# IEEE ICC 2010 - Communication Theory Symposium Program

Symposium Co-Chairs:
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**Monday, May 24**

**14:00 - 15:45**

**CT1p: Hybrid ARQ and Space Time Codes**

Room: Exhibit Hall

*Hybrid-ARQ Interference Channels with Receiver Cooperation*
Ravi Narasimhan (Stanford University, USA)

*Hybrid ARQ with Incremental Redundant Index Assignments for Iterative Source-Channel Decoding*
Thorsten Clevorn (Infineon Technologies, Germany); Laurent Schmalen (RWTH Aachen University, Germany); Peter Vary (RWTH Aachen University, Germany); Marc Adrat (Fraunhofer FKIE / KOM, Germany)

*Analysis of Network Coded HARQ for Multiple Unicast Flows*
Peter Larsson (Ericsson Research, Sweden); Besma Smida (Purdue University Calumet, USA); Toshiaki Koike-Akino (Harvard University, USA); Vahid Tarokh (Harvard University, USA)

*Three-Time-Slot Quasi-Orthogonal Space-Time Block Codes*
Zander Zhongding Lei (Institute for Infocomm Research, Singapore); Chau Yuen (Institute for Infocomm Research, Singapore); Francois Chin (Institute for InfoComm Research, Singapore)

*X-Codes: A low complexity full-rate high-diversity achieving precoder for TDD MIMO systems*
Saif Khan Mohammed (Indian Institute of Science, India); Emanuele Viterbo (University of Calabria, Italy); YiHong (University of Calabria, Italy); A. Chockalingam (Indian Institute of Science, India)
CT01: MIMO

Room: Roof Terrace-A  Session Chair: Tobias J. Oechtering (Royal Institute of Technology & School of Electrical Engineering, EE, Sweden)

On the Achievable Sum Rates of Iterative MIMO Receivers with Linear Front-Ends
Farrokh Etezadi (Concordia University, Canada); Leszek Szczecinski (INRS-EMT, Canada); Ali Ghrayeb (Concordia University, Canada)

Multi-Antenna Beamforming: Feedback or No Feedback?
Kaibin Huang (School of Electrical and Electronic Engineering, Yonsei University, Seoul, Korea, Korea); Vincent Lau (The university of science and technology, Hong Kong); Dong Ku Kim (Yonsei University, Korea)

Closed-Form ASER Results of Rectangular QAM in MIMO MRC with Arbitrary Number of Antennas
Juan M. Romero-Jerez (University of Malaga, Spain); Juan Pena-Martin (University of Malaga, Spain)

Diversity and Multiplexing Tradeoff in SIMO/MISO Channels: Two-Way Training and Power Control
Xiaojuan Zhang (Nanyang Technological University, Singapore); Yi Gong (Nanyang Technological University, Singapore)

Mutual Information Statistics of Optimized LoS MIMO Systems
Michail Matthaiou (Munich University of Technology, Germany); Antonios Pitarokoilis (Munich University of Technology, Germany); Josef A. Nossek (Munich University of Technology, Germany)

Exact Expressions for the Condition Number Distribution of Complex Wishart Matrices
Michail Matthaiou (Munich University of Technology, Germany); Matthew R McKay (Hong Kong University of Science and Technology, Hong Kong); Peter J Smith (The University of Canterbury, New Zealand); Josef A. Nossek (Munich University of Technology, Germany)

16:15 - 18:00

CT2p: Resource Allocation and Cross-Layer Optimization

Room: Exhibit Hall

Simple Algorithms for Optimum Admission Control in Distributed Power-Controlled Networks Using Single and Iterative Measurements of Interference
Stepan Kucera (National Institute of Information and Communication Technology, Japan); Bing Zhang (National Institute of Information and Communications Technology, Japan)

A Queueing Theoretic Analysis of Source IP NAT
Cedric Westphal (Docomo Labs USA, USA); Charles E. Perkins (Independent, USA)

Duality-Gap Bounds for Multi-Carrier Systems and Their Application to Periodic Scheduling
Martin Wolkerstorfer (Telecommunications Research Center Vienna (FTW), Austria); Driton Statovci (The Telecommunications Research Center Vienna (ftw.), Austria); Tomas Nordström (Telecommunications Research Center Vienna (FTW), Austria)

