

Multiscale Motility of Molecular Motors

Potsdam, September 23-25, 2013

Monday, September 23

8:30-9:00	Registration
9:00-9:05	Welcome
9:05-9:35	Stefan Diez (TU Dresden) Force generation by diffusible microtubule crosslinkers
9:35-10:05	Viola Vogel (ETH Zürich) Tensile forces synchronize filopodial and lamellipodial motor activities
10:05-10:35	Steve Gross (UC Irvine) Force adaptation in cargo transport
10:35-10:50	Florian Berger (MPI Potsdam) Motors and forces from a theoretical perspective
10:50-11:20	Coffee break
11:20-11:50	Karsten Kruse (Univ. Saarbrücken) Molecular motors interacting with dynamic filaments
11:50-12:20	Christoph Schmidt (Univ. Göttingen) Tracking cytoskeletal dynamics with single-walled carbon nanotubes as stealth probes
12:20-12:50	Ahmet Yildiz (UC Berkeley) Single Molecule Analysis of Cytoplasmic Dynein Motility
12:50-14:00	Lunch
14:00-14:30	Mans Ehrenberg (Univ. Uppsala) Accuracy of codon reading by tRNAs in vitro and in vivo
14:30-15:00	Roy Bar-Ziv (Weizmann Institute) Synthetic compartments on a chip
15:00-15:15	Sophia Rudorf (MPI Potsdam) Ribosomal rates and the speed of translation
15:15-15:45	Coffee break
15:45-16:00	Michael Faber (MPI Potsdam) Co-transcriptional RNA folding studied with structure-based models
16:00-16:30	Joseph D. Puglisi (Stanford Univ.) Dynamics of Translation
16:30-18:30	Poster session

Tuesday, September 24

- 9:00-9:30 Udo Seifert (Univ. Stuttgart)
Stochastic thermodynamics and efficiency of molecular motors
- 9:30-10:00 Stephan Sigrist (FU Berlin)
Forming presynaptic active zones: axonal transport and local assembly
- 10:00-10:30 Berenike Maier (Univ. Köln)
The type IV pilus - a tunable molecular motor
- 10:30-10:45 Corina Keller (MPI Potsdam)
Network representation for kinesin motor pairs
- 10:45-11:15 Coffee break**
- 11:15-11:45 José Onuchic (Rice Univ.)
From Protein Folding to Biomolecular Machines of Life
- 11:45-12:15 Erwin Frey (LMU München)
Microtubule Length Regulation by Molecular Motors
- 12:15-12:45 Paul Selvin (Univ. Illinois)
Single Molecule Fluorescence and Optical Trapping Applied to Molecular Motors: Two can do it better than one
- 12:45-14:00 Lunch**
- 14:00-14:30 Barry Cooperman (Univ. Pennsylvania)
The dynamics of ribosomal protein synthesis
- 14:30-15:00 James Weisshaar (Univ. Wisconsin)
Superresolution imaging of ribosome and RNA polymerase dynamics in live E. coli
- 15:00-15:30 Terence Strick (Institut Monod)
Motor-motor interactions in transcriptionally-coupled DNA repair
- 15:30-15:45 Marco Mauri (MPI Potsdam)
A model for sigma factor competition in bacterial cells
- 15:45-16:15 Coffee break**
- 16:15-16:45 Erika Holzbaur (Univ. Pennsylvania)
Bidirectional Vesicular Transport: Tug-of-War versus Motor Coordination
- 16:45-17:00 Ludger Santen (Univ. Saarbrücken)
Cooperative Effects in Bidirectional Intracellular Transport
- 17:00-17:15 Thomas Niedermayer (MPI Potsdam)
Depolymerization of actin filaments
- 17:15-17:45 Michael Diehl (Rice Univ.)
A synthetic approach to delineating the collective functions of processive motors in living cells
- 18:00 **Barbecue in institute courtyard**

Wednesday, September 25

- 9:00-9:30 Anatoly Kolomeisky (Rice Univ.)
Mechanisms and topology determination of complex biological network systems from first-passage theoretical approach
- 9:30-10:00 Debashish Chowdhury (IIT Kanpur)
Porters, polymerizers and pistons: pause and passage distributions
- 10:00-10:15 Gero Steinberg (Univ. Exeter)
Hook proteins are master regulators for Kinesin-3 dependent motility
- 10:15-10:45 Coffee break**
- 10:45-11:15 Claudia Veigel (LMU München)
Mechanics of unconventional myosin motors
- 11:15-11:45 Henry Hess (Columbia Univ.)
Velocity fluctuations, alignment, and assembly in kinesin gliding motility assays
- 12:00-13:15 Lunch**
- 13:15-13:45 Stephan Grill (MPI Dresden)
Morphogenetic Functions of Actomyosin
- 13:45 Concluding remarks