaxation Dynamics in Frustrated Colloidal Systems
- 17:00              HOLGER STARK (Technische Universität Berlin)  
Closing remarks
-

## Posters: Hard Matter

---

- Poster 1      SINA BÖHLING (Technische Universität Berlin)  
Thermoelectric performance of topological boundary modes
- Poster 2      JAVIER CERRILLO (Technische Universität Berlin)  
Non-equilibrium fluctuation theorems for strongly-coupled, non-thermal environments
- Poster 3      TIM HERPICH (University of Luxembourg)  
Collective power: Minimal model for thermodynamics of nonequilibrium phase transitions
- Poster 4      OLIVER KÄSTLE (Technische Universität Berlin)  
Solution of Non-Markovian Electron-Photon Coupling Using Tensor Networks
- Poster 5      MANUEL KRAFT (Technische Universität Berlin)  
Divergent correlation length via time-delayed feedback in wQED
- Poster 6      MATTHIAS KUNZ (Technische Universität Berlin)  
Spatially resolved photoluminescence of mono- and bilayer molybdenum ditelluride
- Poster 7      CHRISTOPHER W. WÄCHTLER (Technische Universität Berlin)  
Thermodynamics of self-oscillation at the example of the electron shuttle

## Posters: Soft Matter

---

- Poster 8      OLEKSANDR CHEPIZHKO (Universität Innsbruck)  
Transport properties of ideal circular microswimmers in crowded environments
- Poster 9      ALEXANDER FISCHER (Universität Leipzig)  
Feedback Control of Active Microswimmers
- Poster 10      ANDREAS FISCHER (Johannes Gutenberg-Universität Mainz)  
Self-Organization of Active Particles by Quorum Sensing
- Poster 11      AISHANI GHOSAL (Indian Institute of Science, Bangalore)  
Flow effects on chain conformational dynamics
- Poster 12      JOSUA GRAWITTER (Technische Universität Berlin)  
Dissipative systems with nonlocal time-delayed feedback control
- Poster 13      WILLIAM JANKE (Johannes Gutenberg-Universität Mainz)  
Structure Formation of Organic Molecules on Dielectric Surfaces
- Poster 14      MACIEJ MAJKA (Jagiellonian University, Kraków)  
Spatially correlated stochastic dynamics in self-assembly and glass transition

- Poster 15 PAOLO MALGARETTI (MPI Stuttgart)  
Confinement-induced dynamical regimes
- Poster 16 MIRIAM MARTINSONS (Friedrich-Alexander Universität Erlangen-Nürnberg)  
Growth of decagonal and dodecagonal colloidal quasicrystals in two dimensions
- Poster 17 CHRISTIAN SCHAAF (Technische Universität Berlin)  
Phonons in inertial microfluidics
- Poster 18 SHAHAJHAN SORATHIYA (Technische Universität Berlin)  
Collective Dynamics of Squirmers in Poiseuille Flow
- Poster 19 JULIAN STÜRMER (Technische Universität Berlin)  
Chemotactic interactions in systems of active and passive colloids
- Poster 20 DAVID TONEIAN (Technische Universität Wien)  
Conformational and Dynamic Properties of Magnetic Star Polymers Under Shear
- Poster 21 ROBERT F. B. WEIGEL (Friedrich-Alexander Universität Erlangen-Nürnberg)  
Equilibration of Orientational Order in Hard Disks via Arcuate Event-Chain Monte Carlo
- Poster 22 VASCO MARIUS WORLITZER (PTB, Berlin)  
Active polar fluids with density fluctuations
- Poster 23 SADATO YAMANAKA (University of Tokyo)  
Key role of a fluid component in the rheological behavior of dense granular suspensions

## Posters: Biological Physics

---

- Poster 24 JULIO BASTOS (Technische Universität Dresden)  
BacteriaBots as biohybrid microswimmers
- Poster 25 NAFISA BEGAM (Eberhard Karls Universität Tübingen)  
Kinetics and Dynamics of Protein Solutions with an Interplay between Liquid-Liquid Phase Separation and Glass Formation
- Poster 26 PAVEL BURAN (PTB, Berlin)  
Mechanism of underdrive pacing for low-energy defibrillation
- Poster 27 SAIKAT CHAKRABORTY (Johannes Gutenberg-Universität Mainz)  
A Minimal Model in Implicit Solvent for 1D Self-assembly of  $C_3$ -symmetric Amphiphilic Peptides in Water
- Poster 28 BENJAMIN DALTON (MPI Dresden)  
Long-range stresses spatially organise active filament networks with mass turnover
- Poster 29 MARTIN FALCKE (Helmholtz Centre for Infection Research, Braunschweig)  
Loss of the Arp2/3 complex boosts FMNL2/3-dependent filopodia formation

- Poster 30            MILOS KNEZEVIC (Technische Universität Berlin)  
Mechanical tuning of synaptic patterns enhances immune discrimination
- Poster 31            MEHMET CAN UCAR (MPI Potsdam)  
Collective force generation by elastically coupled molecular motors