A Cognitive Cross-layer Resource Allocation Scheme for In-home Power Line Communications
Rongping Dong (Orange Labs, France); Meryem Ouzzif (Orange Labs, France); Samir Saoudi (Telecom-Bretagne, France)

Network Resources Optimization for Random Linear Network Coding
Kwang Taik Kim (Cornell University, USA); Chan Soo Hwang (Samsung AIT, Korea)

On the Fair Comparison of FEC Schemes
Stefano Galli (Panasonic, USA)

CT02: Network coding

Room: Roof Terrace-A  Session Chair: Guosen Yue (NEC Laboratories America, Inc., USA)
Single-generation Network Coding for Networks with Delay
Prasad Krishnan (Indian Institute of Science, India); B. Sundar Rajan (Indian Institute of Science, India)

Throughput Analysis of Two-Hop Wireless CSMA Network Coding
Daisuke Umehara (Kyoto University, Japan); Satoshi Denno (Kyoto University, Japan); Masahiro Morikura (Kyoto University, Japan); Takatoshi Sugiyama (NTT, Japan)

Network error correction for unit-delay, memory-free networks using convolutional codes
Prasad Krishnan (Indian Institute of Science, India); B. Sundar Rajan (Indian Institute of Science, India)

Asynchronous Network Coded Multicast
Danail Traskov (Technical University of Munich, Germany); Johannes Lenz (Technical University of Munich, Germany);
Niranjan Ratnakar (Qualcomm, Inc., USA); Muriel Medard (MIT, USA)

Scalar Linear Network Coding for Networks with Two Sources
Sormeh Shadbakht (Caltech, USA); Amin Jafarian (The University of Texas, Austin, USA); Babak Hassibi (California Institute of Technology, USA)

A simple necessary and sufficient condition for the double unicast problem
Sagar Shenvi (Indian Institute of Technology Bombay, India); Bikash K Dey (Indian Institute of Technology Bombay, India)

Tuesday, May 25

10:30 - 12:15

CT3p: Transmission Schemes

Room: Exhibit Hall

Constant-Rate Power Allocation under Constraint on Average BER in Adaptive OFDM Systems
Chunhui Liu (RWTH Aachen University, Germany); Anke Schmeink (RWTH Aachen University, Germany); Rudolf Mathar (RWTH Aachen University, Germany)

Channel Estimation with Low-Precision Analog-to-Digital Conversion
Onkar Dabeer (Tata Institute of Fundamental Research, India); Upamanyu Madhow (University of California, Santa Barbara, USA)

Sampling Clock Frequency Offset Compensation for Feature Detection in Spectrum Sensing
Arash Zahedi-Ghasabeh (University of California, Los Angeles, USA); Alireza Tarighat (Wilinx Corp., USA); Babak Daneshrad (University of California, Los Angeles, USA)

Error-Rate Approximations for Bit-Interleaved Coded Modulation: A Flexible Analytical Approach
Alireza Kenarsari Anhari (Dyaptive Systems, Canada); Lutz Lampe (University of British Columbia, Canada)

Turbo Equalization Based on Bi-Directional DFE
Seongwook Jeong (University of Minnesota, USA); Jaekyun Moon (KAIST, Korea)

CT03: Cognitive Radio and Spectrum Sharing

Room: Roof Terrace-A Session Chair: Joao Barros (University of Porto & Instituto de Telecomunicações, Portugal)

An Information-Theoretic View of Spectrum Leasing via Secondary Cooperation
Osvaldo Simeone (New Jersey Institute of Technology, USA); Tariq Elkourdi (New Jersey Institute of Technology, USA)

Performance Degradation Due to MAI in OFDMA-based Cognitive Radio
Liwen Yu (University of California, San Diego, USA); Lawrence Milstein (UCSD, USA); John Proakis (University of California, San Diego, USA); Bhaskar Rao (University of California, San Diego, USA)

Capacity Analysis of Multicast Network in Spectrum Sharing Systems
Jianbo Ji (Shanghai Jiaotong University, P.R. China); Wen Chen (Shanghai Jiaotong University, P.R. China); Haibin Wan (Shanghai Jiaotong University, P.R. China)

Trace Based Semi-blind and Blind Spectrum Sensing Schemes for Cognitive Radio
Xi Yang (Southeast University, P.R. China); Kejun Lei (College of Physics Science and Information Engineering, Jishou University, P.R. China); Shengliang Peng (National Mobile Communication Research Lab., Southeast University, P.R. China); Xiuying Cao (National Mobile Communication Research Lab., Southeast University, P.R. China)

