

# **2012 IEEE International Conference on Communications (ICC 2012)**

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**Pages 1-559**



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## ICC'12 AHSN: IEEE ICC 2012 - Ad-hoc and Sensor Networking Symposium - Program

|               | Tuesday, June 12                                                                                                                                                                                                         | Wednesday, June 13                                                                                                                                                                            | Thursday, June 14                                                                                                                                                      |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:00 - 9:45   |                                                                                                                                                                                                                          | AH10: <i>Routing (III)</i><br>AH11: <i>Scheduling</i><br>AH12: <i>Cooperative Networking</i>                                                                                                  | AH19: <i>Localization (II)</i><br>AH20: <i>Femtocell and Networks</i><br>AH21: <i>Wireless Sensor and Actor Networks (II)</i>                                          |
| 9:45 - 10:45  |                                                                                                                                                                                                                          |                                                                                                                                                                                               |                                                                                                                                                                        |
| 10:45 - 12:30 | AH-P1: <i>Mobile Ad Hoc and Sensor Networks (Poster Session)</i><br>AH01: <i>Localization (I)</i><br>AH02: <i>Delay Tolerant Networks (DTN)</i><br>AH03: <i>Cognitive Wireless Networks</i>                              |                                                                                                                                                                                               |                                                                                                                                                                        |
| 12:30 - 14:00 |                                                                                                                                                                                                                          |                                                                                                                                                                                               |                                                                                                                                                                        |
| 14:00 - 15:45 | AH-P2: <i>Transmission and Multi-hop Forwarding (Poster Session)</i><br>AH04: <i>Routing (I)</i><br>AH05: <i>Security (I)</i><br>AH06: <i>Clustering</i>                                                                 | AH-P4: <i>Wireless Network Applications (III) (Poster Session)</i><br>AH13: <i>Medium Access Control (MAC) (I)</i><br>AH14: <i>Resource Allocation</i><br>AH15: <i>Performance Evaluation</i> | AH22: <i>Wireless Mesh Networks</i><br>AH23: <i>Relay and Network Coding</i><br>AH24: <i>Mobile and Vehicular Networks</i>                                             |
| 15:45 - 16:15 |                                                                                                                                                                                                                          |                                                                                                                                                                                               |                                                                                                                                                                        |
| 16:15 - 18:00 | AH-P3: <i>Wireless Network Applications (II) (Poster Session)</i><br>AH07: <i>Routing (II)</i><br>AH08: <i>Energy-Efficient Networking Algorithms and Protocols</i><br>AH09: <i>Mobile and Vehicular Ad Hoc Networks</i> | AH16: <i>Wireless Sensor and Actor Networks (I)</i><br>AH17: <i>Medium Access Control (MAC) (II)</i><br>AH18: <i>Security (II)</i>                                                            | AH25: <i>Wireless Sensor and Actor Networks (III)</i><br>AH26: <i>Algorithms and Protocols for Wireless Networks</i><br>AH27: <i>Wireless Network Applications (I)</i> |

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 Illanko (Ryerson University, Canada); Alagan Anpalagan (Ryerson University, Canada); Dimitri Androustos (Ryerson University, Canada)  
pp. 11-15

**11:48 Optimizing Network Topology to Reduce Aggregate Traffic in A System of Mobile Robots Under An Energy Constraint**

Leenapat Navaravong (University of Florida, USA); John M. Shea (University of Florida, USA); Eduardo L Pasillao, 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)

pp. 27-31

**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**

Taieb 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); Xinpeng Guan (Shanghai Jiao Tong University, P.R. China); Xiaodong Lin (University of Ontario Institute of Technology, Canada)  
pp. 88-92

**11:48 *A Consensus-based Protocol for Spectrum Sharing Fairness in Cognitive Radio Ad Hoc & Sensor Networks***

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

**12:09 *A Self-Configurable Power Control Algorithm for Cognitive Radio-based Industrial Wireless Sensor Networks with Interference Constraints***

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 (TU Berlin, 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 Peloponnese, Greece); Periklis Chatzimisios (Alexander Technological Educational Institute of Thessaloniki, Greece); Anthony Boucouvalas (University of Peloponnese, 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 Gourhant (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 (Universite 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); Wanjiun 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-Hong 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



Minnesota, USA); Xiaokang Liu (Da Lian University of Technology, P.R. China); Ming Zhu (Dalian University of Technology, P.R. China); Qin Zhenquan (Dalian University of Technology, P.R. China); Canfeng Chen (Nokia Research Center, P.R. China)  
pp. 213-217

**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); Benoît Geller (ENSTA, France); JingWu 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); Zanzun Dai (Texas State University, USA); Wenzhong Li (Nanjing University, P.R. China); Hongchi Shi (Texas State University-San Marcos, USA)  
pp. 228-232

**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); Marwan Krunz (University of Arizona, USA)  
pp. 238-242

**17:18 *A Parallel and Adaptive Query Routing Scheme for Wireless Sensor Networks***

Guillermo G Riva (National Technological University & Digital Communication Lab (LCD) - National University of Cordoba, Argentina); Jorge M Finochietto (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); Mohamad 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

**16:36 Optimum Multi-Hop Transmission Strategies for Energy Constrained Wireless Sensor Networks**

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

**16:57 An Optimal Energy Allocation Algorithm for Energy Harvesting Wireless Sensor Networks**

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

**17:18 Probabilistic Polling for Multi-Hop Energy Harvesting Wireless Sensor Networks**

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 (LTRT) 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

Heide (Aalborg University, Denmark); Qi Zhang (Aarhus University, Denmark); Frank H.P. Fitzek (Aalborg University, Denmark)  
pp. 291-296

**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: Shaoh 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

**08:42 Adaptive Opportunistic Routing Protocol for Energy Harvesting Wireless Sensor Networks**

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 K 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

**08:42 SCT-MAC: A Scheduling Duty Cycle MAC Protocol for Cooperative Wireless Sensor Network**

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); Sithapon 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 Ibnkahla (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)

**16:15 Optimized Interconnection of Disjoint Wireless Sensor Network Segments Using K Mobile Data Collectors**

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 LTCl, 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 Mohammed 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)

pp. 533-537

**17:39 *An Optimal Stopping Strategy for Opportunistic Broadcast Channel Access***

Shun Cai (School of Computer Science and Engineering, Southeast University, P.R. China); Sanfeng Zhang (Southeast University & Key Laboratory of Computer Network and Information Integration In Southeast University, Ministry of , P.R. China); Dong Yongqiang (Southeast University, P.R. China); Guoxin Wu (School of Computer Science and Engineering, Southeast University, P.R. China)

pp. 538-543

## 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 Hamdi (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); Xiaojiang Du (Temple University, USA); Fang Binxing (Institute of Computing Technology Chinese Academy of Sciences, P.R. China); Yan Liu (Harbin Institute of Technology, P.R. China); Haining 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

Thursday, June 14

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 Ndihi (Université de Sherbrooke, Canada); Soumaya Cherkaoui (Université de Sherbrooke, Canada)

pp. 596-600

**08:42 A Geographical Partitioning-based Pigeon Assignment in a Pigeon Network**

Jiazhen Zhou (University of Wisconsin - Whitewater, USA); Sankardas Roy (Howard University, USA); Jiang (Leo) Li (Howard University, USA); Yi Qian (University of Nebraska–Lincoln, USA)

pp. 601-605

**09:03 A Novel Collaborative Navigation Architecture Based on Decentralized and Distributed Ad-hoc Networks**

Weixiao Meng (Harbin Institute of Technology, P.R. China); Enxiao Liu (Harbin Institute of Technology, P.R. China); Shuai Han (Harbin Institute of Technology, P.R. China)

pp. 606-610

**09:24 Coverage Optimization for Femtocell Clusters using Modified Particle Swarm Optimization**

Liang Huang (Institute of Computing Technology, Chinese Academy of Science, P.R. China); Yiqing Zhou (Chinese Academy of Science, P.R. China); Jinlong Hu (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Xue Han (Institute of Computing Technology Chinese Academy of Science, P.R. China); Jinglin Shi (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China)

pp. 611-615

## 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 Ndi (Université de Sherbrooke, Canada); Soumaya Cherkaoui (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 Frery (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**

Evsen 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-Peñaloza (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 JiaoTong University, P.R. China); Min-You Wu (Shanghai JiaoTong 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

# ICC'12 CISS: IEEE ICC 2012 - Communication and Information Systems Security Symposium - Program

|               | Tuesday, June 12                                                       | Wednesday, June 13                               | Thursday, June 14                                                                                      |
|---------------|------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| 8:00 - 9:45   |                                                                        | CISS-06: <i>Wireless Sensor Network Security</i> | CISS09: <i>CISS09: Multimedia Security</i>                                                             |
| 9:45 - 10:45  |                                                                        |                                                  |                                                                                                        |
| 10:45 - 12:30 | CISS01: <i>Algorithmic Design</i><br>CISS02: <i>Attack and Defense</i> |                                                  |                                                                                                        |
| 12:30 - 14:00 |                                                                        |                                                  |                                                                                                        |
| 14:00 - 15:45 | CISS03: <i>Authentication</i><br>CISS04: <i>Channel Analysis</i>       | CISS07: <i>Malware and OS Security</i>           | CISS-P1: <i>P2P Security -- Poster session</i><br>CISS10: <i>Network Analysis</i>                      |
| 15:45 - 16:15 |                                                                        |                                                  |                                                                                                        |
| 16:15 - 18:00 | CISS05: <i>Infrastructure Security</i>                                 | CISS08: <i>Mobile Security</i>                   | CISS-P2: <i>Intrusion Detection -- Poster session</i><br>CISS11: <i>Privacy and Information Hiding</i> |

