2011 IEEE 12th International Conference on High Performance Switching and Routing

(HPSR 2011)

Cartagena, Spain
4-6 July 2011
## Program

### Monday, July 4

**S1: Packet Processing and Scheduling**

*Space-time tradeoffs in Software-based Deep Packet Inspection*
Anat Bremler-Barr (Interdisciplinary Center Herzliya, Israel); Yotam Harchol (Hebrew University of Jerusalem, Israel); David Hay (The Hebrew University of Jerusalem, Israel)
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*High-Performance Implementation of In-Network Traffic Pacing*
Y. Sinan Hanay (University of Massachusetts, USA); Abhishek Dwaraki (University of Massachusetts, USA); Tilman Wolf (University of Massachusetts, USA)
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*StablePlus: A Practical 100% Throughput Scheduling for Input-Queued Switches*
Yu Xia (Polytechnic Institute of NYU, USA); H. Jonathan Chao (Polytechnic Institute of New York University, USA)
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*NAF Conversion: An Efficient Solution for the Range Matching Problem in Packet Filters*
Nizar Ben Neji (Higher School of Communication of Tunis, Tunisia); Adel Bouhoula (Hight School of Communications of Tunisia, Tunisia)
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**S2: Router and Switch Architecture**

*Implementation of ARP-Path Low Latency Bridges in Linux and OpenFlow/NetFPGA*
Guillermo Ibáñez (Universidad de Alcalá. Escuela Politécnica Superior, Spain); Bart De Schuymer (Art in Algorithms, Belgium); Jad Naous (MIT & Stanford University, USA); Diego Rivera (Universidad de Alcalá, European Union); Elisa Rojas (Universidad de Alcalá (UAH) Madrid, Spain); Juan A. Carral (Universidad de Alcalá. Escuela Politécnica Superior, Spain)
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*Evaluating the Energy-Awareness of Future Internet Devices*
Raffaele Bolla (University of Genoa, Italy); Chiara Lombardo (University of Genoa, Italy); Roberto Bruschi (CNIT, Italy); Diego Suino (Telecom Italia, Italy)
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On the optimum switch radix in fat tree networks
Cyriel Minkenberg (IBM Zurich Research Laboratory, Switzerland); Ronald P. Luijten (IBM Zurich research Laboratory, Switzerland); German Rodriguez (Barcelona Supercomputing Center, Spain)
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FPGA Controller for Rearrangeable Log2(N,0,p) Fabrics with an Even Number of Stages
Marek Michalski (Poznan University of Technology, Poland); Wojciech Kabacinski (Poznan University of Technology, Poland)
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S3: Network Planning, Management and Architecture

High-Performance Routing for Hose-Based VPNs in Multi-Domain Backbone Networks
Xiuzhong Chen (University of California, Davis, USA); Marc De Leenheer (Ghent University & University of California - Davis, Belgium); Chaitanya S. K. Vadrevu (University of California, Davis, USA); Lei Shi (University of California, Davis, USA); Jie Zhang (Beijing University of Posts and Telecommunications, P.R. China); Biswanath Mukherjee (- University of California Davis, USA)
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A GMPLS/OBS Network Architecture Enabling QoS-aware End-to-End Burst Transport
Pedro Pedroso (Universitat Politècnica de Catalunya, Spain); Jordi Perelló (Universitat Politècnica de Catalunya (UPC), Spain); Miroslaw Klinkowski (National Institute of Telecommunications, Poland); Davide Careglio (Universitat Politècnica de Catalunya, Spain); Salvatore Spadaro (Universitat Politècnica de Catalunya (UPC), Spain); Josep Solé-Pareta (Universitat Politècnica de Catalunya (UPC), Spain)
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To Switch On or Off: A Simple Case Study on Energy Efficiency in IP-over-WDM Networks
Marcel Caria (Technische Universitat Carolo-Wilhelmina zu Braunschweig, Germany); Mohit Chamania (Technische Universität Carolo-Wilhelmina zu Braunschweig, Germany); Admela Jukan (Technische Universität Carolo-Wilhelmina zu Braunschweig, Germany)
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Dynamic Anycasting over Wavelength Routed Networks with Lightpath Switching
Bharath Honnenahalli Ramaprasad (University of Massachusetts Dartmouth, USA); Arush G Gadkar (University of Massachusetts, Dartmouth, USA); Vinod M. Vokkarane (University of Massachusetts Dartmouth, USA)
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S4: Network Planning, Management and Architecture

