

Monday, October 5

- 8:50 – 9:00 HOLGER STARK (Technische Universität Berlin)
Opening remarks
- 9:00 – 9:35 PETRA SCHWILLE (MPI Martinsried)
Spatial Control of Protein Pattern and Gradient Formation
- 9:35 – 10:10 KARSTEN KRUSE (Universität des Saarlands, Saarbrücken)
Collective effects of molecular motors and passive cross-linkers
- 10:10 – 10:30 MARCUS J. B. HAUSER (Otto-von-Guericke-Universität Magdeburg)
Migratory behaviour of *Physarum polycephalum* microplasmodia
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Coffee break

- 11:00 – 11:35 EBERHARD BODENSCHATZ (MPI Göttingen)
Self-Oscillations of the Cytoskeleton of Chemotacticoeba
- 11:35 – 11:55 MARIUS HINTSCHE (Universität Potsdam)
Quantifying the chemotactic response of *Pseudomonas putida*
- 11:55 – 12:15 JOHANNES BLASCHKE (Technische Universität Berlin)
Simulating the Swimming Dynamics of *Trypanosoma brucei* in Crowded Environments
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Lunch

- 2:00 – 2:35 HUGUES CHATÉ (CEA Saclay)
Phase and microphase separation in active matter
- 2:35 – 3:10 THOMAS SPECK (Johannes-Gutenberg-Universität Mainz)
Active Brownian particles: effective equilibrium vs. genuine non-equilibrium
- 3:10 – 3:30 JAKOB LÖBER (Technische Universität Berlin)
Modeling crawling cell motility
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Coffee break

- 4:00 – 4:35 MASAKI SANO (University of Tokyo)
Interaction and Collective Dynamics of Self-Propelled Particles
- 4:35 – 4:55 SEBASTIAN HEIDENREICH (PTB Berlin)
Hydrodynamic length scale selection in mesoscale turbulence
- 4:55 – 5:15 JAIDEEP KATURI (MPI Stuttgart)
Synthetic microswimmers near surfaces and their collective behavior
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6:00 – open Poster session and buffet

Tuesday, October 6

- 9:00 – 9:35 JÉRÉMIE PALACCI (University of California San Diego)
Emergent properties in experimental systems with synthetic microswimmers
- 9:35 – 10:10 RAMIN GOLESTANIAN (University of Oxford)
Collective Chemotaxis of Colloidal and Living Active Matter
- 10:10 – 10:30 CELIA LOZANO (MPI Stuttgart)
Dynamics of Microswimmers with Space-Dependent Self-Propulsion
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Coffee break

- 11:00 – 11:35 JÜRGEN HORBACH (Heinrich-Heine-Universität Düsseldorf)
Directed Site Percolation Roots in the Formation of Shear Bands
- 11:35 – 11:55 PIETRO TIERNO (University of Barcelona)
Excluded Volume Causes Integer and Fractional Plateaus in Colloidal Ratchet Currents
- 11:55 – 12:15 NICOLAS RIVAS (University of Twente, Enschede)
Collective oscillations in vibrated granular media
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Lunch

- 2:00 – 2:35 HENRI ORLAND (CEA Saclay)
The search for transition paths
- 2:35 – 3:10 JONATHAN KEELING (University of St Andrews)
Non-equilibrium phases of matter-light systems
- 3:10 – 3:30 ARTHUR STRAUBE (Humboldt-Universität zu Berlin)
Microscopic dynamics of synchronization in driven colloids
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Coffee break

- 4:00 – 4:35 MARTIJN WUBS (Technical University of Denmark, Kgs. Lyngby)
Non-classical plasmonics with and without hard walls
- 4:35 – 4:55 LINA JAURIGUE (Technische Universität Berlin)
Timing jitter in passively mode-locked semiconductor lasers: a semi-analytic approach
- 4:55 – 5:15 PHILIPP STRASBERG (Technische Universität Berlin)
Physics and thermodynamics of information processing at the nanoscale
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6:00 – open Poster session and buffet

Wednesday, October 7

- 9:00 – 9:35 SETH FRADEN (Brandeis University, Waltham)
Microfluidic Networks of Oscillatory Chemical Reactions
- 9:35 – 9:55 MICHIEL HERMES (University of Edinburgh)
Unstable and chaotic flow in shear thickening suspensions
- 9:55 – 10:15 PHILIPP KANEHL (Technische Universität Berlin)
Dense Colloidal Suspensions in Microfluidic Flow: Size Segregation and Velocity Oscillations
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Coffee break