## 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*

Kristjan V Jonsson (Reykjavik University, Iceland); Karl Palmkog (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 UNiversity 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 Sodagari (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 (Xidian University, P.R. China); Yuqing Zhang (Graduate University of Chinese Academy of Sciences, P.R. China); Xuefeng Liu (Xidian 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 Ottawa, 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  $O(\log n)$  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)

**08:00 *Fast Jamming Detection in Sensor Networks***

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)  
pp. 934-938

**08:20 *A Novel Traffic-Analysis Back Tracing Attack for Locating Source Nodes in Wireless Sensor Networks***

Mohamed Mahmoud (University of Waterloo, Canada); Sherman Shen (University of Waterloo, Canada)  
pp. 939-943

**08:40 *Quantitative Security and Efficiency Analysis of SEAR in Wireless Sensor Networks***

Di Tang (Michigan State University, USA); Tongtong Li (Michigan State University, USA); Jian Ren (Michigan State University, USA)  
pp. 944-948

**09:00 *All Your Jammers Belong To Us - Localization of Wireless Sensors Under Jamming Attack***

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)  
pp. 949-954

**09:20 *Stealthy pre-attacks against random key pre-distribution security***

Panagiotis (Panos) Papadimitratos (KTH, Sweden); Jing Deng (University of North Carolina at Greensboro, USA)  
pp. 955-959

14:00 - 15:45

### CISS07: Malware and OS Security

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

**14:00 *How an SMS-Based Malware Infection Will Get Throttled by the Wireless Link***

Ilona Murynets (AT&T Security Research Center, USA); Roger Piqueras Jover (AT&T Security Research Center, USA)  
pp. 960-965

**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 Lício 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 Modem 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**

Radoniaina Andriatsimandefitra (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 Kademlia-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***

Oussema 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 Rizzo (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 Reiher (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**

**CISS-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)  
pp. 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)  
pp. 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 Venkatasubramaniam (Lehigh University, USA)  
pp. 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)  
pp. 1123-1127

**16:55 *Privacy-Preserving PKIs with Reduced Server Trust***

Giovanni Di Crescenzo (Telcordia Technologies, USA); Tao Zhang (Cisco Systems, USA)  
pp. 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)  
pp. 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)  
pp. 1138-1143

# ICC'12 CQRM: IEEE ICC 2012 - Communication QoS, Reliability and Modeling Symposium - Program

|               | Tuesday, June 12                                                                                   | Wednesday, June 13                                                                                                                                      | Thursday, June 14                                                         |
|---------------|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| 8:00 - 9:45   |                                                                                                    | CQR05: <i>Quality and Performance in Grid, Distributed and Cloud Computing</i><br>CQR06: <i>Quality, Scalability and Performance in the Internet II</i> | CQR09: <i>Information based Wireless and Mobile Networks and Services</i> |
| 9:45 - 10:45  |                                                                                                    |                                                                                                                                                         |                                                                           |
| 10:45 - 12:30 | CQR-P1: <i>CQR-P1</i><br>CQR01: <i>Network Measurement and Monitoring Techniques</i>               |                                                                                                                                                         |                                                                           |
| 12:30 - 14:00 |                                                                                                    |                                                                                                                                                         |                                                                           |
| 14:00 - 15:45 | CQR-P2: <i>CQR-P2</i><br>CQR02: <i>Quality, Scalability and Performance in the Internet I</i>      | CQR07: <i>Quality and Performance in Next Generation Mobile Networks</i>                                                                                | CQR10: <i>Network Modeling &amp; Performance Evaluation Techniques</i>    |
| 15:45 - 16:15 |                                                                                                    |                                                                                                                                                         |                                                                           |
| 16:15 - 18:00 | CQR03: <i>TCP/IP Performance</i><br>CQR04: <i>Quality and Performance for Network and Services</i> | CQR08: <i>Quality and Performance in Wireless Networks</i>                                                                                              | CQR11: <i>Performance Modeling of Next Generation Networks</i>            |

## 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

**11:48 GM-PAB: A Grid-based Energy Saving Scheme with Predicted Traffic Load Guidance for Cellular Networks**

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

## **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 Sanjuà-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);

Joel J. P. C. Rodrigues (Instituto de Telecomunicações, University of Beira Interior, Portugal); Mario Lemes Proença Jr. (State University of Londrina, Brazil)  
pp. 1188-1192

**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-Hong 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 NATted Hosts by Observing TCP/IP Field Behaviors**

Sophon Mongkolluksamee (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 Schoenenberg (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 Hoßfeld (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);  
Xiaojiang Du (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 Domżał (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

TeleInfrastruktur, Denmark); Neeli Rashmi Prasad (Center for TeleInfrastructure (CTIF), Denmark); Ramjee Prasad (Center for TeleInfrastruktur (CTIF), Aalborg University, Denmark)  
pp. 1362-1366

**15:24 Network connectivity with heterogeneous mobility**

Richard J La (University of Maryland at College Park, USA)  
pp. 1367-1371

## 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 Marie 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 Tomasiak (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 Scaraficci (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); Racha 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

|               | Tuesday, June 12                                                                                     | Wednesday, June 13                                                                        | Thursday, June 14                                                                                      |
|---------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| 8:00 - 9:45   |                                                                                                      | CRN04: <i>Resource Allocation-I</i>                                                       | CRN09: <i>Performance Modeling and Analysis-II</i><br>CRN10: <i>Spectrum Access-II</i>                 |
| 9:45 - 10:45  |                                                                                                      |                                                                                           |                                                                                                        |
| 10:45 - 12:30 | CRN-P1: <i>Spectrum Sensing</i><br>CRN01: <i>Spectrum Sensing-I</i>                                  |                                                                                           |                                                                                                        |
| 12:30 - 14:00 |                                                                                                      |                                                                                           |                                                                                                        |
| 14:00 - 15:45 | CRN-P2: <i>Performance Modeling and Analysis</i><br>CRN02: <i>Cooperative Spectrum Sensing</i>       | CRN05: <i>Resource Allocation-II</i><br>CRN06: <i>Performance Modeling and Analysis-I</i> | CRN11: <i>Game Theory and Network Economics</i><br>CRN12: <i>Performance Modeling and Analysis-III</i> |
| 15:45 - 16:15 |                                                                                                      |                                                                                           |                                                                                                        |
| 16:15 - 18:00 | CRN-P3: <i>Learning, Spectrum Analysis, and Spectrum Access</i><br>CRN03: <i>Spectrum Sensing-II</i> | CRN07: <i>Spectrum Analysis</i><br>CRN08: <i>Spectrum Access-I</i>                        | CRN13: <i>Interference Analysis and Management</i>                                                     |

## 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 (UniversityTexas 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 Treeumnuk (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 Spectrums***

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 Jiaotong University, P.R. China); Chen He (Shanghai Jiaotong 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 Wijedasa (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. Zarikoff (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)  
pp. 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)  
pp. 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)  
pp. 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)  
pp. 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)  
pp. 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)  
pp. 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

**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); Wenye 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 Noguét (CEA LETI, France)

**16:15 Interference Study between Wireless Microphone Systems and TV White Space Devices**

Rogério Dionísio (IT Aveiro & Castelo Branco Polytechnic Institute, Portugal); Paulo Marques (Instituto de Telecomunicações, Portugal); Jonathan Rodriguez (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)

pp. 1890-1894

**17:39 *Efficient Convex Optimization for Beamforming in Cognitive Radio Multicast Transmission***

Marko Boko (ULHT, Lisbon & UNINOVA, Caparica, Portugal)

pp. 1895-1900

# ICC'12 CSSMA: IEEE ICC 2012 - Communication Software Services and Multimedia Applications Symposium - Program

|               | Tuesday, June 12                         | Wednesday, June 13         | Thursday, June 14                     |
|---------------|------------------------------------------|----------------------------|---------------------------------------|
| 8:00 - 9:45   |                                          | CSS04: <i>Peer-to-Peer</i> | CSS07: <i>Resource Management</i>     |
| 9:45 - 10:45  |                                          |                            |                                       |
| 10:45 - 12:30 | CSS01: <i>Quality of Services</i>        |                            |                                       |
| 12:30 - 14:00 |                                          |                            |                                       |
| 14:00 - 15:45 | CSS02: <i>Communication Optimization</i> | CSS05: <i>Streaming</i>    | CSS08: <i>Collaborative Media</i>     |
| 15:45 - 16:15 |                                          |                            |                                       |
| 16:15 - 18:00 | CSS03: <i>Energy Efficiency</i>          | CSS06: <i>Coding</i>       | CSS-P1: <i>CSS-P1: Poster Session</i> |

## 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 Polit cnica de Valencia, Spain); Diana Bri (Universidad Politecnica de Valencia, Spain); Sandra Sendra (Universidad Polit cnica de Valencia, Spain); Jaime Lloret (Universidad Polit cnica 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 Institute of Crete, Greece)  
pp. 1906-1910

**11:27 *Enriched IPTV Services Personalization***

Songbo Song (France Telecom, France); Hassnaa Moustafa (Intel, USA); Hossam Afifi (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

**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

**08:21 *On the Optimal Scheduling in Pull-based Real-Time P2P Streaming Systems: Layered and Non-Layered Streaming***

Abbas Bradai (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); Giaime 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



Thursday, June 14

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 Dusenbery (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***

