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# VTC2017-Fall Accepted Paper List

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## 1. Antenna Systems, Propagation, and RF Design Papers

58855

### 1 A Real-Time Millimeter-Wave Phased Array MIMO Channel Sounder

Celalettin Umit Bas, Rui Wang, University of Southern California; Dimitris Psychoudakis, Samsung Research America; Thomas Henige, Robert Monroe, Samsung Research America, Richardson, TX, USA; Jeongho Park, Samsung Electronics; Jianzhong Charlie Zhang, Samsung Research America; Andreas F. Molisch, University of Southern California

69310

### 2 A Three-Dimensional Time-Varying Model for 5G Indoor Dual-Mobility Channels

Shuai Nie, Georgia Institute of Technology; Chong Han, Shanghai Jiao Tong University; Ian F. Akyildiz, Georgia Institute of Technology

12481

### 3 Body Mass Index Effect on Ultrawideband MIMO BAN Channel Characterization

Seun Sangodoyin, Andreas F. Molisch, University of Southern California

48108

### 4 Channel Estimation for FDD Massive MIMO OFDM Systems

Die Hu, Fudan University; Lianghua He, Tongji University

18896

### 5 Concurrent, Multi-band, Single-Chain Radio Receiver for High Data-Rate HetNets

Ravinder Singh, Qiang Bai, Timothy O'Farrell, Kenneth Lee Ford, Richard Langley, University of Sheffield

45392

### 6 Diffraction Loss Model based on 28 GHz Over-Rooftop Propagation Measurements

Kyung-Win Kim, Myung-Don Kim, Jae Joon Park, Juyul Lee, Jinyi Liang, Kwang-chun Lee, ETRI

47330

### 7 Direction of Arrival Estimation with Uniform Planar Array

Lili Wei, Qian (Clara) Li, Geng Wu, Intel Corporation USA

99474

### 8 Distributed Measurements of the Penetration Loss of Railroad Cars

Martin Lerch, Philipp Svoboda, TU Wien; Stephan Ojak, OBB Technische Services GmbH; Markus Rupp, Christoph Mecklenbräuker, TU Wien

31878

### 9 Double-Directional Channel Characterization of Truck-to-Truck Communication in Urban Environment

Rui Wang, University of Southern California; Olivier Renaudin, Austrian Institute of Technology; Celalettin Umit Bas, Seun Sangodoyin, Andreas F. Molisch, University of Southern California

31106

### 10 Enhancing the Resolution of the Spectrogram of Non-Stationary Mobile Radio Channels by Using Massive MIMO Techniques

Matthias Pätzold, University of Agder; Carlos A. Gutierrez, Universidad Autonoma de San Luis Potosi

73538

### 11 Exploring Ergodicity Over Frequency to Examine Small-Scale Propagation Effects

James Jamison, The University of Vermont; Jeff Frolik, University of Vermont

16281

### 12 Interference analysis for UAV connectivity over LTE using aerial radio measurements

István Z. Kovács, Nokia Bell Labs; Raphael Amorim, Huan Cong Nguyen, Aalborg University; Jeroen Wigard, Nokia Bell Labs; Preben Mogensen, Aalborg University

14337

### 13 Investigation and Comparison of 3GPP and NYUSIM Channel Models for 5G Wireless Communications

Anonymous Account 61961, Anonymous; Shu Sun, New York University; Mansoor Shafi, Spark, New Zealand

39829

### 14 Land Mobile Satellite Propagation Channel Characterization Based On RF Measurements And Fish-eye Images

Jonathan ISRAEL, Mehdi AIT IGHIL, ONERA

92929

### 15 Markov Process Based Array Non-Stationarity Modeling for Massive MIMO Channels

Lihua Pang, Xi'an University of Science and Technology; Yang Zhang, Guangliang Ren, Fengkui Gong, Xidian University; Anyi Wang, Xi'an University of Science and Technology; Jiandong Li, Xidian University

90127

### 16 Measurement-Based Path Loss and Delay Spread Propagation Models in VHF/UHF Bands for IoT Communications

Ebrahim Bedeer, Carleton University; Jeff Pugh, Colin Brown, CRC Canada; Halim Yanikomeroglu, Carleton University

72797

### 17 Millimeter-wave beam mis-alignment analysis based on 28 and 38 GHz urban measurements

Juyul Lee, Jinyi Liang, Myung-Don Kim, Jae Joon Park, ETRI

36700

### 18 Millimeter Wave Vehicular Blockage Characteristics Based on 28 GHz Measurements

Jae Joon Park, Juyul Lee, Jinyi Liang, Kyung-Won Kim, Kwang-chun Lee, Myung-Don Kim, ETRI

28010

### 19 Modeling of Spatially Correlated Geometry-based Stochastic Channels

Fjolla Ademaj, Technische Universität Wien; Martin Müller, TU Wien; Stefan Schwarz, Technische Universität (TU) Wien; Markus Rupp, TU Wien

76577

### 20 Novel Synthesis of Dual-Frequency RF Energy-Harvesting Rectifier Incorporating Coupled Lines

Md Ayatullah Maktoomi, Fadhel M Ghannouchi, Rushi Vyas, University of Calgary

20219

### 21 Radio Propagation Measurement-Based Simulations of the Capacity of Multi-User D-MIMO Indirect Path

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**Communication Systems in a Small Cluttered Room at 2, 18, and 28 GHz**

Robert Bultitude, Mohamad Alkadmani, Carleton University

77773

**22 Second Order Statistics of Non-Isotropic UAV Ricean Fading Channels**

Linzhou Zeng, Xiang Cheng, Peking University; Cheng-Xiang Wang, Heriot-Watt University; Xuefeng, Tongji University

91476

**23 Self-Interference Channel Characteristics of a 2x2 MIMO Full-Duplex Transceiver**

Fei Chen, Robert Morawski, Tho Le-Ngoc, McGill University

37023

**24 The Effects of the Rotating Step on Analyzing the Virtual Multi-antenna Measurement Results at 28 GHz**

Zhixue Hu, Beijing University of Posts and Telecommunications; Tian Lei, Beijing University of Posts and Telecommunication; Pan Tang, Tao

Jiang, Zhang Jianhua, Beijing University of Posts and Telecommunications

98000

**25 Ultra-wideband Channel Modeling for Hurricanes**

Wahab Ali Gulzar, NCSU; Ismail Guvenc, North Carolina State University; Arindam Chowdhury, Florida International University

62837

**26 Using LTE Networks for UAV Command and Control**

**Link: A Rural-Area Coverage Analysis**

Huan Cong Nguyen, Raphael Amorim, Aalborg University; Jeroen Wigard, István Z. Kovács, Nokia Bell Labs; Preben Mogensen, Aalborg University

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## 2. Signal Transmission and Reception Papers

96812

**1 A Kernel-Based QAM Symbol Error Probability Estimation Technique**

Pasteur Poda, Université Nazi BONI; Samir Saoudi, IMT Atlantique Bretagne-Pays de la Loire

73925

**2 A Leakage Minimization Approach to Zero-Tail OFDM with Orthonormal Spreading in a Multiple Access Channel with Uncorrelated Scatterings**

Thomas Bourgeois, Noriyuki Hashimoto, Yasuhiro Suegara, KDDI Research, Inc.

53169

**3 An Efficient Low Complexity Gaussian Approximation-Based Scheme for SCMA Detection**

Yudan Wang, Ling Qiu, Xinmin Li, University of Science and Technology of China

18548

**4 An Optimal Low Complexity LMMSE Channel Estimator for OFDM System**

Jyoti Prasanna Patra, Poonam Singh, National Institute Of Technology Rourkela

72544

**5 A Novel SA-PNC Method for Macro and Small cells Coexistence Under the Same Spectrum**

Syed Saqlain Ali, Institute of Telecommunication, University of Aveiro; Daniel Castanheira, University of Aveiro; Adão Silva, DETI / Instituto de Telecomunicações / University of Aveiro; Anonymous Account 3333, Anonymous

83081

**6 A Probability Based Modulation and Its Application in Ultra Reliable Low Latency Communications in 5G**

Fan Yang, Fujitsu R&D Center Co., Ltd; Xin Wang, Fujitsu R&D Center Co., Ltd.

87538

**7 Blind Nonlinear Compensation for RF Receiver Employing Sub-Nyquist Sampling A/D Conversion**

Kan Kimura, The University of Electro-Communications; Yasushi Yamao, The University of Electro-Communications

91043

**8 Centralized and Distributed Sparsification for Low-Complexity Message Passing Algorithm in C-RAN Architectures**

Alessandro Brighente, Università degli studi di Padova; Stefano Tomasin, University of Padova

65656

**9 Circular Convolution Filter Bank Multicarrier (FBMC) System with Index Modulation**

Jian Zhang, Minjian Zhao, Zhejiang University; Lei Zhang, University of Surrey; Jie Zhong, zhejiang university; Tianhang Yu, Zhejiang University

25288

**10 Cognitive Framework for the Estimation of Doubly Selective Channels**

Kelvin Chelli, Praharsa Sirsi, Thorsten Herfet, Saarland Informatics Campus

22710

**11 Compensation of Phase Noise in OFDM/OQAM Systems**

Kengo Ikeuchi, Manabu Sakai, Hai Lin, Osaka Prefecture University

48646

**12 Coordinated DPC-Based Precoding Design for Energy Efficiency Optimization in Downlink Multi-Cell MIMO Systems**

Ji Wang, Huazhong University of Science and Technology; Xin Gui, Samsung R&D Center Beijing; Weimin Wu, Yingzhuang Liu, Huazhong University of Science and Technology

32088

**13 Co-time Co-frequency Full-Duplex Visible Light On-Chip Communication Using a Pair of InGaN/GaN Quantum-Well Diodes**

Bingcheng Zhu, Wei Cai, Yongchao Yang, Xumin Gao, Jialei Yuan, Yongjin Wang, Nanjing University of Posts and Telecommunications

45809

**14 Cross-Layer Spectral Efficiency of Adaptive Communications Systems with QoS Constraints**

Anas Saci, Arafat Al-Dweik, Abdallah Shami, University of Western Ontario

92241

**15 Cross-QAM Signaling in Free Space Optical**

**Communication Systems with Generalized Pointing Errors**  
Nikhil Sharma, LNM Institute of Information Technology, Jaipur; Parul Garg, Netaji Subhas Institute of Technology

52225

**16 Design of Check-Hybrid LDPC Codes for Data Communications over Helicopter-Satellite Channels**

Ping Wang, Liuguo Yin, Jianhua Lu, Tsinghua University

50457

**17 Dual-Mode Time-Domain Single-Carrier Index Modulation with Frequency-Domain Equalization**

Miyu Nakao, Shinya Sugiura, Tokyo University of Agriculture and Technology

62854

**18 Dynamic Power Splitting Schemes for Non-Linear EH Relaying Networks: Perfect and Imperfect CSI**

Kaipeng Wang, Yongzhao Li, Yinghui Ye, Hailin Zhang, Xidian University

81640

**19 Energy Beamforming for Full-Duplex Wireless Powered Communication in Presence of Eavesdropper**

Juhwan Seo, Jae Hong Lee, Seoul National University

55353

**20 Evaluation of Static Sequence Assisted DFT-spread-OFDM for 5G Systems**

Jean-Christophe Sibel, Cristina Ciochina, Mitsubishi Electric R&D Centre Europe; Fumihito Hasegawa, Information Technology R&D Centre, Mitsubishi Electric Corporation

