

Workshop schedule

invited talk

contributed talk

break

	Tuesday, 5 Sep	Wednesday, 6 Sep	Thursday, 7 Sep
8:45 – 9:00	Opening remarks		
9:00 – 9:35	Demetri Psaltis (EPFL) <i>Training optical neural networks</i>	Wolfram Pernice (Heidelberg) <i>Photonic neural networks with synaptic and structural plasticity</i>	Sonia Buckley (NIST) <i>A general approach to fast online training on real neuromorphic systems</i>
9:35 – 10:10	Claudio Conti (Sapienza, Rome) <i>Theory and experiments in neuromorphic computing with classical waves</i>	Benjamin Scellier <i>Energy-based learning algorithms for physical networks</i>	Gyorgy Csaba (Budapest) <i>Training dynamical systems to do computing</i>
10:10 – 10:25	Saamil Bandyopadhyay (MIT) <i>Inference and in situ training of a deep neural network on a single photonic chip</i>	Felipe Martins (UPenn) <i>Spatial Imprints of Learning in Physical Learning Machines</i>	Steven Abreu (Groningen) <i>Neuromorphic intermediate representation - toward a common representation for physical computing</i>
10:25 – 10:55	coffee break		
10:55 – 11:10	Steven Becker (MPL) <i>Optoacoustic recurrent operator</i>	Marcelo Guzmán (UPenn) <i>Scaling laws for physical learning in electrical circuits</i>	Anders Mikkelsen (Lund) <i>III-V nanowire based neuromorphic nanophotonic circuits</i>
11:10 – 11:45	Firooz Aflatouni (UPenn) <i>Integrated photonic deep networks for image classification</i>	Julie Grollier (CNRS/ Thales; Saclay) <i>Training physical systems with Equilibrium Propagation</i>	Menachem Stern (UPenn) <i>Physical learning of energy-efficient solutions</i>
11:45 – 12:20	Alexander Lvovsky (Oxford) <i>All-optical training of a neural network</i>	Sylvain Gigan (Sorbonne) <i>Exploiting light scattering for optical computing</i>	Andrea Liu (UPenn) <i>Circuits that learn on their own</i>
12:20 – 14:00	lunch break		
14:00 – 14:15	Mario Chemnitz (Leibniz Institute of Photonic Technology) <i>Broadband frequency generation in single-mode fibers as a resource for neuromorphic computing</i>	Marco Leonetti (Center for Life Nano Science@Sapienza) <i>Optical computation with scattering: Photonic Hopfield Random Memories for storage and Spin Glass Dynamics</i>	Frank Mizrahi (CNRS/ Thales) <i>Multilayer spintronic neural networks with radio-frequency connections</i>
14:15 – 14:30	Mingwei Yang (DLR) <i>Optical Convolutional Neural Network with Atomic Nonlinearity</i>	Antonio Sanna (IFISC) <i>Dissipation as a resource for Quantum Reservoir Computing</i>	Gerliz Mercedes Gutierrez Finol (València) <i>STOSS: A stochastic spin simulator for binary stochastic neurons allowing the exploration of molecular nanomagnets as p-bits</i>
14:30 – 15:05	Daniel Brunner (FEMTO-ST, CNRS) <i>Physics, integration and training of scalable and autonomous Photonic Neural Networks</i>	Alexander Khajetoorians (Radboud) <i>Using model atomic spin systems to learn about in materia computing</i>	Abu Sebastian (IBM – Zurich) <i>The IBM HERMES Project Chip: The Most Advanced Analog in-memory Computing Chip based on Memristive Devices</i>
15:05 – 15:35	coffee break		
15:35 – 15:50	Grigorii Slinkov (MPL) <i>All-optical nonlinear activation function based on stimulated Brillouin scattering</i>	group photo	Anatole Moureaux (Louvain) <i>Accelerated development of spintronic reservoir computing using data-driven simulations</i>
15:50 – 16:25	Tatsuhiko Onodera (Cornell) <i>Deep Physical Neural Networks Trained with in-situ Backpropagation</i>	panel discussion	Johannes Schemmel (Heidelberg) <i>Novel Concepts for Fast Analog Neuromorphic Computing</i>
16:25 – 17:00	Darius Bunandar (Lightmatter) <i>Accelerating AI through Photonic Computing and Communication</i>		possibly visit Nürnberg
from 17:00	poster session (incl. dinner)	conference dinner	