Huangmao 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***

Abedelaziz 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 Lóránd 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

|               | Tuesday, June 12                                                                         | Wednesday, June 13                                                | Thursday, June 14                                                             |
|---------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------------------|
| 8:00 - 9:45   |                                                                                          | CT07: <i>Multicell Network</i><br>CT08: <i>Wireless Networks</i>  | CT13: <i>Heterogeneous Network</i><br>CT14: <i>Network Coding</i>             |
| 9:45 - 10:45  |                                                                                          |                                                                   |                                                                               |
| 10:45 - 12:30 | CT01: <i>MIMO I</i><br>CT02: <i>LDPC Codes</i>                                           |                                                                   |                                                                               |
| 12:30 - 14:00 |                                                                                          |                                                                   |                                                                               |
| 14:00 - 15:45 | CT03: <i>Relay I</i><br>CT04: <i>Channel Capacity</i>                                    | CT09: <i>Network Information Theory</i><br>CT10: <i>Diversity</i> | CT-P1: <i>Compressed Sensing and New Applications</i><br>CT15: <i>MIMO II</i> |
| 15:45 - 16:15 |                                                                                          |                                                                   |                                                                               |
| 16:15 - 18:00 | CT05: <i>Interference Alignment</i><br>CT06: <i>Detection, Decoding and Equalization</i> | CT11: <i>Performance Analysis</i><br>CT12: <i>Relay II</i>        | CT-P2: <i>Wireless Communications</i><br>CT16: <i>Coding Theory</i>           |

### 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 (Linköping University & Dept. Electrical Engineering (ISY), Sweden); Erik G. Larsson (Linköping University, Sweden)  
pp. 2145-2150

**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

## CT02: LDPC Codes

Chair: Ravi Tandon (Virginia Tech, USA)

**10:45 Protograph-Based Raptor-Like LDPC Codes with Low Thresholds**

Tsung-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

**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 Parzys (Ecole de Technologie Supérieure, Canada); Mai Vu (McGill University, Canada); Francois Gagnon (Ecole de Technologie Supérieure, Canada)  
pp. 2207-2212

**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 Cancellation 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

**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

## 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 Technologie (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)

pp. 2380-2384

**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); Siddhartan Govindasamy (F. W. Olin College of Engineering, USA)

pp. 2404-2409

**16:55 Uniform approximations for wireless performance in fading, noise and interference**

Chintha 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**

Pawandeeep 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**

Morteza 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

|               | Tuesday, June 12                                         | Wednesday, June 13                                                                                                   | Thursday, June 14                                                                            |
|---------------|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 8:00 - 9:45   |                                                          | NGN04: <i>Network Virtualization</i>                                                                                 | NGN07: <i>Routing I</i>                                                                      |
| 9:45 - 10:45  |                                                          |                                                                                                                      |                                                                                              |
| 10:45 - 12:30 | NGN01: <i>P2P and Content Based Networks I</i>           |                                                                                                                      |                                                                                              |
| 12:30 - 14:00 |                                                          |                                                                                                                      |                                                                                              |
| 14:00 - 15:45 | NGN02: <i>P2P and Content Based Networks II</i>          | NGN-P1: <i>Topics on Next Generation Networking and Internet I</i><br>NGN05: <i>Mobile and Wireless Networks I</i>   | NGN08: <i>Routing II</i><br>NGN09: <i>Content Delivery and Cloud Computing</i>               |
| 15:45 - 16:15 |                                                          |                                                                                                                      |                                                                                              |
| 16:15 - 18:00 | NGN03: <i>Traffic Engineering and Congestion Control</i> | NGN-P2: <i>Topics on Next Generation Networking and Internet II</i><br>NGN06: <i>Mobile and Wireless Networks II</i> | NGN10: <i>Cloud and Data Center</i><br>NGN11: <i>Router Architecture &amp; Switch Design</i> |

## 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)

pp. 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); Zhili Sun (University of Surrey, United Kingdom)

pp. 2628-2633

**12:09 *Towards a Flexible Resource Management System for Content Centric Networking***

Indra Widjaja (Bell Labs, Alcatel-Lucent, USA)

pp. 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)

pp. 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)

pp. 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)

pp. 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)

pp. 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

Wednesday, June 13

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: Zuqing 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

**14:21 EABF: Energy Efficient Self-Adaptive Bloom Filter for Network Packet Processing**

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 of Texas at 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 Aïssa (INRS, University of Quebec, Canada)  
pp. 2763-2767

**15:03 Dimensioning X2 backhaul link in LTE networks**

Alexandre Blogowski (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 Atiquzzaman (University of Oklahoma, USA); William D. Ivancic (NASA Glenn Research Center, USA)

pp. 2806-2810

**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); Michal Beňo (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); Shenjiang 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)  
pp. 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)  
pp. 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)  
pp. 2901-2906

**15:03 *A Multi-criteria Master Nodes Selection Mechanism For Knowledge Dissemination In Autonomic Networks***

Sami Souihi (University Paris Est UPEC, France); Said Hoceini (UPEC, University Paris-Est Creteil Val de Marne, France); Abdelhamid Mellouk (UPEC, University Paris-Est Creteil Val de Marne, France)  
pp. 2907-2911

**15:24 *Providing Reliability as an Elastic Service in Cloud Computing***

Nakharin Limrungsi (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)  
pp. 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)  
pp. 2918-2923

**16:36 *HERO: Hierarchical Energy Optimization for Data Center Networks***

Yan Zhang (NJIT, USA); Nirwan Ansari (NJIT, USA)  
pp. 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)

pp. 2929-2933

**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

# ICC'12 ONS: IEEE ICC 2012 - Optical Networks and Systems - Program

|               | Tuesday, June 12                         | Wednesday, June 13                                 | Thursday, June 14                                       |
|---------------|------------------------------------------|----------------------------------------------------|---------------------------------------------------------|
| 8:00 - 9:45   |                                          | ONS01: <i>Energy-efficient Optical Networks I</i>  | ONS04: <i>Optical Network Design and Control</i>        |
| 9:45 - 10:45  |                                          |                                                    |                                                         |
| 10:45 - 12:30 | ONSP1: <i>Optical Networking Posters</i> |                                                    |                                                         |
| 12:30 - 14:00 |                                          |                                                    |                                                         |
| 14:00 - 15:45 |                                          | ONS02: <i>Energy-efficient Optical Networks II</i> | ONS05: <i>Optical Access networks I: PON</i>            |
| 15:45 - 16:15 |                                          |                                                    |                                                         |
| 16:15 - 18:00 |                                          | ONS03: <i>Optical Network Survivability</i>        | ONS06: <i>Optical Access networks II: OCDMA and FSO</i> |

## 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); Sagi 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

**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***

Arularasi 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 Babarczy (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 Babarczy (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); Admela 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 Nurujjaman (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 Mumey (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); Qirui 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. Yuang (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

|               | Tuesday, June 12                                                                                       | Wednesday, June 13                               | Thursday, June 14                                                           |
|---------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------------------------|
| 8:00 - 9:45   |                                                                                                        | SA-SSC2: <i>Satellite &amp; Space Networking</i> | SA-TCO1: <i>TCO1: Tactical Communications and Operations</i>                |
| 9:45 - 10:45  |                                                                                                        |                                                  |                                                                             |
| 10:45 - 12:30 | SA-AN1: <i>Access Networks I</i><br>SA-SSC-P1: <i>Satellite &amp; Space Communications Systems I</i>   |                                                  |                                                                             |
| 12:30 - 14:00 |                                                                                                        |                                                  |                                                                             |
| 14:00 - 15:45 | SA-AN2: <i>Access Networks II</i><br>SA-SSC-P2: <i>Satellite &amp; Space Communications Systems II</i> | SA-SG1: <i>Smart Grid 1</i>                      | SA-EH1: <i>SAC E-Health</i>                                                 |
| 15:45 - 16:15 |                                                                                                        |                                                  |                                                                             |
| 16:15 - 18:00 | SA-SSC1: <i>Satellite &amp; Space Communications</i><br>SA-EH-P1: <i>SAC E-Health Poster</i>           | SA-SG2: <i>Smart Grid 2</i>                      | SA-PLC1: <i>SAC-Powerline Communications</i><br>SA-EH2: <i>SAC E-Health</i> |

### 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. Wyglinski (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 Baudoin (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 Vanelli-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 SSAInc 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

Wednesday, June 13

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 Firrincieli (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***

Boonyarith Saovapakhiran (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

(Universidad Carlos III de Madrid, Spain); Jose Ignacio Moreno (Universidad Carlos III de Madrid, Spain)  
pp. 3357-3361

**17:18 A Cheat-Proof Game Theoretic Demand Response Scheme for Smart Grids**

Yan Chen (University of Maryland, College Park, USA); Wan-Yi Lin (University of Maryland, College Park, USA); Feng Han (University of Maryland, College Park, USA); Yu-Han Yang (University of Maryland, College Park, USA); Zoltan Safar (University of Maryland College Park, USA); K. J. Ray Liu (University of Maryland, USA)  
pp. 3362-3366

**17:39 An Efficient Multiple Access Scheme for Voltage Control in Smart Grid Using WiMAX**

Rukun Mao (University of Tennessee Knoxville, USA); Husheng Li (University of Tennessee, USA)  
pp. 3367-3371

Thursday, June 14

08:00 - 09:45

**SA-TCO1: TCO1: Tactical Communications and Operations**

Chair: Gabriel E. Jakobson (Altusys Corp., USA)

**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***

Kellyn 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 Kortermann (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. Zirikoff (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***