47946

**21 Fast Converging ADMM-Penalized Algorithm for Turbo-Like OVXDM**

Peng Lin, Yafeng Wang, Daoben Li, Beijing University of Posts and Telecommunications

98682

**22 Fourth-Order Moment Analysis of Filtered Single-Carrier and OFDM Signals**

Hideki Ochiai, Yokohama National University

95213

**23 Generalized Pattern Search for Beam Discovery in Millimeter Wave Systems**

Mohammed Jasim, Nasir Ghani, University of South Florida

98806

**24 Hardware Design and Implementation of Sparse Code Multiple Access**

Yunfei Wu, Jincheng Dai, Beijing University Of Posts and Telecommunications; Anonymous Account 3654, Anonymous; Chao Dong, Beijing University of Posts and Telecommunications; Xin Bian, b

56618

**25 Incremental Selective Decode-and-Forward Relaying for Power Line Communication**

Ankit Dubey, National Institute of Technology Goa; Chinmoy Kundu, Queen's University Belfast; Ngatched Telex, Octavia A. Dobre, Memorial University; Ranjan K. Mallik, IIT Delhi

31852

**26 Maximum Likelihood Decoder for Index Coded PSK Modulation for Priority Ordered Receivers**

Divya U. Sudhakaran, B. Sundar Rajan, Indian Institute of Science, Bangalore

39456

**27 MIMO Self-Coherent OFDM**

Qianyu Jin, monash university; Yi Hong, Emanuele Viterbo, Monash University

25804

**28 Modeling and Mitigating the In-Band Emission Interference in D2D-Enabled Cellular Networks**

Hind, Jiangzhou Wang, University of Kent

91446

**29 Non-Orthogonal Frame Synchronization for Low Latency Communication**

Stephan Pfletschinger, Hochschule Offenburg; Pau Closas, Northeastern University

34754

**30 On the Joint Use of Time Reversal and POPS-OFDM for 5G Systems**

Wafa Khrouf, Zeineb Hraiech, Higher School of Communications of Tunis (SUP'COM); Fatma Abdelkefi, Sup'Com; Mohamed Siala, SUPCOM, Tunis, Tunisia; Matthieu Crussière, Institute of Electronics and Telecommunications of Rennes

87991

**31 Parameter Identification of Reed-Solomon Codes over Noisy Environment**

Swaminathan Ramanathan, A.S. Madhukumar, Nanyang Technological University; Wang Guohua, Ting Shang Kee, Temasek laboratories, NTU Singapore

27764

**32 Performance Analysis of OFDM over Multi-scale Multi-lag Channels**

Yun Liu, South China University of Technology; Zhongkai Univ. of Agric. & Eng.; Fei Ji, Fangjiong Chen, Miaowen Wen, Hua Yu, Yinming Cui, South China University of Technology

13265

**33 Performance Approximation of Compressive Sensing Multi-User Detection via Replica Symmetry**

Yalei Ji, Carsten Bockelmann, Armin Dekorsy, University of Bremen

99437

**34 Performance Evaluation For Vertical Inhomogenous Underwater Visible Light Communications**

Noha Anous, Texas A&M university at Qatar (TAMUQ); Mohamed Abdallah, Hamad Bin Khalifa University; Khalid Qaraqe, TAMU

45090

**35 Physical Layer Design of Energy-Efficient Data Transmission in 2D Communication Environments**

Yuichi Masuda, The University of Tokyo; Akihito Noda, Nanzan University; Hiroyuki Shinoda, The University of Tokyo

48889

**36 Polar Codes for SCMA Systems**

Monirosharieh Vameghestahbanati, Ian Marsland, Ramy H. Gohary, Halim Yanikomeroglu, Carleton University

34330

**37 Resource Allocation for Outdoor-to-Indoor Compress-and-Forward SUDAS with Independent Relay Processing**

Aravindh Krishnamoorthy, Robert Schober, Friedrich-Alexander-Universität Erlangen-Nürnberg; Marco Breiling, Fraunhofer Institute for Integrated Circuits IIS

48923

**38 SCMA Uplink Decoding With Codebook Collision**

Yanjun Yang, Yuping Zhao, Dou Li, Peking University

46623

**39 Spatial Propagation Characteristics of 28 GHz Frequency Band in UMi Scenario**

Yu Han, Beijing University of Posts and Telecommunications; Tian Lei, Beijing University of Posts and Telecommunication; Pan Tang, Xinzhuang Zhang, Zhixue Hu, Zhang Jianhua, Beijing University of Posts and Telecommunications

32094

**40 Stopping Condition for Greedy Block Sparse Signal Recovery**

Yu Luo, Ronggui Xie, Huarui Yin, Weidong Wang, University of Science and Technology of China

41919

**41 Superimposed Training for Channel Estimation in FBMC-OQAM**

Kun Chen-Hu, Juan Carlos Estrada-Jiménez, M. Julia Fernández-Getino García, Ana Garcia-Armada, Universidad Carlos III de Madrid

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46193

**42 Synchronization Method for FBMC Systems**

Wonsuk Chung, Samsung Electronics Co.; Beomju Kim, Insik Jung, Jintae Kim, Yonsei University; Hyunkyuu Yu, Samsung Electronics; Sooyong Choi, Daesik Hong, Yonsei University

69333

**43 Throughput-based Design of Polar Codes**

Hossein Khoshnevis, Ian Marsland, Halim Yanikomeroglu, Carleton University

20885

**44 Time-Domain Turbo Equalization for Oversampled Single Carrier System Over Doubly Selective Fading Channels Using Kalman Filtering**

Yue Cao, Jianhua Ge, Chensi Zhang, Xidian University

23613

**45 User Loading in Downlink Multiuser Massive MIMO with 1-bit DAC and Quantized Receiver**

Jindan Xu, Wei Xu, Fengfeng Shi, Hua Zhang, Southeast University

80478

**46 Using the Fireworks Algorithm for ML Detection of Nonlinear OFDM**

João Guerreiro, Instituto de Telecomunicações; Marko Beko, ULHT, UNINOVA, ISR-IST; Rui Dinis, Universidade Nova de Lisboa; Paulo Carvalho, FCT- Universidade Nova de Lisboa

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### 3. Cognitive Radio and Spectrum Management Papers

83570

**1 An Energy-efficient Routing Protocol for Cognitive Radio Enabled AMI Networks in Smart Grid**

Yang Zhutian, Yinming Gu, Zhilu Wu, Harbin Institute of Technology; Nan Zhao, Dalian University of Technology; Xianbin Wang, The University of Western Ontario

42905

**2 Assessment on Using Multitaper and Higher-Order STBC Techniques for Spectrum Estimation in Cognitive Radio**

Ahmed Abdul Salam, Ray E. Sheriff, University of Bradford; Saleh Al-Araji, (formerly) Khalifa University of Science and Technology; Kahtan Mezher, Khalifa University of Science and Technology; Qassim Nasir, University of Sharjah

13281

**3 Automatic Modulation Classification for MIMO-OFDM Systems with Imperfect Timing Synchronization**

Xiaoyu Yuan, Yongzhao Li, Mingjun Gao, Tao Li, Hailin Zhang, Xidian University

12102

**4 Cognitive Co-existence of Unlicensed Wireless Networks through Beamforming**

Golara Zafari, University of Western Ontario; Xianbin Wang, The University of Western Ontario

82682

**5 Cognitive Heterogeneous Networks with Best Relay Selection over Unreliable Backhaul Connections**

Huy T. Nguyen, Inje University; Trung Q. Duong, Queen's University Belfast; Octavia A. Dobre, Memorial University; Won-Joo Hwang, Inje University

43530

**6 Control Signal Transmission based on IFDMA and Receiver with Nonlinear Amplifier for Compensating Access Channel Mismatch**

Ryo Kurosawa, Osamu TAKYU, Shinshu University; Mai Ohta, Fukuoka University; Takeo Fujii, The University of Electro-Communications; Fumihito Sasamori, Shinshu University; Shiro Handa, Shinshu University

93870

**7 Crowdsourcing-assisted Radio Environment Maps for V2V Communication Systems**

Keita Katagiri, Koya Sato, Takeo Fujii, The University of Electro-Communications

60565

**8 Distributed Power Control Based on LQR and LQG Regulator for A Cognitive Radio Network**

Xiaohui Zhao, Shuying Zhang, Jilin University

43088

**9 Energy Efficient Power Allocation for UAV Cognitive Radio Systems**

Lokman Sboui, King Abdullah University of Science and Technology (KAUST); Hakim Ghazzai, Qatar Mobility Innovations Center (QMIC); Zouheir Rezki, University of Idaho; Mohamed-Slim Alouini, King Abdulah University of Science and Technology (KAUST)

69705

**10 Enhanced Overlay Spectrum Sharing Scheme for Cognitive Radio Networks**

Raed F. Manna, Emirates Telecommunications Corporation (Etisalat); Fawaz Al-Qahtani, Texas A & M University at Qatar; Salam Zummo, KFUPM; Dr. Mohammad Shaqfeh, Texas A&M University at Qatar

45901

**11 Heterogeneous Cooperative Spectrum Sensing Test-Bed Using Software-Defined Radios**

Kuldeep S. Gill, Alexander Wyglinski, Worcester Polytechnic Institute

15155

**12 Hybrid sub-Nyquist Spectrum Sensing with Geo-location Database in M2M Communications**

Yue Gao, Xingjian Zhang, Yuan Ma, Queen Mary University of London

61640

**13 Improved Energy Detector with Cognitive User Mobility over Generalized Fading Channels**

Lokesh Gahane, Visvesvaraya National Institute of Technology; Prabhat Kumar Sharma, Visvesvaraya National Institute of Technology, Nagpur; Parul Garg, Netaji Subhas Institute of Technology; Dr. Theodoros Tsiftsis, Nazarbayev University

45673

**14 Joint Optimization for Computation Offloading and Resource Allocation in Internet of Things**

Mengling Guan, Li Wang, Beijing University of Posts and Telecommunications; Bo Bai, Huawei Technologies Co., Ltd.; Zhu Han, University of Houston; Shi Jin, Southern University

62367

**15 LDLT Decomposition Based Spectrum Sensing in Cognitive Radio Using Hard Decision Criterion**

Guangyue Lu, Xi'an University of Posts and Telecommunications; Yuxin Li, Xi'an University of Posts and Telecommunications; Yinghui Ye, Xidian University

46261

**16 Multi-Operator Spectrum Sharing Models under Different Cooperation Schemes for Next Generation Cellular Networks**

Professor Mohammed N. Patwary, Birmingham City University; Md Asaduzzaman, Raouf Abozariba, Staffordshire University

58419

**17 Near Optimal Distributed Cooperative Spectrum Sensing and Access: A Benefit-and-Compensation Approach**

Yuli Zhang, Yuhua Xu, PLA University of Science and Technology; Qihui Wu, Nanjing University of Aeronautics and Astronautics, China; Alagan Anpalagan, Ryerson University; Shuo Feng, McMaster University, Hamilton, Canada

