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AH11: Scheduling  
AH12: Cooperative Networking | AH19: Localization (II)  
AH20: Femtocell and Networks  
AH21: Wireless Sensor and Actor Networks (II) |
| 9:45 - 10:45  |                                                     | AH-P1: Mobile Ad Hoc and Sensor Networks (Poster Session)  
AH01: Localization (I)  
AH02: Delay Tolerant Networks (DTN)  
AH03: Cognitive Wireless Networks |                                                     |
| 10:45 - 12:30 | AH-P2: Transmission and Multi-hop Forwarding (Poster Session)  
AH04: Routing (I)  
AH05: Security (I)  
AH06: Clustering | AH-P4: Wireless Network Applications (III) (Poster Session)  
AH13: Medium Access Control (MAC) (I)  
AH14: Resource Allocation  
AH15: Performance Evaluation | AH22: Wireless Mesh Networks  
AH23: Relay and Network Coding  
AH24: Mobile and Vehicular Networks |
| 12:30 - 14:00 |                                                     |                                                        |                                                        |
| 14:00 - 15:45 | AH-P3: Wireless Network Applications (II) (Poster Session)  
AH07: Routing (II)  
AH08: Energy-Efficient Networking Algorithms and Protocols  
AH09: Mobile and Vehicular Ad Hoc Networks | AH16: Wireless Sensor and Actor Networks (I)  
AH17: Medium Access Control (MAC) (II)  
AH26: Algorithms and Protocols for Wireless Networks  
AH27: Wireless Network Applications (I) |
| 15:45 - 16:15 |                                                     |                                                        |                                                        |
| 16:15 - 18:00 |                                                     |                                                        |                                                        |
Tuesday, June 12

10:45 - 12:30

AH-P1: Mobile Ad Hoc and Sensor Networks (Poster Session)

Chair: Wei Yu (Towson University, USA)

10:45 Concrete Synthetic Modeling of Vehicular Networks as Random Geometric Graphs  
Giovanni Di Crescenzo (Telcordia Technologies, USA); Yogesh Reddy Kondareddy (Auburn University, USA); Tao Zhang (Cisco Systems, USA)  
pp. 1-5

11:06 Multicast Capacity of Wireless Ad Hoc Networks with Infrastructure Support  
Changliang Xie (Shanghai Jiao Tong University, P.R. China); Jian Li (Shanghai Jiao Tong University, P.R. China); Xinbing Wang (Shanghai Jiaotong University, P.R. China); Xiaohua Tian (Shanghai Jiaotong University, P.R. China); Yongsheng Zhang (DOCOMO Beijing Communications Laboratories Co., Ltd, P.R. China); Xiaoli Wang (Docomo Beijing Communications Lab, P.R. China)  
pp. 6-10

11:27 Competitive Pricing for Spectrum Subleasing for Future Wireless Ad Hoc Networks  
Kandasamy Illankos (Ryerson University, Canada); Alagan Anpalagan (Ryerson University, Canada); Dimitri Androutsos (Ryerson University, Canada)  
pp. 11-15

Leenhapat Navaravong (University of Florida, USA); John M. Shea (University of Florida, USA); Eduardo L Pasiliao, Jr. (US AFRL Munitions Directorate, USA); Warren Dixon (University of Florida, USA)  
pp. 16-20

12:09 Context Data Distribution in Mobile Systems: a Case Study on Android-based Phones  
Antonio Corradi (University of Bologna, Italy); Mario Fanelli (University of Bologna, Italy); Luca Foschini (University of Bologna, Italy); Marcello Cinque (University of Naples, Italy)  
pp. 21-26

AH01: Localization (I)

Chair: Xianbin Wang (The University of Western Ontario, Canada)

10:45 Efficient Localization Algorithm in Wireless Ad Hoc Sensor Networks by Utilizing Radical Centers  
Yeong-Sheng Chen (National Taipei University of Education, Taiwan); Chung-Chieh Chin (National Taipei University of Education, Taiwan); Der-Jiunn Deng (National Changhua University of Education, Taiwan)
11:06 3GPE: An Energy Efficient Probabilistic Fingerprint-Assisted Localization in Indoor Wi-Fi Areas
Yubin Xu (Harbin Institute of Technology, P.R. China); Mu Zhou (Chongqing University of Posts and Telecommunications & Chongqing Municipal Key Laboratory of Mobile Communications, P.R. China); Lin Ma (Harbin Institute of Technology, P.R. China); Weixiao Meng (Harbin Institute of Technology, P.R. China)
pp. 32-36

11:27 Cooperative Location Verification for Vehicular Ad-Hoc Networks
Pengfei Zhang (University of Ottawa, Canada); Zhenxia Zhang (University of Ottawa, Canada); Azzedine Boukerche (University of Ottawa, Canada)
pp. 37-41

11:48 Privacy-Preserving Location and Mobility Management To Support Tether-Free Patients in Ad-Hoc Networks
Taleb Znati (University of Pittsburgh, USA); Anandha Gopalan (Imperial College London, United Kingdom)
pp. 42-46

12:09 Passive Multiple Disjoint Sources Localization Using TDOAs and GROAs in the Presence of Sensor Location Uncertainties
Benjian Hao (Xidian University, P.R. China); Zan Li (Xidian University, P.R. China); JiangBo Si (Xi’dian, P.R. China); Weiyi Yin (Xidian University, P.R. China); Yunmei Ren (Xidian University, P.R. China)
pp. 47-52

AH02: Delay Tolerant Networks (DTN)

Chair: Jun Zheng (Southeast University, P.R. China)

10:45 Capacity vs. Delivery Delay in MANETs with Power Control and f-cast Relay
Jiajia Liu (Tohoku University, Japan); Xiaohong Jiang (Future University-Hakodate, Japan); Hiroki Nishiyama (Tohoku University, Japan); Nei Kato (Tohoku University, Japan)
pp. 53-57

11:06 Study of Visiting Frequency in a Delay Tolerant Network
Jiazhen Zhou (University of Wisconsin - Whitewater, USA); Jiang (Leo) Li (Howard University, USA); Rose Qingyang Hu (Utah State University, USA); Yi Qian (University of Nebraska–Lincoln, USA)
pp. 58-62

11:27 Dynamic Segmented Network Coding for Reliable Data Dissemination in Delay Tolerant Networks
Deze Zeng (School of Computer Science and Engineering, The University of Aizu & School of Computer Science and Engineering, Huazhong University of Science and Technology, Japan); Song Guo (The University of Aizu, Japan); Hai Jin (Huazhong University of Science and Technology, P.R. China); Victor CM Leung (The University of British Columbia, Canada)
pp. 63-67
11:48 The Effect of "Window Size" on Throughput Performance of DTN in Lossy Cislunar Communications
Ruhai Wang (Lamar University, USA); Anand Reshamwala (Lamar University, USA); Qinyu Zhang (Shenzhen Graduate School, Harbin Institute of Technology, P.R. China); Zhensheng Zhang (Cubic, USA); Qing Guo (Harbin Institute of Technology, P.R. China); Ming-Chuan Yang (Harbin Institute of Technology, P.R. China)
pp. 68-72

12:09 A Joint Replication-Migration-based Routing in Delay Tolerant Networks
Yunsheng Wang (Temple University, USA); Jie Wu (Temple University, USA); Zhen Jiang (West Chester University of Pennsylvania, USA); Feng Li (Indiana University-Purdue University Indianapolis, USA)
pp. 73-77

AH03: Cognitive Wireless Networks
Chair: Zhihong Hong (Communications Research Centre, Canada)

10:45 Capacity Enhancement of Cognitive Wireless Networks with \gamma-Distance Spectrum Usage Policy
Devu Manikantan Shila (UTRC, USA); Yu Cheng (Illinois Institute of Technology, USA)
pp. 78-82

11:06 K-connectivity of Cognitive Radio Networks
Luoyi Fu (Shanghai Jiao Tong University, P.R. China); Liu Zhuotao (Shanghai Jiao Tong University, P.R. China); Ding Nie (SJTU, P.R. China); Xinbing Wang (Shanghai Jiaotong University, P.R. China)
pp. 83-87

11:27 Towards A Game Theoretical Modeling of Rational Collaborative Spectrum Sensing in Cognitive Radio Networks
Shuai Li (Shanghai Jiao Tong University, P.R. China); Haojin Zhu (Shanghai Jiao Tong University, P.R. China); Bo Yang (Shanghai Jiao Tong University, P.R. China); Cailian Chen (Shanghai Jiao Tong University, P.R. China); Xinning Guan (Shanghai Jiao Tong University, P.R. China); Xiaodong Lin (University of Ontario Institute of Technology, Canada)
pp. 88-92

Peng Hu (Queen's University, Canada); Mohamed Ibnkahla (Queen's University, Canada)
pp. 93-97

Tao Zheng (Beijing Jiaotong University, P.R. China); Yajuan Qin (Beijing Jiaotong University, P.R. China); Hongke Zhang (Beijing University of Posts and Telecommunications, P.R. China); Sy-Yen Kuo (National Taiwan University, Taiwan)
pp. 98-103
14:00 - 15:45

**AH-P2: Transmission and Multi-hop Forwarding (Poster Session)**

Chair: Patrick Marsch (Nokia Siemens Networks, Poland)

- **14:00 Analysis of Intra-flow Interference in Opportunistic Large Array Transmission for Strip Networks**
  Haejoon Jung (Georgia Institute of Technology, USA); Mary Ann Ingram (Georgia Institute of Technology, USA)
  pp. 104-108

- **14:21 TCP over Multiple Paths Revisited: Towards Transparent Proxy Solutions**
  Tacettin Ayar (Technical University of Berlin & Istanbul Technical University, Germany); Berthold Rathke (TUBerlin, Germany); Łukasz Budzisz (Technical University of Berlin, Germany); Adam M Wolisz (Technical University of Berlin, Germany)
  pp. 109-114

- **14:42 IEEE 802.11aa: Improvements on video transmission over Wireless LANs**
  Kostas Maraslis (University of Peloponnesse, Greece); Periklis Chatzimisios (Alexander Technological Educational Institute of Thessaloniki, Greece); Anthony Boucouvalas (University of Peloponnesse, Greece)
  pp. 115-119

- **15:03 LTE4V2X - Collection, dissemination and multi-hop forwarding**
  Guillaume Rémy (Orange Labs, France); Sidi-Mohammed Senouci (University of Bourgogne - ISAT Nevers, France); François Jan (Orange Labs, France); Yvon Gourhart (Orange Labs, France)
  pp. 120-125

- **15:24 Cooperative Transmission Range Doubling with IEEE 802.15.4**
  Van Nguyen (Georgia Institute of Technology, USA); Mary Ann Ingram (Georgia Institute of Technology, USA)
  pp. 126-130

**AH04: Routing (I)**

Chair: Jaime Lloret (Universidad Politécnica de Valencia, Spain)

- **14:00 Global State-Dependent QoE based Routing**
  Hai Anh Tran (Univesite Paris-Est Creteil, France); Abdelhamid Mellouk (UPEC, University Paris-Est Creteil Val de Marne, France); Said Hoceini (UPEC, University Paris-Est Creteil Val de Marne, France); Brice Augustin (UPEC, University Paris-Est, France)
  pp. 131-135

- **14:21 CAOR: Coding-Aware Opportunistic Routing in Wireless Ad Hoc Networks**
  Kun-Cheng Chung (National Taiwan University, Taiwan); Yi-Chun Chou (National Taiwan University, Taiwan); Wanjun Liao (National Taiwan University, Taiwan)
  pp. 136-140
14:42 An Energy Efficient Double Cluster Head Routing Scheme for Motorway Vehicular Networks
Wanod Kumar (University of Leeds, United Kingdom); Samya Bhattacharya (University of Leeds, United Kingdom); Bilal R Qazi (University of Leeds, United Kingdom); Jaafar Elmirghani (University of Leeds, United Kingdom)
pp. 141-146

15:03 Signal Reflection-enabled Geographical Routing for Underwater Sensor Networks
Lloyd Emokpae (University of Maryland Baltimore County, USA); Mohamed Younis (University of Maryland Baltimore County, USA)
pp. 147-151

15:24 Energy-efficient Cooperative Geographic Routing in Wireless Sensor Networks
Bin Li (Xi’an Jiaotong University, P.R. China); Wenjie Wang (Xi’an Jiaotong University, P.R. China); Qinye Yin (Xi’an Jiaotong University, P.R. China); Hongxiang Li (University of Louisville, USA); Hui-ming Wang (Xi’an Jiaotong University, P.R. China)
pp. 152-156

AH05: Security (I)

Chair: Liang Zhang (Communications Research Centre Canada, Canada)

14:00 Providing Location Anonymity in a Multi-Base station Wireless Sensor Network
Rania El-Badry (University of Maryland, Baltimore County, USA); Mohamed Younis (University of Maryland Baltimore County, USA)
pp. 157-161

14:21 A Novel Mechanism to Secure Internal Attacks in HWMP Routing Protocol
Jalel Ben-Othman (University of Paris 13, France); Jean Pierre Claude (University of Versailles St Quentin en Yvelines, France); Yesica Imelda Saavedra Benitez (University of Versailles, France)
pp. 162-166

14:42 A Secure and Efficient Scheme for Machine-to-Machine Communications in Smart Grid
Ye Yan (University of Nebraska-Lincoln, USA); Yi Qian (University of Nebraska–Lincoln, USA); Rose Qingyang Hu (Utah State University, USA)
pp. 167-172

15:03 Dynamic Solution for Detecting Denial of Service Attacks in Wireless Sensor Networks
Malek Guechari (University of Paris 12, France); Lynda Mokdad (Université de Paris 12 & Laboratoire LACL, France); Sovanna Tan (University of Paris 12, France)
pp. 173-177

15:24 Optimal Anti-Jamming Strategy in Sensor Networks
Xiangpeng Li (Shanghai Jiaotong University, P.R. China); Yanmin Zhu (Shanghai Jiao Tong University, P.R. China); Bo Li (Hong Kong University of Science and Technology, Hong Kong)
pp. 178-182
**AH06: Clustering**

Chair: Chung-Horng Lung (Carleton University, Canada)

**14:00 Is the Clustering Coefficient a Measure for Fault Tolerance in Wireless Sensor Networks?**
Matthias R Brust (Louisiana Tech University & University of Central Florida, USA); Damla Turgut (University of Central Florida, USA); Carlos H. C. Ribeiro (Technological Institute of Aeronautics, Brazil); Marcus Kaiser (Newcastle University, United Kingdom)
pp. 183-187

**14:21 Joint Optimization of Number and Allocation of Clusters for Wireless Sensor Networks**
Anwar Sadat (Monash University, Australia); Gour Chandra Karmakar (Monash University, Australia); David Green (Monash University, Australia)
pp. 188-192

**14:42 An Energy-Balanced Clustering Protocol Based on Dominating Set for Data Gathering in Wireless Sensor Networks**
Xiaoyan Kui (Central South University, P.R. China); Shigeng Zhang (Central South University, P.R. China); Jianxin Wang (Central South University, P.R. China); Jiannong Cao (Hong Kong Polytechnic Univ, Hong Kong)
pp. 193-197

**15:03 A Slepian-Wolf Coding Based Energy-Efficient Clustering Algorithm for Data Aggregation in Wireless Sensor Networks**
ZhenZhong Huang (Southeast University, P.R. China); Jun Zheng (Southeast University, P.R. China)
pp. 198-202

**15:24 A Fuzzy-Logic-Based Cluster Head Selection Algorithm in VANETs**
Khalid Abdel Hafeez (Ryerson University, Canada); Lian Zhao (Ryerson University, Canada); Zaiyi Liao (Ryerson University, Canada); Ngok-Wah Ma (Ryerson University, Canada)
pp. 203-207

### 16:15 - 18:00

**AH-P3: Wireless Network Applications (II) (Poster Session)**

Chair: Hacene Fouchal (Université de Reims Champagne-Ardenne, France)

**16:15 Belief-based Cleaning in Trajectory Sensor Streams**
Sitthapon Pumpichet (Florida International University, USA); Niki Pissinou (Florida International University, USA); Xinyu Jin (Florida International University, USA); Deng Pan (Florida International University, USA)
pp. 208-212

**16:36 A Green Solution for Intelligent Metropolitan Heating System with uSDCards**
Yue Wenlong (School of Software, Dalian University of Technology, P.R. China); Lei Wang (Dalian University of Technology, P.R. China); Cheng Jin (University of...
16:57 Probability-based Optimal Coverage of PTZ Camera Networks
Pu Zhou (Shanghai Jiao Tong University, P.R. China); Jing Wu (Shanghai Jiao Tong University, P.R. China); Chengnian Long (Shanghai Jiao Tong University, P.R. China)
pp. 218-222

17:18 Quality-Delay Tradeoff for Video Streaming over Mobile Ad Hoc Networks
Liang Zhou (Nanjing University of Posts and Telecommunications, P.R. China); Yan Zhang (Simula Research Laboratory and University of Oslo, Norway); Joel J. P. C. Rodrigues (Instituto de Telecomunicações, University of Beira Interior, Portugal); Benoit Geller (ENSTA, France); Jing Wu Cui (Nanjing University of Posts and Telecomm, P.R. China); Baoyu Zheng (Nanjing University of Posts and Telecommunications, P.R. China)
pp. 223-227

AH07: Routing (II)

Chair: Periklis Chatzimisios (Alexander Technological Educational Institute of Thessaloniki, Greece)

16:15 A Layer-Based Routing Protocol for Heterogeneous Wireless Sensor Networks
Xiao Chen (Texas State University, USA); Zanxun Dai (Texas State University, USA); Wenzhong Li (Nanjing University, P.R. China); Hongchi Shi (Texas State University-San Marcos, USA)
pp. 226-232

16:36 A Gradient-based Multi-Path Routing Protocol for Low Duty-Cycled Wireless Sensor Networks
Jie Hao (Graduate University of Chinese Academy of Sciences, P.R. China); Zheng Yao (Graduate University of the Chinese Academy of Sciences, P.R. China); Baoxian Zhang (Graduate University of the Chinese Academy of Sciences, P.R. China)
pp. 233-237

16:57 Opportunistic Routing in Multi-rate Multi-hop Ad Hoc Networks
Raed Taleb Al-Zubi (University of Jordan, Jordan); Manwan Krunz (University of Arizona, USA)
pp. 238-242

17:18 A Parallel and Adaptative Query Routing Scheme for Wireless Sensor Networks
Guillermo G Riva (National Technological University & Digital Communication Lab (LCD) - National University of Cordoba, Argentina); Jorge M Fnochietto (National University of Córdoba & CONICET, Argentina)
pp. 243-247

17:39 Fuzzy-based Adaptive Cross Layer Routing Protocol for Delay Sensitive Applications in MANET
Cherine Fathy (Arab Academy for Science and Technology and Maritime Transport, Egypt); Mahmoud T El-Hadidi (Cairo University, Egypt); Mohamed Abou El-Nasr (Arab Academy for Science and Technology, Egypt)
pp. 248-253
AH08: Energy-Efficient Networking Algorithms and Protocols

Chair: Jian Lin (Georgia Institute of Technology, USA)

16:15 MAC Protocols for Wireless Sensor Networks over Radio-over-Fiber Links
Tiago Andrade (State University of Campinas, Brazil); Leonardo B. Oliveira (UNICAMP, Brazil); Nelson L. S. da Fonseca (State University of Campinas, Brazil); Omar C Branquinho (Catholic University Campinas, Brazil)
pp. 254-259

Jingxian Wu (University of Arkansas, USA); Yahong Rosa Zheng (Missouri University of Science and Technology, USA)
pp. 260-264

Shaobo Mao (University of British Columbia, Canada); Man Hon Cheung (University of British Columbia, Canada); Vincent W.S. Wong (University of British Columbia, Canada)
pp. 265-270

Zhi Ang Eu (Institute for Infocomm Research, Singapore); Hwee Pink Tan (Institute for Infocomm Research, Singapore)
pp. 271-275

17:39 Energy-Efficient Data Collection in WSN: A Sink-Oriented Dynamic Backbone
François Clad (University of Strasbourg, France); Antoine Gallais (University of Strasbourg, France); Pascal Mérindol (Université de Strasbourg, France)
pp. 276-280

AH09: Mobile and Vehicular Ad Hoc Networks

Chair: Falko Dressler (University of Innsbruck, Austria)

16:15 Dynamic Topology Update Mechanism in Local Tree-based Reliable Topology (LRTT) based MANETs
Atsushi Yoshinari (Tohoku University, Japan); Hiroki Nishiyama (Tohoku University, Japan); Nei Kato (Tohoku University, Japan); Dan Keun Sung (Korea Advanced Institute of Science and Technology, Korea)
pp. 281-285

16:36 Throughput Analysis for IEEE 802.11 in Multi-hop Wireless Networks
Ahed Alshanyour (Ericsson Canada Inc, Canada); Anjali Agarwal (Concordia University, Canada)
pp. 286-290

16:57 Data Dissemination in the Wild: A Testbed for High-Mobility MANETs
Péter Vingelmann (Budapest University of Technology and Economics & Aalborg University, Hungary); Morten V. Pedersen (Aalborg University, Denmark); Janus
17:18 Resource-Exchange Based Cooperation Stimulating Mechanism for Wireless Ad Hoc Networks
Guopeng Zhang (China University of Mining and Technology, P.R. China); Kun Yang (University of Essex, United Kingdom); Peng Liu (China University of Mining and Technology & Mine Perception IOT Center, P.R. China); Xiaodong Yang (China University of Mining and Technology, P.R. China); Ding Enjie (China University of Mining and Technology, P.R. China)
pp. 297-301

17:39 Geo-Dissemination in Vehicular Ad Hoc Networks
Yujin Li (North Carolina State University, USA); Wenye Wang (NC State University, USA)
pp. 302-306

Wednesday, June 13

08:00 - 09:45

AH10: Routing (III)

Chair: Shaohe Lv (National University of Defense Technology, P.R. China)

08:00 Energy-Balanced Cooperative Routing in Multihop Wireless Ad Hoc Networks
Siyuan Chen (University of North Carolina at Charlotte, USA); Minsu Huang (University of North Carolina at Charlotte, USA); Yang Li (Beijing Institute of Technology, P.R. China); Ying Zhu (University of North Carolina at Charlotte, USA); Yu Wang (University of North Carolina at Charlotte, USA)
pp. 307-311

08:21 CAR: Contour-based Routing in Wireless Sensor Networks
Jie Cheng (University of Prince Edward Island, Canada); Qiang Ye (University of Prince Edward Island, Canada); Lei Zhang (Huazhong University of Science and Technology, P.R. China); Yanbo Xu (Huazhong University of Science and Technology, P.R. China); Hongbo Jiang (Huazhong University of Science and Technology, P.R. China); Hongwei Du (Harbin Institute of Technology Shenzhen Graduate School, P.R. China)
pp. 312-317

Zhi Ang Eu (Institute for Infocomm Research, Singapore); Hwee Pink Tan (Institute for Infocomm Research, Singapore)
pp. 318-322
09:03 DCFR: A Novel Double Cost Function based Routing Algorithm for Wireless Sensor Networks
Anfeng Liu (Central South University, P.R. China); Ju Ren (Central South University, P.R. China); Xu Li (INRIA Lille - Nord Europe, France); Zhigang Chen (Central South University, P.R. China); Sherman Shen (University of Waterloo, Canada)
pp. 323-327

09:24 Opportunistic Routing in Tactical Networks
David Kidston (Communications Research Centre, Canada); Minghui Shi (Industry Canada, Canada)
pp. 328-333

AH11: Scheduling

Chair: Ariton Xhafa (Texas Instruments Inc., USA)

08:00 An Efficient Priority Packet Scheduling Algorithm for Wireless Sensor Network
Lutful Karim (University de Moncton, Canada); Nidal Nasser (Alfaisal University, Saudi Arabia); Tarik Taleb (NEC Europe Ltd., Germany); Abdullah Alqallaf (Kuwait University, Kuwait)
pp. 334-338

08:21 Power Scheduling for Distributed Estimation in Cluster-Based Wireless Sensor Networks
Muhammad Hafeez Chaudhary (Royal Military Academy, Belgium); Luc Vandendorpe (University of Louvain, Belgium)
pp. 339-344

Jian Lin (Georgia Institute of Technology, USA); Mary Ann Ingram (Georgia Institute of Technology, USA)
pp. 345-349

09:03 System and Application Knowledge Based Scheduling of Multiple Applications in a WSN
Navdeep K Kapoor (Carleton University, Canada); Shikharesh Majumdar (Carleton University, Canada); Biswajit Nandy (Solana Networks & Carleton University, Canada)
pp. 350-355

09:24 Efficient Wireless Sensor Networks Scheduling Scheme: Game Theoretic Analysis and Algorithm
Zhengyang Qu (Northwestern University, P.R. China); Di Chen (Shanghai Jiao Tong University, P.R. China); Gaofei Sun (Shanghai Jiao Tong University, P.R. China); Xinbing Wang (Shanghai Jiaotong University, P.R. China); Xiaohua Tian (Shanghai Jiaotong University, P.R. China); Jing Liu (Shanghai Jiao Tong University, P.R. China)
pp. 356-360

AH12: Cooperative Networking

Chair: Mohamed Hossam Ahmed (Memorial University, Canada)
08:00 An MDP-based Model for Optimal Relay Selection in OFDMA Cooperative Networks
Najah A. Abu Ali (UAEU, UAE); Abd-Elhamid M. Taha (Alfaisal University, Saudi Arabia)
pp. 361-365

08:21 On the Modeling of Randomized Distributed Cooperation for Linear Multi-Hop Networks
Syed Ali Hassan (National University of Sciences and Technology, Pakistan); Mary Ann Ingram (Georgia Institute of Technology, USA)
pp. 366-370

08:42 RAID the WSN: Packet-based Reliable Cooperative Diversity
Yuan Yang (Freie Universität Berlin, Germany); Matthias Wählisch (Freie Universität Berlin, Germany); Yubin Zhao (Freie Universität Berlin, Germany); Marcel Kyas (Freie University Berlin, Germany)
pp. 371-375

09:03 Improving Aerially Deployed Sensor Networks using Cooperative Communications
Kevin Dorling (University of Calgary, Canada); Geoffrey G. Messier (University of Calgary, Canada); Sebastian Magierowski (University of Calgary, Canada); Stefan Valentin (Bell Labs & Alcatel-Lucent Deutschland AG, Germany)
pp. 376-380

09:24 DSRelay: A Scheme of Cooperative Downloading based on Dynamic Slot
Jianhang Liu (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Jingping Bi (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Yongchao Bian (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Xinyu Liu (Institute Of Computing Technology Chinese Academy Of Science, P.R. China); Zhongcheng Li (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China)
pp. 381-386

14:00 - 15:45

AH-P4: Wireless Network Applications (III) (Poster Session)

Chair: Wei Song (University of New Brunswick, Canada)

14:00 Optimal Frequency Selection for Energy Efficient Underwater Acoustic Networks
Clement Kam (Naval Research Laboratory, USA); Sastry Kompella (Naval Research Laboratory, USA); Gam Nguyen (Naval Research Laboratory, USA); Anthony Ephremides (University of Maryland at College Park, USA); Zaihan Jiang (U.S. Naval Research Lab, USA)
pp. 387-391
14:21 Channel-Aware Distributed Best-Linear-Unbiased Estimation with Reduced Communication Overheads
Jwo-Yuh Wu (National Chiao Tung University, Taiwan); Ling-Hua Chang (National Chiao Tung University, Taiwan)
pp. 392-397

14:42 Combination Weights for Diffusion Strategies With Imperfect Information Exchange
Xiaochuan Zhao (University of California, Los Angeles, USA); Ali H. Sayed (University of California, Los Angeles, USA)
pp. 398-402

15:03 Hiding Trajectory on the Fly
Xinyu Jin (Florida International University, USA); Niki Pissinou (Florida International University, USA); Cody Chesneau (Wofford College, USA); Sitthaporn Pumpichet (Florida International University, USA); Deng Pan (Florida International University, USA)
pp. 403-407

15:24 Balancing Network Connectivity and the Life-Time of Sensors through Percolation and Consensus
Daehyun Ban (North Carolina State University, USA); Michael Devetsikiotis (North Carolina State University, USA)
pp. 408-412

AH13: Medium Access Control (MAC) (I)

Chair: Jun Li (Communications Research Centre of Canada, Canada)

14:00 An Efficient QoS MAC for IEEE 802.11p Over Cognitive Multichannel Vehicular Networks
Hikmat El Ajaltouni (University of Ottawa & Paradise Research Laboratory, Canada); Richard W. Pazzi (University of Ontario Institute of Technology, Canada); Azzedine Boukerche (University of Ottawa, Canada)
pp. 413-417

14:21 Reliability of Cluster-Based Multichannel MAC Protocols in VANETs
Khalid Abdel Hafeez (Ryerson University, Canada); Lian Zhao (Ryerson University, Canada); Zaiyi Liao (Ryerson University, Canada); Ngok-Wah Ma (Ryerson University, Canada)
pp. 418-423

14:42 A MAC Protocol for Multihop RP-CDMA Ad Hoc Wireless Networks
Todd Mortimer (University of Alberta, Canada); Janelle Harms (University of Alberta, Canada)
pp. 424-429

15:03 CM-MAC: A Cognitive MAC Protocol with Mobility Support in Cognitive Radio Ad Hoc Networks
Peng Hu (Queen's University, Canada); Mohamed Ibkahl (Queen's University, Canada)
pp. 430-434
**15:24 SRCR: A Novel MAC Protocol for Underwater Acoustic Networks with Concurrent Reservation**
Jin Yang (Huazhong University of Science and Technology, P.R. China); Peng Guo (Huazhong University of Science and Technology, P.R. China); Tao Jiang (Huazhong University of Science and Technology, P.R. China); Kui Zhang (University of Twente, The Netherlands)
pp. 435-439

**AH14: Resource Allocation**

Chair: Maode Ma (Nanyang Technological University, Singapore)

**14:00 Strategic Subchannel Resource Allocation for Cooperative OFDMA Wireless Mesh Networks**
Sahar Hoteit (Université Paris 6, France); Stefano Secci (University Pierre et Marie Curie - Paris 6, France); Rami Langar (UPMC - University of Paris 6, France); Guy Pujolle (University Pierre et Marie Curie - Paris 6, France)
pp. 440-444

**14:21 Interference-Aware Resource Allocation for Device-to-Device Communications as an Underlay Using Sequential Second Price Auction**
Chen Xu (Peking University, P.R. China); Lingyang Song (Peking University, P.R. China); Zhu Han (University of Houston, USA); Qun Zhao (DoCoMo Beijing Labs, P.R. China); Xiaoli Wang (Docomo Beijing Communications Lab, P.R. China); Bingli Jiao (Peking University, P.R. China)
pp. 445-449

**14:42 Power-Efficient Robust Routing and Resource Allocation in Wireless Mesh Networks**
Rongfei Fan (University of Alberta, Canada); Yuxi Li (University of Electronic Science and Technology, China (UESTC), P.R. China); Hai Jiang (University of Alberta, Canada)
pp. 450-454

**15:03 Distributed Interference-Aware Admission Control with Soft Resource Allocation for Hybrid MAC in Wireless Mesh Networks**
Xiaobo Yu (University of Surrey & Centre for Communication Systems Research, United Kingdom); Pirabakaran Navaratnam (University of Surrey, United Kingdom); Klaus Moessner (University of Surrey, United Kingdom)
pp. 455-460

**15:24 Protocol Design of a Slot Allocation Scheme for Persistence-Reservation-based IEEE 802.16d Mesh Networks**
Chee Wei Ang (Institute for Infocomm Research, Singapore)
pp. 461-465

**AH15: Performance Evaluation**

Chair: Lian Zhao (Ryerson University, Canada)
14:00 A Performance Study of CSMA in Wireless Networks with Successive Interference Cancellation
Shaohe Lv (National University of Defense Technology, P.R. China); Weihua Zhuang (University of Waterloo, Canada); Xiaodong Wang (National University of Defense Technology, P.R. China); Chi Liu (National University of Defense Technology, P.R. China); Xiaofeng Hu (National University of Defense Technology, P.R. China); Yipin Sun (National University of Defense Technology, P.R. China); XingMing Zhou (School of Computer, National University of Defense Technology, P.R. China)
pp. 466-471

14:21 An Efficient Linear MMSE Receiver for Wireless Ad Hoc Networks
Sunho Park (Korea University, Korea); Byungju Lee (Korea University, Korea); Jian Wang (Korea University, Korea); Byonghyo Shim (Korea University, Korea)
pp. 472-476

14:42 Evaluating Wireless Proactive Routing Protocols under Scalability and Traffic Constraints
Nadeem Javaid (COMSATS Institute of IT, Pakistan); Ayesha Bibi (ICIT, Gomal University, Pakistan); Zahoor A Khan (Dalhousie University & Faculty of Engineering, Canada); Umar Khan (COMSATS Institute of IT, Pakistan); Karim Djouani (Tshwane University of Technology, South Africa)
pp. 477-481

15:03 A Realtime Testbed for Performance Evaluation of Indoor TOA Location System
Jie He (Worcester Polytechnic Institute & University of Science and Technology Beijing, USA); Shen Li (Worcester Polytechnic Institute, USA); Kaveh Pahlavan (WPI, USA); Qin Wang (University of Science and Technology Beijing, P.R. China)
pp. 482-486

15:24 Queueing Models for the Performance of Multihop Routing in a Intermittently-Connected Mobile Network
Ramanan Subramanian (University of South Australia & Institute of Telecommunications Research, Australia); Faramarz Fekri (Georgia Institute of Technology, USA)
pp. 487-491

16:15 - 18:00

AH16: Wireless Sensor and Actor Networks (I)
Chair: Hacene Fouchal (Université de Reims Champagne-Ardenne, France)

Fatih Senel (Antalya International University, Turkey); Mohamed Younis (University of Maryland Baltimore County, USA)
pp. 492-496
16:36 **Accuracy of Homology based Approaches for Coverage Hole Detection in Wireless Sensor Networks**  
Feng Yan (Telecom ParisTech, France); Philippe Martins (Telecom Paristech, France); Laurent Decreusefond (Telecom ParisTech & CNRS LTCI, France)  
pp. 497-502

16:57 **A Partition-based Data Collection Scheme for Wireless Sensor Networks with a Mobile Sink**  
Maryam Ahmadi (University of Victoria, Canada); Liang He (Singapore University of Technology and Design, Singapore); Jianping Pan (University of Victoria, Canada); Jingdong Xu (Nankai Univ, P.R. China)  
pp. 503-507

17:18 **Actor Positioning Based on Molecular Geometry in Aerial Sensor Networks**  
Mustafa İ Akbaş (University of Central Florida, USA); Gürkan Solmaz (University of Central Florida, USA); Damla Turgut (University of Central Florida, USA)  
pp. 508-512

17:39 **A Novel Lifetime-Enhanced Deployment Strategy for Chain-Type Wireless Sensor Networks**  
Siwei Qian (Huazhong University of Science and Technology, P.R. China); Peng Guo (Huazhong University of Science and Technology, P.R. China); Tao Jiang (Huazhong University of Science and Technology, P.R. China)  
pp. 513-517

**AH17: Medium Access Control (MAC) (II)**

Chair: Jelena Mišić (Ryerson University, Canada)

16:15 **Dynamic Power Control with Energy Constraint for Multimedia Wireless Sensor Networks**  
Abdellatif Kobbane (ENSIAS, University Mohmmed V-Souissi & ENSIAS, Morocco); Mohammed-Amine Koulali (University Mohammed I & ENSAO, Morocco); Hamidou Tembine (Supelec, France); Mohammed El Koutbi (University Mohamed V - Souissi & ENSIAS, Morocco); Jalel Ben-Othman (University of Paris 13, France)  
pp. 518-522

16:36 **MAC Performance Improvement in UAV Ad-Hoc Networks with Full-Duplex Radios and Multi-Packet Reception Capability**  
Yegui Cai (Carleton University, Canada); F. Richard Yu (Carleton University, Canada); Jun Li (Communications Research Centre of Canada, Canada); Yifeng Zhou (Communications Research Centre, Canada); Louise Lamont (Communications Research Centre Canada, Canada)  
pp. 523-527

16:57 **A Novel Multichannel Multiple Access Protocol for Vehicular Ad Hoc Networks**  
Minming Ni (Beijing Jiaotong University, P.R. China); Zhangdui Zhong (Beijing Jiaotong University, P.R. China); Dongmei Zhao (McMaster University, Canada)  
pp. 528-532

17:18 **A low Energy Consumption Mac Protocol for WSN**  
Thibault Bernard (University of Reims Champagne Ardenne, France); Hacene Fouchal (Université de Reims Champagne-Ardenne, France)
AH18: Security (II)

Chair: Zhu Han (University of Houston, USA)

16:15 **FAST: Realizing what your neighbors are doing**
Lu Wang (Hong Kong University of Science and Technology, Hong Kong); Kaishun Wu (HKUST & Sun Yat-sen University, Hong Kong); Pengfei Chang (Nankai University, P.R. China); Mounir Hamd (Hong Kong University of Science and Technology, P.R. China)
pp. 544-548

16:36 **Hybrid Gaussian-Ring Deployment for Intrusion Detection in Wireless Sensor Networks**
Narendranad Katneni (University of Cincinnati, USA); Vaibhav Pandit (University of Cincinnati, USA); Hailong Li (University of Cincinnati, USA); Dharma P Agrawal (University of Cincinnati, USA)
pp. 549-553

16:57 **Base Station Location Protection in Wireless Sensor Networks: Attacks and Defense**
Juan Chen (Harbin Institute of Technology, P.R. China); Hongli Zhang (Harbin Institute of Technology, P.R. China); Xiaojian Du (Temple University, USA); Fang Binxiong (Institute of Computing Technology Chinese Academy of Sciences, P.R. China); Yan Liu (Harbin Institute of Technology, P.R. China); Weiming Yu (Harbin Institute of Technology, P.R. China)
pp. 554-559

17:18 **Joint Privacy and Reputation Assurance for VANETs**
Zhengming Li (Michigan Tech, USA); Chunxiao (Tricia) Chigan (Michigan Tech, USA)
pp. 560-565

17:39 **A Collusion-Resilient Self-healing Key Distribution Scheme for Wireless Sensor Networks**
Wang Ze (Tianjin Polytechnic University, P.R. China); Maode Ma (Nanyang Technological University, Singapore)
pp. 566-570
08:00 - 09:45

**AH19: Localization (II)**

Chair: Seyed (Reza) Zekavat (Michigan Technological University, USA)

**08:00 Self-Calibration of TOA/Distance Relationship for Wireless Localization in Harsh Environments**
Javier Prieto (University of Valladolid, Spain); Alfonso Bahillo (University of Valladolid, Spain); Santiago Mazuelas (Massachusetts Institute of Technology, USA); Patricia Fernández (University of Valladolid, Spain); Rubén M. Lorenzo (University of Valladolid, Spain); Evaristo J. Abril (University of Valladolid, Spain)
pp. 571-575

**08:21 Distributed Scheduling for Cooperative Localization Based on Information Evolution**
Tianheng Wang (Massachusetts Institute of Technology, USA); Yuan Shen (Massachusetts Institute of Technology, USA); Santiago Mazuelas (Massachusetts Institute of Technology, USA); Moe Win (Massachusetts Institute of Technology, USA)
pp. 576-580

**08:42 Empirical Study on Taxi GPS Traces for Vehicular Ad Hoc Networks**
Daqiang Zhang (Nanjing Normal University & Jiansu Institute of Quality and Safety Engineering, P.R. China); Hongyu Huang (Chongqing University, P.R. China); Min Chen (Huazhong University of Science and Technology, P.R. China); Xiaofeng Liao (Chongqing University, P.R. China)
pp. 581-585

**09:03 RDL: A Novel Approach for Passive Object Localization in WSN Based on RSSI**
Chen Liu (Northwest University, P.R. China); Dingyi Fang (Northwest University, P.R. China); Zhe Yang (Uvic, Canada); Xiaojiang Chen (Northwest University, P.R. China); Wei Wang (Northwest University, P.R. China); Tianzhang Xing (Northwest University, P.R. China); Na An (Northwest University, P.R. China); Lin Cai (University of Victoria, Canada)
pp. 586-590

**AH20: Femtocell and Networks**

Chair: Patrick Marsch (Nokia Siemens Networks, Poland)

**08:00 On Adopting Interleave Division Multiple Access in Two-Tier Femtocell Networks: The Uplink Case**
Yi Xu (Auburn University, USA); Shiwen Mao (Auburn University, USA); Xin Su (Tsinghua University, P.R. China)
pp. 591-595

**08:21 On Supporting Mobile Peer to Mobile Peer Communications**
Tarik Taleb (NEC Europe Ltd., Germany); Eugene David Ngangue Ndih (Université de Sherbrooke, Canada); Soumaya Cherkaoui (Université de Sherbrooke, Canada)
AH21: Wireless Sensor and Actor Networks (II)

Chair: Fortunato Santucci (University of l'Aquila, Italy)

08:00 EDR2: A Sink Failure Resilient Approach for WSNs
Marco Valero (Georgia State University, USA); Mingsen Xu (Georgia State University, USA); Nicholas A Mancuso (Georgia State University, USA); Wen-Zhan Song (Georgia State University, USA); Raheem Beyah (Georgia Institute of Technology, USA)
pp. 616-621

08:21 Classification of Usual Protocols over Wireless Sensor Networks
Cédric Ramassamy (Université des Antilles et de la Guyane, France); Hacene Fouchal (Université de Reims Champagne-Ardenne, France); Philippe Hunel (University of Antilles Guyane, France)
pp. 622-626

08:42 On the Benefit of using Tight Frames for Robust Data Transmission and Compressive Data Gathering in Wireless Sensor Networks
Wei Chen (University of Cambridge, United Kingdom); Miguel Rodrigues (University College London, United Kingdom); Ian James Wassell (University of Cambridge, United Kingdom)
pp. 627-631

09:03 Towards a Wireless Sensor Network Platform for the Internet of Things
Ahmad El Kouche (Queen's University, Canada)
pp. 632-636
09:24 Distributed duty cycling optimization for asynchronous wireless sensor networks
Andrea Abrardo (University of Siena, Italy); Lapo Balucanti (University of Siena, Italy); Alessandro Mecocci (University of Siena, Italy)
pp. 637-641

14:00 - 15:45

AH22: Wireless Mesh Networks

Chair: Maode Ma (Nanyang Technological University, Singapore)

14:00 Link-Preserving Interference-Minimization Channel Assignment in Multi-Radio Wireless Mesh Networks
Li-Hsing Yen (National University of Kaohsiung, Taiwan); Kuo-Wei Huang (National University of Kaohsiung, Taiwan); Victor CM Leung (The University of British Columbia, Canada)
pp. 642-647

14:21 Distributed Throughput Optimization over P2P Mesh Networks using Diffusion Adaptation
Zaid J. Towfic (University of California, Los Angeles, USA); Jianshu Chen (University of California, Los Angeles, USA); Ali H. Sayed (University of California, Los Angeles, USA)
pp. 648-652

14:42 Mesh-DHT: A Locality-Based Distributed Look-Up Structure for Wireless Mesh Networks
Hanno Wirtz (RWTH Aachen University, Germany); Tobias Heer (RWTH Aachen University, Germany); René Hummen (RWTH Aachen University, Germany); Klaus Wehrle (RWTH Aachen University, Germany)
pp. 653-658

15:03 Rate-adaptive Admission Control for Bandwidth Assurance in Multirate Wireless Mesh Networks
Peng Zhao (Xi’an Jiaotong University, P.R. China); Xinyu Yang (Xi’an Jiaotong University, P.R. China); Chaoxin Hu (Xi’an Jiaotong University, P.R. China); Jiayin Wang (University of Connecticut & Xi’an Jiaotong University, USA); Benyuan Liu (University of Massachusetts Lowell, USA); Jie Wang (University of Massachusetts, USA)
pp. 659-663

15:24 Performance Evaluation of Network-Coded Multicast in Multi-Channel Multi-Radio Wireless Mesh Networks
Hoang Lan Nguyen (York University, Canada); Uyen Trang Nguyen (York University, Canada)
pp. 664-670

AH23: Relay and Network Coding

Chair: Steven D Blostein (Queen’s University, Canada)
14:00 **Physical Layer Implementation of Network Coding in Two-Way Relay Networks**  
Hongjuan Yang (Harbin Institute of Technology, P.R. China); Weixiao Meng (Harbin Institute of Technology, P.R. China); Bo Li (Harbin Institute of Technology, P.R. China); Gang Wang (Harbin Institute of Technology School of Electronics and Information Engineering, P.R. China)  
pp. 671-675

14:21 **Toward Neighborhood Prediction Using Physical-Layer Network Coding**  
Eugene David Ngangue Ndih (Université de Sherbrooke, Canada); Soumaya Cherkouki (Université de Sherbrooke, Canada)  
pp. 676-680

14:42 **Link-by-Link Feedback Mechanism for Intra-Session Random Linear Network Coding in Wireless Sensor Networks**  
Vahid Shah-Mansouri (University of British Columbia, Canada); Vincent W.S. Wong (University of British Columbia, Canada)  
pp. 681-686

15:03 **Relay Selection in Network Coded Communications with Power Control**  
Scott H Melvin (Dalhousie University, Canada); Jacek Ilow (Dalhousie University, Canada)  
pp. 687-692

15:24 **Effective Relay Selection for Lifetime Maximization in Decode-and-Forward Networks when Only Mean Channel Gain Is Available at Transmitter Side**  
Lu Zhang (Alcatel-Lucent Bell Labs, P.R. China); Len Cimini (University of Delaware, USA); Tao Yang (Alcatel-Lucent Bell Labs (China), P.R. China)  
pp. 693-697

**AH24: Mobile and Vehicular Networks**

Chair: Liang Zhang (Communications Research Centre Canada, Canada)

14:00 **VIRTUS: A resilient location-aware video unicast scheme for vehicular networks**  
Cristiano Gato Rezende (University of Ottawa, Canada); Heitor S Ramos (Universidade Federal de Alagoas & UFAL, Brazil); Richard W. Pazzi (University of Ontario Institute of Technology, Canada); Azzedine Boukerche (University of Ottawa, Canada); Alejandro C Frey (Universidade Federal de Alagoas, Brazil); Antonio A.F. Loureiro (Federal University of Minas Gerais, Brazil)  
pp. 698-702

14:21 **TGMD: A Trajectory-Based Group Message Delivery Protocol for Vehicular Ad Hoc Networks**  
Wan-Han Hsieh (National Tsing Hua University, Taiwan); Shun-Ren Yang (NTHU, Taiwan); Guann-Long Chiou (National Tsing Hua University, Taiwan)  
pp. 703-707

14:42 **On the Information Propagation Process in Multi-lane Vehicular Ad-hoc Networks**  
Zijie Zhang (NICTA, Australia); Guoqiang Mao (The University of Sydney, Australia); Brian Anderson (Australian National University & National ICT Australia, Australia)  
pp. 708-712
15:03 A Token-Based Connectivity Update Scheme for Unmanned Aerial Vehicle Ad Hoc Networks
Jun Li (Communications Research Centre of Canada, Canada); Zhexiong Wei (Carleton University, Canada); Yifeng Zhou (Communications Research Centre, Canada); Mathieu Deziel (Communications Research Centre - Government of Canada, Canada); Louise Lamont (Communications Research Centre Canada, Canada); F. Richard Yu (Carleton University, Canada)
pp. 713-718

15:24 Connectivity versus Area Coverage in Unmanned Aerial Vehicle Networks
Evjen Yanmaz (University of Klagenfurt & Lakeside Labs, Austria)
pp. 719-723

16:15 - 18:00

AH25: Wireless Sensor and Actor Networks (III)

Chair: Tiffany Jing Li (Lehigh University, USA)

16:15 Field Estimation in Wireless Sensor Networks Using Distributed Kriging
Gustavo Hernández-Peñaño (Universitat de València & GSIC, Spain); Baltasar Beferull-Lozano (Universidad de Valencia, Spain)
pp. 724-729

16:36 Lifetime Optimization of Wireless Sensor Networks with Packet Propagation Table
Hailong Li (University of Cincinnati, USA); Vaibhav Pandit (University of Cincinnati, USA); Yang Chi (University of Cincinnati, USA); Dharma P Agrawal (University of Cincinnati, USA)
pp. 730-734

16:57 A Routing Layer Sleep Scheme for Data Gathering in Wireless Sensor Networks
Tao Zheng (University of Oklahoma, USA); Sridhar Radhakrishnan (University of Oklahoma, USA); Venkatesh Sarangan (Oklahoma State University, USA)
pp. 735-739

17:18 Delay-bounded Sink Mobility in Wireless Sensor Networks
Yu Gu (National Institute of Informatics, Japan); Yusheng Ji (National Institute of Informatics, Japan); Jie Li (University of Tsukuba, Japan); Biao Han (University of Tsukuba, Japan); Baohua Zhao (, P.R. China)
pp. 740-744

17:39 Power Consumption Optimization for Information Exchange in Wireless-Relay Sensor Networks
Chen-Yi Chang (National Taiwan University, Taiwan); Da-shan Shiu (National Taiwan University, Taiwan)
pp. 745-750

AH26: Algorithms and Protocols for Wireless Networks

Chair: Uyen Trang Nguyen (York University, Canada)
16:15 On Graphs Supporting Greedy Forwarding for Directional Wireless Networks
Weisheng Si (University of Western Sydney, Australia); Bernhard Scholz (The University of Sydney, Australia); Joachim Gudmundsson (National ICT Australia Ltd, Australia); Guoqiang Mao (The University of Sydney, Australia); Roksana Boreli (National ICT Australia & University of NSW, Australia); Albert Zomaya (The University of Sydney, Australia)
pp. 751-756

16:36 Road Traffic Detection Using Wireless Noise Sensors
Chao Gao (Vaasa University of Applied Sciences, Finland); Ismo Hakala (University of Jyväskylä, Finland)
pp. 757-761

16:57 Optimizing Spatial Reuse by Dynamic Power Control
Zhen Tong (University of Notre Dame, USA); Martin Haenggi (University of Notre Dame, USA)
pp. 762-766

17:18 Neighbor Discovery Algorithms in Wireless Networks Using Directional Antennas
Cai Hao (Shanghai Jiaotong University, P.R. China); Bo Liu (Shanghai Jiao Tong University, P.R. China); Gui Lin (Shanghai Jiao Tong University, P.R. China); Min-You Wu (Shanghai Jiao Tong University, P.R. China)
pp. 767-772

17:39 An Efficient Differencing Algorithm Based on Suffix Array for Reprogramming Wireless Sensor Networks
Biyuan Mo (Zhejiang University, P.R. China); Wei Dong (Zhejiang University, P.R. China); Chun Chen (Zhejiang University, P.R. China); Jiajun Bu (Zhejiang University, P.R. China); Qiang Wang (Zhejiang University, P.R. China)
pp. 773-777

AH27: Wireless Network Applications (I)

Chair: Thomas Kunz (Carleton University, Canada)

16:15 Congestion Control for Machine Type Communications
Amokrane Ahmed (Université Pierre et Marie Curie & LIP6, France); Adlen Ksentini (University of Rennes 1 / IRISA Lab, France); Yassine Hadjadj-Aoul (University of Rennes 1, France); Tarik Taleb (NEC Europe Ltd., Germany)
pp. 778-782

16:36 Zinc: Index-Coding for Many-to-One Communications in ZigBee Sensor Networks
Ismail Salhi (Université Paris-Est, France); Erwan Livolant (INRIA, France); Yacine Ghamri-Doudane (ENSIIE & Université Paris-Est (LIGM Lab), France); Stephane Lohier (University of Paris-Est, France)
pp. 783-788
16:57 A Bargaining-Based Approach for Incentive-Compatible Message Forwarding in Opportunistic Networks
Fan Wu (Shanghai Jiao Tong University, P.R. China); Tingting Chen (Oklahoma State University, USA); Sheng Zhong (UB, USA); Chunming Qiao (State University of New York at Buffalo, USA); Guihai Chen (Shanghai Jiao Tong University, P.R. China)
pp. 789-793

17:18 Compressive Sensing in Radar Sensor Networks Using Pulse Compression Waveforms
Lei Xu (UTA, USA); Qilian Liang (University of Texas at Arlington, USA)
pp. 794-798

17:39 Macroscopic Traffic Flow Models for Shanghai
Wuxiong Zhang (Shanghai Research Center for Wireless Communications, P.R. China); Yang Yang (Shanghai Research Center for Wireless Communications & CAS Shanghai Institute of Microsystem and Information Technology, P.R. China); Hua Qian (Chinese Academy of Sciences, P.R. China); Yi Zhang (Shanghai Municipal Transportation Information Center, P.R. China); Minduo Jiao (Shanghai Municipal Transportation Information Center, P.R. China); Tao Yang (Shanghai Municipal Transportation Information Center, P.R. China)
pp. 799-803

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<td>CISS-06: Wireless Sensor Network Security</td>
<td>CISS09: CISS09: Multimedia Security</td>
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<td>10:45 - 12:30</td>
<td>CISS01: Algorithmic Design</td>
<td>CISS02: Attack and Defense</td>
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Tuesday, June 12

10:45 - 12:30

**CISS01: Algorithmic Design**

Chair: Mohamed Hamdi (Carthage University & Engineering School of Communications, Tunisia)

- **10:45 Secure Distributed Top-k Aggregation**
  Cristian V Jonsson (Reykjavik University, Iceland); Karl Palmskog (Royal Institute of Technology, Sweden); Ymir Vigfusson (Reykjavik University, Iceland)
  pp. 804-809

- **11:05 Two Matrices for Blakley's Secret Sharing Scheme**
  Xiali Hei (Temple University & Guangdong University of Business Studies, USA); Xiaojiang Du (Temple University, USA); Binheng Song (Tsinghua University, P.R. China)
  pp. 810-814

- **11:25 Secure Node Packing of Large-Scale Wireless Networks**
  Jemin Lee (Massachusetts Institute of Technology, USA); Hyundong Shin (Kyung Hee University, Korea); Moe Win (Massachusetts Institute of Technology, USA)
  pp. 815-819
11:45 Multimodal Biometric Person Recognition System Based on Fingerprint & Finger-Knuckle-Print Using Correlation Filter Classifier
Salim Chitroub (Electronics and Computer Science Faculty, USTHB, Algeria); Abdallah Meraoumia (Signal and Image Processing Laboratory, USTHB, Algeria); Ahmed Bouridane (Northumbria Universiy at Newcastle, United Kingdom) pp. 820-824

12:05 E-NOTE: An E-voting System That Ensures Voter Confidentiality and Voting Accuracy
Haijun Pan (New Jersey Institute of Technology, USA); Edwin Hou (New Jersey Institute of Technology, USA); Nirwan Ansari (NJIT, USA) pp. 825-829

**CISS02: Attack and Defense**

Chair: Yue Chen (Visa Inc., USA)

10:45 Towards Effective Defense against Pollution Attacks on Network Coding
Donghai Zhu (Xi’an Jiaotong University, P.R. China); Xinyu Yang (Xi’an Jiaotong University, P.R. China); Wei Yu (Towson University, USA) pp. 830-834

11:05 Data Tethers: Preventing Information Leakage by Enforcing Environmental Data Access Policies
Charles Fleming (Xi’an Jiaotong-Liverpool University & University of California Los Angeles, P.R. China); Peter Peterson (UCLA, USA); Erik Kline (University of California Los Angeles, USA); Peter Reiher (UCLA, USA) pp. 835-840

11:25 A Cooperative Protocol for Jamming Eavesdroppers in Wireless Networks
Joao P. Vilela (University of Coimbra, Portugal); Joao Barros (University of Porto & Instituto de Telecomunicações, Portugal) pp. 841-845

11:45 Packet Forwarding Misbehavior Detection in Next-Generation Networks
Vikram Desai (University of Massachusetts, Amherst, USA); Sriram Natarajan (University of Massachusetts, Amherst, USA); Tilman Wolf (University of Massachusetts, USA) pp. 846-851

12:05 Efficient Jamming Attacks on MIMO Channels
Shabnam Sodagarí (Virginia Tech, USA); T. Charles Clancy (Virginia Tech, USA) pp. 852-856

**14:00 - 15:45**

**CISS03: Authentication**

Chair: Yue Chen (Visa Inc., USA)
14:00 An Efficient Handover Authentication Scheme with Location Privacy Preserving for EAP-based Wireless Networks
Qi Jing (Xi’an Jiaotong University, P.R. China); Yuqing Zhang (Graduate University of Chinese Academy of Sciences, P.R. China); Xuefeng Liu (Xi’an Jiaotong University, P.R. China);
Anmin Fu (Nanjing University of Science and Technology, P.R. China)
pp. 857-862

14:20 An Pre-authentication Protocol with Symmetric Keys for Secure Handover in Mobile WiMAX Networks
Thuy Nguyen (Nanyang Technological University, Singapore); Maode Ma (Nanyang Technological University, Singapore)
pp. 863-867

14:40 Lightweight Mutual RFID Authentication
Behzad Malek (University of Ottawa, Canada); Ali Miri (Ryerson University & University of Ottowa, Canada)
pp. 868-872

15:00 EM3A: Efficient Mutual Multi-hop Mobile Authentication Scheme for PMIP Networks
Sanaa Taha (University of Waterloo & Cairo University, Canada); Sandra Céspedes (University of Waterloo & Icesi University, Canada); Sherman Shen (University of Waterloo, Canada)
pp. 873-877

15:20 Efficient Authentication and Key Management for the Home Area Network
Hasen Nicanfar (The University of British Columbia, Canada); Paria Jokar (University of British Columbia, Canada); Victor CM Leung (The University of British Columbia, Canada)
pp. 878-882

CISS04: Channel Analysis
Chair: Mohamed Hamdi (Carthage University & Engineering School of Communications, Tunisia)

14:00 Secrecy Capacity Over Correlated Log-normal Fading Channel
Md. Zahurul Islam Sarkar (The University of Edinburgh, United Kingdom);
Tharmalingam Ratnarajah (The University of Edinburgh, United Kingdom)
pp. 883-887

14:20 Physical-Layer Security over Correlated Erasure Channels
Willie K Harrison (Georgia Institute of Technology, USA); Joao Almeida (Faculdade de Engenharia da Universidade do Porto & Instituto de Telecomunicações, Portugal);
Steven McLaughlin (Georgia Institute of Technology, USA); Joao Barros (University of Porto & Instituto de Telecomunicações, Portugal)
pp. 888-892

14:40 Outage Performance for Amplify-and-Forward Channels with an Unauthenticated Relay
Jing Huang (University of California, Irvine, USA); Amitav Mukherjee (Nokia Research Center, USA); Lee Swindlehurst (University of California at Irvine, USA)
pp. 893-897
15:00 Performance of Pilot Jamming on MIMO Channels with Imperfect Synchronization
Chowdhury Shahriar (Virginia Tech, USA); Shabnam Sodagari (Virginia Tech, USA); T. Charles Clancy (Virginia Tech, USA)
pp. 898-902

15:20 Multiuser Transmit Security Beamforming in Wireless Multiple Access Channels
Jinsong Wu (Bell Laboratories & Alcatel-Lucent, P.R. China); Jinhui Chen (Alcatel-Lucent Shanghai Bell, P.R. China)
pp. 903-906

16:15 - 18:00

CISS05: Infrastructure Security

Chair: Wei Yu (Towson University, USA)

16:15 A Novel Architecture against False Data Injection Attacks in Smart Grid
Sulabh Bhattarai (Towson University & Towson University, USA); Linqiang Ge (Computer and Information Sciences, Towson University, USA); Wei Yu (Towson University, USA)
pp. 907-911

16:35 A Dynamic Proof of Retrievability (PoR) Scheme with O(logn) Complexity
Zhen Mo (University of Florida, USA); Yian Zhou (University of Florida, USA); Shigang Chen (University of Florida, USA)
pp. 912-916

16:55 Verifiable Symmetric Searchable Encryption For Semi-honest-but-curious Cloud Servers
Qi Chai (University of Waterloo, Canada); Guang Gong (University of Waterloo, Canada)
pp. 917-922

17:15 Enforcing Scalable and Dynamic Hierarchical Access Control in Cloud Computing
Ran Yang (Tsinghua University, P.R. China); Chuang Lin (Tsinghua University, P.R. China); Yixin Jiang (University of Waterloo, Canada)
pp. 923-927

17:35 Indirect Reciprocity Game Modelling for Secure Wireless Networks
Liang Xiao (Xiamen University & WINLAB, Rutgers University, P.R. China); Wanyi Lin (University of Maryland, USA); Yan Chen (University of Maryland, College Park, USA); K. J. Ray Liu (University of Maryland, USA)
pp. 928-933
### Wednesday, June 13

**08:00 - 09:45**

**CISS-06: Wireless Sensor Network Security**

Chair: Abderrahim Benslimane (University of Avignon & LIA/CERI, France)

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
</tr>
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<tbody>
<tr>
<td>08:00</td>
<td>Fast Jamming Detection in Sensor Networks</td>
<td>Kartik Siddhabathula (University of Texas at Arlington, USA); Qi Dong (University of Texas at Arlington, USA); Donggang Liu (University of Texas at Arlington, USA); Matthew Wright (University of Texas at Arlington, USA)</td>
</tr>
<tr>
<td>08:20</td>
<td>A Novel Traffic-Analysis Back Tracing Attack for Locating Source Nodes in Wireless Sensor Networks</td>
<td>Mohamed Mahmoud (University of Waterloo, Canada); Sherman Shen (University of Waterloo, Canada)</td>
</tr>
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<td>08:40</td>
<td>Quantitative Security and Efficiency Analysis of SEAR in Wireless Sensor Networks</td>
<td>Di Tang (Michigan State University, USA); Tongtong Li (Michigan State University, USA); Jian Ren (Michigan State University, USA)</td>
</tr>
<tr>
<td>09:00</td>
<td>All Your Jammers Belong To Us - Localization of Wireless Sensors Under Jamming Attack</td>
<td>Yu Seung Kim (Carnegie Mellon University, USA); Frank Mokaya (Carnegie Mellon University, USA); Eric Chen (Carnegie Mellon University, USA); Patrick Tague (Carnegie Mellon University, USA)</td>
</tr>
<tr>
<td>09:20</td>
<td>Stealthy pre-attacks against random key pre-distribution security</td>
<td>Panagiotis (Panos) Papadimitratos (KTH, Sweden); Jing Deng (University of North Carolina at Greensboro, USA)</td>
</tr>
</tbody>
</table>

**14:00 - 15:45**

**CISS07: Malware and OS Security**

Chair: Hossam Afifi (Institut Telecom & Paris South, France)

