

**Duration: 08:30 - 17:50**

**Room: Riga**

**WS-03**

**Wireless 100Gb/s and Beyond: Progress in Ultra-Fast Wireless Communications**

**Organiser:**

Rolf Kraemer, IHP GmbH and Brandenburg Technical University Cottbus-Senftenberg, Germany

**Abstract**

This workshop addresses recent progress in ultra-fast wireless communications. It will be organised along the technical chain of involved elements of an innovative communication system. Starting from questions of antenna technologies, wireless frontends for frequencies up to 240 GHz and baseband processing algorithms and technologies the workshop will also include topics of ultra-fast protocols and forward error correction. Also questions of important trade-offs between analog and digital-processing as well as hardware-software-implementation will be addressed. Questions of different MIMO systems including massive MIMO will be included. The workshop is based on recent results of the German priority program on “wireless 100G/s and beyond”.

**Programme**

**08:30 - 09:00 Challenges and Potential Solutions for Wireless 100Gb/s Communication Systems**

Rolf Kraemer, IHP GmbH and Brandenburg Technical University Cottbus-Senftenberg, Germany

**09:00 - 09:35 Optimisation of 100 Gb/s Near Field Wireless Transmitters Under Consideration of Power Limits**

Gerd Ascheid, RWTH Aachen, Germany

**09:35 - 10:10 Development of Novel System and Component Architectures for Future Innovative 100 GBit/s Communication Systems**

Martin Vossiek, Friedrich-Alexander-University Erlangen-Nuremberg, Germany

**10:10 - 10:50 Break**

**10:50 - 11:40 Line-of-Sight MIMO: The Dawn of Intra-Path Spatial Multiplexing**

Xiaohang Song, M. Sc., Technical University Dresden

**11:40 - 12:30 Mixed-Mode Baseband for 100 Gbit/s Wireless Communications**

Christoph Scheytt, University Paderborn, Germany

**12:30 - 13:50 Break**

**13:50 - 14:40 A 10-1000 GHz Wireless Measurement System with 50 GHz Bandwidth**

Andreas Czulwik, University of Duisburg-Essen, Germany

**14:40 - 15:30 Fully Integrated Dual-Polarized Antenna Array with Ultra-Wideband Single-Chip CMOS Receiver**

Friedel Gerfers, Technical University Berlin, Germany

**15:30 - 16:10 Break**

**16:10 - 16:35 Fully Integrated Radio Front-End Module for Wireless 100 Gbps Communications**

Thomas Zwick, Karlsruhe Institute of Technology, Germany

**16:35 - 17:00 On-Chip Integrated Distributed Amplifier and Antenna Systems**

Dirk Plettemeier, Technical University Dresden, Germany

**17:00 - 17:25 Ultra Wideband Communications Based on Massive MIMO and Multi-Mode Antennas Suitable for Mobile Handheld Devices**

Dirk Manteuffel, University of Hannover, Germany

**17:25 - 17:50 Multicore NIC for Highest Data Rates**

Jörg Nolte, Brandenburg Technical University Cottbus-Senftenberg, Germany