

Program of the 39. Meeting, 13.06.2023

— Deep Learning for Communications —

Universität Stuttgart, Institut für Nachrichtenübertragung
Pfaffenwaldring 47, Gebäude ET12, Raum 2.314, 70569 Stuttgart-Vaihingen

9:00 – 9:05 Dirk Wübben, *Department of Communications Engineering, University of Bremen*

Welcome

9:05 – 9:15 Stephan ten Brink, *Institute of Telecommunications, University of Stuttgart*

Welcome by the host

Session I

9:15 – 9:55 Florian Euchner, *Institute of Telecommunications, University of Stuttgart*

Tutorial: Dissimilarity Metric-Based Wireless Channel Charting

9:55 – 10:15 Valentina Rizzello, *Chair of Signal Processing Methods in Munich, TU München*

User-Driven Adaptive CSI Feedback With Ordered Vector Quantization

10:15 – 10:35 Yi Song, *Communication and Information Theory Chair, TU Berlin*

Deep-Learning Aided Channel Training and Precoding in FDD Massive MIMO with Channel Statistics Knowledge

10:35 – 11:00 **Coffee break**

Session II

11:00 – 11:20 Moritz Fischer, *Institute of Telecommunications, University of Stuttgart*

Adaptive Neural Network-based OFDM Receivers

11:20 – 11:40 Pramesh Gautam, *Department of Communications Engineering, University of Bremen*

Interference Prediction in Unconnected In-X Mobile 6G Subnetworks Using Data-Driven Approach

11:40 – 12:00 Daniel Plabst, *Institute for Communications Engineering, TU München*

NN Successive Interference Cancellation for Channels with ISI and a Memoryless Nonlinearity

12:00 – 12:20 Lukas Rapp, *Communications Engineering Lab, KIT*

Structural Optimization of Factor Graphs for Symbol Detection via Continuous Clustering and Machine Learning

12:20 – 13:20 **Lunch break**

Session III

- 13:20 – 13:40 Jannis Clausius, *Institute of Telecommunications, University of Stuttgart*
Component Training of Turbo Autoencoders
- 13:40 – 14:00 Muah Kim, *TU Dresden*
Learning End-to-End Channel Coding with Diffusion Models
- 14:00 – 14:20 Sisi Miao, *Communications Engineering Lab, KIT*
Neural Belief Propagation Decoding of Quantum LDPC Codes Using Overcomplete Check Matrices
- 14:20 – 14:40 Andrej Rode, *Communications Engineering Lab, KIT*
Deep-Learning based Constellation Shaping for Optical Communications with Phase Noise
- 14:40 – 15:05 **Coffee break**

Session IV

- 15:05 – 15:25 Jan Christian Hauffen, *Communication and Information Theory Chair, TU Berlin*
Deep Unfolded Vector Optimization Method for Device-to-Device Link Scheduling
- 15:25 – 15:45 Hans Rosenberger, *Institute for Digital Communications, FAU Erlangen-Nürnberg*
Algorithmic Improvements for Linear Computation Coding
- 15:45 – 16:05 Rebekka Schulz, *Institute of Communications Engineering, Ulm University*
Preequalization for Physical-Layer Security according to the Secrecy Capacity
- 16:05 – **Closing**