56489

**18 New Spectrum Utilization Efficiency Metrics for Coexistence and Spectrum Sharing Applications**

Yifeng Zhou, Communications Research Centre Canada

48931

**19 Optimal Cooperative Strategy in Energy Harvesting Cognitive Radio Networks**

Fudong Li, Hai Jiang, University of Alberta; Rongfei Fan, Beijing Institute of Technology, China; Peng Tan, TELUS

58107

**20 Performance of Spectrum Sensing Based on Absolute Value Cumulation in Laplacian Noise**

Yinghui Ye, Yongzhao Li, Xidian University; Guangyue Lu, Xi'an University of Posts and Telecommunications; Fuhui Zhou, Nanchang University; Hailin Zhang, Xidian University

12123

**21 Power Control with Power Budget for Uplink Transmission in Heterogeneous Networks**

Junhui Zhao, Yongqiang Ning, Beijing Jiaotong University; Yi Gong, South University of Science and Technology of China; Ran Rong, Ajou University

39936

**22 Resource Allocation for 3D Drone Networks Sharing Spectrum Bands**

Keiji Yoshikawa, Graduate School of Informatics, Kyoto University; Shota Yamashita, Koji Yamamoto, Takayuki Nishio, Kyoto University; Masahiro Morikura, Graduate School of Informatics, Kyoto-University

57685

**23 Robust Cooperative Spectrum Sensing Against Probabilistic SSDF Attack in Cognitive Radio Networks**

Jun Wu, Southeast University; Anonymous Account 70392, Anonymous; Cong Wang, Southeast University; Anonymous Account 81319, Anonymous Account 81318, Anonymous

29753

**24 Robust Secure Beamforming for Cognitive Satellite Terrestrial Networks at Millimeter-Wave Frequency**

Anonymous Account 79847, Anonymous; Zhi Lin, PLA University of Science and Technology; Kun Wang, Nanjing University of Posts and Telecommunications; Wei Xu, Southeast University; Song Guo, Hong Kong Polytechnic University; Anonymous Account 81273, Anonymous

78891

**25 Stacked LSTM Deep Learning Model for Traffic Prediction in Vehicle-to-Vehicle Communication**

Xunsheng Du, Huaqing Zhang, Hien Van Nguyen, Zhu Han, University of Houston

## 4. Multiple Antenna Systems and Cooperative Communications Papers

51898

**1 802.11ax: the Coming New WLAN System with More than 4x MAC Throughput Enhancement**

Xun Yang, yuchen Guo, Osama Aboul-Magd, Huawei Technologies

97762

**2 Achievable Rates of the MIMO Multiway Distributed-Relay Channel with Full Data Exchange**

Xiang Zhao, Jianwen Zhang, ShanghaiTech University; Yingjun Zhang, Chinese University of Hong Kong; Xiaojun Yuan, ShanghaiTech University

80318

**3 An Energy-Efficient Hybrid Precoding Algorithm for Multiuser mmWave Massive MIMO Systems**

Qiaomei Yu, Xiongfei Zhai, Minjian Zhao, Zhejiang University

94013

**4 A New Generalized Khatri-Rao Products Approach for Correlated Source Number Estimation**

Jing Wang, Fei Ji, Fangjiong Chen, Hua Yu, Qiang Li, South China University of Technology

83335

**5 Antenna Deployment of 5G Ultra High-Density Distributed Massive MIMO by Low-SHF-Band Indoor and Outdoor Experiments**

Tatsuki Okuyama, Satoshi Suyama, NTT DOCOMO, INC.; Jun Mashino, NTT DOCOMO; Yukihiro Okumura, NTT DOCOMO, INC.; Kotaro Shiizaki, Chiyoshi Akiyama, FUJITSU LABORATORIES LTD.; Masafumi Tsutsui, Fujitsu; Hiroyuki Seki, Morihiko Minowa, FUJITSU LIMITED

17756

**6 Antenna Grouping in Dual-Polarized Generalized Spatial Modulation**

Golara Zafari, University of Western Ontario; Mutlu Koca, Bogazici University; Xianbin Wang, The University of Western Ontario; M.G.S. Sriyananda, University of Western Ontario

69921

**7 Beam Angle Channel Modulation**

Javad Hoseyni, Jacek Ilow, Dalhousie University

84730

**8 Codeword shaping enhanced Polar coded cooperation under fading channels**

Xiang Gao, Shenzhen Graduate School, Harbin Institute of Technology; Shaohua Wu, Harbin Institute of Technology; Xiaoming Jiang, Kun Li, Shenzhen Graduate School, Harbin Institute of Technology; Zhang Qinyu, Harbin Institute of Tech.

97899

**9 Common Sparsity based Channel Estimation for FDD Massive MIMO-OFDM Systems via Multitask Bayesian Compressive Sensing**

Wei Ji, Ling Qiu, University of Science and Technology of China

22083

**10 Compact Antenna Spacing in mmWave MIMO Systems Using Random Phase Precoding**

G. D. Surabhi, A. Chockalingam, Indian Institute of Science, Bangalore

44924

**11 Computationally Efficient Direction of Arrival Estimation for Nested Arrays via DFT Method**

Xiaofei Zhang, Zhen wang, Nanjing University of Aeronautics and Astronautics

60909

**12 Cooperative Forwarding using Distributed MISO in OFDMA Multihop Networks**

Fabian Hohmann, Anja Klein, TU Darmstadt

39313

**13 Diversity Analysis of MIMO Network Coded Cooperation Systems with Relay Selection**

Ali Reza Heidarpour, Masoud Ardakani, University of Alberta

32806

**14 Downlink Capacity Comparison of MMSE-SVD and BD-SVD for Cooperative Distributed Antenna Transmission using Multi-user Scheduling**

Yuta SEKI, Fumiyuki Adachi, Tohoku University

25077

**15 Downlink Resource Allocation With Multiple Users per Resource and Modulation Assignment**

D?evdan Kapetanovi?, Naveed Butt, Rocco Di Taranto, Ericsson

50794

**16 Dynamic Power Splitting for Three-Step Two-Way Multiplicative AF Relay Networks**

Zhaorui Wang, Yongzhao Li, Yinghui Ye, Hailin Zhang, Xidian University

81191

**17 Embedded Coding Techniques for FSO Communication**

Thuan Nguyen, Thanh Nguyen, Oregon State University

35383

**18 Enhanced Precoding Design with Adaptive Beam Width for 5G New Radio Systems**

Victor Sergeev, Lobachevsky State University of Nizhni Novgorod; Alexei Davydov, Intel; Gregory Morozov, Oner Orhan, Wookbong Lee, Intel Corporation

95738

**19 Generalized Approximate Message Passing Detection with Row-Orthogonal Linear Preprocessing for Uplink Massive MIMO Systems**

Hao Fan, Wenjin Wang, Southeast University; Dan Zhang, TU Dresden, Vodafone Chair; Xiqi Gao, Southeast University

18517

**20 Generalizing Hybrid Beamforming Solutions for Massive MIMO Systems**

Mohammed Alarfaj, Huaping Liu, Oregon State University

77550

**21 Hierarchically Modulated Network-Coding-Assisted Cooperation in Multiuser Relay Networks**

Chunling Peng, Fangwei Li, Chongqing University of Posts and Telecommunications; Huaping Liu, Oregon State University

45131

**22 Hybrid Beamforming for Downlink Massive MIMO Systems with Multi-antenna User Equipment**

Sohail Payami, Mir Ghoraiishi, University of Surrey; Mehrdad Dianati, University of Warwick

88083

**23 Hybrid Nonorthogonal Multiple Access with Half and Full Duplex Cooperative Users**

Zhiyuan Lin, Wei Chen, Tsinghua University

65757

**24 Improved Quadrature Spatial Modulation**

Binh Vo, Ha H. Nguyen, University of Saskatchewan

36093

**25 Low-Complexity Precoding for Spatial Modulation**

Peng Cheng, University of Sydney; zhuo chen, CSIRO; Andrew Zhang, UTS; Yonghui Li, University of Sydney; Branka Vucetic, The University of Sydney

67369

**26 Low-Complexity Symbol Detection for Generalized Spatial Modulation MIMO Systems**

Hye-Yeon Yoon, Tae-Hwan Kim, Korea Aerospace University

58916

**27 Massive MIMO with Quasi Orthogonal Pilots: A Flexible Solution for TDD Systems**

Haneya Naeem Qureshi, University of Oklahoma; Ijaz Haider Naqvi, Momin Ayub Uppal, Lahore University of Management Sciences

42786

**28 Max-min Fair Beamforming for SWIPT Systems with Non-linear EH Model**

Elena Boshkovska, FAU; Xiaoming Chen, Zhejiang University; Linglong Dai, Tsinghua University; Derrick Wing Kwan Ng, University of New South Wales; Robert Schober, University British Columbia

64346

**29 Millimeter Wave Hybrid Beamforming with DFT-MUB Aided Precoder Codebook Design**

K Satyanarayana, Mohammed El-Hajjar, University of Southampton; Ping-Heng Kuo, Alain Mourad, InterDigital Communications; Lajos Hanzo, University of Southampton

48744

**30 Multicast Beamforming Capabilities of LTE MBSFN for V2X Communications**

Illia Safiulin, TU Wien; Stefan Schwarz, Technische Universität (TU) Wien; Markus Rupp, TU Wien

83736

**31 Network Coded Cooperation Based on Relay Selection with Imperfect CSI**

Ali Reza Heidarpour, Masoud Ardakani, Chintha Tellambura, University of Alberta

63761

**32 Nonbinary LDPC Coded Spatial Modulation**

Dan Feng, Hengzhou Xu, Qiang Zhang, B. Bai, Xidian University

92524

**33 On Achievable Rate Region Using Location Assisted Coding (LAC) for FSO Communication**

Thuan Nguyen, Duong Nguyen-Huu, Thanh Nguyen, Oregon State University

86464

**34 On the Effect of Hardware Impairments on Two-Way Relay Networks with ICE**

Anoop Kumar Mishra, Sindhu C. M. Gowda, Poonam Singh, National Institute of Technology Rourkela

56671

**35 On the Impact of Strong Nonlinear Effects on Massive MIMO SVD Systems with Imperfect Channel Estimates**

João Guerreiro, Instituto de Telecomunicações; Rui Dinis, Universidade Nova de Lisboa; Paulo Carvalho, FCT- Universidade Nova de Lisboa

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**36 Optimal Angular Spread of the Multipath Clusters in mmWave Systems under Pilot Contamination**

Jorge Iscar Vergara, Florida International University; Ismail Guvenc, North Carolina State University; Sener Dikmese, Tampere University of Technology; Ahmed S. Ibrahim, Florida International University

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**37 Optimal Time-Switching Relaying Protocol for Wireless-Powered DF Relay Networks**

Mengqi Yang, Yonghong Kuo, Jian Chen, Long Yang, Lu Lv, Xidian University

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**38 Outage Performance of Variable-Gain AF Relaying Systems in the Combined Presence of HWI and ICE: Analysis and Comparison**

Anoop Kumar Mishra, Debmalya Mallick, Sindhu C. M. Gowda, Poonam Singh, National Institute of Technology Rourkela

