ITG Fachgruppe "Angewandte Informationstheorie"



Program of the 43. Meeting, 25.06.2025	
— A	Applied Information Theory for Optical Communication —
	Karlsruhe Institute of Technology (KIT)
	Communications Engineering Lab (CEL)
	Gebäude 06.45, Raum 213/214
	Campus West des KIT, Hertzstr. 16, 76187 Karlsruhe
9:00 - 9:00	Dirk Wübben, Department of Communications Engineering, University of Bremen Welcome
9:05 – 9:30	Laurent Schmalen, <i>Communications Engineering Lab, KIT</i> Welcome by the host
Session I	
9:30 - 9:50	Benedikt Geiger, Communications Engineering Lab, KIT A novel model of equalization-enhanced phase noise in high-speed optical communications
9:50 - 10:10	Shuangxu LI, Hudwel Spiking Neural Network Equalization for IM/DD Optical Transmission on Mixed-Signal
10:10 - 10:30	Eike Edelmann, Alexander von Bank, <i>Communications Engineer. Lab, KIT</i> Spiking neural networks in short-reach optical communications
10:30 - 11:00	Coffee break
Session II	
11:00 - 11:20	Shrinivas Chimmalgi, <i>Communications Engineering Lab, KIT</i> End-to-end probabilistic constellation shaping through importance sampling
11:20 - 11:40	Mahmoud Sallam, Institute of Communications Engineering, Uni Ulm Probabilistic Sphere Shaping for QAM Signaling in Nonlinear Fiber-Optic Channels
11:40 - 12:00	Sisi Miao, <i>Communications Engineering Lab, KIT</i> Low-complexity high-performance forward error correction for optical communications
12:00 - 12:20	Haizheng Li, Communications Engineering Lab, KIT Coding for Space Division Multiplexing
12:20 - 13:20	Lunch break
Session III	
13:20 - 13:40	Rodrigo Fischer, Communications Engineering Lab, KIT Kolmogorov-Arnold networks for information processing in optical communications with intensity modulation and direct detection
13:40 - 14:00	Blind equalization and channel estimation using variational autoencoders for optical communications

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14:00 - 14:20	Axel Jäger, Institute for Communications Engineering, TU Munich On Low-Complexity Mitigation of Nonlinear Inter-Channel Distortions in Optical Networks
14:20 – 14:50	Coffee break
Session IV	
14:50 - 15:10	Jonas Berl, Adva Network Security GmbH
	Quantifying Systematic Deviations during CV-QKD Receiver Calibration
15:10 - 15:30	Liang Zhiwei, Institute of Industrial Information Technology, KIT
	Numerical Investigation of Modulo-Based Analog-to-Digital Conversion
	for PCS-64-QAM
15:30 – 15:50	Jonas Krimmer, Institute of Photonics and Quantum Electronics (IPQ), KIT
	Transfer-Matrix Statistics in MDM-FSO Under Atmospheric Turbulence
15:50 –	Closing