

EUROPEAN WIRELESS 2016 DETAILED PROGRAM

Wednesday, May 18

09:00 - 10:40

Room: Ylläs

Tutorial 1: Energy neutral system level analysis and optimization of 5G wireless networks

Room: Äkäslompolo

W3: Collaboration workshop on 5G channel modelling activities and next steps in both Europe and Japan

09:00 Channel modeling in the next generation mmWave Wi-Fi: IEEE 802.11ay standard

Alexander Maltsev (Intel Corporation & University of Nizhny Novgorod, Russia); Andrey Pudeyev (Intel, Russia); Artyom Lomayev (Intel Corp., Russia); Ilya Bolotin (Intel, Russia)

09:16 Frequency Dependency of Measured Highly Resolved Directional Propagation Channel Characteristics

Jonas Medbo (Ericsson Research, Sweden); Nima Seifi (Ericsson Research & Ericsson AB, Sweden); Henrik Asplund (Ericsson Research, Ericsson AB, Sweden)

09:33 Channel Model Considering Frequency Dependency Based on Propagation Measurements with Multiple Frequencies for 5G Systems

Motoharu Sasaki (NTT Access Network Service Systems Laboratories, Japan); Minoru Inomata (NTT Corporation, Japan); Wataru Yamada (Nippon Telegraph and Telephone Cooperation, Japan); Naoki Kita (Nippon Telegraph and Telephone Corp., Japan); Takeshi Onizawa (NTT Corporation, Japan); Masashi Nakatsugawa (NTT, Japan)

09:50 PoC of mmWave (40 and 60 GHz) Integrated 5G Heterogeneous Networks

Makoto Ando (Tokyo Institute of Technology, Japan); Toru Taniguchi (Japan Radio Co., Ltd., Japan); Makoto Noda (Sony Corporation, Japan); Akira Yamaguchi (KDDI R&D Laboratories Inc., Japan); Kei Sakaguchi (Tokyo Institute of Technology & Fraunhofer HHI, Japan); Gia Khanh Tran (Tokyo Institute of Technology, Japan)

10:06 5G Channel Models in mm-Wave Frequency Bands

Stephan Jaeckel (Fraunhofer Heinrich Hertz Institute, Germany); Michael Peter (Fraunhofer HHI, Germany); Kei Sakaguchi (Fraunhofer Heinrich Hertz Institute, Germany); Jonas Medbo (Ericsson Research, Sweden); Wilhelm Keusgen (Fraunhofer Heinrich Hertz Institute, Germany)

10:23 Characterization of Radio Propagation Channel at 11 GHz

Jun-ichi Takada (Tokyo Institute of Technology, Japan); Minseok Kim (Niigata University, Japan); Kentaro Saito (Tokyo Institute of Technology, Japan)

Room: Saariselkä

Tutorial 3: Full duplex techniques for future wireless networks

10:40 - 11:00 Coffee Break

11:00 - 12:20

Room: Ylläs

Tutorial 1 (continued)

Room: Saariselkä

Tutorial 3 (continued)

12:20 - 13:20 Lunch Break

13:20 - 14:40

Room: Ylläs

S1: Wireless operators

13:20 *Business Modeling Options for Distributed Network Functions Virtualization: Operator perspective*

Julius Francis Gomes and Petri Ahokangas (University of Oulu, Finland); Sara Moqaddamerad (University of Oulu & Finland, Finland)

13:40 *Provider Assisted Wi-Fi Offloading Leveraging on SDN*

Jude Okwuibe, Madhusanka Liyanage and Mika Ylianttila (University of Oulu, Finland)

14:00 *Implementation of D2D enabled Mobile Cloud based Content Distribution Architecture in 5G Networks*

Abdul Moiz (Centre for Wireless Communication, Finland); Muhammad Ikram Ashraf (Centre for Wireless Communications, Finland); Kanwar Saad Bin Liaqat (University of Oulu, Finland); Shahid Mumtaz (Instituto de Telecomunicações, Portugal); Marcos D Katz (University of Oulu, Finland)

