MAX-PLANCK-INSTITUT FÜR PHYSIK KOMPLEXER SYSTEME

International workshop on

Pattern Formation in Complex Fluids and Biology

Dresden, Germany • September 1 - September 5, 1997

PROGRAM

Sunday, August 31

19:00	Welcome

Monday, September 1

08:30 - 09:30	Registration
09:30 - 09:45	General Announcements
	<u>Chair: S.C. Müller</u>
09:45 - 10:15	**F.H. Busse**: *Three-dimensional steady and time dependent solutions for the plane Couette flow and for the Eckman-Couette layer*
10:15 - 10:40	**J. Fineberg**: *Dissipative solitons in driven surface waves*
10:40 - 11:40	Tea/Coffee & Poster
11:40 - 12:05	**H.W. Müller**: *Pattern formation by Faraday-waves*
12:05 - 12:30	**P. Kolodner**: *Controlling dispersive chaos*
12:30 - 14:45	Lunch Break & Poster
	<u>Chair: U. Seifert</u>
14:45 - 15.20	**J.V.Small**: *Some current ideas about how cells use actin filaments to move*
15:20 - 15:45	**J. Käs** : *Elasticity of filamentous protein network and their role for cell shape and motility*
15:45 - 16:10	**G. Gerisch**: *Re-organization of the cytoskeleton in cell motility and mitosis*
16:10 - 16:50	Tea/Coffee &Poster
16.50 - 17:15	**C. Misbah** : *Adhesion-induced vesicle movement*
17:15 - 17:40	**R. Goldstein**: *Pearling, pinching and propagation*
17:40 - 19.00	Dinner Break
19:00 -	Opportunity for a brief oral presentation of posters - 2 minutes continued with Poster session

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Tuesday, September 2

	<u>Chair: V. Steinberg</u>
09:00 - 09:40	**I. Rehberg** : *Pattern formation in complex fluids*
09:40 - 10:05	**L. Howle** : *Pattern formation in convection in porous media*
10:05 - 11:00	Tea/Coffee & Poster
11:00 - 11:25	**E. Bodenschatz**: *Spiral formation in Rayleigh Bénard convection*
11:25 - 11:50	**W. Pesch** : *Complex spatio-temporal convection patterns*
11:50 - 12:15	**H. Chate**: *Spiral diffusion in noisy and chaotic oscillatory media*
12:15 - 14:45	Lunch Break & Poster
	<u>Chair: A. Ajdari</u>
14.45 - 15:20	**S. Chu**: *Single molecule studies of polymer dynamics*
15.20 - 15.45	**D. Bensimon**: *Experiments with supercoiled single DNA molecules*
15:45 - 16.10	**T. Duke**: *Dynamics of driven polymers in complex environments*
16.10 - 16:55	Tea/Coffee & Poster
16:55 - 17:20	**T. Kawakatsu**: *Dynamics of phase separation in the presence of Blockcopolymers*
17.20 - 17:45	**D. Bonn** : *Viscous fingering in polymeric liquids*
17:45 - 18:15	**V. Steinberg**: *Elastic vs. inertial instabilities in Couette-Taylor flow of polymer solutions*
18:15 - ...	Dinner Break & Poster

Wednesday, September 3

	<u>Chair: J. Prost</u>
09:00 - 09:40	**P. Fromherz**: *Interfacing silicon with neurons*
09:40 - 10:10	**L. van Hemmen**: *Sound localization in the barn owl: axonal pattern formation*
10:10 - 10.45	Tea/Coffee & Poster
10:45 - 11:10	**S. Loewel**: *Experience-dependent patterning of functional maps in the visual cortex*
11:10 - 11:35	**T. Geisel** : *Pattern formation in the developing visual cortex*
11:35 - 12:00	**H. Flyvbjerg**: *Microtubule dynamics*
12:00 - ...	Lunch Break & Excursions: Two Choices are offered. One leads to Meissen and the other one to the Sächsische Schweiz

Thursday, September 4

	<u>CHAIR: P. FROMHERZ</u>
09:00 - 09:35	**J. Shapiro** : *Bacterial self-organizing systems*
09:35 - 10:10	**E. Ben Jacob**: : *Colonial Adaptive Self Organization*
10:10 - 11:00	TEA/COFFEE & POSTER
11:00 - 11:25	**M. Matsushita** : *Interface growth and pattern formation*
11:25 - 11:50	**C. Weijer** : *Dictyostelium Morphogenesis - pattern formation in a biological excitable system*
11:50 - 12.15	**H. Levine**: *The dynamics of Dictyostelium development*
12:20 - 14.45	LUNCH BREAK & POSTER
	<u>CHAIR: T. GEISEL</u>
14:45 - 15:20	**J. Prost**: *Collective behavior of molecular motors*
15:20 - 15:45	**U. Kaupp** : *Control of motility in sperms - more questions than answers*
15:45 - 16:30	TEA/COFFEE & POSTER
16:30 - 16:55	**E. Brener** : *Structure formation and morphology diagram in diffusional growth*
16:55 - 17:20	**P. Pelce** : *Tip growth sustained by gradients of diffusible substances*
17:20 - 17:40	**E. Dubois-Violette**: *Pattern formation in biomembranes due to protein aggregation*
19:00	**Conference Dinner** **After Dinner Speaker** **Prof. L. Wolpert** *Positional information and pattern formation in development*

Friday, September 5

	<u>Chair: S. Grossmann</u>
09:00 - 09:25	**P. Tabeling**: *Two dimensional turbulence and anomalous dispersion*
09:25 - 09:50	**A. Arneodo**: *Experimental evidence for scale-similarity breaking in turbulent velocity statistics*
09:50 - 10.15	**R. Friederich**: *Intermittency in turbulence comes from a distinct Markovian process*
10:15 - 11:00	Tea/Coffee & Poster
11:00 - 11:25	**P. Cladis**: *Travelling phase boundaries with the broken symmetries of life*
11:25 - 11:50	**H.R. Brand**: *Pattern formation at the onset of electroconvection in nematic liquid crystals above a smectic A - nematic transition*
11:50 - 12:15	**H. Pleiner**: *Electrically driven instabilities in smectic films*
	<u>Chair: I. Rehberg</u>
14:00 - 14:35	**S.C. Müller** : *Control of spiral wave dynamics*
14:35 - 15:00	**A. Panfilov** : *Wave propagation in myocardium and cardiac arrhythmias*
15:00- 15:25	**M. Bär** : *Wave instabilities in reaction-diffusion systems - From space-time chaos to heterogeneous media*