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**39 Outage Probability of Cooperative Relay Networks in  $\alpha$ - $\mu$  and Mixed Fading Channels**

Dharmendra Dixit, The LNMIIT, Jaipur, Rajasthan India; Pravas Ranjan Sahu, Indian Institute of Technology Bhubaneswar

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**40 PD-MAC: Pulse Detection Based MAC Protocol in Distributed Wireless Networks**

Chao Dong, Nanjing Institute of Communications Engineering; Aijing Li, PLA University of Science and Technology; Shaojie Tang, University of Texas at Dallas; Fan Wu, Guihai Chen, Shanghai Jiao Tong University

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**41 Performance Analysis of Low Complexity Coordinated Beamforming for Massive MIMO System**

Jun Shikida, NEC Corporation; Naoto Ishii, NEC

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**42 Performance Analysis on 3D Beamforming for Downlink In-Band Wireless Backhaul for Small Cells**

Jinping Niu, Northwest University

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**43 Performance Evaluation of Low-Complexity FDE Receivers for Massive MIMO Schemes with 1-bit ADCs**

Ricardo Candeias, FCT-UNL; João Guerreiro, Instituto de Telecomunicações; Rui Dinis, Universidade Nova de Lisboa; Paulo Carvalho, FCT- Universidade Nova de Lisboa

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**44 Performance of a Non-Coherent Massive SIMO M-DPSK System**

Victor Monzon, Ana Garcia-Armada, Universidad Carlos III de Madrid; Mohammed El-Hajjar, Lajos Hanzo, University of Southampton

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**45 Pilot Allocation and Sum-rate Analysis in Distributed Massive MIMO Systems**

Ramiz Sabbagh, H. Zhu, Jiangzhou Wang, University of Kent

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**46 Pilot Contamination Elimination and Performance Analysis in Massive MIMO Systems**

Junhui Zhao, Ni Shanjin, Beijing Jiaotong University; Anonymous Account 70325, Anonymous

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Ilmiawan Shubhi, Hidekazu Murata, Kyoto University

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**49 Reducing On-chip Memory for Massive MIMO Baseband Processing using Channel Compression**

Yangxurui Liu, Ove Edfors, Liang Liu, Viktor Öwall, Lund University

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**50 Robust Approximate Message Passing Detection Based on Minimizing Bethe Free Energy for Massive MIMO Systems**

Shujing Chen, Southeast University; Wenjin Wang, Southeast University; Dan Zhang, TU Dresden, Vodafone Chair; Xiqi Gao, Southeast University

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**51 Robust Sum Secrecy Rate Optimization for MIMO Two-way Full Duplex Systems**

Zheng Chu, Middlesex University, London; Tuan Le, Middlesex University London; Huan X. Nguyen, Middlesex University; Arumugam Nallanathan, King's College; Mehmet Karamanoglu, Middlesex University

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**52 Single Channel Blind Source Separation for MISO Communication Systems**

Priyanka Dey, Nikita Trivedi, Udit Satija, Barathram Ramkumar, M. Sabarimalai Manikandan, Indian Institute of Technology Bhubaneswar

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**53 Spectral Efficiency Maximization for Massive Multiuser MIMO Downlink TDD Systems via Data Power Allocation with MRT Precoding**

omid saatlou, Concordia University; M. Omair Ahmad, M.N.S Swamy, Concordia University

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**54 Theory and Design of a Direct Space-to-Information Converter for Rapid Detection of Interferer DoA**

Matthew Bajor, Columbia University

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**55 User Grouping with Load Balance in FDD Massive MIMO System**

YI XIE, Northwestern Polytechnical University; Jiancun Fan, Xi'an Jiaotong University; Xiangwei Zhou, Louisiana State University; Geoffrey Li, Anonymous; Xun Li, Huawei Shanghai Research Institute; Bo Li, Northwestern Polytechnical University

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**56 User Scheduling Based on Horizontal and Vertical Double Codebook for 3D MU-MIMO**

Guomei Zhang, Xi'an Jiaotong University; Jie Li, Hao Sun, Zhenzhen Gao, Xi'an Jiaotong University

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**57 User Selection and Decoding Precedence Based on the Anisotropic Orthogonal Procrustes Analysis for Uplink Multi-User MIMO**

Shih-Hsun Cheng, Chia-Hung Hung, Jung-Chun Kao, National Tsing Hua University

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**58 Virtual Spatial Modulation with Diversity Improvement**

Qiang Li, Miaowen Wen, South China University of Technology; Jun Li, School of Mechanical and Electrical Engineering, Guangzhou University; Xiang Cheng, Peking University; Fangjiong Chen, South China University of Technology

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## 5. Radio Access Technology, LTE, 5G, and Wireless Heterogeneous Networks Papers

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**1 4G LTE on the Road - What Impacts Download Speeds Most?**

Mark Akselrod, Nico Becker, Leibniz Universität Hannover; Markus Fidler, Leibniz University of Hannover; Ralf Lübben, Robert Bosch GmbH

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**2 5G New Radio UL Coverage with Peak Clipping**

Toni Levanen, Tampere University of Technology; Jorma Kaikkonen, Sari Nielsen, Kari Pajukoski, Nokia Bell Labs; Markku Renfors, Mikko Valkama, Tampere University of Technology

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**3 Adaptive CDI-CQI Feedback Bit Partitioning for Quantized MISO-SDMA in Downlink HetNets**

Mohammad G. Khoshkholgh, UBC; Victor C. M. Leung, The University of British Columbia

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**4 A Distance-based Power Control Scheme for D2D Communications Using Stochastic Geometry**

Asmaa Abdallah, Mohammad Mansour, Ali Chehab, American University of Beirut

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Modhawi Alotaibi, Amiya Nayak, University of Ottawa

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**6 A Greedy Heuristic Algorithm for Context-Aware User Association and Resource Allocation in Heterogeneous Wireless Networks**

Mohamad Zalgout, INSA de Rennes, IETR; Anonymous Account 5430, Anonymous; Matthieu Crussière, Institute of Electronics and Telecommunications of Rennes; Anonymous Account 82751, Anonymous Account 26791, Anonymous

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**7 A Green Mesh Routers? Placement to Ensure Small Cells Backhauling in 5G Networks**

Imed Allal, Khaoula Dhifallah, Orange labs France; Joël Penhoat, Orange labs; Yvon Gourhant, Orange labs France; Sidi-Mohammed Senouci, University of Bourgogne, ISAT Nevers

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**8 Analysis of Broadcast Signaling for Millimeter Wave Cell Discovery**

Yilin Li, Jian Luo, Mario Castaneda, Nikola Vucic, Wen Xu, Huawei Technologies Duesseldorf GmbH; Giuseppe Caire, Technical University of Berlin

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**9 Analysis of Different Cloud-RAN Implementation Strategies in Small Cells Scenarios**

Tiago Monteiro, Instituto Superior Técnico; Luis M. Correia, IST - University of Lisbon / INESC

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**10 A Novel Optimization Framework for C-RAN BBU Selection based on Resiliency and Price**

Mohammed Yazid Lyazidi, UPMC; Lorenza Giupponi, CTTC; Josep Mangues-Bafalluy, Centre Tecnològic de Telecomunicacions de Catalunya (CTTC); Nadjib Aitsaadi, ESIEE Paris; Rami Langar, LIGM-CNRS, UPEM

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**11 A Novel UE Preference based Component Carrier Selection Algorithm in LTE-Advanced**

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**13 Antenna Parameters Optimization in Self-Organizing Networks: Multi-armed Bandits with Pareto Search**

Tomoaki Ohtsuki, Keio University

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Paulo Carvalho, FCT- Universidade Nova de Lisboa; Rui Dinis, Universidade Nova de Lisboa; Afonso Ferreira, Guilherme Gaspar,

FCT-UNL; Dushantha N. K. Jayakody, National Research Tomsk Polytechnic University

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**15 A Search-free Algorithm for Precoder Selection in FD-MIMO Systems with DFT-based Codebooks**

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**18 Beamforming and Scheduling for mmWave Downlink Sparse Virtual Channels With Non-Orthogonal and Orthogonal Multiple Access**

Alessandro Brighente, Università degli studi di Padova; Stefano Tomasin, University of Padova

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Ngoc-Dung Dao, Huawei Technologies Canada Co., Ltd.; Hamid Farmanbar, Hang Zhang, Huawei Technologies Canada Co. Ltd.

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Bin Liu, Nanjing University of Posts and Telecommunications; Anonymous Account 23391, Anonymous Account 21241, Anonymous

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Tuong Duc Hoang, Université du Québec; Long Le, INRS, University of Québec

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Megumi Kaneko, National Institute of Informatics; Kazunori Hayashi, Osaka City University

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Hadi Ghauch, Sahar Imtiaz, KTH Royal Institute of Technology; Mikael Skoglund, KTH; George Koudouridis, Huawei Technologies Sweden AB; James Gross, KTH Royal Institute of Technology

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**31 Fast Convergence Outer Loop Link Adaptation With Infrequent Updates In Steady State**

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**34 Impact of LOS/NLOS Propagation on the Coverage Performance of Multi-Stream MIMO-ZFBF Cellular Downlink**

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**35 Indoor and Outdoor Experiments on 5G Radio Access Using Distributed MIMO and Beamforming with a Variety of TP Deployments**

Daisuke Kurita, Kiichi Tateishi, NTT DOCOMO, INC.; Anonymous Account 75649, Anonymous Account 24501, Anonymous Account 84190, Anonymous; Hideshi Murai, Ericsson Japan; Arne Simonsson, Ericsson; Anonymous Account 19661, Anonymous

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**36 Indoor Localization with Irregular Antenna Deployment**

Yang Zheng, Junyu Liu, Min Sheng, Jiandong Li, Xidian University

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**38 Integrated Access and Backhaul in Fixed Wireless Access Systems**

Mona Hashemi, Mikael Coldrey, Martin Johansson, Ericsson Research; Sven Petersson, Ericsson

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**39 Inter-cell Interference-Aware Scheduling for Delay Sensitive Applications in C-RAN**

Yi Li, Mustafa Cenk Gursoy, Senem Velipasalar, Syracuse University

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**40 Inter-Cell Interference Sub-space Coordination for 5G Ultra-Dense Networks**

Ali Karimidehkordi, Nurul Huda Mahmood, Aalborg University; Klaus I. Pedersen, Nokia - Bell Labs; Preben Mogensen, Aalborg University, Nokia Bell Labs

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**41 Interference and Background Noise Effects in Wireless Networks with Poisson Fields of Transmitters**

Natalia Ermolova, Aalto University

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**42 Joint Caching and Multicast for Wireless Fronthaul in Fog Radio Access Networks**

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**43 Joint Resource Allocation for LTE over Licensed and Unlicensed Spectrum**

Xiaojian Zhen, Hangguan Shan, Guanding Yu, Zhejiang University; Yu Cheng, Lin Cai, Illinois Institute of Technology; Aiping Huang, Zhejiang University

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**44 Joint Subcarrier Assignment and Power Allocation in Downlink SCMA Systems**

Wenfeng Zhu, Ling Qiu, Zheng Chen, University of Science and Technology of China

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**45 Keep Pets and Elephants away: Towards Dynamic Process Location Management in 5G**