14:20 *Licensed Shared Access System Development for Public Safety*

Kalle Lähetkangas (Centre for Wireless Communications, Finland); Harri Saarnisaari (Centre for Wireless Communications, Finland); Ari Hulkkonen (Bittium Wireless Ltd., Finland)

Room: Äkäslompolo

S2: Wireless transport

13:20 *Performance Prediction of Robust Header Compression version 2 for RTP Audio Streaming Using Linear Regression*

Máté Tömösközi (Acticom GmbH, Germany); Patrick Seeling (Central Michigan University, USA); Péter Ekler (BME, Hungary); Frank H.P. Fitzek (Technische Universität Dresden & ComNets - Communication Networks Group, Germany)

13:40 *When TCP and Network Coding meet Wireless Links*

Pablo Garrido (University of Cantabria, Spain); David Gómez (Universidad de Cantabria, Spain); Frank H.P. Fitzek (Technische Universität Dresden & ComNets - Communication Networks Group, Germany); Ramón Agüero (University of Cantabria, Spain)

14:00 *On the Impact of Zero-padding in Network Coding Efficiency with Internet Traffic and Video Traces*

Maroua Taghouti (Tunisia Polytechnic School, University of Carthage, Tunisia); Daniel E. Lucani and Morten V. Pedersen (Aalborg University, Denmark); Ammar Bouallegue (National School of Engineers of Tunis, Tunisia)

14:20 A Multi-Criteria Approach for Multicast Resource Allocation over LTE and Beyond Cellular Systems

Antonino Orsino and Pasquale Scopelliti (University Mediterranea of Reggio Calabria, Italy); Massimo Condoluci (King's College London, United Kingdom)

Room: Saariselkä

S3: High frequency wireless

13:20 Understanding Noise and Interference Regimes in 5G Millimeter-Wave Cellular Networks

Mattia Rebato (Università degli Studi di Padova, Italy); Marco Mezzavilla (NYU Poly, USA); Sundeep Rangan (New York University, USA); Federico Boccardi (Ofcom, United Kingdom); Michele Zorzi (Università degli Studi di Padova, Italy)

13:40 Wideband Terahertz Band Reflection and Diffuse Scattering Measurements for Beyond 5G Indoor Wireless Networks

Joonas Kokkonen (University of Oulu, Finland); Vitaly Petrov and Dmitri Moltchanov (Tampere University of Technology, Finland); Janne Lehtomäki (University of Oulu, Finland); Yevgeni Koucheryavy (Tampere University of Technology, Finland); Markku Juntti (University of Oulu, Finland)

14:00 Potholes Ahead: Impact of Transient Link Blockage on Beam Steering in Practical mm-Wave Systems

Adrian Loch (IMDEA Networks Institute, Spain); Irene Tejado (IMDEA Networks Institute, Italy); Joerg Widmer (IMDEA Networks Institute, Spain)

14:20 Beamwidth Optimization in Millimeter Wave Small Cell Networks with Relay Nodes: A Swarm Intelligence Approach

Cristina Perfecto (University of the Basque Country UPV/EHU, Spain); Javier Del Ser (TECNALIA, Spain); Muhammad Ikram Ashraf (Centre for Wireless Communications, Finland); Miren Nekane Bilbao (University of the Basque Country, Spain); Mehdi Bennis (Centre of Wireless Communications, University of Oulu, Finland)

14:40 - 15:00 Coffee Break

15:00 - 17:40

Room: Ylläs

Tutorial 4: Group-oriented Communications in the 5G Era: Fundamentals, Applications and Novel Solutions for Performance Enhancement

15:00 - 16:20

Room: Äkäslompolo

S4: Energy efficient wireless

15:00 Energy Harvesting In Cellular Underlay Cognitive Networks: Rate-Energy Trade-off Characterization

Ali Kariminezhad (RUB, Germany); Aydin Sezgin (RUB & Digital Communication Systems, Germany)

15:20 Energy and Spatial Spectral Efficiency Analysis of Random MIMO Cellular Networks

