

CN07.5 Defending against Packet Injection Attacks in Unreliable Ad hoc Networks
 Qijun Gu, Texas State University, USA, Peng Liu, Sencun Zhu and Chao-Hsien Chu, Pennsylvania State University, USA

CN08 Computer & Network Security VII

Thursday, 1 December 2005 • 2:00–3:45PM
 Room: Complex 225/Level Two/America's Center
 Session Chair: **Yang Xiao**, University of Memphis, USA

CN08.1 Space-Time Encoding Scheme for DDoS Attack Traceback
 M. Muthuprasanna and G. Manimaran, Iowa State University, USA
CN08.2 End-to-End Pairwise Key Establishment using Multi-path in Wireless Sensor Network
 Hui Ling and Taieb Znati, University of Pittsburgh, USA
CN08.3 Analysis and Design of Distributed Hierarchical Access Control for Multimedia Networks
 Ruidong Li and Jie Li, University of Tsukuba, Japan
 Hsiao-Hwa Chen, National Sun Yat-Sen University, Taiwan
CN08.4 An Agent-based Trust and Reputation Management Scheme for Wireless Sensor Networks
 Azzedine Boukerche and Xu Li, University of Ottawa, Canada
CN08.5 Trust Modeling and Evaluation in Ad hoc Networks
 Yan Sun, University of Rhode Island, USA
 Wei Yu, Zhu Han and K. J. Ray Liu, University of Maryland, USA

Photonic Technologies for Communication Symposium

Chair: **Ioannis Tomkos**, Athens Information Technology Center, Greece
 Vice Chair: **Jason Jue**, University of Texas at Dallas, USA

PT01 Survivability & Reliability I

Tuesday, 29 November 2005 • 10:30AM–12:15PM
 Room: Portland/Benton/Mezzanine Level/Renaissance Grand Hotel
 Session Chair: **Arun K. Somani**, Iowa State University, USA

PT01.1 A p-cycle -based Survivable Design for Dynamic Traffic in WDM Networks
 Wensheng He, Jing Fang and Arun K. Somani, Iowa State University, USA
PT01.2 Survivable Waveband Switching in WDM Mesh Networks under Dedicated Path Protection
 Mengke Li, and Byrav Ramamurthy, University of Nebraska-Lincoln, USA
PT01.3 A Disjoint Path Selection Scheme Based on Enhanced Shared Risk Link Group Management for Multi-reliability Service
 Takashi Miyamura, Takashi Kurimoto, Akira Misawa and Shigeo Urushidani, NTT Corporation, USA
PT01.4 Logical Topology Augmentation for Survivable Mapping in IP-over-WDM Networks
 Chang Liu and Lu Ruan, Iowa State University, USA
PT01.5 Reliability and Recovery Time Differentiated Routing in WDM Optical Networks
 Peng Ma, NUS, Singapore, Luying Zhou, Institute for Infocomm Research, Singapore, Gurusamy Mohan, NUS, Singapore

PT02 Survivability & Reliability II

Tuesday, 29 November 2005 • 2:00–3:45PM
 Room: Portland/Benton/Mezzanine Level/Renaissance Grand Hotel
 Session Chair: **Byrav Ramamurthy**, University of Nebraska-Lincoln, USA

PT02.1 Failure-Aware Idle Protection Capacity Reuse
 A. Giorgetti, N. Andriolli, L. Valcarengi and P. Castoldi, Scuola Superiore Sant'Anna di Studi Universitari e di Perfezionamento, Italy

PT02.2 On Survivable Service Provisioning in WDM Optical Networks under a Scheduled Traffic Model
 Tianjian Li, Bin Wang and Chunsheng Xin, Wright State University, USA
 Xinhui Zhang, Norfolk State University, USA
PT02.3 Two-Layer Parallel Switching: A Practical and Survivable Design for Performance Guaranteed Optical Packet Switches
 Bin Wu, Kwan L. Yeung and Victor O. K. Li, The University of Hong Kong, Hong Kong
PT02.4 Efficient Path Protection using Bi-directional WDM Transmission Technology
 Ji Li and Kwan L. Yeung, The University of Hong Kong, PR China
PT02.5 A Heuristic with Bounded Guarantee to Compute Diverse Paths under Shared Protection in WDM Mesh Networks
 Ajay Todimala and Byrav Ramamurthy, University of Nebraska-Lincoln, USA

PT03 Access & CDMA T13

Tuesday, 29 November 2005 • 2:00–3:45PM
 Room: Complex 225/Level Two/America's Center
 Session Chair: **Ioannis Tomkos**, Athens Information Technology Center, Greece