Shahin Vakili, Concordia university; Halimia, University of Quebec a Montreal; Behdad Heidarpour, École de technologie supérieure

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**46 Low Density Spreading Signature Vector Extension (LDS-SVE) for Uplink Multiple Access**

Jian Zhang, Xin Wang, Xianjun Yang, Fujitsu R&D Center Co., Ltd.; Hua Zhou, Fujitsu

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**47 Maximized traffic offloading by content sharing in D2D communication**

Xinying Yu, Chong Tan, Lin Ma, Min Zheng, Zhiyong Bu, Shanghai Institute of Microsystem and Information Technology CAS

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**48 Mobility and Reliability in LTE-5G Dual Connectivity Scenarios**

Henrik Martikainen, Magister solutions LTD; Ingo Viering, Nomor Research GmbH; Andreas Lobinger, Bernhard Wegmann, Nokia Bell Labs, Germany

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**50 Network Slicing with Elastic SFC**

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**51 On the Average Rate and Power Allocation of Multi-Antenna Uplink NOMA**

Jinling Dai, Beihang University; Anonymous Account 62798, Anonymous; Chenyang Yang, Beihang University, Beijing

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**52 On the Performance of High-Rate LDPC Codes with Low-Resolution Analog-to-Digital Conversion**

Niklas Doose, Peter A. Hoeher, Kiel University

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**53 On the Power Allocation and Constellation Selection in Downlink NOMA**

Estela Carmona Cejudo, H. Zhu, Osama Alluhaibi, University of Kent

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**54 On the Power Leakage Problem in BeamSpace MIMO Systems with Lens Antenna Array**

Tian Xie, Linglong Dai, Xinyu Gao, Tsinghua University; Haipeng Yao, Beijing University of Posts and Telecommunications; Xiaodong Wang, Columbia University

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**55 On the Value of Vehicular Relay Nodes in Cellular Networks**

Nadav Lavi, General Motors; Hanoch Levy, Tel-Aviv University

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**56 Opportunistic Interference Alignment Scheme based on Cross-Layer Design**

Yunyi Liu, Junhui Zhao, Shangyao Wang, Beijing Jiaotong University; Yi Gong, South University of Science and Technology of China

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**57 Optimizing Synchronous Handover in Cloud RAN**

Troels Kolding, Nokia Bell Labs; Lucas Chavarria Gimenez, Aalborg University; Klaus I. Pedersen, Nokia - Bell Labs

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**58 Outage Probability Analysis and Optimization in Downlink NOMA Systems with Cooperative Full-duplex Relaying**

Lin Zhang, UESTC, China; Ming Xiao, KTH; Jiaqi Liu, Gang Wu, Dengsheng Lin, University of Electronic Science and Technology of China; Shaoqian Li, UESTC, China

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**59 Performance Analysis of Fiber-optic Inband Relaying against both Self- and Inter-cell Interference**

Ryota Nakao, Norihiro Naganuma, Shigeaki Takano, Hiroyuki Otsuka, Kogakuin University

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**60 Performance of Overlaid MIMO Cellular Networks with TAS/MRC Under Hybrid-Access Small Cells and Poisson Field Interference**

Amr, Abdelkhalek; Fawaz Al-Qahtani, Texas A & M University at Qatar; Redha M. Radaydeh, KAUST; Dr. Mohammad Shaqfeh, Texas A&M University at Qatar; Raed F. Manna, Emirates Telecommunications Corporation (Etisalat)

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**61 Pilot Allocation for Multi-Cell TDD Massive MIMO Systems**

Wanning Hao, Osamu Muta, Kyushu University; Haris Gacanin, Nokia Bell Labs; Hiroshi Furukawa, Kyushu University

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**62 Punctured Scheduling for Critical Low Latency Data on a Shared Channel with Mobile Broadband**

Klaus I. Pedersen, Nokia - Bell Labs; Guillermo Pocovi, Aalborg University; Jens Steiner, Saeed R. Khosravirad, Nokia Bell Labs

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**63 Radio Access for Future 5G Vehicular Networks**

Barbara M. Masini, Alessandro Bazzi, CNR-IEIIT; Enrico Natalizio, Université de Technologie de Compiègne

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**64 Research on Coverage Enhancement of Narrowband M2M Communications Based on Unlicensed Spectrum**

Shaoyi Xu, Beijing Jiaotong University

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**65 Scheduler Reducing CSI Feedback Overhead and Computational Complexity for 5G Ultra High-Density Distributed Antenna Systems with Hybrid BF**

Shinya Kumagai, Takaharu Kobayashi, Daisuke Jitsukawa, Takashi Seyama, Takashi Dateki, Hiroyuki Seki, FUJITSU LIMITED; Koji Matsuyama, FUJITSU LABORATORIES LTD.; Morihiko Minowa, FUJITSU LIMITED

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**66 Seamless Gate-to-Gate Connectivity Concept: Onboard LTE, Wi-Fi and LAA**

Ergin Dinc, Michal Vondra, Royal Institute of Technology (KTH); Cicek Cavdar, KTH Royal Institute of Technology

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**67 SINR Model for MBSFN Based Mission Critical Communications**

Alaa Daher, ETELM, Telecom ParisTech; Marceau Coupechoux, TELECOM Paris Tech; Philippe Godlewski, Telecom ParisTech; Jean-Marc Kelif, Orange Labs; Pierre Ngouat, PNG-Technologies; Pierre Minot, ETELM

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**68 Social-Aware Relay Selection for Device-to-Device Underlying Cellular Networks**

Xuejie Zhu, Qinghe Du, Pinyi Ren, Xi'an Jiaotong University

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Yiqun Wu, Huawei; Wang Chao, Huawei Technologies; Yan Chen, Huawei; Alireza Bayesteh, Huawei Technologies Canada Co. Ltd.

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**70 The Effect of D2D Communication on the Uplink Cellular Network Performance**

Hind, University of Kent

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**71 Time Series Measurement of IEEE 802.11ad Signal Power Involving Human Blockage with HMM-based State Estimation**

Yusuke Koda, Koji Yamamoto, Takayuki Nishio, Kyoto University; Masahiro Morikura, Graduate School of Informatics, Kyoto-University

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**72 Underlay D2D Communication in a Finite Cellular Network with Exclusion Zone**

Jing Guo, Australian National University; Salman Durrani, Xiangyun Zhou, The Australian National University; Halim Yanikomeroglu, Carleton University

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**73 Uplink Performance Analysis in D2D-Enabled mmWave Cellular Networks**

Esma Turgut, Mustafa Cenk Gursoy, Syracuse University

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**74 User Satisfaction-Aware WiFi Offloading in Heterogeneous Networks**

Jiao Xu, Harbin Institute of Technology, Shenzhen; Shaohua Wu, Harbin Institute of Technology; Luyao Xu, Harbin Institute of Technology, Shenzhen; Ning Zhang, University of Waterloo; Zhang Qinyu, Harbin Institute of Tech.

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**75 User Selection and Rank Adaptation for Multi-User Massive MIMO with Hybrid Beamforming**

Hiroyuki Miyazaki, Satoshi Suyama, Tatsuki Okuyama, NTT DOCOMO, INC.; Jun Mashino, NTT DOCOMO; Yukihiro Okumura, NTT DOCOMO, INC.

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**76 Utility-Based Resource Allocation under Multi-Connectivity in Evolved LTE**

Konstantinos Alexandris, Chia-Yu Chang, Kostas Katsalis, EURECOM; Navid Nikaein, Eurecom; Thrasivoulos Spyropoulos, EURECOM

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## 6. Green Communications and Networks Papers

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**1 Advanced Sleep Modes and their impact on flow-level performance of 5G networks**

Fatma Ezzahra Salem, Orange Labs; Azeddine Gati, Zwi Altman, Orange; Tijani Chahed, Institut Mines-Telecom; Telecom SudParis

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**2 A Joint Time Allocation and UE Scheduling Algorithm for Full-Duplex Wireless Powered Communication Networks**

Jie Hu, University of electronic science and technology of China; Yinghong Xue, Qin Yu, Kun Yang, University of Electronic Science and Technology of China

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**3 A Low Power Cyber-Attack Detection and Isolation Mechanism for Wireless Sensor Network**

Gurpreet Singh Dhunna, Irfan Al-Anbagi, University of Regina

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**4 Analysis of Wireless-Powered Device-to-Device Communications with Ambient Backscattering**

Lu Xiao, Hai Jiang, University of Alberta; Dusit Niyato, Nanyang Technological University; Dong In Kim, Sungkyunkwan University (SKKU), Korea; Ping Wang, Nanyang Technological University

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**5 A Novel Pricing Scheme to Optimally Schedule the Charging Demands with User Utilities**

Zhou Su, Shanghai University, China; Hui Hui, Shanghai University; Tingting Yang, Dalian Maritime University; Yilong Hui, Qiarong Liu, Rui Xing, Shanghai University

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**6 A Study of Multicast Message Allocation for Content Distribution with Device-to-Device Communications**

Jianguo Xie, Wei Song, Xi Tao, University of New Brunswick, Fredericton, NB, Canada

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**7 Bargaining-Based Power Allocation of Hybrid Green Cellular Networks with Energy Harvesting**

Lin Wang, Beijing University of Posts and Telecommunications; Xing Zhang, BUPT; Shuo Wang, Juwo Yang, Beijing University of Posts and Telecommunications

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**8 Capacity Region of a MAC With a Wireless-Powered DF Relay-to-Destination Link**

Runfa Zhou, The Hong Kong University of Science and Technology; Roger Shu Kwan Cheng, Hong Kong University of Science and Technology

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**9 Cell Splitting for Energy-Efficient Massive MIMO**

Olli Apilo, Mika Lasanen, VTT Technical Research Centre of Finland; Jiaheng Wang, Southeast University; Aarne Mämmelä, VTT Technical Research Centre of Finland

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**10 Data Precoding and Energy Transmission for Parameter Estimation in MIMO Wireless Powered Sensor Networks**

Naveen K. D. Venkatesowda, Hoon Lee, Inkyu Lee, Korea University

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**11 Does Wake-up Radio Always Consume Lower Energy Than Duty-Cycled Protocols?**

Min Zhang, Debasish Ghose, Frank Y. Li, University of Agder

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**12 Dynamic Time and Power Allocation for Opportunistic Energy Efficient Cooperative Relay**

John Heron, Hongjian Sun, Durham University

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**13 Energy Efficiency Fairness in Heterogeneous Cellular Networks with Wireless Power Transfer**

Jing Zhang, Guoheng Liu, Yan Liao, Qingjie Zhou, Qiang Li, Huazhong University of Science and Technology

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**14 Energy Efficient Relay-Assisted Cell Zooming in a Wireless Heterogeneous Network**

Sidhant Chatterjee, Zekun Zhang, Rose Qingyang Hu, Utah State University

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**15 Ensuring Reliable and Stable Communications in Mobile Ad-hoc Networks**

Tareq Hayajna, Kadoch Michel, Ecole de technologie superieure; Bo Rong, Communications Research Centre Canada

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**16 Green C-RAN: A Joint Approach to the Design and Energy Optimization**

Song Guo, Hong Kong Polytechnic University; Deze Zeng, China University of Geosciences, Wuhan; Li Gu, Huazhong University of Science and Technology