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<tr>
<th>Time</th>
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<th>Authors</th>
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<tr>
<td>14:00</td>
<td>How an SMS-Based Malware Infection Will Get Throttled by the Wireless Link</td>
<td>Ilona Murynets (AT&amp;T Security Research Center, USA); Roger Piqueras Jover (AT&amp;T Security Research Center, USA)</td>
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</tbody>
</table>
14:20 A Hybrid Framework to Analyze Web and OS Malware
Vitor Afonso (University of Campinas, Brazil); Dario Fernandes Filho (University of Campinas, Brazil); André Grégio (Renato Archer IT Research Center & University of Campinas, Brazil); Paulo Licio de Geus (University of Campinas, Brazil); Mario Jino (University of Campinas, Brazil)
pp. 966-970

14:40 File-Process Dependency Network and Malware Detection
Weixuan Mao (Xi’an Jiaotong University, P.R. China); Zhongmin Cai (Xi’an Jiaotong University, P.R. China); Xiaohong Guan (Xi’an Jiaotong University & Tsinghua University, P.R. China); Qian Feng (Xi’an Jiaotong University, P.R. China)
N/A

15:00 Revealing and Analysing Modern Malware
Pavel Celeda (Masaryk University, Czech Republic); Radek Krejci (CESNET & Masaryk University, Czech Republic); Vojtech Krmicek (Masaryk University, Czech Republic)
pp. 971-975

15:20 Designing Information Flow Policies for Android's Operating System
Radoniaine Andriansimandefitra (SUPELEC, France); Stephane Geller (SUPELEC, France); Valérie Viet Triem Tong (SUPELEC, France)
pp. 976-981

16:15 - 18:00

CISS08: Mobile Security

Chairs: Rose Qingyang Hu (Utah State University, USA), Bo Liu (Shanghai Jiao Tong University, P.R. China)

16:15 A First Look on the Effects and Mitigation of VoIP SPIT Flooding in 4G Mobile Networks
Elias Bou-Harb (Concordia University, Canada); Mourad Debbabi (Concordia University, Montreal, Canada); Chadi Assi (Concordia University, Canada)
pp. 982-987

16:35 Trust-Enhanced Message Security Protocol for Mobile Ad Hoc Networks
Isaac Woungang (Ryerson University, Canada); Mohammad S. Obaidat (Monmouth University, USA); Sanjay Kumar Dhurandher (Netaji Subhas Institute of Technology, India); Han-Chieh Chao (National Ilan University, Taiwan); Chris Liu (University of I-Lan, Taiwan)
pp. 988-992

16:55 A localized authentication and billing scheme for proxy mobile IPv6 in VANETs
Lo-Yao Yeh (National Center for High-Performance Computing, Taiwan); Jee-Gong Chang (National Center for High-Performance Computing & National Applied Research Laboratories, Taiwan); Weicheng Huang (National Center for High-Performance Computing, Taiwan); Yi-Lang Tsai (National Center for High-Performance Computing & National Applied Research Laboratories, Taiwan)
pp. 993-998
17:15 Mitigating SMS Spam by Online Detection of Repetitive Near-Duplicate Messages
Baris Coskun (AT&T Security Research Center, USA); Paul Giura (AT&T Security Research Center, USA)
pp. 999-1004

17:35 WiMAX Mobile Subscriber Verification Using Gabor-Based RF-DNA Fingerprints
Donald Reising (AF Institute of Technology, USA); Michael A Temple (Air Force Institute of Technology, USA)
pp. 1005-1010

Thursday, June 14

08:00 - 09:45

CISS09: CISS09: Multimedia Security

Chair: Periklis Chatzimisios (Alexander Technological Educational Institute of Thessaloniki, Greece)

08:00 A New Image Encryption Algorithm Based on a Chaotic DNA Substitution Method
Abir Awad (Ryerson University, Canada); Ali Miri (Ryerson University & University of Ottawa, Canada)
pp. 1011-1015

08:20 Watermark Removal using Pseudorandom Desynchronization by Selective Pixel Elimination
Pradhumna L Shrestha (University of Nebraska-Lincoln, USA); Michael Hempel (University of Nebraska-Lincoln, USA); Tao Ma (University of Nebraska-Lincoln, USA); Dongming Peng (University Nebraska - Lincoln, USA); Hamid Sharif (University of Nebraska-Lincoln, USA)
pp. 1016-1020

08:40 A Quality-Preserving Hidden Information Removal Approach for Digital Images
Fahimeh Rezaei (University of Nebraska Lincoln, USA); Michael Hempel (University of Nebraska-Lincoln, USA); Pradhumna Lal Shrestha (University of Nebraska Lincoln, USA); Tao Ma (University of Nebraska-Lincoln, USA); Dongming Peng (University Nebraska - Lincoln, USA); Hamid Sharif (University of Nebraska-Lincoln, USA)
pp. 1021-1025

09:00 EDES - Efficient Dynamic Selective Encryption Framework to Secure Multimedia Traffic in Wireless Sensor Networks
Abderrezak Rachedi (University Paris-Est Marne-la-Vallée, France); Kaddar Lamia (University of Versailles Saint Quentin, France); Ahmed Mehaoua (University of Paris Descartes, France)
pp. 1026-1030
09:20 On the Extraction of Spread-Spectrum Hidden Data in Digital Media
Ming Li (State University of New York at Buffalo, USA); Michel Kulhandjian (State University of New York at Buffalo, USA); Dimitris A. Pados (State University of New York at Buffalo, USA); Stella N. Batalama (State University of New York at Buffalo, USA); Michael Medley (Air Force Research Laboratory, USA); John Matyjas (Air Force Research Laboratory/RIGF, USA)
pp. 1031-1035

14:00 - 15:45

CISS-P1: P2P Security -- Poster session

Chair: Remi Badonnel (LORIA, France)

Applying Trust and Reputation Mechanisms to a Kademia-Based Distributed Hash Table
Michael Kohnen (University of Duisburg-Essen, Germany)
pp. 1036-1041

Trust Management Framework for Social Networks
Ping Zhang (IUPUI, USA); Arjan Durresi (Indiana University Purdue University Indianapolis, USA)
pp. 1042-1047

DDoS Vulnerability of BitTorrent Peer Exchange Extension: Analysis and Defense
Majing Su (Harbin Institute of Technology, P.R. China); Hongli Zhang (Harbin Institute of Technology, P.R. China); Binxing Fang (Harbin Institute of Technology, P.R. China); Xiaojiang Du (Temple University, USA)
pp. 1048-1052

A Trust-based Strategy for Addressing Residual Attacks in the RELOAD Architecture
Oussma Dabbebi (INRIA Nancy - Grand Est, France); Remi Badonnel (LORIA, France); Olivier Festor (INRIA Nancy - Grand Est, France)
pp. 1053-1058

Utilizing Social Links for Location Privacy In Opportunistic Delay-Tolerant Networks
Sameh Zakhary (University of Nottingham, United Kingdom); Milena Radenkovic (University of Nottingham, United Kingdom)
pp. 1059-1063

CISS10: Network Analysis

Chair: Zubair Baig (King Fahd University of Petroleum and Minerals, Saudi Arabia)

14:00 Classifying Service Flows in the Encrypted Skype Traffic
Maciej Korczyński (Grenoble Informatics Laboratory, France); Andrzej Duda (Grenoble Institute of Technology, France)
pp. 1064-1068
14:20 **ITACA: Flexible, Scalable Network Analysis**  
John Hurley (Queens University of Belfast, United Kingdom); Antonio Munoz (Queen's University of Belfast, United Kingdom); Sakir Sezer (Queen's University Belfast, United Kingdom)  
pp. 1069-1073

14:40 **Multilevel Early Packet Filtering Technique based on Traffic Statistics and Splay Trees for Firewall Performance Improvement**  
Zouheir Trabelsi (UAE University, UAE); Safaa Zeidan (UAE University, UAE)  
pp. 1074-1078

15:00 **Efficient Multistriding of Large Non-deterministic Finite State Automata for Deep Packet Inspection**  
Matteo Avalle (Politecnico di Torino, Italy); Fulvio Risso (Politecnico di Torino, Italy); Riccardo Sisto (Politecnico di Torino, Italy)  
pp. 1079-1084

15:20 **Controlling Applications by Managing Network Characteristics**  
Vahab Pournaghshband (University of California, Los Angeles, USA); Leonard Kleinrock (University of California, Los Angeles, USA); Peter Reither (UCLA, USA); Alexander Afanasyev (University of California, Los Angeles & Internet Research Laboratory, Laboratory for Advanced Systems Research, USA)  
pp. 1085-1090

16:15 - 18:00  
ICSS-P2: Intrusion Detection -- Poster session

Chair: Bo Rong (Communications Research Center Canada, Canada)

**Combining Wavelet Analysis and CUSUM Algorithm for Network Anomaly Detection**  
Christian Callegari (University of Pisa, Italy); Stefano Giordano (University of Pisa, Italy); Michele Pagano (University of Pisa, Italy); Teresa Pepe (University of Pisa, Italy)  
pp. 1091-1095

**Detection of Cache Pollution Attacks Using Randomness Checks**  
Hyundo Park (Bell Labs, Alcatel-Lucent, USA); Indra Widjaja (Bell Labs, Alcatel-Lucent, USA); Heejo Lee (Korea University, Korea)  
pp. 1096-1100

**On using multiple classifier systems for Session Initiation Protocol (SIP) anomaly detection**  
Anil S Mehta (Advanced Energy Solutions Group Inc., USA); Neda Hantehzadeh (Southern Illinois University, USA); Vijay Gurbani (Bell Laboratories, Alcatel-Lucent, USA); Tin Ho (Bell Labs, Lucent Technologies, USA); Flavia Sancier (Southern Illinois University, USA)  
pp. 1101-1106
Distributed PCA-based anomaly detection in telephone networks through legitimate-user profiling
Maurizio Dusi (NEC Laboratories Europe, Germany); Christian Vitale (NEC Laboratories Europe, Germany); Saverio Niccolini (NEC Europe Ltd., Germany); Christian Callegari (University of Pisa, Italy)
p. 1107-1112

An Improved Hidden Markov Model for Anomaly Detection Using Frequent Common Patterns
Afroza Sultana (Concordia University, Canada); Abdelwahab Hamou-Lhadj (Concordia University, Canada)
p. 1113-1117

CISS11: Privacy and Information Hiding
Chair: Remi Badonnel (LORIA, France)

16:15 Source Anonymity in Fair Scheduling: A Case for the Proportional Method
Abhishek Mishra (Lehigh University, USA); Parv Venkitasubramaniam (Lehigh University, USA)
p. 1118-1122

16:35 Secure and Efficient Source Location Privacy-Preserving Scheme for Wireless Sensor Networks
Mohamed Mahmoud (University of Waterloo, Canada); Sherman Shen (University of Waterloo, Canada)
p. 1123-1127

16:55 Privacy-Preserving PKIs with Reduced Server Trust
Giovanni Di Crescenzo (Telcordia Technologies, USA); Tao Zhang (Cisco Systems, USA)
p. 1128-1132

17:15 Least-significant-digit Steganography in Low Bitrate Speech
Jin Liu (School of Computer, Huazhong University of Science and Technology, Wuhan, P.R. China); Ke Zhou (Huazhong University of Science and Technology, P.R. China); Hui Tian (National Huaqiao University, P.R. China)
p. 1133-1137

17:35 Evaluating Component Hiding Techniques in Circuit Topologies
Jeffrey Todd McDonald (University of South Alabama & School of Computer and Information Science, USA); Yong Kim (Air Force Institute of Technology, USA); Daniel Koranek (Air Force Research Laboratory, USA); James Parham (Air Force Research Laboratory, USA)
p. 1138-1143
## ICC’12 CQRM: IEEE ICC 2012 - Communication QoS, Reliability and Modeling Symposium - Program

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<td>8:00 - 9:45</td>
<td></td>
<td>CQR05: Quality and Performance in Grid, Distributed and Cloud Computing</td>
<td>CQR09: Information based Wireless and Mobile Networks and Services</td>
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<tr>
<td>9:45 - 10:45</td>
<td></td>
<td>CQR06: Quality, Scalability and Performance in the Internet II</td>
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<tr>
<td>10:45 - 12:30</td>
<td>CQR-P1: CQR-P1 CQR01: Network Measurement and Monitoring Techniques</td>
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<td>12:30 - 14:00</td>
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<tr>
<td>14:00 - 15:45</td>
<td>CQR-P2: CQR-P2 CQR02: Quality, Scalability and Performance in the Internet I</td>
<td>CQR07: Quality and Performance in Next Generation Mobile Networks</td>
<td>CQR10: Network Modeling &amp; Performance Evaluation Techniques</td>
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<td>15:45 - 16:15</td>
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<td>16:15 - 18:00</td>
<td>CQR03: TCP/IP Performance CQR04: Quality and Performance for Network and Services</td>
<td>CQR08: Quality and Performance in Wireless Networks</td>
<td>CQR11: Performance Modeling of Next Generation Networks</td>
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### Tuesday, June 12

#### 10:45 - 12:30

**CQR-P1: CQR-P1**

Chair: Periklis Chatzimisios (Alexander Technological Educational Institute of Thessaloniki, Greece)

**10:45 Signal Processing Applied to Chemically Inspired Communication Protocols**

Massimo Monti (University of Basel, Switzerland); Thomas Meyer (University of Basel, Switzerland); Christian F Tschudin (University of Basel, Switzerland); Marco Luise (University of Pisa & WISER srl, Italy)

pp. 1144-1148
11:06 **Adaptive Security-Aware Scheduling Using Multi-Agent System**  
Maen Saleh (Western Michigan University, USA); Liang Dong (Baylor University, USA)  
pp. 1149-1153

11:27 **Optimal Cross Layer Design for Video Transmission over OFDMA System**  
Lijun He (Xi'an Jiaotong University, P.R. China); Guizhong Liu (Xi'an Jiaotong University, P.R. China)  
pp. 1154-1159

Rongpeng Li (Zhejiang University, P.R. China); Zhifeng Zhao (Zhejiang University, P.R. China); Yan Wei (Zhejiang University, P.R. China); Xuan Zhou (Zhejiang University, P.R. China); Honggang Zhang (Zhejiang University, P.R. China)  
pp. 1160-1164

12:09 **Assessing QoE of On-Demand TCP Video Streams in Real Time**  
Amy Csizmar Dalal (Carleton College, USA); Andy K Bouchard (Carleton College, USA); Sara Cantor (Carleton College, USA); Yiran Guo (Carleton College, USA); Anya Johnson (Carleton College, USA)  
pp. 1165-1170

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**CQR01: Network Measurement and Monitoring Techniques**

Chair: Stefano Giordano (University of Pisa, Italy)

10:45 **A Lightweight Algorithm for Traffic Filtering over Sliding Windows**  
Josep Sanjuàs-Cuxart (Technical University of Catalonia, Spain); Pere Barlet-Ros (Technical University of Catalonia, Spain); Josep Solé-Pareta (Universitat Politècnica de Catalunya (UPC), Spain); Gabriella Andriuzzi (Università Degli Studi di Napoli Federico II, Italy)  
pp. 1171-1176

11:06 **MTCLASS: Traffic Classification on High-Speed Links with Commodity Hardware**  
Francesco Gringoli (University of Brescia, Italy); Alice Este (University of Brescia, Italy); Luca Salgarelli (University of Brescia, Italy)  
pp. 1177-1182

11:27 **Anomaly Detection Using DSNS and Firefly Harmonic Clustering Algorithm**  
Mario H. A. C. Adaniya (State University of Londrina, Brazil); Moisés Fernando Lima (State University of Londrina, Brazil); Joel J. P. C. Rodrigues (Instituto de Telecomunicações, University of Beira Interior, Portugal); Taufik Abrão (State University of Londrina, Brazil); Mario Lemes Proença Jr. (State University of Londrina, Brazil)  
pp. 1183-1187

11:48 **Moni4VDTN: a Monitoring System for Vehicular Delay-Tolerant Networks**  
João Isento (Instituto de Telecomunicações, University of Beira Interior, Portugal); João Dias (Instituto de Telecomunicações, University of Beira Interior, Portugal); Fábio Canelo (Instituto de Telecomunicações, University of Beira Interior, Portugal);
12:09 Valley-free violation in Internet routing - Analysis based on BGP Community data
Vasileios Giotsas (University College London, United Kingdom); Shi Zhou (University College London, United Kingdom)
pp. 1193-1197

14:00 - 15:45
CQR-P2: CQR-P2

Chair: Lorenzo Di Gregorio (Intel Mobile Communications GmbH & Lantiq Deutschland GmbH, Germany)

14:00 Coded Path Protection: Efficient Conversion of Sharing to Coding
Serhat N Avci (University of California, Irvine, USA); Ender Ayanoglu (University of California, Irvine, USA)
pp. 1198-1203

14:21 Flow Availability Analysis in Two-Layer Networks with Dedicated Path Protection at the Upper Layer
Wenda Ni (Carleton University, Canada); Jing Wu (Communications Research Centre Canada, Canada); Changcheng Huang (Carleton University, Canada); J. Michel Savoie (Communications Research Centre Canada, Canada)
pp. 1204-1208

14:42 Enhanced Metric Caching for Short TCP Flows
Per Hurtig (Karlstad University, Sweden); Anna Brunstrom (Karlstad University, Sweden)
pp. 1209-1213

15:03 ADUS: Adaptive Resource Allocation in Cluster Systems under Heavy-Tailed and Bursty Workloads
Zhen Li (Northeastern University, USA); Jianzhe Tai (Northeastern University, USA); Jiahui Chen (Northeastern University, USA); Ningfang Mi (Northeastern University, USA)
pp. 1214-1218

15:24 Optimal Server Assignment in Multi-server Parallel Queueing Systems with Random Connectivities and Random Service Failures
Hassan Halabian (Carleton University, Canada); Ioannis Lambadaris (Carleton University, Canada); Chung-Horng Lung (Carleton University, Canada)
pp. 1219-1224

CQR02: Quality, Scalability and Performance in the Internet I

Chair: Tetsuya Yokotani (Mitsubishi Electric Corp., Japan)
14:00 **Real-time Web Application Roadblock: Performance Penalty of HTML Sockets**  
Sachin Kumar Agarwal (NEC Europe Ltd., Laboratories, Germany)  
pp. 1225-1229

14:21 **Erlang-based dimensioning for IPv4 Address+Port translation**  
Florent Fourcot (Telecom Bretagne, France); Bertrand Grelot (Telecom Bretagne, France); Isabelle Kraemer (Télécom Bretagne, France); Frédéric Perrin (Télécom Bretagne, France); Patrick Maillé (Telecom Bretagne, France); Tanguy Ropitault (ENST Bretagne, France); Laurent Toutain (Telecom Bretagne, France)  
pp. 1230-1234

14:42 **Enhancing TCP Performance in IP Fast Reroute**  
Minjing Mao (The University of Hong Kong, Hong Kong); Zheng Wen (The University of Hong Kong, Hong Kong); Kwan Yeung (University of Hong Kong, Hong Kong)  
pp. 1235-1238

15:03 **NUM-Based Rate Allocation for Streaming Traffic via Sequential Convex Programming**  
Ali Sehati (University of Tehran, Iran); Mohammad Sadegh Talebi (IPM, Iran); Ahmad Khonsari (University of Tehran, Iran)  
pp. 1239-1243

15:24 **Stability Analysis of Tandem SIP Proxies**  
Seyed Vahid Azhari (Iran University of Science and Technology, Iran); Hani Nemati (Iran university of science and Technology, Iran)  
pp. 1244-1248

16:15 - 18:00

**CQR03: TCP/IP Performance**

Chair: Toshinori Tsuboi (Tokyo University of Technology, Japan)

16:15 **Saving Energy and Improving TCP Throughput with Rate Adaptation in Ethernet**  
Y. Sinan Hanay (Osaka University, Japan); Wei Li (University of Massachusetts, USA); Russell Tessier (University of Massachusetts, USA); Tilman Wolf (University of Massachusetts, USA)  
pp. 1249-1254

16:36 **The Successive Approximation Approach for Multi-path Utility Maximization Problem**  
Phuong L. Vo (Kyung Hee University, Korea); Anh T. Le (Kyung Hee University, Korea); Choong Seon Hong (Kyung Hee University, Korea)  
pp. 1255-1259

16:57 **AFStart: An Adaptive Fast TCP Slow Start for Wide Area Networks**  
Yan Zhang (NJIT, USA); Nirwan Ansari (NJIT, USA); Mingquan Wu (Huawei Technologies, USA); Heather Yu (Huawei Technologies, USA)  
pp. 1260-1264
17:18 Counting NATed Hosts by Observing TCP/IP Field Behaviors
Sophon Mongkolkuksamee (National Electronics and Computer Technology Center, Thailand); Kensuke Fukuda (National Institute of Informatics, Japan); Panita Pongpaibool (National Electronics and Computer Technology Center, Thailand)
pp. 1265-1270

17:39 Improving Performance of Router-Assisted Transport Protocols over Variable Capacity Links
Ihsan A Qazi (Lahore University of Management Sciences, Pakistan); Taieb Znati (University of Pittsburgh, USA); Daniel Mosse (University of Pittsburgh, USA)
pp. 1271-1275

CQR04: Quality and Performance for Network and Services

Chair: Michael D. Logothetis (University of Patras, Greece)

16:15 Aggregation-based Discovery for Virtual Network Environments
Heli Amarasinghe (University of Ottawa, Canada); Abdeltouab Belbekkouche (University of Ottawa, Canada); Ahmed Karmouch (University of Ottawa, Canada)
pp. 1276-1280

16:36 QoS Guarantee in a Batched Poisson Multirate Loss Model Supporting Elastic and Adaptive Traffic
Ioannis Moscholios (University of Peloponnese, Greece); John S Vardakas (IQUADRAT Informatica S. L. Barcelona, Spain); Michael D. Logothetis (University of Patras, Greece); Anthony Boucouvalas (University of Peloponnese, Greece)
pp. 1281-1286

16:57 The LogLog Counting Reversible Sketch: a Distributed Architecture for Detecting Anomalies in Backbone Networks
Christian Callegari (University of Pisa, Italy); Andrea Di Pietro (University of Pisa, Italy); Stefano Giordano (University of Pisa, Italy); Teresa Pepe (University of Pisa, Italy); Gregorio Procissi (Università di Pisa, Italy)
pp. 1287-1291

17:18 IA-TCP: A Rate Based Incast-Avoidance Algorithm for TCP in Data Center Networks
Jaehyun Hwang (Bell Labs, Alcatel-Lucent, Korea); Joon Yoo (Gachon University, Korea); Nakjung Choi (Bell-Labs, Alcatel-Lucent, Korea)
pp. 1292-1296

17:39 MDP-Based Admission Control for Multicast Streaming Services in Wireless Mobile Networks
Tae Ok Kim (University of Manitoba, Canada); Attahiru S. Alfa (University of Manitoba, Canada); Bong Dae Choi (Korea University, Korea)
N/A
Wednesday, June 13

08:00 - 09:45

CQR05: Quality and Performance in Grid, Distributed and Cloud Computing

Chair: Miki Yamamoto (Kansai University, Japan)

08:00 A Hybrid Multidimensional Algorithm for Network-aware Resource Scheduling in Clouds and Grids
Davide Adami (CNIT Pisa Research Unit, University of Pisa, Italy); Christian Callegari (University of Pisa, Italy); Stefano Giordano (University of Pisa, Italy); Michele Pagano (University of Pisa, Italy)
pp. 1297-1301

08:26 Average Delay SLAs in Cloud Computing
Boonyarith Saovapakhiran (North Carolina State University, USA); Michael Devetsikiotis (North Carolina State University, USA); George Michailidis (University of Michigan, USA); Yannis Viniotis (North Carolina State University, USA)
pp. 1302-1308

08:52 Coping with Fluctuations in Resource Availability in Grid Networks
Daniel M. Batista (University of Sao Paulo, Brazil); Rafael Curi (State University of Campinas, Brazil); Nelson L. S. da Fonseca (State University of Campinas, Brazil)
pp. 1309-1313

09:18 SLA Guaranteed Virtual Machine Consolidation for Computing Clouds
Zhe Huang (Hong Kong University of Science and Technology, Hong Kong); Danny H.K. Tsang (HKUST, Hong Kong)
pp. 1314-1319

CQR06: Quality, Scalability and Performance in the Internet II

Chair: Noriaki Kamiyama (NTT Service Integration Laboratories, Japan)

08:00 Same but Different? - Using Speech Signal Features for Comparing Conversational VoIP Quality Studies
Sebastian Egger (Telecommunications Research Center Vienna (FTW) & Signal Processing and Speech Communication Laboratory, Graz University of Technology, Austria); Raimund Schatz (Telecommunications Research Center Vienna (FTW), Austria); Katrin Schoenberg (Deutsche Telekom Laboratories / Berlin University of Technology, Germany); Alexander Raake (Deutsche Telekom Laboratories / Berlin University of Technology, Germany); Gernot Kubin (Graz University of Technology, Austria)
pp. 1320-1324

08:21 "Time is Bandwidth"? Narrowing the Gap between Subjective Time Perception and Quality of Experience
Sebastian Egger (Telecommunications Research Center Vienna (FTW) & Signal Processing and Speech Communication Laboratory, Graz University of Technology, Austria); Peter Reichl (Université Européenne de Bretagne / Télécom Bretagne,
Rennes & FTW Telecommunications Research Center Vienna, France); Tobias Hößfeld (University of Wuerzburg, Germany); Raimund Schatz (Telecommunications Research Center Vienna (FTW), Austria)
pp. 1325-1330

08:42 A Distributed Login Framework for Semi-structured Peer-to-Peer Networks
Xiali Hei (Temple University & Guangdong University of Business Studies, USA); Xiaojian Shu (Temple University, USA); Binheng Song (Tsinghua University, P.R. China)
pp. 1331-1335

09:03 Coverage and Capacity Optimization in Self-Aware Systems of the Future Internet
Ioannis Chochliouros (Hellenic Telecommunications Organization S.A., Greece); Periklis Chatzimisios (Alexander Technological Educational Institute of Thessaloniki, Greece)
pp. 1336-1340

09:24 Per User Fairness in Flow-Aware Networks
Jerzy Domżal (AGH University of Science and Technology, Poland); Robert Wójcik (AGH University of Science and Technology, Poland); Andrzej Jajszczyk (AGH University of Science and Technology, Poland)
pp. 1341-1346

14:00 - 15:45

CQR07: Quality and Performance in Next Generation Mobile Networks

Chair: Richard J La (University of Maryland at College Park, USA)

14:00 "Green" Distance-Aware Base Station Sleeping Algorithm in LTE-Advanced
Alexandra Bousia (UPC, Spain); Angelos Antonopoulos (Telecommunications Technological Centre of Catalonia (CTTC), Spain); Luis Alonso (Universidad Politecnica de Catalunya, Spain); Christos Verikoukis (Telecommunications Technological Centre of Catalonia, Spain)
pp. 1347-1351

14:21 A Novel Handover Decision Policy for Reducing Power Transmissions in the two-tier LTE network
Dionysis Xenakis (University of Athens & Green Adaptive Intelligent Networking (GAIN) group, Greece); Nikos Passas (University of Athens, Greece); Christos Verikoukis (Telecommunications Technological Centre of Catalonia, Spain)
pp. 1352-1356

14:42 Load balancing in heterogeneous LTE: Range optimization via cell offset and load-coupling characterization
Iana Siomina (Ericsson, Sweden); Di Yuan (Linköping University, Sweden)
pp. 1357-1361

15:03 Efficient Admission Control for Next Generation Cellular Networks
Venkata Ramkumar (Aalborg University, Denmark); Andrei Lucian Stefan (Aalborg University, Denmark); Rasmus Hjorth Nielsen (Aalborg University & Center for...
16:15 - 18:00

CQR08: Quality and Performance in Wireless Networks

Chair: Christos Verikoukis (Telecommunications Technological Centre of Catalonia, Spain)

16:15 A Decentralized Lifetime Maximization Algorithm for Distributed Applications in Wireless Sensor Networks
Virginia Pilloni (University of Cagliari, Italy); Mauro Franceschelli (University of Cagliari, Italy); Luigi Atzori (University of Cagliari, Italy); Alessandro Giua (University of Cagliari, Italy)
pp. 1372-1377

16:36 A Cross-layer design for QoS support in Cognitive Radio Sensor Networks for Smart Grid Applications
Ghalib A. Shah (University of Engineering and Technology, Pakistan); Vehbi Cagri Gungor (Bahcesehir University, Turkey); Ozgur B. Akan (Koc University, Turkey)
pp. 1378-1382

16:57 Service Availability Analysis in Communication-based Train Control (CBTC) Systems Using WLANs
Li Zhu (Carleton University, Canada); F. Richard Yu (Carleton University, Canada); Bing Ning (State Key Laboratory of Rail Traffic Control and Safety, P.R. China); Tao Tang (Beijing Jiaotong University, P.R. China)
pp. 1383-1387

17:18 Dynamic and Scalable Provisioning in Wireless Mesh Networks to Efficiently Support Multi-User Killer-Applications with High-Demand of Resources
Augusto Jose Venancio Neto, Ph. D. (Universidade Federal do Ceará & Centro Tecnológico, Brazil); Eric Patrick (Federal University of Goiás, Brazil); Eduardo Cerqueira (Federal University of Para & UFPA, Brazil); Danielo Gomes (Federal University of Ceará ( UFC), Brazil); Rui L Aguiar (University of Aveiro & Instituto de Telecomunicações, Portugal)
pp. 1388-1392

17:39 Chunk and Object Level Deduplication for Web Optimization: A Hybrid Approach
Ioannis Papapanagiotou (IBM, USA); Bob Callaway (IBM & NC State University, USA); Michael Devetsikiotis (North Carolina State University, USA)
pp. 1393-1398
Thursday, June 14

08:00 - 09:45

CQR09: Information based Wireless and Mobile Networks and Services

Chair: Ioannis Lambadaris (Carleton University, Canada)

08:00 Energy-Efficient Spectrum Sensing in Cognitive Radio Networks by Coordinated Reduction of the Sensing Users
Saud Althunibat (University of Trento, Italy); Raúl Palacios (University of Trento, Italy); Fabrizio Granelli (University of Trento, Italy)
pp. 1399-1404

08:21 Network Coding Based Wideband Compressed Spectrum Sensing
Hoda Dehghan (Carleton University, Canada); Ioannis Lambadaris (Carleton University, Canada); Chung-Horng Lung (Carleton University, Canada)
pp. 1405-1409

08:42 Design and Performance Evaluation of Underwater Data Dissemination Strategies using Interference Avoidance and Network Coding
Raúl Palacios (University of Trento, Italy); Janus Heide (Aalborg University, Denmark); Frank H.P. Fitzek (Aalborg University, Denmark); Fabrizio Granelli (University of Trento, Italy)
pp. 1410-1415

09:03 A Destination Prediction Model based on Historical Data, Contextual Knowledge and Spatial Conceptual Maps
Apollinaire Nadembega (University of Montreal, Canada); Tarik Taleb (NEC Europe Ltd., Germany); Abdelhakim Hafid (University of Montreal, Canada)
pp. 1416-1420

09:24 Epidemic Forwarding in Mobile Social Networks
Hongxian Sun (The University of Hong Kong, Hong Kong); Chuan Wu (The University of Hong Kong, Hong Kong)
pp. 1421-1425

14:00 - 15:45

CQR10: Network Modeling & Performance Evaluation Techniques

Chair: George Kesidis (Pennsylvania State University, USA)

14:00 Cognitive Radio Network Interference Modeling with Shadowing Effect via Scaled Student’s t Distribution
Xue Li (Wright State University & IEEE Student Member, Member of Society of Women Engineers, USA); Ruolin Zhou (Western New England University & IEEE Student Member, USA); Qian Han (Wright State University, USA); Zhiqiang Wu (Wright State University, USA)
pp. 1426-1430
14:21 Accounting for characteristics of session workloads: A study based on partly-open queue
Nikola Janevski (West Virginia University, USA); Katerina Goseva-Popstojanova (West Virginia University, USA)
pp. 1431-1437

14:42 A Study of Unsupervised Adaptive Crowdsourcing
George Kesidis (Pennsylvania State University, USA); Aditya Kurve (The Pennsylvania State University, USA)
pp. 1438-1442

15:03 Strategic Evaluation of Performance-Cost Trade-offs in a Multipath TCP Multihoming Context
Sinh Chung Nguyen (University Pierre et Maire Curie - Paris 6, France); Thi Mai Trang Nguyen (Université Pierre et Marie Curie & LIP6, France); Guy Pujolle (University Pierre et Marie Curie - Paris 6, France); Stefano Secci (University Pierre et Marie Curie - Paris 6, France)
pp. 1443-1447

15:24 The inter-domain hierarchy in measured and randomly generated AS-level topologies
Joanna Tomasik (Supélec, France); Marc-Antoine Weisser (Supélec, France)
pp. 1448-1453

16:15 - 18:00

CQR11: Performance Modeling of Next Generation Networks

Chair: Katsunori Yamaoka (Tokyo Institute of Technology, Japan)

16:15 Algorithm for energy efficient lightpath establishment in WDM networks
Rafael Scarafichi (University of Campinas, Brazil); Nelson L. S. da Fonseca (State University of Campinas, Brazil); Marcos Rogerio Salvador (CPqD, Brazil)
pp. 1454-1459

16:36 Approximated Algorithms for Mapping Virtual Networks on Network Substrates
Gustavo Alkmim (State University of Campinas, Brazil); Daniel M. Batista (University of Sao Paulo, Brazil); Nelson L. S. da Fonseca (State University of Campinas, Brazil)
pp. 1460-1465

16:57 The flatrate policy is an incentive for saving energy in mobile cooperation networks
Lorenzo Di Gregorio (Intel Mobile Communications GmbH & Lantiq Deutschland GmbH, Germany); Christos Verikoukis (Telecommunications Technological Centre of Catalonia, Spain)
pp. 1466-1470

17:18 Accurate SINR Estimation Model for System Level Simulation of LTE Networks
Josep Colom Ikuno (Vienna University of Technology, Austria); Stefan Pendl (Vienna University of Technology, Austria); Michal Šimko (Vienna University of Technology, Austria); Markus Rupp (Vienna University of Technology, Austria)
pp. 1471-1475
17:39 Performance model for mapping processing tasks to OpenFlow switch resources

Omar El Ferkouss (Université du Québec à Montréal, Canada); Rachida Ben Ali (École Polytechnique de Montréal, Canada); Yves Lemieux (Ericsson Research Canada, Canada); Cherkaoui Omar (University of Quebec in Montreal, Canada)

pp. 1476-1481
# ICC’12 CRN: IEEE ICC 2012 - Cognitive Radio and Networks Symposium - Program

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<td>14:00 - 15:45</td>
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<td>CRN02: Cooperative Spectrum Sensing</td>
<td>CRN11: Game Theory and Network Economics</td>
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<td>CRN13: Interference Analysis and Management</td>
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## Tuesday, June 12

**10:45 - 12:30**

**CRN-P1: Spectrum Sensing**

Chair: Alagan Anpalagan (Ryerson University, Canada)

10:45 EM-based Joint Estimation and Detection for Multiple Antenna Cognitive Radios
Ayman Assra (McGill University, Canada); Benoit Champagne (McGill University, Canada)
pp. 1482-1486

11:06 Sampling Spectrum Occupancy Data over Random Fields: A Matrix Completion Approach
Lanchao Liu (University of Houston, USA); Husheng Li (University of Tennessee, USA); Zhu Han (University of Houston, USA)
pp. 1487-1491
11:27 Cooperative Spectrum Sensing with Slepian-Wolf Coded Cooperations
Ning Sun (University of Arkansas, USA); Guoqing Zhou (University of Arkansas, USA); Jingxian Wu (University of Arkansas, USA)
pp. 1492-1496

11:48 Spectrum Sensing Based on Recovered Secondary Frame in the Presence of Realistic Decoding Errors
Liang Tang (Warwick University, United Kingdom); Yunfei Chen (University of Warwick, United Kingdom); Arumugam Nallanathan (King's College London, United Kingdom); Evor L Hines (University of Warwick, United Kingdom)
pp. 1497-1501

12:09 Sliding Window Technique for Dynamic Spectrum Sensing of an Asynchronous Primary User
MD Rakibul Hasan (University of Texas at Dallas, USA); Mohammad Saquib (University of Texas at Dallas, USA)
pp. 1502-1506

CRN01: Spectrum Sensing-I

Chair: Shahram ShahbazPanahi (University of Ontario Institute of Technology, Canada)

10:45 Blind Cyclostationary Feature Detection Based Spectrum Sensing for Autonomous Self-Learning Cognitive Radios
Mario Bkassiny (University of New Mexico, USA); Sudharman K Jayaweera (University of New Mexico, USA); Yang Li (University of New Mexico, USA); Keith Avery (Air Force Research Laboratory, USA)
pp. 1507-1511

11:06 Spectrum Sensing Under Distribution Uncertainty in Cognitive Radio Networks
Shimin Gong (Nanyang Technological University, Singapore); Ping Wang (Nanyang Technological University, Singapore); Wei Liu (Huazhong University of Science and Technology, P.R. China)
pp. 1512-1516

11:27 Wideband Spectrum Sensing Based on Multi-Resolution Bayes Classifier for Cognitive Radio
Lihui Huang (Shanghai Normal University, P.R. China); Li Li (Shanghai Normal University, P.R. China); Jing Zhang (Shanghai Normal University, P.R. China); Peiqing Ye (Shanghai Normal University, P.R. China)
pp. 1517-1521

11:48 Optimal Spectrum Sensing over Multipath Channels
Yifei Huang (University of New South Wales, Australia); Xiaojing Huang (CSIRO ICT Centre, Australia)
pp. 1522-1527

12:09 Energy Detector with Adaptive Sensing Window for Improved Spectrum Utilization in Dynamic Cognitive Radio Systems
Dusadee Treeumnu (Old Dominion University, USA); Dimitrie C. Popescu (Old Dominion University, USA)
pp. 1528-1532
14:00 - 15:45

CRN-P2: Performance Modeling and Analysis

Chair: Dimitrie C. Popescu (Old Dominion University, USA)

14:00  **Wi-Fi, but not on Steroids: Performance Analysis of a Wi-Fi-like Network Operating in TVWS under Realistic Conditions**
Ljiljana Simić (RWTH Aachen University, Germany); Marina Petrova (RWTH Aachen University, Germany); Petri Mähönen (RWTH Aachen University, Germany)
pp. 1533-1538

14:21  **Performance of Cognitive Radio Spectrum Access with Intra- and Inter-Handoff**
Yong Yao (Blekinge Institute of Technology, Sweden); Said Rutabayiro Ngoga (Blekinge Institute of Technology, Sweden); David Erman (Blekinge Institute of Technology, Sweden); Adrian Popescu (Blekinge Institute of Technology, Sweden)
pp. 1539-1544

14:42  **Joint Soft-Decision Cooperative Spectrum Sensing and Power Control in Multiband Cognitive Radios**
Hua Mu (Auburn University, USA); Jitendra Tugnait (Auburn University, USA)
pp. 1545-1549

15:03  **Binary Artificial Bee Colony for Cooperative Relay Communication in Cognitive Radio Systems**
Saeed Ashrafinia (Simon Fraser University, Canada); Udit Pareek (Simon Fraser University, Canada); Muhammad Naeem (Ryerson University, Canada); Daniel Lee (Simon Fraser University, Canada)
pp. 1550-1554

15:24  **A Spectrum Exploitation Scheme with Channel Assignment for Genetic Algorithm based Adaptive-Array Smart Antennas in Cognitive Radio Networks**
Muhammad Zeeshan (National University of Sciences and Technology (NUST), Islamabad, Pakistan); Salman Ali (National University of Sciences and Technology, Pakistan)
pp. 1555-1559

CRN02: Cooperative Spectrum Sensing

Chair: Karaputugala Gamacharige Madushan Thilina (University of Manitoba, Canada)

14:00  **Power-Constrained Sensor Selection and Routing for Cooperative Detection in Cognitive Radios**
Ibrahim Khalife (University of Valencia, USA); Baltasar Beferull-Lozano (Universidad de Valencia, Spain)
pp. 1560-1565

14:21  **Optimal Sensing-Order in Cognitive Radio Networks with Cooperative Centralized Sensing**
Rakesh Misra (Stanford University, USA); Arun Pachai Kannu (IIT Madras, India)
pp. 1566-1570
14:42 Optimal Cooperative Sensing for Sensors Equipped with Multiple Antennas
Yonghong Zeng (Institute for Infocomm Research, Singapore); Ying-Chang Liang (Institute for Infocomm Research, Singapore); Edward Chu Yeow Peh (Institute for Infocomm Research, Singapore)
pp. 1571-1575

15:03 A Cyclic Correlation-Based Cooperative Spectrum Sensing Method for OFDM Signals
Hamed Sadeghi (Tarbiat Modares University, Iran); Paeiz Azmi (Tarbiat Modares University, Iran); Hamid Arezumand (Tarbiat Modares, Iran)
N/A

15:24 Decentralized Sensor Selection for Cooperative Spectrum Sensing Based on Unsupervised Learning
Guoru Ding (PLA University of Sci. &Tech., P.R. China); Qihui Wu (PLA University of Sci. & Tech., P.R. China); Fei Song (Institute of communication engineering, PLA university of science and Technology, P.R. China); Jinlong Wang (PLA University of Science and Technology, P.R. China)
pp. 1576-1580

16:15 - 18:00

CRN-P3: Learning, Spectrum Analysis, and Spectrum Access

Chair: Walid Saad (University of Miami, USA)

16:15 Behavior Dynamics in Cognitive Radio Networks: An Interacting Particle System Approach
Husheng Li (University of Tennessee, USA); Ju Bin Song (Kyung Hee University, Korea)
pp. 1581-1585

16:36 Nonparametric Bayesian Identification of Primary Users' Payloads in Cognitive Radio Networks
Muhammad Ejaz Ahmed (Kyung Hee University, Korea); Ju Bin Song (Kyung Hee University, Korea); Nam Tuan Nguyen (University of Houston, USA); Zhu Han (University of Houston, USA)
pp. 1586-1591

16:57 Learning Coarse Correlated Equilibria in Two-Tier Wireless Networks
Mehdi Bennis (Centre of Wireless Communications, University of Oulu, Finland); Samir M. Perlaza (Princeton University, USA); Mérouane Debbah (Supelec, France)
pp. 1592-1596

17:18 Identification of Legacy Radios in a Cognitive Radio Network Using a Radio Frequency Fingerprinting Based Method
Nansai Hu (Stevens Institute of Technology, USA); Yu-Dong Yao (Stevens Institute of Technology, USA)
pp. 1597-1602
17:39 Enhancing Wireless Medical Telemetry through Dynamic Spectrum Access
Rahman Doost-Mohammady (Northeastern University, USA); Kaushik Chowdhury
(Northeastern University, USA)
pp. 1603-1608

CRN03: Spectrum Sensing-II

Chair: Octavia A. Dobre (Memorial University of Newfoundland, Canada)

16:15 New and Accurate Results on the Performance of the Multitaper-Based Detector
Ebtihal Haider Gismalla (University of Manchester, United Kingdom); Emad Alsusa
(Manchester University, United Kingdom)
pp. 1609-1613

16:36 An Accurate Model for Periodogram-Based Energy Detection Over Nakagami Fading
Emad Alsusa (Manchester University, United Kingdom); Ebtihal Haider Gismalla
(University of Manchester, United Kingdom)
pp. 1614-1618

16:57 Cyclostationary-Based Low Complexity Wideband Spectrum Sensing using Compressive Sampling
Eric Rebeiz (UCLA, USA); Varun Jain (UCLA, USA); Danijela Cabric (University of California Los Angeles, USA)
pp. 1619-1623

17:18 Non-parametric Multiple-Antenna Blind Spectrum Sensing by Predicted Eigenvalue Threshold
Kais Hassan (University Lille Nord de France, France); Roland Gautier (University of Brest, France); Iyad Dayoub (University Lille Nord de France IEMN-DOAE CNRS
UMR 8520 UVHC & Concordia University Montreal, France); Emanuel Radoi
(University of Brest & Lab-STICC UMR CNRS 3192, France); Marion Berbineau
(IFSTTAR, LEOST & University Lille Nord de France, France)
pp. 1624-1629

17:39 Iterative Recovery Algorithms for Compressed Sensing of Wideband Block Sparse Spectra
Zeinab Zeinalkhani (Carleton University, Canada); Amir Banihashemi (Carleton
University, Canada)
pp. 1630-1634

Wednesday, June 13

08:00 - 09:45

CRN04: Resource Allocation-I

Chair: Dusit Niyato (Nanyang Technological University, Singapore)
08:00 Joint Optimal Sensing and Power Allocation for Cooperative Relay in Cognitive Radio Networks
Huogen Yu (University of Electronic Science and Technology of China, P.R. China); WanBin Tang (University of Electronic Science & Technology of China, P.R. China); Shaoqian Li (University of Electronic Science and Technology of China, Taiwan)
pp. 1635-1640

08:21 Optimal Power Allocation and Relay Selection in Dual-hop and Multi-hop Cognitive Networks
Yiyi Chen (Beijing University of Posts and Telecommunications, P.R. China); Zhiyong Feng (Beijing University of Posts and Telecommunications, P.R. China); Ding Xu (Beijing University of Posts and Telecommunications, P.R. China); Liu Yang (Beijing University of Posts and Telecommunications, P.R. China)
pp. 1641-1645

08:42 Joint Optimal Rate, Power, and Spectrum Allocation in Multi-hop Cognitive Radio Networks
Mui Van Nguyen (Kyung Hee University, Korea); Choong Seon Hong (Kyung Hee University, Korea); Trung Q. Duong (Blekinge Institute of Technology, Sweden)
pp. 1646-1650

09:03 Optimal Power Allocation for OFDM-based Cooperative Relay Cognitive Radio Networks
Shaowei Wang (Nanjing University, P.R. China); Fangjiang Huang (Nanjing University, P.R. China); Mengyao Ge (Nanjing University, P.R. China); Chonggang Wang (InterDigital Communications, USA)
pp. 1651-1655

09:24 Novel Power Control Algorithm by Decomposed Geometric
Mohamed Elalem (Ryerson Canada, Canada)
pp. 1656-1660

14:00 - 15:45

CRN05: Resource Allocation-II

Chair: Long Bao Le (INRS, University of Quebec, Canada)

14:00 Spectrum Sharing and Resource Allocation for Energy-Efficient Heterogeneous Cognitive Radio Networks with Femtocells
Renchao Xie (Carleton University, Canada); F. Richard Yu (Carleton University, Canada); Hong Ji (Beijing University of Posts and Telecommunications, P.R. China)
pp. 1661-1665

14:21 Non-Cooperative Power Allocation Game with Imperfect Sensing Information for Cognitive Radio
Xiaoge Huang (University of Valencia, Spain); Baltasar Beferull-Lozano (Universidad de Valencia, Spain)
pp. 1666-1671
14:42 **A Distributed Power Control Algorithm in Cognitive Radio Networks Based on Nash Bargaining Solution**  
Zhengqiang Wang (Shanghai Jiao Tong University, P.R. China); Lingge Jiang (Shanghai Jiao tong University, P.R. China); Chen He (Shanghai Jiao tong University, P.R. China)  
pp. 1672-1676

15:03 **Robust Power Allocation Designs for Cognitive Radio Networks with Cooperative Relays**  
Shankhanaad Mallick (University of British Columbia, Canada); Rajiv Devarajan (University of British Columbia, Canada); Mohammad Mamunur Rashid (University of British Columbia, Canada); Vijay Bhargava (University of British Columbia, Canada)  
pp. 1677-1682

15:24 **Power Allocation using Vickrey Auction and Sequential First-Price Auction Games for Physical Layer Security in Cognitive Relay Networks**  
Tianyu Wang (Peking University, P.R. China); Lingyang Song (Peking University, P.R. China); Zhu Han (University of Houston, USA); Xiang Cheng (Peking University, P.R. China); Bingli Jiao (Peking University, P.R. China)  
pp. 1683-1687

**CRN06: Performance Modeling and Analysis-I**

Chair: Li-Chun Wang (National Chiao Tung University, Taiwan)

14:00 **Performance Analysis of Cognitive Radio Networks with Channel Assembling and Imperfect Sensing**  
Telex Magloire Nkouatchah Ngatched (Grenfell Campus - Memorial University of Newfoundland, Canada); Shuo Dong (University of Manitoba, Canada); Attahiru S. Alfa (University of Manitoba, Canada); Jun Cai (University of Manitoba, Canada)  
pp. 1688-1692

14:21 **An Improved Channel Model for Cognitive Radio**  
Samitha Wijesasa (University of Manitoba, Canada); Attahiru S. Alfa (University of Manitoba, Canada)  
pp. 1693-1697

14:42 **Analysis of Radar Detection Probabilities in Time Division Duplexed Systems**  
Brad W. Zarkoff (Latitude Technologies Corporation & National University of Ireland Maynooth, Canada); Douglas Leith (Hamilton, Ireland)  
pp. 1698-1702

15:03 **Analysis of Cognitive Radio Networks Based on a Queueing Model with Server Interruptions**  
Arash Azarfar (Ecole Polytechnique de Montréal, Canada); Jean-François Frigon (Ecole Polytechnique de Montreal and GERAD, Canada); Brunilde Sansò (Ecole Polytechnique de Montreal, Canada)  
pp. 1703-1708

15:24 **On the performance of Cognitive Relay Networks With Cooperative Spectrum Sensing**  
JiangBo Si (Xi'dian, P.R. China); Zan Li (Xidian University, P.R. China); JunJie Chen (XiDian University, P.R. China); HaiYan Huang (XiDian University, P.R. China)
16:15 - 18:00

CRN07: Spectrum Analysis

Chair: Yunxin (Jeff) Li (NICTA & University of Sydney, Australia)

16:15 Cyclostationarity-Based Blind Classification of STBCs for Cognitive Radio Systems
Mohamed Fawzy Marey (Memorial University, Canada); Octavia A. Dobre (Memorial University of Newfoundland, Canada); Robert J. Inkol (Defence R&D Canada, Canada)
p. 1715-1720

16:36 Analysis of Interference in Cognitive Radio Networks with Unknown Primary Behavior
Chunxiao Jiang (Tsinghua University, P.R. China); Yan Chen (University of Maryland, College Park, USA); K. J. Ray Liu (University of Maryland, USA); Yong Ren (Tsinghua University, Beijing, P.R. China)
p. 1721-1725

16:57 Blind Null-Space Learning for Spatial Coexistence in MIMO Cognitive Radios
Yair Noam (Stanford University, USA); Andrea Goldsmith (Stanford University, USA)
p. 1726-1731

17:18 Joint Classification and Parameter Estimation of M-FSK Signals for Cognitive Radio
Hongfei Wang (Memorial University of Newfoundland, Canada); Octavia A. Dobre (Memorial University of Newfoundland, Canada); Cheng Li (Memorial University of Newfoundland, Canada); Robert J. Inkol (Defence R&D Canada, Canada)
p. 1732-1736

17:39 Fourth-order Moment-based Identification of SM and Alamouti STBC for Cognitive Radio
Yahia Eldemerdash (Memorial University, Canada); Octavia A. Dobre (Memorial University of Newfoundland, Canada); Mohamed Fawzy Marey (Memorial University, Canada); Robert J. Inkol (Defence R&D Canada, Canada)
p. 1737-1741

CRN08: Spectrum Access-I

Chair: Mark Buckner (Oak Ridge National Laboratory, USA)

16:15 Multiuser Access in Distributed Multichannel Cognitive Radio Systems
Xiaofan Li (Beijing University of Posts and telecommunications, P.R. China); Hui Liu (Shanghai JiaoTong University, P.R. China); Jianhua Zhang (Beijing University of Posts and Telecommunications, P.R. China); Ping Zhang (WTI-BUPT, P.R. China)
p. 1742-1746
16:36 **An Indirect Reciprocity Game Theoretic Framework for Dynamic Spectrum Access**  
Biling Zhang (Beijing University of Posts and Telecommunications, P.R. China); Yan Chen (University of Maryland, College Park, USA); K. J. Ray Liu (University of Maryland, USA)  
pp. 1747-1751

16:57 **Secondary Access Policies with Imperfect Sensing in Dynamic Spectrum Access Networks**  
Zhanwei Sun (University of Notre Dame, USA); J. Nicholas Laneman (University of Notre Dame, USA)  
pp. 1752-1756

17:18 **Dynamic Spectrum Access with Two Channel Sensing in Cognitive Radio Networks**  
Jin Lai (Macquarie University, Australia); Eryk Dutkiewicz (Macquarie University, Australia); Ren Ping Liu (CSIRO, Australia); Rein Vesilo (Macquarie University, Australia); Changliang Zheng (Beijing University of Posts and Telecommunications & Macquarie University, P.R. China)  
pp. 1757-1762

17:39 **Energy-Efficient and Trust-aware Cooperation in Cognitive Radio Networks**  
Ning Zhang (University of Waterloo, Canada); Ning Lu (University of Waterloo, Canada); Rongxing Lu (University of Waterloo, Canada); Jon Mark (University of Waterloo, Canada); Sherman Shen (University of Waterloo, Canada)  
pp. 1763-1767

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**Thursday, June 14**

08:00 - 09:45  
**CRN09: Performance Modeling and Analysis-II**

Chair: Ping Wang (Nanyang Technological University, Singapore)

08:00 **Achievable Throughput in Power-Constrained Cognitive Wireless Networks**  
Alireza Babaei (Virginia Tech, USA); Bijan Jabbari (George Mason University, USA)  
pp. 1768-1772

08:21 **Joint Beamforming, Scheduling, and Power Allocation for Hierarchical Cellular Systems**  
Yu-Lung Liu (National Chiao Tung University, Taiwan); Meng-lin Ku (National Central University, Taiwan); Li-Chun Wang (National Chiao Tung University, Taiwan)  
pp. 1773-1778

08:42 **Asymptotic Capacity Analysis in Point-to-Multipoint Cognitive Radio Networks**  
Jianbo Ji (Shanghai Jiao Tong University, P.R. China); Wen Chen (Shanghai Jiao Tong University, P.R. China)  
pp. 1779-1783
09:03 Reactive Relay Selection in Underlay Cognitive Networks with Fixed Gain Relays
Syed Hussain (Texas A&M University at Qatar, Qatar); Mohamed-Slim Alouini (King Abdullah University of Science and Technology (KAUST), Saudi Arabia); Khalid A. Qaraqe (Texas A&M University at Qatar, USA); Mazen Omar Hasna (Qatar University, Qatar)
pp. 1784-1788

09:24 On the Performance of Cellular Network Deployments in TV Whitespaces
Andreas Achtzehn (RWTH Aachen University, Germany); Marina Petrova (RWTH Aachen University, Germany); Petri Mähönen (RWTH Aachen University, Germany)
pp. 1789-1794

CRN10: Spectrum Access-II

Chair: Hesham ElSawy (University of Manitoba, Canada)

08:00 Towards an efficient rendezvous protocol for a cognitive PAN
Jelena Mišić (Ryerson University, Canada); Haleh Khojasteh (Ryerson University, Canada); Nargis Khan (Ryerson University, Canada); Vojislav B. Mišić (Ryerson University, Canada)
pp. 1795-1799

08:21 Hyper-exponential Approximation of Channel Idle Time Distribution with Implication to Secondary Transmission Strategy
Yingxi Liu (The University of Texas at Austin, USA); Ahmed Tewfik (University of Texas, Austin, USA)
pp. 1800-1805

08:42 Random Leader: A Distributed-Centralized Spectrum Sharing Scheme in Cognitive Radios
Qingkai Liang (Shanghai Jiao Tong University, P.R. China); Gaofei Sun (Shanghai Jiao Tong University, P.R. China); Xinbing Wang (Shanghai Jiaotong University, P.R. China)
pp. 1806-1810

09:03 Opportunistic Adaptive Relaying in Cognitive Radio Networks
Wael Jaafar (École Polytechnique de Montréal, Canada); Wessam Ajib (Université du Québec à Montréal, Canada); David Haccoun (Ecole Polytechnique de Montréal, Canada)
pp. 1811-1815

09:24 Exploiting Statistical Interference Models for Distributed Resource Allocation in Cognitive Femtocells
Fangfang Liu (Beijing University of Posts and Telecommunications, P.R. China); Xiangwei Zhou (Marvell Semiconductor, USA); Nageen Himayat (Intel Corporation, USA); Shu-ping Yeh (Intel Corporation, USA); Srikathyayani Srikanteswara (Intel, USA); Shilpa Talwar (Intel, USA); Chunyan Feng (Beijing University of Posts and Telecommunications, P.R. China); Geoffrey Li (Georgia Tech, USA)
pp. 1816-1820
14:00 - 15:45

CRN11: Game Theory and Network Economics

Chair: Walid Saad (University of Miami, USA)

14:00 Multiagent Jamming-Resilient Control Channel Game for Cognitive Radio Ad Hoc Networks
Brandon F Lo (Georgia Institute of Technology, USA); Ian F. Akyildiz (Georgia Institute of Technology, USA)
pp. 1821-1826

14:21 Pricing for Open Access Femtocell Networks Using Market Equilibrium and Non-Cooperative Game
Mohsen Nader Tehrani (University of Waterloo, Canada); Murat Uysal (Ozyegin University, Turkey)
pp. 1827-1831

14:42 Profit Maximization of Cognitive Virtual Network Operator in A Dynamic Wireless Network
Shuqin Li (The Chinese University of Hong Kong, Hong Kong); Jianwei Huang (The Chinese University of Hong Kong, Hong Kong); Shuo-Yen Robert Li (The Chinese University of Hong Kong, Hong Kong)
pp. 1832-1837

15:03 Realistic Pricing Modeling for Dynamic Spectrum Access Network
Md. Rakib Hassan (Monash University, Australia); Gour Chandra Karmakar (Monash University, Australia); Joarder Kamruzzaman (Monash University, Australia)
pp. 1838-1842

15:24 Optimal Content Delivery in DSA Networks: A Path Auction based Framework
Swastik Brahma (Syracuse University, USA); Pramod Varshney (Syracuse University, USA); Mainak Chatterjee (University of Central Florida, USA)
pp. 1843-1847

CRN12: Performance Modeling and Analysis-III

Chair: Nandana Rajatheva (University of Oulu, Finland)

14:00 On the Outage and TIFR Capacity of Sensing Enhanced Spectrum Sharing Systems
Stergios Stotas (King’s College London, United Kingdom); Arumugam Nallanathan (King’s College London, United Kingdom)
pp. 1848-1853

14:21 On the Connectivity of Large Multi-channel Cognitive Radio Networks
Lei Sun (NC State University, USA); Weny e Wang (NC State University, USA)
pp. 1854-1858
14:42 Enhanced Outage Performance With Adaptive Linear Precoding in Cognitive Radio Downlink
Faheem A Khan (Queen's University Belfast, United Kingdom); Christos Masouros (University College London, United Kingdom); Tharmalingam Ratnarajah (The University of Edinburgh, United Kingdom)
pp. 1859-1863

15:03 GHOST: Efficient Goodness-of-fit HOS Testing Signal Detector for Cognitive Radio Networks
Daniel Denkovski (Ss. Cyril and Methodius University in Skopje, Macedonia, the former Yugoslav Republic of); Vladimir Atanasovski (Ss Cyril and Methodius University in Skopje, Macedonia, the former Yugoslav Republic of); Liljana Gavrilovska (Ss Cyril and Methodius University - Skopje, Macedonia, the former Yugoslav Republic of)
pp. 1864-1868

15:24 Impact of Variance of Heterogeneous Spectrum on Performance of Cognitive Radio Ad Hoc Networks
Gan Liu (Huazhong University of Science and Technology, P.R. China); Xu Zhu (University of Liverpool, United Kingdom); Guangxi Zhu (& Information Engineering, Huazhong University of Science and Technology, P.R. China)
pp. 1869-1873

16:15 - 18:00

CRN13: Interference Analysis and Management

Chair: Dominique Noguet (CEA LETI, France)

16:15 Interference Study between Wireless Microphone Systems and TV White Space Devices
Rogerio Dionisio (IT Aveiro & Castelo Branco Polytechnic Institute, Portugal); Paulo Marques (Instituto de Telecomunicações, Portugal); Jonathan Rodríguez (Instituto de Telecomunicações, Portugal)
pp. 1874-1878

16:36 A Comparison of Interference Cartography Generation Techniques in Cognitive Radio Networks
Suzan Üreten (University of Ottawa, Canada); Abbas Yongaçoğlu (University of Ottawa, Canada); Emil M. Petriu (University of Ottawa, Canada)
pp. 1879-1883

16:57 Interference Management in Cognitive Radio Systems - a Convex Optimisation Approach
Sudhir Singh (Industrial Research Ltd., New Zealand); Paul D Teal (Victoria University of Wellington, New Zealand); Pawel A. Dmochowski (Victoria University of Wellington, New Zealand); Alan J Coulson (Industrial Research Ltd, New Zealand)
pp. 1884-1889

17:18 MIMO Cognitive Radio With Channel Covariance Feedback
Liang Dong (Baylor University, USA)
17:39 Efficient Convex Optimization for Beamforming in Cognitive Radio Multicast Transmission
Marko Beko (ULHT, Lisbon & UNINOVA, Caparica, Portugal)
pp. 1895-1900
# ICC'12 CSSMA: IEEE ICC 2012 - Communication Software Services and Multimedia Applications Symposium - Program

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<td>CSS07: Resource Management</td>
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<td>CSS02: Communication Optimization</td>
<td>CSS05: Streaming</td>
<td>CSS08: Collaborative Media</td>
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<td>16:15 - 18:00</td>
<td>CSS03: Energy Efficiency</td>
<td>CSS06: Coding</td>
<td>CSS-P1: CSS-P1: Poster Session</td>
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## Tuesday, June 12

### 10:45 - 12:30

**CSS01: Quality of Services**

Chair: Brice Augustin (UPEC, University Paris-Est, France)

10:45 *Vertical WLAN Handover Algorithm and Protocol to Improve the IPTV QoS of the End User*