Study of a Hybrid OCDMA-WDM Segmented Ring for Metropolitan Area Networks
Gerson Rodríguez de los Santos (Universidad Carlos III de Madrid, Spain); José Alberto Hernández (Universidad Carlos III de Madrid, Spain); Manuel Urueña (Universidad Carlos III de Madrid, Spain); Isaac Seoane (Universidad Carlos III Madrid, Spain); D. Larrabeiti (Universidad Carlos III de Madrid, Spain)
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RRPD strategies for a T-OBS network architecture
Oscar Pedrola (Universitat Politècnica de Catalunya, Spain); Davide Careglio (Universitat Politècnica de Catalunya, Spain); Mirosław Klinkowski (National Institute of Telecommunications, Poland); Josep Solé-Pareta (Universitat Politècnica de Catalunya (UPC), Spain)
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Multicast Tree Computation in Networks with Multicast Incapable Nodes
Limin Tang (University of Texas at Dallas, USA); Wanjun Huang (University of Texas at Dallas, USA); Miguel Razo (University of Texas at Dallas & Computer Science, USA); Arularasi Sivasankaran (University of Texas at Dallas, USA); Marco Tacca (University of Texas at Dallas, USA); Andrea Fumagalli (UTD, USA)
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Online Lightpath Provisioning and Critical Services: New IA-RWA Algorithms to Assure QoT and Survivability
Davide Adami (CNIT Pisa Research Unit, University of Pisa, Italy); Stefano Giordano (University of Pisa, Italy); Michele Pagano (University of Pisa, Italy); Luiz Gustavo Zuliani (University of Pisa, Italy)
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S5: Router and Switch Architecture

OOK Q-factor Degradation in Scalable Optical Switches
Qing Xu (Laval University & Center for Optics, Photonics and Lasers, Canada); Houman Rastegarfar (University of Toronto, Canada); Youusra Ben M'Sallem (Université Laval, Canada); Sophie LaRochelle (Université Laval, Canada); Alberto Leon-Garcia (University of Toronto, Canada); Leslie Rusch (Laval University, Canada)
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Design and Control of Next Generation Distribution Frames
Davide Cuda (Orange Labs, France); Paolo Giaccone (Politecnico di Torino, Italy); Massimo Montalto (Politecnico di Torino, Italy)
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### Memory-Memory-Memory Clos-Network Packet Switches with In-Sequence Service
Ziqian Dong (New York Institute of Technology & NYIT, USA); Roberto Rojas-Cessa (New Jersey Institute of Technology, USA); Eiji Oki (The University of Electro-Communications, Japan)  
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### An Improved Design of Optical LIFO Buffer with Switched Delay Lines
Xiaoliang Wang (Nanjing University, P.R. China); Xiaohong Jiang (Future University-Hakodate, Japan); Achille Pattavina (Politecnico di Milano, Italy)  
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#### S6: Traffic Engineering

### Beyond RED: Periodic Early Detection for On-Chip Buffer Memories in Network Elements
Andrea Francini (Bell Labs, Alcatel-Lucent, USA)  
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### VAIPA: A Video-Aware Internet Protocol Architecture
Victor Murcia (Universidad Politecnica de Valencia, Spain); Amelia Delgado (Universidad Politecnica de Valencia, Spain); Tito R. Vargas (Universidad Politécnica de Valencia & ITEAM Research Institute, Spain); Juan C. Guerri (Universidad Politecnica Valencia, Spain); Javier Antich (Juniper Networks, USA)  
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### Fuzzy-CAC Driven MPLS-TE Realization
Jans Jeļinskis (Riga Technical University, Latvia); Andris Skrastiņš (Riga Technical University, Latvia); Gunārs Lauks (Riga Technical University, Latvia)  
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### Link Dimensioning for Fractional Brownian Input
Jiongze Chen (City University of Hong Kong, Hong Kong); Ronald G. Addie (University of Southern Queensland, Australia); Moshe Zukerman (City University of Hong Kong, Hong Kong)  
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### Improvement of Maximum Admissible QoS Traffic by Traffic Observations
Taiju Mikoshi (Nihon University, Japan); Toyofumi Takenaka (Nihon University, College of Engineering, Japan); Takayuki Fujiwara (Nippon Telegraph and Telephone Corporation, Japan); Akeo Masuda (NTT, Japan); Kohei Shiomoto (NTT, Japan)  
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S7: Survivability

**Assessing Network Vulnerability Under Probabilistic Region Failure Model**  
Xiaoliang Wang (Nanjing University, P.R. China); Xiaohong Jiang (Future University-Hakodate, Japan); Achille Pattavina (Politecnico di Milano, Italy)  
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**Beyond Connectivity - New Metrics to Evaluate Robustness of Networks**  
Sujogya Banerjee (Arizona State University, USA); Shahrzad Shirazipourazad (Arizona State University, USA); Pavel Ghosh (Arizona State University, USA); Arunabha Sen (ASU, USA)  
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**Two-Step Routing for Dynamic Traffic Protection in WDM Networks with Wavelength Continuity Constraint**  
Minjing Mao (The University of Hong Kong, Hong Kong); Kwan Yeung (University of Hong Kong, Hong Kong)  
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**A Problem Reduction Approach for the Design of Fault-Tolerant Wireless-Optical Access Networks**  
Noelia Correia (University of Algarve, Portugal); Gabriela Schütz (University of Algarve, Portugal)  
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S8: Routing

