<table>
<thead>
<tr>
<th>CTH-03: OFDM Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced Complexity Receiver Design for MIMO-OFDM Systems with Space-Time-frequency Coding</td>
</tr>
<tr>
<td>Shaohua Li, Defeng Huang, K. B. Letaief, Zucheng Zhou</td>
</tr>
<tr>
<td>Balancing Pilot and Data Power for Adaptive MIMO-OFDM Systems</td>
</tr>
<tr>
<td>Taeyoon Kim, Jeffrey G. Andrews</td>
</tr>
<tr>
<td>Reed–Solomon Codes Implementing a Coded OFDM Scheme for Rayleigh Fading Channels</td>
</tr>
<tr>
<td>Geert Van Meerbergen, Marc Moonen, Hugo De Man</td>
</tr>
<tr>
<td>Alamouti Space–Time Coded OFDM Systems in Time- and Frequency-selective Channels</td>
</tr>
<tr>
<td>Kun Fang, Geert Leus, Luca Rugini</td>
</tr>
<tr>
<td>Optimal Resource Allocation via Geometric Programming for OFDM Broadcast and Multiple Access Channels</td>
</tr>
<tr>
<td>Kibeora Seong, David D. Yu, Youngjae Kim, John M. Cioffi</td>
</tr>
<tr>
<td>Approaching MIMO-OFDM Capacity with Closed-loop V-BLAST</td>
</tr>
<tr>
<td>Rui Zhang, John M. Cioffi</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CTH-04: Information Theoretic Aspects of Source-channel Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>On Information Rates for Faster than Nyquist Signaling</td>
</tr>
<tr>
<td>Fredrik Rusek, John B. Anderson</td>
</tr>
<tr>
<td>A Multiple-description Trellis Quantizer for Sources with Memory</td>
</tr>
<tr>
<td>Pradeepa Yahampath</td>
</tr>
<tr>
<td>Source-optimized Clustering for Distributed Source Coding</td>
</tr>
<tr>
<td>Gerhard Maierbacher, João Barros</td>
</tr>
<tr>
<td>Capacity Bounds for Training-based UWB Systems</td>
</tr>
<tr>
<td>Stefan Franz, Urbashi Mitra, Giuseppe Caire</td>
</tr>
<tr>
<td>A New Iterative Algorithm for Calculating the Capacity of Discrete Memoryless Channels</td>
</tr>
<tr>
<td>Xue-Bin Liang</td>
</tr>
<tr>
<td>Iterative Decoding of Entropy-constrained Multiple Description Trellis-coded Quantization</td>
</tr>
<tr>
<td>Morten Holm Larsen, Claudio Weidmann, Michel Kieffer</td>
</tr>
</tbody>
</table>

Author Index

<table>
<thead>
<tr>
<th>CTH-05: Diversity Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effect of Channel Estimation Errors on Diversity-multiplexing Tradeoff in Multiple Access Channels</td>
</tr>
<tr>
<td>Ravi Narasimhan</td>
</tr>
<tr>
<td>Rateless Codes for the Gaussian Multiple Access Channel</td>
</tr>
<tr>
<td>Urs Niesen, Uri Erez, Devavrat Shah, Gregory W. Wornell</td>
</tr>
<tr>
<td>On Mutual Information of Stacked OSTBC</td>
</tr>
<tr>
<td>Aydin Sezgin</td>
</tr>
<tr>
<td>Effect of Geometry on the Diversity-multiplexing Tradeoff in Relay Channels</td>
</tr>
<tr>
<td>George Atia, Masoud Sharif, Venkatesh Saligrama</td>
</tr>
</tbody>
</table>

Volume 2

xxvi
Evaluation of Bit Error Rate for Packet Combining with Constellation Rearrangement
Mustapha Benjillali, Leszek Szczecinski, Sonia Aissa

Hybrid-selection/Equal-gain Combining for Non-constant Modulus Signals
Yao Ma, Jinghua Jin