Atieh Rajabi Khamesi (University of Padova, Italy); Bin Yang and Ge Xiaohu (Huazhong University of Science & Technology, P.R. China); Michele Zorzi (University of Padova, Italy)

15:40 Analysis of the Capacity and Scalability of the LoRa Wide Area Network Technology

Konstantin Mikhaylov, Juha Petäjälä and Tuomo Hänninen (University of Oulu, Finland)

16:00 Quantitative Power Consumption Analysis of a Multi-tier Wireless Multimedia Sensor Network

Pawani Porombage, Arto Heikkinen and Erkki Harjula (University of Oulu, Finland); Andrei Gurtov (Aalto University, Finland); Mika Ylianttila (University of Oulu, Finland)

Room: Saariselkä

S5: Wireless channel

15:00 Modeling of Non-Stationary Double-Rayleigh Fading Channels for Mobile-to-Mobile Communications

Carlos A. Gutiérrez (Universidad Autonoma de San Luis Potosi, Mexico); Jose Martin Luna-Rivera (Autonomous University of San Luis Potosi, Mexico); Daniel Ulises Campos-Delgado (Universidad Autonoma de San Luis Potosi, Mexico)

15:20 Level Crossing Rate and Average Fade Duration of Amplify and Forward Relay Channels with Cochannel Interference

Mahsa Shirzadian Gilan and Mohammad Yavari Manesh (University of Tehran, Iran); Abbas Mohammadi (Amirkabir University of Technology, Iran)

15:40 Measurement-based Evaluation of the Impact of Large Vehicle Shadowing on V2X Communications

Ignacio Rodriguez (Aalborg Universitet, Denmark); Erika Almeida (INDT - Institute of Technology Development, Brazil); Mads Lauridsen, Dereje Assefa Wassie and Lucas Chavarria Gimenez (Aalborg University, Denmark); Huan Cong Nguyen (Aalborg University & Faculty of Engineering and Science, Denmark); Troels B. Sørensen (Aalborg University, Denmark); Preben Mogensen (Nokia Siemens Networks, Aalborg, Denmark)

16:00 Measurement of 3.5 GHz Band Small Cell Indoor-Outdoor Propagation in Multiple Environments

Hideki Fukudome, Kohei Akimoto, Suguru Kameda, Noriharu Suematsu, Tadashi Takagi and Kazuo Tsubouchi (Tohoku University, Japan)

16:20 - 17:40

Room: Äkäslompolo

S6: Next generation wireless

16:20 Power Amplifier Effects on Frequency Localized 5G Candidate Waveforms

Markku K. Renfors, Juha Yli-Kaakinen and Mikko Valkama (Tampere University of Technology, Finland)

16:40 Asymptotic Presentation of Intrinsic Interference for FBMC/OQAM Signals in Quasi-Static Channels

Dmitry Petrov (Magister Solutions Ltd., Finland); Timo Hämäläinen (University of Jyväskylä, Finland); Sergei Melnik (Central Scientific Research Institute of Communication & Moscow Technical University of Communications and Informatics, Russia)

17:00 Adaptive OQAM-OFDM transmission with MAP-based modulation classification in TDD systems

Lars Haering (University Duisburg-Essen, Germany)

17:20 Sparse Interference Pre-Cancellation for FTN-OQAM Systems

Naila Lahbabi (TELECOM BRETAGNE, France); Hao Lin (France Telecom, France); Charbel Abdel Nour (Institut Telecom - Telecom Bretagne, France); Catherine Douillard (Institut Mines Telecom - Telecom Bretagne, France); Pierre Siohan (Retired, France)

Room: Saariselkä

S7: Wireless access

16:20 A Fair Opportunistic Relaying Algorithm Using an Adaptive Selection Region in Cooperative Networks

Mahdi Azari, Sofie Pollin and Fernando Rosas (KU Leuven, Belgium); Behrouz Maham (Nazarbayev University, Kazakhstan); Xiangyun Zhou (The Australian National University, Australia)

16:40 Improved Frameless ALOHA for Wireless Networks

Iqbal Hussain and Markku Juntti (University of Oulu, Finland); Tad Matsumoto (CWC - Oulu, Finland)

