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## **Communication QoS and System Modeling**

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- A New Highly Accurate Workload Model for Campus Email Traffic

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- Optimal Context-Aware Resource Allocation in Cellular Networks

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- Hierarchical Traffic Engineering Based on Model Predictive Control

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- Information Service Pricing Competition in Internet-of-Vehicle (IoV)

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- Users Association in Small Cell Networks with Massive MIMO

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- Performance Bounds for MRC and SC Over Nakagami-m Fading Channels With Arbitrary Correlation

Bingcheng Zhu (Southeast University, P.R. China), Fan Yang (University of British Columbia, Canada), Julian Cheng (University of British Columbia, Canada), Lenan Wu (Southeast University, P.R. China) 543

- Privacy-Aware Mobile Sensing in Vehicular Networks

Mingming Guo (Florida International University, USA), Niki Pissinou (Florida International University, USA), Sitharama Iyengar (Florida International University, USA) 549

- Protection of Location Privacy in Continuous LBSs against Adversaries with Background Information

Ben Niu (State Key Laboratory of Information Security, Institute of Information Engineering, CAS, P.R. China), Sheng Gao (Central University of Finance and Economics, P.R. China), Fenghua Li (State Key Laboratory of Information Security, Institute of Information Engineering, CAS, P.R. China), Hui Li (Xidian University, P.R. China), Zongqing Lu (The Pennsylvania State University, USA) 554

- How to Enhance the Immunity of LTE Systems against RF Spoofing

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- BAN-Trust: An Attack-Resilient Malicious Node Detection Scheme for Body Area Networks

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- Connectivity and Rendezvous in Distributed DSA Networks

Osama A.H. Al-Tameemi (University of Central Florida, USA), Ayad Al-Rumaithi (University of Central Florida, USA), Mainak Chatterjee (University of Central Florida, USA), Kevin Kwiat (Air Force Research Laboratory, USA), Charles A Kamhoua (Air Force Research Laboratory & Information Directorate, USA) 570

- QoE-Based Resource Allocation for Mixed Services over Cognitive Radio Networks

Bin Liu (University of Science and Technology of China, P.R. China), Lei He (University of Science and Technology of China, P.R. China) 577

- Cooperative Cognitive Radio Network with Energy Harvesting: Stability Analysis

Ramy Amer (NTI of Egypt, Egypt), Amr El-Sherif (Alexandria University, Egypt), Hanaa Abd El Aziz Ebrahim (National Telecom. Institute, Egypt), Amr Mokhtar (Egypt, Egypt) 582

- Mixed Signal Detection and Carrier Frequency Estimation based on Spectral Coherent Features

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- Recent Results on Correlated Lognormal Atmospheric Turbulence Channels

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- Routing and Spectrum Assignment for 1+1:1 Lightpath Services in Elastic Optical Networks

Hong Guo (Soochow University, P.R. China), Gangxiang Shen (Soochow University, P.R. China), Sanjay Kumar Bose (I.I.T. Guwahati, India) 600

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- Optimal Power Allocation for Energy Harvesting Cognitive Radio Networks with Primary Rate Protection

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- System-level simulations for multi-hop D2D communications overlay LTE networks

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- Lifetime Maximization via Optimal Coordinator Deployment for Wireless Body Area Network

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- Traffic-Aware Backoff Design for IEEE 802.11(ac)

Chun-Hao Liu (University of California, Los Angeles, USA), Danijela Cabric (University of California Los Angeles, USA) 622

- Resource Allocation for Relay-aided OFDMA Networks with Constraints on Queue Stability

Sara Lakani (Ecole de Technologie Superieure, Canada), Francois Gagnon (Ecole de Technologie Superieure, Canada) 628

- Energy-Efficient Mobile Association in Device-to-Device-Enabled Heterogeneous Networks

Sa Xiao (University of Electronic Science and Technology of China, P.R. China), Xiangwei Zhou (Louisiana State University, USA), Daquan Feng (Singapore University of Technology and Design, Singapore), Yi Yuan-Wu (Orange Labs, France), Geoffrey Li (Georgia Tech, USA), Guo Wei (National Communication Technology Key LAB, P.R. China) 635

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### **Multimedia Computing and Communications & Internet Services and Applications**

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- Flow Embedding in the Data Plane of Multimedia IP Communications

Lilin Zhang (University of Toronto, Canada), Ali Tizghadam (TELUS & University of Toronto, Canada), Hadi Bannazadeh (University of Toronto, Canada), Alberto Leon-Garcia (University of Toronto, Canada) 640