Cognitive Radio Transmission under Interference Limitations and QoS Constraints
Sami Akin (University of Nebraska-Lincoln, USA); Mustafa Cenk Gursoy (University of Nebraska-Lincoln, USA)

Fast Distributed Resource Allocation for Multi-Cell Cognitive Radio Systems
Maite Brandt-Pearce (University of Virginia, USA); Kimmo Kansanen (Norwegian University of Science and Technology, Norway); Geir E. Oien (NTNU, Norway)

14:00 - 15:45

CT04: Game Theoretic Approaches

Room: 2.64-66 Session Chair: Holger Boche (Technical University of Berlin, Germany)

User Cooperation for Energy-efficient Cellular Communications
Matthew Nokleby (Rice University, USA); Behnaam Aazhang (Rice University, USA)

Channel Capacity of Electromagnetic Nanonetworks in the Terahertz Band
Josep Miquel Jornet Montana (Georgia Institute of Technology, USA); Ian F. Akyildiz (Georgia Institute of Technology, USA)

Balancing Egoism and Altruism on the Interference Channel: The MIMO case
Ka Ming Ho (Institute Eurecom, France); David Gesbert (Eurecom, France)

The Cross Rate: Linear Processing for the Two User Broadcast Channel
Alon Shalev Housfater (University of Toronto, Canada); Teng Joon Lim (University of Toronto, Canada)

On the Dynamic Behavior of the Min-Cut in Random Geometric Graphs
Lennart Gerdes (Technische Universität München, Germany); Mohit Thakur (Technische Universität München, Germany); Ralf Koetter (Technical University of Munich, Germany, Germany)

BICM Transmission using Non-Uniform QAM Constellations: Performance Analysis and Design
Md. Jahangir Hossain (INRS, Canada); Alex Alvarado (Chalmers University of Technology, Sweden); Leszek Szczecinski (INRS-EMT, Canada)

CT05: Cooperative communication and relay I

Room: Roof Terrace-A Session Chair: Martin Haenggi (University of Notre Dame, USA)

A Complete Characterization of an Optimal Timer Based Selection Scheme
Virag Shah (Indian Institute of Science, India); Neelesh B. Mehta (Indian Institute of Science, India); Raymond Yim (Mitsubishi Electric Research Labs, USA)

A Metrics-Based Approach for the Analysis of Two-Hop Detect-and-Forward Relay Channels
Mustapha Benjillali (King Abdullah University of Science and Technology (KAUST), Saudi Arabia); Leszek Szczecinski (INRS-EMT, Canada)

Source Coding Rate Allocation in Orthogonal Compress-and-Forward Relay Networks
Georg Zeitler (Technische Universität München, Germany); Johannes Brehmer (Technische Universität München, Germany); Gerhard Bauch (Universitaet der Bundeswehr Munich, Germany); Joerg C. Widmer (DOCOMO Euro-Labs, Germany)

Resource Allocation via Linear Programming for Multi-Source, Multi-Relay Wireless Networks
Nariman Farsad (York University, Canada); Andrew Eckford (York University, Canada)

Distributed Turbo-Like Codes for Multi-User Cooperative Relay Networks
Roua Youssef (Telecom Bretagne, France); Alexandre Graell i Amat (ENST Bretagne, France)
Compress-and-forward relaying based on symbol-wise joint source-channel coding
Ricardo Blasco-Serrano (Royal Institute of Technology (KTH), Sweden); Ragnar Thobaben (Royal Institute of Technology, KTH, Sweden); Mikael Skoglund (Royal Institute of Technology, Sweden)

16:15 - 18:00

CT06: Channel coding

Room: 2.64-66 Session Chair: Guosen Yue (NEC Laboratories America, Inc., USA)

Design of Distributed Multiple Turbo Codes for Block-Fading Relay Channels
Peng Hui Tan (Institute for Infocomm Research, Singapore); Chin Keong Ho (Institute for Infocomm Research, Singapore); Sumei Sun (Institute for Infocomm Research, Singapore)

Design of a Concatenated Coding Scheme for a Bit-Shift Channel
Eirik Rosnes (University of Bergen, Norway); Alexandre Graell i Amat (ENST Bretagne, France)