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Xiangli Liu, Jianhuan Wang, Xidian University; Zan Li, State Key Laboratory of ISN, Xidian University

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**18 Interference Alignment with Power Splitting Relays in Multi-User Multi-Relay Networks**

Man Chu, Xi'an Jiaotong University; Biao He, University of California, Irvine; Xuwen Liao, Xi'an Jiaotong University; Zhenzhen Gao, Shihua Zhu, Xi'an Jiaotong University

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**19 Inversely Proportional Carrier Sense Threshold and Transmit Power Setting towards Green WLANs**

Bo Yin, Liang Lin, Koji Yamamoto, Takayuki Nishio, Masahiro Morikura, Kyoto University; Hirantha Abeysekera, NTT Corporation

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**20 Joint Channel Bandwidth and Power Allocations for Downlink Non-orthogonal Multiple Access Systems**

Yuan Wu, Liping Qian, Haowei Mao, Weidang Lu, Zhejiang University of Technology; Haibo Zhou, University of Waterloo; Anonymous Account 84119, Anonymous

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**21 Joint Time Allocation and Power Splitting Schemes for DF Energy Harvesting Relaying Networks**

DanWang, Yongzhao Li, Yinghui Ye, Xidian University; Hongxing Xia, Hubei Engineering University; Hailin Zhang, Xidian University

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**23 Minimizing the Update Complexity of Facebook HDFS-RAID Locally Repairable Code**

Mehrtash Mehrabi, Masoud Ardakani, Majid Khabbazian, University of Alberta

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**24 NOMA-based Energy-Efficient Wireless Powered Communications in 5G Systems**

Tewodros A. Zewde, Mustafa Cenk Gursoy, Syracuse University

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**25 Optimal Resource Allocation for Data Offloading in Energy-harvesting Small-cell Networks**

Yutong Yan, Liping Qian, Yuan Wu, Weidang Lu, Zhejiang University of Technology

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**26 Outage Probability and Throughput of SWIPT Relay Networks with Differential Modulation**

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**27 Performance of Multi-Antenna Wireless-Powered Communications With Nonlinear Energy Harvester**

Yuzhen Huang, PLA University of Science and Technology; Trung Q. Duong, Queen's University Belfast; Anonymous Account 37119, Anonymous Account 1849, Anonymous

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**28 Robust Beamforming and Base Station Activation for Energy Efficient Downlink C-RAN**

Yong Wang, Lin Ma, Yubin Xu, Harbin Institute of Technology

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**29 SMDP-Based Resource Allocation for Wireless Networks with Energy Harvesting Constraints**

Mohammed Baljon, Mushu Li, Ryerson University; Hongbin Liang, Southwest Jiaotong University; Lian Zhao, Ryerson University

81603

**30 Transmission Strategy for D2D Terminal with Ambient RF Energy Harvesting**

Luyan Wang, Xi'an Jiaotong University; Xuewen Liao, Xi'an JiaoTong University; Yang Li, Xi'an Jiaotong University

60065

**31 Wake-up Radio-enabled Routing for Green Wireless Sensor Networks**

Stefano Basagni, Northeastern University; Valerio Di Valerio, University of Rome "La Sapienza"; Georgia Koutsandria, University of Rome "La Sapienza"; Chiara Petrioli, University of Rome La Sapienza

## 7. Ad-Hoc, M2M, and Sensor Networks Papers

71229

**1 A Data Aggregation Scheme with Fine-grained Access Control for the Smart Grid (invited paper)**

Wen Mi, Shanghai University of Electric Power, China; Xu Zhang, Shanghai University of Electric Power; Hongwei Li, University of Electronic Science and Technology of China, Chengdu; Anonymous Account 70762, Anonymous

22792

**2 A Joint SUCR Protocol and TA Information Pilot Random Access Scheme**

Xiaojie Li, Ying Li, Huimei Han, Xudong Guo, Xidian University

17666

**3 A New Backoff Scheme with Collision Detection for IEEE 802.11p Vehicular Networks**

Xiaoying Lei, Yangzhou University; Seung Hyong Rhee, Kwangwoon University

75069

**4 An Experimental Baseline for Underwater Acoustic Broadcasts**

Stephane Blouin, DRDC Atlantic Research Centre; Michel Barbeau, Carleton University

87262

**5 A Runtime Framework for Context-Sensitive Device-to-Device Communication**

Zhang Yan, Beijing University of Post and Telecommunication; Zheng Song, Virginia Tech; Tian Ye, Beijing University of Post and Telecommunication; Wendong Wang, Beijing University of Posts & Telecom.

71626

**6 Coordinationless Coordinated Fastlane Network Service in Wireless Multimedia Sensor Networks**

Zhonghu Xu, Kai Xing, University of Science and Technology of China

85123

**7 Cost-efficient VNF Placement Strategy for IoT Networks with Availability Assurance**

He Zhu, Changcheng Huang, Carleton University

89150

**8 Coverage Maximization with Switched Multi-Element Antennas in Next Generation Cellular Networks**

Shih-Fan Chou, Hsiu-Wen Yen, Yen-Ju Chen, Ai-Chun Pang, National Taiwan University; Ting-Wu Ho, Industrial Technology Research Institute

44987

**9 Cross-layer QoE-based Incentive Mechanism for Video Streaming in Multi-hop Wireless Networks**

Mahdi Mousavi, Technical University of Darmstadt; Anonymous Account 76561, Anonymous; Wasiur R. KhudaBukhsh, Technical University of Darmstadt; Heinz Koepl, Technische Universitaet Darmstadt; Anja Klein, TU Darmstadt

61328

**10 Data Collection from Smart-city Sensors through large-scale Urban Vehicular Network**

Muhammad Awais Khan, Instituto de Telecomunicações, Portugal; Susana Sargento, IT - Universidade de Aveiro; Miguel Luís, Instituto de Telecomunicações

33798

**11 DFTR: Dynamic Fault-Tolerant Routing protocol for Convergecast WSNs**

G rard Chalhoub, Hamadoun Tall, Jinpeng WANG, Michel MISSON, Universit  Clermont Auvergne

39023

**12 Discovering Routers as Secondary Landmarks for Accurate IP Geolocation**

Zhihao Wang, Institute of Information Engineering, Chinese Academy of Sciences; Yongle Chen, Taiyuan University of Technology; Hui Wen, Institute of Information Engineering, Chinese Academy of Sciences; Lian Zhao, Ryerson University; Limin Sun, University of Chinese Academy of Sciences

50071

**13 Distributed Antenna System using Concurrent Transmission for Wireless Automation System**

Kulanuch Chutisemachai, Theerat Sakdejayont, Chun-Hao Liao, Makoto Suzuki, Hiroyuki Morikawa, The University of Tokyo

31423

**14 Distributed fast loop-free transition of routing protocols**

Nina Pelagie Bekono, Universit  Clermont Auvergne; Nancy El Rachkidy, Universit  Blaise Pascal; Alexandre Guitton, Universit  Clermont Auvergne

91611

**15 Dynamic Anchors based Void Avoidance Scheme for Real-time Application in WSNs**

Sangdae Kim, Taehun Yang, Cheonyong Kim, Hyunchong Cho, Chungnam National University; Sang-Ha Kim, ChungNam National University

39127

**16 Dynamic Power Strategy Space for Non-Cooperative Power Game With Pricing**

Shu Fu, Chongqing University; Zhou Su, Shanghai University, China

20176

**17 Effective Capacity of Multi-Stream MIMO-ZFBF Communications in Large Wireless Networks**

Mohammad G. Khoshkholgh, UBC; Victor C. M. Leung, The University of British Columbia

39534

**18 Efficient Bayesian Communication Approach For Smart Agriculture Applications**

Cristanel Razafimandimby, Inria Lille; Valeria Loseri, Inria Lille - Nord Europe; Anna Maria Vegni, University of Roma Tre; Alessandro Neri, COMLAB Telecommunications Laboratory, Rome, Italy

63525

**19 Energy-Efficient Millimeter-Wave M2M 5G Systems with Beam-Aware DRX Mechanism**

Cheng-Hsiang Ho, An Huang, Ping-Jung Hsieh, Hung-Yu Wei, National Taiwan University

84455

**20 Energy-efficient Preventive Mechanism for Fault Tolerance in Wireless Multimedia Sensor Networks**

Bouatit Mohamed-Nacer, CEDRIC/CNAM PARIS; selma boumerdassi, CNAM; Adel Djama, ESI; Ruben H. Milocco, GCAyS, Fac. Ingenieria. U.N. Comahue

19869

**21 Fair Resource Allocation Algorithm for Chunk based OFDMA Multi-User Networks**

Yanyan Shen, Xiao xia Huang, Shenzhen Institutes of Advanced Technology, CAS; Bo Yang, Shanghai Jiaotong University; Shimin Gong, Shenzhen Institutes of Advanced Technology; Shuqiang Wang, Shenzhen Institutes of Advanced Technology, CAS

72719

**22 Full-Duplex SIMO Relaying for Machine-Type Communications in Cellular Networks**

Utku Tefek, Teng Joon Lim, National University of Singapore

85752

**23 Grouping Based Uplink Resource Allocation for Massive M2M Communications over LTE-A**

Shaoyi Xu, Beijing Jiaotong University

62147

**24 Leveraging Path Planning of Maritime Wireless Sensor Network for Hydrologic Information Monitoring At Open Sea Area**

Xiao Chen, Tingting Yang, Ouyang Zhenfeng, Dalian Maritime University; Ruilong Deng, University of Alberta

42372

**25 Location-based Decision-making Mechanism for Device-to-Device Link Establishment**

Filip Lemic, Technische Universit t Berlin; Arash Behboodi, RWTH Aachen University; Vlado Handziski, Anatolij Zubow, Adam Wolisz, Technische Universit t Berlin

12179

**26 Measuring Centrality Metrics Based on Time-ordered Graph in Mobile Social Networks**

Huan Zhou, China Three Gorges University; Chunsheng Zhu, Victor C. M. Leung, The University of British Columbia; Shouzhi Xu, China Three Gorges University

97654

**27 Multi-Parameter Based Self-Feedback Effectiveness Evaluation in a Multi-Sensor Fusion Positioning System**

Wanlong Zhao, Weixiao Meng, Han Shuai, Harbin Institute of Technology; Rose Qingyang Hu, Utah State University

57305

**28 Online Pricing Crowdsensed Fingerprints for Accurate Indoor Localization**

Xiaohua Tian, Wencan Zhang, Shanghai Jiao Tong University; Jingchao Wang, Institute of China Electronic System Engineering Corporation; Wenxin Li, Shitao Li, Xinyu Wu, Yucheng Yang, Shanghai Jiao Tong University

25976

**29 On OFDM-Based Resource Allocation in LTE Radio Management System for Unmanned Aerial Vehicles (UAVs) (Invited Paper)**

Hiroki Nishiyama, Yuichi Kawamoto, Daisuke Takaishi, Tohoku University

85756

**30 On Physical Layer Security in Finite-Area Wireless Networks: An Analysis Framework**

Jiajia Liu, Xidian University, China; Jiahao Dai, Yongpeng Shi, Wen Sun, Xidian University; Anonymous Account 83903, Anonymous