- A Novel Metadata Extraction Method for Surveillance Video

Ran Zheng (Huazhong University of Science and Technology, P.R. China), Long Chen (Huazhong University of Science and Technology, P.R. China), Hai Jin (Huazhong University of Science and Technology, P.R. China), Lei Zhu (Huazhong University of Science and Technology, P.R. China), Qin Zhang (Huazhong University of Science and Technology, P.R. China) 646

- On the Scalability and Effectiveness of a Cache Pollution based DoS Attack in Information Centric Networks

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- Fighting Fire with Fire: Eliminating Standing Queues with Large UDP Packet Floods

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- Performance Considerations of Network Functions Virtualization using Containers

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- Minimum Cost Deployment of Radio and Transport Resources in Centralized Radio Architectures

Federico Tonini (Università di Bologna, Italy), Matteo Fiorani (KTH Royal Institute of Technology, Sweden), Marija Furdek (KTH Royal Institute of Technology, Sweden), Lena Wosinska (KTH Royal Institute of Technology, Sweden), Carla Raffaelli (University of Bologna, Italy), Paolo Monti (KTH Royal Institute of Technology, Sweden) 678



- Incorporating Network Coding to Formulate Multicast Sessions in Elastic Optical Networks

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- Demonstration of Multi-Domain Spectrum Defragmentation with Minimum Controller-Participation Degree in Elastic Optical Networks

Yajie Li (Beijing University of Posts and Telecommunications, P.R. China), Yongli Zhao (Beijing University of Posts and Telecommunications, P.R. China), Jie Zhang (Beijing University of Posts and Telecommunications, P.R. China), Xiaosong Yu (Beijing University of Posts and Telecommunications, P.R. China), Guoying Zhang (China Academy of Information and Communication Technology, P.R. China), Yina Song (Beijing University of Posts and Telecommunications, P.R. China), Guangbin Li (Beijing University of Posts and Telecommunications, P.R. China) 688

- Optical Power Control to Efficiently Handle Flex-Grid Spectrum Gain over Existing Fixed-Grid Networks Infrastructures

Mohamad Kanj (B-com, France), Esther Le Rouzic (Orange Labs, France), Djamel Amar (Institut Mines-Télécom/Telecom SudParis & Orange Labs, France), Jean-Luc Auge (Orange Labs, France), Bernard Cousin (University of Rennes 1 & IRISA Research Laboratory, France), Nicolas Brochier (Orange Labs, France) 693

# **ICNC'16 WCS: 2016 International Conference on Computing, Networking and Communications, Wireless Communications Symposium**

## **Wireless Communications Symposium**

- Secrecy-Throughput-Optimal Artificial Noise Design Against Randomly Located Eavesdroppers

Tong-Xing Zheng (Xi'an Jiaotong University, P.R. China), Hui-Ming Wang (Xi'an Jiaotong University, P.R. China), Rui Huang (Xi'an Jiaotong University, P.R. China), Pengcheng Mu (Xi'an Jiaotong University, P.R. China) 700

- Diversity of distributed linear convolutive space-time codes on fast fading Rayleigh channels

Yi Liu (Xidian University, P.R. China), Bo Pang (School of Telecommunications Engineering, P.R. China), Yue Zhang (Xidian University, P.R. China), Ce Kang (Xidian University, P.R. China) 705

- Joint Source-Channel Decoding for LDPC-coded Error-Corrupted Binary Markov Sources

Zribi Amin (Higher Institute of Communication Technology & Telecom Bretagne, Tunisia), Tad Matsumoto (Japan Advanced Institute of Science and Technology, Japan), Ramesh Mahendra Pyndiah (Institut Telecom/TELECOM Bretagne, France) 710

- Optimal User Association and Resource Allocation for Device-to-Device Communications Underlying Cellular Networks

Liping Qian (Zhejiang University of Technology, P.R. China), Yuan Wu (Zhejiang University of Technology, P.R. China), Liang Huang (Zhejiang University of Technology, P.R. China), Wei Zhang (The University of New South Wales, Australia) 716

- Multi-Objective Beamforming for Energy-Efficient SWIPT Systems

Shiyang Leng (The Pennsylvania State University, USA), Derrick Wing Kwan Ng (University of New South Wales, Australia), Nikola Zlatanov (Monash University, Australia), Robert Schober (University of British Columbia, Canada) 722

- Estimating Cross-Channel Gain without Using Backhaul Link in Two-Tier Heterogeneous Networks