Sanjeewa 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***

Joshua 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

|            | Tuesday, June 12                                                | Wednesday, June 13                                                     | Thursday, June 14                                                       |
|------------|-----------------------------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------------|
| 8:00<br>-  |                                                                 | SPC07: <i>Beamforming and Multi-antenna Systems (I)</i>                | SPC10: <i>MIMO Systems</i>                                              |
| 9:45<br>-  |                                                                 |                                                                        |                                                                         |
| 10:45      |                                                                 |                                                                        |                                                                         |
| 10:45<br>- | SPC01: <i>Channel Estimation, Equalization and Decoding (I)</i> |                                                                        |                                                                         |
| 12:30      | SPC02: <i>Cognitive Radio Systems</i>                           |                                                                        |                                                                         |
| 12:30<br>- |                                                                 |                                                                        |                                                                         |
| 14:00      |                                                                 |                                                                        |                                                                         |
| 14:00<br>- | SPC03: <i>Cooperative Communications</i>                        | SPC08: <i>Localization</i>                                             | SPC-P2: <i>Signal Processing for Communications-Poster Session (II)</i> |
| 15:45      | SPC04: <i>Secured Communications</i>                            |                                                                        | SPC11: <i>Beamforming and Multi-antenna Systems (II)</i>                |
| 15:45<br>- |                                                                 |                                                                        |                                                                         |
| 16:15      |                                                                 |                                                                        |                                                                         |
| 16:15<br>- | SPC05: <i>OFDM and Multi-Carrier Systems (I)</i>                | SPC-P1: <i>Signal Processing for Communications-Poster Session (I)</i> | SPC12: <i>Channel Modelling</i>                                         |
| 18:00      | SPC06: <i>Optimization</i>                                      | SPC09: <i>Channel Estimation, Equalization and Decoding (II)</i>       | SPC13: <i>OFDM and Multi-Carrier Systems (II)</i>                       |

## 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)

pp. 3471-3475

**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

**14:00 - 15:45**

### **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 (Linköping 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

### **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 Xuwen (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**

Özgun Özdemir (Qatar University, Qatar); Ridha Hamila (Department of Electrical Engineering & Qatar University, Qatar); Naofal 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 Abbasfar (University of Tehran, Iran)  
pp. N/A

**17:39 *Jointly Optimizing the Virtual Noise Mask and the SNR Margin for improved Service in xDSL Systems***

Wagih Sarhan (Technische Universität Darmstadt, Germany); Anja Klein (TU Darmstadt, Germany); Martin Kuipers (Nokia Siemens Networks GmbH & Co. KG, Germany)  
pp. 3590-3594

## 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



Wednesday, June 13

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); Himel 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 Georghiades (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 Biskaduros (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); Kutluyıl Doğançay (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**

Hala 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); Kutluyıl 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); M erouane 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); Bj orn 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

**15:24 A Multiple Access Scheme Based on Multi-dimensional Compressed Sensing**

Tong Xue (University of Victoria, Canada); Xiaodai Dong (University of Victoria, Canada); Yi Shi (University of Victoria, Canada)  
pp. 3774-3778

**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 Hölscher (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); Qinye 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)

pp. 3852-3856

## ICC'12 WCS: IEEE ICC 2012 - Wireless Communications Symposium - Program

|               | Tuesday, June 12                                                                                                                                                                                                                     | Wednesday, June 13                                                                                                                                                                                                                                   | Thursday, June 14                                                                                                                                                            |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:00 - 9:45   |                                                                                                                                                                                                                                      | WC13: <i>Coordinated Multi-Point Transmission Systems</i><br>WC14: <i>Space-Time Coding II</i><br>WC15: <i>MIMO I</i><br>WC16: <i>Relay Technologies I</i>                                                                                           | WC25: <i>Performance Analysis for Relay Systems II</i><br>WC26: <i>Cognitive Radio Networks</i><br>WC27: <i>OFDMA</i>                                                        |
| 9:45 - 10:45  |                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                      |                                                                                                                                                                              |
| 10:45 - 12:30 | WC01: <i>Multiuser MIMO</i><br>WC02: <i>Cooperative Communications: Resource Allocation</i><br>WC03: <i>Hybrid ARQ</i><br>WC04: <i>OFDM</i>                                                                                          |                                                                                                                                                                                                                                                      |                                                                                                                                                                              |
| 12:30 - 14:00 |                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                      |                                                                                                                                                                              |
| 14:00 - 15:45 | WC05: <i>Space-Time Coding I</i><br>WC06: <i>Performance Analysis for Relay Systems I</i><br>WC07: <i>Energy Efficient Design I</i><br>WC08: <i>Dynamic/Opportunistic Spectrum Access</i>                                            | WC-P2: <i>WC-P2: Topics in Wireless Communications II</i><br>WC17: <i>Energy Efficient Design II</i><br>WC18: <i>Resource Allocation</i><br>WC19: <i>Spectrum Sensing for Cognitive Radio</i><br>WC20: <i>Relay Technologies: Decode-and-Forward</i> | WC-P4: <i>WC-P4: Topics in Wireless Communications IV</i><br>WC28: <i>Coding</i><br>WC29: <i>Physical-Layer Network Coding</i><br>WC30: <i>Wireless Systems</i>              |
| 15:45 - 16:15 |                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                      |                                                                                                                                                                              |
| 16:15 - 18:00 | WC-P1: <i>WC-P1: Topics in Wireless Communications I</i><br>WC09: <i>Cooperative Communications: Coding and Diversity</i><br>WC10: <i>Cross-Layer Design</i><br>WC11: <i>Relay Selection</i><br>WC12: <i>Interference Management</i> | WC-P3: <i>WC-P3: Topics in Wireless Communications III</i><br>WC21: <i>UWB</i><br>WC22: <i>Relay Technologies II</i><br>WC23: <i>Wireless Channel and Propagations</i><br>WC24: <i>Network Coding</i>                                                | WC-P5: <i>WC-P5: Topics in Wireless Communications V</i><br>WC31: <i>MIMO in Cooperative Communications</i><br>WC32: <i>MIMO II</i><br>WC33: <i>Estimation and Detection</i> |



Tuesday, June 12

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: Yindi 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

**11:48 First-Hop-Quality-Aware Dynamic Resource Allocation for Amplify-and-Forward Opportunistic Relaying Assisted SC-FDMA**

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 Vakili (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

**15:03 *On the Performance of Two-Way Amplify-and-Forward Relaying in the Presence of Co-channel Interferences***

Salama Said Ikki (INRS, Canada); Sonia Aïssa (INRS, University of Quebec, Canada)  
pp. 4006-4010

**15:24 *Performance Evaluation of Multi-Hop Multi-Branch Relaying Networks with Multiple Co-Channel Interferers***

Amir. H. Forghani (INRS, University of Quebec, Montreal QC, Canada); Salama Said Ikki (INRS, Canada); Sonia Aïssa (INRS, University of Quebec, Canada)  
pp. 4011-4015

## **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 Supérieure, 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

Schiphorst (University of Twente, The Netherlands); Cornelis H Slump (University of Twente, The Netherlands)  
pp. 4044-4048

**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. 4049-4054

**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: 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

**16:57 *Delay-Power Tradeoff of Max Queue-Weighted (MWQ) Power Control for Wireless Systems with Limited Renewable Energy Storage***

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); Kathiravetpillai 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**

Di 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 Bahrami (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 Apelfröjd (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 / TRILabs, 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 & IITL, 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 Elsherif (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

Systems Engineering Corporation, P.R. China); Rui Gao (State Key Lab. of Integrated Services Networks, Xidian University, P.R. China)  
pp. 4426-4430

**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: Himel 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**

Kalpna 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: 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 & IDCOM, United Kingdom); Md. Zahurul 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 Dorni (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 Irahhauten (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. Shahriar 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 Zaidi (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 Elmusrati (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); Huaizong 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: 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

Corp., USA); Kyle Wilt (Rensselaer Polytechnic Institute, USA); Henry Scarton (Rensselaer Polytechnic Institute, USA); Sam Pascarella (Advanced Acoustic Concepts, USA); John Pinezich (Advanced Acoustic Concepts, USA)  
pp. 4678-4683

**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); Daiming 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); Soung Chang Liew (The Chinese University of Hong Kong, Hong Kong); Shengli Zhang (Shenzhen University, P.R. China)  
pp. 4734-4740

**14:21 Cross-Layer Resource Allocation of Two-Way Relaying for Statistical Delay-QoS Guarantees**

Gen 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: 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); Huaizong Shao (University of Electronic Science and Technology of China, P.R. China)



pp. 4793-4797

**17:18 Optimal Direct Path Detection for Positioning with Communication Signals in Indoor Environments**

Jiixin 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. 4798-4802

**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 Amarasuriya (University of Alberta, Canada); Chintha 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 Khoshnevis (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**

Mahmood Mazrouei-Sebdani (University of Alberta / TRILabs, Canada); Witold A. Krzymieñ (University of Alberta / TRILabs, 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 H elard (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); Bj orn 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 M ah onen (RWTH Aachen University, Germany); Janne Riihij arvi (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

|               | Tuesday, June 12                                                                                     | Wednesday, June 13                                                                                                           | Thursday, June 14                                                                                                                                |
|---------------|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:00 - 9:45   |                                                                                                      | WN07: <i>Femtocell Networks I</i><br>WN08: <i>Wireless Relay Networks I</i>                                                  | WN13: <i>Resource Allocation I</i><br>WN14: <i>Vehicular &amp; Mobile Ad Hoc Networks</i><br>WN15: <i>Heterogeneous Wireless Networks</i>        |
| 9:45 - 10:45  |                                                                                                      |                                                                                                                              |                                                                                                                                                  |
| 10:45 - 12:30 | WN01: <i>LTE/WiMAX Networks</i><br>WN02: <i>Wireless Sensor Network Design</i>                       |                                                                                                                              |                                                                                                                                                  |
| 12:30 - 14:00 |                                                                                                      |                                                                                                                              |                                                                                                                                                  |
| 14:00 - 15:45 | WN03: <i>802.11 Wireless Networks</i><br>WN04: <i>Multicast &amp; Broadcast in Wireless Networks</i> | WN-P1: <i>Wireless Networks Posters I</i><br>WN09: <i>Femtocell Networks II</i><br>WN10: <i>Wireless Relay Networks II</i>   | WN16: <i>Resource Allocation II</i><br>WN17: <i>Opportunistic Wireless Networking</i><br>WN18: <i>Mobile Wireless Networks</i>                   |
| 15:45 - 16:15 |                                                                                                      |                                                                                                                              |                                                                                                                                                  |
| 16:15 - 18:00 | WN05: <i>Medium Access Control</i><br>WN06: <i>Cooperative Networking &amp; Network Coding</i>       | WN-P2: <i>Wireless Networks Posters II</i><br>WN11: <i>Scheduling in Wireless Networks</i><br>WN12: <i>Energy Efficiency</i> | WN19: <i>Performance Evaluation for Wireless Networks</i><br>WN20: <i>Modeling and Optimization</i><br>WN21: <i>Routing in Wireless Networks</i> |

