

Workshop 2016

GRK1558
research training group

*Nonequilibrium Collective Dynamics in
Condensed Matter and Biological Systems*

Hotel Erbgericht, Bad Schandau-Krippen
October 10 – 12, 2016

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Talks

Monday, October 10

Lunch

- 13:55 – 14:00 HOLGER STARK
Welcome Address
- 14:00 – 14:30 MAXIMILIAN SEYRICH
Statistical Interference of chemotactic strategies
- 14:30 – 15:00 ZAHRA ALIREZAEI
A bacterial swimmer with stops and turns; from single tracks to collective motion
- 15:00 – 15:30 SETAREH DOLATI
FMNL formins affect actin polymerization and lamellipodial protrusion in the motile cells
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Coffee break

- 16:00 – 16:30 JANINE VIERHELLER
Modeling excitation contraction coupling of a cardiac myocyte
- 16:30 – 16:50 PHILIPP WEISS
Random number generation with small networks of chemical oscillators
- 16:50 – 17:10 MEHRANA RAEISIAN NEJAD
Hydrodynamics and Chemotaxis
- 17:10 – 17:30 MAXIMILIAN BUSER
Full counting statistics in the non-Markovian, strong-coupling regime – a hierarchy of equations of motion approach

Tuesday, October 11

9:00 – 9:30 SEBASTIAN RESTREPO
Driven open quantum systems and Floquet stroboscopic dynamics

9:30 – 10:00 SOPHIA HELMRICH
Excitons and Trions in Monolayer Transition Metal Dichalcogenides
(Tungsten Diselenid, Molybdenum Ditellurid)

10:00 – 10:30 CHRISTOPH REDLICH
Phase noise characteristics in quantum dot lasers

Coffee break

11:00 – 11:30 HENNING REINKEN
Shear banding in nematogenic fluids

11:30 – 12:00 CHRISTIAN SCHAAF
Inertial migration of elastic capsules in Poiseuille flow

12:00 – 12:30 SHAHAJHAN SORATHIYA
Collective Dynamics of Squirmers in Poiseuille flow

Lunch

13:30 – 14:00 PAVEL BURAN
Wave termination in heterogeneous cardiac tissue

14:00 – 14:30 DIRK KULAWIAK
Intracellular mechanochemical waves induce motion in droplets of
Physarum polycephalum

Wednesday, October 11

- 9:00 – 9:30 PETER KALLE
Dynamics of viscoelastic liquids under time-delayed feedback
- 9:30 – 10:00 JOHANN HANSING
Network structure effects on interaction filtering in gels
- 10:00 – 10:30 JOHANNES BLASCHKE
Hydrodynamically Tuned Phase Separation of Spherical Microswimmers

Coffee break

- 11:00 – 11:30 ENRICO FENGLER
Autonomous learning in networks of relaxation oscillator
- 11:30 – 12:00 JAN TOTZ
Coexistence of synchronized and desynchronized dynamics in large arrays
of chemical relaxation oscillators
- 12:00 – 12:30 JAN-TIMM KUHR
last year in GRK 1558, opportunities in GRK 1558

Lunch

Posters

ZAHRA ALIREZAEI	A bacterial swimmer with stops and turns; from single tracks to collective motion
JOHANNES BLASCHKE	Hydrodynamically Tuned Phase Separation of Spherical Microswimmers
PAVEL BURAN	Wave control by cooperative excitation of cardiac tissue
SETAREH DOLATI	Modelling single cell migration; viscoelastic gel-cytoskeleton and the leading edge protrusion mechanism
ENRICO FENGLER	Autonomous optimization of coupled relaxation oscillators
JOHANN HANSING	Network structure effects on interaction filtering in gels
SOPHIA HELMRICH	Distinct valley dynamics associated with intra-valley trions in monolayer WSe_2
PETER KALLE	Dynamics of viscoelastic liquids under time-delayed feedback
DIRK KULAWIAK	Modeling cell movement on heterogeneous substrates
CHRISTOPH REDLICH	Dynamics of integrated multi-section laser and amplifier structures
HENNING REINKEN	Shear banding in nematogenic fluids with oscillating orientational dynamics
SEBASTIAN RESTREPO	Driven open quantum systems and Floquet stroboscopic dynamics
CHRISTIAN SCHAAF	Inertial migration of elastic capsules in Poiseuille flow
DAVID SCHICKE	Reservoir computing using the Lang-Kobayashi laser equations with time delayed feedback
MAXIMILIAN SEYRICH	Inference of chemotactic strategies of <i>E. coli</i> and <i>Pseudomonas putida</i> using Kramers-Moyal coefficients

JAN TOTZ

Coexistence of synchronized and desynchronized dynamics in large arrays of chemical relaxation oscillators

JANINE VIERHELLER

Modeling excitation contraction coupling of a cardiac myocyte

Participants

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Workshop homepage:

www.itp.tu-berlin.de/grk1558/events/workshops/workshop_2016

Conference booklet by

Jan-Timm Kuhr

Number of participants: 30
Number of talks: 22
Number of posters: 17

	chair	Monday, 10.10.2016	chair	Tuesday, 11.10.2016	chair	Wednesday, 12.10.2016		
Breakfast				8:00 – 9:00		8:00 – 9:00 Breakfast and Checkout		
9:00 – 9:30		8:30 bus departure at Hardenbergplatz	Kulawiak	Sebastian Restrepo (A.2, Brandes)	Restrepo	Peter Kalle (PhD, Stark)		
9:30 – 10:00				Sophia Helmrich (A.5, Woggon)		Johann Hansing (B.5, Netz)		
10:00 – 10:30				Christoph Redlich (A.1, Schöll)		Johannes Blaschke (postdoc, Stark)		
Coffee break						10:30 – 11:00		10:30 – 11:00
11:00 – 11:30			Redlich		Henning Reinken (B.3, Klapp)	Alirezai	Enrico Fengler (C.3, Engel)	
11:30 – 12:00					Christian Schaaf (PhD, Stark)		Jan Tötz (PhD, Engel)	
12:00 – 12:30					Shahajhan Sorathiya (B.2, Stark)		Jan-Timm Kuhr	
Lunch		12:00 – 13:55 Check-In and Lunch 13.55 Welcome address (Holger Stark)		12:30 – 13:30 Lunch		12:30 – 12:35 Closing remarks 12:30 – 14:00 Lunch		
14:00 – 14:30	Hansing	Maximilian Seyrich (C.2, Stark)	Dolati	13:30 – 14:00 Pavel Buran (C.4, Bär)		14.30 bus departure		
14:30 – 15:00		Zahra Alirezai (C.1, Beta)		14:00 – 14:30 Dirk Kulawiak (C.3, Engel)				
15:00 – 15:30		Setareh Dolati (C.5, Falcke)	14:30 – 21:30 hiking trip to and conference dinner at Bastei Panoramarestaurant return by bus					
Coffee break	15:30 – 16:00							
16:00 – 16:30	Janine Vierheller (PhD, Falcke)							
16:30 – 16:50	Philipp Weiß (research student, Engel)							
16:50 – 17:10	Seyrich	Mehrana Nejad (guest of GRK)						
17:10 – 17:30		Maximilian Buser (research student, Brandes)						
Dinner		18:00 – 19:30						
		19:30 meeting of project leaders						

Timetable GRK 1558 Workshop 2016