PT09.3 A Cost-Effective Traffic Aggregation Scheme in All-Optical Networks
Nizar Bouabdallah and Harry Perros, North Carolina State University, USA
Guy Pujolle, University of Paris , France
PT09.4 Rollout Algorithms for Logical Topology Design and Traffic Grooming in Multihop WDM Networks
Kwangil Lee, University of Texas, USA, Mark A. Shayman, University of Maryland, USA
PT09.5 Analysis of IP Grooming Approaches in Optical WDM Mesh Networks
Ramakrishna Shenai and Krishna Sivalingam, University of Maryland, USA

Signal Processing for Communcation Symposium

Chair: Jerome Knopp, University of Missouri-Kansas City, USA
Vice Chair: Jing Tiffany Li, Lehigh University, USA

SP01   Equalization
Tuesday, 29 November 2005 • 10:30AM–12:15PM
Room: Landmark 1/Level One/Renaissance Grand Hotel
Session Chair: **Balaji Raghothaman**, Nokia Research Center

SP01.1 Near Minimum Bit-Error Rate Equalizer Adaptation for PRML Systems
J. Riani,S. van Beneden and J. W. M. Bergmans, Eindhoven University of Technology, The Netherlands, A. Immink, Philips Research Laboratories, The Netherlands
SP01.2 Performance of Single-Carrier Block Transmissions over Multipath Fading Channels with MMSE Equalization
Shuichi Ohno and Kok Ann Donny Teo, Hiroshima University, Japan
SP01.3 A Comparison of QAM and CAP Equalizers for VDSL
Lee M. Garth and Fan Li, University of Canterbury, New Zealand
SP01.4 A Hybrid Variable Step-Size Adaptive Blind Equalization Algorithm for QAM Signals
Kun-Chien Hung and David W. Lin, National Chiao Tung University, ROC
SP01.5 Tagging-Filter -based Blind MIMO Equalization without Signal Permutation
James Okello and Masao Ikekawa, NEC Corporation, Japan

SP02   Multimedia Systems
Tuesday, 29 November 2005 • 2:00–3:45PM
Room: Landmark 1/Level One/Renaissance Grand Hotel
Session Chair: **Joseph O'Sullivan**, Washington University at St. Louis, USA

SP02.1 Low-Complexity Multi-Head Detection for Multi-Track Partial Response and Two-Dimensional Recording Channels
Edward K. S. Au and Wai Ho Mow, The Hong Kong University of Science and Technology, Hong Kong
SP02.2 Performance Comparison of Layered Coding and Multiple Description Coding in Packet Networks
Yugang Zhou and Wai-Yip Chan, Queen's University, Canada
SP02.3 Data Embedding in μ-law Speech with Spread Spectrum Techniques
Libo Zhang and Heping Ding, National Research Council, Canada
Sridhar Krishnan, Ryerson University, Canada
SP02.4 Joint Power Allocation and Rate Control for Real-Time Video Transmission over Wireless Systems
Dongdong Li, University of Texas at Arlington, USA
Yu Sun and Zhidan Feng, University of Arkansas at Little Rock, USA

SP03   Signal Processing Session
Tuesday, 29 November 2005 • 2:00–5:00PM
Room: Majestic C/Level Two/Renaissance Grand Hotel
Session Chair: N/A