17:00 On the Capacity of an Elemental Two-Way Two-Tier Network

Dennis Michaelis (Ruhr-University Bochum, Germany); Aydin Sezgin (RUB & Digital Communication Systems, Germany); Eduard Jorswieck (TU Dresden, Germany)

17:20 Network slicing management & prioritization in 5G mobile systems

Menglan Jiang (Kings College London, United Kingdom); Massimo Condoluci and Toktam Mahmoodi (King's College London, United Kingdom)

19:30 - 21:00 Welcome Reception at Oulu City Hall

Thursday, May 19

09:00 - 09:20

Rooms: Ylläs + Äkäslompolo

Welcome Addresses

Prof. Matti Latva-aho
University of Oulu
Head of Research Unit Centre for Wireless Communications - Radio Technologies

Prof. Marcos Katz
University of Oulu
General Chair of the EW 2016

09:20 - 10:20

Rooms: Ylläs + Äkäslompolo

Keynote Speech: Optical Wireless Communications: Current status and future prospects

Prof. Dominic O'Brien (University of Oxford)

10:20 - 10:40 Coffee Break

10:40 - 11:40

Rooms: Ylläs + Äkäslompolo

Keynote Speech: The Future of Mobile Access

Dr. Harish Viswanathan (Nokia Bell Labs)

11:40 - 12:40 Lunch Break

12:40 - 13:40

Room: Saariselkä

5G Demonstration Session

13:40 - 15:00

Room: Ylläs

Workshop 1: Full-Duplex Techniques for 5G and Beyond (WFDT5G) - part1

13:40 Keynote: *Full-duplex protocol design in 5G networks*

Prof. Risto Wichman, Aalto University, Finland

14:00 *Full Duplex Medium Access Control Design for Heterogeneous WLAN*

Md. Abdul Alim (Osaka University & Faculty Member, Electronics and Communication Engineering Discipline, Khulna University, Japan); Makoto Kobayashi and Takashi Watanabe (Osaka University, Japan)

14:20 *Digitally-Controlled Electrical Balance Duplexer for Transmitter-Receiver Isolation in Full-Duplex Radio*

Enrico Manuzzato, Jooze Tamminen, Matias Turunen and Dani Korpi (Tampere University of Technology, Finland); Fabrizio Granelli (University of Trento, Italy); Mikko Valkama (Tampere University of Technology, Finland)

14:40 *Ergodic Secrecy Rates of the Full-Duplex AF and DF Relay Wire-Tap Fading Channels*

Cuong Dang and Lubna Elsaid (University of Akron, USA); Leonardo Jiménez Rodríguez (McGill University, Canada); Nghi H Tran (University of Akron, USA); Shivakumar Sastry (The University of Akron, USA)

Room: Äkäslompolo

W2.1: Workshop Advanced PHY and MAC Layer Design for 5G Mobile Networks and IoT (RESCUE) - part 1

13:40 Power Allocation for Orthogonal Multiple Access Relay Channel Allowing Intra-link Errors

Valtteri Tervo (University of Oulu, Finland); Xiaobo Zhou (Tianjin University, P.R. China); Pen-Shun Lu (Sony China Research Lab, Taiwan); Markku Juntti (University of Oulu, Finland); Tad Matsumoto (CWC - Oulu, Finland)

14:00 Providing 10 Gbit/s in Downlink to a Mobile Terminal with Practical Array Design Beamforming Aspects by Using Orthogonal MIMO Beams

Tommi Tuovinen, Nuutti Tervo, Harri Pennanen and Aarno Pärssinen (University of Oulu, Finland)

14:20 On the Performance of Dynamic Multi-Source Multi-Antenna Multi-Relay Wireless Networks

Jiguang He and Iqbal Hussain (University of Oulu, Finland); Shen Qian (Japan Advanced Institute of Science and Technology & University of Oulu, Finland); Markku Juntti (University of Oulu, Finland); Tad Matsumoto (Japan Advanced Institute of Science and Technology, Japan)

14:40 A Comparative Study of Different Relaying Strategies over One-Way Relay Networks