Xiaoning Huang (University of Electronic Science and Technology of China (UESTC), P.R. China), Liying Li (University of Electronic Science and Technology of China, P.R. China), Guodong Zhao (University of Electronic Science and Technology of China (UESTC), P.R. China), Zhi Chen (University of Electronic Science and Technology of China & University of California, Riverside, P.R. China) 729

# **ICNC'16 WN: 2016 International Conference on Computing, Networking and Communications, Wireless Networks**

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- OUS: Optimal User Selection in MU-MIMO WLAN

Yizirui Zhou (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China), Anfu Zhou (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China), Min Liu (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China) 734

- An Empirical Characterization of Cellular Network Performance

Anand Seetharam (California State University Monterey Bay, USA), Peter Walker (California State University Monterey Bay, USA) 739

- Public Scene Recognition Using Mobile Phone Sensors

Shuang Liang (Temple University, USA), Xiaojiang Du (Temple University, USA), Ping Dong (Beijing Jiaotong University, P.R. China) 744

- MobiVPN: A Mobile VPN Providing Persistency To Applications

Abdullah Alshalan (Arizona State University, USA), Sandeep Pisharody (Arizona State University, USA), Dijiang Huang (Arizona State University, USA) 749

- AP MATRIX: A New Access Point Architecture for Reliable Public Wi-Fi Services

Zhe Fu (Tsinghua University, P.R. China), Xiaohe Hu (Tsinghua University, P.R. China), Xiang Wang (Tsinghua University, P.R. China), Chang Chen (Tsinghua University, P.R. China), Jun Li (Tsinghua University, P.R. China) 755

- Detection and Mitigation of Signaling Storms in Mobile Networks

Erol Gelenbe (Imperial College London, United Kingdom), Omer H. Abdelrahman (Imperial College London, United Kingdom), Gokce Gorbil (Imperial College London, United Kingdom) 760

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- CTP-WUR: The Collection Tree Protocol in Wake-up Radio WSNs for Critical Applications

Stefano Basagni (Northeastern University, USA), Chiara Petrioli (University of Rome "La Sapienza", Italy), Dora Spenza (University of Rome "La Sapienza", Italy) 765

- Modeling and Analysis of Coexisting Multiple Radio Access Technologies in Heterogeneous Wireless Networks

Li-Chun Wang (National Chiao Tung University, Taiwan), Chun-Hung Liu (National Chiao Tung University, Taiwan) 771

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- Peek: A Mobile-to-Mobile Remote Computing Protocol For Smartphones and Tablets

Uma Parthavi Moravapalle (Georgia Institute Of Technology, USA), Raghupathy Sivakumar (Georgia Institute of Technology, USA) 776

- Collaboration over IEEE 802.11P to enable an Intelligent Traffic Light Function for Emergency Vehicles

Oliver Sawade (Fraunhofer FOKUS, Germany), Bernd Schäufele (Technische Universität Berlin, Germany), Ilja Radusch (Fraunhofer FOKUS & Daimler Center for Automotive IT Innovations (DCAITI), Germany) 782

- An Exact Performance Analysis for Mobile Communications over Generalized Fading Channels

Osamah S. Badarneh (University of Tabuk, Saudi Arabia), Ibrahim E. Atawi (University of Tabuk, Saudi Arabia), Mohammed Aloqlah (Yarmouk University, Jordan) 787

- Quadrature Index Modulated OFDM for Vehicular Communications

Xiaotian Zhou (Shandong University, P.R. China), Xiang Cheng (Peking University, P.R. China), Liuqing Yang (Colorado State University, USA) 792

- Sum of Arbitrarily Correlated Gamma Random Variables with Unequal Parameters and Its Application in Wireless Communications

Yizhi Feng (South China University of Technology, P.R. China), Miaowen Wen (South China University of Technology, P.R. China), Jun Zhang (South China University of Technology, P.R. China), Fei Ji (South China University of Technology, P.R. China), Geng-xin Ning (South China University of Technology, P.R. China) 797

- Novel Signal Reconstruction Method for SC-FDE Systems with Frequency Domain Pilot Multiplexing Technique over Time-Varying Channels

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- Personalized Pre-trust Reputation Management in Social P2P Network

Mingchu Li (School of Software, Dalian University of Technology, P.R. China), Quanhua Guan (Dalian University of Technology, P.R. China), Xing Jin (School of Software Technology, Dalian University of Technology, P.R. China), Cheng Guo (School of Software Technology, Dalian University of Technology, Dalian, Liaoning, P.R. China), Xing Tan (School of Information Technology, York University Toronto, Canada), Yongli Gao (Seventh School of Liaoyang, Liaoning, P.R. China) 808