SP03.01 Peak to Average Power Ratio Reduction in Multi-band Transmitters—Analysis, Design, and FPGA Implementation
Navid Lashkarian, Helen Tarn and Chris Dick, Xilinx Inc., USA
SP03.02 Generalization of Single-Carrier and Multicarrier Cyclic Prefixed Communication
Lei Feng and Won Namgoong, University of Southern California, USA
SP03.03 A Vector-Hydrophone's Minimal Composition for Finite Estimation-Variance in Direction-Finding near a Rigid Reflecting Boundary
Javad Ahmadi-Shokouh and Hengameh Keshavarz, University of Waterloo, Canada
SP03.04 Power Spectrum Estimation with Low Rank Beamforming
Ernesto Santos and Michael Zoltowski, Purdue University, USA
SP03.05 Fading and Interference Mitigation Using a Greedy Approach
Oghenekome Oteri,and Arogyaswami Paulraj, Stanford University, USA
SP03.06 Optimized Software Implementation of Full-Rate IEEE 802.11a Compliant Digital Baseband Transmitter on a Digital Signal Processor
Yiyan Tang, Lie Qian and Yuke Wang, University of Texas at Dallas, USA
SP03.07 A Soft Detection Directed Phase Estimator Suited to Satellite Burst Transmissions
M. Dervin and M. L. Boucheret, ENSEEIHT–IRIT, France
G. Mesnager and A. Ducasse, Alcatel Space, France
SP03.08 On the Outage Capacity of MIMO Multihop Networks
Yijia Fan and John S. Thompson, The University of Edinburgh, UK
SP03.09 Robust Timing Synchronization for Uplink Multi-Carrier Spread-Spectrum Systems
Hou-Shin Chen, Rutgers University, USA, Yumin Lee, National Taiwan University, Taiwan, David G. Daut, Rutgers University, USA
SP03.10 A Precoded Multiuser OFDM (PMU-OFDM) Transceiver for Time Asynchronous Systems
Shang-Ho Tsai, University of Southern California, USA, Yuan-Pei Lin, National Chiao Tung University, Taiwan, C.-C. Jay Kuo, University of Southern California, USA

SP04   Channel Estimation
Tuesday, 29 November 2005 • 4:00–5:45PM
Room: Landmark 1/Level One/Renaissance Grand Hotel
Session Chair: **Navid Lashkarian**, Xilinx Inc.

SP04.1 A Low Complexity, Fixed Point Channel Estimator for 802.11a Transceivers
Markos G. Troulis, Intel Corp. and University of Crete, Greece
SP04.2 Joint Iterative Multiuser Detection and Channel Estimation for Differentially Coded Asynchronous CDMA Systems
Shahram Talakoub and Behnam Shahrrava, University of Windsor, Canada
SP04.3 Superimposed Pilot Symbols for Channel Estimation in OFDM Systems
Tao Cui, Chintha Tellambura, University of Alberta, Canada
SP04.4 Low-Complexity Code-Aided Estimation Techniques for Multi-User DS-CDMA Systems
M. Guenach, F. Simoens, H. Wymeersch and M. Moeneclaey, Ghent University, Belgium
SP04.5 MIMO Frequency Selective Channel Estimation Using Aperiodic Complementary Sets of Sequences
Shuangquan Wang and Ali Abdi, New Jersey Institute of Technology, USA

SP05 Signal Processing for OFDM Systems
Wednesday, 30 November 2005 • 10:30AM–12:15PM
Room: Landmark 1/Level One/Renaissance Grand Hotel
Session Chair: **Nallanathan Arumugam**, National University of Singapore, Singapore

SP05.1 Near-Optimal Training Sequences for MIMO OFDM Systems with Nulled Subcarriers
Magnus Sandell and Justin Coon, Toshiba Research Europe Ltd., UK
SP05.2 A Pilot-Aided Non-Resampling Sequential Monte Carlo Detector for Coded MIMO-OFDM Systems
Thomas S. John, A. Nallanathan and Marc A. Armand, National University of Singapore, Singapore
SP05.3 Joint Channel Estimation and Prediction for OFDM Systems
Ian C. Wong and Brian L. Evans, The University of Texas at Austin, USA
SP05.4 Optimal Pilot Sequence Design for Multiple-Input Multiple-Output OFDM Systems
Die Hu, Luxi Yang and Lianghua He, Southeast University, China
Yuhui Shi, Electronic Data System Corporation, USA
SP05.5 Iterative Channel Estimation and Signal Detection in Clipped OFDM
Bingyang Wu and Shixin Cheng, Southeast University, China,
Haifeng Wang, Nokia, Finland

SP06 Signal Processing for CDMA Systems
Wednesday, 30 November 2005 • 10:30AM–12:15PM
Room: Complex 226/Level Two/America's Center
Session Chair: **Chen Ming**, Southeast University, China