## 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 Politecnica de Catalunya, Spain); Mario Garcia-Lozano (Universitat Politècnica de Catalunya, Spain); Silvia Ruiz Boqué (UPC, Spain); Joan Olmos (Universitat Politecnica 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 Nicopolitidis (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***

Raul 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 Sciarone (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); Kyunghye 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. Fadlullah (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); Hanguan 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 Bruggen (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

**17:39 Acoustic Propagation Properties of Underwater Communication Channels and their Influence on the Medium Access Control Protocol**

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 Backhuls on Coordinated Multipoint Transmission in Femtocell Networks***

Francesco Pantisano (University of Bologna & Centre for Wireless Communications, Finland); Mehdi Bennis (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 Khanafer (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 Mouatcho 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. 5075-5079

**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 Ghrayeb (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 Tsioutsoulouklis (Ionian 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 Mangués-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 Aitsaadi (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); Yusuo 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)

pp. 5291-5295

**08:21 Highway Multihop Broadcast Protocols for Vehicular Networks**

Mohsin Barradi (University of Montreal, Canada); Abdelhakim Hafid (University of Montreal, Canada); Sultan Aljahdali (Taif University, Saudi Arabia)

pp. 5296-5300

**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 Jamalipour (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); Zhouyue 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)

pp. 5371-5375

**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. 5376-5380

**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

**15:24 *An Efficient Network Coding Based Multicast Retransmission Scheme for Mobile Communication Networks with Relays***

Qiang Hu (Southeast University, P.R. China); Jun Zheng (Southeast University, P.R. China)  
pp. 5413-5417

**16:15 - 18:00**

**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 Politécnic de Valencia, Spain); Miguel Garcia (Universidad Politecnica 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. 5423-5428

**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 Halepovic (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 ElSawy (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

| Monday, June 11 |                                                    |
|-----------------|----------------------------------------------------|
| 9:00 - 9:45     | K1: <i>Keynote presentation</i>                    |
| 9:45 - 10:30    | S1: <i>Multicast Services</i>                      |
| 10:30 - 11:00   |                                                    |
| 11:00 - 11:40   | S2: <i>Optimizing virtual resource utilization</i> |
| 11:40 - 13:00   | P1: <i>Panel</i>                                   |

## 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); Ashiq Khan (NTT DOCOMO, Inc. & DOCOMO Communications

Laboratories Europe GmbH, Germany); Wolfgang Kellerer (Technische Universität München, Germany)  
pp. 5503-5507

**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

| Monday, June 11 |                                                               |
|-----------------|---------------------------------------------------------------|
| 8:30 - 8:45     | <i>Workshop Opening</i>                                       |
| 8:45 - 9:30     | <i>Key Note Talk - Intra Data Center</i>                      |
| 9:30 - 12:30    | <i>Intra - Data Center Session</i>                            |
| 12:30 - 14:00   | <i>Lunch</i>                                                  |
| 14:00 - 14:30   | <i>Key Note Talk - Inter - Data Center User - Data Center</i> |
| 14:30 - 16:30   | <i>Inter - Data Center / User - Data Center</i>               |
| 16:30 - 18:00   | <i>Panel on Clouds, Networks and Data Centers</i>             |

## 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 Kellerer (Technische Universität München, Germany)

**14:30 - 16:30**

**Inter - Data Center / User - Data Center**

Room: M5

Chair: Wolfgang Kellerer (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)

pp. 5538-5542

**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

|               | Monday, June 11                   |
|---------------|-----------------------------------|
| 8:30 - 9:30   | S1: <i>Keynote</i>                |
| 9:30 - 12:00  | S2: <i>Cooperative networking</i> |
| 12:00 - 14:00 |                                   |
| 14:00 - 15:30 | S3: <i>Cognitive radio</i>        |
| 15:30 - 16:00 |                                   |
| 16:00 - 18:00 | S4: <i>Network coding</i>         |

## 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

**14:15 Cognitive Radio Enabling Opportunistic Spectrum Access in LTE-Advanced Femtocells**

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 Politécnica de Valencia, Spain); Narcis Cardona (Universidad Politécnica Valencia, Spain); Xavier Gelabert (King's College London & Centre for Telecommunications Research (CTR), United Kingdom)

pp. 5593-5597

**14:30 PAPER 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. Girnyk (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 Czylik (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 Queensland, 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

| Monday, June 11 |                                                                                                              |
|-----------------|--------------------------------------------------------------------------------------------------------------|
| 8:20 - 8:30     | Welcome: <i>Dr. Periklis Chatzimisios (Alexander TEI of Thessaloniki) CONWIRE Co-Chair</i>                   |
| 8:30 - 9:00     | Keynote 1: <i>Keynote Speech - Prof. Nirwan Ansari (New Jersey Institute of Technology, USA)</i>             |
| 9:00 - 10:00    | S1: <i>Session 1 - Handover Services in Heterogeneous Wireless Networks</i>                                  |
| 10:00 - 10:30   |                                                                                                              |
| 10:30 - 11:00   | Invited 1: <i>Invited Talk 1 - Konstantinos Samdanis (NEC Europe Ltd, Germany)</i>                           |
| 11:00 - 12:30   | S2: <i>Session 2 - Performance Evaluation and Optimization Techniques for Heterogeneous Wireless Systems</i> |
| 12:30 - 14:00   | Lunch: <i>Lunch break</i>                                                                                    |
| 14:00 - 15:30   | S3: <i>Session 3 - Radio Resource and Mobility Management</i>                                                |
| 15:30 - 16:00   |                                                                                                              |
| 16:00 - 16:30   | Invited 2: <i>Invited Talk 2 - Prof. Andrea Goldsmith (Stanford University, USA)</i>                         |
| 16:30 - 18:00   | Panel: <i>Panel - Advances and Future Trends for Convergence among Heterogeneous Wireless Systems</i>        |

## 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 Spachos (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 Bourdena (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)

# ICC'12 WS - E2Nets: Workshop On Energy Efficiency in Wireless Networks & Wireless Networks for Energy Efficiency - Program

| Monday, June 11 |                                                                     |
|-----------------|---------------------------------------------------------------------|
| 8:30 - 10:00    | E2NETS-PHY: <i>Energy Efficiency in Physical Layer</i>              |
| 10:00 - 10:45   |                                                                     |
| 10:45 - 12:15   | E2NETS-NET: <i>Energy Efficiency in Datalink and Network Layers</i> |
| 12:15 - 14:00   |                                                                     |
| 14:00 - 15:30   | E2NETS-APPL: <i>Energy Efficiency in Application Layer</i>          |
| 15:30 - 16:30   |                                                                     |
| 16:30 - 18:00   | E2NETS-CELL: <i>Energy Efficiency in Cellular Networks</i>          |

## 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 Technologie (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 TeleInfrastruktur (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

# ICC'12 WS - EHC: International Workshop on Energy Harvesting for Communication - Program

|               |                                               |
|---------------|-----------------------------------------------|
|               | <b>Friday, June 15</b>                        |
| 8:30 - 10:00  | F1_S1: <i>Keynote Talk and Presentation 1</i> |
| 10:00 - 10:30 |                                               |
| 10:30 - 12:30 | F1_S2: <i>Presentations 2-6</i>               |

## 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 Bordonio, Italy); Kris Steenhaut (Vrije Universiteit Brussel, Belgium); Massimo Celidonio (Fondazione Ugo Bordonio, Italy); Emanuele Sergio (Fondazione Ugo Bordonio, 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 |                                                  |
|-----------------|--------------------------------------------------|
| 8:30 - 10:00    | S1: <i>Pub/Sub &amp; Routing</i>                 |
| 10:00 - 10:30   |                                                  |
| 10:30 - 12:30   | S2: <i>Content/Information Oriented Networks</i> |
| 12:30 - 14:00   |                                                  |
| 14:00 - 15:30   | S3: <i>Mobility Aware Networks</i>               |
| 15:30 - 16:00   |                                                  |
| 16:00 - 17:40   | S4: <i>Virtual Networks &amp; Provisioning</i>   |

## Monday, June 11

**08:30 - 10:00**

### S1: Pub/Sub & Routing

Chair: Lixin Gao (University of Massachusetts at Amherst, USA)

**08:30 CCFRR: 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**

Tatsuhiko 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. Kafle (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); Shahrooz 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 |                                                                   |
|-----------------|-------------------------------------------------------------------|
| 8:30 - 9:50     | Wireless 1: <i>Green Wireless Communications and Networking 1</i> |
| 9:50 - 10:20    |                                                                   |
| 10:20 - 12:00   | Wireless 2: <i>Green Wireless Communications and Networking 2</i> |
| 12:00 - 13:30   |                                                                   |
| 13:30 - 15:00   | Wired 1: <i>Green Wired Communications and Networking 1</i>       |
| 15:00 - 15:30   |                                                                   |
| 15:30 - 17:00   | Wired 2: <i>Green Wired Communications and Networking 2</i>       |