PT03.1 Statistical Bandwidth Multiplexing in Ethernet Passive Optical Networks
 Xiaofeng Bai, Abdallah Shami and Chadi M. Assi
PT03.2 An Urgency Fair Queuing Scheduling to Support Differentiated Services in EPONs
 Yongqing Zhu, Maode Ma and Tee Hiang Cheng, Nanyang Technological University, Singapore
PT03.3 Design and Analysis of Coordinated Access Schemes for Code-Limited Optical-CDMA Networks
 Fei Xue, S. J. Ben Yoo and Zhi Ding, University of California, Davis, USA
PT03.4 Optical S-ALOHA/CDMA System for Multirate Applications: System Architecture and Performance Evaluation
 Robert Raad and Elie Inaty, University of Balamand, Lebanon, Paul Fortier, Laval University, Canada, Hossam M. H. Shalaby, University of Alexandria, Egypt
PT03.5 A Greedy Algorithm for Deriving Optical Orthogonal Codes using Rejected Delays Reuse
 Tamer Khattab and Hussein Alnuweiri, University of British Columbia, Canada

PT04 Multicasting & Light Trails

Tuesday, 29 November 2005 • 4:00–5:45PM
 Room: Complex 225/Level Two/America's Center
 Session Chair: **Guoliang Xue**, Arizona State University, USA

PT04.1 Bidirectional Light-Trails for Synchronous Communications in WDM Networks
 Dzmityr Kliazovich, and Fabrizio Granelli, University of Trento, Italy
 Hagen Woesner and Imrich Chlamtac, Create-Net, Italy
PT04.2 On Topology-Independent IP Group Aggregation in Multicast Capable Optical Networks
 Yi Zhu, Yaohui Jin, Weiqiang Sun, Wei Guo and Weisheng Hu, Shanghai Jiao Tong University, China
PT04.3 Traffic Grooming in Light Trail Networks
 Yabin Ye, Hagen Woesner, Roberto Grasso, Tao Chen and Imrich Chlamtac, Create-Net, Italy
PT04.4 Dynamic Light Trail Routing and Protection Issues in WDM Optical Network
 Weiwei Zhang, Guoliang Xue, and Jian Tang, Arizona State University, USA
 Krishnaiyan Thulasiraman, University of Oklahoma, USA
PT04.5 Mathematical Formulation of Optical Multicast with Loss-balanced Light-forest
 Oliver Yu and Yuan Cao, University of Illinois at Chicago, USA

TECHNICAL PROGRAM

PT05 OBS/OPS Networks I

Wednesday, 30 November 2005 • 10:30AM–12:15PM
Room: Portland/Benton/Mezzanine Level/Renaissance Grand Hotel
Session Chair: Pin-Han Ho, University of Waterloo, Canada

PT05.1 Integrated Congestion-Control Mechanism in Optical Burst Switching Networks

Sungchang Kim, Information and Communications University, Korea, Biswanath Mukherjee, University of California, Davis, USA, Minhong Kang, Information and Communications University, Korea

PT05.2 Analysis of TCP over Optical Burst-Switched Networks with Burst Retransmission

Qiong Zhang, Arizona State University West, USA
Vinod M. Vokkarane, University of Massachusetts Dartmouth, USA
Yuke Wang and Jason P. Jue, The University of Texas at Dallas, USA

PT05.3 Throughput Analysis of Adaptive Flow Control Protocol for

PT2005.4 A Closed-Loop Rate-based Contention Control for Optical Burst Switched Networks

Farid Farahmand, Central Connecticut State University, USA, Qiong Zhang, Arizona State University West, USA, Jason P. Jue, The University of Texas at Dallas, USA

PT05.5 Optical Flooding Cluster Switching (OFCS)

Anpeng Huang, Pin-Han Ho, Xiaohong Jiang, Minyi Guo and Susumu Horiguchi

PT06 Photonic Technologies Session

Wednesday, 30 November 2005 • 2:00–5:00PM
Room: Majestic C/Level Two/Renaissance Grand Hotel
Session Chair: N/A

PT06.1 A Symbol Decision Scheme to Mitigate Effects of Scintillations and MAIs in Optical Atmospheric PPM-CDMA Systems

Koki Ohba, Tatsuma Hirano, Takaya Miyazawa and Iwao Sasase, Keio University, Japan
PT06.2 Improvement of Parallel Interference Cancellation Technique with Hard Limiter for DS-OCDMA Systems
C. Goursaud, A. Julien-Vergonjanne, Y. Zouine, C. Aupetit-Berthelemot, J. P. Cances and J. M. Dumas, University of Limoges, France

PT06.3 A Novel Method for Increasing the Spectral Efficiency of Optical CDMA

Stefano Galli, Ronald Menendez, Russel Fischer, and Robert J. Runser, Telcordia Technologies, USA, Evgenii Narima and Paul R. Prucnal, Princeton University, USA

PT06.4 2D Optical CDMA Networks using Multi-wavelength Pulse Modulation and Modified Carrier-Hopping Prime Sequence

PT06.5 A Novel Cost-Efficient On-Line Intermediate Waveband-Switching Scheme in WDM Mesh Networks