58018

**31 Opportunistic Scheduling of Machine Type Communications as Underlay to Cellular Networks**

Samad Ali, Nandana Rajatheva, University of Oulu

69017

**32 Performance analysis of video services over WLANs with channel bonding**

mengqi han, Sami Khairy, IIT; Lin Cai, Yu Cheng, Illinois Institute of Technology; Fen Hou, University of Macau

32085

**33 Performance of data caching in cloud sensing**

Jelena Mistic, Vojislav Mistic, Fatemeh Banaie, Ryerson University

54482

- 34 Performance of LoRa-based IoT Applications on Campus**  
Shie-Yuan Wang, Yo-Ru Chen, Tzu-Yang Chen, Chia-Hung Chang, Yu-Hsiang Cheng, Chun-Chia Hsu, Yi-Bing Lin, National Chiao Tung University

51401

- 35 Privacy-preserving Time-sharing Services for Autonomous Vehicles**  
Mohammad Hadian, University of Massachusetts Boston; Xiaohui Liang, University of Massachusetts Boston, USA; Thamer Altuwaiyan, University of Massachusetts Boston

75042

- 36 Prototype System based Enhanced Scheduled Access Mechanism for WBAN**  
Yao Zhang, Changle Li, Xidian University; Tom Luan, Deakin University, Australia; Yueyang Song, Xiaoming Yuan, Xidian University

62371

- 37 Scheduling transmissions with latency constraints in an IEEE 802.15.4e TSCH network**  
Ines Khoufi, Pascale Minet, Inria; Badr Rmili, CNES

90590

- 38 Sensor Calibration for Floor Detection by D2D Communications**  
Ting-Hui Chiang, National Chiao-Tung University; Ling-Jyh Chen, Academia Sinica; Yu-Chee Tseng, National Chiao Tung University

57098

- 39 Task delegation through multi-agent negotiation in embedded systems by the platform MERMAID**  
Tifaine Inguere, University of Maine and STMicroelectronics; Florent Carlier, Valérie Renault, University of Maine

59772

- 40 The Energy Efficient and Disjointed Multipath for Void Handling in Wireless Sensor Networks**  
Hyunchong Cho, Chungnam National University; Seungmin Oh, UCLA; Yongbin Yim, Sangdae Kim, Taehun Yang, Chungnam National University; Sang-Ha Kim, ChungNam National University

27411

- 41 The Multi-Cast Packet Loss in Mobile Ad-hoc Networks**  
Siyang Liu, Shanghai Jiao Tong University; Jingchao Wang, Institute of China Electronic System Engineering Corporation; Xiaoying Gan, Shanghai Jiaotong University; Xiaohua Tian, Shanghai Jiao Tong University

82166

- 42 Trail-based Location Service in Event-driven Wireless Sensor and Actor Networks**  
Guanglun Liu, Zhezhuang Xu, Haotian Yan, Hao Jiang, Fuzhou University; Cailian Chen, Shanghai Jiao Tong University; Li Yu, Huazhong University of Science and Technology

93741

- 43 Transmission Rate Analysis in Multi-level Hierarchical Coded Caching**  
Cai guoqing, Xiong Wang, Jinbei Zhang, Shanghai Jiao tong university; Jingchao Wang, Institute of China Electronic System Engineering Corporation; Xiaoying Gan, Shanghai Jiaotong University; Xiaohua Tian, Shanghai Jiao Tong University; Xingbing Wang, Shanghai Jiao tong university

39822

- 44 Uniqueness-based Resource Allocation for M2M Communications in Narrowband IoT Networks**  
Ahmed Elhamy Mostafa, The University of British Columbia; Yasser Gadallah, The American University in Cairo

## 8. Wireless Networks: Protocols, Security and Services Papers

97567

- 1 AAOG: Anti-Addiction on Online Gaming leveraging CSI from Commodity WiFi Devices**  
YuFu, Hefei University of Technology; MIN PENG, HeFei University of Technology (HFUT); Qing F. Zhou, HeFei University of Technology

43297

- 2 A Cross-Layer Downlink Scheduling Scheme for Balancing QoS in IEEE 802.16 Broadband Wireless Access Systems**  
Hassen Hamouda, Majmaah University; Mohamed Ouweis Kabaou, Gabes University; Mohamed Salim Bouhlel, University of Sfax

20962

- 3 A low complexity matching game approach for LTE-Unlicensed**  
Francesco Chiti, University of Florence; Romano, University of Florence; Benedetta Picano, University of Florence; Yunan Gu, Xunsheng Du, Zhu Han, University of Houston

23435

- 4 Analysis of a LTE-based Textile Massive MIMO Proposal for Public Safety Networks**  
Estefanía Crespo-Bardera, Matilde Sánchez-Fernández, Ana García-Armada, Universidad Carlos III de Madrid; Aaron Garrido Martín, Alfonso Fernández Durán, Nokia Spain

70792

- 5 An Optimized Fast Handover Scheme Based on Distributed Antenna System for High-Speed Railway**  
Wael Ali, Junyuan Wang, H. Zhu, Jiangzhou Wang, University of Kent

68023

- 6 Artificial-Noise-Resistant Eavesdropping in MISO Wiretap Channels: Receiver Construction and Performance Analysis**  
Dongyang Xu, Pinyi Ren, Xi'an Jiaotong University; James A Ritcey, University of Washington

41763

- 7 Cognitive Radio Networking with Cooperative and Energy Harvesting**  
Ala'eddin Masadeh, Ahmed Kamal, Zhengdao Wang, Iowa State University

33285

- 8 Control of Multi-Hop Wireless Networks with Security Constraints**  
Qiuming Liu, Li Yu, Jun Zheng, Huazhong University of Science and Technology

11053

- 9 Cooperative Anti-Jamming Strategy and Outage Probability Optimization for Multi-hop Ad-hoc Networks**  
Xiuji Wang, Ming Lei, Minjian Zhao, Zhejiang University; Min Li, The University of Newcastle

16209

- 10 Cooperative Secure Transmission for Two-Hop Relay Networks With Limited Feedback**  
Dawei Wang, Pinyi Ren, Xi'an Jiaotong University; Julian Cheng, University of British Columbia; Qinghe Du, Yichen Wang, Li Sun, Xi'an Jiaotong University

32468

- 11 Data Dissemination in Software-Defined Vehicular Networks (Invited Paper)**  
Yuanzhi Ni, University of Victoria; Jianping He, Shanghai Jiao Tong University; Lin Cai, University of Victoria

63348

- 12 Distributed Simplicial Homology Based Load Balancing Algorithm for Cellular Networks**  
Ngoc-Khuyen LE, Anais Vergne, Telecom ParisTech; Philippe Martins, Télécom ParisTech; Laurent Decreusefond, Telecom Paristech

55193

**13 Efficient Flow Instantiation via Source Routing in Software Defined Vehicular Networks**

Kushan Sudheera, Ma Maode, Nanyang Technological University; Professor Peter Han Joo Chong, Auckland University of Technology

48013

**14 Eliminating Pilot Contamination Using Dual Pilot Sequences in Massive MIMO (Invited Paper)**

Abdelmalik Nasser Aljalai, The University of British Columbia; Chen Feng, University of British Columbia Okanagan; Victor C. M. Leung, Rabab Ward, The University of British Columbia

53247

**15 Enabling Backoff and Eliminating Redundant Idle Period for Medium Access in LTE-U**

Geeth P. Wijesiri N.B.A., Frank Y. Li, University of Agder

79784

**16 Energy Harvesting in Heterogenous Networks with Hybrid Powered Communication Systems**

Ahmad Alsharoa, Iowa State University; Abdulkadir Celik, King Abdullah University of Science and Technology; Ahmed Kamal, Iowa State University

98857

**17 Gaming and Learning Approaches for Multi-user Computation Offloading (Invited Paper)**

Sowndarya Sundar, Ben Liang, University of Toronto

63753

**18 (Invited Paper) Handoff Delay Analysis in SDN-enabled Mobile Networks: A Network Calculus Approach**

Chun-Rong Lin, Yu-Jia Chen, Li-Chun Wang, National Chiao Tung University

24287

**19 LTE Physical-Layer Identity Detection in the Presence of Jamming**

Amr El-Keyi, Carleton University; Oktay Ureten, Trevor Yensen, Allen-Vanguard Corporation; Halim Yanikomeroglu, Carleton University

91658

**20 MISO Secure Transmission with Imperfect Channel State Information**

Huanhuan Song, University of Electronic Science and Technology of China; Hong Wen, University of Elec. Science and Tech. of China; Lin Hu, University of Electronic Science and Technology of China; Zhengguang Zhang, University of Elec. Science and Tech. of China; Luping Zhang, University of Electronic Science and Technology of China

22518

**21 Optimal Cost-Based Cyber Insurance Policy Management for Mobile Services**

Dinh Thai Hoang, Dusit Niyato, Ping Wang, Nanyang Technological University

43802

**22 Optimal Power Allocation to Increase Secure Energy Efficiency in A Two-Way Relay Network**

Rugui YAO, Tamer MEKKAWY, Fei XU, Northwestern Polytechnical University

78604

**23 Performance Analysis of a Mission-Critical Portable LTE System in Targeted RF Interference**

Vuk Marojevic, Raghunandan M Rao, Sean Ha, Jeffrey Reed, Virginia Tech

36652

**24 Recommendation Trust for Improved Malicious Node Detection in Ad hoc Networks**

Saneeha Ahmed, NED University of Engineering and Technology

22917

**25 Reed Solomon Codes for the Reconciliation of Wireless PHY Layer based Secret Keys**

Michelle Fernando, Dhammika Jayalath, Queensland University of Technology; Seyit Camtepe, DATA61 / CSIRO; Ernest Foo, Queensland University of Technology

65906

**26 Reputation Routing in MANETs**

Prateek Kumar Singh, Koushik Kar, Rensselaer Polytechnic Institute; Charles Kamhoua, Air Force Research Laboratory

67080

**27 Resource Allocation in Software-defined and Information-Centric Vehicular Networks with Mobile Edge Computing**

Ying He, Chengchao Liang, Carleton University; Zheng Zhang, Beijing University of Technology; F. Richard Yu, Carleton University, Canada; Nan Zhao, Hongxi Yin, Dalian University of Technology; Anonymous Account 61439, Anonymous

27471

**28 Schemes for Enabling Vehicles Parked Out-of-RSU Range to Participate in Group Communication**

Young-Hoon Park, Sookmyung Women's University

70776

**29 Secrecy Performance of Full-Duplex Relay System With Randomly Located Eavesdroppers**

Donghyun Jung, Jae Hong Lee, Seoul National University

24839

**30 Secure Transmission Scheme in K-tier Dense Heterogeneous Cellular Networks with Imperfect Channel State Information**

Yunjia Xu, Kaizhi Huang, Dazhao Ding, Xiaohui Qi, Yajun Chen, National Digital Switching System Engineering and Technological Center

34637

**31 Security in Use Cases of Vehicle-to-everything Communications (Invited Paper)**

Kaigui Bian, Gaoxiang Zhang, Lingyang Song, Peking University

21814

**32 To Bond or not to Bond: An Optimal Channel Allocation Algorithm For Flexible Dynamic Channel Bonding in WLANs**

Caihong Kai, Yuting Liang, Tianyu Huang, Hefei University of Technology; Xu Chen, Sun Yat-Sen University