CTH-06: Multiple Access Schemes
Optimality of FDMA in Gaussian Multiple-access Channels with Non-zero SNR Margin and Gap
Sumanth Jagannathan, John M. Cioffi

Window and Backwards Decoding Achieve the Same Sum Rate for the Fading Cooperative
Gaussian Multiple Access Channel
Onur Kaya

Collision Model for Bit Error Rate analysis of Time Hopping Impulse Radio in Multipath
Nakagami-m Channels
L. Reggiani, U. Spagnolini

Novel Low-density Signature Structure for Synchronous DS-CDMA Systems
Reza Hoshyar, Ferry P. Wathan, Rahim Tafazolli

Scalable TSC-optimal Overloading of Binary Signature Sets
Harish Ganapathy, Rohan Grover, Dimitris A. Pados

Optimized Transmission for Upstream Vectored DSL Systems Using Zero-forcing Generalized
Decision-feedback Equalizers
Chiang-yu Chen, Kibeom Seong, Rui Zhang, John M. Cioffi

CTH-07: MIMO Systems I
Effect of Feedback Delay on Multi-antenna Limited Feedback for Temporally-correlated Channels
Kaibin Huang, Bishwarup Mondal, Robert W. Heath Jr., Jeffrey G. Andrews

Design of Multi-antenna Coded Modulators Using Noisy Quantized Channel State Information
Siavash Ekbatani, Hamid Jafarkhani

Optimal Linear Transceiver Design for MIMO Flat Fading Channels Exploiting Channel Mean
Feedback
Haitong Sun, Zhi Ding

Singular Value Decomposition of Correlated MIMO Channels
David W. Browne, Michael W. Browne, Michael P. Fitz

Free Space Optical MIMO System Using an Optical Pre-amplifier
Qianling Cao, Maité Brandt-Pearce, Stephen G. Wilson

CTH-p1: Topics in Communication Theory (Poster)
A Soft Decision Decoding Scheme for Long Haul Optical Transmission Systems Based on the
Instanton Approach
Milos Ivković, Ivan Djordjević, Bane Vasić

Potential Performance of Partial Crosstalk Cancellation in Twisted Pair Cables
Nils Holte

A Simple Integral Form of Lognormal Characteristic Functions Convenient for Numerical
Computation
Norman C. Beaulieu
Channel Aware Aloha with Imperfect CSI
Ghurumurhan Ganesan, Ye Li, Ananthram Swami

Optimal Routing in the Worst-case Error Metric
Edwin Soedarmadji

Coprime Interleavers Revisited
Kai Xie, Wenbo Wang, Jing Li

Prefix-length Adaptation for PRQT Protocol in RFID Systems
Kong Wa Chiang, Cunqing Hua, Tak-Saing Peter Yum

Measurements and modeling of Line-of-Sight UWB Channel in Underground Mines
Abdellah Chehri, Paul Fortier, Pierre-Martin Tardif

CTH-08: LDPC and Convolutional Codes

Construction of High Performance and Efficiently Encodable Nonbinary Quasi-cyclic LDPC Codes
Bo Zhou, Ying Y. Tai, Lan Lan, Shumei Song, Lingqi Zeng, Shu Lin

EXIT Chart Analysis for Doubly Generalized LDPC Codes
Yige Wang, Marc Fossorier

Protograph LDPC Codes with Node Degrees at Least 3
Dariush Divsalar, Christopher Jones

Efficient Encoding and Termination of Low-density Parity-check Convolutional Codes
Zhengang Chen, Stephen Bates, Duncan Elliott, Tyler Brandon

Context-based Decoding of Split LDPC Codes
Gil I. Shamir, Li Wang, Joseph J. Boutros

CTH-09: MIMO Systems II

On the Capacity of Separately-correlated MIMO Rician Fading Channels
Giorgio Taricco

A Time-efficient Approach for Designing LDPC-coded MIMO Systems
Yao-Nan Lee, Chao-Kai Wen, Pang-An Ting, Jiunn-Tsair Chen

Statistical Characterization of Eigen Channels in Time-varying Rayleigh Flat Fading MIMO Systems
Shuangquan Wang, Ali Abdi

