

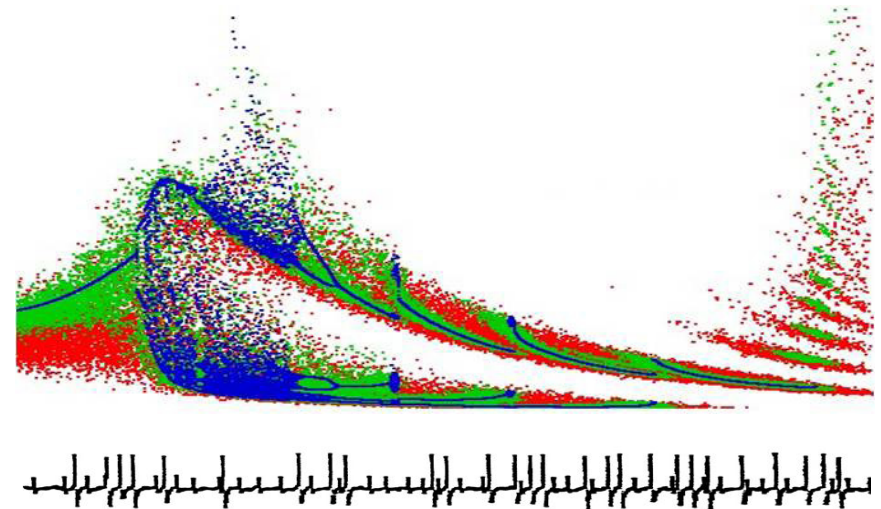
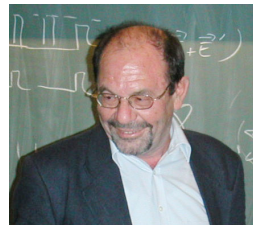


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## Connecting Theories, Models and Experiments for Life Science Research and Education

celebrating 7 nonlinear, chaotic, and noisy decades

organized by Karlheinz Voigt, Aubin Tchaptchet and Hans Braun  
Institute of Physiology, Philipps University of Marburg  
June 8th to June 10th, 2017

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Thursday, June 8, 2017

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18:00 – 21:00 **Welcome Reception with Cheese and Wine**

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Friday, June 9, 2017

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10:00 – 10:10 **Hans Braun, Marburg, Germany**  
*Opening*

10:10 – 10:20 **Dominik Oliver, Marburg, Germany**  
*Welcome Address*

10:20 – 10:40 **Karlheinz Voigt, Senden, Germany**  
*Introduction*

**Virtual Physiology** (Chair:Karlheinz Voigt)

10:40 – 10:55 **Martin Hirsch, Berlin, Germany**  
*The real and the Virtual World (prelim.)*

10:55 – 11:10 **Aubin Thapchet, Marburg, Germany**  
*Numerical Implementation of Randomness and Diversity for Teaching and Research Applications*

11:10 – 11:25 **Friederike Stumpff, Berlin, Germany**  
*Virtual tools in physiological education*

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11:25 – 11:55 Coffee Break

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**Systems Biology, Chaos and Noise** (Chair: Aubin Tchaptchet)

11:55 – 12:10 **Alessandro Villa, Lausanne, Switzerland**  
*Empirical evidence of chaos in brain*

12:10 – 12:25 **Adi Bulsara, San Diego, USA**  
*Stochastic Resonance: Discovery, Hybris, and the Quest for the Ultimate Experiment...*

12:25 – 12:40 **Martin Huber, Stade, Germany**  
*...and the only equations are in the appendix...: Developing a HH-Type Model of Cold Receptors*

12:40 – 12:55 **Epaminondas Rosa, Normal, Illinois, USA**  
*A Characteristic Firing Rate in the Huber-Braun Model Neuron*

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12:55 – 14:00 Lunch

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**Sensory Transduction and Neural Information Processing** (Chair: Hans Braun)

14:00 – 14:15 **Klaus Schäfer, Frickenhausen, Germany**  
*In the Realm of the Senses. Memories of a Sensitive Time*

14:15 – 14:30 **Heimo Wissing, Heidelberg, Germany**  
*Dynamics of Sensory Transduction in Shark Electoreceptors*

14:30 – 14:45 **Alexander Neiman, Athens, Ohio, USA**  
*Stochastic Dynamics of Electoreceptors*

14:45 – 15:00 **Joachim Roth / Rüdiger Gerstberger, Giessen, Germany**  
*Cold-Sensors and Inflammation: anything to do with each other?*

15:00 – 15:30 **Brief reports on nonlinear dynamics** (Chair. Aubin Tchaptchet)

5 min each

**Andreas Slemeyer, Lübeck, Germany**

**Mathias Dewald, Hameln, Germany**

**Horst Schneider, Buseck, Germany**

**Christian Finke, Bremen, Germany**

**Justus Schwabedal, Desden, Germany**

**NN**

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15:30 – 16:00 Coffee Break

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**Autonomic Functions** (Chair:Karlheinz Voigt)

16:00 – 16:15 **Thomas Noack, Rostock, Germany**  
*Multidimensional Network Analysis in Smooth Muscle*

16:15 – 16:30 **Olga Sosnovtseva, Copenhagen, Denmark**  
*Functional Relevance of Renal Arterial Structure: Between Order and Randomness*

16:30 – 16:45 **Thomas Penzel, Berlin, Germany**  
*Nonlinear Signal Processing in Sleep Research*

16:45 – 17:00 **Diana Peckys, Saarbrücken, Germany**  
*Zooming-in on single molecules examining deviant drug reactions in cancer cell populations*

17:00 – 17:15 **Oxana Glushkovskaya, Saratov, Russia**  
*Chaotic Glymphatic System: where is the exit?*

17:15 – 17:30 **Video Messages** (Chair: Aubin Tchaptchet)

5 min each

**Students from Saratov State University, Russia**

**NN**

**Concluding Remarks** (Chair: Karlheinz Voigt)

17:30 – 17:45 **Petr Lansky, Prague, Czech Rep.**  
*The destructive role of time*

17:45 – 17:50 **Hans Braun, Marburg, Germany**  
*Closing*

18:00 – open end **Barbecue and Informal Discussions**

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Saturday, June 10, 2017

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11:00 – 13:00 **Final Discussion and Conclusions**