- ESammon: A Computationaly Enhanced Sammon Mapping

Chanpaul Jin Wang (UMass Medical School, USA), Hua Fang (UMass Medical, USA), Honggang Wang (University of Massachusetts, Dartmouth & College of Engineering, USA) 813

- On Social Network Firewall Selection

Anisha Mazumder (Arizona State University, USA), Arunabha Sen (ASU, USA) 818

# **ICNC'16 WAHS: 2016 International Conference on Computing, Networking and Communications, Wireless Ad Hoc and Sensor Networks**

## **Wireless Ad Hoc and Sensor Networks**

- Protecting Sink Location Against Global Traffic Monitoring Attacker

Juan Chen (Dalian Maritime University, P.R. China), Zheng kui Lin (Dalian Maritime University, P.R. China), Xiaojiang Du (Temple University, USA) 823

- LiREP: Lightweight Incremental Reprogramming of Sensor Nodes Based On In-situ Modification

Jiefan Qiu (Zhejiang University of Technology, P.R. China), Liang Huang (Zhejiang University of Technology, P.R. China), Liping Qian (Zhejiang University of Technology, P.R. China) 828

- Prediction of Received Signal Strength from Human Joint Angles in Body Area Networks

Thang Tran (Loyola Marymount University, USA), Gustavo Vejarano (Loyola Marymount University, USA) 834

- Localization in Heterogeneous Wireless Sensor Networks Using Elliptical Range Estimation

Mehdi Golestanian (University of Notre Dame, USA), Christian Poellabauer (University of Notre Dame, USA) 840

- CASPaR: Congestion Avoidance Shortest Path Routing for Delay Tolerant Networks

Michael Stewart (Louisiana State University, USA), Rajgopal Kannan (Louisiana State University, USA), Amit Dvir (Ariel University Center of Samaria, Israel), Bhaskar Krishnamachari (University of Southern California, USA) 847

- Evaluation of a Radio Signal as a Time Reference Beacon for Wireless Sensor Networks

Meriel Huggard (Trinity College Dublin, Ireland), Ciaran Mc Goldrick (Trinity College Dublin, Ireland), Alessandro Vaccaro (Trinity College Dublin, Ireland) 852

# **ICNC'16 MCVC: 2016 International Conference on Computing, Networking and Communications, Mobile Computing and Vehicle Communications**

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- Modified PEG Algorithm for Large Girth Quasi-Cyclic Protograph LDPC Codes

Xueqin Jiang (Donghua University, P.R. China), Huiming Wang (Xi'an Jiaotong University, P.R. China), Jun Li (Chonbuk National University, Korea), Miaowen Wen (South China University of Technology, P.R. China), Moon Ho Lee (Chonbuk National University, Korea) 857

- Information-Centric VANETs: A Study Of Content Routing Design Alternatives

Yu-Ting Yu (Qualcomm Research, USA), Mario Gerla (University of California at Los Angeles, USA) 862

- Index Modulated OFDM with ICI Self-Cancellation for V2X Communications

Yuke Li (Institute of Automation, Chinese Academy of Sciences, P.R. China), Miaowen Wen (South China University of Technology, P.R. China), Xiang Cheng (Peking University, P.R. China), Liuqing Yang (Colorado State University, USA) 867

- Spatial Modulation Orthogonal Frequency Division Multiplexing with Subcarrier Index Modulation for V2X Communications

Yingtao Liu (Peking University, P.R. China), Meng Zhang (Peking University, P.R. China), Haowen Wang (Shanghai Research Center for Wireless Communications, P.R. China), Xiang Cheng (Peking University, P.R. China) 872

- Urban Intelligent Parking System Based on the Parallel Theory

Fei-Yue Wang (Institute of Automation, Chinese Academy of Science, P.R. China), Liuqing Yang (Colorado State University, USA), Jian Yang (Institute of Automation, Chinese Academy of Science, P.R. China), Yanli Zhang (Qingdao Academy of Intelligent Industries, P.R. China), Shuangshuang Han (Institute of Automation, Chinese Academy of Sciences, P.R. China), Kai Zhao (Institute of Automation, Chinese Academy of Science, P.R. China) 877

- Geometry-based Path Loss Model for High-speed-train Environments in LTE-A Networks

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- A Practical Approach for Network Fault Detection

Yuncheng Zhu (Hitachi, Ltd., Japan), Hideki Okita (Hitachi, Ltd., Japan), Seishi Hanaoka (Hitachi, Ltd., Japan) 888