A Lattice-reduction-aided Soft Detector for Multiple-input Multiple-output Channels
David L. Milliner, John R. Barry

On the Capacity Achieving Transmit Covariance Matrices of MIMO Correlated Rician Channels: A Large System Approach
Julien Dumont, Philippe Loubaton, Samson Lasaulce

Capacity of MIMO Systems in the Presence of Interference
Marco Chiani, Moe Z. Win, Hyundong Shin

CTH-10: Space-Time Coding

Optimization of Coding Gain for Full Response CPM Space-Time Codes
Alenk G. Zajić, Gordon L. Stüber
On Orthogonal Space–Time Block Codes and Packings on the Grassmann Manifold ........................................ 693
C. Pietsch, J. Lindner

Scalable Design of Space–Time Trellis Code with Low Decoding Complexity ........................................ 698
Kyungmin Kim, Hamid R. Sadjadpour, Rick S. Blum, Yong H. Lee

High-rate Double-symbol-decodable STBCs from Clifford Algebras ...................................................... 703
Sanjay Karmakar, B. Sundar Rajan

Space–Time Codes from Permutation Codes ................................................................. 708
Oliver Henkel

Diagonal Block Space–Time Code Design for Continuous-phase Modulation ........................................ 714
A.-M. Silvester, L. Lampe, R. Schober

CTH-11: MIMO Systems III

Queuing Aspects of Multi-antenna Multiple Access Channels .............................................................. 720
Sriram N. Kizhakkomadam, Dinesh Rajan

Distributed Multi-cell Zero-forcing Beamforming in Cellular Downlink Channels ...................................... 725
Oren Somekh, Osvaldo Simeone, Yeheskel Bar-Ness, Alexander M. Haimovich

Spectral Outage due to Aggregate Interference in a Poisson Field of Nodes ........................................ 731
Pedro C. Pinto, Moe Z. Win

On Lowering the Error Floor of High Order Turbo BICM Schemes over Fading Channels ...................... 737
Charbel Abdel Nour, Catherine Douillard

New Lower Bounds for Noncoherent Channel Estimation and ML Performance ..................................... 742
Daniel J. Ryan, I. Vaughan L. Clarkson, Iain B. Collings

Performance Analysis of Frame Synchronization for Non-uniformly Distributed Data Symbols ............. 747
Marco Chiani, Maria G. Martini

CTH-12: Detection and Coded Modulation I

Efficient Calculation of BER for Arbitrary Modulation and Signaling in Fading Channels ...................... 752
Leszek Szczecinski, Hong Xu, Xin Gao, Rolando Bettancourt

Space–Time Trellis Codes over Independent, Non-identically Distributed, Rapid, Rayleigh Fading Channels with Channel Estimation ........................................ 758
Yan Li, Pooi Yuen Kam

Gaussian Chip Waveform Together with Markovian Spreading Codes Improve BER Performance in Chip-asynchronous CDMA Systems ..................................................... 763
Yutaka Jitsumatsu, M. Tahir Abbas Khan, Tohru Kohda

Reduced Complexity Iterative Multiuser Detector for IDMA (Interleave-Division Multiple Access) System ............................................................. 768
Irène M. Mahafeno, Charlotte Langlais, Christophe Jégot

Acquisition Performance Comparison of Transmitted-reference and Coherent UWB Receivers .......... 773
Ning He, Cihan Tepedelenlioglu

Analysis Techniques for Coded Modulation-based Cooperation Protocols ......................................... 778
S. Nagaraj, M. Bell

xxix
CTH-13: Cooperative Networks I

Design of Multiplexed Coding for User Cooperation .................................................. 783
Guosen Yue, Xiaodong Wang, Mohammad Madihian

Relay Channel with Private Messages ................................................................. 788
Ramy Tannious, Aria Nosratinia

Symmetric Rate Capacity of Cellular Systems with Cooperative Base Stations .............. 793
Yifan Liang, Andrea Goldsmith

