Contents

S2: Wireless transport

Room: Äkäslompolo

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)

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)

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)

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)

S3: High frequency wireless

Room: Saariselkä

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)

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

Joonas Kokkoniemi (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)

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)

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)

S4: Energy efficient wireless

Room: Äkäslompolo

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

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

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)

Analysis of the Capacity and Scalability of the LoRa Wide Area Network Technology

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

Quantitative Power Consumption Analysis of a Multi-tier Wireless Multimedia Sensor Network
Pawani Porambage, Arto Heikkinen and Erkki Harjula (University of Oulu, Finland); Andrei Gurtov (Aalto University, Finland); Mika Ylianttila (University of Oulu, Finland)

S5: Wireless channel
Room: Saariselkä

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)

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)

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)

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)

S6: Next generation wireless
Room: Äkäslompolo

Power Amplifier Effects on Frequency Localized 5G Candidate Waveforms
Markku K. Renfors, Juha Yli-Kaakinen and Mikko Valkama (Tampere University of Technology, Finland)

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)

Adaptive OQAM-OFDM transmission with MAP-based modulation classification in TDD systems
Lars Haering (University Duisburg-Essen, Germany)

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)

S7: Wireless access
Room: Saariselkä

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)

Improved Frameless ALOHA for Wireless Networks
Iqbal Hussain (Sweden, Sweden); Markku Juntti (University of Oulu, Finland); Tad Matsumoto (CWC - Oulu, Finland)

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)

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)

W1.1: Workshop 1: Full-Duplex Techniques for 5G and Beyond (WFDT5G) - part1

Room: Ylläs

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)

Digitally-Controlled Electrical Balance Duplexer for Transmitter-Receiver Isolation in Full-Duplex Radio
Enrico Manuzzato, Joose Tamminen, Matias Turunen and Dani Korpi (Tampere University of Technology, Finland); Fabrizio Granelli (University of Trento, Italy); Mikko Valkama (Tampere University of Technology, Finland)

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)

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

Room: Äkäslompolo

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)

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)

On the Performance of Dynamic Multi-Source Multi-Antenna Multi-Relay Wireless Networks
Jiguang He (University of Oulu, Finland); Iqbal Hussain (Sweden, Sweden); 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)

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)

W1.2: Workshop 1: Full-Duplex Techniques for 5G and Beyond (WFDT5G) - part 2

Room: Ylläs

Analog and Digital Self-Interference Cancellation for Full-Duplex Transceivers
Visa Tapio and Marko Sonkki (University of Oulu, Finland)

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)

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)

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)

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)

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)

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)

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

Room: Äkäslompolo

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 Fraidenraich (Unicamp & Communication Department, Brazil); Matti Latva-aho (UoOulu, Finland)

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)

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)

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)

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)

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

Room: Ylläs

Hybrid Precoding for Device-to-Device Communication at MmWave Frequencies
Asmaa Abdallah and Salam Doumiati (American University of Beirut, Lebanon)

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 Röning (University of Oulu, Finland)

On Distribution of SIR in Dense D2D Deployments
Shamil Etezov (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)

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)

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)

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)

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

Room: Äkäslompolo

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)

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)

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)

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)

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)

S8: Optical wireless

Room: Ylläs

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)

Analysis of an array-based high-speed integrated optical receiver in a FSO USRP OFDM testbed
Niklas Schulz (University of Duisburg-Essen, Germany); Andreas Czylwik (Universität Duisburg-Essen, Germany)

Visible Light Communication Constraints in Practical Indoor Lighting Systems
Jose Martin Luna-Rivera (Autonomous University of San Luis Potosi, Mexico)

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)

S9: Wireless transceivers
Room: Äkäslompolo

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)

Optimal fronthaul capacity allocation and training for joint uplink receiver in C-RAN
Dora Boviz (Nokia Bell Labs, France); Sheng Yang (CentraleSupelec, France)

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)

Noncoherent Reception of Short PSK Data Packets with Pilot Symbols
Alexander B. Sergienko (St. Petersburg Electrotechnical University, Russia)

S10: Wireless networks
Room: Ylläs

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)

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)

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)

Mobile User Hotspot Detection in LTE Networks by Moving Pseudo Pico Cells
Lutz Ewe, Roland Moedinger and Hajo Bakker (Nokia Bell Labs, Germany)

S11: Wireless MIMO
Room: Äkäslompolo

Performance of Dual-Hop MIMO Network with Partial Relay Selection and Fixed Gain
Ahmet Yılmaz (TUBITAK, Turkey); Oguz Kucur (Gebze Institute of Technology, Turkey)

High PAPR Sequence Scrambling for Reducing OFDM Peak-to-Average Power Ratio
Heshani Gamage and Nandana Rajatheva (University of Oulu, Finland); Matti Latva-aho (UoOulu, Finland)

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 (UoOulu, Finland)

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)

S12: Industrial wireless

Room: Saariselkä

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)

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)

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

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

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)