BEYOND! | PROGRAM

May 18th, 2016

Workshop Opening

7:00 PM - 7:30 PM	Welcome Address & Concept of the „Beyond! von Neumann" Workshop	Stuart Parkin
7:30 PM - 9:00 PM	Welcome Dinner followed by Scientific Discussions

May 19th, 2016

Neuromorphic Concepts
Session chairs: Steve Oh, Ingo Fischer

9:15 AM - 10:00 AM	Models of Parallel Computation	Leslie Valiant
10:00 AM - 10:45 AM	A High-Speed Tutorial on Reservoir Computing and even more	Herbert Jaeger
10:45 AM - 11:15 AM	Coffee Break
11:15 AM - 12:00 PM	Brain-Inspired Paradigms for Non-von Neumann Computing	Robert Legenstein
12:00 PM - 12:45 PM	Photonic Reservoir Computing in Si Chips	Peter Bienstman
1:00 PM - 2:30 PM	Lunch Break

Machine Learning in Spatial Systems
Session chairs: Leslie Valiant, Bhavin J. Shastri

2:30 PM - 3:15 PM	Neuromorphic Computing Using Networks of Quantum Dot Emitters	Daniel Brunner
3:15 PM - 4:00 PM	Mechanical Computations	Julien Sylvestre
4:00 PM - 4:30 PM	Coffee Break
4:30 PM - 5:15 PM	Towards Brain-Inspired Computing with Spin-Torque Nano-Oscillators	Jacob Torrejon
5:15 PM - 6:00 PM	Spike Based Computation and the Unsupervised Learning Challenge	Simon Thorpe
6:00 PM - 8:00 PM	Dinner followed by Scientific Discussions in Einstein-Lounge

May 20th, 2016

Machine Learning in Delay Systems
Session chairs: Robert Legenstein, Peter Bienstman

9:15 AM - 10:00 AM	Ultra-Fast Reservoir Computing with Semiconductor Lasers and Autonomous Boolean Networks	Ingo Fischer
10:00 AM - 10:45 AM	Brain-Inspired Photonic Computing	Serge Massar
10:45 AM - 11:15 AM	Coffee Break
11:15 AM - 12:00 PM	Electro-Optic Nonlinear Delayed Feedback Systems: From Fundamental Dynamical Properties to Demonstration of Photonic Reservoir Computing	Laurent Larger
12:00 PM - 12:45 PM	Delay-Based Reservoir Computing in Photonics and (Opto)-Electronics	Guy Van der Sande
1:00 PM - 2:00 PM	Lunch Break

Novel Devices for Hardware Neurons
Session chairs: Julien Sylvestre, Guy van der Sande

2:00 PM - 2:45 PM	Bioinspired Programming of Memory Devices for Implementing an Inference Engine	Damien Querlioz
2:45 PM - 3:30 PM	Intrinsically Distributed Computation by Collective Network Dynamics	Marc Timme
3:30 PM - 4:00 PM	Coffee Break
4:00 PM - 4:45 PM	Learning from Living Cells for Computation?	Steve Oh
4:45 PM - 5:30 PM	Brain-Inspired Photonic Spike Processing	Bhavin J. Shastri
6:00 PM - 8:00 PM	Closing Dinner followed by Scientific Discussions

Harnack-Haus, Berlin
May 18th-21st, 2016

MAX PLANCK INSTITUTE OF MICROSTRUCTURE PHYSICS

NISE NANO-SYSTEMS FROM IONS, SPINS AND ELECTRONS

ICNS INTERNATIONAL CENTER FOR NANO-SYSTEMS

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