

ASC Workshop

Brownian Motion:

A Paradigm of Soft Matter and
Biological Physics

September 26-28, 2005

Munich

Sommerfeld Lecture Hall E52

Theresienstr. 37

Speakers

Andreas Bausch

Dieter Braun

Philippe Cluzel

Werner Ebeling

Dekel Erez

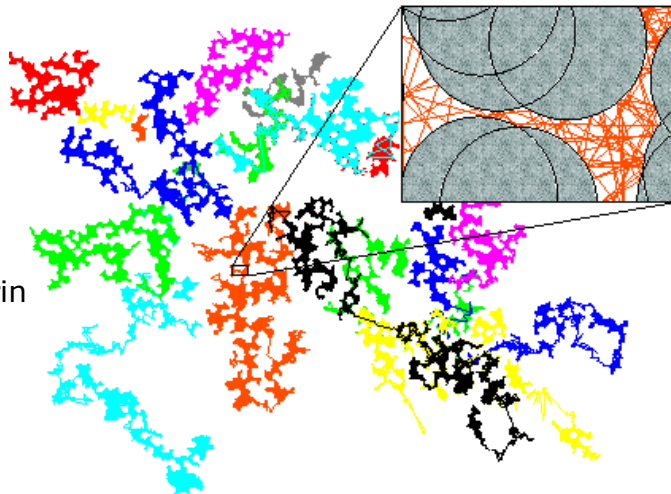
Ernst-Ludwig Florin

Thomas Franosch

Matthias Fuchs

Ulrich Gerland

Gerhard Gompper



Frank Jülicher

Yariv Kafri

Yossi Klafter

Klaus Kroy

Georg Maret

Felix Ritort

Christof Schmidt

Udo Seifert

Igor Sokolov

Royce Zia

Topics include

Molecular Motors, Biopolymers, Fluctuation Theorems, Gene Expression, Colloidal Dispersions, Cellular Oscillations, Percolation, Lattice Gas Models, Thermophoresis, Chemotaxis, Membranes, Nanostructures, RNA folding, DNA/RNA Translocation

Organization by Erwin Frey (LMU) and Roland Netz (TUM)

<http://www.theorie.physik.uni-muenchen.de/lsfrey/>

LMU

ARNOLD SOMMERFELD
CENTER FOR THEORETICAL PHYSICS

CeNLS
Center for NanoScience
Ludwig-Maximilians-Universität

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Workshop
Brownian Motion:
A Paradigm of Soft Matter and Biological Physics
Munich
September, 26th-28th

Monday

9.00-9.45	Yossi Klafter	Biological processes on the level of a single molecule
9.45-10.30	Werner Ebeling	From passive to active Brownian motion
10.30-11.00		Coffee-Break
11.00-11.45	Ernst-Ludwig Florin	3D and 2D imaging of soft and dynamic nanostructures using thermal fluctuations
11.45-12.30	Royce Zia	On mass transport models: exact results, condensation transitions and condensates' properties
12.30-14.00		Lunch
14.00-14.45	Yariv Kafri	Collective behavior of molecular motors pulling liquid membranes
14.45-15.30	Christoph Schmidt	Short time inertial response of viscoelastic fluids: direct observation of vortex propagation in the correlated Brownian motion of micron-sized particles
15.30-16.00		Coffee-Break
16.00-16.45	Gerhard Gompper	Hydrodynamics of vesicles and cells in shear and capillary flows
16.45-17.30	Matthias Fuchs	Properties of stationary states in sheared colloidal dispersions



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Tuesday

9.00-9.45	Udo Seifert	Fluctuation theorems, Jarzinski relation and entropy production
9.45-10.30	Felix Ritort	Recovering folding free energies of RNA molecules in an experimental test of Crooks fluctuation theorem
10.30-11.00		Coffee-Break
11.00-11.45	Philippe Cluzel	Noise propagation in the chemotaxis network of a single bacterium
11.45-12.30	Dekel Erez	Optimality and evolutionary tuning of the expression level of a protein
12.30-14.00		Lunch
14.00-14.45	Frank Jülicher	Cell dynamics and cellular oscillations
14.45-15.30	Klaus Kroy	How a deterministic response emerges from Brownian polymer dynamics
15.30-16.00		Coffee-Break
16.00-16.45	Andreas Bausch	Cytoskeletal polymer networks: relating molecular structure to macroscopic properties
16.45-17.30	Thomas Franosch	The localization transition of the 3D Lorentz model and continuum percolation



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Wednesday

9.00-9.45	Georg Maret	Conformation and stretching of tethered DNA
9.45-10.30	Ulrich Gerland	Coupled dynamics of DNA/RNA base-pairing and nanopore translocation
10.30-11.00		Coffee-Break
11.00-11.45	Dieter Braun	What drives molecules along thermal gradients?
11.45-12.30	Igor Sokolov	Diffusion in complex molecular systems: nonlocality and memory
12.30-14.00		Lunch
14.00-14.45	Ralf Metzler	Breathing dynamics of local DNA-denaturation zones- Sequencing and nano-sensing
14.45-15.30	Holger Stark	Hydrodynamic Interactions in Colloidal Physics and the Locomotion in Biology



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