Alejandro Canovas (Universidad Politécnica de Valencia, Spain); Diana Bri (Universidad Politecnica de Valencia, Spain); Sandra Sendra (Universidad Politécnica de Valencia, Spain); Jaime Lloret (Universidad Politécnica de Valencia, Spain)

pp. 1901-1905

11:06 *Distributed NQoS provision in Interactive DVB-T systems*

Anargyros Sideris (University of the Aegean & Technological Educational Institute of Crete, Greece); Evangelos Pallis (Technological Educational Institute of Crete, Greece); Harry Skianis (University of the Aegean, Greece); Vassilios Zacharopoulos (Technological Educational Insitute of Crete, Greece)

pp. 1906-1910

11:27 *Enriched IPTV Services Personalization*

Songbo Song (France Telecom, France); Hassnaa Moustafa (Intel, USA); Hossam Affifi (Institut Telecom & Paris South, France)

pp. 1911-1916
11:48 **Low-Latency Privacy-Enabled Context Distribution Architecture**
João Gonçalves (Portugal Telecom Inovação, Portugal); Diogo Gomes (Universidade de Aveiro & Instituto de Telecomunicações, Portugal); Rui L Aguiar (University of Aveiro & Instituto de Telecomunicações, Portugal)
pp. 1917-1922

12:09 **A Multimedia Service Migration Protocol for Single User Multiple Devices**
Chi-Yu Li (UCLA, USA); Ioannis Pefkianakis (UCLA, USA); Bojie Li (Huawei Technologies co., P.R. China); Chenghui Peng (Huawei Technologies co., P.R. China); Wei Zhang (Huawei Technologies co., P.R. China); Songwu Lu (University of California at Los Angeles, USA)
pp. 1923-1927

14:00 - 15:45

**CSS02: Communication Optimization**

Chair: Liang Zhou (Nanjing University of Posts and Telecommunications, P.R. China)

14:00 **Traffic Optimization through Information Dissemination**
Sanjay Dhurandher (NSIT, University of Delhi, India); Mohammad S. Obaidat (Monmouth University, USA); Amrit Jaiswal (University of Delhi, India); Akanksha Tiwari (University of Delhi, India); Ankur Tyagi (Eigen Technologies Private Limited, India)
pp. 1928-1932

14:21 **Network Coding-based Medium Access Control Protocol for Cooperative Wireless Networks**
Angelos Antonopoulos (Telecommunications Technological Centre of Catalonia (CTTC), Spain); Harry Skianis (University of the Aegean, Greece); Christos Verikoukis (Telecommunications Technological Centre of Catalonia, Spain)
pp. 1933-1937

14:42 **Optimized Path Selection Mechanism for IEEE 802.16j Multi-hop Relay Networks**
Jian-Ming Chang (National Dong-Hwa University, Taiwan); Chin-Feng Lai (National Ilan University, Taiwan); Han-Chieh Chao (National Ilan University, Taiwan); Jiann-Liang Chen (National Taiwan University of Science and Technology, Taiwan)
pp. 1938-1942

15:03 **Secure Network-Coded Wireless Multicast for Delay-Sensitive Data**
Tuan T. Tran (University of Louisville, USA); Hongxiang Li (University of Louisville, USA); Lingjia Liu (University of Kansas, USA); Samee U. Khan (North Dakota State University, USA)
pp. 1943-1947

16:15 - 18:00

**CSS03: Energy Efficiency**

Chair: Younh Wen (NTU, Singapore)
16:15 **Green Multimedia Communications over Internet of Things**  
Liang Zhou (Nanjing University of Posts and Telecommunications, P.R. China); Min Chen (Huazhong University of Science and Technology, P.R. China); Baoyu Zheng (Nanjing University of Posts and Telecommunications, P.R. China); JingWu Cui (Nanjing University of Posts And Telecomm, P.R. China)  
pp. 1948-1952

16:36 **Secured Energy-aware Sleep Scheduling Algorithm in Duty-cycled Sensor Networks**  
Chunsheng Zhu (St. Francis Xavier University, Canada); Laurence T. Yang (St. Francis Xavier University, Canada); Lei Shu (Osaka University, Japan); Trung Q. Duong (Blekinge Institute of Technology, Sweden); Shojiro Nishio (Osaka University, Japan)  
pp. 1953-1957

16:57 **Network Game Based Routing for Energy Efficient Fibre-Wireless Access Networks**  
José Coimbra (University of Algarve, Portugal); Gabriela Schütz (University of Algarve, Portugal); Noelia Correia (University of Algarve, Portugal)  
pp. 1958-1963

17:18 **Analysis of Adjustable and Fixed DRX Mechanism for Power Saving in LTE/LTE-Advanced**  
Scott Fowler (Linköping University, Sweden); Ranjeet S Bhamber (Instituto de Óptica, CSIC, Spain); Abdelhamid Mellouk (UPEC, University Paris-Est Creteil Val de Marne, France)  
pp. 1964-1969

17:39 **Green Virtualized Networks**  
Esteban Rodriguez (State University of Campinas, Brazil); Gustavo Alkmim (State University of Campinas, Brazil); Daniel M. Batista (University of Sao Paulo, Brazil); Nelson L. S. da Fonseca (State University of Campinas, Brazil)  
pp. 1970-1975

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**Wednesday, June 13**

08:00 - 09:45

**CSS04: Peer-to-Peer**

Chair: Paulo Roberto de Lira Gondim (Universidade de Brasília, Brazil)

08:00 **Two-Level Energy-Based Supplier Selection Protocol for Mobile P2P 3D Streaming**  
Haifa Maamar (SITE, University of Ottawa, Canada); Graciela Roman Alonso (Universidad Autonoma Metropolitana-Izt, Mexico); Azzedine Boukerche (University of Ottawa, Canada); Emil M. Petriu (University of Ottawa, Canada)  
pp. 1976-1980
Abbas Bradaei (University of Bordeaux 1 & LaBRI, France); Toufik Ahmed (University of Bordeaux-1 / CNRS-LaBRI, France)
pp. 1981-1985

08:42 Smooth Delivery of Layered Video Stream in P2P Networks
Ubaid Abbasi (CNRS LaBRI Lab. - University of Bordeaux, France); Toufik Ahmed (University of Bordeaux-1 / CNRS-LaBRI, France)
pp. 1986-1990

09:03 Bottom-Up Trie Structure for P2P Live Streaming
Boyuan Zhang (Carleton University, Canada); Changcheng Huang (Carleton University, Canada); James Yan (Carleton University, Canada)
pp. 1991-1995

09:24 Object Management Policies in P2P-CDN Networks
Cesar A. V. Melo (Federal University of Amazonas, Brazil); João da Mata Libório, Filho (Federal University of Amazonas, Brazil); Nelson L. S. da Fonseca (State University of Campinas, Brazil)
pp. 1996-2000

14:00 - 15:45

CSS05: Streaming

Chair: Toufik Ahmed (University of Bordeaux-1 / CNRS-LaBRI, France)

14:00 A Path Prediction Model to Support Mobile Multimedia Streaming
Apollinaire Nadembega (University of Montreal, Canada); Abdelhakim Hafid (University of Montreal, Canada); Tarik Taleb (NEC Europe Ltd., Germany)
pp. 2001-2005

14:21 Adaptive Multicast Streaming Based on Scalable Video Blocks and TFMCC Protocol
Bernardo Dias (Universidade de Brasilia, Brazil); Paulo Roberto Gondim (Universidade de Brasilia, Brazil)
pp. 2006-2010

14:42 Adaptive Scalable Layer Selection for Video Streaming over Wireless Networks
Ke Zeng (University of Science and Technology of China, P.R. China); Jian Yang (University of Science and Technology of China, P.R. China)
pp. 2011-2015

15:03 Lazy Caching: A Novel Proxy Caching Algorithm for Peer-to-Peer Live Streaming
Haibin Zhai (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Albert K. Wong (Hong Kong University of Science and Technology, Hong Kong); Li Lu (Guangzhou Research Institute, China Telecom, P.R. China); Hai Jiang (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Jun Li (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China);
Zhongcheng Li (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China)  
pp. 2016-2020

15:24 Rate Control based on Reduced-Reference Image Quality Estimation for Streaming Video over Wireless Channels  
Luigi Atzori (University of Cagliari, Italy); Giaine Ginesu (University of Cagliari, Italy); Alessandro Floris (CNIT, Italy); Daniel D Giusto (University of Cagliari & CNIT, Italy)  
pp. 2021-2025

16:15 - 18:00

CSS06: Coding

Chair: Heung-Gyoon Ryu (Chungbuk National University, Korea)

16:15 Energy Minimization via Dynamic Voltage Scaling for Real-Time Video Encoding on Mobile Devices  
Ming Yang (Nanyang Technological University, Singapore); Yonggang Wen (Nanyang Technological University, Singapore); Jianfei Cai (Nanyang Technological University, Singapore); Chuan Heng Foh (Nanyang Technological University, Singapore)  
pp. 2026-2031

16:36 A Playback Length Changeable Segmentation Algorithm for SVC-based P2P Streaming Systems  
Junping Song (Institute of Acoustics, Chinese Academy of Sciences, P.R. China); Xu Zhou (Institute of Acoustics, Chinese Academy of Science, P.R. China); Yan Zhang (Institute of Acoustics, Chinese Academy of Sciences, P.R. China); Hui Tang (IOA, Chinese Academy of Sciences, USA); Fan Bai (Institute of Acoustics, Chinese Academy of Sciences, P.R. China)  
pp. 2032-2037

16:57 A Transcoding Framework with Error-Resilient Video/Depth Rate Allocation for Mobile 3D Video Streaming  
Yanwei Liu (Institute of Acoustics, Chinese Academy of Sciences, P.R. China); Song Ci (University of Nebraska-Lincoln, USA); Hui Tang (IOA, Chinese Academy of Sciences, USA); Yun Ye (University of Nebraska-Lincoln, USA)  
pp. 2038-2042

17:18 Global Motion Compensation and Spectral Entropy Bit Allocation for Low Complexity Video Coding  
Malavika Bhaskaranand (University of California, Santa Barbara, USA); Jerry D Gibson (University of California, Santa Barbara, USA)  
pp. 2043-2047

17:39 Unified Distributed Source Coding Frames for Interactive Multiview Video Streaming  
Zhi Liu (National Institute of Informatics, The Graduate University for Advanced Studies, Japan); Gene Cheung (National Institute of Informatics, Japan); Yusheng Ji (National Institute of Informatics, Japan)  
pp. 2048-2053
08:00 - 09:45

CSS07: Resource Management

Chair: Yacine Ghamri-Doudane (ENSIIE & Université Paris-Est (LIGM Lab), France)

08:00 On-Demand Selection, Control and Management of Context-Based Wireless Mesh Networks
Ricardo Matos (Instituto de Telecomunicações, Universidade de Aveiro, Portugal); Carlos Marques (Instituto de Telecomunicações, Universidade de Aveiro, Portugal); Susana Sargento (Instituto de Telecomunicações, Universidade de Aveiro, Portugal)
pp. 2054-2059

08:21 Memory Consumption Analysis for the GOE and PET Unequal Erasure Protection Schemes
Aline Roumy (INRIA Rennes, France); Vincent Roca (INRIA Rhône-Alpes, France); Bessem Sayadi (Alcatel-Lucent Bell-Labs, France)
pp. 2060-2064

08:42 Joint Optimization of Content Replication and Server Selection for Video-On-Demand
Huan Huang (The Hong Kong University of Science and Technology, P.R. China); Pengye Xia (Hong Kong University of Science and Technology, Hong Kong); Gary Chan (The Hong Kong University of Science and Technology, P.R. China); Guangyu Shi (Huawei Technologies Co., Ltd, P.R. China); Hongbo Zhang (Huawei Technologies Co., Ltd, P.R. China)
pp. 2065-2069

09:03 Memory and Complexity Analysis of On-the-Fly Coding Schemes for Multimedia Multicast Communications
Guillaume Smith (UNSW - NICTA - University of Toulouse - ISAE, Australia); Emmanuel Lochin (University of Toulouse - ISAE / LAAS-CNRS, France); Jerome Lacan (University of Toulouse, France); Roksana Boreli (National ICT Australia & University of NSW, Australia)
pp. 2070-2074

09:24 Optimizing Push Scheduling Algorithm based on Network Coding for Mesh Peer-to-Peer Live Streaming
Laizhong Cui (Shenzhen University, P.R. China); Yong Jiang (Graduate School at Shenzhen, Tsinghua University, P.R. China); Jianping Wu (Tsinghua University, P.R. China)
pp. 2075-2080

14:00 - 15:45

CSS08: Collaborative Media

Chair: Xiaodong Lin (University of Ontario Institute of Technology, Canada)
14:00 Wireless Network Aware Cloud Scheduler for Scalable Cloud Mobile Gaming  
Shaoxuan Wang (University of California, San Diego, USA); Yao Liu (UC San Diego, USA); Sujit Dey (University of California, San Diego, USA)  
pp. 2081-2086

14:21 Analysis of An Investment Social Network  
Alex Dusenberg (UMASS, USA); Khanh Nguyen (University of Massachusetts - Boston, USA); Duc A. Tran (University of Massachusetts Boston, USA)  
pp. 2087-2092

14:42 Characterizing User Access Behaviors in Mobile TV System  
Yuheng Li (Tsinghua University, P.R. China); Yiping Zhang (Shandong Technology, P.R. China); Ruixi Yuan (Tsinghua University, P.R. China)  
pp. 2093-2097

15:03 A Connectivity-Based Popularity Prediction Approach for Social Networks  
Huangmiao Quan (Temple University, USA); Ana Milicic (Anam, USA); Slobodan Vucetic (Vucetic, USA); Jie Wu (Temple University, USA)  
pp. 2098-2102

15:24 Collaboration in Social Network-based Information Dissemination  
Abedalaziz Mohaisen (Verisign Labs, USA); Tamer AbuHmed (Inha University, Korea); Ting Zhu (State University of New York at Binghamton, USA); Manar Mohaisen (Korea University of Technology and Education, Korea)  
pp. 2103-2107

16:15 - 18:00

CSS-P1: CSS-P1: Poster Session

Chair: Joel J. P. C. Rodrigues (Instituto de Telecomunicações, University of Beira Interior, Portugal)

Power Budgeted Packet Scheduling for Wireless Multimedia  
Praveen Bommannavar (Stanford University, USA); Nicholas Bambos (Stanford University, USA); John Apostolopoulos (Hewlett-Packard Labs, USA)  
pp. 2108-2113

Epidemic Theory based H + 1 hop Forwarding for Intermittently Connected Mobile Ad Hoc Networks  
Xin Guan (Heilongjiang University, P.R. China); Min Chen (Huazhong University of Science and Technology, P.R. China); Tomoaki Ohtsuki (Keio University, Japan)  
pp. 2114-2118

A Fairness-aware Smart Parking Scheme Aided by Parking Lots  
Cheng Jin (University of Minnesota, USA); Lei Wang (Dalian University of Technology, P.R. China); Lei Shu (Osaka University, Japan); Yuyao Feng (Dalian University of Technology, P.R. China); Xueqing Xu (Dalian University of Technology, P.R. China)  
pp. 2119-2123
A_PSQA: PESQ-like non-intrusive tool for QoE prediction in VoIP services
Wael Cherif (University of Rennes 1 & Viotech Communications, France); Adlen Ksentini (University of Rennes 1 / IRISA Lab, France); Daniel Négru (University of Bordeaux, France); Mamadou Sidibe (University of Versailles, France)
pp. 2124-2128

Capturing the Real Influencing Factors of Traffic for Accurate Traffic Identification
Géza Szabó (Ericsson Research, Hungary); János Szüle (Eötvös Loránd University, Hungary); Bruno Lins (Universidade Federal de Pernambuco, Brazil); Zoltán Richárd Turányi (Ericsson, Hungary); Gergely Pongrácz (Ericsson Research, Hungary); Djamel Hadj Sadok (Federal University of Pernambuco, Brazil); Stenio Fernandes (Federal University of Pernambuco, Brazil)
pp. 2129-2134
## ICC’12 CT: IEEE ICC 2012 - Communications Theory - Program

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<td>CT08: Wireless Networks</td>
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<td>CT01: MIMO I</td>
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<td>14:00 - 15:45</td>
<td>CT03: Relay I</td>
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<td>CT05: Interference Alignment</td>
<td>CT11: Performance Analysis</td>
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<td>CT06: Detection, Decoding and Equalization</td>
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<td>CT16: Coding Theory</td>
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### Tuesday, June 12

**10:45 - 12:30**

**CT01: MIMO I**

Chair: Robert Heath (The University of Texas at Austin, USA)

10:45 *Comparison of Linear Precoding Schemes for Downlink Massive MIMO*  
Jakob Hoydis (Alcatel-Lucent Bell Labs, Germany); Stephan ten Brink (Alcatel-Lucent, Bell Laboratories, Germany); Mérouane Debbah (Supelec, France)  
pp. 2135-2139

11:05 *Precoder Design for Physical Layer Multicasting*  
Hao Zhu (University of Minnesota, USA); Narayan Prasad (NEC Labs America, Princeton, USA); Sampath Rangarajan (NEC Labs America, USA)  
pp. 2140-2144

11:25 *Power-Efficient Downlink Communication Using Large Antenna Arrays: The Doughnut Channel*  
Saif Khan Mohammed (Linkoping University & Dept. Electrical Engineering (ISY), Sweden); Erik G. Larsson (Linköping University, Sweden)  
pp. 2145-2150
CT02: LDPC Codes

Chair: Ravi Tandon (Virginia Tech, USA)

10:45 *Protograph-Based Raptor-Like LDPC Codes with Low Thresholds*
Tsun-Yi Chen (University of California, Los Angeles, USA); Dariush Divsalar (Jet Propulsion Laboratory, USA); Richard Wesel (University of California, Los Angeles, USA)
pp. 2161-2165

11:05 *Protograph-based LDPC Codes for Partial Response Channels*
Thuy Nguyen (University of Texas at Dallas, USA); Aria Nosratinia (University of Texas, Dallas, USA); Dariush Divsalar (Jet Propulsion Laboratory, USA)
pp. 2166-2170

11:25 *Anytime Reliability of Systematic LDPC Convolutional Codes*
Leefke Dössel (Royal Institute of Technology (KTH), Sweden); Lars K. Rasmussen (KTH Royal Institute of Technology, Sweden); Ragnar Thobaben (KTH Royal Institute of Technology, Sweden); Mikael Skoglund (KTH Royal Institute of Technology, Sweden)
pp. 2171-2175

11:45 *Connecting Spatially Coupled LDPC Code Chains*
Dmitri Truhachev (University of Alberta, Canada); David G. M. Mitchell (University of Notre Dame, USA); Michael Lentmaier (Dresden University of Technology, Germany); Daniel J. Costello, Jr. (University of Notre Dame, USA)
pp. 2176-2180

12:05 *Threshold Saturation of Spatially-Coupled Codes on Intersymbol-Interference Channels*
Phong S Nguyen (Texas A&M University, USA); Arvind Yedla (Texas A&M University, USA); Henry D Pfister (Texas A&M University, USA); Krishna Narayanan (Texas A&M University, USA)
pp. 2181-2186

11:45 *Downlink Distributed Antenna Systems: Optimal Beamforming Designs and Capacity Behavior*
Sang-Rim Lee (Korea University, Korea); Sung-Hyun Moon (ETRI, Korea); Inkyu Lee (Korea University, Korea)
pp. 2151-2155

12:05 *Linear MIMO Precoding in Multi-Antenna Wiretap Channels for Finite-Alphabet Data*
Yongpeng Wu (Southeast University, P.R. China); Chengshan Xiao (Missouri University of Science and Technology, USA); Zhi Ding (University of California at Davis, USA); Xiqi Gao (Southeast University, P.R. China); Shi Jin (Southeast University, P.R. China)
pp. 2156-2160
14:00 - 15:45

**CT03: Relay I**

Chair: Shuguang Cui (Texas A&M University, USA)

**14:00 Capacity Limit of Static Single-Relay Amplify-and-Forward Channels**  
Leonardo Jiménez Rodríguez (McGill University, Canada); Nghi H Tran (University of Akron, USA); Tho Le-Ngoc (McGill University, Canada)  
pp. 2187-2191

**14:20 Optimal Multi-antenna Relay Beamforming with Per-Antenna Power Control**  
Min Dong (University of Ontario Institute of Technology, Canada); Qiang Xiao (University of Toronto, Canada); Ben Liang (University of Toronto, Canada)  
pp. 2192-2196

**14:40 Spectrum-Sharing Capacity Enhancement with Distributed Relaying**  
Yang Li (University of Texas at Dallas, USA); Aria Nosratinia (University of Texas, Dallas, USA)  
pp. 2197-2201

**15:00 Optimizing Limited Channel State Information in Wireless Cooperative Networks**  
Ehsan Karamad (University of Toronto, Canada); Raviraj Adve (University of Toronto, Canada)  
pp. 2202-2206

**15:20 Optimal Distributed Coding Schemes for Energy Efficiency in the Fading Relay Channel**  
Fanny Parzysz (Ecole de Technologie Supérieure, Canada); Mai Vu (McGill University, Canada); Francois Gagnon (Ecole de Technologie Superieure, Canada)  
pp. 2207-2212

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**CT04: Channel Capacity**

Chair: Natasha Devroye (University of Illinois at Chicago, USA)

**14:00 Optimal Index Codes for a Class of Multicast Networks with Receiver Side Information**  
Lawrence Ong (The University of Newcastle, Australia); Chin Keong Ho (Institute for Infocomm Research, A*STAR, Singapore)  
pp. 2213-2218

**14:20 Writing on Insertion Paper**  
Vaneet Aggarwal (AT&T Labs - Research, USA)  
pp. 2219-2222

**14:40 The Sum-Capacity of Discrete-Noise Multiple-Access Channels with Single-User Decoding and Identical Codebooks**  
Ibrahim Abou-Faycal (American University of Beirut, Lebanon); Elie Rustom (American University of Beirut, Lebanon)  
pp. 2223-2227
15:00 *Channel quantizers that maximize random coding exponents for binary-input memoryless channels*
    Hideki Yagi (University of Electro-Communications, Japan); Brian Michael Kurkoski (Japan Advanced Institute of Science and Technology (JAIST), Japan)
    pp. 2228-2232

15:20 *On The Error-Prone Substructures for The Binary-Input Ternary-Output Channel and Its Corresponding Exhaustive Search Algorithm*
    Gyu Bum Kyung (Samsung Advanced Institute of Technology, Korea); Chih-Chun Wang (Purdue University, USA)
    pp. 2233-2237

16:15 - 18:00

**CT05: Interference Alignment**

Chair: David Gesbert (Eurecom Institute, France)

16:15 *A New Achievable DoF Region for the 3-user MXN Symmetric Interference Channel*
    Mohamed Khalil (Nile University, Egypt); Amr El-Keyi (Nile University, Egypt); Mohammed Nafie (Nile University & Cairo University, Egypt)
    pp. 2238-2243

16:35 *On the Sum Rate of a 2 x 2 Interference Network*
    Murali Sridhar (Intel, India); Srikrishna Bhashyam (Indian Institute of Technology Madras, India)
    pp. 2244-2249

16:55 *Interference Alignment with Cyclic Unidirectional Cooperation*
    Mohammad Reza Nakhai (King's College London, United Kingdom); Aimal Khan Yousafzai (King's College London, United Kingdom)
    pp. 2250-2254

17:15 *On Interference Alignment for Symmetrically Connected Interference Networks with Line of Sight Channels at Finite Powers*
    Abhinav Ganesan (Indian Institute of Science, Bangalore, India); B. Sundar Rajan (Indian Institute of Science, India)
    pp. 2255-2259

17:35 *Asymmetric Interference Alignment and Cancelation for 3-user MIMO Interference Channels*
    Lu Yang (University of New South Wales, Australia); Wei Zhang (The University of New South Wales, Australia)
    pp. 2260-2264

**CT06: Detection, Decoding and Equalization**

Chair: Martin Haenggi (University of Notre Dame, USA)
16:15 **Reduced-dimension multiuser detection**  
Yao C Xie (Duke University, USA); Yonina C. Eldar (Technion-Israel Institute of Technology, Israel); Andrea Goldsmith (Stanford University, USA)  
pp. 2265-2269

16:35 **Optimal Linear Correction of Mismatched L-values in BICM receivers**  
Leszek Szczecinski (INRS-EMT, Canada)  
pp. 2270-2276

16:55 **MAP Decoding of Quantized Sources over Soft-Decision Fading Channels with Memory**  
Shervin Shahidi (University of Toronto, Canada); Fady Alajaji (Queen's University, Canada); Tamas Linder (Queen's University, Canada)  
pp. 2277-2282

17:15 **Maximum-likelihood Blind PAM Detection**  
Dimitris Papailiopoulos (University of Southern California, USA); Georgina Abou Elkheir (University of Piraeus, Greece); George N. Karystinos (Technical University of Crete, Greece)  
pp. 2283-2287

17:35 **Symbol Block Construction for Frequency Domain Equalization of Multi-h CPM**  
Sajid Saleem (Georgia Institute of Technology, USA); Gordon Stüber (Georgia Institute of Technology, USA)  
pp. 2288-2292

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**Wednesday, June 13**

08:00 - 09:45

**CT07: Multicell Network**

Chair: Vaneet Aggarwal (AT&T Labs - Research, USA)

08:00 **Degrees of Freedom (DoF) of Locally Connected Interference Channels with Coordinated Multi-Point (CoMP) Transmission**  
Aly El Gamal (University of Illinois at Urbana-Champaign, USA); V. Sreekanth Annapureddy (UIUC, USA); Venugopal Veeravalli (University of Illinois at Urbana-Champaign, USA)  
pp. 2293-2297

08:20 **On Asymptotic Capacity of Coordinated Multi-Point MIMO Channels**  
Chao-Kai Wen (National Sun Yat-Sen University, Taiwan); Kai Kit Wong (University College London, United Kingdom); Shi Jin (Southeast University, P.R. China); Jung-Chieh Chen (National Kaohsiung Normal University, Taiwan); Pangan Ting (Tsing Hua University, Taiwan)  
pp. 2298-2302
08:40 **Base Station Cooperation with Noisy Analog Channel Feedback: A Large System Analysis**  
Rusdha Muharar (University of Melbourne & Syiah Kuala University, Australia); Randa Zakhour (University of Texas at Austin, USA); Jamie Evans (Monash University, Australia)  
pp. 2303-2307

09:00 **New Leakage-Based Iterative Coordinated Beam-forming for Multi-user MIMO in LTE-Advanced**  
Lingjia Liu (University of Kansas, USA); Jianzhong Zhang (Samsung Telecommunications America, USA)  
pp. 2308-2312

09:20 **CSI Feedback Allocation in Multicell MIMO Channels**  
Paul de Kerret (EURECOM, France); David Gesbert (Eurecom Institute, France)  
pp. 2313-2317

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**CT08: Wireless Networks**

Chair: Robert J Piechocki (University of Bristol, United Kingdom)

08:00 **Energy Efficiency in Multiaccess Fading Channels under QoS Constraints**  
Deli Qiao (University of Nebraska-Lincoln, USA); M. Cenk Gursoy (Syracuse University, USA); Senem Velipasalar (Syracuse University, USA)  
pp. 2318-2322

08:20 **Hopping Strategies for Adaptive FH-CDMA Ad Hoc Networks under External Interference**  
Jens P. Elsner (Karlsruhe Institute of Technology (KIT) & Communications Engineering Lab, Germany); Ralph Tanbourgi (Karlsruhe Institute of Technology (KIT), Germany); Joerg Schmid (Karlsruhe Institute of Technology, Germany); Friedrich K. Jondral (Karlsruhe Institute of Technology, Germany)  
pp. 2323-2328

08:40 **On the Optimum Number of Hops in a Multi-hop Linear Network with Randomly Located Nodes**  
Hao Feng (University of Delaware, USA); Len Cimini (University of Delaware, USA)  
pp. 2329-2333

09:00 **Optimal Power Allocation of a Sensor Node Under Different Rate Constraints**  
Jose Roberto Ayala Solares (King Abdullah University of Science and Technology, Saudi Arabia); Zouheir Rezki (King Abdullah University of Science and Technology (KAUST), Saudi Arabia); Mohamed-Slim Alouini (King Abdullah University of Science and Technology (KAUST), Saudi Arabia)  
pp. 2334-2338

09:20 **Cooperative Jamming for Secrecy in Decentralized Wireless Networks**  
Xiangyun Zhou (The Australian National University, Australia); Meixia Tao (Shanghai Jiao Tong University, P.R. China); Rodney Andrew Kennedy (The Australian National University, Australia)  
pp. 2339-2344
14:00 - 15:45

**CT09: Network Information Theory**

Chair: Salman Durrani (The Australian National University, Australia)

**14:00 Bounds and Capacity Results for the Cognitive Z Channel**
Yinghui Cheng (Southeast University, P.R. China); Nan Liu (Southeast University, P.R. China)
pp. 2345-2349

**14:20 On The Capacity of the Symmetric Interference Channel with a Cognitive Relay at High SNR**
Alex R Dytso (University of Illinois at Chicago, USA); Natasha Devroye (University of Illinois at Chicago, USA); Daniela Tuninetti (University of Illinois at Chicago, USA)
pp. 2350-2354

**14:40 Feedback and Delayed CSI Can Be as Good as Perfect CSI**
Ravi Tandon (Virginia Tech, USA); Soheil Mohajer (UC Berkeley, USA); H. Vincent Poor (Princeton University, USA); Shlomo (Shitz) Shamai (The Technion, Israel)
pp. 2355-2359

**15:00 An interpretation of the Cover and Leung capacity region for the MAC with feedback through stochastic control**
Achilleas Anastasopoulos (University of Michigan, USA); Kihyuk Sohn (University of Michigan, USA)
pp. 2360-2364

**15:20 The Multiple Access Channel Interfering with a Point to Point Link: Linear Deterministic Sum Capacity**
Jörg Bühler (TU Berlin, Germany); Gerhard Wunder (Heinrich-Hertz-Institut, Germany)
pp. 2365-2369

**CT10: Diversity**

Chair: Steven Corroy (RWTH Aachen University, Germany)

**14:00 DMT of MMSE receiver in the Frequency Selective MIMO Channel**
Ahmed Hesham Mehana (University of Texas at Dallas, USA); Aria Nosratinia (University of Texas, Dallas, USA)
pp. 2370-2374

**14:20 Cyclic Delay Transmission Achieves Full Diversity without (Pre)Coding**
Ahmed Hesham Mehana (University of Texas at Dallas, USA); Aria Nosratinia (University of Texas, Dallas, USA)
pp. 2375-2379

**14:40 On Combined Beamforming and OSTBC over the Cognitive Radio Z-Channel with Partial CSI**
Efthymios Stathakis (Royal Institute of Technology, Sweden); Mikael Skoglund (KTH Royal Institute of Technology, Sweden); Lars K. Rasmussen (KTH Royal Institute of Technology, Sweden)
15:00 Diversity-Rate Trade-off for Fading Channels with Power Control
Anusha Gorantla (Indian Institute of Science, India); Vinod Sharma (Indian Institute of Science, India)
pp. 2385-2391

15:20 On the Diversity Gain Region of the Z-Interference Channels
Mohamed Nafea (The Pennsylvania State University, USA); Karim G Seddik (American University in Cairo & Alexandria University, Egypt); Mohammed Nafie (Nile University & Cairo University, Egypt); Hesham El Gamal (Ohio State University, USA)
pp. 2392-2397

16:15 - 18:00

CT11: Performance Analysis

Chair: Achilleas Anastasopoulos (University of Michigan, USA)

16:15 Simplified Expression of the Average Rate of Cellular Networks Using Stochastic Geometry
Alessandro Guidotti (University of Bologna, Italy); Marco Di Renzo (French National Center for Scientific Research (CNRS), France); Giovanni Corazza (University of Bologna, Italy); Fortunato Santucci (University of l'Aquila, Italy)
pp. 2398-2403

16:35 Performance of Multi-Antenna MMSE Receivers in Non-homogenous Poisson Networks
Junjie Zhu (F. W. Olin College of Engineering, USA); Siddharten Govindasamy (F. W. Olin College of Engineering, USA)
pp. 2404-2409

16:55 Uniform approximations for wireless performance in fading, noise and interference
Chinthra Tellambura (University of Alberta, Canada); Yamuna Dhungana (University of Alberta, Canada); Madushanka Soysa (University of California San Diego, Canada)
pp. 2410-2415

17:15 Calculating the Distribution of Sums of Log-Gamma Random Variables
Seyed Ali Saberali (University of Alberta, Canada); Norman C. Beaulieu (University of Alberta, Canada)
pp. 2416-2421

17:35 On the Exact Distribution of the Scaled Largest Eigenvalue
Lu Wei (Aalto University, Finland); Olav Tirkkonen (Aalto University, Finland); Prathapasinghe Dharmawansa (Aalto University, Finland); Matthew R McKay (Hong Kong University of Science and Technology, Hong Kong)
pp. 2422-2426

CT12: Relay II

Chair: Raviraj Adve (University of Toronto, Canada)
16:15 Relaying over Multiple Slots with Causal CSI: Optimal Power Allocation for Energy Minimization
Chin Keong Ho (Institute for Infocomm Research, A*STAR, Singapore); Peng Hui Tan (Institute for Infocomm Research, Singapore); Sumei Sun (Institute for Infocomm Research, Singapore)
pp. 2427-2432

16:35 Delay-Constrained Gaussian Relay Channel with Energy Harvesting Nodes
Chuan Huang (Texas A&M University, USA); Rui Zhang (National University of Singapore, Singapore); Shuguang Cui (Texas A&M University, USA)
pp. 2433-2438

16:55 On Linear Precoding of Non-Regenerative MIMO Relays for QAM Inputs
Xiao Liang (Southeast university, P.R. China); Zhi Ding (University of California at Davis, USA); Chengshan Xiao (Missouri University of Science and Technology, USA)
pp. 2439-2444

17:15 Degrees of Freedom for separated and non-separated Half-Duplex Cellular MIMO Two-way Relay Channels
Mohammad G. Khafagy (King Abdullah University of Science and Technology, Saudi Arabia); Amr El-Keyi (Nile University, Egypt); Mohammed Nafie (Nile University & Cairo University, Egypt); Tamer ElBatt (Nile University, Egypt)
pp. 2445-2450

17:35 Partial Decode-forward Coding Schemes for the Gaussian Two-Way Relay Channel
Peng Zhong (McGill University, Canada); Mai Vu (McGill University, Canada)
pp. 2451-2456

Thursday, June 14

08:00 - 09:45

CT13: Heterogeneous Network
Chair: Wan Choi (KAIST, Korea)

08:00 Dynamic Cell Association for Downlink Sum Rate Maximization in Multi-Cell Heterogeneous Networks
Steven Corroy (RWTH Aachen University, Germany); Laetitia Falconetti (Ericsson Research, Germany); Rudolf Mathar (RWTH Aachen University, Germany)
pp. 2457-2461

08:20 Heterogeneous Partial Feedback Design in Heterogeneous OFDMA Cellular Networks
Yichao Huang (University of California, San Diego, USA); Bhaskar Rao (University of California, San Diego, USA)
pp. 2462-2466
08:40 Wireless Video Content Delivery through Coded Distributed Caching
Negin Golrezaei (University of Southern California, USA); Karthikeyan Shanmugam (University of Southern California, USA); Alex Dimakis (University of Southern California, USA); Andreas Molisch (University of Southern California, USA); Giuseppe Caire (University of Southern California, USA)
pp. 2467-2472

09:00 Spectrum Allocation and Optimization in Femtocell Networks
Wang Chi Cheung (Massachusetts Institute of Technology & Agency for Science, Technology And Research, USA); Tony Q. S. Quek (Singapore University of Technology and Design (SUTD) & Institute for Infocomm Research, Singapore); Marios Kountouris (Supélec, France)
pp. 2473-2478

09:20 Downlink Analysis of Multi-channel Hybrid Access Two-tier Networks
Yi Zhong (University of Science and Technology of China, P.R. China); Wenyi Zhang (University of Science and Technology of China, P.R. China)
pp. 2479-2484

CT14: Network Coding

Chair: Amir Banihashemi (Carleton University, Canada)

08:00 Joint Network-Channel Coding for the Asymmetric Multiple-Access Relay Channel
Andreas Winkelbauer (Vienna University of Technology, Austria); Gerald Matz (Vienna University of Technology, Austria)
pp. 2485-2489

08:20 Encoded Packet-Assisted Reliable Transmission for Unicast Sessions in Wireless Networks
Zhiheng Zhou (University of Electronic Science and Tech of China, P.R. China); Liang Zhou (UESTC, P.R. China)
pp. 2490-2495

08:40 Error Performances of Multiple Access System Using Analog Network Coding
Wei Guan (University of Maryland, College Park, USA); K. J. Ray Liu (University of Maryland, USA)
pp. 2496-2500

09:00 Network-Coded Multihop Multicast: Topology and Encoding Complexity
Marco Martalò (University of Parma, Italy); Michele Mohorovicich (University of Parma, Italy); Gianluigi Ferrari (University of Parma, Italy); Christina Fragouli (EPFL, Switzerland)
pp. 2501-2505

09:20 Soft-bit Correction with Robust Quantize-and-Forward for Physical Layer Network Coding in Two-Way Relay Fading Channel
Dong Fang (University of York, United Kingdom); Alister G. Burr (University of York, United Kingdom)
pp. 2506-2510
14:00 - 15:45

CT-P1: Compressed Sensing and New Applications

Chair: Jun Li (Communications Research Centre of Canada, Canada)

**Non-Asymptotic Analysis of Compressed Sensing Random Matrices: An U-Statistics Approach**
Fabian Lim (Massachusetts Institute of Technology, USA); Vladimir Marko Stojanovic (Massachusetts Institute of Technology, USA)
pp. 2511-2515

**Distributed Compressed Sensing for the MIMO MAC with Correlated Sources**
Steven Corroy (RWTH Aachen University, Germany); Rudolf Mathar (RWTH Aachen University, Germany)
pp. 2516-2520

**Channel Estimation Impact over MIMO-MAC Achievable Rates**
Iñaki Esnaola (Princeton University, USA); Antonia Tulino (Bell Labs, USA); Sivarama Venkatesan (Bell Labs, Alcatel-Lucent, USA); Jonathan Ling (Bell Labs, Alcatel-Lucent Technologies, USA)
pp. 2521-2525

**On the feasibility of using microfluidic technologies for communications in Labs-on-a-Chip**
Elena De Leo (University of Catania, Italy); Laura Galluccio (University of Catania, Italy); Alfio Lombardo (University of Catania, Italy); Giacomo Morabito (University of Catania, Italy)
pp. 2526-2530

**Information Rates of Solar Blind Non-Line-of-Sight Ultra-Violet Channels with Binary-Input**
Mohamed A. Elshimy (McMaster University, Canada); Steve Hranilovic (McMaster University, Canada)
pp. 2531-2535

CT15: MIMO II

Chair: Min Dong (University of Ontario Institute of Technology, Canada)

**14:00 On the Optimality of Beamformer Design for Zero-forcing DPC with QR Decomposition**
Le-Nam Tran (University of Oulu & Centre for Wireless Communications, Finland); Markku Juntti (University of Oulu, Finland); Mats Bengtsson (KTH Royal Institute of Technology, Sweden); Björn Ottersten (KTH Royal Institute of Technology, Sweden)
pp. 2536-2541

**14:20 Optimal Pilot Design and Power Control in Correlated MISO Links**
Adriano Pastore (Universitat Politècnica de Catalunya, Spain); Javier R. Fonollosa (Universitat Politècnica de Catalunya - Barcelona Tech (UPC), Spain)
pp. 2542-2546
14:40 **Fundamental Capacity Limits on Compact MIMO-OFDM Systems**  
Pawandeep S Taluja (MaxLinear Inc & North Carolina State University, USA); Brian L Hughes (North Carolina State University, USA)  
pp. 2547-2552

15:00 **MIMO-OFDMA Rate Allocation and Beamformer Design Using a Multi-Access Channel Framework**  
Ali Khanafer (University of Illinois at Urbana-Champaign, USA); Teng Joon Lim (National University of Singapore, Singapore); Roya Doostnejad (University of Toronto, Canada); Taiwen Tang (BLINQ Networks, Canada)  
pp. 2553-2558

15:20 **Optimal Dynamic Spectrum Management for DSL Interference/Broadcast Channel**  
Amir R. Forouzan (University of Isfahan, Iran); Marc Moonen (Katholieke Universiteit Leuven, Belgium); Jochen Maes (Alcatel-Lucent Bell Labs, Belgium); Mamoun Guenach (Bell Laboratories, Alcatel-Lucent, Antwerp, Belgium)  
pp. 2559-2564

16:15 - 18:00

**CT-P2: Wireless Communications**

Chair: Matthew Valenti (West Virginia University, USA)

- **Layered Hybrid Digital-Analog Coding with Correlated Interference**  
  Mortez A Varasteh (Sharif University of Technology, Iran); Hamid Behroozi (Sharif University of Technology, Iran)  
  pp. 2565-2569

- **CPM-Based Spread Spectrum Systems for Multi-user Communications**  
  Nicolò Mazzali (University of Parma, Italy); Giulio Colavolpe (University of Parma, Italy); Stefano Buzzi (University of Cassino, Italy)  
  pp. 2570-2574

- **Code-Acquisition via the Projection Method for CDMA Systems in High MAI Channels**  
  Jeewani Kodithuwakku (University of South Australia, Australia); Nick A Letzepis (University of South Australia, Australia); Alex Grant (University of South Australia, Australia); Robby G. McKilliam (University of South Australia, Australia)  
  pp. 2575-2579

- **First Passage Time Problems with Applications to Synchronization**  
  Watcharapan Suwansantisuk (Massachusetts Institute of Technology, USA); Moe Win (Massachusetts Institute of Technology, USA); Lawrence Shepp (University of Pennsylvania, USA)  
  pp. 2580-2584

- **Average Symbol Error Probability in the Presence of Network Interference and Noise**  
  Cristina Merola (University of L’Aquila, Italy); Alessandro Guidotti (University of Bologna, Italy); Marco Di Renzo (French National Center for Scientific Research (CNRS), France); Fortunato Santucci (University of L'Aquila, Italy); Giovanni Corazza (University of Bologna, Italy)
CT16: Coding Theory

Chair: Philippa A. Martin (University of Canterbury, New Zealand)

16:15 Analog Digital Belief Propagation: from theory to practice
Guido Montorsi (Politecnico di Torino, Italy)
pp. 2591-2595

16:35 A Density Evolution Based Framework for Dirty Paper Code Design Using TCQ and Multilevel LDPC Codes
Yang Yang (Texas A&M University, USA); Zixiang Xiong (Texas A&M University, USA); Yuchun Wu (Huawei Hisi company, P.R. China); Philipp Zhang (Hisilicon Technologies, Huawei, P.R. China)
pp. 2596-2600

16:55 On the Error-Rate Performance of 4-State Turbo Codes with Puncture-Constrained DRP Interleavers
Stewart Crozier (Communications Research Centre, Canada); Ken A. Gracie (Communications Research Centre, Canada)
pp. 2601-2605

17:15 Short Non-Binary IRA Codes on Large-Girth Hamiltonian Graphs
Gianluigi Liva (DLR - German Aerospace Center, Germany); Balazs Matuz (German Aerospace Center (DLR), Germany); Enrico Paolini (DEI, University of Bologna, Italy); Marco Chiani (University of Bologna, Italy)
pp. 2606-2610

17:35 Concatenated BCH Codes for NAND Flash Memories
Sung-gun Cho (Korea Advanced Institute of Science and Technology, Korea); Jeongseok Ha (KAIST, Korea)
pp. 2611-2616
# ICC’12 NGN: IEEE ICC 2012 - Next-Generation Networking Symposium - Program

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<td>NGN02: P2P and Content Based Networks II</td>
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## Tuesday, June 12

### 10:45 - 12:30

**NGN01: P2P and Content Based Networks I**

Chair: Go Hasegawa (Osaka University, Japan)

**10:45 The Low-Overhead Routing Policy in the Content Centric Network**
Yifan Yu (Orange Labs Beijing, P.R. China); Daqing Gu (France Telecom R&D, P.R. China)
pp. N/A

**11:06 CCNxServ: Dynamic Service Scalability in Information-Centric Networks**
Suman Srinivasan (Columbia University, USA); Amandeep Singh (Columbia University, USA); Dhruva Batni (Columbia University, USA); Jae Woo Lee (Columbia University, USA); Henning Schulzrinne (Columbia University, USA); Volker Hilt (Bell Labs/Alcatel-Lucent, USA); Gerald Kunzmann (DOCOMO Communications Laboratories Europe, Germany)
pp. 2617-2622
11:27 An Efficient Search Method for the Content-Based Identification of Telephone-SPAM
Julian Strobl (Cologne University of Applied Sciences, Germany); Bernhard Mainka (Cologne University of Applied Sciences, Germany); Gary Grutzek (Cologne University of Applied Sciences, Germany); Heiko Knospe (Cologne University of Applied Sciences, Germany)
p. 2623-2627

11:48 Optimizing Server Power Consumption in Cross-Domain Content Distribution Infrastructures
Chang Ge (University of Surrey, United Kingdom); Ning Wang (University of Surrey, United Kingdom); Zhiyi Sun (University of Surrey, United Kingdom)
p. 2628-2633

12:09 Towards a Flexible Resource Management System for Content Centric Networking
Indra Widjaja (Bell Labs, Alcatel-Lucent, USA)
p. 2634-2638

14:00 - 15:45
NGN02: P2P and Content Based Networks II
Chair: Tutomu Murase (NEC Corporation, Japan)

14:00 Will P2P Users Cooperate with ISPs? A Word-of-Mouth Communication Approach
Piotr Wydrych (AGH University of Science and Technology, Poland); Piotr Cholda (AGH University of Science and Technology, Poland)
p. 2639-2644

14:21 QoS Aware Path Selection in Content Centric Networks
Aadil Z Khan (Lahore University of Management Sciences, Pakistan); Shahab Baqai (Lahore University of Management Sciences, Pakistan); Fahad R Dogar (Carnegie Mellon University, USA)
p. 2645-2649

14:42 SIONA: A Service and Information Oriented Network Architecture
Zhongxing Ming (Tsinghua University, P.R. China); Mingwei Xu (Tsinghua University, P.R. China); Chunmei Xia (Tsinghua University, P.R. China); Dan Li (Tsinghua University, P.R. China); Dan Wang (The Hong Kong Polytechnic University, Hong Kong)
p. 2650-2654

15:03 A Chunk Caching Location and Searching Scheme in Content Centric Networking
Yang Li (Institute of Acoustics, Chinese Academy of Sciences, P.R. China); Tao Lin (Institute of Acoustics, Chinese Academy of Sciences, P.R. China); Hui Tang (IOA, Chinese Academy of Sciences, USA); Peng Sun (Nanyang Technological University, Singapore)
p. 2655-2659
15:24 Traffic engineering for information-centric networks
Martin Reed (University of Essex, United Kingdom)
pp. 2660-2665

16:15 - 18:00
NGN03: Traffic Engineering and Congestion Control

Chair: Kazuhiko Kinoshita (Osaka University, Japan)

16:15 On the Fairness of Transport Protocols in a Multi-Path Environment
Martin Becke (University of Duisburg-Essen, Germany); Thomas Dreibholz (University of Duisburg-Essen, Germany); Hakim Adhari (University of Duisburg-Essen, Germany); Erwin P. Rathgeb (Universität Duisburg-Essen, Germany)
pp. 2666-2672

16:36 A Carrier-Ethernet oriented Transport Protocol with a Novel Congestion Control and QoS Integration: Analytical, Simulated and Experimental Validation
Claudio I Estevez (University of Chile, Chile); Sergio Angulo (University of Chile, Chile); Andrés Abujatum (University of Chile, Chile); Georgios Ellinas (University of Cyprus, Cyprus); Cheng Liu (Georgia Institute of Technology, USA); Gee-Kung Chang (Georgia Tech, USA)
pp. 2673-2678

16:57 Prompt Congestion Reaction Scheme for Data Center Network using Multiple Congestion Points
Shuo Fang (Nanyang Technological University, Singapore); Chuan Heng Foh (Nanyang Technological University, Singapore); Khin Mi Mi Aung (A*STAR, Data Storage Institute, Singapore)
pp. 2679-2683

17:18 Autonomic Load Balancing for Flow Monitoring
Noriaki Kamiyama (NTT Service Integration Laboratories, Japan); Tatsuya Mori (NTT, Japan); Ryoichi Kawahara (NTT Service Integration Laboratories, Japan)
pp. 2684-2688

17:39 Passive Crowd-based Monitoring of World Wide Web Infrastructure and its Performance
Martin Arlitt (HP Labs & University of Calgary, USA); Niklas Carlsson (Linköping University, Sweden); Carey Williamson (University of Calgary, Canada); Jerry Rolia (HP Labs, Canada)
pp. 2689-2694
08:00 - 09:45

**NGN04: Network Virtualization**

Chair: Kurt Tutschku (University of Vienna, Austria)

**08:00 Hybrid Virtual Network Embedding with K-core Decomposition and Time-oriented Priority**
Sude Qing (Beijing University of Posts and Telecommunications & EBUPT Information Technology Co., Ltd., P.R. China); Jianxin Liao (Beijing University of Posts and Telecommunications, P.R. China); Jingyu Wang (Beijing University of Posts and Telecommunications, P.R. China); Xiaomin Zhu (Beijing University of Posts and Telecommunications, P.R. China); Qi Qi (Beijing University of Posts and Telecommunications, P.R. China)

pp. 2695-2699

**08:21 nSwitching: Virtual Machine Aware Relay Hardware Switching to improve intra-NIC Virtual Machine Traffic**
Jim Bardgett (Harris Corporation & University of Central Florida, USA); Cliff Zou (University of Central Florida, USA)

pp. 2700-2705

**08:42 Robust Dynamic Bandwidth Allocation Method for Virtual Networks**
Min Zhang (Zhejiang University & Hangzhou Dianzi University, P.R. China); Chunming Wu (Zhejiang University, P.R. China); Qiang Yang (Zhejiang University, P.R. China); Ming Jiang (Hangzhou Dianzi University, P.R. China)

pp. 2706-2710

**09:03 Dependability Assessment of Virtualized Networks**
Stenio Fernandes (Federal University of Pernambuco, Brazil); Eduardo Tavares (Federal University of Pernambuco, Brazil); Marcelo Santos (Federal University of Pernambuco, Brazil); Victor Lira (Federal University of Pernambuco, Brazil); Paulo Maciel (Federal University of Pernambuco, Brazil)

pp. 2711-2716

**09:24 Virtual Network Mapping with Traffic Matrices**
Cong Wang (University of Massachusetts, Amherst, USA); Shashank Shanbhag (University of Massachusetts, USA); Tilman Wolf (University of Massachusetts, USA)

pp. 2717-2722

14:00 - 15:45

**NGN-P1: Topics on Next Generation Networking and Internet I**

Chair: Zuoqing Zhu (University of Science and Technology of China, P.R. China)
14:00 Access-Efficient Balanced Bloom Filters
Yossi Kanizo (Technion, Israel); David Hay (The Hebrew University of Jerusalem, Israel); Isaac Keslassy (Technion, Israel)
pp. 2723-2728

Yachao Zhou (Dublin City University, Ireland); Tian Song (Beijing Institute of Technology, P.R. China); Xiaojun Wang (Dublin City University, Ireland)
pp. 2729-2734

14:42 GMPLS Adaptive Level of Recovery
Bruno Vidalenc (Alcatel-Lucent Bell Labs France, France); Ludovic Noirie (Alcatel-Lucent France, France); Laurent Ciavaglia (Alcatel-Lucent, France)
pp. 2735-2740

15:03 Modeling and Evaluation of Address Resolution Scalability in VPLS
Dominik Klein (University of Wuerzburg, Germany); Rastin Pries (University of Wuerzburg, Germany); Michael Scharf (Alcatel-Lucent Bell Labs, Germany); Michael Soellner (Alcatel-Lucent Bell Labs, Germany); Michael Menth (University of Tuebingen, Germany)
pp. 2741-2746

15:24 Separating Identifier from Locator with Extended DNS
Jessie Hui Wang (Tsinghua University, P.R. China); Yang Wang (University of Tsinghua, P.R. China); Mingwei Xu (Tsinghua University, P.R. China); Jiahai Yang (Tsinghua University, P.R. China)
pp. 2747-2751

NGN05: Mobile and Wireless Networks I

Chair: Marco Liebsch (NEC Europe Ltd, Germany)

14:00 Fast Handover in Cellular Networks with Femtocells
Ayaskant Rath (Polytechnic Institute of New York University, USA); Shivendra Panwar (Polytechnic Institute of New York University, USA)
pp. 2752-2757

14:21 WLAN/Cellular Handover Analysis for Different Mobility Models
Tariq M Ali (University of Texas at Dallas, USA); Mohammad Saquib (University Texas Dallas, USA)
pp. 2758-2762

14:42 Handoff Algorithm for Mobile Satellite Systems with Ancillary Terrestrial Component
Mirette Sadek (King Abdullah University of Science and Technology, Saudi Arabia); Sonia Alissa (INRS, University of Quebec, Canada)
pp. 2763-2767

15:03 Dimensioning X2 backhaul link in LTE networks
Alexandre Blugowski (Orange Labs & LIP 6, France); Olivier Klopfenstein (Orange Labs, France); Benjamin Renard (Ecole Polytechnique, France)
pp. 2768-2773
15:24 Virtual Mobility Domains - A Mobility Architecture for the Future Internet
Hasan Tuncer (Rochester Institute of Technology, USA); Yoshihiro Nozaki (Rochester Institute of Technology, USA); Nirmala Shenoy (University of Rochester, USA)
pp. 2774-2779

16:15 - 18:00
NGN-P2: Topics on Next Generation Networking and Internet II
Chair: Rastin Pries (University of Wuerzburg, Germany)

16:15 Minimizing Mean Packet Delay in EPONs through Integrated Grant Scheduling
Qingqi Shi (Shanghai Jiao Tong University, P.R. China); Wei Guo (Shanghai Jiao Tong University, P.R. China); Zhe Liu (Shanghai Jiao Tong University, P.R. China); Yaohui Jin (Shanghai Jiaotong University, P.R. China); Weiqiang Sun (Shanghai Jiaotong University, P.R. China); Weisheng Hu (Shanghai Jiao Tong University, P.R. China)
pp. 2780-2784

16:36 Side-payment profitability under convex demand-response modeling congestion-sensitive applications
George Kesidis (Pennsylvania State University, USA)
pp. 2785-2789

16:57 Scaling Bloom Filter Based Multicast With Hierarchical Tree Splitting
Sajjad Rizvi (Aalto University & National University of Sciences and Technology (NUST), Finland); András Zahemszky (Ericsson Research & Budapest University of Technology and Economics, Sweden); Tuomas Aura (Aalto University, Finland)
pp. 2790-2795

17:18 ISPs as Nodes or Sets of Links?
Praveen Kumar Muthuswamy (Rensselaer Polytechnic Institute, USA); Koushik Kar (Rensselaer Polytechnic Institute, USA); Aparna Gupta (Rensselaer Polytechnic Institute, USA); Hasan T Karaoglu (University of Nevada, Reno, USA); Murat Yuksel (University of Nevada - Reno, USA)
pp. 2796-2800

17:39 Optimized Constraint-Based Scheduling of OSPF Graceful Restarts for Maintenance Purposes
Walid Benchaita (Alcatel-Lucent Bell Labs France, France); Samir Ghamri-Doudane (Alcatel-Lucent Bell Labs France, France)
pp. 2801-2805

NGN06: Mobile and Wireless Networks II
Chair: Gang Feng (University of Electronic Science and Technology of China, P.R. China)

16:15 On the Efficiency of IPv6-based Network Mobility
Md Shohrab Hossain (University of Oklahoma, USA); Mohammed Atiguzzaman (University of Oklahoma, USA); William D. Ivancic (NASA Glenn Research Center, USA)
16:36 A Normalized Average Cost Model for ID/LOC Separation Networks
   Jungha Hong (Electronics and Telecommunications Research Institute, Korea);
   Heeyoung Jung (Electronics and Telecommunications Research Institute, Korea)
   pp. 2811-2815

16:57 Impairment-aware Radio-over-Fiber Control Plane for LTE Antenna Backhauling
   Ahmed Haddad (Telecom ParisTech, France); Elias A. Doumith (TELECOM
   ParisTech, France); Maurice Gagnaire (Telecom ParisTech (Ecole Nationale
   Superieure des Telecommunications) & Institut Telecom, France)
   pp. 2816-2821

17:18 Satellite based "Power Utility Intranet" for smart management of electric
distribution networks: The AuRA-NMS case study
   Qiang Yang (Zhejiang University, P.R. China)
   pp. 2822-2826

17:39 Virtual Cognitive Base Station: Enhancing Software-based Virtual Router
Architecture with Cognitive Radio
   Kiyohide Nakauchi (National Institute of Information and Communications Technology, Japan);
   Kentaro Ishizu (National Institute of Information and Communications
   Technology, Japan); Homare Murakami (National Institute of Information and
   Communications Technology, Japan); Yasunaga Kobari (National Institute of
   Information and Communications Technology, Japan); Yuji Nishida (National Institute
   of Information and Communications Technology, Japan); Akihiro Nakao (University of
   Tokyo, Japan); Hiroshi Harada (National Institute of Information & Communications
   Technology (NICT), Japan)
   pp. 2827-2832

Thursday, June 14

08:00 - 09:45

NGN07: Routing I

Chair: Shingo Ata (Osaka City University, Japan)

08:00 GRASP-BSMA: A Fast Algorithm for Delay Constrained Multicast Routing
   Gang Feng (University of Wisconsin, Platteville, USA)
   pp. 2833-2837

08:21 On Finding Multicast Paths in the Internet
   Visa Holopainen (Aalto University, Finland)
   pp. 2838-2843

08:42 Spraying the Replication Probability With Geographic Assistance for Delay
Tolerant Networks
   Yue Cao (University of Surrey, United Kingdom); Zhili Sun (University of Surrey,
   United Kingdom); Ning Wang (University of Surrey, United Kingdom)
   pp. 2844-2849
09:03 Towards Robust, Scalable, and Fast Internet via Explicit Forwarding Engines (EFE)
Visa Holopainen (Aalto University, Finland)
pp. 2850-2855

09:24 Introducing Multi-Plane Routing for Next-Generation All-IP Wireless Access Networks
Alexandre Jaron (King's College London, United Kingdom); Andrej Mihailovic (King's College London, United Kingdom); Hamid Aghvami (King's College London, United Kingdom)
pp. 2856-2860

14:00 - 15:45

NGN08: Routing II

Chair: Jing Wu (Communications Research Centre Canada, Canada)

14:00 Internet routing diversity for stub networks with a Map-and-Encap scheme
Xavier Misseri (TELECOM ParisTech, France); Jean-Louis Rougier (TELECOM ParisTech, France); Damien Saucez (INRIA, France)
pp. 2861-2866

14:21 Enabling Green Networking with a Power Down Approach
Brendan Mumey (Montana State University, USA); Jian Tang (Syracuse University, USA); Saiichi Hashimoto (Montana State University, USA)
pp. 2867-2871

14:42 Fault-tolerant Routing on Borel Cayley Graph
Junghun Ryu (Stony Brook University, USA); Eric Noel (AT&T Labs - Research, USA); Wendy Tang (Stony Brook University, USA)
pp. 2872-2877

15:03 IPv6 Routing and Autoconfiguration in Extended LANs
Chi-Anh La (Grenoble Informatics Laboratory, France); Martin Heusse (Grenoble Informatics Laboratory & Grenoble INP, France); Michał Beńo (Grenoble Informatics Laboratory, France); Andrzej Duda (Grenoble Institute of Technology, France)
pp. 2878-2883

15:24 Constructing Optimal Non-overlap Routing Tables
Tong Yang (Tsinghua University & Dept. of Computer Science and Technology, P.R. China); Ting Zhang (Tsinghua University, P.R. China); Shenniang Zhang (Tsinghua University, P.R. China); Bin Liu (Tsinghua University, P.R. China)
pp. 2884-2888

NGN09: Content Delivery and Cloud Computing

Chair: Yonggang Wen (Nanyang Technological University, Singapore)
14:00 In-Network Caching Effect on Optimal Energy Consumption in Content-Centric Networking
Nakjung Choi (Bell-Labs, Alcatel-Lucent, Korea); Kyle C Guan (Bell Labs, Alcatel-Lucent, USA); Dan Kilper (Bell Laboratories & Alcatel-Lucent, USA); Gary Atkinson (Bell Labs, Alcatel-Lucent, USA)
p. 2889-2894

14:21 Reducing Backhaul Costs for Mobile Content Delivery - An Analytical Study
Marco Liebsch (NEC Europe Ltd, Germany); Stefan Schmid (NEC Europe Ltd., Germany); Jun Awano (NEC, Japan)
p. 2895-2900

14:42 Energy Benefit of Distributed In-Network Processing for Personalized Media Service Delivery
Jaime Llorca (Bell Labs, Alcatel-Lucent, USA); Kyle C Guan (Bell Labs, Alcatel-Lucent, USA); Gary Atkinson (Bell Labs, Alcatel-Lucent, USA); Dan Kilper (Bell Laboratories & Alcatel-Lucent, USA)
p. 2901-2906

15:03 A Multi-criteria Master Nodes Selection Mechanism For Knowledge Dissemination In Autonomic Networks
Sami Souhi (University Paris Est UPEC, France); Said Hoceni (UPEC, University Paris-Est Creteil Val de Marne, France); Abdelhamid Mellouk (UPEC, University Paris-Est Creteil Val de Marne, France)
p. 2907-2911

15:24 Providing Reliability as an Elastic Service in Cloud Computing
Nakharin Limrungsri (George Washington University, USA); Juzi Zhao (The George Washington University, USA); Yu Xiang (George Washington University, USA); Tian Lan (George Washington University, USA); Howie Huang (George Washington University, USA); Suresh Subramaniam (The George Washington University, USA)
p. 2912-2917

16:15 - 18:00

NGN10: Cloud and Data Center

Chair: Kang Xi (Polytechnic Institute of New York University, USA)

16:15 Hyper-BCube: A Scalable Data Center Network
Dong Lin (Hong Kong University of Science & Technology, Hong Kong); Yang Liu (Hong Kong University of Science & Technology, Hong Kong); Mounir Hamdi (Hong Kong University of Science and Technology, P.R. China); Jogesh Muppala (The Hong Kong University of Science and Technology, Hong Kong)
p. 2918-2923

16:36 HERO: Hierarchical Energy Optimization for Data Center Networks
Yan Zhang (NJIT, USA); Nirwan Ansari (NJIT, USA)
p. 2924-2928