A Simple Algorithm for Decoding of Binary Block Codes based on Information Sets
Walter Godoy Junior (Federal University of Technology - Paraná, Brazil); Emilio Wille (UTFPR - Federal University of Technology - Parana, Brazil); Ricardo Jasinski (UTFPR, Brazil)

Design of efficient convolutional and serially concatenated convolutional codes with a-priori information
Andrea Abrardo (University of Siena, Italy)

Improved Decoding for the Davey-MacKay Codes for InsDel Channels
Johann A. Briffa (University of Surrey, United Kingdom); Hans Georg Schaathun (University of Surrey, United Kingdom); Stephan Wesemeyer (University of Surrey, United Kingdom)

Numerical Comparison of IP Formulations as ML decoders
Akin Tanatmis (University of Kaiserslautern, Germany); Stefan Ruzika (University of Kaiserslautern, Germany); Frank Kienle (University of Kaiserslautern, Germany); Mayur Punekar (University of Kaiserslautern, Germany)

CT07: Cooperative communication and relay II

Room: Roof Terrace-A Session Chair: Aylin Yener (Pennsylvania State University, USA)

Finite-SNR Diversity-Multiplexing Tradeoff in Bidirectional Cooperative Networks
Zhihang Yi (Queen’s University, Canada); Il-Min Kim (Queen’s University, Canada); Robert Schober (University of British Columbia, Canada)

Optimal Binary Power Allocation for Wireless Networks with Local Interference
Nasreen Badruddin (University of Melbourne, Australia); Stephen Hanly (The University of Melbourne, Australia); Jamie Evans (University of Melbourne, Australia)

Cooperative Transmission with Decode-and-Forward MIMO Relaying in Multiuser Relay Networks
Chang Kyung Sung (CSIRO, Australia); Iain B. Collings (CSIRO, Australia)

Outage Probability and SER of Fixed Gain Relaying with Selection Diversity in Cellular Systems
Phee Lep Yeoh (University of Sydney, Australia); Maged Elkashlan (CSIRO, ICT Centre, Australia); Iain B. Collings (CSIRO, Australia)

Demodulate-and-Forward Relaying with Higher Order Modulations: Impact of Channel State Uncertainty
Ramesh Annavajjala (Mitsubishi Electric Research Labs, USA); Amine Maaref (Mitsubishi Electric Research Laboratories, USA); Jinyun Zhang (MERL, USA)

On Degrees of Freedom of the Cellular Network
Jun Sun (Huazhong University of Science and Technology, P.R. China); Yingzhuang Liu (Huazhong University of Science and Technology, P.R. China); Guangxi Zhu (Department of Electronics & Information Engineering, Huazhong University of Science and Technology, P.R. China)

Wednesday, May 26
08:30 - 10:15

CT08: Secrecy

Room: Roof Terrace-A Session Chair: Daniela Tuninetti (University of Illinois at Chicago, USA)

A New Outer Bound for the Secrecy Capacity Region of the Gaussian Two-Way Wiretap Channel
He Xiang (Pennsylvania State University, USA); Aylin Yener (Pennsylvania State University, USA)

Friendly Jamming for Wireless Secrecy
Joao P. Vilela (Instituto de Telecomunicações, Universidade do Porto, Portugal); Matthieu Bloch (Georgia Institute of Technology, France); Joao Barros (University of Porto, Portugal); Steven McLaughlin (Georgia Institute of Technology, USA)

Ergodic Secret Alignment for the Fading Multiple Access Wiretap Channel
Raef Bassily (University of Maryland, USA); Sennur Ulukus (University of Maryland, USA)

‘On the Impact of Quantized Channel Direction Feedback in multiple-antenna wiretap channels’
Shih-Chun Lin (National Taiwan University, Taiwan); Tsung-Hui Chang (National Tsing Hua University, Taiwan); Yao-Win Peter Hong (National Tsing Hua University, Taiwan); Chong-Yung Chi (National Tsing Hua University, Taiwan)

10:45 - 12:30

CT09: Interference channels

Room: Roof Terrace-A Session Chair: Sennur Ulukus (University of Maryland, USA)

The Gaussian Z-interference Channel with Rate-Constrained Conferencing Decoders
Hieu T. Do (Royal Institute of Technology (KTH), Sweden); Tobias J. Oechtering (Royal Institute of Technology, Sweden); Mikael Skoglund (Royal Institute of Technology, Sweden)

Outage analysis of Block-Fading Gaussian-Interference-Channels: General Case
Yang Weng (University of Illinois at Chicago, USA); Daniela Tuninetti (University of Illinois at Chicago, USA)

