

Hanse-Wissenschaftskolleg
Institute for Advanced Study

Symposium

“Self-Organization in Complex Systems: The Past, Present and Future of Synergetics”

Delmenhorst, Nov. 13 – 16, 2012

Organizers:

PD Dr. Axel Pelster, HWK/Technische
Universität Kaiserslautern

Prof. Dr. Günter Wunner, Universität Stuttgart

Venue:

Hanse-Wissenschaftskolleg
Institute for Advanced Study

Lehmkuhlenbusch 4
27753 Delmenhorst
Germany
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VolkswagenStiftung

Programm

Tuesday, November 13, 2012

- 16:00 – 17:00** **Arrival and Coffee/Tea**
Posters can be put up upon arrival and will be on display during the whole symposium. Participants are encouraged to visit posters during all breaks.
- 17:00 – 17:15 Axel Pelster (Delmenhorst, Germany):
Opening
- 17:15 – 18:00 Joachim Peinke (Oldenburg, Germany):
Stochastic models for turbulent and turbulent driven systems
- 18:00 – 18:45 Siegfried Großmann (Marburg, Germany):
Flow organization in highly turbulent thermal convection
- 18:45 – 19:00 Hermann Haken (Stuttgart, Germany):
Obituary for Rudolf Friedrich and Arne Wunderlin
- 19:00 – 20:30** **Dinner**
- 20:30 – 22:00 Poster Session I

Wednesday, November 14, 2012

- 09:00 – 09:45 Fritz Haake (Duisburg-Essen, Germany):
Quantum chaotic equilibration – without dissipation
- 09:45 – 10:30 Günter Mahler (Stuttgart, Germany):
Quantum-Thermodynamics: A case study for emergent behavior
- 10:30 – 11:00** **Coffee Break**
- 11:00 – 11:15 Reto Weiler (Delmenhorst, Germany):
*Welcome to the Hanse-Wissenschaftskolleg
(Institute of Advanced Study, HWK)*
- 11:15 – 12:00 Cun-Zheng Ning (Tempe, USA):
Nanolasers: The current status of the trailblazer of synergetics
- 12:00 – 12:45 Günter Wunner (Stuttgart, Germany):
Bose-Einstein condensates in PT-symmetric double-well potentials
- 12:45 – 14:00** **Lunch**

- 14:00 – 14:45 Axel Pelster (Delmenhorst, Germany):
Ginzburg-Landau theory for bosons in optical lattices
- 14:45 – 15:30 Martin Weitz (Bonn, Germany):
Bose-Einstein condensation of light
- 15:30 – 16:00** **Coffee Break**
- 16:00 – 17:15 Poster Session II
- 17:15 – 18:00 Gerhard Roth (Bremen, Germany):
Personality development as a process of self-organization
- 18:00 – 19:00 Hermann Haken (Stuttgart, Germany):
The brain as a synergetic and physical system
(All HWK Fellows are invited to this lecture.)
- 19:00 – 20:30** **Dinner with HWK Fellows**
- 20:30 – 21:15 Bernd Kröger (Stuttgart, Germany):
Hermann Haken – His roadmap to synergetics

Thursday, November 15, 2012

- 09:00 – 09:45 Marko Robnik (Maribor, Slovenia):
Adiabatic invariants and some statistical properties of the time-dependent linear and nonlinear oscillators
- 09:45 – 10:30 Axel Hutt (Nancy, France):
Additive noise tunes the stability of nonlinear systems
- 10:30 – 11:00** **Coffee Break**
- 11:00 – 11:45 Viktor Jirsa (Marseille, France):
On the role of the space-time structure of couplings in synergetic networks
- 11:45 – 12:30 Eckehard Schöll (Berlin, Germany):
Control of self-organizing complex systems and networks with time-delay
- 12:30 – 13:15 Günter Schiepek (Salzburg, Austria):
Phase transitions and critical instabilities in the psychotherapeutic process: Converging results from repeated functional MRI and continuous self-report data from the synergetic navigation system

- 13:15 – 14:30 **Lunch, Coffee/Tea**
- 14:30 Departure for Bremerhaven (bus)
- 16:30 – 18:00 Visit to the “Klimahaus Bremerhaven 8°Ost”
followed by **Dinner in Bremerhaven**
- 21:30 Departure from Bremerhaven to Delmenhorst (bus)

Friday, November 16, 2012

- 09:00 – 09:45 Peter Tass (Jülich, Germany):
*Unlearning pathological neuronal synchrony by coordinated
reset neuromodulation: treating brain diseases based on
synergetic principles*
- 09:45 – 10:30 Andreas Daffertshofer (Amsterdam, The Netherlands):
*On the dynamics of synchrony and information processing in the
nervous system*
- 10:30 – 11:00** **Coffee Break**
- 11:00 – 11:45 Aneta Stefanovska (Lancaster, UK):
*Introduction to chronotaxic systems – systems far from
thermodynamic equilibrium that adjust their clocks*
- 11:45 – 12:30 Till Frank (Connecticut, USA):
Synergetic computer and physical intelligence
- 12:30 – 13:15 Lisa Borland (San Francisco, USA):
The Physics of finance: Collective dynamics in a complex world
- 13:15 – 13:30 Günter Wunner (Stuttgart, Germany):
Closing
- 13:30 – 15:00** **Lunch, Coffee/Tea**
- 15:00 Departure