16:57 Maximizing Revenue with Dynamic Cloud Pricing: The Infinite Horizon Case
Hong Xu (University of Toronto, Canada); Baochun Li (University of Toronto, Canada)
17:18 HyScale: A Hybrid Optical Network based Scalable, Switch-centric Architecture for Data Centers
Shivashis Saha (University of Nebraska-Lincoln, USA); Jitender Singh Deogun (University of Nebraska-Lincoln, USA); Lisong Xu (University of Nebraska-Lincoln, USA)
pp. 2934-2938

17:39 Hybrid Security Architecture for Data Center Networks
Ho-Yu Lam (Polytechnic Institute of New York University, USA); Song Zhao (Polytechnic Institute of New York University, USA); Kang Xi (Polytechnic Institute of New York University, USA); H. Jonathan Chao (Polytechnic Institute of New York University, USA)
pp. 2939-2944

NGN11: Router Architecture & Switch Design

Chair: Jorge M Finochietto (National University of Córdoba & CONICET, Argentina)

16:15 On Dynamic Policies to Switch Off Relay Nodes
Diogo Quintas (King’s College London, United Kingdom); Vasilis Friderikos (King’s College London, United Kingdom)
pp. 2945-2950

16:36 Energy Saving in Distributed Router Architectures
Andrea Bianco (Politecnico di Torino, Italy); Fikru Getachew Debele (Politecnico di Torino, Italy); Luca Giraudo (Politecnico di Torino, Italy)
pp. 2951-2955

16:57 On the Scalability of Feedback-based Two-stage Switch
Bing Hu (Zhejiang University, P.R. China); Chunzhi He (The University of Hong Kong, Hong Kong); Kwan Yeung (University of Hong Kong, Hong Kong)
pp. 2956-2960

17:18 ALFE: A Replacement Policy to Cache Elephant Flows in the Presence of Mice Flooding
Tian Pan (Tsinghua University, P.R. China); Xiaoyu Guo (Tsinghua University, P.R. China); Chen Hui Zhang (Tsinghua University, P.R. China); Wei Meng (Tsinghua University, P.R. China); Bin Liu (Tsinghua University, P.R. China)
pp. 2961-2965

17:39 Path-Vector Contract Routing
Hasan T Karaoglu (University of Nevada, Reno, USA); Murat Yuksel (University of Nevada - Reno, USA)
pp. 2966-2971
Tuesday, June 12

10:45 - 12:30

ONSP1: Optical Networking Posters

10:45 Analysis of Laser and Detector Placement in MIMO Multimode Optical Fiber Systems
Kumar Appaiah (University of Texas, Austin, USA); Sagii Zisman (The University of Texas at Austin, USA); Sriram Vishwanath (University of Texas at Austin, USA); Seth R. Bank (University of Texas, USA)
pp. 2972-2976

11:11 Carving-decomposition based algorithms for the maximum path coloring problem
Mehwish Bashir (Simon Fraser University, Canada); Qianping Gu (Simon Fraser University, Canada)
pp. 2977-2982

11:37 Computing Path Blocking Probabilities for Traffic Splitting in Optical Hybrid Switching Networks
Onur Alparslan (Osaka University, Japan); Shin'ichi Arakawa (Osaka University, Japan); Masayuki Murata (Osaka University, Japan)
pp. 2983-2988
**12:03 Leveraging Multipath Routing and Traffic Grooming for an Efficient Load Balancing in Optical Networks**

Juliana De Santi (State University of Campinas, Brazil); André C Drummond (University of Brasilia, Brazil); Nelson L. S. da Fonseca (State University of Campinas, Brazil); Xiaomin Chen (Technische Universität Carolo-Wilhelmina zu Braunschweig, Germany); Admela Jukan (Technische Universität Carolo-Wilhelmina zu Braunschweig, Germany)

pp. 2989-2993

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**Wednesday, June 13**

**08:00 - 09:45**

**ONS01: Energy-efficient Optical Networks I**

Chair: Lena Wosinska (Royal Institute of Technology KTH, Sweden)

**08:00 Standards-compliant EPON Sleep Control for Energy Efficiency: Design and Analysis**

Jingjing Zhang (Arista Networks, USA); Nirwan Ansari (NJIT, USA)

pp. 2994-2998

**08:21 Low-Carbon Routing Algorithms For Cloud Computing Services in IP-over-WDM Networks**

Mirko Gattulli (Politecnico di Milano, Italy); Massimo Tornatore (Politecnico di Milano & University of California, Davis, Italy); Riccardo Fiandra (Fastweb S. p. A, Italy); Achille Pattavina (Politecnico di Milano, Italy)

pp. 2999-3003

**08:42 On the Energy Consumption of IP-over-WDM Architectures**

Francesco Musumeci (Politecnico di Milano, Italy); Domenico Siracusa (Create-Net & Politecnico Di Milano, Italy); Giuseppe Rizzelli (Politecnico di Milano, Italy); Massimo Tornatore (Politecnico di Milano & University of California, Davis, Italy); Riccardo Fiandra (Fastweb S. p. A, Italy); Achille Pattavina (Politecnico di Milano, Italy)

pp. 3004-3008

**09:03 Energy Efficiency Analysis for Dynamic Routing in Optical Transport Networks**

Jorge López Vizcaino (Huawei Technologies Duesseldorf GmbH & Technische Universität Dortmund, Germany); Yabin Ye (Huawei Technologies Duesseldorf GmbH, Germany); Idelfonso Tafur Monroy (Technical University of Denmark, Denmark)

pp. 3009-3014

**09:24 Genetic Algorithms for Designing Energy-Efficient Optical Transport Networks with Mixed Regenerator Placement**

Chuanqi Wan (University of Science and Technology of China, P.R. China); Zuqing Zhu (University of Science and Technology of China, P.R. China); Weida Zhong (University of Science and Technology of China, P.R. China)

pp. 3015-3019
14:00 - 15:45

ONS02: Energy-efficient Optical Networks II

Chair: Dominic A. Schupke (Nokia Siemens Networks & NSN Research, Germany)

14:00 *Energy-Efficient Impairment-Constrained 3R Regenerator Placement in Optical Networks*
Weisheng Xie (University of Texas at Dallas, USA); Yi Zhu (Hawaii Pacific University, USA); Jason P. Jue (University of Texas at Dallas, USA)
pp. 3020-3024

14:21 *Design of Green Optical Networks With Signal Quality Guarantee*
Cicek Cavdar (Royal Institute of Technology (KTH), Sweden); Marc Ruiz (Universitat Politècnica de Catalunya, Spain); Paolo Monti (Royal Institute of Technology (KTH), Sweden); Luis Velasco (Universitat Politècnica de Catalunya (UPC), Spain); Lena Wosinska (Royal Institute of Technology KTH, Sweden)
pp. 3025-3030

14:42 *Energy-Efficient Dynamic Provisioning for Spectrum Elastic Optical Networks*
Shuqiang Zhang (University of California, Davis, USA); Biswanath Mukherjee (University of California Davis, USA)
pp. 3031-3035

15:03 *Heterogeneous Space Switches for Power-Efficient Optical Interconnection Networks*
Pier Giorgio Raponi (Scuola Superiore Sant'Anna, Italy); Nicola Andriolli (Scuola Superiore Sant'Anna, Italy); Isabella Cerutti (Scuola Superiore Sant'Anna, Italy); Piero Castoldi (Scuola Superiore Sant'Anna, Italy); Odile Liboiron-Ladouceur (McGill University, Canada)
pp. 3036-3040

15:24 *Vertical Cavity Surface Emitting Laser Transmitters for Energy Efficient Broadband Access Networks*
Elaine Wong (Dept of Electrical and Electronic Engineering & The University of Melbourne, Australia); Chien Aun Chan (Centre for Energy-Efficient Telecommunications (CEET) & The University of Melbourne, Australia); Maluge Pubuduni Imali Dias (NICTA Victoria Research Laboratory, Australia); Michael Mueller (Walter Schottky Institut, Technische Universität München, Germany); Markus-Christian Amann (Technische Universität München, Germany)
pp. 3041-3045

16:15 - 18:00

ONS03: Optical Network Survivability

Chair: Jing Wu (Communications Research Centre Canada, Canada)
16:15 Decoupling Wavelength Assignments in Dedicated Protection Switching Bidirectional Lightpath

Arunarasi Sivasankaran (University of Texas at Dallas, USA); Miguel Razo (University of Texas at Dallas & Computer Science, USA); Wanjun Huang (University of Texas at Dallas, USA); Limin Tang (University of Texas at Dallas, USA); Marco Tacca (University of Texas at Dallas, USA); Andrea Fumagalli (UTD, USA)

pp. 3046-3050

16:36 Optimal Dedicated Protection Approach to Shared Risk Link Group Failures using Network Coding

Péter Babarcsi (Budapest University of Technology and Economics, Hungary); János Tapolcai (Budapest University of Technology and Economics, Hungary); Pin-Han Ho (University of Waterloo, Canada); Muriel Médard (MIT, USA)

pp. 3051-3055

16:57 Optimizing the Monitoring Path Design for Independent Dual Failures

Wenda Ni (Carleton University, Canada); Changcheng Huang (Carleton University, Canada); Jing Wu (Communications Research Centre Canada, Canada); Qingshan Li (Tsinghua University, P.R. China); J. Michel Savoie (Communications Research Centre Canada, Canada)

pp. 3056-3060

17:18 Path vs. Cutset Approaches for the Design of Logical Survivable Topologies

Brigitte Jaumard (Concordia University, Canada); Hai Anh Hoang (Concordia University, Canada); Minh Bui (Concordia University, Canada)

pp. 3061-3066

17:39 Cost Comparison of 1+1 Path Protection Schemes: A Case for Coding

Harald Øverby (Norwegian University of Science and Technology, Norway); Gergely Biczók (Norwegian University of Science and Technology, Norway); Péter Babarcsi (Budapest University of Technology and Economics, Hungary); János Tapolcai (Budapest University of Technology and Economics, Hungary)

pp. 3067-3072

Thursday, June 14

08:00 - 09:45

ONS04: Optical Network Design and Control

Chair: Pin-Han Ho (University of Waterloo, Canada)

08:00 PCE-based Inter-Domain Lightpath Provisioning

Alisson S. L. Pontes (State University of Campinas, Brazil); André C Drummond (University of Brasilia, Brazil); Nelson L. S. da Fonseca (State University of Campinas, Brazil); Admelia Jukan (Technische Universität Carolo-Wilhelmina zu Braunschweig, Germany)

pp. 3073-3078
08:21 Optimal Capacity Planning and RPL Placement in Carrier Ethernet Mesh Network Design
Mohammad Nurujaman (Concordia University, Canada); Samir Sebbah (Concordia University, Canada); Chadi Assi (Concordia University, Canada); Martin Maier (Institut National de la Recherche Scientifique (INRS), Canada)
pp. 7187-7192

08:42 Cross-layer RWA in Translucent Optical Networks
Juzi Zhao (The George Washington University, USA); Suresh Subramaniam (The George Washington University, USA); Maite Brandt-Pearce (University of Virginia, USA)
pp. 3079-3083

09:03 Regenerator Pool Site Selection for Mixed Line Rate Optical Networks
Weisheng Xie (University of Texas at Dallas, USA); Jason P. Jue (University of Texas at Dallas, USA); Xi Wang (Fujitsu Laboratories of America, USA); Qiong Zhang (Fujitsu Laboratories of America, USA); Qingya She (Fujitsu Network Communications, USA); Paparao Palacharla (FLA, USA); Motoyoshi Sekiya (Fujitsu Laboratories of America, Inc., USA)
pp. 3084-3088

09:24 Simple and Effective Routing and Wavelength Assignment in Transparent Optical Networks
Brendan Mume (Montana State University, USA); Timothy A. Hahn (Montana State University, USA); Richard S. Wolff (Montana State University, USA)
pp. 3089-3093

14:00 - 15:45

ONS05: Optical Access networks I: PON

Chair: Isabella Cerutti (Scuola Superiore Sant'Anna, Italy)

14:00 A Dynamic Wavelength Resource Allocation Capable Passive Optical Network with Shared Transceivers
Luying Zhou (Institute for Infocomm Research, Singapore); Zhaowen Xu (Institute for Infocomm Research, Singapore); Xiaofei Cheng (Institute for Infocomm Research, Singapore); Yong-Kee Yeo (Institute for Infocomm Research, Singapore); Xu Shao (Institute for Infocomm Research, Singapore); Qi Rui Huang (Institute for Infocomm Research, Singapore)
pp. 3094-3098

14:21 Delay Analysis for Ethernet Long-Reach Passive Optical Networks
Mohammad Seyed Kiaei (Concordia University, Canada); Kerim Fouli (MIT & INRS, USA); Michael Scheutzow (Technical University Berlin, Germany); Martin Maier (Institut National de la Recherche Scientifique (INRS), Canada); Martin Reisslein (Arizona State University, USA); Chadi Assi (Concordia University, Canada)
pp. 3099-3104
14:42 Cascaded Splitter Topology Optimization in LRPONs
Bin Lin (Dalian Maritime University, P.R. China); Lin Lin (University of Waterloo, Canada); Pin-Han Ho (University of Waterloo, Canada)
pp. 3105-3109

15:03 A Cross Layer Optimization Scheme for WDM PON Network Design and Dimensioning
Rejaul Chowdhury (Concordia University, Canada); Brigitte Jaumard (Concordia University, Canada)
pp. 3110-3115

15:24 A Virtual-Tree OFDMA PON System Architecture
Maria C. Yang (National Chiao Tung University, Taiwan); Po-Lung Tien (National Chiao Tung University, Taiwan); Hsing-Yu Chen (Industrial Technology Research Institute of Taiwan, Taiwan); Dar-Zu Hsu (Industrial Technology Research Institute, Taiwan); Chia-Chien Wei (National Sun Yat-sen University, Taiwan); Jyehong Chen (National Chiao Tung University, Taiwan); Ju-Lin Shih (National Chiao Tung University, Taiwan)
pp. 3116-3121

16:15 - 18:00

ONS06: Optical Access networks II: OCDMA and FSO
Chair: Martin Maier (Institut National de la Recherche Scientifique (INRS), Canada)

16:15 Gigabit Rate Mobile Connectivity Through Visible Light Communication
Eran Pisek (Samsung Telecommunications America & Samsung Electronics, USA); Sridhar Rajagopal (Samsung Telecommunications America, USA); Shadi Abu-Surra (Samsung Telecommunications America, USA)
pp. 3122-3127

16:36 Diversity Gain for Near-field MISO Atmospheric Optical Communications
Majid Safari (McMaster University, Canada); Steve Hranilovic (McMaster University, Canada)
pp. 3128-3132

16:57 CDMA Based Dynamic Bandwidth Allocation (CDBA) Scheme for EPON
Elie Naim Inaty (University of Balamand, Lebanon); Robert Raad (University of Balamand, Lebanon); Paul Fortier (Laval University, Canada)
pp. 3133-3138

17:18 Link Allocation, Routing and Scheduling of FSO Augmented RF Wireless Mesh Networks
Yi Tang (University of Virginia, USA); Maite Brandt-Pearce (University of Virginia, USA)
pp. 3139-3143

17:39 A Study on Hybrid Optical Network Architecture with OCDM Technology
Tatsuya Fukuda (Osaka University, Japan); Ken-ichi Baba (Osaka University, Japan); Shimojo Shinji (Osaka University, Japan)
pp. 3144-3148
**ICC'12 SAC: IEEE ICC 2012 - Selected Areas in Communications Symposium - Program**

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<td>SA-SSC2: Satellite &amp; Space Networking</td>
<td>SA-TCO1: TCO1: Tactical Communications and Operations</td>
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<td>SA-SSC-P1: Satellite &amp; Space Communications Systems I</td>
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<td>15:45 - 16:15</td>
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<td>SA-SSC1: Satellite &amp; Space Communications</td>
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**Tuesday, June 12**

**10:45 - 12:30**

**SA-AN1: Access Networks I**

Chair: Jaafar Elmirghani (University of Leeds, United Kingdom)

**10:45 Pushing the limits of copper**
Jochen Maes (Alcatel-Lucent Bell Labs, Belgium); Mamoun Guenach (Bell Laboratories, Alcatel-Lucent, Antwerp, Belgium); Koen Hooghe (Bell Labs, Alcatel-Lucent, Belgium); Michael Timmers (Alcatel-Lucent Bell Labs, Belgium)
pp. 3149-3153

**11:06 A Novel Class of Iterative Approximation Methods for DSL Spectrum Optimization**
Paschalis Tsiaflakis (Katholieke Universiteit Leuven, Belgium); Francois Glineur (Université Catholique de Louvain, Belgium)
pp. 3154-3159
11:27 Impulse Noise Detection Techniques for Retransmission to Reduce Delay in DSL Systems
Dan Zhang (McGill University, Canada); Ho Van Khuong (McGill University, Canada); Tho Le-Ngoc (McGill University, Canada)
pp. 3160-3164

11:48 Design Green Hybrid Fiber-Coaxial Networks: A Traffic-Aware and Cooperative Approach
Zuqing Zhu (University of Science and Technology of China, P.R. China)
pp. 3165-3169

12:09 Efficient Erasure Marking Technique for Interleaving Delay Reduction in DSL Systems Impaired by Impulse Noise
Yuxin Zhao (McGill University, Canada); Ho Van Khuong (McGill University, Canada); Tho Le-Ngoc (McGill University, Canada)
pp. 3170-3174

SA-SSC-P1: Satellite & Space Communications Systems I

Chair: Ming-Chuan Yang (Harbin Institute of Technology, P.R. China)

10:45 Spectral Efficiency of Linear and Continuous Phase Modulations over Nonlinear Satellite Channels
Giulio Colavolpe (University of Parma, Italy); Guido Montorsi (Politecnico di Torino, Italy); Amina Piemontese (University of Parma, Italy)
pp. 3175-3179

11:06 Offered Capacity Optimization Mechanisms for Multi-beam Satellite Systems
Ricard Alegre-Godoy (Universitat Autònoma de Barcelona, Spain); Nader Alagha (European Space Agency, The Netherlands); Maria-Angeles Vázquez-Castro (Universidad Autónoma de Barcelona, Spain)
pp. 3180-3184

11:27 Optimized Laser Beam Parameters for Communications in Space Environments in the Presence of Pointing Errors
Chandana Tatineni (New Mexico State University, USA); Javier Perez-Ramirez (New Mexico State University, USA); Deva K. Borah (New Mexico State University, USA); David Voelz (New Mexico State University, USA)
pp. 3185-3189

11:48 Comparative Performance Analysis of SFH/FDM DRT and OBP Satellite Payloads Under Jamming
Junghwan Kim (University of Toledo, USA); Mike Orra (General Dynamics, USA); Chong Wang (The University of Toledo, USA)
pp. 3190-3194

12:09 Weight Based Dominating Set Clustering Algorithm for Small Satellite Networks
Jing Qin (University of Florida, USA); Xiang Mao (University of Florida, USA); Janise McNair (University of Florida, USA)
pp. 3195-3199
14:00 - 15:45

**SA-AN2: Access Networks II**

Chair: Jochen Maes (Alcatel-Lucent Bell Labs, Belgium)

**14:00 A Truthful Auction for Access Point Selection in Heterogeneous Mobile Networks**
Stefano Paris (University of Bergamo, Italy); Fabio Martignon (Université Paris-Sud, France); Ilario Filippini (Politecnico di Milano, Italy); Antonio Capone (Politecnico di Milano, Italy)
pp. 3200-3205

**14:21 Bandwidth Scheduling Techniques in TDM-PON Supporting Inter-ONU Communication with Network Coding for Smart Grid Applications**
Ryogo Kubo (Keio University, Japan); Masashi Tadokoro (NTT, Japan); Hiroko Nomura (NTT, Japan); Hirotaka Ujikawa (NTT, Japan); Susumu Nishihara (NTT Access Network Service Systems Laboratories, Japan); Ken-Ichi Suzuki (NTT, Japan); Naoto Yoshimoto (NTT Access Network Service Systems Laboratories, Japan)
pp. 3206-3211

**14:42 Quantifying Multiplexing Gains in a Wireless Network Cloud**
Mukundan Madhavan (IBM Research India, India); Parul Gupta (IBM India Research Lab, India); Malolan Chetlur (IBM Research - India, India)
pp. 3212-3216

**15:03 Dynamic Handoff Decision in Heterogeneous Wireless Systems: Q-Learning Approach**
Haleh Tabrizi (Stanford, USA); Golnaz Farhadi (Fujitsu Laboratories of America, USA); John Cioffi (Stanford University, USA)
pp. 3217-3222

**15:24 Pushing Uplink Goodput of An Asymmetric Access Network Beyond its Uplink Bandwidth**
Trang Minh Cao (Universitat Pompeu Fabra, Spain); Xin Huang (Deutsche Telekom R&D Lab USA, USA); Cheng-Hsin Hsu (National Tsing Hua University, Taiwan)
pp. 3223-3228

**SA-SSC-P2: Satellite & Space Communications Systems II**

Chair: Daniel E. Lucani (Aalborg University, Denmark)

**14:00 Modular FPGA-Based Software Defined Radio for CubeSats**
Steven Olivieri (Worcester Polytechnic Institute, USA); Jim Aarestad (University of New Mexico, USA); L. Howard Pollard (University of New Mexico, USA); Alexander M. Wyginski (Worcester Polytechnic Institute, USA); Craig Kief (Configurable Space Microsystems Innovations and Applications Center & University of New Mexico, USA); Richard Erwin (AFRL, USA)
pp. 3229-3233
14:21 Out-of-Band Sensing Scheme for Dynamic Frequency Hopping in Satellite Communications
Mohammad J Abdel Rahman (University of Arizona, USA); Marwan Krunz (University of Arizona, USA); Richard Erwin (AFRL, USA)
pp. 3234-3238

14:42 Reliable Multicast Transport of BGP for Geostationary Satellite Networks
Fabrice Hobaya (TéSA & CNES / Thales Alenia Space, France); Emmanuel Chaput (Irit-Enseeiht, France); Cédric Boudoin (Thales Alenia Space, France); Patrick Gelard (CNES, France); Emmanuel Dubois (CNES, France); André-Luc Beylot (IRIT Toulouse, France)
pp. 3239-3244

15:03 A Unified Model of Satellite Optical Transmission with Correlated and Heterogeneous Pointing Errors
Xian Liu (University of Arkansas at Little Rock, USA)
pp. 3245-3249

15:24 Minimizing Transponder Cost for Two-way Data Exchange in Satellite Networking
Chenguang Xu (University of Virginia, USA); Stephen G. Wilson (University of Virginia, USA)
pp. 3250-3254

16:15 - 18:00

SA-SSC1: Satellite & Space Communications
Chair: Hiromitsu Wakana (National Institute of Information & Communications Technology, Japan)

16:15 Performance Analysis of a Mesh Satellite System based on Linear and Continuous Phase Modulations
Riccardo Baroni (University of Bologna, Italy); Francesco Lombardo (University of Bologna, Italy); Rosalba Suffritti (Mavigex, Italy); Enzo Alberto Candreva (University of Bologna, Italy); Alessandro Vaneli-Coralli (University of Bologna, Italy); Giovanni Emanuele Corazza (University of Bologna, Italy); Giulio Colavolpe (University of Parma, Italy); Gennaro Gallinaro (Space Engineering S.p.A., Italy); Nader Alagha (European Space Agency, The Netherlands)
pp. 3255-3259

16:36 How to Significantly Improve the Spectral Efficiency of Linear Modulations through Time-Frequency Packing and Advanced Processing
Andrea Modenini (University of Parma, Italy); Giulio Colavolpe (University of Parma, Italy); Nader Alagha (European Space Agency, The Netherlands)
pp. 3260-3264
16:57  Frequency Allocation in a SDMA Satellite Communication System with Beam Moving
Kata Kiatmanaroj (University of Toulouse, France); Christian Artigues (University of Toulouse, France); Laurent Houssin (University of Toulouse, France); Frederic Messine (University of Toulouse, France)
pp. 3265-3269

17:18  Coarse Beamforming Techniques for Multi-Beam Satellite Networks
Ilaria Thibault (University of Bologna, Italy); Francesco Lombardo (University of Bologna, Italy); Enzo Alberto Candreva (University of Bologna, Italy); Alessandro Vanelli-Coralli (University of Bologna, Italy); Giovanni Emanuele Corazza (University of Bologna, Italy)
pp. 3270-3274

17:39  Amount of Log-Square-Hoyt Fading in a Satellite Optical Transmission System: Models and Solutions
Xian Liu (University of Arkansas at Little Rock, USA)
pp. 3275-3279

**SA-EH-P1: SAC E-Health Poster**

Chair: Tony R Sahama (Queensland University of Technology & IEEE ACM IBS ACS SSInc HISA, Australia)

16:15  Adaptive Information Content Management and Buffer Caching Design for Robust Real-Time Streaming over IP Network
Vilas Joshi (Carleton University, Canada); Rafik Goubran (Carleton University, Canada); Frank Knoefel (Bruyere Continuing Care, Canada)
pp. 3280-3285

16:50  TESHEALTH: An Integrated Satellite/Terrestrial System for E-Health Services
Luca Simone Ronga (CNIT, Italy); Sara Jayousi (CNIT University of Florence, Italy); Enrico Del Re (University of Florence, Italy); Lina Colitta (Telbios - Telemedicine for Life, Italy); Gianluca Iannone (Telbios - Telemedicine for Life, Italy); Antonio Scorpiniti (Telbios - Telemedicine for Life, Italy); Cesare Aragno (Kell, Italy); Carlo Peraldo Neja (Ospedale San Giovanni Calibita Fatebenefratelli, Italy)
pp. 3286-3290

17:25  Performance Evaluation of 60 GHz Radio Systems in Hospital Environments
Kenichi Takizawa (National Institute of Information and Communications Technology, Japan); Mikko Kyrö (Aalto University School of Electrical Engineering, Finland); Katsuyuki Haneda (Aalto University, Finland); Hiroaki Hagiwara (Yokohama City University, Japan); Pertti Vainikainen (Aalto University, Finland)
pp. 3291-3295
08:00 - 09:45

**SA-SSC2: Satellite & Space Networking**

Chair: Hiromitsu Wakana (National Institute of Information & Communications Technology, Japan)

08:00 *Use of a Hybrid of DTN Convergence Layer Adapters (CLAs) in Interplanetary Internet*
Ruhai Wang (Lamar University, USA); Bhuvan C Modi (Prairie View A & M University, USA); Qinyu Zhang (Shenzhen Graduate School, Harbin Institute of Technology, P.R. China); Jia Hou (Soochow University, P.R. China); Qing Guo (Harbin Institute of Technology, P.R. China); Ming-Chuan Yang (Harbin Institute of Technology, P.R. China)
pp. 3296-3300

08:21 *Application of Contact Graph Routing to LEO Satellite DTN Communications*
Carlo Caini (University of Bologna, Italy); Rosario Frrincieli (University of Bologna, Italy)
pp. 3301-3305

08:42 *Caching in information-centric satellite networks*
Laura Galluccio (University of Catania, Italy); Giacomo Morabito (University of Catania, Italy); Sergio Palazzo (University of Catania, Italy)
pp. 3306-3310

09:03 *Assessing Packet Delivery Delay in Multi-Layered Satellite Networks*
Yuichi Kawamoto (Tohoku University, Japan); Hiroki Nishiyama (Tohoku University, Japan); Nei Kato (Tohoku University, Japan); Naoko Yoshimura (National Institute of Information and Communications Technology, Japan); Naoto Kadowaki (National Institute of Information and Communications Technology, Japan)
pp. 3311-3315

09:24 *Codes and Balances: Multibeam Satellite Load Balancing with Coded Packets*
Fausto Vieira (University of Porto & Instituto de Telecomunicações, Portugal); Daniel E. Lucani (Aalborg University, Denmark); Nader Alagha (European Space Agency, The Netherlands)
pp. 3316-3321

14:00 - 15:45

**SA-SG1: Smart Grid 1**

Chair: Periklis Chatzimisios (Alexander Technological Educational Institute of Thessaloniki, Greece)
14:00 Avoiding Overages by Deferred Aggregate Demand for PEV Charging on the Smart Grid
Guodong Pang (Penn State University, USA); George Kesidis (Pennsylvania State University, USA); Takis Konstantopoulos (Uppsala University, Sweden)
pp. 3322-3327

14:26 An Algorithm for Joint Guidance and Power Control for Electric Vehicles in the Smart Grid
Boonyarit Saopapakhiran (North Carolina State University, USA); George Michailidis (University of Michigan, USA); Michael Devetsikiotis (North Carolina State University, USA)
pp. 3328-3334

14:52 An Energy Transmission and Distribution Network Using Electric Vehicles
Ping Yi (Shanghai Jiao Tong University, P.R. China); Ting Zhu (State University of New York at Binghamton, USA); Bo Jiang (University of Massachusetts Amherst, USA); Bing Wang (University of Connecticut, USA); Don Towsley (University of Massachusetts at Amherst, USA)
pp. 3335-3339

15:18 Optimal Integration of Renewable Energy Resources in Data Centers with Behind-the-Meter Renewable Generator
Mahdi Ghamkhari (University of California at Riverside, USA); Hamed Mohsenian-Rad (University of California at Riverside, USA)
pp. 3340-3344

16:15 - 18:00

SA-SG2: Smart Grid 2

Chair: Hamed Mohsenian-Rad (University of California at Riverside, USA)

16:15 A Differential Game Approach to Distributed Demand Side Management in Smart Grid
Quanyan Zhu (University of Illinois at Urbana Champaign, USA); Zhu Han (University of Houston, USA); Tamer Başar (University of Illinois at Urbana-Champaign, USA)
pp. 3345-3350

16:36 An Energy-Efficient Beaconless Synchronization Mechanism for Smart Utility Networks Operating in TV White Space
Chin-Sean Sum (National Institute of Information and Communications Technology, Japan); Liru Lu (National Institute of Information and Communications Technology, Singapore); Fumihide Kojima (National Institute of Information and Communications Technology, Japan); Hiroshi Harada (National Institute of Information & Communications Technology (NICT), Japan)
pp. 3351-3356

16:57 Modeling the Neighborhood Area Networks of the Smart Grid
Gregorio López (Universidad Carlos III de Madrid, Spain); Pedro Moura (Institute of Systems and Robotics - University of Coimbra, Portugal); Víctor Custodio
08:20 Joint Replay Detection in Tactical Networks
Li Li (Communication Research Centre of Canada, Canada); Philip J Vigneron (Communications Research Centre & Industry Canada, Canada); Peter C Mason (Defence Research & Development Canada, Canada); Thomas Kunz (Carleton University, Canada)
pp. 3372-3376

08:41 A Novel Frame Structure for Centralized Cooperative Cognitive Networks to Achieve Overhead-Throughput Tradeoff
Mingyue Xu (Beijing University of Posts and Telecommunications, P.R. China); Ying Wang (Beijing University of Posts and Telecommunications, P.R. China); Gen Li (Beijing University of Posts and Telecommunications, P.R. China); Weidong Zhang (Beijing University of Posts and Telecommunications & Wireless Technology Innovation Institute, P.R. China); Gaofeng Nie (Beijing University of Posts and Telecommunications, P.R. China)
pp. 3377-3381

09:02 Algorithms for Automated Design of Tactical Wireless Networks
Ossama Younis (Applied Communication Sciences, USA); Latha Kant (Applied Communication Sciences (ACS) - Formerly Telcordia Technologies, ATS, USA); Charles Graff (US Army CERDEC STCD, USA); Mitesh Patel (US Army CERDEC STCD, USA)
pp. N/A
09:23 Dynamic Spectrum Access to Improve Fairness in Tactical Networks with Mobile Base Stations
Jongkwan Lee (Ajou University, Korea); Jae Sung Lim (Ajou University, Korea)
pp. 3382-3387

09:44 Using Battle Management Language for Information Advantage
Kellin Rein (Fraunhofer FKIE, Germany); Ulrich Schade (Fraunhofer Gesellschaft, Germany); Thomas Remmersmann (Fraunhofer FKIE, Germany)
pp. N/A

14:00 - 15:45
SA-EH1: SAC E-Health

Chair: Riccardo Raheli (University of Parma, Italy)

14:00 Reactive Virtual Coordinate Routing Protocol for Body Sensor Networks
Qi Zhang (Aarhus University, Denmark); Kim Kortermand (ProInnovation, Denmark); Rune Hylsberg Jacobsen (Aarhus University & Electrical and Computer Engineering, Denmark); Thomas S. Toftegaard (Aarhus University, Denmark)
pp. 3388-3393

14:21 Fault Tolerant Virtual Backbone for Minimum Temperature in In Vivo Sensor Networks
Choong Seon Hong (Kyung Hee University, Korea); Rossi Kamal (Kyung Hee University, Korea)
pp. 3394-3398

14:42 Heterogeneous Time-Resource Allocation in Wireless Body Area Networks for Green, Maximum Likelihood Activity Detection
Daphney-Stavroula Zois (University of Southern California, USA); Marco Levorato (Stanford University & University of Southern California, USA); Urbashi Mitra (University of Southern California, USA)
pp. 3399-3403

15:03 An Efficient Certificateless Remote Anonymous Authentication Scheme for Wireless Body Area Networks
Jingwei Liu (Xidian University, P.R. China); Zonghua Zhang (Institut Mines-Télécom, France); Rong Sun (Xidian University, P.R. China); Kyung Sup Kwak (Inha University, Korea)
pp. 3404-3408

15:24 Energy-aware Topology Design for Wireless Body Area Networks
Jocelyne Elias (Université Paris Descartes - Sorbonne Paris Cité, France); Ahmed Mehaoua (University of Paris Descartes, France)
pp. 3409-3413
16:15 - 18:00

SA-PLC1: SAC-Powerline Communications

Chair: Han Vinck (University of Duisburg-Essen, Germany)

16:15 *Experiments with Radiated Interference from In-Home Power Line Communication Networks*
Brad W. Zarikoff (Latitude Technologies Corporation & National University of Ireland Maynooth, Canada); David Malone (NUI Maynooth, Ireland)
pp. 3414-3418

16:35 *Power Line Network Topology Inference Using Frequency Domain Reflectometry*
Mohamed Osama Ahmed (University of British Columbia, Canada); Lutz Lampe (University of British Columbia, Canada)
pp. 3419-3423

16:55

17:00 *Point-to-Multipoint Communication in Power Line Networks: A novel FDM Access Method*
Pierre Achaichia (France Télécom R&D, France); Marie Le Bot (France Telecom, France); Pierre Siohan (France Telecom, France)
pp. 3424-3428

17:20 *On Optimal Input Distribution and Capacity Limit of Bernoulli-Gaussian Impulsive Noise Channels*
Sanjeeewa P Herath (McGill University, Canada); Nghi H Tran (University of Akron, USA); Tho Le-Ngoc (McGill University, Canada)
pp. 3429-3433

17:40 *Improved Error Localization in DSL Systems Based on the Common Mode*
Oana Graur (Jacobs University Bremen, Germany); Werner Henkel (Jacobs University Bremen, Germany)
pp. 3434-3438

SA-EH2: SAC E-Health

Chair: Jocelyne Elias (Université Paris Descartes - Sorbonne Paris Cité, France)

16:15 *Model-driven Adaptive Wireless Sensing for Environmental Healthcare Feedback Systems*
Nima Nikzad (University of California, San Diego, USA); Jinseok Yang (University of California, San Diego, USA); Piero Zappi (University of California, San Diego, USA); Tajana Simunic Rosing (UCSD, USA); Dilip Krishnaswamy (Qualcomm Research Center, USA)
pp. 3439-3444
16:36 *Wavelet Coherence Reveals Entrainment of Heart Rate Variability Among People Involved in Group Activities*
Joshal A Daftari (University of California, San Diego, USA); Giorgio Quer (University of California San Diego, USA); Ramesh Rao (University of California at San Diego, USA)
pp. 3445-3450

16:57 *Enabling Pervasive Healthcare with Privacy Preservation in Smart Community*
Xiaohui Liang (University of Waterloo, Canada); Xu Li (INRIA Lille - Nord Europe, France); Rongxing Lu (University of Waterloo, Canada); Xiaodong Lin (University of Ontario Institute of Technology, Canada); Sherman Shen (University of Waterloo, Canada)
pp. 3451-3455

17:18 *Video Processing-based Detection of Neonatal Seizures by Trajectory Features Clustering*
Guy Mathurin Kouamou Ntonfo (University of Parma, Italy); Francesco Lofino (University of Parma, Italy); Gianluigi Ferrari (University of Parma, Italy); Riccardo Raheli (University of Parma, Italy); Francesco Pisani (University of Parma, Italy)
pp. 3456-3460

17:39 *Online Multiple Profile Manager for eHealth information sharing*
Jian Liang (Queensland University of Technology, Australia); Tony R Sahama (Queensland University of Technology & IEEE ACM IBS ACS SSAInc HISA, Australia)
pp. 3461-3465
ICC’12 SPC: IEEE ICC 2012 - Signal Processing for Communications Symposium - Program

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<td>10:45 -</td>
<td>SPC01: Channel Estimation, Equalization and Decoding (I)</td>
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<td>SPC02: Cognitive Radio Systems</td>
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<td>14:00 -</td>
<td>SPC03: Cooperative Communications</td>
<td>SPC08: Localization</td>
<td>SPC-P2: Signal Processing for Communications-Poster Session (II)</td>
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<td>SPC11: Beamforming and Multi-antenna Systems (II)</td>
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<td>16:15</td>
<td>SPC05: OFDM and Multi-Carrier Systems (I)</td>
<td>SPC01: Signal Processing for Communications-Poster Session (I)</td>
<td>SPC12: Channel Modelling</td>
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<td>SPC06: Optimization</td>
<td>SPC09: Channel Estimation, Equalization and Decoding (II)</td>
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**Tuesday, June 12**

**10:45 - 12:30**

**SPC01: Channel Estimation, Equalization and Decoding (I)**

Chair: James Hicks (The Aerospace Corp., USA)

*10:45 Iterative Amplitude/Phase Multiple-Symbol Differential Sphere Detection for DAPSK Modulated Transmissions*

Li Wang (University of Southampton, United Kingdom); Kvs Hari (Indian Institute of Science, India); Lajos Hanzo (University of Southampton, United Kingdom)

pp. 3466-3470

*11:06 Reduced-Latency SC Polar Decoder Architectures*

Chuan Zhang (University of Minnesota, Twin Cities, USA)
11:27 Fast, Blind, and Joint Maximum Likelihood Estimation of MPSK Signal Parameters  
James Hicks (The Aerospace Corp., USA)  
pp. 3476-3481

11:48 Blind Cyclostationary Carrier Frequency and Symbol Rate Estimation for Underwater Acoustic Communication  
Zhiqiang Wu (Wright State University, USA); T Yang (National Sun Yat-Sen University, Taiwan)  
pp. 3482-3486

12:09 Application of Bayesian Hierarchical Prior Modeling to Sparse Channel Estimation  
Niels Lovmand Pedersen (Aalborg University, Denmark); Carles Navarro Manchón (Aalborg University, Denmark); Dmitriy Shutin (German Aerospace Center (DLR), Germany); Bernard Henri Fleury (Aalborg University, Denmark)  
pp. 3487-3492

**SPC02: Cognitive Radio Systems**

Chair: Hsiao-Chun Wu (Louisiana State University, USA)

10:45 Outage and TIFR Capacity of Sensing Enhanced Spectrum Sharing Cognitive Radio Networks with Missed Detection Protection Constraints  
Stergios Stotas (King's College London, United Kingdom); Arumugam Nallanathan (King's College London, United Kingdom)  
pp. 3493-3498

11:06 Exploiting Spatial Degrees of Freedom in MIMO Cognitive Radio Systems  
Yair Noam (Stanford University, USA)  
pp. 3499-3504

11:27 Automatic Modulation Recognition for Spectrum Sensing using Nonuniform Compressive Samples  
Chia Wei Lim (Colorado School of Mines, USA); Michael Wakin (Colorado School of Mines, USA)  
pp. 3505-3510

11:48 Adaptive Cooperative Spectrum Sensing Based on a Novel Robust Detection Algorithm  
Hongting Zhang (Louisiana State University, USA); Hsiao-Chun Wu (Louisiana State University, USA); Lu Lu (Louisiana State University, USA); Sundaraja Iyengar (Florida International University, USA)  
pp. 3511-3515

12:09 An optimal resource allocation technique for spectrum sharing MIMO wireless relay network  
Jie Tang (Loughborough University, United Kingdom); Sangarapillai Lambotharan (Loughborough University, United Kingdom)  
pp. 3516-3520
### SPC03: Cooperative Communications

**Chair:** Himal A Suraweera (Singapore University of Technology and Design, Singapore)

**14:00 Distributed Space-Time Coding in Two-Way Fixed Gain Relay Networks over Nakagami-m Fading**

Trung Q. Duong (Blekinge Institute of Technology, Sweden); Hien Quoc Ngo (Linkoping University, Sweden); Hans-Juergen Zepernick (Blekinge Institute of Technology, Sweden); Arumugam Nallanathan (King's College London, United Kingdom)

pp. 3521-3525

**14:21 Alternate MIMO Relaying with Three AF Relays Using Interference Alignment**

Ki-Hong Park (King Abdullah University of Science and Technology, Saudi Arabia); Mohamed-Slim Alouini (King Abdullah University of Science and Technology (KAUST), Saudi Arabia)

pp. 3526-3531

**14:42 Amplify-and-Forward with Full-Duplex Relay Selection**

Ioannis Krikidis (University of Cyprus, Cyprus); Himal A Suraweera (Singapore University of Technology and Design, Singapore); Chau Yuen (Singapore University of Technology and Design, Singapore)

pp. 3532-3537

**15:03 Outage Performance Analysis of Two-Way Relay System with Multi-Antenna Relay Node**

Rui Wang (Shanghai Jiaotong university, P.R. China); Meixia Tao (Shanghai Jiao Tong University, P.R. China)

pp. 3538-3542

**15:24 Coordinated Downlink Precoder Design for Regenerative Multi-User Relaying**

Jarkko Kaleva (University of Oulu, Finland); Antti Tölli (University of Oulu, Finland); Markku Juntti (University of Oulu, Finland)

pp. 3543-3547

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### SPC04: Secured Communications

**Chair:** Xianbin Wang (University of Western Ontario, Canada)

**14:00 The Role of Aggregate Interference on Intrinsic Network Secrecy**

Alberto Rabbachin (Massachusetts Institute of Technology, USA); Andrea Conti (ENDIF University of Ferrara, WiLAB University of Bologna, Italy); Moe Win (Massachusetts Institute of Technology, USA)

pp. 3548-3553

**14:21 Directional Space-Time Modulation: A Novel Approach for Secured Wireless Communication**

Osama Alrabadi (AAU, Denmark); Gert Pedersen (Aalborg University, Denmark)

pp. 3554-3558
14:42 Physical Layer Authentication in OFDM Systems Based on Hypothesis Testing of CFO Estimates
Weikun Hou (The University of Western Ontario, Canada); Xianbin Wang (The University of Western Ontario, Canada); Jean-Yves Chouinard (Laval University, Canada)
pp. 3559-3563

15:03 Reconstruction of Jointly Sparse Signals using Iterative Hard Thresholding
Alireza Makhzani (University of Toronto, Canada); Shahrokh Valaee (University of Toronto, Canada)
pp. 3564-3568

15:24 Multiuser Communication Based on the Discrete Fractional Fourier Transform
Juliano Lima (Federal University of Pernambuco, Brazil); Ricardo Campello de Souza (Federal University of Pernambuco, Brazil); Daniel C Cunha (Federal University of Pernambuco, Brazil)
pp. 3569-3573

16:15 - 18:00

SPC05: OFDM and Multi-Carrier Systems (I)

Chair: Hai Lin (Osaka Prefecture University, Japan)

16:15 A General Framework for Optimizing AF Based Multi-Relay OFDM Systems
Guftaar Ahmad Sardar Sidhu (Jacobs University Bremen, Germany); Feifei Gao (Tsinghua University, P.R. China); Liao Xuewen (Xi'an Jiaotong University, P.R. China); Arumugam Nallanathan (King's College London, United Kingdom)
pp. 3574-3578

16:36 A Novel Algorithm for Joint Bit and Power Loading for OFDM Systems with Unknown Interference
Ebrahim Bedeer (Memorial University of Newfoundland, Canada); Mohamed Fawzy Marey (Memorial University, Canada); Octavia A. Dobre (Memorial University of Newfoundland, Canada); Mohamed Hossam Ahmed (Memorial University, Canada); Kareem E. Baddour (Communications Research Centre, Canada)
pp. 3579-3584

16:57 Digital Baseband Compensation of Frequency-Dependent Joint TX/RX I/Q Imbalance in Beamforming MIMO OFDM Transceivers
Özgur Özdemir (Qatar University, Qatar); Ridha Hamila (Department of Electrical Engineering & Qatar University, Qatar); Naoaf Al-Dhahir (University of Texas at Dallas, USA)
pp. 3585-3589

17:18 OFDM Signals with Bounded PMEPR Using Golay Sequences over a Class of Cross Constellations
Mohammad Ghasemi Damavandi (University of Tehran, Iran); Aliazam Abbafar (University of Tehran, Iran)
pp. N/A
SPC06: Optimization

Chair: Sangarapillai Lambotharan (Loughborough University, United Kingdom)

16:15 Robust Power Allocation via Semidefinite Programming for Wireless Localization
William Wei-Liang Li (University of California, Santa Barbara, USA); Yuan Shen (Massachusetts Institute of Technology, USA); Ying Jun (Angela) Zhang (The Chinese University of Hong Kong, Hong Kong); Moe Win (Massachusetts Institute of Technology, USA)
pp. 3595-3599

16:36 Bounds on Optimal Power Minimization and Rate Balancing in the Satellite Downlink
Andreas Gründinger (Technische Universität München, Germany); Michael Joham (Technische Universität München, Germany); Wolfgang Utschick (Technische Universität München, Germany)
pp. 3600-3605

16:57 Joint MAX-SER-Minimized DFE Transceiver Design with Bit Allocation for Broadcast Channels
Chih-Hao Liu (California Institute of Technology, USA); P. p. Vaidyanathan (Cal Tech., USA)
pp. 3606-3610

17:18 Signaling Strategy Optimization for Gaussian MIMO Wiretap Channel
Qingjiang Shi (Zhejiang Sci-Tech University, P.R. China); Enbin Song (Sichuan University/University of Minnesota, P.R. China); Guoan Chen (Research & Innovation Center, Alcatel-Lucent Shanghai Bell, P.R. China)
pp. 3611-3615

17:39 Coordinated Max-Min Fair Port Selection in a Multi-Cell Distributed Antenna System using Semidefinite Relaxation
Talha Ahmad (Carleton University, Canada); Ramy Gohary (Carleton University, Canada); Halim Yanikomeroglu (Carleton University, Canada); Saad Al-Ahmadi (King Fahd University of Petroleum & Minerals, Saudi Arabia); Gary Boudreau (Ericsson, Canada)
pp. 3616-3620
08:00 - 09:45

SPC07: Beamforming and Multi-antenna Systems (I)

Chair: Jinho Choi (Swansea University, United Kingdom)

08:00 Beamforming in Two-Way Fixed Gain Amplify-and-Forward Relay Systems with CCI
Trung Q. Duong (Blekinge Institute of Technology, Sweden); Himal A Suraweera (Singapore University of Technology and Design, Singapore); Hans-Juergen Zepernick (Blekinge Institute of Technology, Sweden); Chau Yuen (Singapore University of Technology and Design, Singapore)
pp. 3621-3626

08:21 Robust SLNR Downlink Beamforming Based on Markov’s Inequality
Pei-Jung Chung (University of Edinburgh, United Kingdom); Huiqin Du (University of Edinburgh, United Kingdom)
pp. 3627-3631

08:42 Robust Beamforming with Channel Uncertainty for Two-way Relay Networks
Ahsan Aziz (National Instruments, USA); Meng Zeng (Marvell Semiconductor, USA); Jianwei Zhou (Texas A&M University, USA); Costas N Georgiades (Texas A&M University, USA); Shuguang Cui (Texas A&M University, USA)
pp. 3632-3636

09:03 Beam Broadening for Phased Antenna Arrays using Multi-beam Subarrays
Sridhar Rajagopal (Samsung Telecommunications America, USA)
pp. 3637-3642

09:24 Robust Coordinated Downlink Beamforming for Multicell-Cognitive Radio Networks with Probabilistic Constraints
Dhananjaya Ponukumati (Jacobs University Bremen, Germany); Feifei Gao (Tsinghua University, P.R. China); Mathias Bode (Jacobs University, Germany); James C. F. Li (NEC Laboratories China, P.R. China); Ming Lei (NEC Laboratories China, P.R. China)
pp. 3643-3647

14:00 - 15:45

SPC08: Localization

Chair: Hung Nguyen (The Aerospace Corporation, USA)

14:00 Geolocation of MIMO signals using the Cross Ambiguity Function and TDOA/ FDOA
Jacob Overfield (Virginia Polytechnic Institute and State University, USA); Zachary Biskaduro (Virginia Tech, USA); Michael Buehrer (Virginia Tech, USA)
pp. 3648-3653
14:21 Localization and Tracking of a Mobile Target for an Isogradient Sound Speed Profile
Hamid Ramezani (Delft University of Technology, The Netherlands); Hadi Jamali-Rad (Delft University of Technology (TU Delft), The Netherlands); Geert Leus (Delft University of Technology, The Netherlands)
pp. 3654-3658

14:42 Received Signal Strength (RSS) Location Estimation with Nuisance Parameters in Correlated Shadow Fading
Laurence Mailaender (LGS Innovations & Alcatel-Lucent, USA)
pp. 3659-3663

15:03 Received Signal Strength Calibration for Handset Localization in WLAN
Diego S Felix (University of Victoria, Canada); Michael McGuire (University of Victoria, Canada)
pp. 3664-3669

15:24 A Constraint Sufficient Statistics based Distributed Particle Filter for Bearing Only Tracking
Arash Mohammadi (York University, Canada); Amir Asif (York University, Canada)
pp. 3670-3675

16:15 - 18:00

SPC-P1: Signal Processing for Communications-Poster Session (I)

Chair: M. Reza Soleymani (Concordia University, Canada)

16:15 Asymptotic Error Exponents in Energy-Detector and Estimator-Correlator Signal Detection
Josep Font-Segura (Technical University of Catalonia, Spain); Gregori Vazquez (Technical University of Catalonia, Spain); Jaume Riba (UPC, Spain)
pp. 3676-3680

16:36 Affine Projection Algorithm with Variable Projection Order
Reza Arablouei (University of South Australia, Australia); Kutluyil Dogançay (University of South Australia, Australia)
pp. 3681-3685

16:57 A Verification Methodology for the Detection of Spectrally Efficient FDM Signals Generated using Reconfigurable Hardware
Marcus R Perrett (University College London, United Kingdom); Ryan C Grammenos (University College London, United Kingdom); Izzat Darwazeh (University College London, United Kingdom)
pp. 3686-3691

17:18 Parallel LDPC Decoder Implementation on GPU Based on Unbalanced Memory Coalescing
Soonyoung Kang (KAIST, Korea); Jaekyun Moon (KAIST, Korea)
pp. 3692-3697
SPC09: Channel Estimation, Equalization and Decoding (II)

Chair: Tiffany Jing Li (Lehigh University, USA)

16:15 *Pilot Assisted SNR Estimation in a Non-Coherent M-FSK Receiver with a Carrier Frequency Offset*
Syed Ali Hassan (National University of Sciences and Technology, Pakistan); Mary Ann Ingram (Georgia Institute of Technology, USA)
pp. 3698-3702

16:36 *Channel Estimation and Training Design for MIMO-OFDM Two-Way Relay Systems*
The-Hanh Pham (Institute for Infocomm Research, Singapore); Ying-Chang Liang (Institute for Infocomm Research, Singapore)
pp. 3703-3707

16:57 *Combined Channel Estimation and Adaptive Prediction for MC-IDMA Systems*
Olutayo O. Oyerinde (University of KwaZulu-Natal, South Africa); Stanley H. Mnene (University of KwaZulu-Natal, South Africa)
pp. 3708-3712

17:18 *Estimation of Synchronization Parameters in AF Cooperative Networks*
Ali A Nasir (Australian National University, Australia); Hani Mehrpouyan (California State University, USA); Steven D Blostein (Queen's University, Canada); Salman Durrani (The Australian National University, Australia); Rodney Andrew Kennedy (The Australian National University, Australia)
pp. 3713-3717

17:39 *Decoding Techniques for Coded Full-Rate Cooperative Systems*
Haifa Mostafa (Memorial University of Newfoundland, Canada); Mohamed Fawzy Marey (Memorial University, Canada); Mohamed Hossam Ahmed (Memorial University, Canada); Octavia A. Dobre (Memorial University of Newfoundland, Canada)
pp. 3718-3723

Thursday, June 14

08:00 - 09:45

SPC10: MIMO Systems

Chair: Nghi H Tran (University of Akron, USA)

08:00 *Low Complexity Precoding for Large Millimeter Wave MIMO Systems*
Omar El Ayach (The University of Texas at Austin, USA); Robert Heath (The University of Texas at Austin, USA); Shadi Abu-Surra (Samsung Telecommunications America, USA); Sridhar Rajagopal (Samsung Telecommunications America, USA); Zhouyue Pi (Samsung Telecommunications America, USA)
pp. 3724-3729
08:21 *Further Complexity Reduction of MIMO PSK Signal Detection Based on Symbol Distribution Approximation*
Shunsuke Tanaka (Yokohama National University, Japan); Hideki Ochiai (Yokohama National University, Japan)
pp. 3730-3734

08:42 *Adaptive Decision-Feedback Equalization of MIMO Channels Using Coordinate Descent Iterations*
Reza Arablouei (University of South Australia, Australia); Kutluyl Doğançay (University of South Australia, Australia)
pp. 3735-3740

09:03 *Interference Alignment with Delayed Differential Feedback for Time-Correlated MIMO Channels*
Mingxin Zhou (Peking University, P.R. China); Leiming Zhang (Peking University, P.R. China); Lingyang Song (Peking University, P.R. China); Mérouane Debbah (Supelec, France); Bingli Jiao (Peking University, P.R. China)
pp. 3741-3745

09:24 *Successive Zero-forcing DPC with Per-Antenna Power Constraint: Optimal and Suboptimal Designs*
Le-Nam Tran (University of Oulu & Centre for Wireless Communications, Finland); Markku Juntti (University of Oulu, Finland); Mats Bengtsson (KTH Royal Institute of Technology, Sweden); Björn Ottersten (KTH Royal Institute of Technology, Sweden)
pp. 3746-3751

14:00 - 15:45

**SPC-P2: Signal Processing for Communications-Poster Session (II)**

Chair: Yu Cheng (Illinois Institute of Technology, USA)

14:00 *Maximizing MLC NAND lifetime and reliability in the presence of write noise*
Borja Peleato (Stanford University, USA); Rajiv Agarwal (Stanford University, USA)
pp. 3752-3756

14:21 *Adaptive Channel Direction Quantization based on Spherical Prediction*
Stefan Schwarz (Vienna University of Technology, Austria); Markus Rupp (Vienna University of Technology, Austria)
pp. 3757-3762

14:42 *A Practical Approach to Strengthen Vulnerable Downlinks using Superposition Coding*
Sundaram Vanka (University of Notre Dame, USA); Sunil Srinivasa (University of Notre Dame, USA); Martin Haenggi (University of Notre Dame, USA)
pp. 3763-3768

15:03 *Analog Turbo Codes: Turning Chaos to Reliability*
Tiffany Jing Li (Lehigh University, USA); Kai Xie (Lehigh University, USA)
pp. 3769-3773
SPC11: Beamforming and Multi-antenna Systems (II)

Chair: Kaibin Huang (The Hong Kong Polytechnic University, Hong Kong)

14:00 **Optimal Transmitter Beamforming with Per-antenna Power Constraints**
Zhouyue Pi (Samsung Telecommunications America, USA)
pp. 3779-3784

14:21 **On Enhancing Inter-User Spatial Separation for Downlink Multiuser MIMO Systems**
Xinping Yi (EURECOM, France); Edward K. S. Au (Huawei Technologies, Canada)
pp. 3785-3789

14:42 **Coordinated Beamforming using Semidefinite Programming**
Tuan Anh Le (King's College London, United Kingdom); Mohammad Reza Nakhai (King's College London, United Kingdom)
pp. 3790-3794

15:03 **Joint Transceiver and Relay Beamforming Design for Multi-Pair Two-way Relay Systems**
Hyunjo Chung (Korea University, Korea); Namyoon Lee (The University of Texas at Austin, USA); Byonghyo Shim (Korea University, Korea); Tae Won Oh (Korea University, Korea)
pp. 3795-3799

15:24 **Transmit Beamforming for MIMO Multicast Channels**
Baisheng Du (University of Science and Technology of China, P.R. China); Yi Jiang (Qualcomm Inc., USA); Xiaodong Xu (University of Science and Technology of China, P.R. China); Xuchu Dai (University of Science and Technology of China, P.R. China)
pp. 3800-3805

16:15 - 18:00

SPC12: Channel Modelling

Chair: Byonghyo Shim (Korea University, Korea)

16:15 **Modeling and Performance Evaluation for Mobile Ricean MIMO Channels**
Adrian Ispas (RWTH Aachen University, Germany); Jonas Höscher (RWTH Aachen University, Germany); Xitao Gong (RWTH Aachen University, Germany); Christian Schneider (Ilmenau University of Technology, Germany); Gerd H. Ascheid (RWTH Aachen University, Germany); Reiner S. Thomä (Ilmenau University of Technology, Germany)
pp. 3806-3810
16:36 Underwater Acoustic Communications: a New Channel Modeling
Floriano De Rango (University of Calabria, Italy); Fiore Veltri (University of Calabria, Italy); Peppino Fazio (University of Calabria, Italy)
pp. 3811-3815

16:57 Utilization of Underwater Particle Velocity Channels for Data Transmission: Signals, Channels and System Performance
Chen Chen (New Jersey Institute of Technology, USA); Ali Abdi (New Jersey Institute of Technology, USA)
pp. 3816-3820

17:18 Underwater Acoustic Channel Estimation via Complex Homotopy
Chenhao Qi (Southeast University, P.R. China); Lenan Wu (Southeast University, P.R. China); Xiaodong Wang (Columbia University, USA)
pp. 3821-3825

17:39 Detection/Decoding over Channels with Synchronization Errors and Inter-Symbol Interference
Feng Wang (Arizona State University, USA); Tolga M. Duman (Arizona State University, USA)
pp. 3826-3830

SPC13: OFDM and Multi-Carrier Systems (II)

Chair: Feifei Gao (Tsinghua University, P.R. China)

16:15 Phase-Shifted Interpolation for Channel Matrix Inversion in MIMO-OFDM Systems
Jian (Andrew) Zhang (CSIRO ICT Centre, Australia); Xiaojing Huang (CSIRO ICT Centre, Australia); Hajime Suzuki (CSIRO, Australia); Zhuo Chen (CSIRO ICT Centre, Australia)
pp. 3831-3835

16:36 Cascaded Doubly-Selective Channel Estimation in Multi-relay AF OFDM Transmissions
Loïc J.P. Canonne-Velasquez (InterDigital, Canada); Hung Nguyen-Le (McGill University, Canada); Tho Le-Ngoc (McGill University, Canada)
pp. 3836-3840

16:57 A Novel Time Domain Approach for the Downlink Pilot Design of Multiantenna OFDM Systems
Jing Zhou (Beijing University of Posts and Telecommunications, P.R. China); Ying Wang (Beijing University of Posts and Telecommunications, P.R. China); Daoben Li (Beijing University of posts and telecommunications, P.R. China)
pp. 3841-3846

17:18 Carrier Frequency Offset Estimation for Interleaved OFDMA Uplink
Weile Zhang (Xi'an Jiaotong University, P.R. China); Feifei Gao (Tsinghua University, P.R. China); Qiye Yin (School of Electronics and Information Engineering Xi'an Jiaotong University, P.R. China); Hui-Ming Wang (Xi'an Jiaotong University, P.R. China)
pp. 3847-3851
17:39 Alien Crosstalk Mitigation in Vectored DSL Systems for Backhaul Applications
Aditya Awasthi (The University of Texas at Dallas & Xtendwave, USA); Naofal Al-Dhahir (University of Texas at Dallas, USA); Oren Eliezer (Xtendwave, USA); Poras T Balsara (University of Texas, Dallas, USA)
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<td>WC25: Performance Analysis for Relay Systems II</td>
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<td>WC14: Space-Time Coding II</td>
<td>WC26: Cognitive Radio Networks</td>
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<td>WC15: MIMO</td>
<td>WC27: OFDMA</td>
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<td>WC16: Relay Technologies I</td>
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<td>14:00 - 15:45</td>
<td>WC05: Space-Time Coding I</td>
<td>WC-P2: WC-P2: Topics in Wireless Communications II</td>
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<td>WC06: Performance Analysis for Relay Systems I</td>
<td>WC17: Energy Efficient Design II</td>
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<td>WC20: Relay Technologies: Decode-and-Forward</td>
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<td>WC09: Cooperative Communications: Coding and Diversity</td>
<td>WC21: UWB</td>
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<td>WC12: Interference Management</td>
<td>WC24: Network Coding</td>
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10:45 - 12:30

**WC01: Multiuser MIMO**

Chair: Ming Lei (NEC Laboratories China, P.R. China)

**10:45 Sum rate analysis of ZF receivers in distributed MIMO systems with Rayleigh/Lognormal fading**
Michail Matthaiou (Chalmers University of Technology, Sweden); Caijun Zhong (Zhejiang University, P.R. China); Matthew R McKay (Hong Kong University of Science and Technology, Hong Kong); Tharmalingam Ratnarajah (The University of Edinburgh, United Kingdom)

pp. 3857-3861

**11:06 Joint Bit and Power Loading With User and Stream Selection in OSDM MU-MIMO Broadcast Channels**
Jingyi Liu (University of Electronic Science and Technology of China, P.R. China); Bin Wu (University of Electronic Science and Technology of China, P.R. China); Pin-Han Ho (University of Waterloo, Canada); Xiang Ling (University of Electronic Science and Technology of China, P.R. China)

pp. 3862-3866

**11:27 Joint Transceiver Beamforming Design and Power Allocation for Multiuser MIMO Systems**
Qian Liu (University at Buffalo, USA); Chang Wen Chen (State University of New York at Buffalo, USA)

pp. 3867-3871

**11:48 Statistical Eigenmode SDMA Transmission for a Two-User Downlink**
Jue Wang (National Mobile Communications Research Laboratory, P.R. China); Shi Jin (Southeast University, P.R. China); Xiqi Gao (Southeast University, P.R. China); Kai Kit Wong (University College London, United Kingdom); Edward K. S. Au (Huawei Technologies, Canada)

pp. 3872-3877

**12:09 On the Capacity Gain from Antenna Correlation in Multi-User MIMO Systems**
Hao Wang (City University of Hong Kong, P.R. China); Peng Wang (The University of Sydney, Australia); Li Ping (City University of Hong Kong, Hong Kong)

pp. 3878-3883

**WC02: Cooperative Communications: Resource Allocation**

Chair: Yindong Jing (University of Alberta, Canada)