Shen Qian (Japan Advanced Institute of Science and Technology & University of Oulu, Finland); Valtteri Tervo, Jiguang He and Markku Juntti (University of Oulu, Finland); Tad Matsumoto (Japan Advanced Institute of Science and Technology, Japan)

Room: Saariselkä

Tutorial 2: Simultaneous energy and information transmission

15:00 - 15:20 Coffee Break

15:20 - 18:00

Room: Ylläs

Workshop 1: Full-Duplex Techniques for 5G and Beyond (WFDT5G) - part 2

15:20 Analog and Digital Self-Interference Cancellation for Full-Duplex Transceivers

Visa Tapio and Marko Sonkki (University of Oulu, Finland)

15:40 Performance Analysis of Full-Duplex AF Relaying with Transceiver Hardware Impairments

Gustavo J. González (CONICET & Universidad Nacional del Sur, Argentina); Fernando Gregorio and Juan E. Cousseau (Universidad Nacional del Sur, Argentina); Taneli Riihonen and Risto Wichman (Aalto University School of Electrical Engineering, Finland)

16:00 RF Front-End Implementation Challenges of In-band Full-Duplex Relay Transceivers

Fernando Gregorio (Universidad Nacional del Sur, Argentina); Gustavo J. González (CONICET & Universidad Nacional del Sur, Argentina); Juan E. Cousseau (Universidad Nacional del Sur, Argentina); Taneli Riihonen and Risto Wichman (Aalto University School of Electrical Engineering, Finland)

16:20 *Micro-Electromechanical impedance control for Electrical Balance Duplexing*

Chunqing Zhang, Leo Laughlin, Mark Beach and Kevin A Morris (University of Bristol, United Kingdom);
John Haine (U-blox, United Kingdom)

16:40 Keynote: *Full-Duplex: Challenges and Applications*

Andrew Austin and Prof. Andreas Burg , EPFL, Switzerland

17:00 *Agile Full-Duplex Transceiver: The Concept and Self-Interference Channel Characteristics*

Ramez Askar, Benjamin Schubert and Wilhelm Keusgen (Fraunhofer Heinrich Hertz Institute, Germany); Thomas Haustein (Fraunhofer Institute for Telecommunications, Heinrich-Hertz-Institut, Germany)

17:20 *Can Uplink Transmissions Survive in Full-duplex Cellular Environments?*

Hesham ElSawy (King Abdullah University of Science and Technology (KAUST), Saudi Arabia); Ahmad M AlAmmouri (King Abdullah University of Science and Technology, Saudi Arabia); Osama Amin and Mohamed-Slim Alouini (King Abdullah University of Science and Technology (KAUST), Saudi Arabia)

17:40 *Performance Evaluation of User Scheduling for Full-Duplex Small Cells in Ultra-Dense Networks*

Italo Atzeni (Mathematical and Algorithmic Sciences Lab, France Research Center, Huawei Technologies Co. Ltd., France); George C. Alexandropoulos (France Research Center, Huawei Technologies Co. Ltd., France); Marios Kountouris (Huawei Technologies, France)

Room: Äkäslompolo

W2.2: Workshop Advanced PHY and MAC Layer Design for 5G Mobile Networks and IoT (RESCUE) - part 2

15:20 *Validation of Deterministic Radio Channel Model by 10 GHz Microcell Measurements*

Antti Roivainen (Centre for Wireless Communications, University of Oulu, Finland); Pekka Kyösti (Anite Telecoms Oy, Finland); Veikko Hovinen (University of Oulu, Finland); Cláudio Dias (Universidade Estadual de Campinas, Brazil); Nuutti Tervo and Marko Sonkki (University of Oulu, Finland); Gustavo Fraidenaich (Unicamp & Communication Department, Brazil); Matti Latva-aho (University of Oulu, Finland)

15:40 *Effects of PA Nonlinearity and Dynamic Range in Spatially Multiplexed Precoded MIMO Systems*

Nuutti Tervo, Janne P Aikio, Tommi Tuovinen, Timo Rahkonen and Aarno Pärssinen (University of Oulu, Finland)