- Towards a realistic model for failure propagation in interdependent networks

Agostino Sturaro (University of Padua, Italy), Simone Silvestri (Missouri University of Science and Technology, USA), Mauro Conti (University of Padua, Italy), Sajal K. Das (Missouri University of Science and Technology, USA) 893

- Designing Cascade-Resilient Interdependent Networks by Optimum Allocation of Interdependencies

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- Power Monitoring of Highly Parallel Network Processors

Christopher Mansour (Villanova University, USA), Danai Chasaki (Villanova University, USA) 907

## **ICNC'16 WAHS: 2016 International Conference on Computing, Networking and Communications, Wireless Ad Hoc and Sensor Networks**

### **Wireless Ad Hoc and Sensor Networks & Wireless Networks**

## **ICNC'16 WN: 2016 International Conference on Computing, Networking and Communications, Wireless Networks**

## **ICNC'16 WAHS: 2016 International Conference on Computing, Networking and Communications, Wireless Ad Hoc and Sensor Networks**

- Event-driven Partial Barriers in Wireless Sensor Networks



Hyunbum Kim (University of North Carolina at Wilmington, USA), Junggab Son (North Carolina Central University, USA), Hyung Jae Chang (Troy University - Montgomery, USA), Heekuck Oh (Hanyang University, Korea) 912

- A Low-Complexity Cooperative Algorithm for Robust Localization in Wireless Sensor Networks

Dexin Wang (Colorado State University, USA), Liuqing Yang (Colorado State University, USA), Xiang Cheng (Peking University, P.R. China) 917

- Routing and Optimal Hop Distance in Wireless Ad Hoc Networks

Yin xiang Qu (Beijing University of Posts and Telecommunications(BUPT), P.R. China), Yang Liu (Beijing University of Posts and Telecommunications, P.R. China), Li Wang (Beijing University of Posts and Telecommunications, P.R. China), Mei Song (Beijing University of Posts and Telecommunications, P.R. China) 922

- Mobile Message Board: Location-based Message Dissemination in Wireless Ad-Hoc Networks

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- An Optimal Resource Allocation with Frequency Reuse in Cellular Networks

Ahmed Abdelhadi (Virginia Tech, USA), T. Charles Clancy (Virginia Tech, USA) 932

- A Game Theoretical Approach to Coexistence of Heterogeneous MIMO Wireless Networks with Interference Cancellation

Yantian Hou (USU, USA), Ming Li (University of Arizona, USA), Dejun Yang (Colorado School of Mines, USA) 937

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- On the Effects of Battery Imperfections in an Energy Harvesting Device

Alessandro Biazon (University of Padova, Italy), Michele Zorzi (Università degli Studi di Padova, Italy) 942

- Optimal Power Allocation in Dispersed Cognitive Radio Systems with Carrier Aggregation  
Fotis Foukalas (Qatar University, Qatar), Tamer Khattab (Qatar University, Qatar) 949
- GreenTCAM: A Memory- and Energy-efficient TCAM-based Packet Classification  
Xianfeng Li (Peking University, P.R. China), Yuanxin Lin (Peking University, P.R. China), Wenjun Li (Peking University, P.R. China) 955
- Real-Time Energy Price-Aware Anycast RWA in Optical Data Center Networks  
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## **ICNC'16 SPC: 2016 International Conference on Computing, Networking and Communications, Signal Processing for Communications**

### **Signal Processing for Communications**

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- Channel Prediction Using Compressed Sensing in Multi-User MIMO Systems  
Shunsuke Uehashi (Hokkaido University, Japan), Yasutaka Ogawa (Hokkaido University, Japan), Toshihiko Nishimura (Hokkaido University, Japan), Takeo Ohgane (Hokkaido University, Japan) 967
- Multi-Pass Joint Viterbi Detector Decoder (MP-JVDD) over AWGN/ISI Channels  
Ashish James (Data Storage Institute, A\*STAR, Singapore), Kheong Sann Chan (Data Storage Institute, Singapore) 973
- On the Design of Broadbeam for Massive MIMO Systems

Deli Qiao (East China Normal University, P.R. China), Haifeng Qian (East China Normal University, P.R. China), Geoffrey Li (Georgia Tech, USA) 978

- Improved Trellis-Based Decoder for Non-Binary LDPC Codes

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- Performance Study of Decode and Forward based Multi-Hop Relaying in Wireless Networks Over Extended Generalized-K Fading Channels

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