**SDBGP: A Scalable, Distributed BGP Routing Protocol Implementation**  
Xiaozhe Zhang (National university of defense Technology, P.R. China)  
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**Group-based Two-hop Relay with Redundancy in MANETs**  
Jiajia Liu (Tohoku University, Japan); Xiaohong Jiang (Future University-Hakodate, Japan); Hiroki Nishiyama (Tohoku University, Japan); Nei Kato (Tohoku University, Japan)  
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**Hierarchical Cluster-Based Link State Routing Protocol for Large Self-Organizing Networks**  
Guizani Badreddine (Université de Technologie de Belfort-Montbéliard & Ecole National des Sciences D’Informatique, Tunisia); Béchir Ayeb (Faculté des Sciences de Monastir, Tunisia); Abder Koukam (SeT. Lab., UTBM Belfort France, France)  
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A dynamic on-line path computation algorithm for VNT configuration in GMPLS controlled multi-layer (Ethernet/WSON) network
Anica Bukva (CTTC (Centre Tecnologic de Telecomunicaciones de Catalunya), Spain); Ramon Casellas (Centre Tecnologic de Telecomunicaciones de Catalunya, Spain); Raul Muñoz (CTTC, Spain); Ricardo Martinez (CTTC, Spain)
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S9: Packet Processing and Scheduling

Using Hardware Classification to Improve PC-Based OpenFlow Switching
Voravit Tanyingyong (KTH, Sweden); Markus Hidell (KTH Royal Institute of Technology, Sweden); Peter Sjödin (KTH, Sweden)
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Shift-Based Pattern Matching for Compressed Web Traffic
Anat Bremler-Barr (Interdisciplinary Center Herzliya, Israel); Yaron Koral (Tel Aviv University, Israel); Victor Zigdon (Interdisciplinary Center (IDC), Israel)
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Out-of-Sequence Preventative Cell Dispatching for Multicast Input-Queued Space-Memory-Memory Clos-Network
Hao Yu (Technical University of Denmark, Denmark); Sarah Ruepp (Technical University of Denmark, Denmark); Michael S. Berger (Technical University of Denmark, Denmark)
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S10: Router and Switch Architecture

Design and performance evaluation of a GMPLS-enabled MPLS-TP/PWE3 node with integrated 10Gbps tunable DWDM transponders
Ricard Vilalta (Centre Tecnològic de Telecomunicacions de Catalunya, Spain); Raul Muñoz (CTTC, Spain); Ramon Casellas (Centre Tecnologic de Telecomunicaciones de Catalunya, Spain); Ricardo Martinez (CTTC, Spain)
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Characterization of A Shared Buffer Optoelectronic Packet Router
Shunyuan Ye (Polytechnic Institute of New York University, USA); Marina Thottan (Bell Labs, USA); Jesse Edward Simsarian (Bell Labs, Alcatel-Lucent, USA); Shivendra Panwar (Polytechnic Institute of New York University, USA)
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AWG-based architecture for optical interconnection in asynchronous systems
Diego Lucerna (Politecnico di Milano, Italy); Guido Maier (Politecnico di Milano, Italy); Achille Pattavina (Politecnico di Milano, Italy)
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**Performance of a Software Switch**
Nuutti Varis (Aalto University, Finland); Jukka M J Manner (Aalto University, Finland)
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**Analytical Model of Asynchronous Shared-per-Wavelength Multi-fiber Optical Switch**
Nail Akar (Bilkent University, Turkey); Carla Raffaelli (University of Bologna, Italy); Michele Savi (Norwegian University of Science and Technology, Norway)
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**S11: Packet Processing and Scheduling**

**FPGA Implementation of Lookup Algorithms**
Zoran Chicha (Belgrade University, Serbia); Luka Milinkovic (Belgrade University, Serbia); Aleksandra Smiljanic (Belgrade University, Polytechnic Institute of NYU, Serbia)
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**A New Ranked Hopfield Neural Networks Approach to QoS Parallel Scheduling for WDM Optical Interconnection System**
Po-Lung Tien (National Chiao Tung University, Taiwan); Bo-Yu Ke (National Chiao Tung University, Taiwan)
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**QoS Parallel Incremental Scheduling for Optical Pseudo-Banyan Packet Switching System**
Shih-Hsuan Lin (National Chiao Tung University, Taiwan); Maria C. Yang (National Chiao Tung University, Taiwan)
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