16:00 *DRSS-based Factor Graph Geolocation Technique for Position Detection of Unknown Radio Emitter*

Muhammad Reza Kahar Aziz (Japan Advanced Institute of Science and Technology & Institut Teknologi Sumatera, Japan); Khoirul Anwar and Tad Matsumoto (Japan Advanced Institute of Science and Technology, Japan)

16:20 *Channel Dynamics and SNR Tracking in Millimeter Wave Cellular Systems*

Marco Giordani (Universita' degli Studi di Padova, Italy); Marco Mezzavilla (NYU Poly, USA); Aditya Dhananjay (NYU Polytechnic, USA); Sundeep Rangan (New York University, USA); Michele Zorzi (Università degli Studi di Padova, Italy)

16:40 *Evaluating New Concepts in Wireless Communications: From Theory to Practice*

Christian Schneider (Ilmenau University of Technology, Germany); Hicham Khalife (Thales Communications & Security, France); Szymon Szott (AGH University of Science and Technology, Poland); Valtteri Tervo (University of Oulu, Finland); Xin He (Japan Advanced Institute of Science and Technology & University of Oulu, Japan); Marek Natkaniec (AGH University of Science and Technology, Poland); Sebastian Sosnik and Lukasz Trzeciakowski (FQS Poland, Poland); Mario Lorenz (Technische Universität Ilmenau, Germany); Martin Käske (Ilmenau University of Technology, Germany); Jacek Wszolek (AGH University of Science and Technology, Poland)

Room: Saariselkä

Tutorial 2 (continued)

19:30 - 23:00 Banquet Dinner, Restaurant Vänmanni

23:00 After-Party with Live-Music, Tervasoiehu

Friday, May 20

09:00 - 11:00

Room: Ylläs

W4: Workshop on Device-to-Device Communication for 5G Systems (WD2DC)

09:00 *Hybrid Precoding for Device-to-Device Communication at MmWave Frequencies*

Asmaa Abdallah and Salam Doumiati (American University of Beirut, Lebanon)

09:20 *Power-Efficiency in Social-Aware D2D Communications*

Marko Höyhtyä (VTT Technical Research Centre of Finland Ltd, Finland); Aarne O Mämmelä (VTT, Finland); Ulrico Celentano and Juha Rönning (University of Oulu, Finland)

09:40 *On Distribution of SIR in Dense D2D Deployments*

Shamil Eteзов (Peoples' Friendship University of Russia, Russia); Yuliya Gaidamaka and Konstantin Samouylov (Peoples' Friendship University of Russia, Russia); Dmitri Moltchanov, Andrey Samuylov, Sergey Andreev and Yevgeni Koucheryavy (Tampere University of Technology, Finland)

10:00 *Link Level Performance of a Multicarrier CDMA Based Device-to-Device Integrated OFDMA Cellular System*

Hongnian Xing and Markku K. Renfors (Tampere University of Technology, Finland)

10:20 *Social-aware Content Delivery with D2D Communications Support for Emergency Scenarios in 5G Systems*

Antonino Orsino (University Mediterranea of Reggio Calabria, Italy); Leonardo Militano (Mediterranea University of Reggio Calabria, Italy); Giuseppe Araniti and Antonio Iera (University Mediterranea of Reggio Calabria, Italy)

10:40 *On Transmission Policies in Multihop Device-to-Device Communications with Network Coded Cooperation*

Nestor Hernandez (Aalborg University, Denmark); Janus Heide (Steinwurf, Denmark); Daniel E. Lucani (Aalborg University, Denmark); Frank H.P. Fitzek (Technische Universität Dresden & ComNets - Communication Networks Group, Germany)

Room: Äkäslompolo

W5: Workshop on Competitive and Cooperative Approaches for 5G networks (COCOA)

09:00 *Multi-Group Multicast Beamformer Design for MIMO-OFDM Transmission*

Ganesh Venkatraman (University of Oulu & CWC, University of Oulu, Finland); Antti Tölli and Markku Juntti (University of Oulu, Finland); Le-Nam Tran (Maynooth University, Ireland)

