

Workshop: ITG Expert Group KT 3.1
Modeling and Simulation of Photonic Components and Systems
Virtual | February 07, 2022

Registration and further information: www.hhi.fraunhofer.de/itg-ws
(Lecture language English)

- 12:30 pm Welcome and Introduction
- 12:40 pm **Session 1: QoT Estimation (Chair: Prof. Pachnicke, CAU)**
Exact component parameter agnostic QoT estimation in optical networks using different machine learning techniques
Alexandr Langolf
Kiel University Christian-Albrechts-Universität zu Kiel
- 13:00 pm **ML Model Design for QoT Estimation – Public Datasets, Data Visualization and Data Quality Evaluation**
Geronimo Bergk
Fraunhofer Heinrich Hertz Institute
- 13:20 pm **Homomorphic Encryption for Privacy-preserving ML-based QoT Estimation: Opportunities and Challenges**
Jasper Müller
ADVA
- 13:40 pm **Coffee Break**
- 13:50 pm **Session 2: Autoencoders (Chair: Prof. ten Brinck, University of Stuttgart)**
Carrier Recovery in Coherent Optical Communications Using Variational Autoencoders
Vincent Lauinger
Karlsruhe Institute of Technology
- 14:10 pm **Learning a Nonlinear Pulse Shaping by a γ -lifted Training**
Tim Uhlemann
University of Stuttgart
- 14:30 pm **Deep Learning Based Modelling of Short Reach Optical Link for Modulation Format Optimization**
Shuangxu Li
Huawei
- 14:50 pm **Coffee Break**
- 15:20 pm **Session 3: Optical Component Modelling (Chair: André Richter, VPIphotonics)**
Performance Requirements for Optical Frequency Comb Generators as Optical Power Supplies in Coherent SDM/DWDM Links
Christoph Füllner
Karlsruhe Institute of Technology
- 15:40 pm **Optical Bistability in Silicon Nitride Ring Cavities with Thermo-optic Effect**
Menglong He
Technische Universität Dresden
- 16:00 pm **Simulation and design of a integrated cavity tunable mode-locked laser**
Jiaxing Dong
VPIphotonics
- 16:20 pm **Coffee Break**

- 16:30 pm **Session 4: Modelling of Sub-Systems (Chair: Bernhard Schmauss, University of Erlangen)**
On Shortening Multi-Solitons Using the Continuous NFT Spectrum
Sander Wahls
Delft University of Technology
- 16:50 pm **Time adaptive probabilistic shaping for combined optical/THz links**
In-Ho Baek
Fraunhofer Heinrich Hertz Institute
- 17:10 pm **Modeling SNR and sensing range of an OTDR for POF**
Simon Dengler
POF Application Center – Nuremberg Institute of Technology
- 17:30 pm Closing
- 17:35 pm Expert Group Meeting