**10:45 Reduced feedback links for power minimization in distributed multicell OFDMA networks**
Berna Özbek (CNAM, France); Didier Le Ruyet (CNAM, France); Mylene Pischella (CNAM, France)

pp. 3884-3888
11:06 Delay Quality-of-Service Driven Resource Allocation for Relay-Based Multiuser OFDMA Networks
Jun Yuan (Southeast University, P.R. China); Qiao Wang (Southeast University, P.R. China)
pp. 3889-3894

11:27 Universal Cheat-proof Pricing for Multiple Access Channels without SIC under QoS Requirements
Fei Shen (Dresden University of Technology, Germany); Eduard Jorswieck (Dresden University of Technology, Germany)
pp. 3895-3899

Jiayi Zhang (Alcatel-Lucent Shanghai Bell, P.R. China); Lie-Liang Yang (University of Southampton, United Kingdom); Lajos Hanzo (University of Southampton, United Kingdom)
pp. 3900-3904

12:09 Power Bargaining in Multi-Source Relay Networks
Qian Cao (University of Alberta, Canada); Yindi Jing (University of Alberta, Canada); H. Vicky Zhao (University of Alberta, Canada)
pp. 3905-3909

WC03: Hybrid ARQ

Chair: M. Cenk Gursoy (Syracuse University, USA)

10:45 Uncoordinated cooperative truncated ARQ schemes in wireless systems
Chao Zhai (The University of New South Wales, Australia); Wei Zhang (The University of New South Wales, Australia); Guoqiang Mao (The University of Sydney, Australia)
pp. 3910-3914

11:06 Rate Adaptation and Power Allocation for Time-Correlated MISO Rayleigh Fading Channel with Delay-Limited HARQ
Seyed Hamed Rastegar (Sharif University of Technology, Iran); Shahin Vakilian (Concordia University, Canada); Babak Hossein Khalaj (Sharif University of Technology, Iran)
pp. 3915-3919

11:27 On the Energy Delay Tradeoff of HARQ-IR in Wireless Multiuser Systems
Jinho Choi (Swansea University, United Kingdom)
pp. 3920-3924

11:48 Optimal Power Assignment to Minimize the Average Delay in Hybrid-ARQ Protocols
Sangkook Lee (State University of New York at Buffalo, USA); Weifeng Su (State University of New York at Buffalo, USA); Dimitris A. Pados (State University of New York at Buffalo, USA); John Matyjas (Air Force Research Laboratory/RIGF, USA)
pp. 3925-3930
12:09 **ARQ versus Rateless Coding: From a Point of View of Redundancy**  
Xijun Wang (Xidian University, P.R. China); Wei Chen (Tsinghua University, P.R. China); Zhigang Cao (Tsinghua University, P.R. China)  
pp. 3931-3935

**WC04: OFDM**

Chair: Alexander M. Wyglinski (Worcester Polytechnic Institute, USA)

10:45 **Efficient OFDM Channel Estimation via an Information Criterion**  
Alessandro Tomasoni (Politecnico di Milano, Italy); Sandro Bellini (Politecnico di Milano, Italy); Marco Ferrari (CNR-IEIIT - Politecnico di Milano, Italy); Devis Gatti (STMicroelectronics Srl, Italy); Massimiliano Siti (STMicroelectronics, Italy)  
pp. 3936-3941

11:06 **Orthogonal Multicarrier Division Duplexing for Point-to-Point Communications**  
Wenxun Qiu (Texas Instruments, USA); Hlaing Minn (University of Texas at Dallas, USA)  
pp. 3942-3947

11:27 **Sparse Channel Estimation for OFDM Transmission over Two-Way Relay Networks**  
Peng Cheng (Shanghai Jiao Tong University, P.R. China); Gui Lin (Shanghai Jiao Tong University, P.R. China); Meixia Tao (Shanghai Jiao Tong University, P.R. China); Y Jay Guo (CSIRO, Australia); Xiaojing Huang (CSIRO ICT Centre, Australia); Yun Rui (Shanghai Advanced Research Institute · Chinese Academy of Sciences, P.R. China)  
pp. 3948-3953

11:48 **Non-Data-Aided Timing Synchronization for Cooperative MIMO OFDM Systems**  
Hung-Chin Wang (National Tsing Hua University, Taiwan); Chin-Liang Wang (National Tsing Hua University, Taiwan); Mian-Cheng Lin (National Tsing Hua University, Taiwan)  
pp. 3954-3958

12:09 **Sidelobe Suppression with Orthogonal Projection for OFDM Systems: Performance Characterization**  
Jian (Andrew) Zhang (CSIRO ICT Centre, Australia); Antonio Cantoni (The University of Western Australia, Australia); Xiaojing Huang (CSIRO ICT Centre, Australia); Y Jay Guo (CSIRO, Australia)  
pp. 3959-3963

**14:00 - 15:45**

**WC05: Space-Time Coding I**

Chair: Zhuo Chen (CSIRO ICT Centre, Australia)
14:00 Iterative Soft-Detection of Space-Time-Frequency Shift Keying
Hoang Anh Ngo (University of Southampton, United Kingdom); Shinya Sugiura (Toyota Central R&D Labs., Inc., Japan); Lajos Hanzo (University of Southampton, United Kingdom)
pp. 3964-3968

14:21 Algorithms for Pattern Selection MIMO Systems over Spatially Correlated Channels
Xingliang Li (Ecole Polytechnique de Montreal, Canada); Jean-François Frigon (Ecole Polytechnique de Montreal and GERAD, Canada)
pp. 3969-3973

14:42 On Interference-Aware Precoding for Multi-Antenna Channels with Finite-Alphabet Inputs
Weiliang Zeng (Tsinghua University, P.R. China); Chengshan Xiao (Missouri University of Science and Technology, USA); Jianhua Lu (Tsinghua University, P.R. China)
pp. 3974-3978

15:03 A New Family of Low-Complexity Decodable STBCs for Four Transmit Antennas
Amr Ismail (King Abdullah University of Science and Technology (KAUST), Saudi Arabia); Jocelyn Fiorina (SUPELEC, France); Hikmet Sari (Ecole Supérieure d'Electricité (SUPELEC), France)
pp. 3979-3983

15:24 Asymptotic Performance Analysis of Precoded BICM-MIMO under Channel Estimation Errors
Zohreh Andalibi (University of Saskatchewan, Canada); Ha Nguyen (University of Saskatchewan, Canada); Eric Salt (University of Saskatchewan, Canada)
pp. 3984-3989

WC06: Performance Analysis for Relay Systems I

Chair: Norman C. Beaulieu (University of Alberta, Canada)

14:00 Tightened Upper Bounds for Distributed Alamouti’s Code with a non-Regenerative Relay
Peng Huo (University of Mississippi, USA); Lei Cao (The University of Mississippi, USA)
pp. 3990-3994

14:21 Exact Analytical Solution for AF Relaying Systems With Full Selection Diversity
Samy S. Soliman (University of Alberta, Canada); Norman C. Beaulieu (University of Alberta, Canada)
pp. 3995-4000

14:42 Performance of Multi-antenna Systems with Fixed Gain AF Relay in the Presence of Co-Channel Interference
Hui Ding (Shanghai Jiaotong University, P.R. China); Chen He (Shanghai Jiaotong University, P.R. China); Lingge Jiang (Shanghai Jiaotong University, P.R. China)
pp. 4001-4005
**WC07: Energy Efficient Design I**

Chair: Chenyang Yang (Beihang University, P.R. China)

14:00 *Power-Efficient Spatial Multiplexing for Multiantenna MANETs*
   Diep N. Nguyen (University of Arizona, USA); Marwan Krunz (University of Arizona, USA)
   pp. 4016-4020

14:21 *Cross-Layer Design for Green Power Control*
   Vineeth S Varma (Supelec & ORANGE LABS, France); Samson E Lasaulce (CNRS - Supelec, France); Yezekael Hayel (LIA, University of Avignon, France); Salah Eddine Elayoubi (Orange Labs, France); Mérouane Debbah (Supelec, France)
   pp. 4021-4026

14:42 *Energy-Efficient Resource Allocation in SDMA Systems with Large Numbers of Base Station Antennas*
   Derrick Wing Kwan Ng (University Erlangen-Nürnberg, Germany); Ernest S. Lo (Centre Tecnològic de Telecomunicacions de Catalunya, Hong Kong); Robert Schober (University of British Columbia, Canada)
   pp. 4027-4032

15:03 *Energy-efficient standby mode algorithm in short-range one-to-one millimeter wave communications*
   Ryoko Matsuo (Toshiba Corporation, Japan); Tomoya Tandai (Toshiba Corporation, Japan); Takeshi Tomizawa (Toshiba Corp., Japan); Tomoko Adachi (Toshiba Corporation, Japan); Hideo Kasami (Toshiba Corporation, Japan)
   pp. 4033-4038

15:24 *Energy Efficiency of Cooperative Beamforming in Wireless Ad-Hoc Networks*
   Gubong Lim (University of Delaware, USA); Len Cimini (University of Delaware, USA)
   pp. 4039-4043

**WC08: Dynamic/Opportunistic Spectrum Access**

Chair: Francois Gagnon (Ecole de Technologie Superieure, Canada)

14:00 *Medium Usage Model for the Design of Dynamic Spectrum Management in ISM bands*
   Ben Witvliet (University of Twente & Radiocommunications Agency Netherlands, The Netherlands); Mark J. Bentum (University of Twente, The Netherlands); Roel
14:21 Interference Models for Heterogenous Sources
   Pawel A. Dmochowski (Victoria University of Wellington, New Zealand); Peter J Smith (The University of Canterbury, New Zealand); Mansoor Shafi (Telecom New Zealand, New Zealand); Jeffrey Andrews (The University of Texas at Austin, USA); Rahul Mehta (Ministry of Economic Development, New Zealand)
   pp. 4044-4048

14:42 Diversity Backpressure Routing with Mutual Information Accumulation in Wireless Ad-hoc Networks
   Hao Feng (University of Southern California, USA); Andreas Molisch (University of Southern California, USA)
   pp. 4055-4060

15:03 Successive Convex Approximation based Methods for Dynamic Spectrum Management
   Tao Wang (Universite Catholique de Louvain, Belgium); Luc Vandendorpe (University of Louvain, Belgium)
   pp. 4061-4065

15:24 Capacity Offload Game over Unlicensed Spectrum
   Feng Zhang (University of Science and Technology of China, P.R. China); Wenyi Zhang (University of Science and Technology of China, P.R. China); Qiang Ling (University of Science and Technology of China, P.R. China)
   pp. 4066-4071

16:15 - 18:00

WC-P1: Topics in Wireless Communications I

Chair: Benoit Champagne (McGill University, Canada)

16:15 Compressive Sensing Aided Determination of WCDMA Constrained Capacity
   Jocelyn Aulin (Chalmers University of Technology, Sweden); Djordje Jeremic (Chalmers University of Technology, Sweden)
   pp. 4072-4077

16:36 Communication Theory Perspective on Antenna Selection for Compact Transceivers
   Pawandeep S Taluja (MaxLinear Inc & North Carolina State University, USA); Brian L Hughes (North Carolina State University, USA)
   pp. 4078-4083

   Huang Huang (HKUST, Hong Kong); Vincent Lau (Hong Kong University of Science and Technology, Hong Kong); Chung Ha Koh (Korea Agency of Technology and Standards, Korea); Yan Chen (Huawei, P.R. China)
   pp. 4084-4088
17:18 Exact Dual-User Macrodiversity Performance with Linear Receivers in Flat Rayleigh Fading
Dushyantha Basnayaka (University of Canterbury, New Zealand); Peter J Smith (The University of Canterbury, New Zealand); Philippa A. Martin (University of Canterbury, New Zealand)
pp. 4089-4094

17:39 Coordinated Dual-Layer Beamforming for Public Safety Network: Architecture and Algorithms
Kai Yang (Bell Labs, Alcatel-Lucent, USA); Doru Calin (Bell Labs, Alcatel-Lucent, USA); Aliye Ozge Kaya (Bell Labs, Alcatel-Lucent, USA); Simon Yiu (Bell Labs, Alcatel-Lucent, USA)
pp. 4095-4099

WC09: Cooperative Communications: Coding and Diversity
Chair: Fulvio Babich (University of Trieste, Italy)

16:15 A Practical Equalizer for Cooperative Delay Diversity with Multiple Carrier Frequency Offsets
Feng Wang (Georgia Institute of Technology, USA); Mary Ann Ingram (Georgia Institute of Technology, USA)
pp. 4100-4104

16:36 Cooperative Performance and Diversity Analysis for Wireless Relay Networks
Shengbo Zhang (University of Delaware, USA); Xiang-Gen Xia (University of Delaware, USA); Jiangzhou Wang (University of Kent, United Kingdom)
pp. 4105-4109

16:57 Dual-hop Amplify-and-Forward Transmission with Imperfect Channel Estimates at the Relay
Zoran Hadzi-Velkov (Ss. Cyril and Methodius University, Macedonia, the former Yugoslav Republic of); Diomidis S. Michalopoulos (University of British Columbia, Canada); George K. Karagiannidis (Aristotle University of Thessaloniki, Greece); Robert Schober (University of British Columbia, Canada)
pp. 4110-4115

17:18 Diversity, Coding, and Multiplexing Trade-Off of Network-Coded Cooperative Wireless Networks
Michela Iezzi (University of L'Aquila, Italy); Marco Di Renzo (French National Center for Scientific Research (CNRS), France); Fabio Graziosi (University of l'Aquila, Italy)
pp. 4116-4121

17:39 Distributed Beamforming and Subcarrier Power Allocation for OFDM-based Asynchronous Two-way Relay Networks
Reza Vahidnia (University of Ontario Institute of Technology, Canada); Shahram ShahbazPanahi (University of Ontario Institute of Technology, Canada)
pp. 4122-4126

WC10: Cross-Layer Design
Chair: Jack H. Winters (Jack Winters Communications, LLC, USA)
16:15 *Opportunistic Joint Decoding with Scheduling and Power Allocation in OFDMA Femtocell Networks*
Yuhan Zhou (University of Toronto, Canada); Wei Yu (University of Toronto, Canada)
pp. 4127-4131

16:36 *Frequency-Domain On-Off Accumulative Transmission Over Frequency-selective Fading*
Jingxian Wu (University of Arkansas, USA); Gang Wang (University of Arkansas, USA); Geoffrey Li (Georgia Tech, USA)
pp. 4132-4136

16:57 *Improving Cell-Edge User Performance with Multi-Streaming*
Rahul N. Pupala (Alcatel-Lucent, USA); Subramanian Vasudevan (Alcatel-Lucent, USA); Kothiravetpillai Sivanesan (Alcatel-Lucent, USA); Ganesh Sundaram (Alcatel-Lucent, USA); Ashok Rudrapatna (Alcatel-Lucent, USA)
pp. 4137-4143

17:18 *Joint Mode/Route Selection and Power Allocation in Cellular Networks with Cooperative Relay*
Dì Wu (Beijing Jiaotong University, P.R. China); Gang Zhu (Beijing Jiaotong University, P.R. China); Lianming Sun (The University of Kitakyushu, Japan); Dongmei Zhao (McMaster University, Canada)
pp. 4144-4149

17:39 *Enabling Adaptive Rate and Relay Selection for 802.11 Mobile Ad Hoc Networks*
Neil Mehta (North Carolina State University, USA); Alexandra Duel-Hallen (North Carolina State University, USA); Wenye Wang (NC State University, USA)
pp. 4150-4154

**WC11: Relay Selection**

Chair: Lingyang Song (Peking University, P.R. China)

16:15 *Relay and Antenna Selection in Multi-Antenna Amplify-and-Forward (AF) Systems with Partial Channel State Information*
Ahmad Danaee (The University of Akron, USA); Mehdi Maleki (The University of Akron, USA); John Kota (The University of Akron, USA); Hamid Reza Bahrani (The University of Akron, USA)
pp. 4155-4159

16:36 *A Novel Distributed Fair Relay Selection Strategy for Cooperative Wireless System*
Essam Saleh Altubaishi (University of Waterloo & King Saud University, Canada); Sherman Shen (University of Waterloo, Canada)
pp. 4160-4164

16:57 *Zero-Forcing based MIMO Two-Way Relay with Relay Antenna Selection: Transmission Scheme and Diversity Analysis*
Hui Gao (Singapore University of Technology and Design, Singapore); Tiejun Lv (Beijing University of Posts and Telecommunications, P.R. China); Shengli Zhang (Shenzhen University, P.R. China); Xin Su (Tsinghua University, P.R. China)
pp. 4165-4170
17:18 Selective Relaying in Multi-Relay Networks with Feedback Delays and Adaptive Modulation
Karaputugala Gamacharige Madushan Thilina (University of Manitoba, Canada); Ekram Hossain (University of Manitoba, Canada)
pp. 4171-4175

17:39 Best Relay Selection Using SNR and Interference Quotient for Underlay Cognitive Networks
Syed Hussain (Texas A&M University at Qatar, Qatar); Mohamed M. Abdallah (Texas A&M University at Qatar & Cairo University, Cairo, Qatar); Mohamed-Slim Alouini (King Abdullah University of Science and Technology (KAUST), Saudi Arabia); Mazen Omar Hasna (Qatar University, Qatar); Khalid A. Qaraqe (Texas A&M University at Qatar, USA)
pp. 4176-4180

WC12: Interference Management

Chair: Weiliang Zeng (Tsinghua University, P.R. China)

16:15 The Performance Loss of Unilateral Interference Cancellation
Luis Miguel Cortés-Peña (Georgia Institute of Technology, USA); John Barry (Georgia Institute of Technology, USA); Douglas Blough (Georgia Institute of Technology, USA)
pp. 4181-4186

16:36 An Adaptive Iterative Algorithm for Joint Signal and Interference Alignment Based on Target SINR Criterion
Slim Ben Halima (Orange Labs, France); Ahmed Saadani (Orange Labs, France)
pp. 4187-4191

16:57 Joint Relay Selection and Subchannel Allocation for Amplify-and-Forward OFDMA Cooperative Networks
Bo Bob Bai (Tsinghua University, P.R. China); Wei Chen (Tsinghua University, P.R. China); Khaled Ben Letaief (Hong Kong University of Science & Technology, Hong Kong); Zhigang Cao (Tsinghua University, P.R. China)
pp. 4192-4196

17:18 Achievable Diversity Gain of K-user Interference Channel
Shenghui Song (The Hong Kong University of Science and Technology, Hong Kong); Xiang Chen (Hong Kong University of Science and Technology, Hong Kong); Khaled Ben Letaief (Hong Kong University of Science & Technology, Hong Kong)
pp. 4197-4201

17:39 Multi-layer Rate Splitting Scheme for Interference Mitigation in Tri-sectored Wireless Networks
Guangxia Zhou (Intel Mobile Communications & Technische Universität Hamburg-Harburg, Germany); Gerhard Bauch (Universitaet der Bundeswehr Munich & Institute for Information Processing, Germany); Jens Berkmann (Intel Mobile Communications, Germany); Wen Xu (Intel & Intel Mobile Communications, Germany)
pp. 4202-4206
Wednesday, June 13

08:00 - 09:45

WC13: Coordinated Multi-Point Transmission Systems

Chair: Jocelyn Aulin (Chalmers University of Technology, Sweden)

08:00 Exploiting Interference Locality in Coordinated Multi-Point Transmission Systems
Xinyu Zhang (University of Wisconsin-Madison, USA); Mohammad Khojastepour (NEC Laboratories America, USA); Karthikeyan Sundaresan (NEC Labs America, USA); Sampath Rangarajan (NEC Labs America, USA); Kang G. Shin (University of Michigan, USA)
pp. 4207-4211

08:21 Measurement-Based Evaluation of Robust Linear Precoding for Downlink CoMP
Rikke Apelfrøjd (Uppsala University, Sweden); Mikael Sternad (Uppsala University, Sweden); Daniel Aronsson (Uppsala University, Sweden)
pp. N/A

08:42 Interference Coordination in CoMP with Transmission Scheduling and Game Theoretical Power Reallocation
Shu Fu (Chongqing University of Posts and Telecommunications, P.R. China); Bin Wu (University of Electronic Science and Technology of China, P.R. China); Pin-Han Ho (University of Waterloo, Canada); Xiang Ling (University of Electronic Science and Technology of China, P.R. China)
pp. 4212-4217

09:03 Greedy and Progressive User Scheduling for CoMP Wireless Networks
Shreeram Sigdel (University of Alberta, Canada); Witold A. Krzymień (University of Alberta / TRLabs, Canada); Mazin Al-Shalash (Huawei, USA)
pp. 4218-4223

09:24 Selective and Limited Feedback Method for Network MIMO Systems
Donghyun Kim (Seoul National University, Korea); Oh-Soon Shin (Soongsil University, Korea); Kwang Bok Lee (Seoul National University, Korea)
pp. 4224-4228

WC14: Space-Time Coding II

Chair: Xu Chong (University of St. Thomas, USA)

08:00 Interference Reduction on Cellular Networks with Large Antenna Arrays
Fabio Fernandes (University of Texas at Austin, USA); Alexei Ashikhmin (Bell Labs, Alcatel-Lucent, USA); Tom Marzetta (Bell Labs, USA)
pp. N/A

08:21 A Full Diversity PIC Group Decoding for A Family of Space-Time Block Codes
Tianyi Xu (University of Delaware, USA); Xiang-Gen Xia (University of Delaware, USA); Wei Zhang (The University of New South Wales, Australia)
pp. 4229-4233
08:42 **Antenna Selection For Time-Varying Channels Based on Slepian Subspace Projections**
Hassan Abou Saleh (Queen's University, Canada); Andreas Molisch (University of Southern California, USA); Thomas Zemen (FTW Telecommunications Research Center Vienna, Austria); Steven D Blostein (Queen's University, Canada); Neelesh B. Mehta (Indian Institute of Science, India)
pp. 4234-4239

09:03 **A Low-Complexity Tree-Search Algorithm to Decode Diversity-Oriented Block Codes with Inter-Symbol Interference**
Xu Chong (University of St. Thomas, USA); Hamid Gharavi (NIST & ITL, USA)
pp. 4240-4245

09:24 **Bit-Interleaved Coded Multiple Beamforming with Perfect Coding**
Boyu Li (University of California, Irvine, USA); Ender Ayanoglu (University of California, Irvine, USA)
pp. 4246-4251

**WC15: MIMO I**

Chair: Yonghong Zeng (Institute for Infocomm Research, Singapore)

08:00 **Channel Quantization Algorithm for MIMO Interference Alignment with Limited Feedback**
Jin-Sung Kim (Bell Labs Seoul Ltd., Korea); Sung-Hyun Moon (ETRI, Korea); Sang-Rim Lee (Korea University, Korea); Inkyu Lee (Korea University, Korea)
pp. 4252-4256

08:21 **Linear Precoding of Finite Alphabet Signals in Multi-Antenna Broadcast Channels**
Yongpeng Wu (Southeast University, P.R. China); Mingxi Wang (Missouri University of Science and Technology, USA); Chengshan Xiao (Missouri University of Science and Technology, USA); Zhi Ding (University of California at Davis, USA); Xiqi Gao (Southeast University, P.R. China)
pp. 4257-4261

08:42 **An Effective Link Error Prediction Technique for MIMO-OFDM Systems with ML Receiver**
Sung-Hyun Moon (ETRI, Korea); Kyoung-Jae Lee (University of Texas at Austin, USA); Jihoon Kim (Samsung Electronics, Korea); Inkyu Lee (Korea University, Korea)
pp. 4262-4266

09:03 **On Feasibility of Interference Alignment and Cancellation for Gaussian Interference Multiple Access Channel**
Xin Qu (Korea University, Korea); Chung G. Kang (Korea University, Korea)
pp. 4267-4271

09:24 **Hierarchical Selection Diversity Combining Architecture**
Sebastien Roy (University of Sherbrooke, Canada)
pp. 4272-4276
WC16: Relay Technologies I

Chair: Salama Said Ikki (INRS, Canada)

08:00 **An Optimal Graph Approach for Optimizing OFDMA Relay Networks**
Yuan Liu (Shanghai Jiao Tong University, P.R. China); Meixia Tao (Shanghai Jiao Tong University, P.R. China)
pp. 4277-4281

08:21 **Relay Selection with Time-Division Broadcast in Bidirectional Cooperative Networks**
Peng Liu (Queen's University, Canada); Il-Min Kim (Queen's University, Canada); Saeed Gazor (Queen's University, Canada)
pp. 4282-4287

08:42 **Energy Efficiency Comparison among Direct, One-way and Two-way Relay Transmission**
Can Sun (Beihang University, P.R. China); Chenyang Yang (Beihang University, P.R. China)
pp. 4288-4293

09:03 **Low Latency Relaying Schemes for Next-Generation Cellular Networks**
Glenn Bradford (University of Notre Dame, USA); J. Nicholas Laneman (University of Notre Dame, USA)
pp. 4294-4299

09:24 **Relay Selection Schemes Relying on Adaptive Modulation and Imperfect Channel Knowledge for Cooperative Networks**
Fulvio Babich (University of Trieste, Italy); Alessandro Crismani (University of Trieste, Italy); Lajos Hanzo (University of Southampton, United Kingdom)
pp. 4300-4304

14:00 - 15:45

WC-P2: WC-P2: Topics in Wireless Communications II

Chair: Hsiao-Chun Wu (Louisiana State University, USA)

14:00 **Blind Phase Noise Compensation for SC-FDMA with Application to LTE-Uplink**
Ahmad Abdulrahman Gomaa (University of Texas at Dallas & Erik Jonsson School of Engineering, USA); Naofal Al-Dhahir (University of Texas at Dallas, USA)
pp. 4305-4309

14:21 **Adaptive Tuning Method for Maximizing Capacity in Magnetic Induction Communication**
Kisong Lee (KAIST, Korea); Dong-Ho Cho (Korea Advanced Institute of Science and Technology, Korea)
pp. 4310-4314
14:42 Adaptive Precoding for Femtocell Interference Mitigation  
Ahmed Elshefif (University of California, Davis & Newport Media Inc., USA); Ahmed Mohamed Ahmedin (UC Davis & Nile University, USA); Zhi Ding (University of California at Davis, USA); Xin Liu (UC Davis, USA)  
pp. 4315-4320

15:03 Performance Bounds for Multipath-assisted Indoor Navigation and Tracking (MINT)  
Klaus Witrisal (Graz University of Technology, Austria); Paul Meissner (Graz University of Technology, Austria)  
pp. 4321-4325

15:24 Novel Energy-Based Localization Technique for Multiple Sources  
Lu Lu (Louisiana State University, USA); Hsiao-Chun Wu (Louisiana State University, USA)  
pp. 4326-4330

WC17: Energy Efficient Design II

Chair: Lingjia Liu (University of Kansas, USA)

14:00 Energy Savings for Cellular Access Network through Wi-Fi Offloading  
Adnan Aijaz (King's College London, United Kingdom); Oliver D Holland (King's College London, United Kingdom); Paul Pangalos (Kings College London, United Kingdom); Hamid Aghvami (King's College London, United Kingdom)  
pp. 4369-4373

14:21 Energy-Efficient Cellular Network Operation via Base Station Cooperation  
Feng Han (University of Maryland, College Park, USA); Zoltan Safar (University of Maryland College Park, USA); Wanyi Lin (University of Maryland, USA); Yan Chen (University of Maryland, College Park, USA); K. J. Ray Liu (University of Maryland, USA)  
pp. 4374-4378

14:42 Optimal Base Station Density for Energy-Efficient Heterogeneous Cellular Networks  
Dongxu Cao (Tsinghua University, Beijing, P.R. China); Sheng Zhou (Tsinghua University, P.R. China); Zhisheng Niu (Tsinghua University, P.R. China)  
pp. 4379-4383

15:03 Energy-Efficient Configuration of Spatial and Frequency Resources in MIMO-OFDMA Systems  
Zhikun Xu (Beihang University, P.R. China); Chenyang Yang (Beihang University, P.R. China); Geoffrey Li (Georgia Tech, USA); Shunqing Zhang (Huawei Technologies Co. Ltd., P.R. China); Yan Chen (Huawei, P.R. China); Shugong Xu (Huawei, P.R. China)  
pp. 4384-4389

15:24 Energy-Efficient Scheduling for Downlink Multi-User MIMO  
Lingjia Liu (University of Kansas, USA); Guowang Miao (KTH, Royal Institute of Technology & Department of Communications Systems, USA); Jianzhong Zhang (Samsung Telecommunications America, USA)  
pp. 4390-4394
WC18: Resource Allocation

Chair: Tao Wang (Universite Catholique de Louvain, Belgium)

14:00 Contractive Interference Functions and Rates of Convergence of Distributed Power Control Laws
Hamid Reza Feyzmahdavian (Royal Institute of Technology (KTH), Sweden); Mikael Johansson (Royal Institute of Technology, Sweden); Themistoklis Charalambous (Royal Institute of Technology (KTH), Sweden)
pp. 4395-4399

14:21 Coordinated SINR Balancing Methods for Multi-Cell Downlink Systems
Haewook Park (Korea University, Korea); Seok-Hwan Park (New Jersey Institute of Technology, USA); Jin-Sung Kim (Bell Labs Seoul Ltd., Korea); Inkyu Lee (Korea University, Korea)
pp. 4400-4404

14:42 Efficient Frequency Domain Packet Scheduler for Point-to-Multipoint Transmissions in LTE Networks
Giuseppe Araniti (University "Mediterranea" of Reggio Calabria, Italy); Valerio Scordamaglia (University of Reggio Calabria, Italy); Massimo Condoluci (University Mediterranea of Reggio Calabria, Italy); Antonella Molinaro (University "Mediterranea" of Reggio Calabria, Italy); Antonio Iera (University Mediterranea of Reggio Calabria, Italy)
pp. 4405-4409

15:03 Dynamic Cooperation Link Selection for Network MIMO Systems with Limited Backhaul Capacity
Shervin Mehryar (University of Toronto, Canada); Aakanksha Chowdhery (Stanford University, USA); Wei Yu (University of Toronto, Canada)
pp. 4410-4415

15:24 Hierarchical Resource Allocation in Femtocell Networks using Graph Algorithms
Sanam Sadr (University of Toronto, Canada); Raviraj Adve (University of Toronto, Canada)
pp. 4416-4420

WC19: Spectrum Sensing for Cognitive Radio

Chair: Lu Wei (Aalto University, Finland)

14:00 Interference Mitigation Using Spectrum Sensing and Dynamic Frequency Hopping
Mohammad J Abdel Rahman (University of Arizona, USA); Marwan Krunz (University of Arizona, USA); Richard Erwin (AFRL, USA)
pp. 4421-4425

14:21 A Novel Spectrum Sensing Method in Cognitive Radio Based on Suprathreshold Stochastic Resonance
Qunwei Li (State Key Laboratory of Integrated Services Networks, Xidian University, P.R. China); Zan Li (Xidian University, P.R. China); Jian Shen (China Electronics
14:42 Relay Assisted Spectrum Sharing in Cognitive Radio Networks
Zhe Wang (University of New South Wales, Australia); Wei Zhang (The University of New South Wales, Australia); Khaled Ben Letaief (Hong Kong University of Science & Technology, Hong Kong)
pp. 4431-4435

15:03 Cooperative Spectrum Sensing with Noncoherent Transmission
Simin Bokharaiee (University of Saskatchewan, Canada); Ha Nguyen (University of Saskatchewan, Canada); Ed Shwedyk (University of Manitoba, Canada)
pp. 4436-4441

15:24 Compressive Autonomous Sensing (CASe) for Wideband Spectrum Sensing
Hongjian Sun (King’s College London, United Kingdom); Arumugam Nallanathan (King’s College London, United Kingdom); Jing Jiang (University of Surrey, United Kingdom); H. Vincent Poor (Princeton University, USA)
pp. 4442-4446

WC20: Relay Technologies: Decode-and-Forward

Chair: Himal A Suraweera (Singapore University of Technology and Design, Singapore)

14:00 Successive DF Relaying: MS-DIS aided Interference Suppression and Three-Stage Concatenated Architecture Design
Li Li (University of Southampton, United Kingdom); Li Wang (University of Southampton, United Kingdom); Lajos Hanzo (University of Southampton, United Kingdom)
pp. 4447-4451

14:21 Full Diversity Decoding in Differential DF Cooperative System with Unitary Constellations
Manav Bhatnagar (Indian Institute of Technology Delhi, India)
pp. 4452-4457

14:42 Optimal Power Allocation in a Multi-Hop Decode-and-Forward Communication System
Kalpana Dhaka (Indian Institute of Technology - Delhi, India); R. K. Mallik (Indian Institute of Technology - Delhi, India); Robert Schober (University of British Columbia, Canada)
pp. 4458-4462

15:03 Optimal Power Allocation for Two-Way Decode-and-Forward OFDM Relay Networks
Fei He (Tsinghua University, P.R. China); Yin Sun (Tsinghua University, P.R. China); Xiang Chen (Tsinghua University, P.R. China); Limin Xiao (Tsinghua University, P.R. China); Shidong Zhou (Tsinghua University, P.R. China)
pp. 4463-4467

15:24 Rate regions for coordination of Decode-and-Forward relays and direct users
Chan Dai Truyen Thai (Aalborg University, Denmark); Petar Popovski (Aalborg University, Denmark)
16:15 - 18:00

**WC-P3: Topics in Wireless Communications III**

Chair: Bei Yin (Rice University, USA)

16:15 Alternative Concepts of Antenna Deployment and Cell Layout in Mobile Communications
Patrick Marsch (Nokia Siemens Networks, Poland); Jani Moilanen (Nokia Siemens Networks, Finland); Thomas Chapman (Roke Manor Research Ltd, United Kingdom)
pp. 4473-4478

16:36 Error Exponents for Nakagami-m Fading Keyhole MIMO Channels
Jiang Xue (The University of Edinburgh & IDC&COM, United Kingdom); Md. Zahirul Islam Sarkar (The University of Edinburgh, United Kingdom); Tharmalingam Ratnarajah (The University of Edinburgh, United Kingdom)
pp. 4479-4483

16:57 Downlink Multiuser MIMO Scheduling in LTE Advanced Systems
Guosen Yue (NEC Laboratories America, Inc., USA); Narayan Prasad (NEC Labs America, Princeton, USA); Sampath Rangarajan (NEC Labs America, USA)
pp. 4484-4488

17:18 Digital Block Design of MIMO Hardware Simulator for LTE applications
Bachir Habib (IETR-INSA Rennes & IETR, France); Gheorghe Zaharia (IETR-INSA de Rennes, France); Ghais El Zein (IETR-INSA Rennes, France)
pp. 4489-4493

17:39 A Novel SIR-Based Access Scheme for Multi-Packet Communication in 802.11 Networks
Fulvio Babich (University of Trieste, Italy); Massimiliano Comisso (University of Trieste, Italy); Aljosa Dorn (University of Trieste, Italy)
pp. 4494-4498

**WC21: UWB**

Chair: Xiaoyu Fu (University of Electronic Science and Technology of China, P.R. China)

16:15 A Joint ToA/DoA Technique for 2D/3D UWB Localization in Indoor Multipath Environment
Zoubir Irahihauten (Delft University of Technology, The Netherlands); Homayoun Nikookar (Delft University of Technology, The Netherlands); Matthijs Klepper (KPN, Mobile Innovation Radio, The Netherlands)
pp. 4499-4503
16:36 An Experimental Approach to a Low-Complexity Two-Step TOA Measurement for TR-UWB Signals
Jorge Pardiñas-Mir (Telecom SudParis, France); Roger Lamberti (Institut Télécom & Télécom SudParis, France); Muriel Muller (Institut National des Telecommunications, France); Claude Gimenes (Institut National des Telecommunications, France)
pp. 4504-4508

16:57 Non-coherent ToA Estimation for UWB Multipath Channels using Max-eigenvalue Detection
Wei Shi (University of Washington, USA); Ramesh Annavajjala (Mitsubishi Electric Research Labs, USA); Philip Orlik (Mitsubishi Electric Research Laboratories, USA); Andreas Molisch (University of Southern California, USA); Mari Ochiai (Mitsubishi Electric Corp., Japan); Akinori Taira (Mitsubishi Electric Corporation, Japan)
pp. 4509-4514

17:18 Joint Estimation of Time of Arrival and Channel Power Delay Profile for Pulse-Based UWB Systems
Fang Shang (McGill University, Canada); Benoit Champagne (McGill University, Canada); Ioannis Psaromiligkos (McGill University, Canada)
pp. 4515-4519

17:39 Polarity-Invariant Square Law Technology for Transmitted Reference UWB Receivers Digitizing with a Monobit ADC
Hassan Khani (University of Northern Iowa & Ghochan Higher Educational Complex of Engineering and Technology, USA); Hong Nie (University of Northern Iowa, USA); Weidong Xiang (University of Michigan, Dearborn, USA); Zhimeng Xu (Fuzhou University, P.R. China); Sateesh Addepalli (Cisco, USA); Zhizhang (David) Chen (Dalhousie University, Canada)
pp. 4520-4524

WC22: Relay Technologies II
Chair: Xiangyun Zhou (The Australian National University, Australia)

16:15 Achievable Rate Analysis and Feedback Design for Multiuser Relay with Imperfect CSI
Zhangjie Peng (Southeast University, P.R. China); Wei Xu (Southeast University, P.R. China); Chunming Zhao (National Mobile Communications Research Laboratory, Southeast University, P.R. China); Bin Jiang (Southeast University & National Mobile Communications Research Lab., P.R. China)
pp. 4525-4530

16:36 A Near Optimal Routing Scheme for Multi-hop Relay Networks Based on Viterbi Algorithm
Qimin You (The University of Sydney, Australia); Yonghui Li (University of Sydney, Australia); Md. Shahrir Rahman (The University of Sydney, Australia); Zhuo Chen (CSIRO ICT Centre, Australia)
pp. 4531-4536
16:57 **Optimal Power Adaption for NAF Relaying with Channel Side Information**  
Leonardo Jiménez Rodríguez (McGill University, Canada); Amir Helmy (McGill University, Canada); Nghi H Tran (University of Akron, USA); Tho Le-Ngoc (McGill University, Canada)  
pp. 4537-4541

17:18 **Linear MIMO Transceiver Design for Cellular Multi-User Two-Way AF Relaying**  
Eddy Chiu (HKUST, Hong Kong); Vincent Lau (Hong Kong University of Science and Technology, Hong Kong)  
pp. 4542-4546

17:39 **A Novel Relay-Assisted Protocol for Cooperative Multiple Access Networks**  
Peng Xu (University of Science and Technology of China, P.R. China); Zhiguo Ding (Newcastle University, United Kingdom); Xuchu Dai (University of Science and Technology of China, P.R. China); Ioannis Krikidis (University of Cyprus, Cyprus); Athanasios V. Vasilakos (National Technical University of Athens, Greece)  
pp. 4547-4551

**WC23: Wireless Channel and Propagations**

Chair: Yves Lostanlen (SIRADEL & University of Toronto, Canada)

16:15 **Millimeter Waves Channel Measurements and Path Loss Models**  
Stefano Piersanti (RadioLabs, Italy); Luca Alfredo Annoni (2T srl Information Technology Consulting, Italy); Dajana Cassioli (University of L'Aquila, Italy)  
pp. 4552-4556

16:36 **Modeling Urban Peer-to-Peer Channel Characteristics for the 700 MHz and 4.9 GHz Public Safety Bands**  
Camillo Gentile (NIST, USA); David W Matolak (University of South Carolina, USA); Kate Remley (NIST, USA); Christopher Holloway (NIST, USA); Qiong Wu (Ohio University, USA); Qian Zhang (Ohio University, USA)  
pp. 4557-4562

16:57 **Measurements and Analysis of Short-Term Fading Behavior for High-Speed Rail Viaduct Scenario**  
Ruisi He (Beijing Jiaotong University, P.R. China); Zhangdui Zhong (Beijing Jiaotong University, P.R. China); Ai Bo (Beijing Jiaotong University, P.R. China); Jian-wen Ding (Beijing Jiaotong University, P.R. China)  
pp. 4563-4567

17:18 **Efficient MIMO Antenna Evaluation based on MIMO Spatial Channel Simulations**  
Xueyuan Zhao (Hong Kong Applied Science and Technology Research Institute Company Limited, Hong Kong)  
pp. N/A

17:39 **38 GHz and 60 GHz Angle-dependent Propagation for Cellular & Peer-to-Peer Wireless Communications**  
Theodore Rappaport (NYU-Poly and NYU, USA); Eshar Ben-Dor (The University of Texas at Austin, USA); James Murdock (The University of Texas at Austin & Wireless Networking and Communications Group, USA); Yijun Qiao (The University of Texas at Austin, USA)  
pp. 4568-4573
WC24: Network Coding

Chair: Abdellatif Zaïdi (Université Paris-Est Marne La Vallée, France)

16:15 Performance Evaluation and Energy Efficiency of Random Network Coding in LTE-Advanced
Chadi Khirallah (The University of Edinburgh, United Kingdom); Dejan Vukobratović (University of Novi Sad, Serbia); John Thompson (University of Edinburgh, United Kingdom)
pp. 4574-4578

16:36 Trustworthiness of Random Network Coded Information in Untrustworthy Networks
Sang Wu Kim (Iowa State University, USA)
pp. 4579-4583

16:57 Collaborative Downloading in VANET using Network Coding
Mohammad Hamed Firooz (University of Washington, USA); Sumit Roy (University of Washington, USA)
pp. 4584-4588

17:18 Wireless Adaptive Network Coding Strategy in Multiple-Access Relay Channels
Sha Wei (Shanghai Jiaotong University, USA); Jun Li (University of Sydney, Australia); Wen Chen (Shanghai Jiao Tong University, P.R. China); Hang Su (Shanghai Jiaotong University, USA)
pp. 4589-4594

17:39 An Iterative Beamforming Optimization Algorithm for Generalized MIMO Y Channels
Zhendong Zhou (The University of Sydney, Australia); Branka Vucetic (The University of Sydney, Australia)
pp. 4595-4599

Thursday, June 14

08:00 - 09:45

WC25: Performance Analysis for Relay Systems II

Chair: George K. Karagiannidis (Aristotle University of Thessaloniki, Greece)

08:00 Outage Probability of Dual-Hop AF Opportunistic Relaying with Directional Antennas
Aydin Behnad (University of Tehran, Iran); Amir Masoud Rabiei (University of Tehran, Iran); Norman C. Beaulieu (University of Alberta, Canada)
pp. 4600-4604
08:21 A Novel Ergodic Capacity Analysis of Diversity Combining and Multihop Transmission Systems over Generalized Composite Fading Channels
Ferkan Yilmaz (King Abdullah University of Science and Technology, Saudi Arabia); Mohamed-Slim Alouini (King Abdullah University of Science and Technology (KAUST), Saudi Arabia)
pp. 4605-4610

08:42 Characterizing Multi-Cell Cooperation via the Outage Probability Exponent
Kaibin Huang (The Hong Kong Polytechnic University, Hong Kong); Jeffrey Andrews (The University of Texas at Austin, USA)
pp. 4611-4615

09:03 Spectral Efficiency of Cooperative Relaying with Imperfect Channel Estimation
Yao Xiao (University of Delaware & Shanghai Jiao Tong University, USA); Len Cimini (University of Delaware, USA)
pp. 4616-4620

09:24 Energy-Aware Relay Selection for Multiuser Relay Networks
Fangzhi Zuo (University of Ontario Institute of Technology, Canada); Min Dong (University of Ontario Institute of Technology, Canada)
pp. 4621-4625

WC26: Cognitive Radio Networks
Chair: M. Cenk Gursoy (Syracuse University, USA)

08:00 Asymptotic Analysis of Outage Probability in Cognitive Radio Networks
Yaobin Wen (University of Ottawa, Canada); Sergey Loyka (University of Ottawa, Canada); Abbas Yongaçoğlu (University of Ottawa, Canada)
pp. 4626-4631

08:21 Stable Transmission for a Cognitive-shared Channel with Rechargeable Transmitters
Ruifeng Duan (University of Vaasa, Finland); Mohammed Salem Elmsrati (University of Vaasa, Finland); Reino Virrankoski (University of Vaasa, Finland)
pp. 4632-4636

08:42 Resource Allocation and Access Strategy Selection for QoS Provisioning in Cognitive Networks
Yichen Wang (Xi’an Jiaotong University, P.R. China); Pinyi Ren (Xi’an Jiaotong University, P.R. China); Qinghe Du (Xi’an Jiaotong University, P.R. China); Zhou Su (Waseda University, Japan)
pp. 4637-4641

09:03 A Robust MDP Approach to Secure Power Control in Cognitive Radio Networks
Hua Xiao (Columbia University & University of Electronic Science and Technology of China, USA); Kai Yang (Bell Labs, USA); Xiaodong Wang (Columbia University, USA); Huaziong Shao (University of Electronic Science and Technology of China, P.R. China)
pp. 4642-4647
**09:24 Joint Admission Control and Beamforming with Adaptive Modulation for Cognitive Radio network**
Huiqin Du (University of Edinburgh, United Kingdom); Tharmalingam Ratnarajah (The University of Edinburgh, United Kingdom)
pp. 4648-4652

**WC27: OFDMA**

Chair: Huiling Zhu (University of Kent, United Kingdom)

**08:00 Tone Reservation Based Peak Power Reduction in OFDMA Uplink Systems**
Abolfazl Ghassemi (Stanford University, USA); Lutz Lampe (University of British Columbia, Canada); T. Aaron Gulliver (University of Victoria, Canada)
pp. 4653-4657

**08:21 A User-Differentiation-based Resource Allocation Scheme for OFDMA Downlink Systems**
Yao-Hsing Chung (National Chiao Tung University, Taiwan); Chung-Ju Chang (National Chiao Tung University, Taiwan); Zhaoyang Zhang (Zhejiang University, P.R. China)
pp. 4658-4662

**08:42 Interference-Aware Resource Allocation in Co-Channel Deployment of OFDMA Femtocells**
Haijun Zhang (Beijing University of Posts and Telecommunications, P.R. China); Xiaoli Chu (University of Sheffield, United Kingdom); Wei Zheng (Beijing University of Posts and Telecommunications, P.R. China); Xiangming Wen (Beijing University of Posts and Telecommunications, P.R. China)
pp. 4663-4667

**09:03 Frequency Reuse in Chunk-based Multi-cell OFDMA Systems**
Huiling Zhu (University of Kent, United Kingdom); Jiangzhou Wang (University of Kent, United Kingdom)
pp. 4668-4672

**09:24 Analysis of a MIMO OFDMA Heterogeneous Feedback System Employing Joint Scheduling and Spatial Diversity in Nakagami Fading Channels**
Yichao Huang (University of California, San Diego, USA); Bhaskar Rao (University of California, San Diego, USA)
pp. 4673-4677

**14:00 - 15:45**

**WC-P4: Topics in Wireless Communications IV**

Chair: Bachir Habib (IETR-INSA Rennes & IETR, France)

**14:00 Multi-Channel Data Communication Through Thick Metallic Barriers**
Jonathan D Ashdown (Rensselaer Polytechnic Institute, USA); Gary J. Saulnier (Rensselaer Polytechnic Institute, USA); Tristan J Lawry (Applied Physical Sciences
14:21 Combinatorial Channel Signature Modulation for Wireless ad-hoc Networks
Robert J Piechocki (University of Bristol, United Kingdom); Dino Sejdinovic (University College London, United Kingdom)
pp. 4684-4689

14:42 Constellation Design and Mapping for Partially Coherent Correlated Channel with Coding
Animesh Yadav (Centre for Wireless Communications, University of Oulu, Finland); Markku Juntti (University of Oulu, Finland); Jorma Olavi Lilleberg (Renesas Mobile, Finland)
pp. 4690-4695

15:03 Non-Data-Aided Distorted Constellation Estimation and Demodulation for mmWave Communications
Changming Zhang (Tsinghua University, P.R. China); Zhenyu Xiao (Tsinghua University, P.R. China); Xiaoming Peng (Institute for InfoComm Research, Singapore); Depeng Jin (Tsinghua University, P.R. China); Lieguang Zeng (Tsinghua University, P.R. China)
pp. 4696-4701

15:24 On the Benefits of Non-Uniform Signaling in Chip-Asynchronous CDMA
Salman Khan (McGill University, Canada); Jan Bajcsy (McGill University, Canada)
pp. 4702-4706

WC28: Coding

Chair: Jan Bajcsy (McGill University, Canada)

14:00 Error Resistant Lossless Data Compression with Equal Length Coding using Fine Tuned Multiple Label Mapping
Valtteri T Tervo (University of Oulu, Finland); Kisho Fukawa (Japan Advanced Institute of Science and Technology, Japan); Tadashi Matsumoto (CWC - Oulu, Finland)
pp. 4707-4711

14:21 Design of LDPC codes for Non-Contiguous OFDM-Based Communication Systems
Li Li (Huazhong University of Science and Technology, P.R. China); Daming Qu (Huazhong University of Science and Technology, Wuhan, Hubei, P.R. China); Tao Jiang (Huazhong University of Science and Technology, P.R. China); Jie Ding (Macquarie University, Australia)
pp. 4712-4716

14:42 Design of Bilayer QC-LDPC codes for Decode-and Forward based Cooperative Relaying Communication
Lingjun Kong (Inha University, Korea); Kyeong Jin Kim (Mitsubishi Electric Research Laboratories (MERL), USA); Kyung Sup Kwak (Inha University, Korea)
pp. 4717-4721
15:03 Receiver Rate Adaptation for MIMO System
Hao Cui (University of Science and Technology of China, P.R. China); Chang Wen Chen (State University of New York at Buffalo, USA)
pp. 4722-4727

15:24 Protograph EXIT Analysis over Block Fading Channels with Application to Relays
Paola Pulini (German Aerospace Center (DLR), Germany); Gianluigi Liva (DLR - German Aerospace Center, Germany); Marco Chiani (University of Bologna, Italy)
pp. 4728-4733

WC29: Physical-Layer Network Coding

Chair: Salama Said Ikki (INRS, Canada)

14:00 Implementation of Physical-layer Network Coding
Lu Lu (The Chinese University of Hong Kong, Hong Kong); Taotao Wang (The Chinese University of Hong Kong, Hong Kong); Soong Chang Liew (The Chinese University of Hong Kong, Hong Kong); Shengli Zhang (Shenzhen University, P.R. China)
pp. 4734-4740

Cen Lin (Shanghai Jiao Tong University, P.R. China); Yuan Liu (Shanghai Jiao Tong University, P.R. China); Meixia Tao (Shanghai Jiao Tong University, P.R. China)
pp. 4741-4745

14:42 Trellis-based Equalization Schemes for Physical Layer Network Coding
Armin Schmidt (University of Erlangen-Nuernberg, Germany); Wolfgang Gerstacker (University of Erlangen-Nuernberg, Germany)
pp. 4746-4750

15:03 Iterative Sum-Rate Optimization for Multiple Access Relay Channels with a Compute-and-Forward Relay
Mohieddine El Soussi (Université Catholique de Louvain, Belgium); Abdellatif Zaidi (Université Paris-Est Marne La Vallée, France); Luc Vandendorpe (University of Louvain, Belgium)
pp. 4751-4755

15:24 Limited Feedback Designs for Two-Way Wireless Relaying Channels with Physical Network Coding
Young-Tae Kim (Korea University, Korea); Youngil Jeon (Korea University, Korea); Kwangwon Lee (Korea University, Korea); Inkyu Lee (Korea University, Korea)
pp. 4756-4760

WC30: Wireless Systems

Chair: Berna Özbek (CNAM, France)
14:00 New Results on Maximal Ratio Combining in Nakagami-$m$ Fading Channels
Young Gil Kim (University of Seoul, Korea); Norman C. Beaulieu (University of Alberta, Canada)
pp. 4761-4765

14:21 Reconfigurable multi-standard uplink MIMO receiver with partial interference cancellation
Bei Yin (Rice University, USA); Kiarash Amiri (Rice University, USA); Joseph R. Cavallaro (Rice University, USA); Yuanbin Guo (Huawei Technologies, USA)
pp. 4766-4770

14:42 Coordinated Linear Precoding in Downlink Multicell MIMO-OFDMA Networks
Kun Wang (Tsinghua University, P.R. China); Xiaodong Wang (Columbia University, USA); Weiqiang Xu (Zhejiang Sci-Tech University, P.R. China); Xianda Zhang (Tsinghua University, P.R. China)
pp. N/A

15:03 Optimizing Cellular Network Architectures to Minimize Energy Consumption
Ernest Kurniawan (Stanford University & Institute for Infocomm Research, USA); Andrea Goldsmith (Stanford University, USA)
pp. 4771-4775

15:24 System Design and Implementation of Broadband In-Band On-Channel Digital Radio
Zixia Hu (University of Washington, USA); Xun Shao (Telepath Ltd, P.R. China); Zhiyong Chen (Shanghai Jiaotong University, P.R. China); Hui Liu (Shanghai JiaoTong University, P.R. China); Guanbin Xing (Telepath Technologies Co., Ltd, P.R. China)
pp. 4776-4781

16:15 - 18:00

WC-P5: Topics in Wireless Communications V

Chair: Liang Xiao (Xiamen University & WINLAB, Rutgers University, P.R. China)

16:15 How Much Training is Enough for Secrecy Beamforming with Artificial Noise
Ta-Yuan Liu (National Tsing Hua University, Taiwan); Shih-Chun Lin (National Taiwan University of Science and Technology, Taiwan); Tsung-Hui Chang (National Taiwan University of Science and Technology, Taiwan); Yao-Win Peter Hong (National Tsing Hua University, Taiwan)
pp. 4782-4787

16:36 Performance Evaluation of DAS for Inter-floor Wireless Communications
Temitope Alade (University of Kent, United Kingdom); Huiling Zhu (University of Kent, United Kingdom); Hassan Osman (University of Kent, United Kingdom)
pp. 4788-4792

16:57 An Improved Pilot-Assisted SNR Estimation for MBSFN Downlink Transmission
Fan Yang (University of Electronic Science and Technology of China, P.R. China); Wei Huang (Military Representative Office in Chengdu Region, P.R. China); Huaiizong Shao (University of Electronic Science and Technology of China, P.R. China)
17:18 Optimal Direct Path Detection for Positioning with Communication Signals in Indoor Environments
Jiaxin Yang (The University of Western Ontario, Canada); Xianbin Wang (The University of Western Ontario, Canada); Sung Ik Park (Electronics and Telecommunications Research Institute (ETRI), Korea); Heung Mook Kim (ETRI, Korea)
pp. 4796-4802

17:39 Improving network throughput in 60GHz WLANs via Multi-AP diversity
Xu Zhang (Tsinghua University, P.R. China); Sheng Zhou (Tsinghua University, P.R. China); Xiaolei Wang (Tsinghua University, P.R. China); Zhisheng Niu (Tsinghua University, P.R. China); Xiaokang Lin (Tsinghua University, P.R. China); Dalin Zhu (NEC Laboratories China, P.R. China); Ming Lei (NEC Laboratories China, P.R. China)
pp. 4803-4807

WC31: MIMO in Cooperative Communications

Chair: Alexei Ashikhmin (Bell Labs, Alcatel-Lucent, USA)

16:15 Diversity-Multiplexing Tradeoff Analysis for MMSE-based Cooperative MIMO Relaying Systems
Changick Song (Korea University, Korea); Kyoung-Jae Lee (University of Texas at Austin, USA); Inkyu Lee (Korea University, Korea)
pp. 4808-4812

16:36 A Large System Analysis of Cooperative Multicell Downlink System with Imperfect CSIT
Jun Zhang (Southeast University, P.R. China); Chao-Kai Wen (National Sun Yat-Sen University, Taiwan); Shi Jin (Southeast University, P.R. China); Xiqi Gao (Southeast University, P.R. China)
pp. 4813-4817

16:57 Energy Efficiency Optimization in Uplink Virtual MIMO Systems
Yun Rui (Shanghai Advanced Research Institute, Chinese Academy of Sciences, P.R. China); Keith Q. T. Zhang (City University of Hong Kong, Hong Kong); Mingqi Li (SARI, CAS, P.R. China); Lei Deng (Shanghai Jiao Tong University, P.R. China); Peng Cheng (Shanghai Jiao Tong University, P.R. China)
pp. 4818-4823

17:18 On the Capacity of MIMO Distributed Antenna Systems
Sang-Rim Lee (Korea University, Korea); Sung-Hyun Moon (ETRI, Korea); Jin-Sung Kim (Bell Labs Seoul Ltd., Korea); Inkyu Lee (Korea University, Korea)
pp. 4824-4828

17:39 Joint Beamforming and Antenna Selection for Two-Way Amplify-and-Forward MIMO Relay Networks
Gayan Amarasinghe (University of Alberta, Canada); Chinthia Tellambura (University of Alberta, Canada); Masoud Ardakani (University of Alberta, Canada)
pp. 4829-4834
WC32: MIMO II

Chair: Manav Bhatnagar (Indian Institute of Technology Delhi, India)

16:15 Two-Stage Channel Feedback for Beamforming and Scheduling in Network MIMO Systems
Behrouz Khoshrnevis (University of Toronto, Canada); Wei Yu (University of Toronto, Canada); Yves Lostanlen (SIRADEL & University of Toronto, Canada)
pp. 4835-4840

16:36 On MMSE Vector-Perturbation Precoding for MIMO Broadcast Channels with Per-Antenna-Group Power Constraints
Mahmoud Mazrouei-Sebdani (University of Alberta / TRLabs, Canada); Witold A. Krzymień (University of Alberta / TRLabs, Canada)
pp. 4841-4845

16:57 MIMO Capacity Gain Analysis for General Channel Models
Min Zhang (Alcatel-Lucent, New Zealand); Peter J Smith (The University of Canterbury, New Zealand); Mansoor Shafi (Telecom New Zealand, New Zealand);
Pawel A. Dmochowski (Victoria University of Wellington, New Zealand); Jawad Mirza (Victoria University of Wellington, New Zealand)
pp. 4846-4851

17:18 Receive Antenna Shift Keying
Dinh-Thuy Phan-Huy (Orange-France Telecom, France); Maryline Hélard (INSA Rennes & IETR Institute of Electronics and Telecommunications of Rennes, France)
pp. 4852-4856

17:39 Successive Zero-forcing DPC with Sum Power Constraint: Low-complexity Optimal Designs
Le-Nam Tran (University of Oulu & Centre for Wireless Communications, Finland);
Markku Juntti (University of Oulu, Finland); Mats Bengtsson (KTH Royal Institute of Technology, Sweden); Björn Ottersten (KTH Royal Institute of Technology, Sweden)
pp. 4857-4861

WC33: Estimation and Detection

Chair: Klaus Witrisal (Graz University of Technology, Austria)

16:15 Iterative Compensated MMSE Channel Estimation in LTE Systems
Yang Liu (SEQUANS Communications, France); Serdar Sezginer (Sequans, France)
pp. 4862-4866

16:36 Repeated Preamble Based Carrier Frequency Offset Estimation in the presence of I/Q Imbalance
Rina Kume (Osaka Prefecture University, Japan); Hai Lin (Osaka Prefecture University, Japan); Katsumi Yamashita (Osaka Prefecture University, Japan)
pp. 4867-4871

16:57 Shadow Fading Correlations with Compressive Sensing: Prediction accuracy
Alexandros Palaios (RWTH Aachen University, Germany); Petri Mähönen (RWTH Aachen University, Germany); Janne Riihijärvi (RWTH Aachen University, Germany)
pp. 4872-4877
**17:18 Joint Time-varying Channel Estimation with Dual-ICI Cancellation in OFDM Systems**
Qilin Guo (Beijing University of Posts and Telecommunications, P.R. China); Muqing Wu (BUPT, P.R. China); Qinjuan Zhang (Beijing University of Posts and Telecommunications, P.R. China); Xiaofang Hao (Beijing University of Posts and Telecommunications, P.R. China)
pp. 4878-4882

**17:39 Toward Cell Outage Detection with Composite Hypothesis Testing**
Qi Liao (Fraunhofer Institute for Telecommunications, Heinrich-Hertz-Institute, Germany); Marcin Wiczanowski (Nokia Siemens Networks, Wroclaw, Poland); Slawomir Stańczak (Fraunhofer Heinrich Hertz Institute, Germany)
pp. 4883-4887
## ICC'12 WN: IEEE ICC 2012 - Wireless Networks Symposium - Program

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| 8:00 - 9:45|                                                                                   | WN07: Femtocell Networks I  
WN08: Wireless Relay Networks I                                                          | WN13: Resource Allocation I  
WN14: Vehicular & Mobile Ad Hoc Networks  
WN15: Heterogeneous Wireless Networks |
| 9:45 - 10:45|                                                                                   |                                                                                   |                                                                                   |
| 10:45 - 12:30| WN01: LTE/WiMAX Networks  
WN02: Wireless Sensor Network Design                                                   |                                                                                   |                                                                                   |
| 12:30 - 14:00|                                                                                   |                                                                                   |                                                                                   |
| 14:00 - 15:45| WN03: 802.11 Wireless Networks  
WN04: Multicast & Broadcast in Wireless Networks                              | WN-P1: Wireless Networks Posters I  
WN09: Femtocell Networks II  
WN10: Wireless Relay Networks II                                      | WN16: Resource Allocation II  
WN17: Opportunistic Wireless Networking  
WN18: Mobile Wireless Networks |
| 15:45 - 16:15|                                                                                   |                                                                                   |                                                                                   |
| 16:15 - 18:00| WN05: Medium Access Control  
WN06: Cooperative Networking & Network Coding                                            | WN-P2: Wireless Networks Posters II  
WN11: Scheduling in Wireless Networks  
WN20: Modeling and Optimization  
WN21: Routing in Wireless Networks |

### Tuesday, June 12

**10:45 - 12:30**

**WN01: LTE/WiMAX Networks**

Chair: Nei Kato (Tohoku University, Japan)