09:24 *Precoder Design for MU-MISO Transmission with Guaranteed QoS Constraints*

Ayswarya Padmanabhan (University of Oulu & CWC - Radio Technologies, Finland); Antti Tölli and Markku Juntti (University of Oulu, Finland); Le-Nam Tran (Maynooth University, Ireland)

09:48 *Learning Annealing Schedule of Log-Linear Algorithms for Load Balancing in HetNets*

Mohd. Shabbir Ali (Telecom ParisTech, France); Pierre Coucheney (University of Versailles, France); Marceau Coupechoux (Telecom ParisTech, France)

10:12 *Generalized Satisfaction Equilibrium: A Model for Service-Level Provisioning in Networks*

Mathew Pradeep Goonewardena (University of Quebec & École de Technologie Supérieure, Canada); Samir M. Perlaza (INRIA, France); Animesh Yadav (UQAM, Canada); Wessam Ajib (Université du Québec à Montréal, Canada)

10:36 *A Non-cooperative Game Approach for RAN and Spectrum Sharing in Mobile Radio Networks*

Lorela Cano, Antonio Capone, Giuliana Carello and Matteo Cesana (Politecnico di Milano, Italy); Mauro Passacantando (Università di Pisa, Italy)

Room: Saariselkä

Tutorial 5: Challenges and solutions for networking in the millimeter wave band

11:00 - 11:20 Coffee Break

11:20 - 12:40

Room: Ylläs

S8: Optical wireless

11:20 *FPGA based test-bed for visible light communication physical layer study*

Muhammad Saad Saud and Marko Wirtanen (University Of Oulu, Finland); Helal Chowdhury (Telecommunication laboratory, university of oulu, Finland); Tuomo Hänninen, Juha Hakkinen and Marcos D Katz (University of Oulu, Finland)

11:40 *Analysis of an array-based high-speed integrated optical receiver in a FSO USRP OFDM testbed*

Niklas Schulz (University of Duisburg-Essen, Germany); Andreas Czylik (Universität Duisburg-Essen, Germany)

12:00 Visible Light Communication Constraints in Practical Indoor Lighting Systems

Jose Martin Luna-Rivera (Autonomous University of San Luis Potosi, Mexico)

12:20 Passive Intermodulation and Network Planning Challenges in Future Indoor Networks and Energy Efficient Buildings

Ari Asp, Syed Fahad Yunas and Vili Kilpeläinen (Tampere University of Technology, Finland); Jarno Niemelä (Elisa Corporation, Finland); Mikko Valkama (Tampere University of Technology, Finland)

Room: Äkäslompolo

S9: Wireless transceivers

11:20 Estimation of BS Transceiver Non-Reciprocity in Multi-User Massive MIMO Systems

Orod Raeesi and Ahmet Gokceoglu (Tampere University of Technology, Finland); Yaning Zou (Technische Universität Dresden, Germany); Qimei Cui (Beijing University of Posts and Telecommunications, P.R. China); Mikko Valkama (Tampere University of Technology, Finland)

11:40 Optimal fronthaul capacity allocation and training for joint uplink receiver in C-RAN

Dora Boviz (Nokia Bell Labs, France); Sheng Yang (CentraleSupélec, France)

12:00 Towards an Appropriate Receiver Beamforming Scheme for Millimeter Wave Communication: A Power Consumption Based Comparison

Waqas Bin Abbas and Michele Zorzi (University of Padova, Italy)

12:20 Noncoherent Reception of Short PSK Data Packets with Pilot Symbols

Alexander B. Sergienko (St. Petersburg Electrotechnical University, Russia)

Room: Saariselkä

Tutorial 5 (continued)

12:40 - 13:40 Lunch Break

13:40 - 15:00

Room: Ylläs

S10: Wireless networks

13:40 Topology Optimization of Wireless Localization Networks

Katarina Balać (University of Lugano, Switzerland); Murodzhon Akhmedov (Dalle Molle Institute for Artificial Intelligence, Switzerland); Mauro Prevostini and Miroslaw Malek (University of Lugano, Switzerland)