Link-adaptive Distributed Coding for Multi-source Cooperation .................................. 798
Alfonso Cano, Tairan Wang, Alejandro Ribeiro, Georgios B. Giannakis

Coverage Spectral Efficiency of Cellular Systems with Cooperative Base Stations ....... 803
Yifan Liang, Taesang Yoo, Andrea Goldsmith

Distributive High-rate Space-frequency Codes Achieving Full Cooperative and Multipath Diversities for Asynchronous Cooperative Communications ........................................... 808
Yabo Li, Wei Zhang, Xiang-Gen Xia

CTH-14: Detection and Coded Modulation II

On the Integrated Cross-noise Component in Correlation Receivers ............................. 813
S. Niranjayan, N. C. Beaulieu

Analytical Method for Approximate Performance Evaluation of BICM with Iterative Demapping ................................................................. 819
Rolando Bettancourt, Leszek Szczecinski, Rodolfo Feick

Probability Density Function of Reliability Metrics in BICM with Arbitrary Modulation: Closed-form through Algorithmic Approach ........................................... 825
Leszek Szczecinski, Rolando Bettancourt, Rodolfo Feick

Pilot-assisted Communication over ISI Channels Based on the Belief Propagation Algorithm ................................................................. 831
Emre Aktas

Probability Density Functions of Logarithmic Likelihood Ratios in Phase Shift Keying BICM ................................................................. 836
Leszek Szczeciński, Mustapha Benjillali

Error Correction Using a Message-passing Decoder to Process Cyclic Redundancy Checks ................................................................. 842
Quentin H. Spencer

CTH-15: Cooperative Networks II

Linear Coherent Decentralized Estimation ............................................................. 847
Jinjun Xiao, Shuguang Cui, Zhi-Quan Luo, Andrea Goldsmith

Analysis of Clock Offset and Skew Estimation in Timing-sync Protocol for Sensor Networks ................................................................. 852
Kyoung-Lae Noh, Qasim Chaudhari, Erchin Serpedin, Bruce Suter

Performance of Distributed Space-Time Cooperative Schemes for Underwater Acoustic Communications ................................................................. 857
Madhavan Vajapeyam, Urbashi Mitra

Multiple Frequency Offset Compensation in Cooperative Wireless Systems .............. 862
Daniele Veronesi, Dennis L. Goeckel

Rate Adaptation for Cooperative Systems ........................................................... 867
Zinan Lin, Elza Erkip, Monisha Ghosh

xxx
Efficient ABER Analysis of Bandlimited Cooperative Communication under Time Synchronization Errors
Ramesh Chembil Palat, A. Annamalai, Jeffrey H. Reed

CTH-16: Fading Channel
Unified Asymptotic Analysis of Linearly Modulated Signals in Fading and Noise
A. Nasri, R. Schober, Y. Ma
Linear Joint Source-channel Coding for Gaussian Sources through Fading Channels
Jin-Jun Xiao, Zhi-Quan Luo, Nihar Jindal
Optimum Detection of Binary Signals in Rayleigh Fading Channels with Imperfect Channel Estimates
Amir Ali Basri, Teng Joon Lim
Accurate Simulation of Piecewise Continuous Arbitrary Nakagami-m Phasor Processes
Giuseppe Thadeu Freitas de Abreu
On Selecting the Number of Receiver Diversity Antennas in Ricean Fading Cochannel Interference
Norman C. Beaulieu, Xiaodi Zhang
Adaptive Coding and Modulation for Hybrid ARQ Systems over Partially Observable Nakagami-m Fading Channels
Ashok K. Karmokar, Vijay K. Bhargava

CTH-17: Cooperative Networks III
Using Orthogonal and Quasi-orthogonal Designs in Wireless Relay Networks
Yindi Jing, Hamid Jafarkhani
Energy-efficient Cooperative Relaying over Fading Channels with Simple Relay Selection
Ritesh Madan, Neelesh B. Mehta, Andreas F. Molisch, Jin Zhang
High Performance Static and Dynamic Cooperative Communication Protocols for the Half Duplex Fading Relay Channel
Narayan Prasad, Mahesh K. Varanasi
Outage Performance of Cognitive Wireless Relay Networks
Kyoungwan Kyoungwan, Aylin Yener
Multiple Relay Channels with Asymmetric Transmit Side Information
Harsh Shah, Aria Nosratinia
A Broadcasting Relay for Orthogonal Multiuser Channels
Ali Tajer, Aria Nosratinia