Robust Transceiver Design for the Multi-user Interference Channel
Ali Tajer (Columbia University, USA); Narayan Prasad (NEC Labs America, Princeton, USA); Xiaodong Wang (Columbia University, USA)

Capacity Analysis of Fading Interference Channels
Khairi A. Hamdi (The University of Manchester, United Kingdom)

On the achievable throughput region of multiple-access fading channels with QoS constraints
Deli Qiao (University of Nebraska-Lincoln, USA); Mustafa Cenk Gursoy (University of Nebraska-Lincoln, USA); Senem Velipasalar (University of Nebraska-Lincoln, USA)

Achievable rates for multiuser interference relay channel
Mohammad Khojastepour (NEC Laboratories America, USA); Xiaodong Wang (Columbia University, USA)

14:00 - 15:45

CT10: Cooperative communication and relay III

Room: Roof Terrace-A Session Chair: Holger Boche (Technical University of Berlin, Germany)

Shifted Successive Decode-and-Forward Relaying: Towards the Optimal Diversity-Multiplexing Tradeoff for a Four-Node Cooperative Network
List Decoding for Bidirectional Broadcast Channels with Unknown Varying Channels
Rafael F. Wyrembelski (Technische Universität Berlin, Germany); Igor Bjelakovic (Berlin University of Technology, Germany); Holger Boche (Technical University of Berlin, Germany)

Power Control for Relay-assisted Wireless Systems with General Relaying
Yi Shi (Hong Kong University of Science & Technology, P.R. China); R. K. Mallik (Indian Institute of Technology - Delhi, India); Khaled Ben Letaief (Hong Kong University of Science & Technology, Hong Kong)

Two-way Relaying in Multi-carrier Systems with Private Information for Relay
Chin Keong Ho (Institute for Infocomm Research, Singapore); Sumei Sun (Institute for Infocomm Research, Singapore)

Achievable Rates for Embedded Bidirectional Relaying in a Cellular Downlink
Tobias J. Oechtering (Royal Institute of Technology, Sweden); Hieu T. Do (Royal Institute of Technology (KTH), Sweden); Mikael Skoglund (Royal Institute of Technology, Sweden)

Multi-pair Two-way Relay Channel with Multiple Antenna Relay Station
Erhan Yilmaz (Institute Eurecom, France); Randa Zakhour (Eurecom, European Union); David Gesbert (Eurecom, France); Raymond Knopp (Institut Eurecom, France)

16:15 - 18:00

CT11: Low-density parity-check codes (LDPC)

Room: Roof Terrace-A Session Chair: Stephen Wilson (University of Virginia, USA)

Spectral Shape of Check-Hybrid GLDPC Codes
Enrico Paolini (DEIS, WiLAB, Univ. of Bologna, Italy); Mark F. Flanagan (University College Dublin, Ireland); Marco Chiani (University of Bologna, Italy); Marc Fossorier (Etis Ensea, France)

The Design of Rate-Compatible LDPC Codes for IR-HARQ Systems over Erasure Channels
Dragan Rastovac (University of Novi Sad, Serbia); Dejan Vukobratovic (University of Strathclyde, United Kingdom); Vladimir Stankovic (University of Strathclyde, United Kingdom); Lina Stankovic (University of Strathclyde, United Kingdom)

Hybrid Decoding of LDPC Codes Based on Finite Geometries
Telex Magloire N Ngatched (University of Manitoba, Canada); Attahiru S. Alfa (University of Manitoba, Canada); Jun Cai (University of Manitoba, Canada)

Efficient Receivers for q-ary LDPC Coded Signals over Partial Response Channels
Andrea Marinoni (University of Pavia, Italy); Pietro Savazzi (Università degli Studi di Pavia, Italy)

Protograph-based LDPC Convolutional Codes for Correlated Erasure Channels
Aravind R Iyengar (University of California, San Diego, USA); Marco Papaleo (University of Bologna, Italy); Gianluigi Liva (DLR (German Aerospace Center), Germany); Paul H. Siegel (University of California, San Diego, USA); Jack Wolf (UCSD, USA); Giovanni Corazza (University of Bologna, Italy)

Design of Efficiently-Encodable Generalized LDPC Codes
Tingjun Xie (University of Virginia, USA); Stephen Wilson (University of Virginia, USA)