**10:45 Truthful Auction for Cooperative Communications with Revenue Maximization**

Dejun Yang (Arizona State University, USA); Xi Fang (Arizona State University, USA); Guoliang Xue (Arizona State University, USA)

pp. 4888-4892
11:06 Improving Channel State Information Feedback for Static Intercell Interference Coordination in LTE  
David González G (Universitat Politècnica de Catalunya, Spain); Mario García-Lozano (Universitat Politècnica de Catalunya, Spain); Silvia Ruiz Boqué (UPC, Spain); Joan Olmos (Universitat Politècnica de Catalunya, Spain)  
pp. 4893-4898

11:27 A Group-based Communication Scheme Based on the Location Information of MTC Devices in Cellular Networks  
Kookjin Lee (University of Maryland College Park, Korea); JaeSheung Shin (ETRI (Electronics and Telecommunications Research Institute), Korea); Yongwoo Cho (Seoul National University, Korea); Kab Seok Ko (KAIST, Korea); Dan Keun Sung (Korea Advanced Institute of Science and Technology, Korea); Heonshik Shin (Seoul National University, Korea)  
pp. 4899-4903

11:48 A Novel CQI-Assisted Sounding Design for TDD LTE-Advanced System  
Baolong Zhou (Shanghai Jiaotong University, Alcatel-Lucent Shanghai Bell & Alcatel-Lucent Shanghai Bell Company Ltd, P.R. China); Lingge Jiang (Shanghai Jiaotong University, P.R. China); Chen He (Shanghai Jiaotong University, P.R. China); Shengjie Zhao (Bell Labs & Alcatel-Lucent, Inc., USA)  
pp. 4904-4908

12:09 Design of an Effective QoS-aware Mapping Scheme Using Persistent Allocation Probing  
Malamati Louta (University of Western Macedonia, Greece); Panagiotis Sarigiannidis (University of Western Macedonia, Greece); Petros Nicopolitis (Aristotle University, Greece); Georgios Papadimitriou (Aristotle University, Greece); Mohammad S. Obaidat (Monmouth University, USA)  
pp. 4909-4913

WN02: Wireless Sensor Network Design

Chair: Walaa Hamouda (Concordia University, Canada)

10:45 A Harmony-Seeking Firefly Swarm to the Periodic Replacement of Damaged Sensors by a Team of Mobile Robots  
Rafael Falcon (Larus Technologies Corporation, Canada); Xu Li (INRIA Lille - Nord Europe, France); Amiya Nayak (SITE, University of Ottawa, Canada); Ivan Stojmenovic (University of Ottawa, Canada)  
pp. 4914-4918

11:06 Quality of Information Maximization in Two-Hop Wireless Networks  
Sucha Supittayapornpong (University of Southern California, USA); Michael J. Neely (University of Southern California, USA)  
pp. 4919-4925

11:27 Stochastic Delay Guarantees in ZigBee Cluster-Tree Networks  
Yu-Kai Huang (Quanta Research Institute, Taiwan); Chin-Fu Kuo (National University of Kaohsiung, Taiwan); Ai-Chun Pang (National Taiwan University, Taiwan); Weihua Zhuang (University of Waterloo, Canada)  
pp. 4926-4930
11:48 A pragmatic value-of-information approach for intruder tracking sensor networks
Damla Turgut (University of Central Florida, USA); Ladislau Bölöni (University of Central Florida, USA)
pp. 4931-4936

12:09 A Receiver Architecture for Pulse-based Electromagnetic Nanonetworks in the Terahertz Band
Raúl Gomez Cid-Fuentes (Universitat Politècnica de Catalunya & Georgia Institute of Technology, Spain); Josep Miquel Jornet (Georgia Institute of Technology & School of Electrical and Computer Engineering, USA); Ian F. Akyildiz (Georgia Institute of Technology, USA); Eduard Alarcón (Universitat Politècnica de Catalunya, Spain)
pp. 4937-4942

14:00 - 15:45

WN03: 802.11 Wireless Networks

Chair: Youssef Iraqi (Khalifa University, UAE)

14:00 Smartphone-based Automatic Place Recognition with Wi-Fi Signals for Location-Aware Services
Igor Bisio (University of Genoa, Italy); Roberto Lan Cian Pan (University of Genoa, Italy); Fabio Lavagetto (University of Genoa, Italy); Mario Marchese (DIST-University of Genoa, Italy); Andrea Sciaronne (University of Genoa, Italy); Cristina Frà (Telecom Italia, Italy); Massimo Valla (Telecom Italia, Italy)
pp. 4943-4948

14:21 Combined Antenna Selection and Beamforming in Cross-Layer Design for Cognitive Networks
Amiotosh Ghosh (Concordia University, Canada); Walaa Hamouda (Concordia University, Canada)
pp. 4949-4953

14:42 Exploiting Burst Transmission and Partial Correlation for Reliable Wake-up Signaling in Radio-On-Demand WLANs
Suhua Tang (ATR Adaptive Communications Research Laboratories, Japan); Hiroyuki Yomo (Kansai University, Japan); Yoshihisa Kondo (ATR Adaptive Communications Research Lab., Japan); Sadao Obana (Advanced Telecommunication Research Institute International, Japan)
pp. 4954-4959

15:03 Smart Scanning for Mobile Devices in WLANs
Sooyong Lee (Korea Advanced Institute of Science and Technology, Korea); Myungchul Kim (KAIST, Korea); Sungwon Kang (KAIST, Korea); Kyunghee Lee (ETRI, Korea); IlGu Jung (Electronics and Telecommunications Research Institute, Korea)
pp. 4960-4964
15:24 A Game Theoretic Approach to Integrate Security with Quality of Service
Zubair Md. Fadullah (Tohoku University, Japan); Athanasios V. Vasilakos (National Technical University of Athens, Greece); Nei Kato (Tohoku University, Japan)
pp. 4965-4969

WN04: Multicast & Broadcast in Wireless Networks

Chair: Damla Turgut (University of Central Florida, USA)

14:00 PMDS: A Probabilistic Misbehavior Detection Scheme in DTN
Zhaoyu Gao (Shanghai Jiaotong University, P.R. China); Haojin Zhu (Shanghai Jiao Tong University, P.R. China); Suguo Du (Shanghai Jiao Tong University, P.R. China); Chengxin Xiao (Shanghai Jiao Tong University, P.R. China); Rongxing Lu (University of Waterloo, Canada)
pp. 4970-4974

14:21 Neighbor Discovery in Peer-to-Peer Wireless Networks with Multi-Channel MPR Capability
Lizhao You (Nanjing University & State Key Laboratory for Novel Software Technology, P.R. China); Xiaojun Zhu (Nanjing University, P.R. China); Guihai Chen (Shanghai Jiao Tong University, P.R. China)
pp. 4975-4979

14:42 Throughput Capacity of VANETs by Exploiting Mobility Diversity
Miao Wang (University of Waterloo, Canada); Hangguan Shan (Zhejiang University, P.R. China); Lin X. Cai (Huawei, USA); Ning Lu (University of Waterloo, Canada); Sherman Shen (University of Waterloo, Canada); Fan Bai (General Motors, USA)
pp. 4980-4984

15:03 A Diffusion-Based Binary Digital Communication System
Ling-San Meng (National Taiwan University, Taiwan); Ping-Cheng Yeh (National Taiwan University, Taiwan); Kwang-Cheng Chen (National Taiwan University, Taiwan); Ian F. Akyildiz (Georgia Institute of Technology, USA)
pp. 4985-4989

15:24 A Shadowing-Aware Density Map for Location Estimation using COB in Non-Uniformly Populated Cellular Systems
Nejla Ghaboosi (University of Sydney, Australia); Abbas Jamalipour (University of Sydney, Australia)
pp. 4990-4994

16:15 - 18:00

WN05: Medium Access Control

Chair: Youssef Iraqi (Khalifa University, UAE)
16:15 Upper Bounds on Expected Hitting Times in Mostly-Covered Delay-Tolerant Networks
Max F Brugger (Oregon State University, USA); Kyle Bradford (Oregon State University, USA); Samina Ehsan (Oregon State University, USA); Bechir Hamdaoui (Oregon State University, USA); Yevgeniy Kovchegov (Oregon State University, USA)  
pp. 4995-4999

16:36 Characterizing Random CSMA Wireless Networks: A Stochastic Geometry Approach
Hesham ElSawy (University of Manitoba, Canada); Ekram Hossain (University of Manitoba, Canada); Sergio Camorlinga (TRLabs, Winnipeg, Canada, and University of Manitoba, Canada)  
pp. 5000-5004

16:57 Radio Admission Control Scheme for High-Speed Railway Communication with MIMO Antennas
Yisheng Zhao (Beijing University of Posts and Telecommunications, P.R. China); Xi Li (Beijing University of Posts and Telecommunications, P.R. China); Hong Ji (Beijing University of Posts and Telecommunications, P.R. China)  
pp. 5005-5009

17:18 Capacity of Interference-limited Three Dimensional CSMA Networks
Tao Yang (University of Sydney, Australia); Guoqiang Mao (The University of Sydney, Australia); Wei Zhang (The University of New South Wales, Australia)  
pp. 5010-5014

Ruoyu Su (Memorial University, Canada); Ramachandran Venkatesan (Memorial University of Newfoundland, Canada); Cheng Li (Memorial University of Newfoundland, Canada)  
pp. 5015-5019

WN06: Cooperative Networking & Network Coding

Chair: Nei Kato (Tohoku University, Japan)

16:15 The Urge to Merge: When Cellular Service Providers Pool Capacity
Sha Hua (Polytechnic Institute of New York University, USA); Pei Liu (Polytechnic Institute of New York University, USA); Shivendra Panwar (Polytechnic Institute of New York University, USA)  
pp. 5020-5025

16:36 Dynamic Cluster Based Price Control and Gateway Management for VANETs
Chengyang Wu (Shanghai Jiaotong University, P.R. China); Shangxing Wang (Shanghai Jiao Tong University, P.R. China); Ben Ding (Shanghai Jiao Tong University, P.R. China); Xinbing Wang (Shanghai Jiaotong University, P.R. China); Mohsen Guizani (QU, USA)  
pp. 5026-5030
16:57 TCP Performance Improvement in Wireless Networks with Cooperative Communications and Network Coding
Yifei Wei (Carleton University, Canada); Mei Song (P.R. China); F. Richard Yu (Carleton University, Canada)
pp. 5031-5035

17:18 A Network Coding Method for Channel Signatures Based Key Distribution
Fangming He (Stevens Institute of Technology, USA); Wei Wang (AT&T Security Research Center, USA); Xingzhong Xu (Stevens Institute of Technology, USA); Lei Zhou (Stevens Institute of Technology, USA); Hong Man (Stevens Institute of Technology, USA)
pp. 5036-5041

17:39 Nonlinear Cooperative Dynamics in Distributed Power Control for Wireless Networks
Jeffrey Mounzer (Stanford University, USA); Nicholas Bambos (Stanford University, USA)
pp. 5042-5047

Wednesday, June 13

08:00 - 09:45

WN07: Femtocell Networks I

Chair: Jelena Mišić (Ryerson University, Canada)

08:00 A robust mechanism for resource allocation with interference mitigation in femtocellular networks
Najah A. Abu Ali (UAEU, UAE)
pp. 5048-5052

08:21 Formulating and Solving the Femtocell Deployment Problem in Two-Tier Heterogeneous Networks
Shih-En Wei (National Taiwan University, Taiwan); Chih-Hua Chang (National Taiwan University, Taiwan); You-En Lin (National Taiwan University, Taiwan); Hung-Yun Hsieh (National Taiwan University, Taiwan); Hsuan-Jung Su (National Taiwan University, Taiwan)
pp. 5053-5058

08:42 A Building Architecture Model for Predicting Femtocell Interference in Next-Generation Networks
Maysam Mirahmadi (The University of Western Ontario, Canada); Abdallah Shami (The University of Western Ontario, Canada); Arafat J. Al-Dweik (Khalifa University, UAE)
pp. 5059-5063
09:03 On the Impact of Heterogeneous Backhauls on Coordinated Multipoint Transmission in Femtocell Networks
Francesco Pantisano (University of Bologna & Centre for Wireless Communications, Finland); Mehdi Benni (Centre of Wireless Communications, University of Oulu, Finland); Walid Saad (University of Miami, USA); Mérouane Debbah (Supelec, France); Matti Latva-aho (UoOulu, Finland)
pp. 5064-5069

09:24 Competition in Femtocell Networks: Strategic Access Policies in the Uplink
Ali Khanafar (University of Illinois at Urbana-Champaign, USA); Walid Saad (University of Miami, USA); Tamer Başar (University of Illinois at Urbana-Champaign, USA); Mérouane Debbah (Supelec, France)
pp. 5070-5074

WN08: Wireless Relay Networks I

Chair: Vojislav B. Mišić (Ryerson University, Canada)

08:00 Cross-layer Relay Selection Criterion for Cooperative-Diversity Networks
Jules Merlin Mouatchou Moualeu (University of KwaZulu-Natal, South Africa); Walaa Hamouda (Concordia University, Canada); HongJun Xu (University of KwaZulu-Natal, South Africa); Fambirai Takawira (University of KwaZulu-Natal, South Africa)
pp. 5075-5085

08:21 On the optimal number of hops in relay networks
Sanghoon Kim (University of Michigan, USA); Wayne Stark (University of Michigan, USA)
pp. 5080-5085

08:42 Joint Optimal Relay Selection and Power Allocation in Multicast Cooperative Networks
Mohammad Faisal Uddin (Concordia University, Canada); Chadi Assi (Concordia University, Canada); Ali Ghayeb (Concordia University, Canada)
pp. 5086-5091

09:03 Relay Selection and Resource Allocation for Multi-user Cooperative LTE-A Uplink
Md. Shamsul Alam (University of Waterloo, Canada); Jon Mark (University of Waterloo, Canada); Sherman Shen (University of Waterloo, Canada)
pp. 5092-5096

09:24 Capacity Maximization in Cooperative CRNs: Joint Relay Assignment and Channel Allocation
Peng Li (The University of Aizu, Japan); Song Guo (The University of Aizu, Japan); Weihua Zhuang (University of Waterloo, Canada); Baoliu Ye (Nanjing University, P.R. China)
pp. 5097-5101
14:00 - 15:45

WN-P1: Wireless Networks Posters I

Chair: Nidal Nasser (Alfaisal University, Saudi Arabia)

*Aggregation of Variables in Load Models for Interference-Coupled Cellular Data Networks*
Albrecht J Fehske (Technische Universität Dresden, Germany); Gerhard P. Fettweis (Technische Universität Dresden, Germany)
pp. 5102-5107

*Throughput and Latency of Finite-Buffer Wireless Erasure Networks with Backpressure Routing*
Nima Torabkhani (Georgia Institute of Technology, USA); Faramarz Fekri (Georgia Institute of Technology, USA)
pp. 5108-5112

*Sum Rate Maximization in Fading Wireless Networks Using Stochastic Geometry*
Yi Shi (University of Victoria, Canada); Xiaodai Dong (University of Victoria, Canada); Khaled Ben Letaief (Hong Kong University of Science & Technology, Hong Kong)
pp. 5113-5117

*Scalable Facility Placement for Communication Cost Reduction in Wireless Networks*
Konstantinos Oikonomou (Ionian University, Greece); Giorgos Tsioutsios (Ionion University, Greece); Sonia Aïssa (INRS, University of Quebec, Canada)
pp. 5118-5123

*Relevance-based Verification of VANET Safety Messages*
Subir Biswas (University of Manitoba, Canada); Jelena Mišić (Ryerson University, Canada)
pp. 5124-5128

WN09: Femtocell Networks II

Chair: Vojislav B. Mišić (Ryerson University, Canada)

*14:00 A Self-Organized Tracking Area List Mechanism for Large-Scale Networks of Femtocells*
Jaime Ferragut (Centre Tecnològic de Telecomunicacions de Catalunya (CTTC), Spain); Josep Mangues-Bafalluy (Centre Tecnològic de Telecomunicacions de Catalunya (CTTC), Spain)
pp. 5129-5134

*14:21 Joint Load Balancing and Admission Control in OFDMA-Based Femtocell Networks*
Long Bao Le (INRS, University of Quebec, Canada); Hoang Thai Dinh (Nanyang Technological University, Singapore); Dusit Niyato (Nanyang Technological University, Singapore); Ekram Hossain (University of Manitoba, Canada); Dong In Kim (Sungkyunkwan University, Korea)
pp. 5135-5139
14:42 Multiple Operator and Multiple Femtocell Networks: Distributed Stable Matching
Siavash Bayat (University of Sydney, Australia); Raymond Hall Yip Louie (University of Sydney, Australia); Zhu Han (University of Houston, USA); Yonghui Li (University of Sydney, Australia); Branka Vucetic (The University of Sydney, Australia)
pp. 5140-5145

15:03 QoS/QoE Predictions-based Admission Control for Femto Communications
Tarik Taleb (NEC Europe Ltd., Germany); Adlen Ksentini (University of Rennes 1 / IRISA Lab, France)
pp. 5146-5150

15:24 Q-FCRA: QoS-based OFDMA Femtocell Resource Allocation Algorithm
Abbas Antoun Hatoum (UPMC, France); Rami Langar (UPMC - University of Paris 6, France); Nadjib Altsaad (University of Paris-Est Creteil - UPEC, France); Guy Pujolle (University Pierre et Marie Curie - Paris 6, France)
pp. 5151-5156

WN10: Wireless Relay Networks II

Chair: Christos Masouros (University College London, United Kingdom)

14:00 Broadcasting in Multihop Wireless Networks: the Case for Multi-Source Network Coding
Thomas Kunz (Carleton University, Canada); Kashif Mahmood (Carleton University, Canada); Li Li (Communication Research Centre of Canada, Canada)
pp. 5157-5162

14:21 Cooperation Stimulation in Cooperative Communications: An Indirect Reciprocity Game
Yang Gao (University of Maryland College Park, USA); Yan Chen (University of Maryland, College Park, USA); K. J. Ray Liu (University of Maryland, USA)
pp. 5163-5167

14:42 Adaptive Video Streaming with Inter-Vehicle Relay For Highway VANET Scenario
Min Xing (University of Victoria, Canada); Lin Cai (University of Victoria, Canada)
pp. 5168-5172

15:03 Delivery Ratio in Two-Hop Relay MANETs with Limited Message Lifetime and Redundancy
Jiajia Liu (Tohoku University, Japan); Xiaohong Jiang (Future University Hakodate, Japan); Hiroki Nishiyama (Tohoku University, Japan); Nei Kato (Tohoku University, Japan)
pp. 5173-5177

15:24 Using Game Theory and Bayesian Networks to Optimize Cooperation in Ad Hoc Wireless Networks
Giorgio Quer (University of California San Diego, USA); Federico Librino (University of Padova, Italy); Luca Canzian (University of Padova, Italy); Leonardo Badia (Università degli Studi di Padova, Italy); Michele Zorzi (University of Padova, Italy)
pp. 5178-5184
16:15 - 18:00

**WN-P2: Wireless Networks Posters II**

Chair: Wessam Ajib (Université du Québec à Montréal, Canada)

*An Adaptive Handover Trigger Scheme for Wireless Communications on High Speed Rail*
Juan Li (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Lin Tian (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Yiqing Zhou (Chinese Academy of Science, P.R. China); Jinglin Shi (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China)
pp. 5185-5189

*Maximizing Effective Capacity Over Wireless Links Under Average and Peak Power Constraints*
Wenchi Cheng (Xidian University, P.R. China); Xi Zhang (Texas A&M University, ECE Department, USA); Hailin Zhang (Xidian University, P.R. China)
pp. 5190-5194

*3D Compressive Sensing for Nodes Localization in WNs Based On RSS*
Mohamed Amine Abid (Universite Sherbrooke, Canada); Soumaya Cherkaoui (Université de Sherbrooke, Canada)
pp. 5195-5199

*Anomaly Detection in Network Traffic Using Jensen-Shannon Divergence*
Osman Salem (University of Paris Descartes, France); Farid Naït-Abdesselam (University of Paris Descartes, France); Ahmed Mehaoua (University of Paris Descartes, France)
pp. 5200-5204

*Aggregation of DTN Bundles for Channel Asymmetric Space Communications*
Zhiguo Wei (Soochow University, P.R. China); Ruhai Wang (Lamar University, USA); Qinyu Zhang (Shenzhen Graduate School, Harbin Institute of Technology, P.R. China); Jia Hou (Soochow University, P.R. China)
pp. 5205-5209

**WN11: Scheduling in Wireless Networks**

Chair: Nei Kato (Tohoku University, Japan)

*16:15 Mitigating Power Law Delays: the Use of Polynomial Backoff in IEEE 802.11 DCF*
Suzhi Bi (The Chinese University of Hong Kong, Hong Kong); Ying Jun (Angela) Zhang (The Chinese University of Hong Kong, Hong Kong)
pp. 5210-5215

*16:36 On-off Voice Capacity of Single-hop Cognitive Radio Networks with Distributed Channel Access Control*
Subodha Gunawardena (University of Waterloo, Canada); Weihua Zhuang (University of Waterloo, Canada)
pp. 5216-5220
16:57 STDMA-based Scheduling Algorithm for Concurrent Transmissions in Directional Millimeter Wave Networks
Jian Qiao (University of Waterloo, Canada); Lin X. Cai (Huawei, USA); Sherman Shen (University of Waterloo, Canada); Jon Mark (University of Waterloo, Canada)
pp. 5221-5225

17:18 Transmit mode selection schemes for distributed coordinated transmission of data traffic
Christian M. Mueller (University of Stuttgart, Germany)
pp. 5226-5232

17:39 QoE-aware Congestion Control Algorithm for Conversational Services
Habachi Oussama (LIA, France); Yusu Hu (Google, USA); Mihaela van der Schaar (University of California, Los Angeles (UCLA), USA); Yezekael Hayel (LIA, University of Avignon, France); Feng Wu (Microsoft Research Asia, P.R. China)
pp. 5233-5237

WN12: Energy Efficiency

Chair: Vojislav B. Mišić (Ryerson University, Canada)

16:15 Energy-Efficient Coordinated Sleep of LTE Cells
Kassem Abdallah (Scuola Superiore Sant’Anna & TeCIP Institute, Italy); Isabella Cerutti (Scuola Superiore Sant’Anna, Italy); Piero Castoldi (Scuola Superiore Sant’Anna, Italy)
pp. 5238-5242

16:36 Optimized Energy-Aware Multicasting over Wireless Cellular Networks with Multihop Cooperation
Lina Al-Kanj (American University of Beirut, Lebanon); Zaher Dawy (American University of Beirut, Lebanon)
pp. 5243-5248

16:57 An Energy Efficient Antennas Allocation Method for MIMO Multicast Communications using Network Coding
Francesco Chiti (Università degli Studi di Firenze, Italy); Romano Fantacci (University of Florence, Italy); Laura Pierucci (University of Florence, Italy); Niccolò Privitera (University of Florence, Italy)
pp. 5249-5253

17:18 Analysis of the Energy Consumption for the Clustered Topology Constructed by Combining RNG and GCA
Chih-Cheng Tseng (National Ilan University, Taiwan); Li-Hsun Chang (National Ilan University, Taiwan); Hwang-Cheng Wang (National Ilan University, Taiwan); Fang-Chang Kuo (National Ilan University, Taiwan); Kuo-Chang Ting (Minghsin University of Science and Technology, Hsinchu, Taiwan); Der-Jiunn Deng (National Changhua University of Education, Taiwan)
pp. 5254-5258

17:39 Energy Saving through Cooperation using Game Theory-based Trading Model
Alberto Nascimento (University Madeira, Portugal); Ayman Radwan (Instituto de Telecomunicações & Queen’s University, Portugal); Jonathan Rodriguez (Instituto de Telecomunicações, Portugal)
Thursday, June 14

08:00 - 09:45

WN13: Resource Allocation I

Chair: Youssef Iraqi (Khalifa University, UAE)

08:00 Joint Power Allocation for Multi-Cell Distributed Antenna Systems with Large-Scale CSIT
Yanmin Wang (Tsinghua University, P.R. China); Wei Feng (Tsinghua University, P.R. China); Yifei Zhao (Tsinghua University, P.R. China); Shidong Zhou (Tsinghua University, P.R. China); Jing Wang (EE. Tsinghua University, P.R. China)
pp. 5264-5269

08:21 A Novel Convex Power Adaptation Strategy for Multicast Communications using Random Linear Network Coding Schemes
Andrea Tassi (University of Florence, Italy); Dania Marabissi (University of Florence, Italy); Romano Fantacci (University of Florence, Italy); David Di Lorenzo (University of Florence, Italy); Mirko Maischberger (University of Florence, Italy)
pp. 5270-5274

08:42 Standards-compliant LTE and LTE-A Uplink Power Control
Honghai Zhang (Google, USA); Narayan Prasad (NEC Labs America, Princeton, USA); Sampath Rangarajan (NEC Labs America, USA); Sherif Mekhail (NEC Telecom MODUS, United Kingdom); Said Said (NEC Telecom MODUS, United Kingdom); Rob Arnott (NEC Telecom MODUS, United Kingdom)
pp. 5275-5279

09:03 Towards Optimal Rate Allocation in Multi-hop Wireless Networks with Delay Constraints: A Double-Price Approach
Fan Qiu (Vanderbilt University, USA); Jia Bai (Vanderbilt University, USA); Yuan Xue (Vanderbilt University, USA)
pp. 5280-5285

09:24 QoS Driven Power Allocation Over Full-Duplex Wireless Links
Wenchi Cheng (Xidian University, P.R. China); Xi Zhang (Texas A&M University, ECE Department, USA); Hailin Zhang (Xidian University, P.R. China)
pp. 5286-5290

WN14: Vehicular & Mobile Ad Hoc Networks

Chair: Subir Biswas (University of Manitoba, Canada)

08:00 Vehicular Movement Patterns: A Prediction-Based Route Discovery Technique for VANETs
Amar Farouk Merah (University of Ottawa, Canada); Samer Samarah (University of Ottawa, Canada); Azzedine Boukerche (University of Ottawa, Canada)
08:21 Highway Multihop Broadcast Protocols for Vehicular Networks
Mohsin Barradi (University of Montreal, Canada); Abdelhakim Hafid (University of Montreal, Canada); Sultan Aljaldali (Taif University, Saudi Arabia)
pp. 5291-5295

08:42 DREAM: IEEE 802.11p/WAVE Extended Access Mode in Drive-Thru Vehicular Scenarios
Claudia Campolo (University "Mediterranea" of Reggio Calabria, Italy); Antonella Molinaro (University "Mediterranea" of Reggio Calabria, Italy)
pp. 5301-5305

09:03 Vehicular Networking for Intelligent and Autonomous Traffic Management
Sanket Gupte (University of Maryland, Baltimore County, USA); Mohamed Younis (University of Maryland Baltimore County, USA)
pp. 5306-5310

09:24 GeRA: Generic Rate Adaptation for Vehicular Networks
Ce Liu (University of Pittsburgh, USA); Siyuan Liu (Carnegie Mellon University, USA); Mounir Hamdi (HKUST, ?)
pp. 5311-5315

WN15: Heterogeneous Wireless Networks

Chair: Tiffany Jing Li (Lehigh University, USA)

08:00 A Self-Organizing Cooperative Heterogeneous Cellular Access Network for Energy Conservation
Md. Farhad Hossain (The University of Sydney, Australia); Kumudu S Munasinghe (University of Sydney, Australia); Abbas Jamalpour (University of Sydney, Australia)
pp. 5316-5320

08:21 Co-channel Interference Modelling Between RATs in Heterogeneous Wireless Networks
Jason Ernst (University of Guelph, Canada); Nidal Nasser (Alfaisal University, Saudi Arabia); Joel J. P. C. Rodrigues (Instituto de Telecomunicações, University of Beira Interior, Portugal)
pp. 5321-5325

08:42 Pricing-Based Distributed Mobile Association for Heterogeneous Networks With Cooperative Relays
Qian (Clara) Li (Intel Corporation, P.R. China); Yiran Xu (Utah State University, USA); Rose Qingyang Hu (Utah State University, USA); Geng Wu (Intel Corporation, USA)
pp. 5326-5331

09:03 Distributed Heterogeneous Traffic Delivery over Heterogeneous Wireless Networks
Ying Li (Samsung Telecommunications America, USA); Zhuyue Pi (Samsung Telecommunications America, USA); Lingjia Liu (University of Kansas, USA)
pp. 5332-5337
**09:24 QoS Assurance for Video Service over Heterogeneous Mobile Hotspots**
Wei Song (University of New Brunswick, Canada); Guang Yang (University of New Brunswick, Canada); Yu Cheng (Illinois Institute of Technology, USA)
pp. 5338-5342

**14:00 - 15:45**

**WN16: Resource Allocation II**

Chair: Nidal Nasser (Alfaisal University, Saudi Arabia)

**14:00 Resource Allocation for Minimal Downlink Delay in Two-way OFDM Relaying with Network Coding**
Ke Xiong (Tsinghua University, P.R. China); Pingyi Fan (Tsinghua University, P.R. China); Khaled Ben Letaief (Hong Kong University of Science & Technology, Hong Kong); Su Yi (NEC Labs, P.R. China); Ming Lei (NEC Laboratories China, P.R. China)
pp. 5343-5347

**14:21 Self-Organized Resource Allocation in LTE Systems with Weighted Proportional Fairness**
I-Hong Hou (Texas A&M University, USA); Chung Shue Chen (Alcatel-Lucent Bell Labs & Laboratory of Information, Network and Communication Sciences (LINCS), France)
pp. 5348-5353

**14:42 A Stable Matching Game for Joint Uplink/Downlink Resource Allocation in OFDMA Wireless Networks**
Ahmad El-Hajj (American University of Beirut, Lebanon); Zaher Dawy (American University of Beirut, Lebanon); Walid Saad (University of Miami, USA)
pp. 5354-5359

**15:03 Bit Allocation for Multi-source Multi-path P2P Video Streaming in VoD Systems over Wireless Mesh Networks**
Nguyen-Son Vo (Huazhong University of Science and Technology, P.R. China); Trung Q. Duong (Blekinge Institute of Technology, Sweden); Lei Shu (Osaka University, Japan)
pp. 5360-5364

**WN17: Opportunistic Wireless Networking**

Chair: Vojislav B. Mišić (Ryerson University, Canada)

**14:00 Opportunistic Scheduling in a Bidirectional Communication Link with Relaying**
Hadi Meshgi (McMaster University, Canada); Dongmei Zhao (McMaster University, Canada)
pp. 5365-5370

**14:21 Murco: An Opportunistic Network Coding Framework in Multi-radio Networks**
Yang Chi (University of Cincinnati, USA); Dharma P Agrawal (University of Cincinnati, USA)
14:42 Service Time Estimation in Multiple-Rate IEEE 802.11 WLANs with and without Opportunistic Cooperative Mechanism under unsaturated load conditions
Kumaran Vijayasankar (Texas Instruments, USA); Lakshmi Narasimhan Kannan (Amazon dot com, USA); Marco Tacca (University of Texas at Dallas, USA); Andrea Fumagalli (UTD, USA)
pp. 5371-5375

15:03 Local Cooperative Relay for Opportunistic Data Forwarding in Mobile Ad-hoc Networks
Cheng Li (Memorial University of Newfoundland, Canada); Zehua Wang (Memorial University, Canada); Yuanzhu Chen (Memorial University of Newfoundland, Canada)
pp. 5381-5386

15:24 A Privacy-preserving Proximity Friend Notification Scheme with Opportunistic Networking
Chris Carver (University of Ontario Institute of Technology, Canada); Xiaodong Lin (University of Ontario Institute of Technology, Canada)
pp. 5387-5392

WN18: Mobile Wireless Networks

Chair: Youssef Iraqi (Khalifa University, UAE)

14:00 TCP-Mobile Edge: Accelerating Delivery in Mobile Networks
Tao Han (New Jersey Institute of Tech, USA); Nirwan Ansari (NJIT, USA); Mingquan Wu (Huawei Technologies, USA); Heather Yu (Huawei Technologies, USA)
pp. 5393-5397

14:21 Towards Supporting Highly Mobile Nodes in Decentralized Mobile Operator Networks
Tarik Taleb (NEC Europe Ltd., Germany); Konstantinos Samdanis (NEC Europe Ltd., Germany); Fethi Filali (QMIC, Qatar)
pp. 5398-5402

14:42 Supporting Monitoring Applications with Mobile Wireless Sensor Networks: the eN Route Forwarding Approach
Lorenzo Bartolozzi (Università degli Studi di Firenze, Italy); Francesco Chiti (Università degli Studi di Firenze, Italy); Romano Fantacci (University of Florence, Italy); Tommaso Pecorella (Università di Firenze & CNIT, Italy); Francesco Sgrilli (University of Florence, Italy)
pp. 5403-5407

15:03 MR-Chord: A scheme for Enhancing Chord Lookup Accuracy and Performance in Mobile P2P Network
Jian-Ming Chang (National Dong-Hwa University, Taiwan); Yi-Hsuan Lin (National Ilan University, Taiwan); Isaac Woungang (Ryerson University, Canada); Han-Chieh Chao (National Ilan University, Taiwan)
pp. 5408-5412
WN19: Performance Evaluation for Wireless Networks

Chair: Nidal Nasser (Alfaisal University, Saudi Arabia)

16:15 The Influence of Meteorological Variables on the Performance of Outdoor Wireless Local Area Networks
Diana Bri (Universidad Politecnica de Valencia, Spain); Francisco Ramos (Universidad Politecnica de Valencia, Spain); Jaime Lloret (Universidad Politécnica de Valencia, Spain); Miguel Garcia (Universidad Politécnica de Valencia, Spain)
pp. 5418-5422

16:36 Performance evaluation of selection schemes for offloading traffic to IEEE 802.11 hotspots
Sven Wiethölter (Technical University of Berlin, Germany); Marc Emmelmann (Fraunhofer FOKUS, Germany); Robert Andersson (Technical University of Berlin, Germany); Adam M Wolisz (Technical University of Berlin, Germany)
pp. 5423-5433

16:57 Performance Evaluation of Multihomed NEMO
Md Shohrab Hossain (University of Oklahoma, USA); Mohammed Atiquzzaman (University of Oklahoma, USA); William D. Ivancic (NASA Glenn Research Center, USA)
pp. 5429-5433

17:18 On the Performance of Redundant Traffic Elimination in WLANs
Emir Halebovic (University of Calgary, Canada); Majid Ghaderi (University of Calgary, Canada); Carey Williamson (University of Calgary, Canada)
pp. 5434-5439

17:39 History Based Predictive Routing in Multi-lane Delay Tolerable VANETs
Zhengni Huang (Shanghai Jiao Tong University & Not Applicable, P.R. China); Shangxing Wang (Shanghai Jiao Tong University, P.R. China); Ben Ding (Shanghai Jiao Tong University, P.R. China); Xinbing Wang (Shanghai Jiaotong University, P.R. China); Mohsen Guizani (QU, USA)
pp. 5440-5444

WN20: Modeling and Optimization

Chair: Abd-Elhamid M. Taha (Alfaisal University, Saudi Arabia)
16:15 Particle Swarm Optimization Based Approach to Solve the Multiple Sink Placement Problem in WSNs
Haidar Safa (American University of Beirut, Lebanon); Wassim El-Hajj (American University of Beirut, Lebanon); Hanan Zoubian (American University of Beirut, Lebanon)
pp. 5445-5450

16:36 Performance Optimization in Single Channel Directional Multi-Interface IEEE 802.11s EDCA using Beam Prioritization
Sandip Chakraborty (Indian Institute of Technology Guwahati, India); Sidharth Sharma (Department of CSE, IIT Patna, India); Sukumar Nandi (Indian Institute of Technology, Guwahati, India)
pp. 5451-5456

16:57 Modeling Random CSMA Wireless Networks in General Fading Environments
Hesham El-Sawy (University of Manitoba, Canada); Ekram Hossain (University of Manitoba, Canada)
pp. 5457-5461

17:18 MAC Performance Modeling of IEEE 802.15.6-based WBANs over Rician-faded channels
Saeed Rashwand (University of Manitoba, Canada); Jelena Mišić (Ryerson University, Canada); Vojislav B. Mišić (Ryerson University, Canada)
pp. 5462-5467

17:39 Modeling and Analysis of an Energy-efficient Sleep-mode Operation in IEEE 802.16e System
Eunmi Chu (Korea Advanced Institute of Science and Technology, Korea); Byoung Hoon Jung (Korea Advanced Institute of Science and Technology, Korea); Dan Keun Sung (Korea Advanced Institute of Science and Technology, Korea); Yunju Park (KSA of KAIST, Korea)
pp. 5468-5472

WN21: Routing in Wireless Networks

Chair: Salil Kanhere (The University of New South Wales, Australia)

16:15 A Geographic Routing Oriented Sleep Scheduling Algorithm in Duty-Cycled Sensor Networks
Chunsheng Zhu (St. Francis Xavier University, Canada); Laurence T. Yang (St. Francis Xavier University, Canada); Lei Shu (Osaka University, Japan); Joel J. P. C. Rodrigues (Instituto de Telecomunicações, University of Beira Interior, Portugal); Takahiro Hara (Osaka University, Japan)
pp. 5473-5477

16:36 Localized Load-aware Geographic Routing in Wireless Ad Hoc Networks
Xu Li (University of Waterloo, Canada); Nathalie Mitton (Inria Lille - Nord Europe, France); Amiya Nayak (SITE, University of Ottawa, Canada); Ivan Stojmenovic (University of Ottawa, Canada)
pp. 5478-5482
16:57 Joint Routing, Scheduling and Power Allocation in OFDMA Wireless Ad Hoc Networks
Rozita Rashtchi (Carleton University, Canada); Ramy Gohary (Carleton University, Canada); Halim Yanikomeroglu (Carleton University, Canada)
pp. 5483-5487

17:18 MQBM: an autonomic QoS multicast routing protocol for mobile ad hoc networks
Salim Bitam (Mohamed Khider University of Biskra, Algeria); Abdelhamid Mellouk (UPEC, University Paris-Est Creteil Val de Marne, France)
pp. 5488-5492
**ICC'12 WS - AMN: Workshop on Advances in Mobile Networking - Program**

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<td>09:45 - 10:30</td>
<td><strong>S1: Multicast Services</strong></td>
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<tr>
<td>11:00 - 11:40</td>
<td><strong>S2: Optimizing virtual resource utilization</strong></td>
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**Monday, June 11**

**09:00 - 09:45**

**K1: Keynote presentation**

Chair: Hendrik Berndt (DOCOMO Communications Laboratories Europe, Germany)

**09:45 - 10:30**

**S1: Multicast Services**

Multicast Services
Chair: Hendrik Berndt (DOCOMO Communications Laboratories Europe, Germany)

- **09:45** *A Layered-based Resource Allocation Algorithm for Multicast Services in OFDMA System*
  Lei Chen (Beijing University of Posts and Telecommunications, P.R. China)
  pp. 5493-5497

- **10:07** *Resource Allocation with Coding Schemes for Multicast Services in Single Frequency Networks*
  Lei Chen (Beijing University of Posts and Telecommunications, P.R. China)
  pp. 5498-5502

**11:00 - 11:40**

**S2: Optimizing virtual resource utilization**

Optimizing virtual resource utilization
Chair: Hendrik Berndt (DOCOMO Communications Laboratories Europe, Germany)

- **11:00** *Use Cases and Derived Requirements for a Reconfigurable Mobile Network*
  Sandra Herker (DoCoMo Euro Labs, Germany); Ishan Vaishnavi (Huawei Research Centre, Germany); Aishiq Khan (NTT DOCOMO, Inc. & DOCOMO Communications
11:20 A Novel Indoor Localization Method based on Virtual AP Estimation
Yijun Mo (Huazhong University of Science and Technology, P.R. China); Yifeng Cai (Huazhong University of Science and Technology, P.R. China); Bang Wang (Huazhong University of Science and Technology, P.R. China)
pp. 5508-5512

11:40 - 13:00

P1: Panel

Chair: Hendrik Berndt (DOCOMO Communications Laboratories Europe, Germany)
**ICC'12 WS - CloudNetsDataCenters: Workshop on Clouds, Networks and Data Centers - Program**

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<td>12:30 - 14:00</td>
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<td>14:00 - 14:30</td>
<td><strong>Key Note Talk - Inter - Data Center User - Data Center</strong></td>
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<td>14:30 - 16:30</td>
<td><strong>Inter - Data Center / User - Data Center</strong></td>
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<tr>
<td>16:30 - 18:00</td>
<td><strong>Panel on Clouds, Networks and Data Centers</strong></td>
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**Monday, June 11**

**08:30 - 08:45**

**Workshop Opening**

*Room: M5*
*Chair: Josef Urban (Nokia Siemens Networks, Germany)*

**08:45 - 09:30**

**Key Note Talk - Intra Data Center**

*Speaker: Renaud Larsen (Juniper)*
*Room: M5*
*Chair: Holger Macho (IBM, Germany)*

**09:30 - 12:30**

**Intra - Data Center Session**

*Room: M5*
*Chair: Holger Macho (IBM, Germany)*

**09:30 Scaling-Up Network Servers in N:1 Redundant Systems by Using I/O Virtualization**

Jun Suzuki (NEC Corporation, Japan); Takayuki Miyagaki (NEC Corporation, Japan); Madoka Komatsubara (NEC Corporation, Japan); Kazuteru Ohmori (NEC Corporation, Japan); Hiroshi Baba (NEC Corporation, Japan); Kazuhiro Egashira (NEC Corporation, Japan); Hiroshi Shimamoto (NEC Corporation, Japan); Masaki Tachibana (NEC Corporation, Japan); Katsuyuki Akizuki (NEC Communication Systems, Japan); Satoshi Tsuchiya (NEC Communication Systems, Japan); Youichi
Hidaka (NEC Corporation, Japan); Junichi Higuchi (NEC Corporation, Japan); Takashi Yoshikawa (NEC Corporation, Japan)
pp. N/A

10:00 1st coffee break

10:30 **Optimal Media Storage in Federated Cloud Environments**
Xiao Su (San Jose State University, USA); Brandon Schlinker (San Jose State University, USA); Yi Shang (University of Missouri, USA); Zhenzhen Ye (IBM, USA)
pp. 5518-5522

11:00 **Quantifying the Performance Impact of Overbooking Virtualized Resources**
David Hoeflin (AT&T Labs, USA); Paul Reeser (AT&T Labs, USA)
pp. 5523-5527

11:30 **A Fault-Tolerant Multicast Routing for Fat-Tree Based Data Center Networks**
Ching-Te Chiu (National Tsing Hua University, Taiwan)
pp. N/A

12:00 **On the Usability of OpenFlow in Data Center Environments**
Rastin Pries (University of Wuerzburg, Germany); Michael Jarschel (University of Wuerzburg, Germany); Sebastian Goll (University of Wuerzburg, Germany)
pp. 5533-5537

12:30 - 14:00

Lunch

14:00 - 14:30

**Key Note Talk - Inter - Data Center User - Data Center**

Speaker: xy
Room: M5
Chair: Wolfgang Kellner (Technische Universität München, Germany)

14:30 - 16:30

**Inter - Data Center / User - Data Center**

Room: M5
Chair: Wolfgang Kellner (Technische Universität München, Germany)

14:30 **Optimal Routing and Bandwidth Allocation for Multiple Inter-Datacenter Bulk Data Transfers**
Yiwen Wang (Beijing University of Posts and Telecommunications, P.R. China); Sen Su (Beijing University of Posts & Telecommunications (BUPT), P.R. China); Sujuan Jiang (Beijing University of Posts and Telecommunications, P.R. China); Zhongbao Zhang (Beijing University of Posts and Telecommunications, P.R. China); Kai Shuang (Beijing University of Posts and Telecommunications, P.R. China)
15:00 *libNetVirt: the network virtualization library*
Daniel Turull (KTH Royal Institute of Technology, Sweden); Markus Hidell (KTH Royal Institute of Technology, Sweden); Peter Sjödin (KTH, Sweden)
pp. 5543-5547

15:30 2nd coffee break

16:00 *Assessing Network Path Vulnerabilities for Secure Cloud Computing*
Sachin Shetty (Tennessee State University, USA); Nicholas Luna (Tennessee State University, USA); Kaiqi Xiong (Rochester Institute of Technology, USA)
pp. 5548-5552

16:30 - 18:00

Panel on Clouds, Networks and Data Centers

Panelists: Wolfgang Kellerer (NTT Docomo), Leonidas Kontothanassis (Google), Holger Macho (IBM), Prof. Phuoc Tran-Gia (University of Wuerzburg)
Room: M5
Chair: Glen Hunt (Current Analysis, USA)
ICC’12 WS - CoCoNet 4: Workshop on Cooperative and Cognitive Mobile Networks - Program

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<td>09:30 - 12:00</td>
<td><strong>S2: Cooperative networking</strong></td>
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<td>14:00 - 15:30</td>
<td><strong>S3: Cognitive radio</strong></td>
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<td>16:00 - 18:00</td>
<td><strong>S4: Network coding</strong></td>
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### Monday, June 11

#### 08:30 - 09:30

**S1: Keynote**

Room: M11  
Chair: Frank H.P. Fitzek (Aalborg University, Denmark)

#### 09:30 - 12:00

**S2: Cooperative networking**

Room: M11  
Chair: Frank H.P. Fitzek (Aalborg University, Denmark)

**10:00 Delay-optimal Fair Scheduling and Resource Allocation in Multiuser Wireless Relay Networks**  
Mohammad Moghaddari (University of Manitoba, Canada); Ekram Hossain (University of Manitoba, Canada); Long Bao Le (INRS, University of Quebec, Canada)  
pp. 5553-5557

**10:15 Prolonged Network Life-time in Self-Organizing Peer-to-Peer Networks with E-RSSI Clustering**  
Mehdi Tavakoli (TU Ilmenau, Germany); Bilal Zafar (Ilmenau University of Technology, Germany); Martin Haardt (Ilmenau University of Technology, Germany)  
pp. 5558-5562

**10:30 Mode Selection for Device-to-Device (D2D) Communication under LTE-Advanced Networks**  
Ziyang Liu (Beijing University of Post and Telecommunication, P.R. China); Tao Peng (Beijing University of Posts & Telecommunications, P.R. China); Shang Xiang (Beijing University of Posts and Telecommunications, P.R. China); Wenbo Wang (Beijing University of Posts and Telecommunications, P.R. China)  
pp. 5563-5567
10:45 Airborne Trace Prediction based Relay Selection for Cooperative Communications in Aircraft Approach
Hua Li (Shanghai Jiao Tong University, P.R. China); Cunqing Hua (Shanghai Jiao Tong University, P.R. China); Cailian Chen (Shanghai Jiao Tong University, P.R. China); Xiping Guan (Shanghai Jiao Tong University, P.R. China)
pp. 5568-5572

11:00 Queue-aware Power Allocation for Multi-way Relay Networks
Miao Wang (Beijing Jiaotong University, P.R. China); Fanggang Wang (Beijing Jiaotong University, P.R. China); Zhangdui Zhong (Beijing Jiaotong University, P.R. China)
pp. 5573-5577

11:15 Opportunistic Relay Selection for Cooperative Networks with Buffers
Ioannis Krikidis (University of Cyprus, Cyprus); Themistoklis Charalambous (Royal Institute of Technology (KTH), Sweden); John Thompson (University of Edinburgh, United Kingdom)
pp. 5578-5582

11:30 A Low Complexity Equalization Method for Asynchronous Cooperative Relay Systems
Yanxiang Jiang (Southeast University, P.R. China); Jun Xiao (Southeast University, P.R. China); Xiaohu You (Southeast University, P.R. China)
pp. N/A

11:45 Distributed Opportunistic and Diffused Coding in Multi-hop Wireless Networks
Thuong Van Vu (Université Pierre et Marie Curie, France); Thi Mai Trang Nguyen (Université Pierre et Marie Curie & LIP6, France); Guy Pujolle (University Pierre et Marie Curie - Paris 6, France)
pp. 5583-5587

14:00 - 15:30

S3: Cognitive radio

Room: M11
Chair: Frank H.P. Fitzek (Aalborg University, Denmark)

14:00 Radio Access Behavior (RAB) Based Cognitive Radio Classification and Identification
Nansai Hu (Stevens Institute of Technology, USA); Yu-Dong Yao (Stevens Institute of Technology, USA)
pp. 5588-5592

Carlos Herranz (Polytechnic University of Valencia, Spain); Vicente Osa (Universitat Politècnica de València, Spain); Jose F. Monserrat (Polytechnic University of Valencia, Spain); Daniel Calabuig (Universidad Politècnica de Valencia, Spain); Narcis Cardona (Universidad Politècnica Valencia, Spain); Xavier Gelabert (King's College London & Centre for Telecommunications Research (CTR), United Kingdom)
14:30 **PAPR Reduction in OFDM Based Cognitive Radio with Blockwise-Subcarrier Activation**
Abolfazl Ghassemi (Stanford University, USA); T. Aaron Gulliver (University of Victoria, Canada)
pp. 5598-5602

14:45 **New Resource Allocation Scheme for Cognitive Relay Networks with Opportunistic Access**
Ammar Zafar (King Abdullah University of Science and Technology, Saudi Arabia); Mohamed-Slim Alouini (King Abdullah University of Science and Technology (KAUST), Saudi Arabia); Yunfei Chen (University of Warwick, United Kingdom); Redha M Radaydeh (Alfaisal University, Saudi Arabia)
pp. 5603-5607

15:00 **MAC Protocol Identification Approach for Implement Smart Cognitive Radio**
Sanqing Hu (Stevens Institute of Technology, USA); Yu-Dong Yao (Stevens Institute of Technology, USA); Zhuo Yang (Stevens Institute of Technology (USA), USA)
pp. 5608-5612

15:15 **Cooperation for Secure Broadcasting in Cognitive Radio Networks**
Frederic Gabry (KTH Royal Institute of Technology, Sweden); Nicolas Schrammar (KTH Royal Institute of Technology, Sweden); Maksym A. Gimyky (KTH Royal Institute of Technology, Sweden); Nan Li (KTH Royal Institute of Technology, Sweden); Ragnar Thobaben (KTH Royal Institute of Technology, Sweden); Lars K. Rasmussen (KTH Royal Institute of Technology, Sweden)
pp. 5613-5618

16:00 - 18:00

**S4: Network coding**

Room: M11
Chair: Frank H.P. Fitzek (Aalborg University, Denmark)

16:00 **Antenna Selection Schemes for Energy Efficiency in Distributed Antenna Systems**
Hong Li (Huawei Technologies Sweden AB, Sweden); Georgios P. Koudouridis (Huawei Technologies Sweden R&D Center & Royal Institute of Technology, Sweden); Jiayin Zhang (Huawei Technologies Co., Ltd, P.R. China)
pp. 5619-5623

16:15 **CoMP in Heterogeneous Networks: A Low-Complexity Linear Transceiver Design**
Tarik Akbudak (University of Duisburg-Essen, Germany); Andreas Czyrwik (Universität Duisburg-Essen, Germany)
pp. 5624-5629
16:30 Game Theoretic Network Coding-aided MAC for Data Dissemination towards Energy Efficiency
Angelos Antonopoulos (Telecommunications Technological Centre of Catalonia (CTTC), Spain); Christos Verikoukis (Telecommunications Technological Centre of Catalonia, Spain)
pp. 5630-5634

16:45 Variational-distance-based Modulation Classifier
Fanggang Wang (Beijing Jiaotong University, P.R. China); Chung Chan (The Chinese University of Hong Kong, Hong Kong)
pp. 5635-5639

17:00 Diversity Analysis of Two-Way MIMO Relaying System Based on Zero-Forcing
Hang Long (Beijing University of Posts & Telecommunications, P.R. China); Wei Xiang (University of Southern Queenslan, Australia); Hongmei Liu (Beijing University of Posts and Telecommunications (BUPT), P.R. China); Shanshan Shen (Beijing University of Posts and Telecommunications, P.R. China)
pp. 5640-5644

17:15 Joint Pre-coder and Decoder Design for Physical Layer Network Coding based MIMO Two-Way Relay System
Saliya Jayasinghe (CWC, University of Oulu, Finland); Nandana Rajatheva (University of Oulu, Finland); Matti Latva-aho (UoOulu, Finland)
pp. 5645-5649
# ICC’12 WS - CONWIRE: Workshop on Convergence among Heterogeneous Wireless Systems in Future Internet - Program

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<td>8:30 - 9:00</td>
<td>Keynote 1: Keynote Speech - Prof. Nirwan Ansari (New Jersey Institute of Technology, USA)</td>
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<td>9:00 - 10:00</td>
<td>S1: Session 1 - Handover Services in Heterogeneous Wireless Networks</td>
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<td>10:00 - 10:30</td>
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<tr>
<td>10:30 - 11:00</td>
<td>Invited 1: Invited Talk 1 - Konstantinos Samdanis (NEC Europe Ltd, Germany)</td>
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<tr>
<td>11:00 - 12:30</td>
<td>S2: Session 2 - Performance Evaluation and Optimization Techniques for Heterogeneous Wireless Systems</td>
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<td>12:30 - 14:00</td>
<td>Lunch: Lunch break</td>
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<td>14:00 - 15:30</td>
<td>S3: Session 3 - Radio Resource and Mobility Management</td>
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<tr>
<td>16:00 - 16:30</td>
<td>Invited 2: Invited Talk 2 - Prof. Andrea Goldsmith (Stanford University, USA)</td>
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<td>16:30 - 18:00</td>
<td>Panel: Panel - Advances and Future Trends for Convergence among Heterogeneous Wireless Systems</td>
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## Monday, June 11

### 08:20 - 08:30

**Welcome: Dr. Periklis Chatzimisios (Alexander TEI of Thessaloniki) CONWIRE Co-Chair**

Welcome Address and Opening remarks  
**Room:** M7  
Chair: Periklis Chatzimisios (Alexander Technological Educational Institute of Thessaloniki, Greece)

### 08:30 - 09:00

**Keynote 1: Keynote Speech - Prof. Nirwan Ansari (New Jersey Institute of Technology, USA)**

Title: The Making Over of TCP for Heterogeneity  
**Room:** M7
Chair: Periklis Chatzimisios (Alexander Technological Educational Institute of Thessaloniki, Greece)

09:00 - 10:00

S1: Session 1 - Handover Services in Heterogeneous Wireless Networks

Room: M7
Chair: Periklis Chatzimisios (Alexander Technological Educational Institute of Thessaloniki, Greece)

09:00 Evaluation of Discovery Mechanisms for Media Independent Handover Services
Daniel Corujo (Instituto de Telecomunicações Aveiro & Universidade de Aveiro, Portugal); Carlos Eduardo Magalhães Guimarães (Instituto de Telecomunicações - Pólo de Aveiro, Portugal); Rui L Aguiar (University of Aveiro & Instituto de Telecomunicações, Portugal)
pp. 5650-5654

09:20 Vertical Handover Decision Making Using QoS Reputation and GM(1,1) Prediction
David Giacomini (Concordia University, Canada); Anjali Agarwal (Concordia University, Canada)
pp. 5655-5659

09:40 Location Assisted Energy Efficiency for Multi-Interfaced Mobile Terminals
Joaquim Bastos (Instituto de Telecomunicações, Portugal); Michele Albano (CISTER/INESC-TEC, ISEP, Polytechnic Institute of Porto, Portugal); Jonathan Rodriguez (Instituto de Telecomunicações, Portugal); Christos Verikoukis (Telecommunications Technological Centre of Catalonia, Spain)
pp. 5660-5664

10:00 Coffee break

10:30 - 11:00

Invited 1: Invited Talk 1 - Konstantinos Samdanis (NEC Europe Ltd, Germany)

Title: Energy Efficient Mobile Backhaul for Heterogeneous Access Networks: A transport perspective based on the BBF Architecture
Room: M7
Chair: Periklis Chatzimisios (Alexander Technological Educational Institute of Thessaloniki, Greece)

11:00 - 12:30

S2: Session 2 - Performance Evaluation and Optimization Techniques for Heterogeneous Wireless Systems

Room: M7
Chair: Jonathan Rodriguez (Instituto de Telecomunicações, Portugal)
11:00 On the analysis of WiFi communication and WiMAX network entry over single radios
Sven Wiethölter (Technical University of Berlin, Germany); Marc Emmelmann (Fraunhofer FOKUS, Germany); Yerong Chen (TU Berlin, Germany); Adam M Wolisz (Technical University of Berlin, Germany)
pp. 5665-5669

11:22 Opportunistic Multihop Wireless Communications with Calibrated Channel Model
Petros Spaches (University of Toronto, Canada); Liang Song (University of Toronto, Canada); Dimitrios Hatzinakos (University of Toronto, Canada)
pp. 5670-5674

11:45 Performance Evaluation of Wireless Mesh Networks using IEEE 802.11s and IEEE 802.11n
Thomas Imboden (Southern Illinois University Carbondale, USA); Kemal Akkaya (Southern Illinois University Carbondale, USA); Zach Moore (Southern Illinois University Carbondale, USA)
pp. 5675-5679

12:07 Life-logging in Smart Environments: Challenges and Security Threats
Nikolaos E. Petroulakis (Foundation for Research and Technology - Hellas, Greece); Yannis Askoxylakis (FORTH-ICS, Greece); Theo Tryfonas (University of Bristol, United Kingdom)
pp. 5680-5684

12:30 - 14:00
Lunch: Lunch break

14:00 - 15:30
S3: Session 3 - Radio Resource and Mobility Management

Room: M7
Chair: Periklis Chatzimisios (Alexander Technological Educational Institute of Thessaloniki, Greece)

14:00 A centralised broker-based CR network architecture for TVWS exploitation under the RTSSM policy
Athina Bourdina (University of the Aegean, Greece); Evangelos Pallis (Technological Educational Institute of Crete, Greece); Georgios Kormentzas (University of the Aegean, Greece); George Mastorakis (Technological Educational Institute of Crete, Greece)
pp. 5685-5689

14:22 Radio Resource Mobility Management in B3G Heterogeneous Networks
Leifang Hui (Xidian University, P.R. China); Jiandong Li (Xidian University, P.R. China); Weijia Han (University of Xi'dain, P.R. China)
pp. 5690-5694
14:45 On the Area Spectral Efficiency Improvement of Heterogeneous Network by Exploiting the Integration of Macro-Femto Cellular Networks
Muhammad Zeeshan Shakir (Texas A&M University at Qatar (TAMUQ), Qatar); Mohamed-Slim Alouini (King Abdullah University of Science and Technology (KAUST), Saudi Arabia)
pp. 5695-5700

15:07 A Spectral Efficient Multi-Mode Relaying Technique
Nikolaos Nomikos (University of the Aegean, Greece); Dimitrios N Skoutas (University of the Aegean, Greece); Demosthenes Vouyioukas (University of the Aegean, Greece); Harry Skianis (University of the Aegean, Greece)
pp. 5701-5705

15:30 Coffee break

16:00 - 16:30
Invited 2: Invited Talk 2 - Prof. Andrea Goldsmith (Stanford University, USA)
Title: Wireless network convergence: challenges and opportunities
Room: M7
Chair: Periklis Chatzimisios (Alexander Technological Educational Institute of Thessaloniki, Greece)

16:30 - 18:00
Panel: Panel - Advances and Future Trends for Convergence among Heterogeneous Wireless Systems
Martin Maier (Institut National de la Recherche Scientifique, Canada), Yves Lostanlen (Siradel/University of Toronto, Canada), Vasilis Friderikos (King's College London, UK), Marcos Katz (University of Oulu, Finland)
Room: M7
Chair: Periklis Chatzimisios (Alexander Technological Educational Institute of Thessaloniki, Greece)

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<td>10:45 - 12:15</td>
<td>E2NETS-NET: Energy Efficiency in Datalink and Network Layers</td>
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<tr>
<td>14:00 - 15:30</td>
<td>E2NETS-APPL: Energy Efficiency in Application Layer</td>
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<td>16:30 - 18:00</td>
<td>E2NETS-CELL: Energy Efficiency in Cellular Networks</td>
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**Monday, June 11**

**08:30 - 10:00**

**E2NETS-PHY: Energy Efficiency in Physical Layer**

Chair: Tinku Rasheed (Create-Net Research, Italy)

- **08:30 On the Capacity of Rician Fading Channels With Full Channel State Information at Low SNR**
  - Zouheir Rezki (King Abdullah University of Science and Technology (KAUST), Saudi Arabia); Mohamed-Slim Alouini (King Abdullah University of Science and Technology (KAUST), Saudi Arabia)
  - pp. 5706-5710

- **08:50 A High Energy Efficient Scheme with Selecting Sub-carriers Modulation in OFDM System**
  - Long Zhao (Beijing University of Posts and Telecommunications, P.R. China); Hui Zhao (Beijing University of Posts and Telecommunications, P.R. China); Kan Zheng (Beijing University of Posts&Telecommunications, P.R. China); Yunchuan Yang (Beijing University of Posts and Telecommunications, P.R. China)
  - pp. 5711-5715

- **09:10 Comparison of Energy-Efficiency in Bits per Joule on different downlink CoMP Techniques**
  - Kazi Mohammed Saidul Huq (Institute of Telecommunications, Portugal); Shahid Mumtaz (Institute of Telecommunications, Portugal); Jonathan Rodriguez (Instituto de Telecomunicações, Portugal); Rui L Aguiar (University of Aveiro & Instituto de Telecomunicações, Portugal)
  - pp. 5716-5720
10:45 - 12:15

**E2NETS-NET: Energy Efficiency in Datalink and Network Layers**

Chair: Ignas G.M.M. Niemegeers (Delft University of Technology, The Netherlands)

**10:45 RPL Router Discovery for Supporting Energy-Efficient Transmission in Single-hop 6LoWPAN**
Wilawan Rukpakavong (Loughborough University, United Kingdom); Iain Phillips (Loughborough University, United Kingdom); Lin Guan (Loughborough University, United Kingdom); George Oikonomou (University of Bristol, United Kingdom)  
pp. 5721-5725

**11:05 GCF: Green Conflict Free TDMA Scheduling for Wireless Sensor Network**
Pranav Pawar (University of Aalborg, India); Rasmus Hjorth Nielsen (Aalborg University & Center for TeleInfrastruktur, Denmark); Neeli Rashmi Prasad (Center for TeleInfrastructure (CTIF), Denmark); Shingo Ohmori (CTIF-Japan, Aalborg University & YRP International Alliance Institute, Japan); Ramjee Prasad (Aalborg University, Denmark)  
pp. 5726-5730

**11:25 Ultra-Low-Power Sensor Nodes Featuring a Virtual Runtime Environment**
Emanuele Lattanzi (University of Urbino, Italy); Alessandro Bogliolo (University of Urbino, Italy)  
pp. 5731-5735

14:00 - 15:30

**E2NETS-APPL: Energy Efficiency in Application Layer**

Chair: Honggang Zhang (Zhejiang University, P.R. China)