SP06.1 Set-Theoretic DS/CDMA Receivers for Fading Channels by Adaptive Projected Subgradient Method
Renato L. G. Cavalcante, Masahiro Yukawa and Isao Yamada, Tokyo Institute of Technology, Japan
SP06.2 Throughput Efficient Block-Spreading CDMA: Sequence Design and Performance Comparison
Stefano Tomasin, University of Padova, Italy, Filippo Tosato, Philips Research Laboratories, UK
SP06.3 Displacement MIMO Kalman Equalizer for CDMA Downlink in Fast Fading Channels
Yuanbin Guo, Jianzhong Zhang and Dennis McCain, Nokia Research Center, USA, Joseph R. Cavallaro, Rice University, USA
SP06.4 Minimum BER FIR Receiver Filters for DS-CDMA Systems
Are Hjørungnes, University of Oslo, Norway, Mérouane Debbah, Eurécom Institute, France
SP06.5 Performance Analysis of Space–Time Coded Block Spread Systems for CDMA Downlink
Surya Dharma Tio, A.S. Madhukumar and A.B. Premkumar, Nanyang Technological University, Singapore
Zhongding Lei, Institute for Infocomm Research, Singapore

SP07 Communication Signal Processing I
Wednesday, 30 November 2005 • 2:00–3:45PM
Room: Landmark 1/Level One/Renaissance Grand Hotel
Session Chair: **David G. Daut**, Rutgers University, USA

SP07.1 QR-Decomposition-based Linear and Decision-Feedback Detections for D-STTD Systems over Time-Selective Fading Channels
Hoojin Lee and Edward J. Powers, The University of Texas at Austin, USA
SP07.2 Joint Time and Phase Recovery for CPM and Its Asymptotic Behavior
Qing Zhao and Gordon L. Stüber, Georgia Institute of Technology, USA
SP07.3 DOA Estimation for Coherent Sources with Spatial Smoothing without Eigendecomposition under Unknown Noise Field
Nizar Tayem and Hyuck M. Kwon, Wichita State University, USA
Yong Hoon Lee, KAIST, Korea

SP07.4 A Bayesian Estimator for Correlation Parameters of the Multivariate Nakagami-m Distribution
Mingxin Zhou, Hao Zhang and Yingning Peng, Tsinghua University, PR China
SP07.5 Optimal Rotations for Quasi-Orthogonal STBC with Two-Dimensional Constellations
Dũng Ngoc Đào and Chintha Tellambura, University of Alberta, Canada

SP08 Signal Processing for MIMO Systems
Wednesday, 30 November 2005 • 4:00–5:45PM
Room: Landmark 1/Level One/Renaissance Grand Hotel
Session Chair: **Brian Evans**, The University of Texas at Austin, USA

SP08.1 Signal Detection with Time Delay Estimation for Quasi-Synchronous MIMO Systems on Multipath Channels
Shaodan Ma, The University of Hong Kong, PR China, Yonghong Zeng, Institute for Infocomm Research, Singapore, Tung Sang Ng, The University of Hong Kong, PR China
SP08.2 Low Complexity Adaptation of MIMO MMSE Receivers, Implementation Aspects
Leszek Szczeciski, INRS-EMT, Canada, Daniel Massicotte, UQTR, Canada
SP08.3 Information Waveform Manifold Based Preprocessing for Nonlinear Multichannel Modulation in MIMO Channel
an Sykora, Czech Technical University in Prague, Czech Republic
SP08.4 A Simple Test for Multistage MIMO Detection
Arnaud Santraine and Patrick Duvaut, Conexant Systems Inc.
SP08.5 Throughput Maximization Transmission Control Scheme Using Channel Prediction for MIMO Systems
Yoshikazu Takei, Tokyo University of Science, Japan
Tomoaki Ohtsuki, Keio University, Japan

SP09 Communication Signal Processing II
Thursday, 1 December 2005 • 10:30AM–12:15PM
Room: Complex 226/Level Two/America's Center
Session Chair: **Georgios B. Giannakis**, University of Minnesota, USA