- 11:00 – 11:35 MICHAEL P. BRENNER (Harvard University)
Towards Artificial Living Materials
- 11:35 – 11:55 EHSAN IRANI (Georg-August-Universität Göttingen)
Rheology of Particulate Systems with Attractive Interactions: Effect of Thermal Fluctuations and Dissipation
- 11:55 – 12:15 RODRIGO LUGO-FRÍAS (Technische Universität Berlin)
Shear-induced oscillatory states in binary mixtures of hard anisotropic particles
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Lunch

- 2:00 – 2:35 KNUT DRESCHER (MPI Marburg)
Dynamics in bacterial biofilm communities
- 2:35 – 3:10 PASCAL SILBERZAN (Institut Curie, Paris)
Confined and shaped monolayers
- 3:10 – 3:30 PIERRE A. HAAS (University of Cambridge)
How a *Volvox* Embryo Turns Itself Inside Out
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Coffee break

- 4:00 – 4:35 STEPHAN GRILL (TU Dresden / MPI Dresden)
Actomyosin Force Generation and Pattern Formation
- 4:35 – 4:55 GABRIEL SEIDEN (MPI Dresden / Weizmann Institute, Rehovot)
The tongue as an excitable medium
- 4:55 – 5:15 ROBERT GROSSMANN (PTB Berlin)
Large-scale synchronization of diffusively and superdiffusively moving oscillators
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- 6:30 – 9:30 Conference dinner on a boat on the river Havel
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Thursday, October 8

9:00 – 9:35 PHILIPPE PEYLA (University Grenoble Alpes)
Role of hydrodynamic interactions in phototactic algal suspensions

9:35 – 10:10 SUZANNE FIELDING (Durham University)
Phase behaviour and hydrodynamics of active suspensions

10:10 – 10:30 RAPHAEL JEANNERET (University of Warwick)
Dancing with *Chlamydomonas*

Coffee break

11:00 – 11:35 ALEXANDER MIKHAILOV (FHI Berlin)
Hydrodynamic Collective Effects of Active Protein Machines

11:35 – 11:55 MATTHEW DENNISON (Technische Universität Berlin)
Collective effects of hydrodynamic dipoles: enhancing particle diffusion

11:55 – 12:15 THOMAS IHLE (Ernst-Moritz-Arndt Universität Greifswald)
Kinetic theory of self-driven particles: Invasion waves and correlation effects

Lunch

2:00 – 2:35 HERBERT LEVINE (Rice University, Houston)
Cell motility, from the individual to the collective

2:35 – 2:55 ERIK BERNITT (Universität Bremen)
Actin Waves in Fibroblasts: Noise-induced Circular Dorsal Ruffles

2:55 – 3:15 DIRK KULAWIAK (Technische Universität Berlin)
Reproducing contact inhibition of locomotion probabilities of colliding cells migrating on micro-patterned substrates

Coffee break

3:45 – 4:20 RAYMOND KAPRAL (University of Toronto)
Collective dynamics of chemically-active sphere dimer motors

4:20 – 4:55 PETER KEIM (Universität Konstanz)
Kibble-Zurek mechanism in colloidal monolayers: spontaneous symmetry breaking out of equilibrium

4:55 HOLGER STARK (Technische Universität Berlin)
Closing remarks

Posters: Hard Matter

- Poster 1 ANKE ZIMMERMANN (Technische Universität Berlin)
Two dimensional optical spectroscopy of Coulomb coupled colloidal quantum dots
- Poster 2 KILIAN KUHLA (Technische Universität Berlin)
Spatio-temporal propagation of nonclassical light in a coupled quantum dot-waveguide system
- Poster 3 MIRCO KOLARCZIK (Technische Universität Berlin)
Identification of Crossed Excitons and Observation of Exciton Dynamics in Dot-in-a-Well Structures
- Poster 4 SEBASTIAN RESTREPO (Technische Universität Berlin)
Aspects of the Relationship between Non-Markovianity and Time-Dependent Driving
- Poster 5 T. SVERRE THEUERHOLZ (Technische Universität Berlin)
Metal-semiconductor hybrids: Influence of the Förster coupling between the two quantum dots