**14:00 An Energy-Efficient Content-Centric Approach in Mesh Networking**
Marica Amadeo (University Mediterranea of Reggio Calabria, Italy); Antonella Molinaro (University "Mediterranea" of Reggio Calabria, Italy); Giuseppe Ruggeri (University of Reggio Calabria, Italy)  
pp. 5736-5740

**14:20 A Bi-Objective Algorithm for Dynamic Reconfiguration of Mobile Networks**
Kesav Ram Kaza (IIIT Hyderabad, India); Kishore Kshirsagar (International Institute of Information Technology, India); Krishnan S Rajan (International Institute of Information Technology Hyderabad, India)  
pp. 5741-5745

**14:40 Opportunistic exploitation of resources for improving the energy-efficiency of wireless networks**
Dimitrios Karvounas (University of Piraeus, Greece); Andreas Georgakopoulos (University of Piraeus, Greece); Dimitra Panagiotou (University of Piraeus, Greece); Vera Stavroulaki (University of Piraeus, Greece); Kostas Tsagkaris (University of Piraeus, Greece); Panagiotis Demestichas (University of Piraeus, Greece)  
pp. 5746-5750
16:30 - 18:00

E2NETS-CELL: Energy Efficiency in Cellular Networks

Chair: Venkatesha Prasad (Delft University of Technology, The Netherlands)

16:30 Evaluating an Energy-efficient Radio Architecture for Opportunistic Communication
Sylvia T. Kouyoumdjieva (KTH, Royal Institute of Technology, Sweden); Olafur R Helgason (KTH, Royal Institute of Technology, Sweden); Emre A. Yavuz (Royal Institute of Technology (KTH), Sweden); Gunnar Karlsson (KTH Royal Institute of Technology, Sweden)
pp. 5751-5756

16:50 Energy-efficient Relay Deployment in Next Generation Cellular Networks
Guiying Wu (University of Electronic Science and Technology of China, P.R. China); Gang Feng (University of Electronic Science and Technology of China, P.R. China)
pp. 5757-5761

17:10 Energy Scope of Handoff Strategies in Macro-Femtocell Environments
Jaime Peña León (King Abdullah University of Science and Technology, Saudi Arabia); Faouzi Bader (CTTC & Centre Tecnologic de Telecomunicacions de Catalunya, Spain); Mohamed-Slim Alouini (King Abdullah University of Science and Technology (KAUST), Saudi Arabia)
pp. 5762-5766

17:30 Distributed Energy-Efficient Power Optimization in Two-Tier Femtocell Networks
Wei Zheng (BUPT, P.R. China); Tao Su (Beijing University of Posts and Telecommunications, P.R. China); Wei Li (Beijing University of Posts and Telecommunications, P.R. China); Zhenping Lu (Beijing University of Posts and Telecommunication, P.R. China); Xiangming Wen (Beijing University of Posts and Telecommunication, P.R. China)
pp. 5767-5771
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<td>08:30 - 10:00</td>
<td><strong>F1_S1: Keynote Talk and Presentation 1</strong></td>
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<tr>
<td>10:30 - 12:30</td>
<td><strong>F1_S2: Presentations 2-6</strong></td>
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**Friday, June 15**

08:30 - 10:00

F1_S1: Keynote Talk and Presentation 1

*Room: F1*
Chair: Alireza Seyedi (University of Central Florida, USA)

*08:30 A self-powered wireless sensor for water/gas metering systems*
Dario Di Zenobio (Fondazione Ugo Bordoni, Italy); Kris Steenhaut (Vrije Universiteit Brussel, Belgium); Massimo Celidonio (Fondazione Ugo Bordoni, Italy); Emanuele Sergio (Fondazione Ugo Bordoni, Italy); Yannick Verbelen (Vrije Universiteit Brussel, Belgium)

pp. 5772-5776

10:30 - 12:30

F1_S2: Presentations 2-6

*Room: F1*
Chair: Alireza Seyedi (University of Central Florida, USA)

10:30 *Statistical Models for Harvested Power from Human Motion*
Shenqiu Zhang (University of Rochester, USA); Alireza Seyedi (University of Central Florida, USA)

pp. 5777-5781

10:50 *Operation Policies for Energy Harvesting Devices with Imperfect State-of-Charge Knowledge*
Nicolò Michelusi (University of Padova, Italy); Kostas Stamatiou (University of Notre Dame, USA); Leonardo Badia (Università degli Studi di Padova, Italy); Michele Zorzi (University of Padova, Italy)

pp. 5782-5787

11:10 *Outage Minimization in Fading Channels under Energy Harvesting Constraints*
Chuan Huang (Texas A&M University, USA); Rui Zhang (National University of Singapore, Singapore); Shuguang Cui (Texas A&M University, USA)

pp. 5788-5793
11:30 *Optimal power allocation for a wireless multi-antenna energy harvesting node with arbitrary input distribution*
   Maria Gregori (CTTC, Spain); Miquel Payaró (CTTC, Spain)
   pp. 5794-5798

11:50 *Sensing and Communication Tradeoff in Energy Harvesting Sensors*
   Srinivas Reddy (Indian Institute of Science, India)
   pp. N/A
ICC'12 WS - FutureNet: International Workshop on the Network of the Future - Program

Monday, June 11

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<td>S1: Pub/Sub &amp; Routing</td>
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<td>10:00 - 10:30</td>
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<tr>
<td>10:30 - 12:30</td>
<td>S2: Content/Information Oriented Networks</td>
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<td>12:30 - 14:00</td>
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<td>14:00 - 15:30</td>
<td>S3: Mobility Aware Networks</td>
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<td>15:30 - 16:00</td>
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| 16:00 - 17:40 | S4: Virtual Networks & Provisioning |}

**Monday, June 11**

**08:30 - 10:00**

**S1: Pub/Sub & Routing**

Chair: Lixin Gao (University of Massachusetts at Amherst, USA)

- **08:30 CCNFRR: Fast one-hop Re-Route in CCN**
  Younggi Kim (Korea Advanced Institute of Science and Technology, Korea); Jihoon An (KAIST, Korea); Younghee Lee (KAIST, Korea)
  pp. 5799-5803

- **08:50 On Flexible Topology Formation in Publish-Subscribe Networks**
  Borislava Gajic (RWTH Aachen University, Germany); Janne Riihijärvi (RWTH Aachen University, Germany); Petri Mähönen (RWTH Aachen University, Germany)
  pp. 5804-5809

- **09:10 A Concept for Publish-Subscribe Information Dissemination and Networking**
  Joseph P. Loyall (BBN Technologies, USA); Matthew Gillen (BBN Technologies, USA); Karen Zita Haigh (BBN Technologies, USA); Robert Walsh (BBN Technologies, USA); Craig Partridge (BBN Technologies, USA); Gregory Lauer (Raytheon BBN Technologies, USA); Timothy Strayer (Raytheon BBN Technologies, USA)
  pp. 5810-5816

- **09:30 ISP Tiered Model based Architecture for Routing Scalability**
  Yoshihiro Nozaki (Rochester Institute of Technology, USA); Hasan Tuncer (Rochester Institute of Technology, USA); Nirmala Shenoy (University of Rochester, USA)
  pp. 5817-5821

**10:30 - 12:30**

**S2: Content/Information Oriented Networks**

Chair: Lixin Gao (University of Massachusetts at Amherst, USA)
10:30 **A TLV-Structured Data Naming Scheme for Content-Oriented Networking**  
Hang Liu (InterDigital Communications, USA); Dan Zhang (WINLAB, Rutgers University, USA)  
pp. 5822-5827

10:50 **Performance Evaluation of Partial Deployment of Breadcrumbs in Content Oriented Networks**  
Tatsuhiro Tsutsui (Kansai University, Japan); Hiroyuki Urabayashi (Kansai University, Japan); Miki Yamamoto (Kansai University, Japan); Elisha Rosensweig (UMass Amherst, Israel); Jim Kurose (University of Massachusetts at Amherst, USA)  
pp. 5828-5832

11:10 **Simulation Tools Enabling Research on Information-centric Networks**  
Nikolaos Vastardis (University of Essex, United Kingdom); Andreas Bontozoglou (University of Essex, United Kingdom); Kun Yang (University of Essex, United Kingdom); Martin Reed (University of Essex, United Kingdom)  
pp. 5833-5838

11:30 **Incentivizing User-assisted Content Distribution in Information-Centric Network**  
HyunYong Lee (The University of Tokyo, Japan); Akihiro Nakao (University of Tokyo, Japan)  
pp. 5839-5843

11:50 **The Value Centric Information and Intelligence Sharing Scheme**  
Shinichi Doi (NTT & Network Innovation Laboratories, Japan)  
pp. 5844-5848

**14:00 - 15:30**

**S3: Mobility Aware Networks**

Chair: Lixin Gao (University of Massachusetts at Amherst, USA)

14:00 **Storage-Aware Routing for Robust and Efficient Services in the Future Mobile Internet**  
Nehal Somani (WINLAB, Rutgers University, USA); Abhishek Chanda (WINLAB, Rutgers University, USA); Samuel C. Nelson (BBN Technologies, USA); Dipankar Raychaudhuri (Rutgers University, USA)  
pp. 5849-5853

14:20 **Supporting Seamless Mobility in Named Data Networking**  
Ravishankar Ravindran (Huawei & Huawei, USA); Samantha Lo (Georgia Institute of Technology, USA); Xinwen Zhang (Huawei, USA); Guoqiang Wang (Huawei, USA)  
pp. 5854-5859

14:40 **Seamless User Mobility in Virtual Mobility Domains for the Future Internet**  
Hasan Tuncer (Rochester Institute of Technology, USA); Yoshihiro Nozaki (Rochester Institute of Technology, USA); Nirmala Shenoy (University of Rochester, USA)  
pp. 5860-5865
**15:00 An Integrated Security Scheme for ID/Locator Split Architecture of Future Network**
Ved P. Kafe (National Institute of Information and Communications Technology (NICT), Japan); Ruidong Li (National Institute of Information and Communications Technology (NICT), Japan); Daisuke Inoue (National Institute of Information and Communications Technology, Japan); Hiroaki Harai (National Institute of Information and Communications Technology, Japan)
pp. 5866-5871

**16:00 - 17:40**

**S4: Virtual Networks & Provisioning**

Chair: Lixin Gao (University of Massachusetts at Amherst, USA)

**16:00 Traffic Provisioning in a Future Internet**
Ted H. Szymanski (Mcmaster University, Canada); Shahrroz Behdin (McMaster University, Canada)
pp. 5872-5878

**16:20 Constructing a Virtual Networking Environment in a Geo-Distributed Programmable Layer-2 Networking Environment (G-PLaNE)**
Tianyi Xing (Arizona State University, USA); Xuan Liu (University of Missouri-Kansas City, USA); Chun-Jen Chung (Arizona State University, USA); Akira Wada (Osaka City University, Japan); Shingo Ata (Osaka City University, Japan); Dijiang Huang (Arizona State University, USA); Deep Medhi (University of Missouri-Kansas City, USA)
pp. 5879-5884

**16:40 Using AHP/TOPSIS with Cost and Robustness Criteria for Virtual Network Node Assignment**
Richard Goyette (University of Ottawa, Canada); Ahmed Karmouch (University of Ottawa, Canada)
pp. 5885-5889

**17:00 Network Virtualization: Dealing with Multiple Infrastructure Providers**
Md. M. Hasan (University of Ottawa, Canada); Heli Amarasinghe (University of Ottawa, Canada); Ahmed Karmouch (University of Ottawa, Canada)
pp. 5890-5895
ICC’12 WS - GCN: IEEE ICC’12 Workshop on Green Communications and Networking - Program

Friday, June 15

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<tr>
<td>08:30 - 09:50</td>
<td>Wireless 1: Green Wireless Communications and Networking 1</td>
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</table>
| 08:30         | Green Content Distribution in Wireless Mesh Networks with Infrastructure Support  
|               | Amr Alasaad (The University of British Columbia, Canada); Sathish Gopalakrishnan (University of British Columbia, Canada); Hasen Nicanfar (The University of British Columbia, Canada); Victor CM Leung (The University of British Columbia, Canada)  
|               | pp. 5896-5900                                                        |
| 08:50         | Energy-Efficient Power Allocation for Delay-Sensitive Traffic over Wireless Systems  
|               | Lingjia Liu (University of Kansas, USA)  
|               | pp. 5901-5905                                                        |
| 09:10         | Power Saving Cooperative Path Routing in Static Wireless Networks  
|               | Auon Muhammad Akhtar (King's College London & Mobile VCE, United Kingdom); Mohammad Reza Nakhai (King's College London, United Kingdom); Hamid Aghvami (King's College London, United Kingdom)  
|               | pp. 5906-5910                                                        |
| 09:30         | Downlink Ergodic Capacity Analysis for Wireless Networks with Cooperative Distributed Antenna Systems  
|               | Xinsheeng Zhao (Southeast University, P.R. China); Xiaqing Yang (Southeast University, P.R. China)  
|               | pp. 5911-5915                                                        |
### 10:20 - 12:00

**Wireless 2: Green Wireless Communications and Networking 2**

Chair: Derrick Wing Kwan Ng (University Erlangen-Nürnberg, Germany)

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<th>Authors</th>
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<tr>
<td>10:20</td>
<td>Energy-Efficient Resource Allocation in OFDMA Systems with Large Numbers of Base Station Antennas</td>
<td>Derrick Wing Kwan Ng (University Erlangen-Nürnberg, Germany); Robert Schober (University of British Columbia, Canada)</td>
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<td>pp. 5916-5920</td>
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<tr>
<td>10:40</td>
<td>Energy Efficient Cellular Networks with CoMP Communications and Smart Grid</td>
<td>Shengrong Bu (Carleton University, Canada); F. Richard Yu (Carleton University, Canada); Yegui Cai (Carleton University, Canada); Peter Liu (Carleton University, Canada)</td>
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<td>pp. 5921-5925</td>
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<td>11:00</td>
<td>An Energy Efficiency Power and Sub-carrier Allocation for the Downlink Multi-user CoMP in Multi-Cell Systems</td>
<td>Xiaoliang Zhang (Beijing University of Posts and Telecommunications, P.R. China); Yi Li (Beijing University of Posts and Telecommunications, P.R. China); Hong Ji (Beijing University of Posts and Telecommunications, P.R. China)</td>
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<td>11:20</td>
<td>Cell Switch Off Technique Combined with Coordinated Multi-Point (CoMP) Transmission for Energy Efficiency in Beyond-LTE Cellular Networks</td>
<td>Gencer Cili (Carleton University, Canada); Halim Yaniakomeroglu (Carleton University, Canada); F. Richard Yu (Carleton University, Canada)</td>
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<td>pp. 5931-5935</td>
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<tr>
<td>11:40</td>
<td>Energy-Efficient Non-cooperative Power Control in Relay-Assisted Interference Channels Considering Circuit Dissipated Power</td>
<td>Alessio Zappone (University of Cassino, Italy); Zhijiat Chong (Dresden University of Technology, Germany); Eduard Jorswieck (Dresden University of Technology, Germany); Stefano Buzzi (University of Cassino, Italy)</td>
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### 13:30 - 15:00

**Wired 1: Green Wired Communications and Networking 1**

Chair: Gencer Cili (Carleton University, Canada)

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<tr>
<td>13:30</td>
<td>Research Roadmap for Green Wireline Access</td>
<td>Peter Vetter (Alcatel-Lucent, USA); Laurent Lefevre (INRIA, France); Laurent Gasca (Prysmian Group, USA); Konstantinos Kanonakis (Athens Information Technology, Greece); Leonid Kazovsky (Stanford University, USA); Bart Lannoo (Ghent University - IBBT, Belgium); K. L. Lee (University of Melbourne, Australia); Claude Monney (Swisscom, Switzerland); Xing-Zhi Qiu (Ghent University, Belgium); Fabienne Saliou (Orange Labs, France); Adrian Wonfor (University of Cambridge, United Kingdom)</td>
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13:52 Enabling Sleep Mode in Backbone IP-Networks: a Criticality-Driven Tradeoff
Aruna Prem Bianzino (Linköping University, Sweden); Claude Chaudet (Telecom ParisTech, France); Stefano Moretti (Université Paris Dauphine CNRS UMR, France); Jean-Louis Rougier (TELECOM ParisTech, France); Luca Chiaraviglio (INRIA & Mascotte Project, France); Esther Le Rouzic (Orange Labs, France)
pp. 5946-5950

14:15 Efficiency Analysis of Distributed Dynamic Optical Bypassing Heuristics
Joachim Scharf (University of Stuttgart, Germany)
pp. 5951-5956

14:37 Energy-Aware Multiperiod Traffic Engineering with Flow-based Routing
Bernardetta Addis (Università degli Studi di Torino, Italy); Antonio Capone (Politecnico di Milano, Italy); Giuliana Carello (Politecnico di Milano, Italy); Luca Gianoli (Politecnico di Milano & École Polytechnique de Montréal, Italy); Brunilde Sansò (Ecole Polytechnique de Montreal, Canada)
pp. 5957-5961

15:30 - 17:00

Wired 2: Green Wired Communications and Networking 2

Chair: F. Richard Yu (Carleton University, Canada)

15:30 Energy Efficiency and Delay Performance of Data Transfer using Dynamic Optical Switching
Thyaga Nandagopal (Alcatel-Lucent & Bell Labs, USA); Kyle C Guan (Bell Labs, Alcatel-Lucent, USA); Dan Kliper (Bell Laboratories & Alcatel-Lucent, USA)
pp. 5962-5967

16:00 A Prediction-based Traffic Aggregation Scheme for Green Networking
Bingyi Guo (South China University of Technology, P.R. China); Shengming Jiang (South China University of Technology, P.R. China); Quansheng Guan (Chinese University of Hong Kong & South China University of Technology, P.R. China); Min Zeng (South China University of Technology, P.R. China); Xin Ao (Carleton University, Canada)
pp. 5968-5972

16:30 Energy Profiling of ISP Points of Presence
Edoardo Bonetto (Politecnico di Torino, Italy); Marco Mellia (Politecnico di Torino, Italy); Michela Meo (Politecnico di Torino, Italy)
pp. 5973-5977
# Monday, June 11

## WS_GRNet_00: GreenNetworking Workshop Welcome Session

Welcome and Guest Speaker  
Chairs: Ayman Radwan (Instituto de Telecomunicações & Queen’s University, Portugal),  
Jonathan Rodriguez (Instituto de Telecomunicações, Portugal)

## WS_GRNet_01: GreenNetworking Workshop Technical Session 1

Energy efficiency in Physical (PHY) Layer  
Chair: Abd-Elhamid M. Taha (Alfaisal University, Saudi Arabia)

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<td>Interference-Based Packet Recovery for Energy Saving in Cognitive Radio</td>
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<td>Networks</td>
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<td>Sharhabeel H. Alnabelsi (Iowa State University, USA); Ahmed E. Kamal (</td>
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<td>Iowa State University, USA)</td>
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<td>10:54</td>
<td>Power Management in Solar-powered Long Range WiFi Test-bed</td>
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<td>Najah A. Abu Ali (UAEU, UAE)</td>
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<tr>
<td>11:18</td>
<td>Adaptive Power Control Scheme for Energy Efficient Cognitive Radio</td>
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<td>Networks</td>
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<td>Mahdi Pirmoradian (Kingston University of London, United Kingdom);</td>
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<td>Olayinka Adigun (Kingston University, United Kingdom); Christos Politis</td>
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<td></td>
<td>(Kingston University, United Kingdom)</td>
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11:42 Quality of Experience for Cognitive Multiple Antenna Systems
Reema Imran (University of Jordan, Jordan); Nizar Zorba (QMIS, Qatar); Maha Al Odeh (Interdisciplinary Centre for Security, Reliability and Trust, Luxemburg); Christos Verikoukis (Telecommunications Technological Centre of Catalonia, Spain)
pp. 5993-5997

14:00 - 15:30
WS_GRNet_02: Greenetworking Workshop Technical Session 2

Energy efficiency in Data Link and Networking Layers
Chair: Jonathan Rodriguez (Instituto de Telecomunicações, Portugal)

14:00 Green Wireless Networks: A Radio Resource Management Perspective
Abd-Elhamid M. Taha (Alfaisal University, Saudi Arabia)
pp. 5998-6002

14:22 Extending the Lifetime of M2M Wireless Networks through Cooperation
Giuseppe Botter (University of Trento, Italy); Jesus Alonso-Zarate (Centre Tecnologic de Telecomunicacions de Catalunya - CTTC, Spain); Luis Alonso (Universidad Politecnica de Catalunya, Spain); Fabrizio Granelli (University of Trento, Italy); Christos Verikoukis (Telecommunications Technological Centre of Catalonia, Spain)
pp. 6003-6007

14:44 Context Based Node Discovery Mechanism for Energy Efficiency In Wireless Networks
Muhammad Alam (Instituto de Telecomunicações, Portugal); Michele Albano (CISTER/INESC-TEC, ISEP, Polytechnic Institute of Porto, Portugal); Ayman Radwan (Instituto de Telecomunicações & Queen's University, Portugal); Jonathan Rodriguez (Instituto de Telecomunicações, Portugal)
pp. 6008-6012

16:00 - 17:30
WS_GRNet_03: Greenetworking Workshop Technical Session 3

Energy efficiency in Data Link Layer
Chair: Ayman Radwan (Instituto de Telecomunicações & Queen's University, Portugal)

16:00 A heuristic evaluation PDS algorithm for energy-efficient delay constrained scheduling over wireless communication
Guanjun Xu (Southwest University of Science and Technology, P.R. China)
pp. 6013-6017

16:22 Cooperative Relay Design for Energy Efficient Cell Capacity Improvements
Hong Li (Huawei Technologies Sweden AB, Sweden); Georgios P. Koudouridis (Huawei Technologies Sweden R&D Center & Royal Institute of Technology,
Sweden); Gunnar Hedby (Huawei Technologies Sweden AB, Sweden); Tao Wu (Huawei Technologies Co., Ltd, P.R. China) pp. 6018-6023

16:44 Outage Probability of Cooperative Decode-and-Forward ARQ Scheme with Co-Channel Interference
Tao Zhang (PLA University of Science and Technology, P.R. China); Cai Yueming (Institute of Communications Engineering, PLAUST, P.R. China); Weiwei Yang (Institute of Communications Engineering, PLAUST, P.R. China); Hualiang Chen (PLA University of Science and Technology, P.R. China) pp. 6024-6028

17:06 Performance of Two Way Opportunistic MAC Protocol in Non-Saturated Ad Hoc Networks
Rizwan Ahmad (Qatar University & Victoria University, Qatar); Mazen Omar Hasna (Qatar University, Qatar); Adnan Abu-Dayya (QMIC, Qatar) pp. 6029-6034
**ICC’12 WS - LTHE: Long Term HSPA Evolution - Program**

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<td>9:00 - 10:00</td>
<td>S1: On the Performance of HSPA Evolution</td>
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<tr>
<td>10:00 - 10:30</td>
<td>I2: Enriching the HSPA toolbox</td>
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<tr>
<td>11:00 - 12:30</td>
<td>S2: MIMO in HSPA Evolution</td>
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<tr>
<td>12:30 - 14:00</td>
<td>I3: Evolving HSPA+ in a LTE-competitive environment: a US perspective</td>
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<tr>
<td>14:30 - 15:30</td>
<td>S3: Multi-Cell Techniques in HSPA Evolution</td>
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<td>15:30 - 16:00</td>
<td>I4: HSPA small cells</td>
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<tr>
<td>16:30 - 17:00</td>
<td>I5: Techniques for HSPA Network Capacity Improvements</td>
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<tr>
<td>17:00 - 18:00</td>
<td>P1: Is HSPA at the end of its evolution?</td>
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**Friday, June 15**

**08:30 - 09:00**

**I1 (LTHE): Ultimate Smartphone Solution**

Invited speaker 1
Chair: Harri Holma (Nokia Siemens Networks, Finland)

**09:00 - 10:00**

**S1 (LTHE): On the Performance of HSPA Evolution**

Chair: Claes Tidestav (Ericsson Research, Sweden)

**09:00 Performance Analysis of HSPA Multi-Carrier Heterogeneous Networks**
Beibei Wang (Qualcomm, USA); Haitong Sun (QualComm, USA); Rohit Kapoor (Qualcomm Inc., USA); Sharad Sambhwani (QUALCOMM, USA); Mario Scipione (Qualcomm Incorporated, USA)

pp. 6035-6039

**09:20 On Performance of Long Term HSPA Evolution Towards meeting IMT-Advanced requirements**
Michał Maternia (Nokia Siemens Networks, Poland); Maciej Januszewski (Nokia Siemens Networks, Poland); Karri Ranta-Aho (Nokia Siemens Networks, Finland); Jeroen Wigard (Nokia Siemens Networks, Denmark); Adrian Bohdanowicz (WiLabs, Poland); Michał Marzyński (Wrocław University of Technology, Poland); Michał Wcisło (Wrocław University of Technology, Poland)

pp. 6040-6044
09:40 Introducing Heterogeneous Networks in HSPA
Haitong Sun (QualComm, USA); Beibei Wang (Qualcomm, USA); Rohit Kapoor (Qualcomm Inc., USA); Sharad Sambhwani (QUALCOMM, USA); Mario Scipione (Qualcomm Incorporated, USA)
pp. 6045-6050

10:30 - 11:00
I2 (LTHE): Enriching the HSPA toolbox
Invited speaker 2
Chair: Lajos Hanzo (University of Southampton, United Kingdom)

11:00 - 12:30
S2 (LTHE): MIMO in HSPA Evolution
Chair: Patrick Marsch (Nokia Siemens Networks, Poland)

11:00 Design Principles for Four Branch Downlink MIMO for Long Term HSPA Evolution
SaiRamesh Nammi (Ericsson AB & Nortel Networks, NMSU, USA); Bo Göransson (Ericsson & Business Unit Network, Sweden); Erik Larsson (Ericsson Research, Sweden); Qingyu Miao (Ericsson Research, P.R. China)
pp. 6051-6055

11:20 Uplink MIMO for HSPA
Zhang Zhang (Ericsson China, P.R. China); Jinhua Liu (Ericsson China, P.R. China)
pp. 6056-6060

11:40

11:50 Design Aspects of Closed Loop Beamforming Transmit Diversity in HSUPA
Yibo Jiang (Qualcomm Corp R&D, USA); Jilei Hou (Qualcomm Inc., USA); Arjun Bharadwaj (Qualcomm Inc, USA); Sharad Sambhwani (QUALCOMM, USA)
pp. 6061-6065

12:10 On the Error Probability Of Wideband Spatially Correlated Coherent MIMO Channels
Babak Abbasi Bastami (Load IQ, USA); Seyed (Reza) Zekavat (Michigan Technological University, USA)
pp. 6066-6070
14:00 - 14:30

I3 (LTHE): Evolving HSPA+ in a LTE-competitive environment: a US perspective

Invited speaker 3
Chair: Pablo Tapia (T-Mobile, USA)

14:30 - 15:30

S3 (LTHE): Multi-Cell Techniques in HSPA Evolution

Chair: Eduardo Esteves (Qualcomm, Inc., USA)

14:30 System Performance of Inter-NodeB MF-HSDPA with RLC and MAC Enhancements
Weiyuan Ge (Apple Inc., Hong Kong); Rohit Kapoor (Qualcomm Inc., USA); Danlu Zhang (Qualcomm, USA); Sharad Sambhwani (QUALCOMM, USA); Mario Scipione (Qualcomm Incorporated, USA)
pp. 6071-6075

14:50 On the Joint Usage of MIMO and Multiflow in Evolved HSPA Networks
Ali Yaver (Nokia Siemens Networks, Poland); Patrick Marsch (Nokia Siemens Networks, Poland); Krystian Pawlak (Nokia Siemens Networks, Poland); Fernando Sanchez Moya (Nokia Siemens Networks, Poland)
pp. 6076-6080

15:10 Dynamic Fractional Signature Sequence Reuse (DFSSR) Scheme for CDMA system
Xiaoyan Bi (Huawei Technologies Co., Ltd, P.R. China); Wei Ni (Alcatel-Lucent Shanghai Bell, P.R. China); Dageng Chen (Huawei Technologies Co., Ltd, P.R. China); Yi Wang (Huawei Technologies Co., Ltd, P.R. China)
pp. 6081-6085

16:00 - 16:30

I4 (LTHE): HSPA small cells

Invited Speaker 4
Chair: Peter Malm (Ericsson Mobile Platforms AB, Sweden)

16:30 - 17:00

I5 (LTHE): Techniques for HSPA Network Capacity Improvements

Invited Speaker 5
Chair: Eduardo Esteves (Qualcomm, Inc., USA)
17:00 - 18:00

P1 (LTHE): Is HSPA at the end of its evolution?

Panel discussion
Chair: Matthias Hesse (Nokia Siemens Networks, Poland)
ICC'12 WS - MobiCHESS: International Workshop on Mobile Consumer Health Care Networks, Systems and Services - Program

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<td>Chair: Paul Fergus (Liverpool John Moores University, United Kingdom)</td>
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<td>09:00 - 10:00</td>
<td><strong>K1: Keynote Speaker</strong></td>
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<td>Cell Phone Intervention to Improve Adherence: Cystic Fibrosis Care Team,</td>
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<td>Patient, and Parent Perspectives</td>
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<td>Chair: Paul Fergus (Liverpool John Moores University, United Kingdom)</td>
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<td>10:30 - 12:00</td>
<td><strong>S1: Mobile and Body Sensors in Healthcare (Chair: Dr. Michael Rosenberg)</strong></td>
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<td>Chair: Paul Fergus (Liverpool John Moores University, United Kingdom)</td>
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<td>10:30</td>
<td><strong>Towards a Real-time Application to Reveal Entrainment Among People</strong></td>
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<td>Joshal A Daftari (University of California, San Diego, USA); Giorgio</td>
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<td>Quer (University of California San Diego, USA); Ramesh Rao (University</td>
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<td>of California at San Diego, USA)</td>
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<td>pp. 6086-6090</td>
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11:00 Emergency Response in Smartphone-Based Mobile Ad-Hoc Networks
Pramita Mitra (University of Notre Dame, USA); Christian Poellabauer (University of Notre Dame, USA)
pp. 6091-6095

11:30 Wireless Medical Implant: a Case Study on Artificial Pancreas
Di Ma (Institute for Infocomm Research, A*STAR, Singapore); Sumei Sun (Institute for Infocomm Research, Singapore); Chin Keong Ho (Institute for Infocomm Research, A*STAR, Singapore); Daniel Mok (Institute for Infocomm Research, Singapore); Chee Kong Chui (National University of Singapore, Singapore); Stephen Kin Yong Chang (National University Hospital, Singapore)
pp. 6096-6100

14:00 - 15:30
S2: Real-Time Monitoring and Physical Activity (Chair: Dr Di Ma)

Chair: Mario Kolberg (University of Stirling, United Kingdom)

14:00 Remotely Monitoring and Preventing the Development of Pressure Ulcers with the Aid of Human Digital Memories
Chelsea Dobbins (Liverpool John Moores University, United Kingdom); Paul Ferguson (Liverpool John Moores University, United Kingdom); Madij Merabti (Liverpool John Moores University, United Kingdom); David Llewellyn-Jones (Liverpool John Moores University, United Kingdom)
pp. 6101-6105

14:30 Designing an Application to Motivate Teenagers' Physical Activity
Sonia Arteaga (University of California, Santa Cruz, USA); Sri Kurniawan (UC Santa Cruz, USA)
pp. 6106-6110

15:00 Creating Intelligent Environments to Monitor and Manipulate Physical Activity and Sedentary Behavior in Public Health and Clinical Settings
Gareth Stratton (LJMU, United Kingdom); Rebecca Murphy (Liverpool John Moores University, United Kingdom); Michael Rosenberg (The University of Western Australia, Australia); Paul Ferguson (Liverpool John Moores University, United Kingdom); Andrew Attwood (Liverpool John Moores University, United Kingdom)
pp. 6111-6115

16:00 - 17:00
S3: Security for Medical Device Applications (Chair: Prof. Gareth Stratton)

Chair: Paul Ferguson (Liverpool John Moores University, United Kingdom)
16:00 User Authentication in Body Area Networks
Maksudul A. Chowdhury (University of New Brunswick, Canada); William McIver Jr. (University of New Brunswick, Canada); Janet Vijaya Light (University of New Brunswick (Saint John), Canada)
pp. N/A

16:30 Internet of Things in Healthcare: Interoperability and Security Issues
Liane Margarida Rockenbach Tarouco (Federal University of Rio Grande do Sul, Brazil); Leandro Márcio Bertholdo (Federal University of Rio Grande do Sul & UFRGS, Brazil); Lisandro Z Granville (Federal University of Rio Grande do Sul, Brazil); Lucas Mendes Ribeiro Arbiza (Federal University of Rio Grande do Sul - UFRGS, Brazil); Felipe José Carbone (Federal University of Rio Grande do Sul, Brazil); Marcelo Antonio Marotta (Federal University of Rio Grande do Sul, Brazil); José Jair Cardoso de Santanna (Federal University of Rio Grande do Sul & UFRGS, Brazil)
pp. 6121-6125
ICC’12 WS - MoNaCom: International Workshop on Molecular and Nanoscale Communications - Program

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<td>Prof. Ian F. Akyildiz: GRANET: Graphene Based Nanocommunication Networks</td>
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<tr>
<td>9:00 - 10:00</td>
<td>SESSION I: Networking Concepts for Molecular Communication</td>
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<td>10:00 - 10:30</td>
<td>Coffee Break</td>
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<tr>
<td>10:30 - 11:55</td>
<td>SESSION II: Nanonetworking Communication Techniques</td>
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<tr>
<td>11:55 - 12:00</td>
<td>Break</td>
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<tr>
<td>12:00 - 13:00</td>
<td>SESSION III: Nanonetworking applications and related topics</td>
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<tr>
<td>13:00 - 13:15</td>
<td>SESSION IV: Short Presentations</td>
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Monday, June 11

08:30 - 09:00

Prof. Ian F. Akyildiz: GRANET: Graphene Based Nanocommunication Networks

Room: M10
Chair: Ozgur B. Akan (Koc University, Turkey)

09:00 - 10:00

SESSION I: Networking Concepts for Molecular Communication

Room: M10
Chair: Ozgur B. Akan (Koc University, Turkey)

09:15 Intersymbol and Co-channel Interference in Diffusion-based Molecular Communication
Massimiliano Pierobon (Georgia Institute of Technology & Broadband Wireless Networking Lab, USA); Ian F. Akyildiz (Georgia Institute of Technology, USA)
pp. 6126-6131

09:27 Comparing Transmission, Propagation, and Receiving Options for Nanomachines to Measure Distance by Molecular Communication
Michael J. Moore (Osaka University, Japan); Tadashi Nakano (Osaka University, Japan)
pp. 6132-6136

09:39 A Mathematical Channel Optimization Formula for Active Transport Molecular Communication
Nariman Farsad (York University, Canada); Andrew Eckford (York University, Canada); Satoshi Hiyama (NTT DOCOMO, Inc., Japan)
pp. 6137-6141
09:51 **Stochastic cargo transport by molecular motors in molecular communication**
   Akihiro Enomoto (University of California, Irvine, USA); Michael J. Moore (Osaka University, Japan); Tadashi Nakano (Osaka University, Japan); Tatsuya Suda (University Netgroup Inc., USA)
   pp. 6142-6145

10:03 **Novel Modulation Techniques using Isomers as Messenger Molecules for Molecular Communication via Diffusion**
   Na-Rae Kim (Yonsei University, Korea); Chan-Byoung Chae (Yonsei University, Korea)
   pp. 6146-6150

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10:00 - 10:30

**Coffee Break**

10:30 - 11:55

**SESSION II: Nanonetworking Communication Techniques**

Room: M10
Chair: Tadashi Nakano (Osaka University, Japan)

10:45 **A Joint Energy Harvesting and Consumption Model for Self-Powered Nano-Devices in Nanonetworks**
   Josep Miquel Jornet (Georgia Institute of Technology & School of Electrical and Computer Engineering, USA)
   pp. 6151-6156

10:57 **On the Node Density Limits and Rate-Delay-Energy Tradeoffs in Ad Hoc Nanonetworks with Minimum Energy Coding**
   Murat Kocaoglu (Koc University, Turkey); Derya Malak (Koc University, Turkey)
   pp. 6157-6161

11:09 **Quorum Sensing-enabled Amplification for Molecular Nanonetworks**
   Sergí Abadal (Universitat Politècnica de Catalunya & Nanonetworking Center in Catalonia, Spain); Ignacio Letser (Universitat Politècnica de Catalunya, Spain); Eduard Alarcón (Universitat Politècnica de Catalunya, Spain); Albert Cabellos-Aparicio (Universitat Politècnica de Catalunya, Spain)
   pp. 6162-6166

11:21 **An Information Theoretical Analysis of Broadcast Networks and Channel Routing for FRET-based Nanoscale Communications**
   Murat Kuscu (Koc University, Turkey); Derya Malak (Koc University, Turkey); Ozgur B. Akan (Koc University, Turkey)
   pp. 6167-6171

11:33 **Error Correction Coding for Molecular Communications**
   Mark S Leeson (University of Warwick, United Kingdom); Matthew D Higgins (University of Warwick, United Kingdom)
11:45 An Asynchronous Communication Scheme for Molecular Communication
Ya-Ping Hsieh (National Taiwan University, Taiwan); Po-Jen Shih (National Taiwan University, Taiwan); Yen-Chi Lee (National Taiwan University, Taiwan); Ping-Cheng Yeh (National Taiwan University, Taiwan); Kwang-Cheng Chen (National Taiwan University, Taiwan)
pp. 6177-6182

11:57 Security in Nano Communication: Challenges and Open Research Issues
Falko Dressler (University of Innsbruck, Austria); Frank Kargl (Ulm University & University of Twente, Germany)
pp. 6183-6187

11:55 - 12:00
Break

12:00 - 13:00

SESSION III: Nanonetworking applications and related topics

Room: M10
Chair: Dmitri D Botvich (Waterford Institute of Technology, Ireland)

12:15 Modeling Populations of Micro-robots for Biological Applications
Paul Bogdan (Carnegie Mellon University, USA); Guopeng Wei (Carnegie Mellon University, USA); Radu Marculescu (Carnegie Mellon University, USA)
pp. 6188-6192

12:27 On the Modeling of a Nano Communication Network using Spiking Neural Architecture
Amir Jabbari (Norwegian University of Science and Technology (NTNU), Norway); Illangko Balasingham (Norwegian University of Science & Technology & Oslo University Hospital, Norway)
pp. 6193-6197

12:39 Capacity analysis for signal propagation in nanomachine-to-neuron communications
Laura Galluccio (University of Catania, Italy); Sergio Palazzo (University of Catania, Italy); Giuseppe Enrico Santagati (University of Catania, Italy)
pp. 6198-6202

12:51 Collaborative Wireless Nanobots for Tumor Discovery and Drug Delivery
Dilip Krishnaswamy (Qualcomm Research Center, USA); Renuka Ramanathan (University of Washington, USA); Asif Qamar (JnanaEdge & University of California, Berkeley, USA)
pp. 6203-6208
13:03 Neural Delay Lines for TDMA Based Molecular Communication in Neural Networks
Hakan Tezcan (Istanbul Technical University, Turkey); Sema Oktug (Istanbul Technical University, Turkey); Fatma Kok (Istanbul Technical University, Turkey)
pp. 6209-6213

13:00 - 13:15

SESSION IV: Short Presentations

Room: M10
Chair: Ozgur B. Akan (Koc University, Turkey)
ICC'12 WS - netsurviv: New Trends in Optical Networks Survivability - Program

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<td>8:45 - 9:15</td>
<td>Invited paper I</td>
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<td>9:15 - 10:00</td>
<td>Morning Session I</td>
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<td>10:30 - 11:00</td>
<td>Invited paper II</td>
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<td>14:00 - 14:30</td>
<td>Invited Talk I</td>
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<td>Afternoon Session I</td>
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<td>14:50 - 15:30</td>
<td>Invited Paper III</td>
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<td>16:30 - 17:00</td>
<td>Invited Talk III</td>
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<td>17:00 - 17:30</td>
<td>Invited Talk IV</td>
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<td>17:30 - 18:00</td>
<td>Panel discussion and closing remarks</td>
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Monday, June 11

08:30 - 08:45

Workshop Introduction

A few words from the workshop co-chairs

Room: M8
Chairs: Cicek Cavdar (Royal Institute of Technology (KTH), Sweden), Paolo Monti (Royal Institute of Technology (KTH), Sweden), Lena Wosinska (Royal Institute of Technology KTH, Sweden)

08:45 - 09:15

Invited paper I

Room: M8
Chair: Massimo Tornatore (Politecnico di Milano & University of California, Davis, Italy)

08:45 Survivability Techniques for NG-PONs and FiWi Access Networks
Martin Maier (University of Quebec, Canada)
pp. 6214-6219
09:15 - 10:00

**Morning Session I**

Contributed papers

**Room:** M8

**Chair:** Massimo Tornatore (Politecnico di Milano & University of California, Davis, Italy)

**09:15 Efficient Protection Schemes for Hybrid WDM/TDM Passive Optical Networks**
Abhishek Dixit (University of Ghent & IBBT, Belgium); Jiagia Chen (The Royal Institute of Technology (KTH), Sweden); Mozghan Mahloo (Royal Institute of Technology KTH, Sweden); Bart Lannoo (Ghent University - IBBT, Belgium); Didier Colle (IBBT - Ghent University, Belgium); Mario Pickavet (Ghent University, Belgium)

pp. 6220-6224

**09:35 OBOF: A Protection Scheme for Survivable Fiber-Wireless Broadband Access Network**
Yejun Liu (Northeastern University, P.R. China); Lei Guo (Northeastern University, P.R. China); Xuetao Wei (UC, Riverside, USA)

pp. 6225-6229

10:30 - 11:00

**Invited paper II**

**Room:** M8

**Chair:** Cicek Cavdar (Royal Institute of Technology (KTH), Sweden)

**10:30 Survivable Traffic Grooming in Elastic Optical Networks - Shared Path Protection**
Menglin Liu (University of California, Davis, USA); Massimo Tornatore (Politecnico di Milano & University of California, Davis, Italy); Biswanath Mukherjee (- University of California Davis, USA)

pp. 6230-6234

11:00 - 12:30

**Morning Session II**

Contributed papers

**Room:** M8

**Chair:** Martin Maier (University of Quebec, Canada)

**11:00 Spectrum and Transponder Optimization in Survivable Translucent Flexible-Grid Optical Networks**
António Eira (Nokia Siemens Networks, Portugal); João Manuel Ferreira Pedro (Nokia Siemens Networks Portugal S.A. & Instituto de Telecomunicações, Portugal); João Pires (Instituto de Telecomunicações & Instituto Superior Técnico, Portugal)
11:20 Network Protection with Multiple Availability Guarantees
Gregory Kuperman (MIT, USA); Eytan Modiano (MIT, USA); Aradhana Narula-Tam (MIT Lincoln Laboratory, USA)
pp. 6241-6246

11:40 Diverse Routing in Multi-Domain Optical Networks With Correlated and Probabilistic Multi-Failures
Feng Xu (University of New Mexico, USA); Nasro Min-Allah (GUCAS, P.R. China); Samee U. Khan (North Dakota State University, USA); Nasir Ghani (University of New Mexico, USA)
pp. 6247-6251

12:00 Preemption Based Lightpath Restoration
Arularasi Sivasankaran (University of Texas at Dallas, USA); Miguel Razo (University of Texas at Dallas & Computer Science, USA); Marco Tacca (University of Texas at Dallas, USA); Andrea Fumagalli (UTD, USA)
pp. 6252-6256

14:00 - 14:30
Invited Talk I

Salvatore Spadaro (Universitat Politècnica de Catalunya): "PLI-aware recovery strategies in GMPLS-based all-optical networks"
Room: M8
Chair: Tim Pearson (Ciena, Canada)

14:30 - 14:50
Afternoon Session I

Contributed papers
Room: M8
Chair: Tim Pearson (Ciena, Canada)

14:30 Reconfiguration with physical constraints in WDM networks
Sonia Belhareth (INRIA, I3S, CNRS, Université de Nice Sophia, France); David Coudert (INRIA, I3S, CNRS, Université de Nice Sophia, France); Dorian Mazauric (Mascotte, I3S (CNRS-UNSA)/INRIA, France); Nicolas Nisse (INRIA, I3S, CNRS, Université de Nice Sophia, France); Issam Tahiri (INRIA, I3S, CNRS, Université de Nice Sophia, France)
pp. 6257-6261
14:50 - 15:30

Invited Paper III

Room: M8
Chair: Tim Pearson (Ciena, Canada)

14:50 Resilient network dimensioning for optical grid/clouds using relocation
Chris Develder (Ghent University - IBBT, Belgium); Jens Buysse (Ghent University & INTEC, Belgium); Marc De Leenheer (Ghent University & University of California - Davis, USA); Brigitte Jaumard (Concordia University, Canada); Bart Dhoedt (Ghent University, Belgium)
pp. 6262-6267

16:00 - 16:30

Invited Talk II

Dominic Schupke (Nokia Seimens): "Advances in Multilayer Resilience"
Room: M8
Chair: Salvatore Spadaro (Universitat Politecnica de Catalunya (UPC), Spain)

16:30 - 17:00

Invited Talk III

Biswa Nath Mukherjee (University of California at Davis) "Modern Topics in Optical Network Survivability"
Room: M8
Chair: Salvatore Spadaro (Universitat Politecnica de Catalunya (UPC), Spain)

17:00 - 17:30

Invited Talk IV

Tim Pearson (Ciena): "Building Scalable and Dynamic DWDM Networks with Next Generation Coherent technology"
Room: M8
Chair: Salvatore Spadaro (Universitat Politecnica de Catalunya (UPC), Spain)

17:30 - 18:00

Panel discussion and closing remarks

Room: M8
Chairs: Cicek Cavdar (Royal Institute of Technology (KTH), Sweden), Paolo Monti (Royal Institute of Technology (KTH), Sweden), Lena Wosinska (Royal Institute of Technology KTH, Sweden)

### Friday, June 15

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<td><strong>Energy Efficiency in WSNs</strong></td>
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<tr>
<td>12:00 - 14:00</td>
<td><strong>Energy Efficiency in Wireless Networks</strong></td>
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#### 08:30 - 12:00

**Energy Efficiency in WSNs**

Chair: Torsten Ingo Braun (University of Bern, Switzerland), Mesut Günes (FU Berlin, Germany)

**08:30 On Energy Measurement Methods in Wireless Networks**
Anton Hergenröder (Karlsruhe Institute of Technology (KIT), Germany); Jochen Furthmüller (Karlsruhe Institute of Technology (KIT), Germany)

pp. 6268-6272

**09:00 Profiling energy consumption of Wireless Sensor Nodes with almost zero effort**
Oliver Hahm (Freie Universität Berlin, Germany); Stephan Adler (Freie Universität Berlin, Germany)

pp. 6273-6277

**09:30 A Simple Energy Model for the Harvesting and Leakage in a Supercapacitor**
Aravind Kailas (University of North Carolina at Charlotte, USA); Mary Ann Ingram (Georgia Institute of Technology, USA); Davide Brunelli (University of Trento, Italy)

pp. 6278-6282

**10:00 Coffee break**

**10:30 An Accurate Energy Consumption Model for the Physical Layer in a Wireless Mote**
Sankarkumar Thandapani (University of North Carolina at Charlotte, USA); Aravind Kailas (University of North Carolina at Charlotte, USA)

pp. 6283-6287

**11:00 Energy Efficient Broadcasting in WSNs with Cocasting and Power Control**
Jacek Ilow (Dalhousie University, Canada); Shreyas Rangappa (Dalhousie University, Canada); Nauman Aslam (Northumbria University, United Kingdom)

pp. 6288-6292

**11:30 Evaluating the Energy Consumption of an Incentive System for Resource Sharing in MANETs**
Jochen Furthmüller (Karlsruhe Institute of Technology (KIT), Germany); Oliver P. Waldhorst (Karlsruhe Institute of Technology (KIT), Germany)

pp. 6293-6297
14:00 - 15:30

Energy Efficiency in Wireless Networks

Chair: Martina Zitterbart (KIT (Karlsruhe Institute of Technology), Germany)

14:00 Utilizing Unused Network Capacity for Battery Lifetime Extension of LTE Devices
Bjoern Dusza (Technical University of Dortmund, Germany); Christoph Ide (TU Dortmund University, Germany); Christian Wietfeld (TU Dortmund University & Communication Networks Institute, Germany)
pp. 6298-6302

14:30 Energy Efficient LTE-Based Floating Car Data Collection for Dynamic Traffic Forecasts
Christoph Ide (TU Dortmund University, Germany); Bjoern Dusza (Technical University of Dortmund, Germany); Christian Wietfeld (TU Dortmund University & Communication Networks Institute, Germany)
pp. 6303-6307

15:00 A Methodology for assessing Video transmission Energy Consumption and Quality
Vitor Bernardo (University of Coimbra, Portugal); Marilia Curado (University of Coimbra, Portugal)
pp. 6308-6313
ICC’12 WS - RIDO: Re-think ICT infrastructure designs and operations - Program

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<td>9:15 - 10:00</td>
<td>Invited Talk #2: R&amp;D Activities on Disaster-Resistant Network Infrastructure in KDDI R&amp;D Laboratories</td>
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<tr>
<td>10:30 - 11:15</td>
<td>Invited Talk #3: Emergency Management and Future Vision in Disaster-Resilient Society</td>
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<tr>
<td>11:15 - 12:45</td>
<td>Trustable Communication Services and Applications</td>
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<td>12:45 - 14:00</td>
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<tr>
<td>14:00 - 15:30</td>
<td>Disaster Communication Recovery</td>
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<td>15:30 - 16:00</td>
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<tr>
<td>16:00 - 17:00</td>
<td>Energy Management in National Disaster</td>
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</tbody>
</table>

**Friday, June 15**

**08:30 - 09:15**

**Invited Talk #1: Disaster Voice Messaging Service**

Eisuke Endou (NTT DOCOMO, Japan)
Chair: Yoshiaki Kiriha (NEC, Japan)

**09:15 - 10:00**

**Invited Talk #2: R&D Activities on Disaster-Resistant Network Infrastructure in KDDI R&D Laboratories**

Akira Idoue (KDDI R&D Laboratories Inc., Japan)
Chair: Yoshiaki Kiriha (NEC, Japan)

**10:30 - 11:15**

**Invited Talk #3: Emergency Management and Future Vision in Disaster-Resilient Society**

Yuji Maeda (NTT, Japan)
Chair: Yoshiaki Kiriha (NEC, Japan)

11:15 - 12:45

Trustable Communication Services and Applications

Chair: Makoto Takano (NTT, Japan)

11:15 Communication Service Continuity under a Large-Scale Disaster Providing a Wireless Multihop Network and Shelter Communication Service for a Disaster Area under the Great East Japan Earthquake
Kenichi Mase (Niigata University, Japan)
pp. 6314-6318

11:45 On the Design of Low-Frequency Broadcasting System and Its Applications to Disaster Management
Chia-Horng Liu (Chunghwa Telecom Co., Ltd., Taiwan); JuneMing Shen (Chunghwa Telecom. Labs., Taiwan); ChungHo Wang (Chunghwa Telecom. Labs., Taiwan); YuChen Kuo (Chunghwa Telecom. Labs., Taiwan); Nealvga Wu (Chunghwa Telecom. Labs., Taiwan)
pp. 6319-6323

12:15 On the Use of Virtualization Technologies to Support Uninterrupted IT Services
Mauricio Tsgawa (University of Florida, USA); Renato Figueiredo (University of FLorida, USA); Jose Fortes (University of Florida, USA); Takahiro Hirofuchi (National Institute of Advanced Industrial Science and Technology, Japan); Hidemoto Nakada (National Institute of Advanced Industrial Science and Technology, Japan); Ryousei Takano (National Institute of Advanced Industrial Science and Technology, Japan)
pp. 6324-6328

14:00 - 15:30

Disaster Communication Recovery

Chair: Hideki Okita (Hitachi America, Ltd., USA)

14:00 Wireless Access Systems used in disaster recovery operations after the Great East Japan Earthquake and Tsunami
Takashi Hirose (NTT, Japan); Toshio Nakamura (NTT, Japan); Yoshihiko Shindo (NTT, Japan); Hidekuni Yoshida (NTT, Japan)
pp. N/A

14:30 Distributed Networked Emergency Evacuation and Rescue
Erol Gelenbe (Imperial College London, United Kingdom); Fang-Jing Wu (National Chiao-Tung University, Taiwan)
pp. 6334-6338

15:00 A Rapidly Deployable Disaster Communications System for Developing Countries
Devendra Jaihal (Indian Institute of Technology Madras, India); Ravinder D Koilpillai (Indian Institute of Technology Madras, India); Prakash Khawas (Indian Institute of
16:00 - 17:00

Energy Management in National Disaster

Chair: Shingo Ata (Osaka City University, Japan)

16:00 Subjects surfaced about power feeding systems for communications after the East Japan Great Earthquake
   Tadatoshi Babasaki (NTT, Japan); Yousuke Nozaki (NTT, Japan)
   pp. N/A

16:30 Open Information Gateway for Disaster Management
   Chi-Sheng Shih (National Taiwan University, Taiwan); Ling-Jyh Chen (Academia Sinica, Taiwan); Kate Ching-Ju Lin (Academia Sinica, Taiwan); Wei-Ho Chung (Academia Sinica, Taiwan)
   pp. 6348-6352
### ICC'12 WS - RSN: Workshop on Radar and Sonar Network - Program

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<tr>
<td>08:30 - 09:00</td>
<td><strong>Keynote Speech</strong></td>
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<td>09:00 - 10:00</td>
<td><strong>Plenary Talks</strong></td>
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<tr>
<td>10:30 - 12:30</td>
<td><strong>S1: RSN image processing and compressive sensing</strong></td>
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<td>12:30 - 14:00</td>
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<td>14:00 - 15:30</td>
<td><strong>S2: RSN Modelling and Optimization</strong></td>
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<td>15:30 - 16:00</td>
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<tr>
<td>16:00 - 18:00</td>
<td><strong>S3: Target detection, location, tracking and recognition</strong></td>
</tr>
</tbody>
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**Friday, June 15**

**08:30 - 09:00**

**Keynote Speech**

Chair: Qilian Liang (University of Texas at Arlington, USA)

**09:00 - 10:00**

**Plenary Talks**

Chair: Qilian Liang (University of Texas at Arlington, USA)

**10:30 - 12:30**

**S1: RSN image processing and compressive sensing**

Chair: Zongjie Cao (University of Electronic Science and Engineering of China, P.R. China)

10:30 *FMCW Radar Near Field Three-Dimensional Imaging*

Jungang Yang (University of Edinburgh, United Kingdom); John Thompson (University of Edinburgh, United Kingdom); Xiaotao Huang (National University of Defense Technology, P.R. China); Tian Jin (National University of Defense Technology, P.R. China); Zhimin Zhou (National University of Defense Technology, P.R. China)

pp. 6353-6356

10:50 *Research on image processing with compressed sensing algorithm*

Baoju Zhang (Tianjin Normal University, P.R. China); Xiaohui Yin (Tianjin Normal University, P.R. China); Wei Wang (Tianjin Normal University, P.R. China); Qing Lei (Tianjin Normal University, P.R. China)
11:10 Compressive Sensing Analysis of Synthetic Aperture Radar Raw Data
Junjie Chen (University of Texas at Arlington, USA); Qilian Liang (University of Texas at Arlington, USA); John Paden (University of Kansas, USA); Prasad Gogineni (Center For Remote Sensing Of Ice Sheets, USA)
pp. 6357-6366

11:30 Bayesian compressive sensing for adaptive measurement of radar signal
Wei Wang (Tianjin Normal University, P.R. China); Baoju Zhang (Tianjin Normal University, P.R. China)
pp. 6367-6370

11:50 A Compressed Sensing Radar Detection Scheme for Closing Vehicle Detection
Xuan Sun (Beijing University of Posts and Telecommunications, P.R. China); Zheng Zhou (Beijing University of Posts and Telecommunications, P.R. China); Chenglin Zhao (Beijing University of Posts and Telecommunications, P.R. China); Weixia Zou (Beijing University of Posts and Telecommunications, P.R. China)
pp. 6371-6375

12:10 Sparsity and Compressive Sensing of Sense-through-Foliage Radar Signals
Qilian Liang (University of Texas at Arlington, USA); Ji Wu (UTA, USA); Xiuzhen Cheng (George Washington Univ, USA); Dechang Chen (Uniformed Services University of the Health Sciences, USA); Jing Liang (University of Electronic Science and Technology, P.R. China)
pp. 6376-6380

14:00 - 15:30

S2: RSN Modelling and Optimization

Chair: Qilian Liang (University of Texas at Arlington, USA)

14:00 MIMO-Radar Waveform Design for Beampattern Using Particle-Swarm-Optimisation
Sajid Ahmed (King Abdullah University of Science and Technology, Thuwal, KSA, Saudi Arabia); John Thompson (University of Edinburgh, United Kingdom); Bernard Mulgrew (Institute for Digital Communications, The University of Edinburgh, United Kingdom)
pp. 6381-6385

14:18 Statistical Characterization of UWB Propagation Channel in Ship Cabin Environment
Shijun Zhai (Beijing University of Posts and Telecommunications & Key Laboratory of Universal Wireless Communications, Ministry of Education, P.R. China); Ting Jiang (Beijing University of Posts & Telecommunications, P.R. China); Dejian Li (Beijing University of Posts and Telecommunications, P.R. China); Bin Li (Beijing University of Posts and Telecommunications & Key Lab of Universal Wireless Communications, MOE, P.R. China)
pp. 6386-6390
14:36 Research on the optimal number of cluster heads of wireless sensor networks based on Multihop-LEACH
Zhichao Qin (Beijing University of Posts and Telecommunications, P.R. China); Zheng Zhou (Beijing University of Posts and Telecommunications, P.R. China); Xiaochuan Zhao (Beijing University of Posts and Telecommunications, P.R. China)
pp. 6391-6395

14:54 Fountain Code based Adaptive Multi-hop Reliable Data Transfer for Underwater Acoustic Networks
Zhong Zhou (University of Connecticut, USA); Haining Mo (UCONN, USA); Yibo Zhu (University of Connecticut, USA); Zheng Peng (University of Connecticut, USA); Jie Huang (University of Connecticut, USA); Jun-Hong Cui (University of Connecticut, USA)
pp. 6396-6400

15:12 Scattering Center Modelling of Electrically Large Zigzag-Grooved Structures
Kin Sze (Quality Engineering Test Establishment, Canada)
pp. 6401-6405

16:00 - 18:00

S3: Target detection, location, tracking and recognition
Chair: Zongjie Cao (University of Electronic Science and Technology of China, P.R. China)

16:00 A Mutual Information Based Approach for Target Detection through Foliage using UWB Radar
Ishrat Maherin (UT-Arlington, USA); Qilian Liang (University of Texas at Arlington, USA)
pp. 6406-6410

16:24 Keeping Track of Position and Cell Residual Dwell Time of Cellular Networks Using HSMM Structure and Cell-ID Information
Ruichen Xu (Beijing University of Posts & Telecommunications, P.R. China); Ting Jiang (Beijing University of Posts & Telecommunications, P.R. China)
pp. 6411-6415

16:48 NMF and FLD based Feature Extraction with Application to Synthetic Aperture Radar Target Recognition
Zongjie Cao (University of Electronic Scinece and Engineering of China, P.R. China); Jilian Feng (University of Electronic Science and Technology of China, P.R. China); Rui Min (University of Electronic Science and Engineering of China, P.R. China); Yiming Pi (UESTC, USA)
pp. 6416-6420

17:12 Multitarget Detection Using High-Resolution Passive Radar Sensor Networks (HRPRSN)
Jing Liang (University of Electronic Science and Technology, P.R. China)
pp. 6421-6425
17:36 Passive Geolocation in Underwater Environment

Qilian Liang (University of Texas at Arlington, USA); Chenglin Zhao (Beijing University of Posts and Telecommunications, P.R. China); Yiming Pi (UESTC, USA)

pp. 6426-6430
Monday, June 11

10:30 - 12:30

TS1: Quality Provisioning in Wireless Networks

Chair: Scott Fowler (Linköping University, Sweden)

10:30 Scalability and Routing Performance of Future Autonomous Networks
David Fonseca Palma (University of Coimbra, Portugal); Marília Curado (University of Coimbra, Portugal)
pp. 6431-6436

10:50 Self-Organizing Overlay Networks for Autonomic Manager Selection
Imad Abdeljaouad (University of Ottawa, Canada); Ahmed Karmouch (University of Ottawa, Canada)
pp. 6437-6441

Sajjad Ali Mushtaq (Telecom Bretagne Brest, France); Christophe Lohr (Telecom Bretagne, France); Annie Gravey (Institut Mines Telecom - Telecom Bretagne, France)
pp. 6442-6447

11:30 Multi-agent Learning for Multi-channel Wireless Sensor Networks
Kieu-Ha Phung (Vrije Universiteit Brussel, Belgium); Bart Lemmens (Vrije Universiteit Brussel, Belgium); Mihail Mihaylov (Vrije Universiteit Brussel, Belgium); Dario Di Zenobio (Fondazione Ugo Bordoni, Italy); Kris Steenhaut (Vrije Universiteit Brussel, Belgium); Lan Tran (Hanoi University of Technology, Vietnam)
pp. 6448-6452

11:50 Towards Autonomic Multipath Transport for Infotainment-like Systems
Guillaume Dugue (LAAS-CNRS, France); Codé Diop (LAAS-CNRS, France); Christophe Chassot (LAAS/CNRS & INSA Toulouse, France); Ernesto Exposito (LAAS-CNRS, Université de Toulouse, France)
pp. 6453-6457
12:10 *Multi-Layer quality assessment framework for P2PTV applications*
René Serral-Gracià (Technical University of Catalunya (UPC), Spain); Anny Martinez (Technical University of Catalunya (UPC), Spain); Eva Marin-Tordera (Technical University of Catalonia UPC, Spain); Marcelo Yannuzzi (Technical University of Catalunya (UPC), Spain); Xavier Masip-Bruin (Universitat Politècnica de Catalunya & Advanced Network Architectures Lab (CRAAX), Spain)

pp. 6458-6462

14:00 - 15:30

**TS2: Smart and Efficient Applications, Networks and Communications**

Chair: Ernesto Exposito (LAAS-CNRS, Université de Toulouse, France)