Internet Services and Enabling Technologies Symposium

ISE-01: Network Service Design and Deployment
An Overlay Server System (OSS) Platform for Multiplayer Online Games over Mobile Networks
Ulaş C. Kozat, Youngjune Gwon, Ravi Jain
J2EE-based Middleware for Low Latency Service Enabling Platforms
Bruno Van Den Bossche, Filip De Turck, Bart Dhoedt, Piet Demeester, Gerard Maas, Johan Moreels, Bert Van Vlerken, Thierry Pollet
FEAT: Improving Accuracy in End-to-End Available Bandwidth Measurement
Qiang Wang, Liang Cheng
Deployment Time Performance Optimization of Internet Services ................................................................. 958
SangJeong Lee, Kang-Won Lee, Kyung Dong Ryu, Jong-Deok Choi, Dinesh Verma

Design and Evaluation of a Network Distance-based Planning Service ....................................................... 964
Sanghwan Lee, Sambit Sahu, Debanjan Saha

ISE-02: Peer-to-Peer Services and Technologies

A Proactive Scheme for QoS Enhanced Alternate Path Discovery in a Super-peer Architecture ..................... 969
Thierry Rakotoarivelo, Patrick Senac, Aruna Seneviratne, Michel Diaz

Dynamic Search Algorithm in Unstructured Peer-to-Peer Networks ............................................................ 975
Po-Chiang Lin, Tsung-Nan Lin, Hsinping Wang

TSR: Temporal Subspace Routing for Peer-to-Peer Data Sharing .............................................................. 980
Sasu Tarkoma

L2VPN over Chord: Hosting Millions of Small Zeroconf Networks over DHT Nodes ...................................... 986
Ayumu Kubota, Akira Yamada, Yutaka Miyake

Analysis of Large Scale Hybrid Peer-to-Peer Network Topology ................................................................. 991
Chao Xie, Yi Pan

Analysis of Peer-to-Peer SIP in a Distributed Mobile Middleware System .................................................... 996
Erkki Harjula, Jussi Ala-Kurikka, Douglas Howie, Mika Ylianttila

Author Index

Volume 3

NET-p1: Topics in Networking and Services (Poster)

Dude, Where's My Peer? ................................................................................................................................. 1003
Anirban Banerjee, Abhishek Mitra, Michalis Faloutsos

Evaluation of Dynamic Query Abolishment Methods in Heterogeneous Networks ........................................ 1008
Elena Meshkova, Janne Riihijärvi, Petri Mähönen

A Secure and Energy Efficient Scheme for Wireless VoIP Emergency Service ............................................ 1014
Robert A. Malaney

ISE-03: Service-enabling Protocols and Extensions

A New Framework for Indicating Terminal Capabilities in the IP Multimedia Subsystem ............................... 1020
Bassam El Saghir, Noel Crespi

SPam over Internet Telephony (SPIT) Prevention Framework ...................................................................... 1026
Roman Schlegel, Saverio Niccolini, Sandra Tartarelli, Marcus Brunner

Towards Stateless Core: Improving SIP Proxy Scalability ............................................................................. 1032
Mauricio Cortes, Jairo O. Esteban, Hyewon Jun

Passive Duplicate Address Detection for the Dynamic Host Configuration Protocol (DHCP) ...................... 1038
Sangho Sangho, Andrea G. Forte, Henning Schulzrinne

Toposemantic Network Clustering .............................................................................................................. 1043
Leonid B. Poutievski, Kenneth L. Calvert, James N. Griffioen

An Intersection-based Multipath Routing Scheme ......................................................................................... 1049
L. Wang, J. Griffioen, K. Calvert