Posters: Soft Matter

- Poster 6 ABHRAJIT LASKAR (Institute of Mathematical Sciences Chennai)
Micro-hydrodynamics of Active Filament
- Poster 7 ALEXANDER ZIEPKE (Technische Universität Berlin)
Front Propagation in Sinusoidally Modulated Channels and Tubes
- Poster 8 ANDREA FORTINI (University of Surrey)
Non-equilibrium size segregation in evaporating films of colloidal mixtures
- Poster 9 ANDREA FORTINI (University of Surrey)
Superadiabatic Forces in Brownian Many-Body Dynamics
- Poster 10 ARASH AZHAND (Technische Universität Berlin)
Modulated Filament Structures in a Confined Non-Equilibrium Chemical System: Experiment, Simulation, and Theory
- Poster 11 ARTUR ERBE (Helmholtz-Zentrum Dresden-Rossendorf)
Field-controlled phase transitions between two-dimensional assemblies of magnetic Janus particles
- Poster 12 ARZU B. YENER (Technische Universität Berlin)
Double layer formation of driven magnetic Janus like particles
- Poster 13 DALILA VESCOVI (University of Twente)
Simple shear flows of frictionless, hard and soft spheres
- Poster 14 ELLEN FISCHERMEIER (Universität Erlangen-Nürnberg)
Nonequilibrium Dynamical States in Driven Colloids

- Poster 15 FELIX WINTERHALTER (Universität Erlangen-Nürnberg)
Fluctuating Lattice Boltzmann simulations of microswimmers
- Poster 16 FRANCISCA GUZMAN-LASTRA (Heinrich-Heine-Universität Düsseldorf)
Fission and fusion scenarios for magnetic microswimmer clusters
- Poster 17 HENNING REINKEN (Technische Universität Berlin)
Inhomogeneous flow induced dynamics of nematic colloidal binary mixtures
- Poster 18 JAEHO SHIN (MPI Dresden)
Polymer looping in crowded solutions of active particles
- Poster 19 JOHANN HANSING (Freie Universität Berlin)
The effect of hydrodynamics and electrostatics on particle diffusion in polymer networks
- Poster 20 JOSUA GRAWITTER (Technische Universität Berlin)
Dynamical density functional theory for mixtures of active and passive colloids
- Poster 21 KAROL MAKUCH (University of Warsaw)
Transport coefficients of suspensions of spherical particles
- Poster 22 MARIA ZEITZ (Technische Universität Berlin)
Active particles in complex environments
- Poster 23 MACIEJ MAJKA (Jagiellonian University)
Non-Gaussian polymers described by alpha-stable chain statistics: Model, effective interactions in binary mixtures and application to on-surface separation
- Poster 24 PABLO DE CASTRO (King's College London)
Nonequilibrium dynamics of Polydisperse Lattice-Gas
- Poster 25 PETER KALLE (Technische Universität Berlin)
Controlling the dynamics of complex fluids by time-delayed feedback
- Poster 26 SASCHA GERLOFF (Technische Universität Berlin)
Local transport via density excitations in confined colloidal mixtures under shear flow
- Poster 27 SEBASTIAN EHRIG (MPI Potsdam)
Active particles in confined geometries
- Poster 28 ZAHRA MOKHTARI (Georg-August-Universität Göttingen)
Dynamics of active Brownian particles in heterogeneous media

Posters: Biological Physics

- Poster 29 MARTIN FALCKE (Max Delbrück Center Berlin)
Concentration profiles of actin-binding molecules in motile cells

- Poster 30 OLIVER POHL (Technische Universität Berlin)
Inference of chemotactic strategies of *E. coli* and *Pseudomonas putida*
using Kramers-Moyal coefficients
- Poster 31 ROBERT GROSSMANN (Technische Universität Berlin)
Vortex arrays and mesoscale turbulence of self-propelled particles
- Poster 32 SARA JABBARI-FAROUJI (Johannes Gutenberg-Universität Mainz)
A kinetic model for description of collective dynamics of magnetotactic
bacteria
- Poster 33 SETAREH DOLATI (Max Delbrück Center Berlin)
Actin based cell motility: Phase field modeling of gel-like cytoskeleton
and highly dynamic leading edge membrane
- Poster 34 TAPAN CHANDRA ADHYAPAK (Technische Universität Berlin)
The Role of Rotation Induced Polymorphic Transitions during Tumbling
of an *E. coli*
- Poster 35 THOMAS NIEDERMAYER (PTB Berlin / MPI Potsdam)
Nonequilibrium assembly of filaments: analytical results
- Poster 36 TILL KRANZ (University of Oxford)
Trail-Following in Simple Models of Bacteria