14:00 *Toward a New Addressing Scheme for a Service-Centric Internet*
Anny Martinez (Technical University of Catalunya (UPC), Spain); Xavier Masip-Bruin (Universitat Politècnica de Catalunya & Advanced Network Architectures Lab (CRAAX), Spain); Wilson Ramírez (Universidad Politécnica de Catalunya (UPC), CRAAX, Spain); René Serral-Gracià (Technical University of Catalunya (UPC), Spain); Eva Marin-Tordera (Technical University of Catalonia UPC, Spain); Marcelo Yannuzzi (Technical University of Catalonia (UPC), Spain)

pp. 6463-6467

14:18 *Multi-Agent based governance model for Machine-to-Machine networks in a smart parking management system*
Mustapha Bilal (ENSIMAG - Grenoble INP, France); Camille Persson (Fayol Institute - ENSM-SE & Orange Labs Network and Carrier - France Télécom, France); Fano Ramparanay (France Telecom R&D, France); Gauthier Picard (ENSM-SE, France); Olivier Boissier (ENSM-SE, France)

pp. 6468-6472

14:36 *Interoperable and globally interconnected Smart Grid using IPv6 and 6LoWPAN*
Angelo P. Castellani (University of Padova, Italy); Giulio Ministeri (Università degli studi di Padova, Italy); Marco Rotoloni (University of Padova, Italy); Lorenzo Vangelista (University of Padova, Italy); Michele Zorzi (Università degli Studi di Padova, Italy)

pp. 6473-6478

14:54 *Smart Collaborative System Using the Sensors of Mobile Devices for Monitoring Disabled and Elderly People*
Sandra Sendra (Universidad Politécnica de Valencia, Spain); Emilio Granell (Universitat Politècnica de València, Spain); Jaime Lloret (Universidad Politécnica de Valencia, Spain); Joel J. P. C. Rodrigues (Instituto de Telecomunicações, University of Beira Interior, Portugal)

pp. 6479-6483

15:12 *A Novel Wireless Sensor and Actor Network Framework for Autonomous Monitoring and Maintenance of Lifeline Infrastructures*
Muhammad Imran (King Saud University, Saudi Arabia); M A Alnuem (King Saud University & College of Computer and Information Science, Saudi Arabia); Waleed
16:00 - 18:00

**TS3: Performance and Simulation Analysis**

Chair: Abdelhamid Mellouk (UPEC, University Paris-Est Creteil Val de Marne, France)

16:00 **H-MMAC: A Hybrid Multi-channel MAC Protocol for Wireless Ad hoc Networks**
Duc Ngoc Minh Dang (Kyung Hee University, Korea); Choong Seon Hong (Kyung Hee University, Korea)
pp. 6489-6493

16:20 **Localization in WSN using Exactly Three Anchors with Scalability and Error Analysis**
Saffdar Abbas Khan (University of Paris East Creteil, France); Boubaker Daachi (University of Paris-EAST, France); Karim Djouani (Tshwane University of Technology, South Africa)
pp. N/A

16:40 **OLSR-based Coarse Localization in Tactical MANET Situational Awareness Systems**
Z. M. Faizul Islam (University of Ontario Institute of Technology, Canada); Mitchell Romanuik (University of Toronto, Mississauga, Canada); Shahram Shah Heydari (University of Ontario Institute of Technology, Canada); Mazda Salmanian (Defence R&D Canada, Canada)
pp. 6494-6498

17:00 **Towards an Ontology and DHT-based publish/subscribe scalable system**
Amina Chaabane (National School of Engineers of Sfax-Tunisia, Tunisia); Wassef Louati (ENIS, Tunisia); Mohamed Jmaiel (ENIS, Tunisia); Jorge Gómez-Montalvo (Facultad de Matemáticas, Universidad Autónoma de Yucatán, Mexico); Codé Diop (LAAS-CNRS, France); Ernesto Exposito (LAAS-CNRS, Université de Toulouse, France)
pp. 6499-6503

17:20 **Modeling Enhancements in DSR, FSR, OLSR under Mobility and Scalability Constraints in VANETs**
Nadeem Javaid (COMSATS Institute of IT, Pakistan); Ayesha Bibi (ICIT, Gomal University, Pakistan); Saifdarr Hussain Bouk (COMSATS Institute of Information Technology, Pakistan); Akmal Javaid (COMSATS Institute of Information Technology, Pakistan); Iwao Sasase (Keio University, Japan)
pp. 6504-6508
ICC’12 WS - SCPA: 2nd IEEE International Workshop on Smart Communication Protocols and Algorithms - Program

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<td>09:00 - 09:45</td>
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<td>10:00 - 12:00</td>
<td>S1: LTE and Network Layer</td>
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<td>13:30 - 15:30</td>
<td>S2: Monitoring and Applications</td>
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<tr>
<td>16:00 - 18:00</td>
<td>S3: Wireless channel and scheduling</td>
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</table>

**Monday, June 11**

**09:00 - 09:45**

**S0: Keynote Speech**

Chair: Jaime Lloret (Universidad Politécnica de Valencia, Spain)

**10:00 - 12:00**

**S1: LTE and Network Layer**

Chair: Tigang Jiang (University of Electronic Science and Technology of China (UESTC), P.R. China)

**10:00 Cross Layer Design for Efficient Video Streaming over LTE Using Scalable Video Coding**

Rakesh Radhakrishnan (University of Ottawa, Canada); Amiya Nayak (SITE, University of Ottawa, Canada)

pp. 6509-6513

**10:20 Channel Quality-Based AMC and Smart Scheduling Scheme for SVC Video Transmission in LTE MBSFN Networks**

Rakesh Radhakrishnan (University of Ottawa, Canada); Balaaji Tirouvengadam (University of Ottawa, Canada); Amiya Nayak (SITE, University of Ottawa, Canada)

pp. 6514-6518

**10:40 GORby: Interference-Aware Multicast for Wireless Mesh Network**

Hasen Nicanfar (The University of British Columbia, Canada); Muhammad Jaseemuddin (Ryerson University, Canada); Ngok-Wah Ma (Ryerson University, Canada); Victor CM Leung (The University of British Columbia, Canada)

pp. 6519-6524
11:00 A distributed, load-aware, power and frequency bargaining protocol for LTE-based networks
Vangelis Angelakis (Linköping University, Sweden); Muhammad Sajid (Linköping University, Sweden); Imran Siddiqui (Linköping University, Sweden); Di Yuan (Linköping University, Sweden)
pp. 6525-6529

11:20 A smart multi-hop hierarchical routing protocol for efficient video communication over wireless multimedia sensor network
Denis Lima Rosário (Federal University of Para, Brazil); Rodrigo Medeiros Costa (Federal University of Para, Brazil); Helder Paraense (Federal University of Para, Brazil); Kássio Machado (Federal University of Para, Brazil); Eduardo Cerqueira (Federal University of Para & UFPA, Brazil); Torsten Ingo Braun (University of Bern, Switzerland)
pp. 6530-6534

11:40 A Peer-to-Peer Self-organizing Scheme for Multiparty Session
Dhafer Ben Khedher (Concordia University, Montreal & Ericsson Canada, Montreal, Canada, Canada)
pp. 6535-6539

13:30 - 15:30

S2: Monitoring and Applications

Chair: Ivan Stojmenovic (University of Ottawa, Canada)

13:30 Analyzing the Behavior of Top Spam Botnets
Rui Sousa (University of Aveiro & Instituto de Telecomunicações, Portugal); Nuno Rodrigues (Instituto de Telecomunicações & Instituto Politécnico de Bragança, Portugal); Paulo Salvador (Instituto de Telecomunicações, DETI, University of Aveiro, Portugal); António Nogueira (University of Aveiro/Instituto de Telecomunicações, Portugal)
pp. 6540-6544

13:50 A Cellular Automaton Model for Connectivity Preserving Deployment of Mobile Wireless Sensors
Salimur Choudhury (Queen's University, Canada); Kai Salomaa (School of Computing Queen's University Canada, Canada); Selim G. Akl (Queen's University, Canada)
pp. 6545-6549

14:10 Adaptive Discrete Particle Swarm Optimization for Cognitive Radios
Ali Haider Mahdi (Ilmenau University of Technology, Germany); Jerome Mohanan (Ilmenau University of Technology, Germany); Mohamed Abd Rabo Ahmed Kall (Ilmenau University of Technology, Germany); Andreas Mitschele-Thiel (Ilmenau University of Technology, Germany)
pp. 6550-6554
14:30 **A Smartphone Design Approach to User Communication Interface for Administering Storage System Network**  
Weider D. Yu (San Jose State University, USA); Jason Hansen (San Jose State University, USA)  
pp. 6555-6559

14:50 **Interaction of HiveMind Application with Smart Conference System**  
Andrey Vasilev (Yaroslavl State University, Russia); Ilya Paramonov (Yaroslavl State University, Russia); Ekaterina Dashkova (University of Oulu, Finland); Yevgeni Koucheryavy (Tampere University of Technology, Finland); Sergey I. Balandin (FRUCT Oy, Finland)  
pp. N/A

15:10 **Pheromone-based In-Network Processing for Wireless Sensor Network Monitoring Systems**  
Guillermo G Riva (National Technological University & Digital Communication Lab (LCD) - National University of Cordoba, Argentina); Jorge M Fnochietto (National University of Córdoba & CONICET, Argentina)  
pp. 6560-6564

15:30 **NETCONF agent for link state monitoring**  
Diogo Loureiro (University of Aveiro, DETI/IT, Portugal); Pedro A. Gonçalves (Universidade de Aveiro, Portugal); António Nogueira (University of Aveiro/Instituto de Telecomunicações, Portugal)  
pp. 6565-6569

16:00 - 18:00

**S3: Wireless channel and scheduling**

Chair: Joel J. P. C. Rodrigues (Instituto de Telecomunicações, University of Beira Interior, Portugal)

16:00 **Using Minimization of Maximal Regret for Interface Selection in a Heterogeneous Wireless Network**  
Talmai B Oliveira (University of Cincinnati, USA); Srisudha Mahadevan (University of Cincinnati, USA); Dharma P Agrawal (University of Cincinnati, USA)  
pp. 6570-6574

16:20 **A practical distance estimator through distributed RSSI/LQI processing - An experimental study**  
Madhanmohan Raju (University of Cincinnati, USA); Talmai B Oliveira (University of Cincinnati, USA); Dharma P Agrawal (University of Cincinnati, USA)  
pp. 6575-6579

16:40 **Fully Distributed State Estimation of Smart Grids**  
Yunxin (Jeff) Li (NICTA & University of Sydney, Australia)  
pp. 6580-6585
17:00 Smart Scheduling and Feedback Allocation over Non-stationary Wireless Channels
Mehmet Karaca (Sabanci University, USA); Tansu Alpcan (The University of Melbourne, Australia); Ozgur Ercetin (Sabanci University, Turkey)
pp. 6586-6590

17:20 Improved Channel Assignment for WLANs by Exploiting Partially Overlapped Channels with Novel CIR-Based User Number Estimation
Penghui Mi (The University of Western Ontario, Canada); Xianbin Wang (The University of Western Ontario, Canada)
pp. 6591-6595

17:40 Size-Based and Channel-Aware Scheduling Algorithm Proposal for Mean Delay Optimization in Wireless Networks
Iainre Taboada (University of the Basque Country, Spain); Jose Oscar Fajardo (University of the Basque Country, Spain); Fidel Liberal (University of the Basque Country, Spain); Bego Blanco (University of the Basque Country, Spain)
pp. 6596-6600
### ICC'12 WS - SDN: Software Defined Networks - Program

**Friday, June 15**

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<td>8:40 - 9:30</td>
<td><strong>K1: KEYNOTE 1: Boon Thau Loo (University of Pennsylvania)</strong></td>
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<td>9:30 - 10:00</td>
<td><strong>TS1: Technical Session 1</strong></td>
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<tr>
<td>10:00 - 10:30</td>
<td><strong>TS2: Technical Session 2</strong></td>
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<td>14:00 - 15:30</td>
<td><strong>TS3: Technical Session 3</strong></td>
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<td>16:00 - 16:40</td>
<td><strong>K2: KEYNOTE 2: Thomas D. Nadeau (Juniper Networks)</strong></td>
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<td>16:40 - 17:59</td>
<td><strong>PD1: Panel discussion</strong></td>
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#### 08:30 - 08:40

**O: Opening**

Message from the chairs  
**Room:** F10  
**Chair:** Max Ott (NICTA, Australia)

#### 08:40 - 09:30

**K1: KEYNOTE 1: Boon Thau Loo (University of Pennsylvania)**

**Title:** A Declarative Perspective on Programmable Networking  
**Room:** F10  
**Chair:** Marcos Rogerio Salvador (CPqD, Brazil)

#### 09:30 - 10:00

**TS1: Technical Session 1**

**Room:** F10  
**Chair:** Marcos Rogerio Salvador (CPqD, Brazil)

**09:30 Cost, performance & flexibility in OpenFlow: Pick three**

Charalampos Rotsos (University of Cambridge, United Kingdom); Richard Mortier (University of Nottingham & Horizon Digital Economy Research, United Kingdom); Anil Madhavapeddy (University of Cambridge, United Kingdom); Balraj Singh (Computer Laboratory, University of Cambridge, United Kingdom); Andrew W. Moore (University of Cambridge, United Kingdom)
10:30 - 12:30

**TS2: Technical Session 2**

Room: F10
Chair: Marcos Rogerio Salvador (CPqD, Brazil)

**10:30 Scalable Fault Management for OpenFlow**
James Kempf (Ericsson Research, USA); Elisa Bellagamba (Ericsson, Sweden); András Kern (Ericsson, Hungary); Dávid Jocha (Ericsson, Hungary); Attila Takacs (Ericsson, Hungary); Pontus Sköldström (Acreo AB & Acreo, Sweden)
pp. 6606-6610

**10:55 A Programmable Networking Switch Node with In-network Processing Support**
Namgon Kim (Gwangju Institute of Science and Technology, Korea); Jae-Yong Yoo (Gwangju Institute of Science and Technology(GIST), Korea); NamGon L Kim (Gwangju Institute of Science and Technology, Korea); JongWon Kim (GIST (Gwangju Institute of Science & Technology), Korea)
pp. 6611-6615

**11:20 Driving Software Defined Networks with XSP**
Ezra Kissel (University of Delaware, USA); Guilherme Fernandes (Indiana University, USA); Matthew Jaffee (Indiana University, USA); Martin Swany (Indiana University, USA); Miao Zhang (Indiana University, USA)
pp. 6616-6621

**11:45 Network Virtualization and Resource Allocation in OpenFlow-based Wide Area Networks**
Pontus Sköldström (Acreo AB & Acreo, Sweden); Kiran Yedavalli (Cisco Systems, USA)
pp. 6622-6626

**12:10 Abstracting network state in Software Defined Networks (SDN) for rendezvous services**
Vijay Gurbani (Bell Laboratories, Alcatel-Lucent, USA); Michael Scharf (Alcatel-Lucent Bell Labs, Germany); T. V. Lakshman (Bell Labs, Alcatel-Lucent, USA); Volker Hilt (Bell Labs/Alcatel-Lucent, USA); Enrico Marocco (Telecom Italia, Italy)
pp. 6627-6632

14:00 - 15:30

**TS3: Technical Session 3**

Room: F10
Chair: Marcos Rogerio Salvador (CPqD, Brazil)
14:00 Realizing Packet-Optical Integration with SDN and OpenFlow 1.1 Extensions
Meral Shirazipour (Ericsson, Canada); Wolfgang John (Ericsson Research, Sweden); James Kempf (Ericsson Research, USA); Howard Green (Ericsson Research, USA); Mallik Tatipamula (Ericsson Research, USA)
pp. 6633-6637

14:25 Verification of Switching Network Properties Using Satisfiability
Rick McGeer (HP Laboratories, USA)
pp. 6638-6644

14:50 Supporting Information-Centric Functionality in Software Defined Networks
Luca Veltre (University of Parma, Italy); Giacomo Morabito (University of Catania, Italy); Stefano Salsano (University of Rome "Tor Vergata", Italy); Nicola Blefari-Melazzi (University of Rome "Tor Vergata", Italy); Andrea Detti (University of Rome "Tor Vergata", Italy)
pp. 6645-6650

15:15 A Flexible In-Network IP Anonymization Service
Marc Mendonca (University of California, Santa Cruz, USA); Srini Seetharaman (Deutsche Telekom R&D Lab, USA); Katia Obrazka (University of California, Santa Cruz, USA)
pp. 6651-6656

16:00 - 16:40

K2: KEYNOTE 2: Thomas D. Nadeau (Juniper Networks)

Title: Software Driven or Defined Networks
Room: F10
Chair: Marcos Rogerio Salvador (CPqD, Brazil)

16:40 - 17:59

PD1: Panel discussion

Room: F10
Chair: Marcos Rogerio Salvador (CPqD, Brazil)
ICC’12 WS - SFCS: First IEEE International Workshop on Security and Forensics in Communication Systems - Program

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<td>8:30 - 9:00</td>
<td>Invited Talk: Pr. Azzedine Boukerche (Vehicular Sensor Network Security)</td>
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<tr>
<td>9:00 - 10:00</td>
<td>S1: Security Forensics</td>
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<td>10:00 - 10:30</td>
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<td>10:30 - 12:30</td>
<td>S2: Intrusion Detection</td>
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<td>12:30 - 14:00</td>
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<tr>
<td>14:00 - 15:30</td>
<td>S3: Anonymity, Privacy, and Access Control</td>
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<td>15:30 - 16:00</td>
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<tr>
<td>16:00 - 18:00</td>
<td>S4: Signal and Multimedia Security</td>
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</table>

Friday, June 15

08:30 - 09:00

Invited Talk: Pr. Azzedine Boukerche (Vehicular Sensor Network Security)

09:00 - 10:00

S1: Security Forensics

Chair: Noureddine A. Boudriga (University of Carthage, Tunisia)

09:00 A Game Theoretic Investigation for High Interaction Honeypots
Osama Hayatle (Concordia University, Canada); Hadi Otrok (Khalifa University of Science, Technology & Research (KUSTAR), UAE); Amr Youssef (Concordia University, Canada)
pp. 6662-6667

09:20 Triage-based Automated Analysis of Evidence in Court Cases of Copyright Infringement
Fabio Marturana (University of Rome "Tor Vergata", Italy); Rosamaria Bertè (University of Rome Tor Vergata, Italy); Simone Tacconi (Servizio Polizia Postale e delle Comunicazioni, Italy); Gianluigi Me (Università di Roma "Tor Vergata", Dipartimento di Informatica, Sistemi e Produzione, Italy)
pp. 6668-6672

09:40 Mark Association-based Investigation of Attack Scenarios in Communication Networks
Yacine Djemaïel (Sup'Com CN&S Research Lab., Tunisia); Slim Rekhis (University of Carthage & Communication Networks and Security Research Lab., Tunisia); Noureddine A. Boudriga (University of Carthage, Tunisia)
pp. 6673-6677
10:30 - 12:30

**S2: Intrusion Detection**

Chair: Korbinian Riedhammer (University of Erlangen-Nuremberg, Germany)

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<th>Time</th>
<th>Title</th>
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<tr>
<td>10:30</td>
<td>A Reverse Gaussian Deployment Strategy for Intrusion Detection in Wireless Sensor Networks</td>
<td>Hailong Li (University of Cincinnati, USA); Vaibhav Pandit (University of Cincinnati, USA); Narenderanad Katneni (University of Cincinnati, USA); Dharma P Agrawal (University of Cincinnati, USA)</td>
<td>6678-6682</td>
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<tr>
<td>10:47</td>
<td>An Ontology-Based System to Identify Complex Network Attacks</td>
<td>Lisa Frye (Kutztown University, USA); Liang Cheng (Lehigh University, USA); Jeff Hefflin (Lehigh University, USA)</td>
<td>6863-6688</td>
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<tr>
<td>11:04</td>
<td>A Physical Layer Metric for Measuring Base Station Anonymity in Wireless Sensor Networks</td>
<td>Jon R. Ward (The Johns Hopkins University, USA); Mohamed Younis (University of Maryland Baltimore County, USA)</td>
<td>6699-6693</td>
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<tr>
<td>11:21</td>
<td>Identification of Source Applications for Enhanced Traffic Analysis and Anomaly Detection</td>
<td>André Zúquete (University of Aveiro &amp; IEETA, Portugal); Miguel Rocha (IEETA, University of Aveiro, Portugal)</td>
<td>6694-6698</td>
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<td>11:38</td>
<td>Wormhole Detection Using Channel Characteristics</td>
<td>Shalabh Jain (University of Maryland, USA); Tuan Ta (University of Maryland, College Park, USA); John S. Baras (University of Maryland College Park, USA)</td>
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<td>11:55</td>
<td>Base-station Location Anonymity and Security Technique (BLAST) for Wireless Sensor Networks</td>
<td>Venkata P. V. Gottumukkala (University of Cincinnati, USA); Vaibhav Pandit (University of Cincinnati, USA); Hailong Li (University of Cincinnati, USA); Dharma P Agrawal (University of Cincinnati, USA)</td>
<td>6705-6709</td>
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14:00 - 15:30

**S3: Anonymity, Privacy, and Access Control**

Chair: Slim Rekhis (University of Carthage & Communication Networks and Security Research Lab., Tunisia)
14:00 *A Formal Taxonomy of Privacy in Voting Protocols*
Jannik Dreier (University of Grenoble, CNRS, Verimag, France); Pascal Lafourcade (Verimag, France); Yassine Lakhneh (University Joseph Fourier, France)
pp. 6710-6715

14:18 *Smart Grid Multilayer Consensus Password-Authenticated Key Exchange Protocol*
Hasen Nicanfar (The University of British Columbia, Canada); Victor CM Leung (The University of British Columbia, Canada)
pp. 6716-6720

14:36 *CatBAC: A Generic Framework for Designing and Validating Hybrid Access Control Models*
Bernard Stepień (University of Ottawa, Canada); Hemanth Kambhammettu (Université du Québec en Outaouais, Canada); Kamel Adi (University of Quebec in Outaouais, Canada); Luigi Logrippo (Univrsite de Quebec a l'Outaouais, Canada)
pp. 6721-6726

14:54 *X.509 Identity Certificates with Local Verification*
Christian Bauer (German Aerospace Center (DLR), Germany)
pp. 6727-6732

15:12 *SIP Protector: Defense Architecture Mitigating DDoS Flood Attacks Against SIP Servers*
Jan Stanek (Czech Technical University in Prague & RDC for Mobile Applications, Czech Technical University, Czech Republic); Lukas Kencl (Czech Technical University in Prague, Czech Republic)
pp. 6733-6738

16:00 - 18:00

**S4: Signal and Multimedia Security**

Chair: Christian Bauer (German Aerospace Center (DLR), Germany)

16:00 *Elevating Watermark Robustness by Data Diffusion in Contourlet Coefficients*
Hoda Rezaee Kaviani (McMaster University, Canada); Shadrokh Samavi (McMaster University, Canada); Nader Karimi (Isfahan University of Technology, Iran); Shahram Shirani (McMaster University, Canada)
pp. 6739-6743

16:20 *Silhouette Coefficient Based Approach on Cell-Phone Classification for Unknown Source Images*
Shu Han Luan (Dalian University of Technology, P.R. China); Xiangwei Kong (Dalian University of Technology, P.R. China); Yanqing Guo (Dalian University of Technology, P.R. China); Bo Wang (Dalian University of Technology, P.R. China); Xin'gang You (Beijing Institute of Electronic Technology and Application, P.R. China)
pp. 6744-6747

16:40 *A PKI-free Key Agreement Protocol for P2P VoIP Applications*
Riccardo Pecori (University of Parma, Italy)
pp. 6748-6752
17:00 Covert and Side Channels in Buildings and the Prototype of a Building-aware Active Warden  
Steffen Wendzel (University of Hagen & Augsburg University of Applied Sciences, Germany)  
pp. 6753-6758

17:20 Forensic Content Detection Through Power Consumption  
Benjamin Justus (Muenster University of Applied Science, Germany); Ulrich Greveler (Muenster University of Applied Science, Germany); Dennis Loehr (Muenster University of Applied Science, Germany)  
pp. 6759-6763

17:40 A Software Kit for Automatic Voice Descrambling  
Korbinian Riedhammer (University of Erlangen-Nuremberg, Germany); Matthias Ring (University of Erlangen-Nuremberg, Germany); Elmar Nöth (Universität Erlangen Nürnberg, Germany); Dirk Kolb (Friedrich-Alexander-University, Germany)  
pp. 6764-6768
## Friday, June 15

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<td><strong>Keynote</strong></td>
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<td>9:15 - 10:15</td>
<td><strong>Handover and Resource Allocation</strong></td>
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<td>10:15 - 10:30</td>
<td><strong>Interference Management</strong></td>
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<tr>
<td>14:00 - 14:45</td>
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<td>14:45 - 15:45</td>
<td><strong>Evaluation and Modeling</strong></td>
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<td>15:45 - 16:00</td>
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<td>16:00 - 17:00</td>
<td><strong>Transmission Strategies</strong></td>
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<td>17:00 - 18:00</td>
<td><strong>Panel Discussion: The way towards the future: Dense or Massive?</strong></td>
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### 08:30 - 09:15

**Keynote**

Prof. Tamer Başar (University of Illinois at Urbana-Champaign, USA)  
Chair: Walid Saad (University of Miami, USA)

### 09:15 - 10:15

**Handover and Resource Allocation**

Chair: Walid Saad (University of Miami, USA)

- **09:15 Joint Interference Management and Handover optimization in LTE Small Cells Network**  
  Veronique Capdevielle (Alcatel Lucent Bell Labs France, France); Aref Feki (Bell Labs - Alcatel Lucent - France, France); Elom Sorsy (Telecom Bretagne & Alcatel-Lucent Bell Labs, France)  
  pp. 6769-6779

- **09:35 Theoretical Analysis of Handover Failure and Ping-Pong Rates for Heterogeneous Networks**  
  David López-Pérez (Bell Labs Alcatel-Lucent, Ireland); Ismail Güvenç (Florida International University, USA); Xiaoli Chu (University of Sheffield, United Kingdom)  
  pp. 6774-6779

- **09:55 Downlink SINR distribution in a Heterogeneous Cellular Wireless Network with Biased Cell Association**  
  Sayandeep Mukherjee (DOCOMO Innovations Inc., USA)
10:30 - 12:30

**Interference Management**

Chair: Ismail Güvenç (Florida International University, USA)

**10:30 Scheduling Strategies for HetNets using elCIC**
Andreas Weber (Alcatel-Lucent, Germany); Oliver Stanze (Alcatel-Lucent Bell Labs, Germany)
pp. 6787-6791

**10:50 Sensitivity Study of Optimal elCIC Configurations in Different Heterogeneous Network Scenarios**
Yuanye Wang (Powerwave Technologies & Aalborg University, USA); Beatriz Soret (Aalborg University, Denmark); Klaus Pedersen (Nokia Siemens Networks, Denmark)
pp. 6792-6796

**11:10 CRS Interference Cancellation in Heterogeneous Networks for LTE-Advanced Downlink**
Beatriz Soret (Aalborg University, Denmark); Yuanye Wang (Powerwave Technologies & Aalborg University, USA); Klaus Pedersen (Nokia Siemens Networks, Denmark)
pp. 6797-6801

**11:30 Distributed Algorithm for Downlink Resource Allocation in Multicarrier Small Cell Networks**
Furqan Ahmed (Aalto University, Finland); Alexis Alfredo Dowhuszko (Aalto University, School of Science and Technology & National University of Cordoba, Finland); Olav Tirkkonen (Aalto University, Finland)
pp. 6802-6808

**11:50 Dual-Band Femtocell Traffic Balancing Over Licensed and Unlicensed Bands**
Feili Liu (Qualcomm, USA); Elza Erkip (Polytechnic Institute of NYU, USA); Mihaela Beluri (Interdigital, USA); Rui Yang (Interdigital, USA); Erdem Bala (InterDigital, USA)
pp. 6809-6814

14:00 - 14:45

**Keynote**

Keynote talk by Prof. Jeffrey G. Andrews, The University of Texas, Austin
Chair: Mehdi Bennis (Centre of Wireless Communications, University of Oulu, Finland)

14:45 - 15:45

**Evaluation and Modeling**

Chair: Mehdi Bennis (Centre of Wireless Communications, University of Oulu, Finland)
14:45 **Empirical gains achievable with low altitude remote radio heads in wireless urban links**  
Luciano Ahumada (Universidad Diego Portales, Chile); Rodolfo Feick (Universidad Técnica Federico Santa María, Chile); Reinaldo Valenzuela (Lucent Technologies, USA); Manuel Gallardo (Universidad Técnica Federico Santa María, Chile); Milan S. Derpich (Universidad Tecnica Federico Santa Maria, Chile); Hector Carrasco (Universidad Tecnica Federico Santa Maria, Chile)  
pp. 6815-6819

15:05 **Assessment of 3D network coverage performance from dense small-cell LTE**  
Mathieu Brau (SIRADEL, France); Yoann Corre (SIRADEL, France); Yves Lostanlen (SIRADEL & University of Toronto, Canada)  
pp. 6820-6824

15:25 **Transmission Strategies for Full Duplex Multiuser MIMO Systems**  
Thuy-Dan Nguyen (University of Oulu & Centre for Wireless Communications, Finland); Le-Nam Tran (University of Oulu & Centre for Wireless Communications, Finland); Pekka Pirinen (University of Oulu, Finland); Matti Latva-aho (UoOulu, Finland)  
pp. 6825-6829

16:00 - 17:00

**Transmission Strategies**

Chair: Francesco Pantisano (University of Bologna & Centre for Wireless Communications, Finland)

16:00 **On the Coexistence of Macrocell Spatial Multiplexing and Cognitive Femtocells**  
Ansuman Adhikary (USC, USA); Giuseppe Caire (University of Southern California, USA)  
pp. 6830-6834

16:20 **Distributed Scheduling and Power Control for Cognitive Spatial-Reuse TDMA Networks**  
Phond Phunchongharn (University of Manitoba and TR Labs, Canada); Ekram Hossain (University of Manitoba, Canada); Sergio Camorlinga (TR Labs, Winnipeg, Canada, and University of Manitoba, Canada)  
pp. 6835-6839

16:40 **Location-Based Transmit Power Control for Femtocell Access Points**  
Poramale Tarasak (Institute for Infocomm Research, Singapore); Siew Eng Nai (Institute for Infocomm Research, Singapore); Tony Q. S. Quek (Singapore University of Technology and Design (SUTD) & Institute for Infocomm Research, Singapore); Francois Chin (Institute for InfoComm Research, Singapore)  
pp. 6840-6844
17:00 - 18:00

Panel Discussion: The way towards the future: Dense or Massive?

Chair: Giuseppe Caire (University of Southern California, USA)
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<td><strong>Keynote 1: An era of multi-networks, multi-services and many standards</strong></td>
<td><strong>Keynote III: Emerging Ecosystem for Leveraging Industrial and Academic Research In IEEE Standards and Standards-Related Activities</strong></td>
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<td>9:15</td>
<td><strong>Keynote II: Standards and innovation in emerging technologies: Why industry and academia need each other?</strong></td>
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<td>9:15</td>
<td><strong>COFFEE BREAK</strong></td>
<td><strong>Session 4: Network Monitoring</strong></td>
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<td>10:00</td>
<td><strong>Session 1: Mobility Management and Networking</strong></td>
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<td>10:40</td>
<td><strong>COFFEE BREAK</strong></td>
<td><strong>Panel Discussion</strong></td>
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<td>12:30</td>
<td><strong>LUNCH BREAK</strong></td>
<td><strong>Session 5: Advances in Radio</strong></td>
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<td>14:00</td>
<td><strong>Session 2: Wireless Networking</strong></td>
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<td>15:30</td>
<td><strong>COFFEE BREAK</strong></td>
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<tr>
<td>16:00</td>
<td><strong>Session 3: From Research to Standards</strong></td>
<td><strong>Session 6: Services over LTE/EPC and Evolution</strong></td>
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</table>
Sunday, June 10

08:30 - 09:15

**Keynote I: An era of multi-networks, multi-services and many standards**

Dr. Shigeyuki Akiba, KDDI R&D Laboratories Inc.
Chair: Adnan Abu-Dayya (QMIC, Qatar)

09:15 - 10:00

**Keynote II: Standards and innovation in emerging technologies: Why industry and academia need each other?**

Dr. Stephen Bush, GE Global Research and Dr. Andrew Eckford, York University
Chair: Adnan Abu-Dayya (QMIC, Qatar)

10:00 - 10:30

**COFFEE BREAK**

10:30 - 12:30

**Session 1: Mobility Management and Networking**

Chair: Konstantinos Samdanis (NEC Europe Ltd., Germany)

**10:30 Furthering Media Independence Mechanisms for Future Internet Enablement**
Daniel Corujo (Instituto de Telecomunicações Aveiro & Universidade de Aveiro, Portugal); Marcelo Lebre (Instituto de Telecomunicações, Portugal); Diogo Gomes (Universidade de Aveiro & Instituto de Telecomunicações, Portugal); Rui L Aguiar (University of Aveiro & Instituto de Telecomunicações, Portugal)
pp. 6845-6849

**10:50 Distributed Mobility Management with Mobile IP**
H Anthony Chan (Huawei Technologies, USA)
pp. 6850-6854

**11:10 Towards Flat and Distributed Mobility Management: a 3GPP Evolved Network Design**
Carlos J. Bernardos (Universidad Carlos III de Madrid, Spain); Juan Carlos Zúñiga (InterDigital Communications, LLC, Canada); Alex Reznik (InterDigital, USA)
pp. 6855-6861
11:30 Speeding up IPv6 Transition: Discovering NAT64 and Learning Prefix for IPv6 Address Synthesis
Aaron Yi Ding (University of Helsinki, Finland); Teemu Savolainen (Nokia, Finland); Jouni Korhonen (Nokia Siemens Networks, Finland); Markku Kojo (University of Helsinki, Finland)
pp. 6862-6868

11:50 System Design of Reverse-powered G.fast
Michael Timmers (Alcatel-Lucent Bell Labs, Belgium); Koen Hooghe (Bell Labs, Alcatel-Lucent, Belgium); Mamoun Guenach (Bell Laboratories, Alcatel-Lucent, Antwerp, Belgium); Chuck Storry (Alcatel-Lucent, Belgium); Jochen Maes (Alcatel-Lucent Bell Labs, Belgium)
pp. 6869-6873

12:10 Roles of Network Federations for Bridging Multi-Generation Standard Architectures
Michiaki Hayashi (KDDI R&D Laboratories Inc., Japan); Shuichi Okamoto (KDDI R&D Laboratories Inc., Japan); Nobutaka Matsumoto (KDDI R&D Laboratories Inc., Japan)
pp. 6874-6878

12:30 - 14:00
LUNCH BREAK

14:00 - 15:30
Session 2: Wireless Networking

Chair: Syed Husain (DoCoMo Labs, Germany)

14:00 Evaluation of the IEEE 802.11aa Group Addressed Service for Robust Audio-Video Streaming
M. Ángeles Santos (Universidad de Castilla-La Mancha, Spain); José Villalón (UCLM, Spain); Luis Orozco Barbosa (University of Castilla La Mancha, Spain)
pp. 6879-6884

14:22 IEEE 802.11ah: Advantages in Standards and Further Challenges for Sub 1 GHz Wi-Fi
Stefan Aust (NEC Communication Systems, Ltd., Japan); Venkatesha Prasad (Delft University of Technology, The Netherlands); Ignas G.M.M. Niemegeers (Delft University of Technology, The Netherlands)
pp. 6885-6889

14:45 Distributed Adaptive Backoff Reservation (DABR) for IEEE 802.11 Wireless Networks
Sina Asadallah (University of Oklahoma, USA); Hazem Refai (Oklahoma University, USA)
pp. 6890-6894
**15:07 The X.509 trust model needs a technical and legal expert**
Ahmad Samer Wazan (IRIT, France); Romain Laborde (Université Paul Sabatier, France); François Barrère (Université Paul Sabatier, France); Abdelmalek Benzekri (IRIT – University Paul Sabatier Toulouse, France)
pp. 6895-6900

**15:30 - 16:00**

**COFFEE BREAK**

**16:00 - 18:00**

**Session 3: From Research to Standards**

Chair: Alex Reznik (InterDigital, USA)

**16:00 Research and Reality: The evolution of Open Network API standards**
Sune Jakobsson (ComoYo, Norway); Catherine E A Mulligan (University of Nottingham, United Kingdom); Musa Unmehopa (Alcatel-Lucent, The Netherlands)
pp. 6901-6905

**16:20 Widening the Scope of a Standard: Real Time Flows Tunneling, Compressing and Multiplexing**
Jose Saldana (University of Zaragoza, Spain); Dan Wing (Cisco, USA); Julián Fernández-Navajas (University of Zaragoza, Spain); José Ruiz-Mas (University of Zaragoza, Spain); Muthu Arul Mozhi Perumal (Cisco Systems, India); Gonzalo Camarillo (Ericsson, Finland)
pp. 6906-6910

**16:40 Energy Efficient Mobile Backhaul: From Research to Standardization**
Konstantinos Samdanis (NEC Europe Ltd., Germany); Manuel Paul (Deutsche Telekom AG, Germany)
pp. 6911-6915

**17:00 IEEE DySPAN-SC Activities on Standardization of White Space Radio Systems**
Stanislav Anatolievich Filin (NICT, Japan); Hiroshi Harada (National Institute of Information & Communications Technology (NICT), Japan)
pp. 6916-6920

**17:20 Identifying standardization opportunities of an operator-driven, framework for unifying autonomic network and service management**
Kostas Tsagkaris (University of Piraeus, Greece); Aristi Galani (University of Piraeus, Greece); Panagiotis Demestichas (University of Piraeus, Greece); Gerard Nguengang (Thales Communications SA, France); Mathieu Bouet (Thales Communications SA, France); Imen Grida Ben Yahia (Orange Labs, France); Christian Destré (Orange FT, France); Samir Ghamri-Doudane (Alcatel-Lucent Bell Labs France, France); Laurent Ciavaglia (Alcatel-Lucent, France)
pp. 6921-6925
17:40 Coordinated Computation of Multi-layer Paths via Inter-layer PCE Communication: Standards, Interoperability and Deployment
Mohit Chamania (Technische Universität Carolo-Wilhelmina zu Braunschweig, Germany); Oscar González de Dios (Telefonica I+D, Spain); Víctor López (Telefonica I+D, Spain); Marta Cuaresma (Telefonica I+D, Spain); Marek Drogon (TU Braunschweig, Germany); Admela Jukan (Technische Universität Carolo-Wilhelmina zu Braunschweig, Germany); Xavier Masip-Bruin (Universitat Politècnica de Catalunya & Advanced Network Architectures Lab (CRAAX), Spain); Marcelo Yannuzzi (Technical University of Catalonia (UPC), Spain)
pp. 6926-6931

Monday, June 11

08:30 - 09:15

Keynote III: Emerging Ecosystem for Leveraging Industrial and Academic Research In IEEE Standards and Standards-Related Activities

Dr. Alexander D. Gelman, IEEE-SA Standards
Chair: Hazem Refai (Oklahoma University, USA)

09:15 - 10:10

Session 4: Network Monitoring

Chair: Alla Goldner (Allot Communications, Israel)

09:15 Cost-controlled Monitoring Information Collection in Heterogeneous Mobile Network Infrastructures
Marius Corici (Fraunhofer FOKUS, Germany); Peter Hasse (Fraunhofer FOKUS, Germany); Cornelia Kappler (Huawei Technologies Duesseldorf GmbH, Germany); Kostas Pentikousis (Huawei Technologies & European Research Center, Germany); Rudolf Roth (Fraunhofer FOKUS, Germany); Mirko Schramm (Huawei Technologies Duesseldorf GmbH, Germany)
pp. 6932-6936

09:33 Design and Evaluation of Schemes for More Accurate ECN Feedback
Mirja Kuehlewind (University of Stuttgart, Germany); Richard Scheffenegger (NetApp, Inc., Austria)
pp. 6937-6941

09:51 Enhanced Voice over LTE and its roaming aspects
Syed S Husain (Telecom Consultant-Industry Standards & NTT DOCOMO, USA); Takashi Koshimizu (NTT DOCOMO, Inc., Japan); LaeYoung Kim (LG Electronics, Korea); Andreas Kunz (NEC Europe Ltd., Germany)
pp. 6942-6946
10:10 - 10:40

COFFEE BREAK

10:40 - 12:20

Panel Discussion

Future Telecommunications Systems & Standards: How Can Academia & Industry Collaboratively Contribute to their Shaping?
Chair: Asok Chatterjee (Ericsson, USA)

12:20 - 13:50

LUNCH BREAK

13:50 - 15:30

Session 5: Advances in Radio

Chairs: Vojislav B. Mišić (Ryerson University, Canada), Hazem Refai (Oklahoma University, USA)

13:50 Adaptive Channel Direction Quantization - Enabling Multi User MIMO Gains in Practice
Stefan Schwarz (Vienna University of Technology, Austria); Markus Rupp (Vienna University of Technology, Austria)
pp. 6947-6952

14:10 S-MIM: a Novel Radio Interface for Efficient Messaging Services over Satellite
Sandro Scalise (German Aerospace Center (DLR), Germany); Cristina Parraga Niebla (German Aerospace Center (DLR), Germany); Antonio Arcidiacono (Eutelsat, France); Daniele V. Finocchiaro (Eutelsat S.A., France); Riccardo De Gaudenzi (European Space Agency (ESA), The Netherlands); Oscar Del Río (ESTEC TOS-ETC, European Space Agency, The Netherlands); Gerald Schlüter (SES Astra, Luxemburg); Jens Krause (SES ASTRA, Luxemburg)
pp. 6953-6958

14:30 MU-MIMO in LTE: Performance and the challenges for future enhancement
Sean A. Ramprashad (DoCoMo Communications Labs, USA); Anass Benjebbour (NTT DoCoMo, Inc., Japan)
pp. 6959-6965

14:50 Electromagnetic compatibility: new trends for new standards
Najett Neji (Ecole Supérieure d'Electricité (SUPELEC), France); Raul de Lacerda (Ecole Supérieure d'Electricité (SUPELEC), France); Felipe Nyland (UFSC, Brazil); Lionel Pichon (SUPELEC, France)
pp. 6966-6970
**15:10 Enhanced Mobile Digital Video Broadcasting with Distributed Space-Time Coding**  
Ming Liu (Institute of Electronics and Telecommunications of Rennes (IETR), France); Matthieu Crussière (IETR - Electronics and Telecommunications Research Institute of Rennes (IETR) & INSA - National Institute of Applied Sciences, France); Maryline Héard (INSA Rennes & IETR Institute of Electronics and Telecommunications of Rennes, France); Jean-François Héard (IETR, France); Youssef Nasser (American University of Beirut, Lebanon)  
pp. 6971-6976

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**15:30 - 16:00**  
**COFFEE BREAK**

**16:00 - 18:00**  
**Session 6: Services over LTE/EPC and Evolution**

Chairs: Anass Benjebbour (NTT DoCoMo, Inc., Japan), Sandro Scalise (German Aerospace Center (DLR), Germany)

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<td>16:00</td>
<td>Extending LTE to Support Machine-Type Communications</td>
<td>Vojislav B. Mišić (Ryerson University, Canada); Jelena Mišić (Ryerson University, Canada); Dragan Nerandzic (Ericsson Canada Inc., Canada)</td>
<td>6977-6981</td>
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<td>16:20</td>
<td>Enabling Local Breakout from eNB in LTE Networks</td>
<td>Yinghua Ye (Nokia Simens Networks, USA); Naheed Vora (NSN, USA); Jussi-Pekka Sairanen Sairanen (NSN, USA); Meghana Sahasrabudhe (NSN, USA)</td>
<td>6982-6986</td>
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<td>16:40</td>
<td>Advanced Quality-of-Service Signaling for the Session Initiation Protocol (SIP)</td>
<td>Martin Röhricht (Karlsruhe Institute of Technology (KIT), Germany); Roland Bless (Karlsruhe Institute of Technology (KIT), Germany)</td>
<td>6987-6992</td>
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<td>17:00</td>
<td>3GPP Traffic Detection Functionality</td>
<td>Alla Goldner (Allot Communications, Israel)</td>
<td>6993-6998</td>
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<td>17:20</td>
<td>LTE-Advanced Heterogeneous Networks: Release 10 and Beyond</td>
<td>Teck Hu (Alcatel-Lucent, USA); Jiyong Pang (Alcatel-Lucent Shanghai Bell, P.R. China); Hsuan-Jung Su (National Taiwan University, Taiwan)</td>
<td>6999-7003</td>
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<td>17:40</td>
<td>Advanced Downlink MU-MIMO Receiver for 3GPP LTE-A</td>
<td>Jung Hyun Bae (Samsung US R&amp;D Center, USA); Sungsoo Kim (Samsung Electronics Co., Ltd, Korea); Jungwon Lee (Samsung US R&amp;D Center, USA); Inyup Kang (Samsung Electronics, USA)</td>
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ICC'12 WS - Storage: Emerging Data Storage Technologies - Program

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<td>Writing More Than Once on a Write-Once-Memory</td>
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<td>14:50 - 15:30</td>
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<td>Room: M3</td>
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<td></td>
<td>Chair: Lara Dolecek (UCLA, USA)</td>
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<td></td>
<td>14:50 Repair Topology Design for Distributed Storage Systems</td>
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<td>Quan Yu (City University of Hong Kong, Hong Kong); Chi Wan Sung (City University of Hong Kong, Hong Kong); Terence H. Chan (University of South Australia, Australia)</td>
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<td>pp. 7009-7013</td>
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<td>15:10 Reverse Concatenated Watermark Codes</td>
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<td>Rathnakumar Radhakrishnan (Marvell Semiconductors, USA); Kui Cai (Data Storage Institute, Singapore)</td>
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<td>16:00 - 16:50</td>
<td>I2: Invited Talk 2</td>
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<td>Algebraic LDPC Codes: Error Floor, Trapping Set Structure and the Rate of Decoding Convergence</td>
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<td>Chair: Kui Cai (Data Storage Institute, Singapore)</td>
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16:50 - 18:00

S2: Session 2

Room: M3
Chair: Warren Gross (McGill University, Canada)

16:50 Probabilistic Analysis of Gallager B Faulty Decoder
Sadegh Tabatabaei Yazdi (UCLA, USA); Hyungmin Cho (Stanford University, USA); Yifan Sun (University of California, Los Angeles, USA); Subhasish Mitra (Stanford University, USA); Lara Dolecek (UCLA, USA)
pp. 7019-7023

17:10 Reducing Data Transfer Latency of NAND Flash Memory with Soft-Decision Sensing
Guiqiang Dong (Rensselaer Polytechnic Institute, USA); Yuelin Zou (Sunbelt Solutions, USA); Tong Zhang (Rensselaer Polytechnic Institute, USA)
pp. 7024-7028

17:30 Performance of Rate 0.96 (68254, 65536) EG-LDPC Code for NAND Flash Memory Error Correction
Jonghong Kim (Seoul National University, Korea); Dong-hwan Lee (Seoul National University, Korea); Wonyong Sung (Seoul National University, Korea)
pp. 7029-7033
ICC’12 WS - U-NET: Third IEEE Workshop on User-Centric Networking - Program

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<td><strong>U-NET Paper Session: User-centric Techniques in Communications</strong></td>
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<td><strong>U-NET Panel Discussion</strong></td>
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Monday, June 11

09:15 - 10:00

**U-NET Keynote Presentation**

Prof. Jon Crowcroft, University of Cambridge, UK
Chair: Jiangzhou Wang (University of Kent, United Kingdom)

10:30 - 12:30

**U-NET Paper Session: User-centric Techniques in Communications**

Chair: Jiangzhou Wang (University of Kent, United Kingdom)

10:30 *Let Me Grab Your App: Preliminary Proof-of-Concept Design of Opportunistic Content Augmentation*

Giuseppe Bianchi (University of Rome "Tor Vergata", Italy); Pierpaolo Loreti (University of Rome "Tor Vergata", Italy); Arijana Trkulja (University of Rome "Tor Vergata", Italy)

pp. 7034-7039

11:00 *On the Impact of Correlated Shadowing on the Performance of User-in-the-Loop for Mobility*

Tamer Beitelmal (Carleton University, Canada); Rainer Schoenen (RWTH Aachen University, Faculty 6, Germany); Halim Yanikomeroglu (Carleton University, Canada)

pp. 7040-7044

11:30 *Client-Based QoS Data Selection and Modeling Using Generalized Extreme Value Theorem and Linear Opinion Pool*

Ammar Kamel (Western Michigan University, USA); Ala Al-Fuqaha (Western Michigan University, USA); Driss Benhaddou (University of Houston, USA)

pp. 7045-7049
12:00 Relay-Node Based Proactive Load Balancing Method in MPLS Network with Service Differentiation
Yukitaka Yoshida (University of Tsukuba, Japan); Masatoshi Kawarasaki (University of Tsukuba, Japan)
pp. 7050-7054

14:00 - 14:30

U-NET Keynote Presentation

Dr. Rute Sofia, Universidade Lusófona, Portugal
Chair: Jiangzhou Wang (University of Kent, United Kingdom)

14:30 - 17:00

U-NET Panel Discussion

Chair: Jiangzhou Wang (University of Kent, United Kingdom)
## ICC’12 WS - ViOpt: Realizing Advanced Video Optimized Wireless Networks - Program

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<td>10:30 - 12:40</td>
<td><strong>Cross-layer Video Optimizations</strong></td>
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<td>14:00 - 17:30</td>
<td><strong>Wireless Video Network Optimizations</strong></td>
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### Friday, June 15

#### 08:30 - 10:00

**Video Quality of Experience**

Chair: Robert Heath (The University of Texas at Austin, USA)

**08:30** *Mobile Video Quality Assessment Database*

Anush Moorthy (The University of Texas at Austin, USA); Lark Kwon Choi (The University of Texas at Austin, USA); Alan C Bovic (University of Texas at Austin, USA); Gustavo de Veciana (The University of Texas at Austin, USA)

pp. N/A

**09:15** *Quality of Experience-based Routing in Multi-Service Wireless Mesh Networks*

Ricardo Matos (Instituto de Telecomunicações, Universidade de Aveiro, Portugal); Nuno Coutinho (Instituto de Telecomunicações, Universidade de Aveiro & Celfinet, Portugal); Carlos Marques (Instituto de Telecomunicações, Universidade de Aveiro, Portugal); Susana Sargento (Instituto de Telecomunicações, Universidade de Aveiro, Portugal); Jacob Chakareski (EPFL, Switzerland); Andreas J. Kassler (Karlstad University, Sweden)

pp. 7060-7065

#### 10:30 - 12:40

**Cross-layer Video Optimizations**

Chair: Shivendra Panwar (Polytechnic Institute of New York University, USA)

**10:30** *Two-way Wireless Video Communication using Randomized Cooperation, Network Coding and Packet Level FEC*

Xiaozhong Xu (Polytechnic Institute of New York University, USA); Ozgu Alay (Polytechnic University of NYU, USA); Elza Erkip (Polytechnic Institute of NYU, USA); Yao Wang (Polytechnic Institute of NYU, USA); Shivendra Panwar (Polytechnic Institute of New York University, USA)

pp. 7066-7070
11:35 **Video Capacity and QoE Enhancements over LTE**  
Sarabjot Singh (University of Texas at Austin, USA); Ozgur Oyman (Intel Corporation, USA); Apostolos Papatheanassiou (Intel Corporation & Intel Architecture Group, USA); Debdeep Chatterjee (Intel Corporation, USA); Jeffrey Andrews (The University of Texas at Austin, USA)  
pp. 7071-7076

14:00 - 17:30

**Wireless Video Network Optimizations**

Chair: Jeffrey Foerster (Intel Corporation, USA)

14:00 **Base-Station Assisted Device-to-Device Communications for High-Throughput Wireless Video Networks**  
Negin Golrezaei (University of Southern California, USA); Andreas Molisch (University of Southern California, USA); Alex Dimakis (University of Southern California, USA)  
pp. 7077-7081

15:10 **Hierarchical Video Caching in Wireless Cloud: Approaches and Algorithms**  
Hasti Ahlehagh (University of California San Diego, USA); Sujit Dey (University of California, San Diego, USA)  
pp. 7082-7087

16:20 **QoE-Based Multi-Stream Scalable Video Adaptation over Wireless Networks with Proxy**  
Hao Hu (Cisco Systems, USA); Xiaoqing Zhu (Cisco Systems, USA); Yao Wang (Polytechnic Institute of NYU, USA); Rong Pan (Cisco Systems Inc., USA); Jiang Zhu (Carnegie Mellon University, USA); Flavio Bonomi (Cisco Systems, USA)  
pp. 7088-7092
ICC’12 WS - WiSAAN: Wireless Sensor Actor and Actuator Networks - Program

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<td>SM2: Morning Post-Break</td>
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**Friday, June 15**

**08:45 - 09:30**

**K1: Keynote 1**

Internet of Things and Cyber Physical Systems with Sensors and Robots: Actuation Challenges
Room: F2
Chair: Ramiro Liscano (University of Ontario Institute of Technology, Canada)

**09:30 - 10:00**

**SM1: Morning Pre-Break**

Room: F2
Chair: Ramiro Liscano (University of Ontario Institute of Technology, Canada)

**09:30 On Autonomous Indoor Flights: High-Quality Real-Time Localization using Low-Cost Sensors**
Juergen Eckert (University of Erlangen, Germany); Reinhard German (Universitaet Erlangen-Nuernberg, Germany); Falko Dressler (University of Innsbruck, Austria)
pp. 7093-7098

**10:30 - 12:30**

**SM2: Morning Post-Break**

Room: F2
Chair: Nauman Aslam (Northumbria University, United Kingdom)
10:30 A New Distributed Scheduling Scheme for Timely Multi-hop Transmission of Delay-sensitive Information in Wireless Sensor Networks
Jae-Ryong Cha (Ajou University & WINNER lab., Korea); Jae-Hyun Kim (Ajou University, South Korea, Korea)
pp. 7099-7103

11:00 Adaptive Forward Error Correction for Best Effort Wireless Sensor Networks
Kan Yu (Mälardalen University, Sweden); Filip Barac (Mid Sweden University, Sweden); Mikael Gidlund (ABB, Sweden); Johan Akerberg (ABB AB, Sweden)
pp. 7104-7109

11:30 A Game-Theoretic Approach to Connectivity Restoration in Wireless Sensor and Actor Networks
Izzet F Senturk (Southern Illinois University Carbondale, USA); Sabri Yilmaz (Southern Illinois University Carbondale, USA); Kemal Akkaya (Southern Illinois University Carbondale, USA)
pp. 7110-7114

12:00 Data Collection Using Rendezvous Points and Mobile Actor in Wireless Sensor Networks
Abdullah Alomari (Dalhousie University, Canada); Nauman Aslam (School of Computing, United Kingdom); Frank D Comeau (St. Francis Xavier University, Canada)
pp. 7115-7119

14:00 - 15:00

SA1: Afternoon Pre-Break

Room: F2
Chair: Ramiro Liscano (University of Ontario Institute of Technology, Canada)

14:00 Distributed Data Gathering Scheduling Protocol for Wireless Sensor Actor and Actuator Networks
Wei Shen (Mid Sweden University, Sweden); Tingting Zhang (Mid Sweden University, Sweden); Mikael Gidlund (ABB, Sweden)
pp. 7120-7125

14:30 A Fault Detection Method for Wireless Sensor Networks Based on Improved LTS Regression Algorithm
Teng Wang (Beijing University of Posts and Telecommunications, P.R. China)
pp. 7126-7130

16:00 - 17:00

P1: Panel Session

Challenges in Wireless Sensor Actuator and Actor Networks
Room: F2
Chair: Nauman Aslam (Northumbria University, United Kingdom)
# ICC'12 WS - WIVN: Intelligent Vehicular Networking: V2V/V2I Communications and Applications - Program

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<td>9:00 - 9:30</td>
<td><strong>S2: Invited Presentation #1: Biologically Inspired Solutions to Fundamental Transportation Problems</strong></td>
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<tr>
<td>9:30 - 10:00</td>
<td><strong>S3: Invited Presentation #2: Vehicular Communications &amp; Networking: Things We Know and Don't Know</strong></td>
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<td>10:00 - 10:30</td>
<td>BREAK: BREAK</td>
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<td>10:30 - 11:00</td>
<td><strong>S4: Invited Presentation #3: Propagation Effects in V2V Communications</strong></td>
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<td>11:00 - 11:30</td>
<td><strong>S5: Invited Presentation #4: Improving Collaboration Across Vehicular Networking Disciplines</strong></td>
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<td><strong>S6: Physical Layer</strong></td>
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<td>14:00 - 15:20</td>
<td><strong>S7: Networking</strong></td>
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<td>16:00 - 17:20</td>
<td><strong>S8: Simulation, Security, Safety</strong></td>
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<td>17:20 - 18:00</td>
<td><strong>S9: Panel &amp; Open Discussion</strong></td>
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**Monday, June 11**

**08:50 - 09:00**

**S1: Introductions and Agenda**

Prof. David Matolak (Ohio U.), Prof. David Michelson (U. British Columbia)
Chair: David W Matolak (University of South Carolina, USA)

**09:00 - 09:30**

**S2: Invited Presentation #1: Biologically Inspired Solutions to Fundamental Transportation Problems**

Prof. Ozan Tonguz, Carnegie Mellon University
Chair: David W Matolak (University of South Carolina, USA)
09:30 - 10:00

**S3: Invited Presentation #2: Vehicular Communications & Networking: Things We Know and Don’t Know**

Dr. Onur Altintas, Toyota Information Technologies  
Chair: David W Matolak (University of South Carolina, USA)

10:00 - 10:30

**BREAK: BREAK**

10:30 - 11:00

**S4: Invited Presentation #3: Propagation Effects in V2V Communications**

Prof. Andreas Molisch, University of Southern California  
Chair: David W Matolak (University of South Carolina, USA)

11:00 - 11:30

**S5: Invited Presentation #4: Improving Collaboration Across Vehicular Networking Disciplines**

Prof. David Michelson, University of British Columbia  
Chair: David W Matolak (University of South Carolina, USA)

11:30 - 12:30

**S6: Physical Layer**

Chair: David W Matolak (University of South Carolina, USA)

11:30 **Vehicle-to-Vehicle IEEE 802.11p Performance Measurements at Urban Intersections**

Henrik Schumacher (Leibniz Universität Hannover, Germany); Hugues Tchouankem (Leibniz University of Hannover & Institute of Communications Technology (IKT), Germany); Jörg Nuckelt (Technische Universität Braunschweig, Germany); Thomas Kürner (Technische Universität Braunschweig, Germany); Tetiana Zinchenko (Volkswagen AG, Germany); André Leschke (Volkswagen AG, Germany); Lars C Wolf (Technische Universität Braunschweig, Germany)  
pp. 7131-7135
11:50 Analysis and Suppression of Effects of CFO and Phase noise in WFMT Modulation for Vehicular Communications
Junyeong Bok (Chungbuk National University, Korea); Seon Ae Kim (Chungbuk National University, Korea); Heung-Gyoon Ryu (Chungbuk National University, Korea)
pp. 7136-7140

12:10 Multi-rate Vehicular Communications with Systematic Raptor Codes in Urban Scenarios
Nor Fadzilah Abdullah (University of Bristol & Centre for Communications Research, United Kingdom); Angela Doufexi (University of Bristol, United Kingdom); Robert J Piechocki (University of Bristol, United Kingdom)
pp. 7141-7145

12:30 - 14:00
LINCH: LUNCH

14:00 - 15:20

S7: Networking
Chair: David W Matolak (University of South Carolina, USA)

14:00 A Study of Beaconing Mechanism for Vehicle-to-Infrastructure Communications
Amanda Daniel (Old Dominion University, USA); Dimitrie C. Popescu (Old Dominion University, USA); Stephan Olariu (Old Dominion University, USA)
pp. 7146-7150

14:20 Channel Sensitive Transmission Scheme for V2I-based Floating Car Data Collection via LTE
Christoph Ide (TU Dortmund University, Germany); Bjoern Dusza (Technical University of Dortmund, Germany); Markus Putzke (TU Dortmund University, Germany); Christian Wietfeld (TU Dortmund University & Communication Networks Institute, Germany)
pp. 7151-7156

14:40 Robust Clustering for Connected Vehicles using Local Network Criticality
Weiwei Li (University of Toronto, Canada); Ali Tizghadam (University of Toronto, Canada); Alberto Leon-Garcia (University of Toronto, Canada)
pp. 7157-7161

15:00 Performance Measurements of Multi-hop Communications in Vehicular Ad Hoc Networks
Veronika Shivalova (Vienna University of Technology, Austria); Thomas Paulin (FTW, Austria); Alexander Paier (Kapsch TrafficCom, Austria); Christoph F Mecklenbräuker (Vienna University of Technology, Austria)
pp. 7162-7166
15:20 - 16:00

BREAK: BREAK

16:00 - 17:20

S8: Simulation, Security, Safety

Chair: David W Matolak (University of South Carolina, USA)

16:00 Overhauling ns-2 PHY/MAC Simulations for IEEE 802.11p/WAVE Vehicular Networks
Claudia Campolo (University "Mediterranea" of Reggio Calabria, Italy); Hector Agustin Cozzetti (Istituto Superiore Mario Boella, Italy); Antonella Molinaro (University "Mediterranea" of Reggio Calabria, Italy); Riccardo M. Scopigno (Istituto Superiore Mario Boella, Italy)
pp. 7167-7171

16:20 Multivariate Symmetric Polynomial Based Group Key Management for Vehicular Ad hoc Networks
Dushan Aththidiyavidanalage Don (University of Cincinnati, USA); Vaibhav Pandit (University of Cincinnati, USA); Dharma P Agrawal (University of Cincinnati, USA)
pp. 7172-7176

16:40 Increasing Safety and Efficiency of Railway
Cristina Rico-Garcia (German Aerospace Center (DLR), Germany); Ozan Tonguz (Carnegie Mellon University, USA)
pp. 7177-7181

17:00 Opportunistic System for Collaborative Traffic Monitoring Using Existing IEEE 802.11 Networks
José Geraldo Ribeiro Júnior (Federal University of Rio de Janeiro, Brazil); Miguel Elias Mitre Campista (Federal University of Rio de Janeiro & GTA, Brazil); Luís Henrique M. K. Costa (Federal University of Rio de Janeiro, Brazil)
pp. 7182-7186

17:20 - 18:00

S9: Panel & Open Discussion

Pand and Discussion
Chair: David W Matolak (University of South Carolina, USA)