14:00 An Advanced CDF Based Spectrum Occupancy Rate Measurement Method by Simultaneous Estimation of Gaussian Noise Power and Time Period

Shota Rachi, Masahiro Umehira and Shigeki Takeda (Ibaraki University, Japan)

14:20 System Level Performance Evaluation of LTE-V2X Network

Petri Luoto (University of Oulu, Finland); Mehdi Bennis (Centre of Wireless Communications, University of Oulu, Finland); Pekka Pirinen (University of Oulu, Finland); Sumudu Samarakoon (Centre for Wireless Communications, University of Oulu, Finland); Kari Horneman (Nokia & Bell Labs, Finland); Matti Latva-aho (UoOulu, Finland)

14:40 Mobile User Hotspot Detection in LTE Networks by Moving Pseudo Pico Cells

Lutz Ewe, Roland Moedinger and Hajo Bakker (Nokia Bell Labs, Germany)

Room: Äkäslompolo

S11: Wireless MIMO

13:40 Performance of Dual-Hop MIMO Network with Partial Relay Selection and Fixed Gain

Ahmet Yilmaz (TUBITAK, Turkey); Oguz Kucur (Gebze Institute of Technology, Turkey)

14:00 High PAPR Sequence Scrambling for Reducing OFDM Peak-to-Average Power Ratio

Heshani Gamage and Nandana Rajatheva (University of Oulu, Finland); Matti Latva-aho (University of Oulu, Finland)

14:20 Joint In-Band Backhauling and Interference Mitigation in 5G Heterogeneous Networks

Trung Kien Vu (Centre for Wireless Communications, University of Oulu, Finland); Mehdi Bennis (Centre of Wireless Communications, University of Oulu, Finland); Sumudu Samarakoon (Centre for Wireless Communications, University of Oulu, Finland); Mérouane Debbah (Huawei, France); Matti Latva-aho (University of Oulu, Finland)

14:40 Iterative Detection using MMSE-PIC Demapping for MIMO-GFDM Systems

Maximilian Matthé (Technical University Dresden, Germany); Dan Zhang and Gerhard Fettweis (Technische Universität Dresden, Germany)

Room: Saariselkä

S12: Industrial wireless

13:40 Cognitive Radio Prototype for Industrial Applications

Ahmad Saad (Fraunhofer Institute for Embedded Systems and Communication Technologies ESK, Germany); Nour Mansour (University of Kassel, Germany); Andreas Friedrich (University of Duisburg Essen, Germany); Ziad Youssef (Uni DUE, Germany); Dirk Dahlhaus, Mridula Sharma and Rana Al Halaseh (University of Kassel, Germany); Erfan Majeed (University of Duisburg-Essen, Germany); Kohrt Klaus-Dieter (Independent Advisor, USA); Guido Bruck (University of Duisburg Essen, Germany); Rudi Knorr (Fraunhofer Institute for Embedded Systems and Communication Technologies (ESK), Germany); Peter Jung (Universität Duisburg-Essen, Germany)

14:00 Performance Evaluation of ZigBee and UWB Wireless Sensors under Doppler Effect in Rotating Mechanical Structures

Ioana Olguta Popa (University of Perugia, Italy); Janne Janhunen and Konstantin Mikhaylov (University of Oulu, Finland)

14:20 Experimental Analysis of a Wireless Sensor Network in a Multi-Chamber Metal Environment

David Rojas and John Barrett (Cork Institute of Technology, Ireland)

14:40 Duty Cycle Challenges of IEEE 802.11ah Networks in M2M and IoT Applications

Muhammad Qutab-ud-din and Ali Hazmi (Tampere University of Technology, Finland); Luis Felipe Del Carpio Vega (Ericsson Research, Finland); Ahmet Gokceoglu (Tampere University of Technology, Finland); Behnam Badihi, Parth Amin and Anna Larmo (Ericsson Research, Finland); Mikko Valkama (Tampere University of Technology, Finland)

15:00 - 15:05 Closing

15:05 - 15:30 Coffee