SP09.1 Joint Detection for a Random Permutations-based Spread-Spectrum System over Frequency Selective Time-Varying Channels
Martial Coulon and Daniel Roviras, IRIT-TSA, France
SP09.2 Computational Complexities of Sphere Decoding According to Initial Radius Selection Schemes and an Efficient Initial Radius Reduction Scheme
Hee Goo Han and Seong Keun Oh, Ajou University, Korea, Seung Joon Lee and Dong Seung Kwon, Electronics and Telecommunication Research Institute, Korea
SP09.3 Generalized Iterative Spectrum Balancing and Grouped Vectoring for Maximal Throughput of Digital Subscriber Lines
Amir R. Forouzan and Lee M. Garth, University of Canterbury, New Zealand
SP09.4 Analysis of Kalman Filter in Timing Acquisition in Data Storage Read Channels
Jin Xie, Lingyan Sun and B. V. K. Vijaya Kumar, Carnegie Mellon University, USA
SP09.5 Computationally Efficient Cancellation of Partially-overlapped Crosstalk in Digital Subscriber Lines
Minho Cheong, ETRI, Korea, Yong-Hwan Lee, Seoul National University, Korea, Hyeong Jun Park, ETRI, Korea

SP10   Signal Processing and Coding
Thursday, 1 December 2005 • 10:30AM–12:15PM
Room: Landmark 1/Level One/Renaissance Grand Hotel
Session Chair: **Jing Tiffany Li**, Lehigh University, USA

SP10.1   Design of Minimium-Error-Rate Lattice (Space–Time) Codes via Stochastic Optimization and Gradient Estimation
Inaki Berenguer, University of Cambridge, UK, Xiaodong Wang, Columbia University, USA, Narayan Prasad, NEC Laboratories America, USA, Jibing Wang, Qualcomm, USA, Mohammad Madihian, NEC Laboratories America, USA

SP10.2   Tomlinson-Harashima Precoding: A Continuous Transition from Complete to Statistical Channel Knowledge
Frank A. Dietrich, Peter Breun and Wolfgang Utschick, Munich University of Technology, Germany

SP10.3   Enhancing the Robustness of Distributed Compression Using Ideas from Channel Coding
Peiyu Tan and Jing Li, Lehigh University, USA

SP10.4   Low Latency Joint Source-Channel Coding Using Overcomplete Expansions and Residual Source Redundancy
Jörg Kliewer, University of Notre Dame, USA, Alfred Mertins, University of Oldenburg, Germany

SP10.5   Optimal Overlapped Message Passing Decoding for Quasi-Cyclic Low-Density Parity-Check Codes
Yongmei Dai and Zhiyuan Yan, Lehigh University, USA

SP11   Signal Processing Algorithms
Thursday, 1 December 2005 • 2:00–3:45PM
Room: Landmark 1/Level One/Renaissance Grand Hotel
Session Chair: **Ananthram Swami**, Army Research Laboratory, USA

SP11.1   New Blind Beamforming Algorithm Using Joint Multiple Matrix Diagonalization
Hsiao-Chun Wu and Xiaozhou Huang, Louisiana State University, USA

SP11.2   Joint MIMO Channel Tracking and Symbol Detection with EM Algorithm and Soft Decoding
Fu-Hsuan Chiu, University of Southern California, USA
Sau-Hsuan Wu, National Chiao-Tung University, Taiwan
C.-C. Jay Kuo, University of Southern California, USA

SP11.3   Performance Analysis of Directional Beacon based Position Location Algorithm for UWB Systems
S. F. A. Shah and A. H. Tewfik, University of Minnesota, USA

SP11.4   Blind Nonlinear Channel Equalization Based on Efficient Subspace Algorithms
Dayong Zhou and Victor DeBrunner, University of Oklahoma, USA

SP12   Signal Processing for Wireless Systems
Thursday, 1 December 2005 • 4:00–5:45PM
Room: Landmark 1/Level One/Renaissance Grand Hotel
Session Chair: **Murat Uysal**, University of Waterloo, Canada

SP12.1   Parallel Distributed Detection for Wireless Sensor Networks: Performance Analysis and Design
Israfil Bahceci, Ghassan Al-Regib and Yucel Altunbasak, Georgia Institute of Technology, USA

SP12.2   Transmission Distortion Modeling for Wireless Video Communication
Janak U. Dani and Zhihai He, University of Missouri, USA
Xiong Hongkai, Shanghai Jiaotong University, PR China