## Friday, June 15

**08:30 - 09:50**

### Wireless 1: Green Wireless Communications and Networking 1

Chair: Shengrong Bu (Carleton University, Canada)

**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***

Xinsheng 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)

**10:20 Energy-Efficient Resource Allocation in OFDMA Systems with Large Numbers of Base Station Antennas**

Derrick Wing Kwan Ng (University Erlangen-Nürnberg, Germany); Robert Schober (University of British Columbia, Canada)  
pp. 5916-5920

**10:40 Energy Efficient Cellular Networks with CoMP Communications and Smart Grid**

Shengrong Bu (Carleton University, Canada); F. Richard Yu (Carleton University, Canada); Yegui Cai (Carleton University, Canada); Peter Liu (Carleton University, Canada)  
pp. 5921-5925

**11:00 An Energy Efficiency Power and Sub-carrier Allocation for the Downlink Multi-user CoMP in Multi-Cell Systems**

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)  
pp. 5926-5930

**11:20 Cell Switch Off Technique Combined with Coordinated Multi-Point (CoMP) Transmission for Energy Efficiency in Beyond-LTE Cellular Networks**

Gencer Cili (Carleton University, Canada); Halim Yanikomeroglu (Carleton University, Canada); F. Richard Yu (Carleton University, Canada)  
pp. 5931-5935

**11:40 Energy-Efficient Non-cooperative Power Control in Relay-Assisted Interference Channels Considering Circuit Dissipated Power**

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)  
pp. 5936-5940

**13:30 - 15:00**

## **Wired 1: Green Wired Communications and Networking 1**

Chair: Gencer Cili (Carleton University, Canada)

**13:30 Research Roadmap for Green Wireline Access**

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)

pp. 5941-5945

**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 Kilper (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

# ICC'12 WS - Greenetworking: IEEE ICC 2012 Workshop on Cognitive Radio and Cooperation for Green Networking - Program

| Monday, June 11 |                                                                 |
|-----------------|-----------------------------------------------------------------|
| 8:30 - 10:00    | WS_GRNet_00: <i>Greenetworking Workshop Welcome Session</i>     |
| 10:00 - 10:30   |                                                                 |
| 10:30 - 12:30   | WS_GRNet_01: <i>Greenetworking Workshop Technical Session 1</i> |
| 12:30 - 14:00   |                                                                 |
| 14:00 - 15:30   | WS_GRNet_02: <i>Greenetworking Workshop Technical Session 2</i> |
| 15:30 - 16:00   |                                                                 |
| 16:00 - 17:30   | WS_GRNet_03: <i>Greenetworking Workshop Technical Session 3</i> |

## Monday, June 11

**08:30 - 10:00**

### **WS\_GRNet\_00: Greenetworking Workshop Welcome Session**

Welcome and Guest Speaker

Chairs: Ayman Radwan (Instituto de Telecomunicações & Queen's University, Portugal),  
Jonathan Rodriguez (Instituto de Telecomunicações, Portugal)

**10:30 - 12:30**

### **WS\_GRNet\_01: Greenetworking Workshop Technical Session 1**

Energy efficiency in Physical (PHY) Layer

Chair: Abd-Elhamid M. Taha (Alfaisal University, Saudi Arabia)

**10:30 *Interference-Based Packet Recovery for Energy Saving in Cognitive Radio Networks***

Sharhabeel H. Alnabelsi (Iowa State University, USA); Ahmed E. Kamal (Iowa State University, USA)  
pp. 5978-5982

**10:54 *Power Management in Solar-powered Long Range WiFi Test-bed***

Najah A. Abu Ali (UAEU, UAE)  
pp. 5983-5987

**11:18 *Adaptive Power Control Scheme for Energy Efficient Cognitive Radio Networks***

Mahdi Pirmoradian (Kingston University of London, United Kingdom); Olayinka Adigun (Kingston University, United Kingdom); Christos Politis (Kingston University, United Kingdom)  
pp. 5988-5992

**11:42 *Quality of Experience for Cognitive Multiple Antenna Systems***

Reema Imran (University of Jordan, Jordan); Nizar Zorba (QMIC, 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: Greennetworking 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: Greennetworking 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

| Friday, June 15 |                                                                              |
|-----------------|------------------------------------------------------------------------------|
| 8:30 - 9:00     | I1: <i>Ultimate Smartphone Solution</i>                                      |
| 9:00 - 10:00    | S1: <i>On the Performance of HSPA Evolution</i>                              |
| 10:00 - 10:30   |                                                                              |
| 10:30 - 11:00   | I2: <i>Enriching the HSPA toolbox</i>                                        |
| 11:00 - 12:30   | S2: <i>MIMO in HSPA Evolution</i>                                            |
| 12:30 - 14:00   |                                                                              |
| 14:00 - 14:30   | I3: <i>Evolving HSPA+ in a LTE-competitive environment: a US perspective</i> |
| 14:30 - 15:30   | S3: <i>Multi-Cell Techniques in HSPA Evolution</i>                           |
| 15:30 - 16:00   |                                                                              |
| 16:00 - 16:30   | I4: <i>HSPA small cells</i>                                                  |
| 16:30 - 17:00   | I5: <i>Techniques for HSPA Network Capacity Improvements</i>                 |
| 17:00 - 18:00   | P1: <i>Is HSPA at the end of its evolution?</i>                              |

### 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 (Wroclaw University of Technology, Poland); Michał Wcisło (Wroclaw 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**

Weiyang 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

|               | Friday, June 15                                                                    |
|---------------|------------------------------------------------------------------------------------|
| 8:45 - 9:00   | W1: <i>Welcome</i>                                                                 |
| 9:00 - 10:00  | K1: <i>Keynote Speaker</i>                                                         |
| 10:00 - 10:30 |                                                                                    |
| 10:30 - 12:00 | S1: <i>Mobile and Body Sensors in Healthcare (Chair: Dr. Michael Rosenberg)</i>    |
| 12:00 - 14:00 |                                                                                    |
| 14:00 - 15:30 | S2: <i>Real-Time Monitoring and Physical Activity (Chair: Dr Di Ma)</i>            |
| 15:30 - 16:00 |                                                                                    |
| 16:00 - 17:00 | S3: <i>Security for Medical Device Applications (Chair: Prof. Gareth Stratton)</i> |

## Friday, June 15

### 08:45 - 09:00

#### W1: Welcome

Introduction and Agenda

Chair: Paul Fergus (Liverpool John Moores University, United Kingdom)

### 09:00 - 10:00

#### K1: Keynote Speaker

Cell Phone Intervention to Improve Adherence: Cystic Fibrosis Care Team, Patient, and Parent Perspectives

Chair: Paul Fergus (Liverpool John Moores University, United Kingdom)

### 10:30 - 12:00

#### S1: Mobile and Body Sensors in Healthcare (Chair: Dr. Michael Rosenberg)

Chair: Paul Fergus (Liverpool John Moores University, United Kingdom)

##### **10:30 *Towards a Real-time Application to Reveal Entrainment Among People***

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. 6086-6090

**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 Fergus (Liverpool John Moores University, United Kingdom); Madjid 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 Fergus (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 Fergus (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

| Monday, June 11 |                                                                                 |
|-----------------|---------------------------------------------------------------------------------|
| 8:30 - 9:00     | Prof. Ian F. Akyildiz: <i>GRANET: Graphene Based Nanocommunication Networks</i> |
| 9:00 - 10:00    | SESSION I: <i>Networking Concepts for Molecular Communication</i>               |
| 10:00 - 10:30   | <i>Coffee Break</i>                                                             |
| 10:30 - 11:55   | SESSION II: <i>Nanonetworking Communication Techniques</i>                      |
| 11:55 - 12:00   | <i>Break</i>                                                                    |
| 12:00 - 13:00   | SESSION III: <i>Nanonetworking applications and related topics</i>              |
| 13:00 - 13:15   | SESSION IV: <i>Short Presentations</i>                                          |

## 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

**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**

Sergi Abadal (Universitat Politècnica de Catalunya & Nanonetworking Center in Catalonia, Spain); Ignacio Llatser (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)

pp. 6172-6176

**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); Ilangko 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

| Monday, June 11 |                                             |
|-----------------|---------------------------------------------|
| 8:30 - 8:45     | <i>Workshop Introduction</i>                |
| 8:45 - 9:15     | <i>Invited paper I</i>                      |
| 9:15 - 10:00    | <i>Morning Session I</i>                    |
| 10:00 - 10:30   |                                             |
| 10:30 - 11:00   | <i>Invited paper II</i>                     |
| 11:00 - 12:30   | <i>Morning Session II</i>                   |
| 12:30 - 14:00   |                                             |
| 14:00 - 14:30   | <i>Invited Talk I</i>                       |
| 14:30 - 14:50   | <i>Afternoon Session I</i>                  |
| 14:50 - 15:30   | <i>Invited Paper III</i>                    |
| 15:30 - 16:00   |                                             |
| 16:00 - 16:30   | <i>Invited Talk II</i>                      |
| 16:30 - 17:00   | <i>Invited Talk III</i>                     |
| 17:00 - 17:30   | <i>Invited Talk IV</i>                      |
| 17:30 - 18:00   | <i>Panel discussion and closing remarks</i> |

## 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); Jiajia Chen (The Royal Institute of Technology (KTH), Sweden); Mozhgan 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)

pp. 6235-6240

**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**

Biswanath 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)



# ICC'12 WS - NovaEnEv: International Workshop on Novel approaches to Energy Measurement and Evaluation in Wireless Networks - Program

|               | Friday, June 15                               |
|---------------|-----------------------------------------------|
| 8:30 - 12:00  | <i>Energy Efficiency in WSNs</i>              |
| 12:00 - 14:00 |                                               |
| 14:00 - 15:30 | <i>Energy Efficiency in Wireless Networks</i> |

