

IK 2009



March 6 – 13, 2009 Günne at Lake Möhne. Focus Theme: Rhythm and Timing

Thomas Kammer

The Interdisciplinary College (IK) is an annual, intense one-week spring school which offers a dense state-of-the-art course program in neurobiology, neural computation, cognitive science/psychology, artificial intelligence, robotics and philosophy. It is aimed at students, postgraduates and researchers from academia and industry. By combining humanities, science and technology, the IK endeavours to intensify dialogue and connectedness between the various disciplines. Participants come mainly from European countries, lecturers from all over the world. Courses include up-to-date introductions to the main fields of the IK, as well as an in-depth treatment of focus topic, which is changing from year to year. And finally, the IK is a unique social event. In the evenings participants may enjoy the very special atmosphere: minds meet, music is played, and friends are made in long evening and night sessions in the welcoming conference site at the Lake Möhne.

Focus Theme: Rhythm and Timing

We live - we breathe, we walk, we speak and think - our being is carried by the flow of time. This is as natural to experience as it is hard to understand. The IK 2009 spins around the scientific riddles of time in life. A wide selection of courses will be elucidating time's enigmas from manifold angles: biological clocks and rhythms; temporal processing in biological and artificial neural networks; timing in motion control, speech, social interactions; oscillation and synchronization in neurons, brains, bodies, and societies; perceiving and generating meter in music and dance; subjective and cognitive experience of time; reasoning about time, planning, acting and decision-making in AI systems; accounts of time in physics and philosophy. A number of methodological courses will provide introductions to scientific methods for grasping time. Mini-workshops from music and the fine arts will keep everyone bodily and sensorially grounded.

Courses

Basic courses

- Behavioral Neurobiology: *Günther K.H. Zupanc*, Jacobs University Bremen
- Computational Neuroscience: *Christian Leibold*, LMU Munich
- Cognitive Science: *Natalie Sebanz*, Radboud University Nijmegen, The Netherlands
- Philosophy of Mind and Cognition: *Achim Stephan*, University of Osnabrück
- The computational study of language: Linguistics and Computational Linguistics: *John Bateman*, University of Bremen

Method courses

- Functional Neuroimaging and Brain Reading: *John-Dylan Haynes*, Bernstein-Center Berlin
- Dynamical Systems: *Gregor Schöner*, Ruhr-University Bochum
- Introduction to Colored Petri Nets: *Kurt Jensen*, University of Aarhus, Denmark

Special courses

Neuroscience

- Neural Mechanisms for Rhythm (and Pattern) Generation: *Ansgar Büschges*
- Cerebellum and Timing (working title): *Fahad Sultan*
- Slow Feature Analysis: Theory and Applications: *Laurenz Wiskott*
- The rising of behaviour under natural conditions (working title): *Peter Koenig*

Psychology, Cognition and Philosophy

- When we Speak, we Gesture - How Time in Gesture Reflects and Affects Individual and Interactive Cognitive and Emotional Processes: *Hedda Lausberg*
- Numerical Competence: *Andreas Nieder*
- The Role of Timing in Social Interaction: *Guenter Knoblich*
- Philosophy of Time and Time Consciousness: *Norman Sieroka*

Artificial Intelligence and Robotics

- Human Performance Modelling for Safety Critical Systems: *Leon Urbas*
- Reasoning about a Changing World, Actions, and Scripts: *Erik Sandewall*
- Biologically Inspired Robotics: Locomotion, Central Pattern Generators, and Motor Primitives: *Auke Ijspeert*
- Information Dynamics in Music: *Geraint A Wiggins*

Rhythm and Timing extra track

- A Geography of Time: *Robert V. Levine*
- Motor Coordination Learning in Physical Education of Children: *Matthias Weigelt*
- Musical Aesthetics, Rhythm and Meter: *Justin London*
- Dynamics of Music Perception: *Ed Large*

In addition, practical courses / miniworkshops (planned: rapsong and western calligraphy) for a „sensorial grounding“ of the IK experience. Invited (surprise) evening talks will further extend the focus theme into unexpected directions.

Chairs

Herbert Jaeger (Jacobs University Bremen)
Thomas Kammer (University of Ulm)
Gregor Schöner (Ruhr-University Bochum)

Conference management

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Registration is open until February 15th, 2009, and will be treated on a first come – first serve basis. Please notice early bird fees (by January 11th, 2009)

Further information and registration:

www.ik2009.de/