SP12.3   Implementation of an Efficient Two-Step SOVA Turbo Decoder for Wireless Communication Systems
J. H. Han, A. T. Erdogan and T. Arslan, University of Edinburgh, UK

SP12.4   Multiple Access Performance of Direct Sequence Ultra Wideband Communications with Diversity Reception
S. S. Tan and A. Nallanathan, National University of Singapore, Singapore
B. Kannan, Institute for Infocomm Research, Singapore

SP12.5   Demodulation with Dirty Templates for UWB Impulse Radios
Shahrokh Farahmand, Xiliang Luo and Georgios B. Giannakis, University of Minnesota, USA

Wireless Communication Symposium

Chair: **Abbas Jamalipour**, University of Syndey, Australia
Vice Chairs: **Nirwan Ansari**, New Jersey Institute Of Technology, USA, **Chengshan Xiao**, University of Missouri-Columbia, USA, and **Mostofa Howlader**, University of Tennessee, USA

WC01   Wireless Communications Session -I
Tuesday, 29 November 2005 • 9:00AM–12:00PM
Room: Majestic C/Level Two/Renaissance Grand Hotel
Session Chair: N/A

WC01.01   On the Reliability and Utilization Enhancement for Local Repair in On-Demand Ad hoc Networks
Ben-Jye Chang, Chaoyang, Yan-Min Lin and Shou-Chi Liang, Chaoyang University of Technology, ROC

WC01.02   Call-Level and Packet-Level Performance Modeling in Cellular CDMA Networks
Dusit Niyato and Ekram Hossain, University of Manitoba, Canada

WC01.03   Connection Admission Control Algorithms for OFDMA Wireless Networks
Dusit Niyato and Ekram Hossain, University of Manitoba, Canada

WC01.04   Analysis of the Outage Probability for Spatially Correlated MIMO Channels with Receive Antenna Selection
Hao Shen and Ali Ghrayeb, Concordia University, Canada

WC01.05   Reactive Cognitive Radio Algorithms for Co-Existence between IEEE 802.11b and 802.16a Networks
Xiangpeng Jing, Siun-Chuon Mau and D. Raychaudhuri, Rutgers University, USA, Robert Matyas, Nortel, Canada

WC01.06   Energy Efficient Information Collection with the ARIMA Model in Wireless Sensor Networks
Chong Liu, Kui Wu and Min Tsao, University of Victoria, Canada

WC01.07   Delay Statistics for Selective Repeat ARQ Protocol in Multi-rate Wireless Networks with Non-instantaneous Feedback
Long B. Le and Ekram Hossain, University of Manitoba, Canada

WC01.08   Using Cooperative Multiple Paths to Reduce File Download Latency in Cellular Data Networks
Danyu Zhu, Microsoft Corporation, USA, Matt W. Mutka and Zhiwei Cen, Michigan State University, USA

WC01.09   A New Cell Structure for Distributed Wireless Communication System without Inter-cell Interference
Jianjun Li and Hojin Kim, Samsung Advanced Institute of Technology, Korea, Sungjin Kimand and Kwang Bok Lee, Seoul National University, Korea

WC01.10   Link-Adaptive Largest-Weighted Throughput Packet Scheduling for Real-Time Traffics in Wireless OFDM Networks
Ying Jun Zhang, and Soung Chang Liew, The Chinese University of Hong Kong, Hong Kong

WC01.11   MSDU-based ARQ Scheme for IP-Level Performance Maximization
Youngkyu Choi and Sunghyun Choi, Seoul National University, Korea
Seokhyun Yoon, Dankook University, Korea

WC01.12   Accurate Evaluation of Packet Error Probabilities Considering Bit-to-Bit Error Dependence
Khairi Ashour Hamdi, The University of Manchester, UK, László Pap, Budapest University of Technology and Economics, Hungary, Emad Alsusa, The University of Manchester, UK

WC01.13   Agility Improvement through Cooperative Diversity in Cognitive Radio
Ghurumuruhan Ganesan and Ye Li, Georgia Institute of Technology, USA