## Friday, June 15

**08:30 - 12:00**

### Energy Efficiency in WSNs

Chairs: 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

| Friday, June 15 |                                                                                                                      |
|-----------------|----------------------------------------------------------------------------------------------------------------------|
| 8:30 - 9:15     | <i>Invited Talk #1: Disaster Voice Messaging Service</i>                                                             |
| 9:15 - 10:00    | <i>Invited Talk #2: R&amp;D Activities on Disaster-Resistant Network Infrastructure in KDDI R&amp;D Laboratories</i> |
| 10:00 - 10:30   |                                                                                                                      |
| 10:30 - 11:15   | <i>Invited Talk #3: Emergency Management and Future Vision in Disaster-Resilient Society</i>                         |
| 11:15 - 12:45   | <i>Trustable Communication Services and Applications</i>                                                             |
| 12:45 - 14:00   |                                                                                                                      |
| 14:00 - 15:30   | <i>Disaster Communication Recovery</i>                                                                               |
| 15:30 - 16:00   |                                                                                                                      |
| 16:00 - 17:00   | <i>Energy Management in National Disaster</i>                                                                        |

### 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 Tsugawa (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 Jalihal (Indian Institute of Technology Madras, India); Ravinder D Koilpillai (Indian Institute of Technology Madras, India); Prakash Khawas (Indian Institute of

Technology Madras, India); S Sampooram (Indian Institute of Technology Madras, India); Sree Nagarajan (Indian Institute of Technology Madras, India); Kotaro Kataoka (Keio University, Japan); Keiji Takeda (Keio University, Japan)  
pp. 6339-6343

**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

| Friday, June 15 |                                                                 |
|-----------------|-----------------------------------------------------------------|
| 8:30 - 9:00     | <i>Keynote Speech</i>                                           |
| 9:00 - 10:00    | <i>Plenary Talks</i>                                            |
| 10:00 - 10:30   |                                                                 |
| 10:30 - 12:30   | <i>S1: RSN image processing and compressive sensing</i>         |
| 12:30 - 14:00   |                                                                 |
| 14:00 - 15:30   | <i>S2: RSN Modelling and Optimization</i>                       |
| 15:30 - 16:00   |                                                                 |
| 16:00 - 18:00   | <i>S3: Target detection, location, tracking and recognition</i> |

## 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)

pp. 6357-6361

**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. 6362-6366

**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 Science and Engineering of China, P.R. China); Jilan 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

# ICC'12 WS - SaCoNet-III: 3rd IEEE International Workshop on SmArT COmmunications in NEtwork Technologies - Program

| Monday, June 11 |                                                                           |
|-----------------|---------------------------------------------------------------------------|
| 10:30 - 12:30   | TS1: <i>Quality Provisioning in Wireless Networks</i>                     |
| 12:30 - 14:00   |                                                                           |
| 14:00 - 15:30   | TS2: <i>Smart and Efficient Applications, Networks and Communications</i> |
| 15:30 - 16:00   |                                                                           |
| 16:00 - 18:00   | TS3: <i>Performance and Simulation Analysis</i>                           |

## 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); Marilia 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

**11:10 A Framework for Unified Traffic Dynamic Routing at Private-Public Network Border**

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 Brussels, 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 Catalonia (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 Ramirez (Universidad Politecnica 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 Ramparany (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 Politècnica de Valencia, Spain); Emilio Granell (Universitat Politècnica de València, Spain); Jaime Lloret (Universidad Politècnica 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

Alsali (King Saud University, Saudi Arabia); Mohamed Younis (University of Maryland Baltimore County, USA)  
pp. 6484-6488

**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**

Safdar 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); Safdar 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

| Monday, June 11 |                                            |
|-----------------|--------------------------------------------|
| 9:00 - 9:45     | S0: <i>Keynote Speech</i>                  |
| 9:45 - 10:00    |                                            |
| 10:00 - 12:00   | S1: <i>LTE and Network Layer</i>           |
| 12:00 - 13:30   |                                            |
| 13:30 - 15:30   | S2: <i>Monitoring and Applications</i>     |
| 15:30 - 16:00   |                                            |
| 16:00 - 18:00   | S3: <i>Wireless channel and scheduling</i> |

## 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 Tiroungadam (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 Abdrabou Ahmed Kalil (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 Finochietto (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***

Ianire 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 |                                                                  |
|-----------------|------------------------------------------------------------------|
| 8:30 - 8:40     | O: <i>Opening</i>                                                |
| 8:40 - 9:30     | K1: <i>KEYNOTE 1: Boon Thau Loo (University of Pennsylvania)</i> |
| 9:30 - 10:00    | TS1: <i>Technical Session 1</i>                                  |
| 10:00 - 10:30   |                                                                  |
| 10:30 - 12:30   | TS2: <i>Technical Session 2</i>                                  |
| 12:30 - 14:00   |                                                                  |
| 14:00 - 15:30   | TS3: <i>Technical Session 3</i>                                  |
| 15:30 - 16:00   |                                                                  |
| 16:00 - 16:40   | K2: <i>KEYNOTE 2: Thomas D. Nadeau (Juniper Networks)</i>        |
| 16:40 - 17:59   | PD1: <i>Panel discussion</i>                                     |

## Friday, June 15

### 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 Veltri (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); Srinu Seetharaman (Deutsche Telekom R&D Lab, USA); Katia Obraczka (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

| Friday, June 15 |                                                                                 |
|-----------------|---------------------------------------------------------------------------------|
| 8:30 - 9:00     | <i>Invited Talk: Pr. Azzedine Boukerche (Vehicular Sensor Network Security)</i> |
| 9:00 - 10:00    | S1: <i>Security Forensics</i>                                                   |
| 10:00 - 10:30   |                                                                                 |
| 10:30 - 12:30   | S2: <i>Intrusion Detection</i>                                                  |
| 12:30 - 14:00   |                                                                                 |
| 14:00 - 15:30   | S3: <i>Anonymity, Privacy, and Access Control</i>                               |
| 15:30 - 16:00   |                                                                                 |
| 16:00 - 18:00   | S4: <i>Signal and Multimedia Security</i>                                       |

## Friday, June 15

**08:30 - 09:00**

**Invited Talk: Pr. Azzedine Boukerche (Vehicular Sensor Network Security)**

**09:00 - 10:00**

**S1: Security Forensics**

Chair: Nouredine A. Boudriga (University of Carthage, Tunisia)

**09:00 *A Game Theoretic Investigation for High Interaction Honeypots***

Osama Hayatle (Concordia University, Canada); Hadi Otrouk (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 Djemaiel (Sup'Com. CN&S Research Lab., Tunisia); Slim Rekhis (University of Carthage & Communication Networks and Security Research Lab., Tunisia); Nouredine A. Boudriga (University of Carthage, Tunisia)  
pp. 6673-6677

**10:30 - 12:30**

## **S2: Intrusion Detection**

Chair: Korbinian Riedhammer (University of Erlangen-Nuremberg, Germany)

**10:30 *A Reverse Gaussian Deployment Strategy for Intrusion Detection in Wireless Sensor Networks***

Hailong Li (University of Cincinnati, USA); Vaibhav Pandit (University of Cincinnati, USA); Narendranad Katneni (University of Cincinnati, USA); Dharma P Agrawal (University of Cincinnati, USA)  
pp. 6678-6682

**10:47 *An Ontology-Based System to Identify Complex Network Attacks***

Lisa Frye (Kutztown University, USA); Liang Cheng (Lehigh University, USA); Jeff Heflin (Lehigh University, USA)  
pp. 6683-6688

**11:04 *A Physical Layer Metric for Measuring Base Station Anonymity in Wireless Sensor Networks***

Jon R. Ward (The Johns Hopkins University, USA); Mohamed Younis (University of Maryland Baltimore County, USA)  
pp. 6689-6693

**11:21 *Identification of Source Applications for Enhanced Traffic Analysis and Anomaly Detection***

André Zúquete (University of Aveiro & IEETA, Portugal); Miguel Rocha (IEETA, University of Aveiro, Portugal)  
pp. 6694-6698

**11:38 *Wormhole Detection Using Channel Characteristics***

Shalabh Jain (University of Maryland, USA); Tuan Ta (University of Maryland, College Park, USA); John S. Baras (University of Maryland College Park, USA)  
pp. 6699-6704

**11:55 *Base-station Location Anonymity and Security Technique (BLAST) for Wireless Sensor Networks***

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)  
pp. 6705-6709

**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 Lakhnech (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 Stepien (University of Ottawa, Canada); Hemanth Khambhammettu (Université du Québec en Outaouais, Canada); Kamel Adi (University of Quebec in Outaouais, Canada); Luigi Logrippo (Université 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

# ICC'12 WS - SmallNets: International Workshop on Small Cell Wireless Networks 2012 - Program

| Friday, June 15 |                                                                        |
|-----------------|------------------------------------------------------------------------|
| 8:30 - 9:15     | <i>Keynote</i>                                                         |
| 9:15 - 10:15    | <i>Handover and Resource Allocation</i>                                |
| 10:15 - 10:30   |                                                                        |
| 10:30 - 12:30   | <i>Interference Management</i>                                         |
| 12:30 - 14:00   |                                                                        |
| 14:00 - 14:45   | <i>Keynote</i>                                                         |
| 14:45 - 15:45   | <i>Evaluation and Modeling</i>                                         |
| 15:45 - 16:00   |                                                                        |
| 16:00 - 17:00   | <i>Transmission Strategies</i>                                         |
| 17:00 - 18:00   | <i>Panel Discussion: The way towards the future: Dense or Massive?</i> |