Ping Wang and Tho Le-Ngoc, McGill University, Canada
Mengke Li, Wang Yao and Byrav Ramamurthy, University of Nebraska-Lincoln, USA

PT06.6 Quality of Service Routing for Service Level Agreement Conformance in Optical Networks

Belkacem Daheb, Institut Supérieur d'Electronique de Paris, France
Guy Pujolle, University of Paris 6, France

PT06.7 Designs of Cell Edge Routers in the Optical Cell Switching (OCS) Network

Shi Jiang and H. Jonathan Chao, Polytechnic University, USA

PT06.8 ARTEMIS: A 40 Gb/s All-Optical Self-Router using Asynchronous Bit and Packet-Level Optical Signal Processing

L. Stampoulidis, E. Kehayas and K. Vyrsokinos, National Technical University of Athens, Greece, K. Christodouloupoulos, University of Patras, Greece, D. Tsiokos, P. Bakopoulos and G. T. Kanellos, National Technical University of Athens, Greece, K. Vlachos and E. A. Varvarigos, University of Patras, Greece, H. Avramopoulos, National Technical University of Athens, Greece

PT07 OBS/OPS Networks II

Wednesday, 30 November 2005 • 2:00–3:45PM
Room: Portland/Benton/Mezzanine Level/Renaissance Grand Hotel
Session Chair: Vinod Vokkarane, University of Massachusetts, Dartmouth, USA

PT07.1 Traffic Scheduling in Non-Blocking Optical Packet Switches with Minimum Delay

Bin Wu and Kwan L. Yeung, The University of Hong Kong, Hong Kong

PT07.2 Performance of Scheduling Algorithms in Optical Packet Switches with Limited-Range Wavelength Converters

V. Eramo, M. Listanti, L. Venuti and M. Tarola, University of Roma "La Sapienza", Italy

PT07.3 An Efficient Adaptive Offset Mechanism to Reduce Burst Losses in OBS Networks

Thomas Coutelen Université de Montréal, Canada
Halima Elbiaze UQAM, Canada

Brigitte Jaumard Université de Montréal, Canada

PT07.4 FEC-based Burst Loss Recovery for Multiple-Bursts Transmission in Optical Burst Switching Networks

Satoshi Arima, Nara Institute of Science and Technology, Japan
Takujii Tachibana, National Institute of Information and Communications Technology, Japan
Shoji Kasahara, Kyoto University, Japan

PT07.5 Performance of AWG-based Optical Nodes with Shared Tunable Wavelength Converters

Achille Pattavina, Marica Rebughini and Antonio Sipone, Politecnico di Milano, Italy

PT08 WDM Optical Networks

Thursday, 1 December 2005 • 10:30AM–12:15PM
Room: Portland/Benton/Mezzanine Level/Renaissance Grand Hotel
Session Chair: Dominic Schupke, Siemens AG, Germany

PT08.1 On the Performance Evaluation of Distributed Dynamic Routing in GMPLS Optical Networks

Qiang Song and Ibrahim Habib, City University of New York, USA
Wesam Alanqar, Sprint, USA

PT08.2 Hierarchically Distributed PCS for GMPLS Multilayered Networks

Hiroshi Matsuura, Naotaka Morita and Tatsuro Murakami, NTT Corporation, Japan, Kazumasa Takami, Soka University, Japan

PT08.3 When is Wavelength Conversion Contributing to Reducing the Blocking Rate ?

Brigitte Jaumard and Christophe Meyer, Université de Montréal, Canada

PT08.4 Topology Design and Resource Dimensioning for Optical Mesh Networks under Demand Uncertainties

Chi Guan and V.W.S. Chan, MIT, USA

PT08.5 Fairness Control in Wavelength-Routed WDM Ring Networks
Kayvan Mosharaf, Ioannis Lambadaris, Jerome Talim and Arash Shokrani, Carleton University, Canada

PT09 Traffic Grooming

Thursday, 1 December 2005 • 2:00–3:45PM
Room: Portland/Benton/Mezzanine Level/Renaissance Grand Hotel
Session Chair: Anna Tzanakaki, AIT, Greece

PT09.1 Traffic Grooming in WDM/SONET BLSR Rings with Multiple Line Speeds

Huan Liu and Fouad A. Tobagi, Stanford University, USA

PT09.2 A Heuristic Logical Topology Design Algorithm for Multi-Hop Dynamic Traffic Grooming in WDM Optical Networks

Chunsheng Xin, Norfolk State University, USA, Bin Wang, Wright State University, USA, Xiaojun Cao, Rochester Institute of Technology, USA, Jikai Li, The College of New Jersey, USA

- 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 Communication 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. Tzoulis, 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, Chintia Tellambura, University of Alberta, Canada
- SP04.4 Low-Complexity Code-Aided Estimation Techniques for Multi-User DS-SS-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