## Friday, June 15

### 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); Afef Feki (Bell Labs - Alcatel Lucent - France, France); Elom Sorsy (Telecom Bretagne & Alcatel-Lucent Bell Labs, France)  
pp. 6769-6773

##### **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***

Sayandev 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 eICIC**

Andreas Weber (Alcatel-Lucent, Germany); Oliver Stanze (Alcatel-Lucent Bell Labs, Germany)

pp. 6787-6791

#### **10:50 Sensitivity Study of Optimal eICIC 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**

Feilu 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 Técnica Federico Santa María, Chile); Hector Carrasco (Universidad Técnica Federico Santa María, 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 TRILabs, Canada); Ekram Hossain (University of Manitoba, Canada); Sergio Camorlinga (TRILabs, Winnipeg, Canada, and University of Manitoba, Canada)  
pp. 6835-6839

**16:40 Location-Based Transmit Power Control for Femtocell Access Points**

Poramate 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)

## ICC'12 WS - Standards: Workshop on Telecommunications: From Research to Standards - Program

|                     | Sunday, June 10                                                                                                  | Monday, June 11                                                                                                                           |
|---------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| 8:30<br>-<br>9:15   | <i>Keynote I: An era of multi-networks, multi-services and many standards</i>                                    | <i>Keynote III: Emerging Ecosystem for Leveraging Industrial and Academic Research In IEEE Standards and Standards-Related Activities</i> |
| 9:15<br>-<br>10:00  | <i>Keynote II: Standards and innovation in emerging technologies: Why industry and academia need each other?</i> | <i>Session 4: Network Monitoring</i>                                                                                                      |
| 10:00<br>-<br>10:10 | <i>COFFEE BREAK</i>                                                                                              |                                                                                                                                           |
| 10:10<br>-<br>10:30 |                                                                                                                  | <i>COFFEE BREAK</i>                                                                                                                       |
| 10:30<br>-<br>10:40 | <i>Session 1: Mobility Management and Networking</i>                                                             | <i>Panel Discussion</i>                                                                                                                   |
| 10:40<br>-<br>12:20 |                                                                                                                  |                                                                                                                                           |
| 12:20<br>-<br>12:30 |                                                                                                                  | <i>LUNCH BREAK</i>                                                                                                                        |
| 12:30<br>-<br>13:50 | <i>LUNCH BREAK</i>                                                                                               | <i>Session 5: Advances in Radio</i>                                                                                                       |
| 13:50<br>-<br>14:00 |                                                                                                                  |                                                                                                                                           |
| 14:00<br>-<br>15:30 | <i>Session 2: Wireless Networking</i>                                                                            |                                                                                                                                           |
| 15:30<br>-<br>16:00 | <i>COFFEE BREAK</i>                                                                                              | <i>COFFEE BREAK</i>                                                                                                                       |
| 16:00<br>-<br>18:00 | <i>Session 3: From Research to Standards</i>                                                                     | <i>Session 6: Services over LTE/EPC and Evolution</i>                                                                                     |

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 Asadallahi (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); Victor 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 Rio (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 H elard (INSA Rennes & IETR Institute of Electronics and Telecommunications of Rennes, France); Jean-Fran ois H elard (IETR, France); Youssef Nasser (American University of Beirut, Lebanon)

pp. 6971-6976

**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)

**16:00 *Extending LTE to Support Machine-Type Communications***

Vojislav B. Mi i  (Ryerson University, Canada); Jelena Mi i  (Ryerson University, Canada); Dragan Nerandzic (Ericsson Canada Inc., Canada)

pp. 6977-6981

**16:20 *Enabling Local Breakout from eNB in LTE Networks***

Yinghua Ye (Nokia Siemens Networks, USA); Naheed Vora (NSN, USA); Jussi-Pekka Sairanen Sairanen (NSN, USA); Meghana Sahasrabudhe (NSN, USA)

pp. 6982-6986

**16:40 *Advanced Quality-of-Service Signaling for the Session Initiation Protocol (SIP)***

Martin R ohricht (Karlsruhe Institute of Technology (KIT), Germany); Roland Bless (Karlsruhe Institute of Technology (KIT), Germany)

pp. 6987-6992

**17:00 *3GPP Traffic Detection Functionality***

Alla Goldner (Allot Communications, Israel)

pp. 6993-6998

**17:20 *LTE-Advanced Heterogeneous Networks: Release 10 and Beyond***

Teck Hu (Alcatel-Lucent, USA); Jiyong Pang (Alcatel-Lucent Shanghai Bell, P.R. China); Hsuan-Jung Su (National Taiwan University, Taiwan)

pp. 6999-7003

**17:40 *Advanced Downlink MU-MIMO Receiver for 3GPP LTE-A***

Jung Hyun Bae (Samsung US R&D Center, USA); Sungsoo Kim (Samsung Electronics Co., Ltd, Korea); Jungwon Lee (Samsung US R&D Center, USA); Inyup Kang (Samsung Electronics, USA)

pp. 7004-7008

# ICC'12 WS - Storage: Emerging Data Storage Technologies - Program

|               | Monday, June 11           |
|---------------|---------------------------|
| 14:00 - 14:50 | I1: <i>Invited Talk 1</i> |
| 14:50 - 15:30 | S1: <i>Session 1</i>      |
| 15:30 - 16:00 |                           |
| 16:00 - 16:50 | I2: <i>Invited Talk 2</i> |
| 16:50 - 18:00 | S2: <i>Session 2</i>      |

## Monday, June 11

### 14:00 - 14:50

#### I1: *Invited Talk 1*

Writing More Than Once on a Write-Once-Memory

Room: M3

Chair: Warren Gross (McGill University, Canada)

### 14:50 - 15:30

#### S1: *Session 1*

Room: M3

Chair: Lara Dolecek (UCLA, USA)

#### **14:50 *Repair Topology Design for Distributed Storage Systems***

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)  
pp. 7009-7013

#### **15:10 *Reverse Concatenated Watermark Codes***

Rathnakumar Radhakrishnan (Marvell Semiconductors, USA); Kui Cai (Data Storage Institute, Singapore)  
pp. 7014-7018

### 16:00 - 16:50

#### I2: *Invited Talk 2*

Algebraic LDPC Codes: Error Floor, Trapping Set Structure and the Rate of Decoding Convergence

Room: M3

Chair: Kui Cai (Data Storage Institute, Singapore)

**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

| Monday, June 11 |                                                                       |
|-----------------|-----------------------------------------------------------------------|
| 9:15 - 10:00    | <i>U-NET Keynote Presentation</i>                                     |
| 10:00 - 10:30   |                                                                       |
| 10:30 - 12:30   | <i>U-NET Paper Session: User-centric Techniques in Communications</i> |
| 12:30 - 14:00   |                                                                       |
| 14:00 - 14:30   | <i>U-NET Keynote Presentation</i>                                     |
| 14:30 - 17:00   | <i>U-NET Panel Discussion</i>                                         |

## 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

|               | Friday, June 15                             |
|---------------|---------------------------------------------|
| 8:30 - 10:00  | <i>Video Quality of Experience</i>          |
| 10:00 - 10:30 |                                             |
| 10:30 - 12:40 | <i>Cross-layer Video Optimizations</i>      |
| 12:40 - 14:00 |                                             |
| 14:00 - 17:30 | <i>Wireless Video Network Optimizations</i> |

## 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 Bovik (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 Papathanassiou (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

|               | Friday, June 15                 |
|---------------|---------------------------------|
| 8:45 - 9:30   | K1: <i>Keynote 1</i>            |
| 9:30 - 10:00  | SM1: <i>Morning Pre-Break</i>   |
| 10:00 - 10:30 |                                 |
| 10:30 - 12:30 | SM2: <i>Morning Post-Break</i>  |
| 12:30 - 14:00 |                                 |
| 14:00 - 15:00 | SA1: <i>Afternoon Pre-Break</i> |
| 15:00 - 16:00 |                                 |
| 16:00 - 17:00 | P1: <i>Panel Session</i>        |

## 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 Åkerberg (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

| Monday, June 11 |                                                                                                              |
|-----------------|--------------------------------------------------------------------------------------------------------------|
| 8:50 - 9:00     | S1: <i>Introductions and Agenda</i>                                                                          |
| 9:00 - 9:30     | S2: <i>Invited Presentation #1: Biologically Inspired Solutions to Fundamental Transportation Problems</i>   |
| 9:30 - 10:00    | S3: <i>Invited Presentation #2: Vehicular Communications &amp; Networking: Things We Know and Don't Know</i> |
| 10:00 - 10:30   | BREAK: <i>BREAK</i>                                                                                          |
| 10:30 - 11:00   | S4: <i>Invited Presentation #3: Propagation Effects in V2V Communications</i>                                |
| 11:00 - 11:30   | S5: <i>Invited Presentation #4: Improving Collaboration Across Vehicular Networking Disciplines</i>          |
| 11:30 - 12:30   | S6: <i>Physical Layer</i>                                                                                    |
| 12:30 - 14:00   | LINCH: <i>LUNCH</i>                                                                                          |
| 14:00 - 15:20   | S7: <i>Networking</i>                                                                                        |
| 15:20 - 16:00   | BREAK: <i>BREAK</i>                                                                                          |
| 16:00 - 17:20   | S8: <i>Simulation, Security, Safety</i>                                                                      |
| 17:20 - 18:00   | S9: <i>Panel &amp; Open Discussion</i>                                                                       |

## 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 Shivaldova (Vienna University of Technology, Austria); Thomas Paulin (FTW, Austria); Alexander Paier (Kapsch TrafficCom, Austria); Christoph F Mecklenbräuer (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-García (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)