26057

**33 Utility Privacy Trade-off for Noisy Channels in OFDM Systems**

Mehmet Özgün Demir, Bo?aziçi University; Selahattin Gökceli, Istanbul Technical University; Guido Dartmann, University of Applied Sciences Trier; Volker Lücken, Gerd Ascheid, RWTH Aachen University; Gunes Kurt, Istanbul Technical University

55184

**34 Video Rate Adaptation and Traffic Engineering in Mobile Edge Computing and Caching-enabled Wireless Networks**

Chengchao Liang, Ying He, Carleton University; F. Richard Yu, Carleton University, Canada; Nan Zhao, Dalian University of Technology

53161

**35 Wireless Physical Layer Characteristics Based Random Number Generator: Hijack Attackers**

Ning Gao, Xiaojun Jing, Beijing University of Posts and Telecommunications; Shichao Lv, University of Chinese Academy of Sciences; Junsheng Mu, Beijing University of Posts and Telecommunications; Limin Sun, University of Chinese Academy of Sciences

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## 9. Mobile Satellite Systems, Positioning and Navigation Papers

86685

- 1 5G Ubiquitous Sensing: Passive Environmental Perception in Cellular Systems**  
Bahareh Gholampoorayzdi, Isha Singh, Stephan Sigg, Aalto University

27185

- 2 A Cross-Layer Image Transmission Scheme for Deep Space Exploration**  
Junxin LUO, Shenzhen Graduate School, Harbin Institute of Technology; Shaohua Wu, Harbin Institute of Technology; Siyue Xu, Jian JIAO, Shenzhen Graduate School, Harbin Institute of Technology; Zhang Qinyu, Harbin Institute of Tech.

99348

- 3 A Globally Optimal Solution to Maximum Likelihood Bearing-Only Geolocation**  
Yifeng Zhou, Communications Research Centre Canada

53393

- 4 A Self-Navigation Method with Monocular Plane Discovery**  
Shan Meng, Zhixian Wen, Xiaojian Su, Wenming Tang, Shenzhen University

85646

- 5 Channel Estimation for Overlay Coding in Multibeam Satellite Systems**  
Nazli Ahmad Khan Beigi, Mohammad Reza Soleymani, Concordia University

88605

- 6 Combined UKF/KF for Fast In-motion Attitude Determination of SINS**  
Siyuan Tan, Wenhao Wang, Bocheng Zhu, Peking University

17175

- 7 Confidence Field-based Temporal Alignment and Positioning for Vehicles Using Multiple Sensors**  
Jinlong SUN, Zhilu Wu, Zhendong Yin, Harbin Institute of Technology

70973

- 8 Cramer-Rao Bound Analysis of Wi-Fi Indoor Localization Using Fingerprint and Assistant Nodes**  
LI Qiyue, Wei LI, Wei Sun, Jie LI, Hefei University of Technology; Zhi LIU, Shizuoka University

77090

- 9 Cram'er-Rao Lower Bounds for Positioning with Large Intelligent Surfaces**  
Sha Hu, Fredrik Rusek, Ove Edfors, Lund University

61260

- 10 Holding-Manner-Free Heading Change Estimation for Smartphone-based Indoor Positioning**  
Lili Xie, Fujitsu Research and Development Center Co., Ltd.; TIAN Jun, Fujitsu R&D Center; Genming Ding, Fujitsu Research & Development Center, Co. Ltd.; Qian Zhao, Fujitsu Research and Development Center Co., Ltd.

57948

- 11 Multipath-Aided Direct Path ToA Reconstruction for Integrated UWB Receivers in Generalized NLoS**  
Jimmy MACERAUDI, François Dehmas, CEA-Leti; Benoît Denis, CEA-Leti Minatoc; Bernard Uguen, IETR / CNRS / Université Rennes-I

28284

- 12 Performance Analysis of Physical Layer Network Coding for Two-way Relaying over Non-regenerative Communication Satellites**  
B. Sundar Rajan, Indian Institute of Science, Bangalore; Saket D. Buch, Indian Institute of Science

89041

- 13 Position Estimation Under Model Misspecification**  
Rico Mendrzik, Gerhard Bauch, Hamburg University of Technology

73891

- 14 "Silence is Golden": Exploring Ambient Signals for Detecting Motions in a Real-time Manner**  
Yu Gu, Jinhai Zhan, Hefei University of Technology; Anonymous Account 81834, Anonymous; Xiaoyan Wang, Ibaraki University

42117

- 15 Sub-Nyquist Rate UWB Indoor Positioning using Power Delay Profile and Time of Arrival Estimates**  
Bilal Maqsood, Ijaz Haider Naqvi, Lahore University of Management Sciences

35929

- 16 Wireless Localisation Using Spectral Flatness Weights**  
Orestis Georgiou, Ultrahaptics; William Thompson, Toshiba TREL

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## 10. Vehicular Communications, Networks, and Telematics Papers

34435

- 1 Achieving Secure CoMP Joint Transmission Handover in LTE-A Vehicular Networks**  
Qinglei Kong, Ma Maode, Nanyang Technological University; Rongxing LU, University of New Brunswick

21971

- 2 Adaptive Channel Prediction, Beamforming and Scheduling Design for 5G V2I Network**  
Tadilo Endeshaw Bogale, INRS, University of Quebec; Xianbin Wang, The University of Western Ontario; Long Le, INRS, University of Quebec

71332

- 3 A Measurement-Based Handover Method for Communication-Based Train Control Systems**  
Mei Ya Chan, Sami Baroudi, University of Toronto; Joseph Siu, Thales Canada Transportation Solutions; Jorg Liebherr, University of Toronto

60172

- 4 A multi-radio, multi-hop ad-hoc radio communication network for Communications-Based Train Control (CBTC)**  
Jahanzeb Farooq, Siemens A/S, Ballerup, Denmark; Lars Bro, nyantec UG, Berlin, Germany; Rasmus Thystrup Karstensen, Siemens A/S, Ballerup, Denmark; Jose Soler, DTU Fotonik

22780

- 5 An RSU controlled IEEE 802.11ac based MAC protocol for Multi-vehicle uplink transmission in VANET**  
M Zulfiker Ali, Jelena Mistic, Vojislav Mistic, Ryerson University

18128

- 6 A Study of Pilot Placement Optimization with Constrained MDPs in IEEE802.11p Systems**  
Yan Yang, Beijing Jiaotong University; Yejun He, Shenzhen University; Mohsen Guizani, University of Idaho

37689

- 7 Autonomous Deployment of UAVs as Access Points to Serve Wireless Terminals**  
Che-Wei Chou, Li-Hsing Yen, National Chiao Tung University



59350

**8 Benchmarking In-Train Coverage Measurements of Mobile Cellular Users**

Taulant Berisha, Technische Universität Wien, Institute of Telecommunications (TU Wien); Philipp Svoboda, TU Wien; Stephan Ojak, OBB Technische Services GmbH; Christoph Mecklenbräuker, TU Wien

16917

**9 Bus-Based Cloudlet Cooperation Strategy in Vehicular Networks**

Zhe Wang, Zhangdui Zhong, Beijing Jiaotong University; Dongmei Zhao, McMaster University; Minming Ni, Beijing Jiaotong University

78697

**10 Connectivity and clustering in a network of randomly distributed vehicles on a highway**

Gleb Dubosarskii, Western University; Xianbin Wang, Serguei Primak, The University of Western Ontario

77119

**11 Cross-Layer Routing for Multicasting Multiple Description Coded Media in Wireless Mesh Networks**

Abdulelah Alganass, Dongmei Zhao, McMaster University

29478

**12 Decentralized Relaying and Performance Analysis in Vehicular Ad Hoc Networks**

Wuwen Lai, Beijing Institute of Technology; Wei Ni, CSIRO; Hua Wang, Beijing Institute of Technology; Ren Ping Liu, University of Technology Sydney

28778

**13 Enhanced Algorithms for the IEEE 802.11p Deployment in Vehicular Ad Hoc Networks**

Yamen Nasrallah, University of Ottawa; Irfan Al-Anbagi, University of Regina; Hussein T. Mouftah, University of Ottawa

85212

**14 Fairness-Aware Game Theoretic Approach for Service Management in Vehicular Clouds**

Moayad Aloqaily, Carleton University; Burak Kantarci, Hussein T. Mouftah, University of Ottawa

50377

**15 Joint Job Partition and Collaborative Computation Offloading in Multi-User Network**

Siqi Mu, Zhangdui Zhong, Beijing Jiaotong University; Dongmei Zhao, McMaster University; Minming Ni, Beijing Jiaotong University

40432

**16 Know Thy Neighbor - A Data-Driven Approach to Neighborhood Estimation in VANETs**

Karsten Roscher, Thomas Nitsche, Rudi Knorr, Fraunhofer ESK

68736

**17 MmWave System for Future ITS: A MAC-layer Approach for V2X Beam Steering**

Ioannis Mavromatis, Andrea Tassi, Robert Piechocki, Andrew Nix, University of Bristol

97045

**18 On the performance evaluation of vehicular PKI protocol for V2X communications security**

Farah Haidar, Arnaud Kaiser, IRT SystemX; Brigitte Lonc, Renault

18547

**19 Optimized Certificate Revocation List Distribution for Secure V2X Communications**

Giovanni Rigazzi, Andrea Tassi, Robert Piechocki, Theo Tryfonas, Andrew Nix, University of Bristol

21015

**20 Performance Improvement of Low-latency V2I Uplink Using Superposed Cooperative V2V Transmission**

Eiji Okamoto, Nagoya Institute of Technology; Hiraku Okada, Nagoya University; Yoshinao Ishii, Satoshi Makido, Toyota Central R&D Labs., Inc

79800

**21 Performance of eCall Modem with Turbo Codes in AWGN and AMR**

Samer Zakhem, John Liu, Jacob Brandenburg, Wayne State University

76869

**22 Probability-based Location Prediction Algorithm**

Qingqi Pei, Xidian University

99664

**23 RSS Estimation Based on Bayesian Learning Mechanism by Vehicular Sensor Networks**

Silan Zheng, Cailian Chen, Xiping Guan, Shanghai Jiao Tong University; Li Yu, Huazhong University of Science and Technology

33932

**24 RSSI-based Attention Target Approach Detection for a Vehicle Reminder System with Beaconing Devices**

Yoshito Watanabe, Yoza Shoji, NICT

18425

**25 Secrecy-Based Resource Allocation for Vehicular Communication Networks with Outdated CSI**

Wei Yang, Peking University; Rongqing Zhang, Colorado State University; Chen Chen, Xiang Cheng, Peking University

67734

**26 Security Modeling and Analysis on Intra Vehicular Network**

Jinli Zhong, Suguo Du, Lu Zhou, Shanghai Jiao Tong University; Haojin Zhu, Shanghai Jiaotong Univ, China; Fan Cheng, Cailian Chen, Shanghai Jiao Tong University; Qingshui Xue, Shanghai Institute of Technology

40206

**27 Smart Monitoring: Reckoning Traffic Statuses of Road System in Real-time Based on Scarce Road Surveillance Cameras**

Wenjian Ding, Yang Wang, Yan Guo, Wuji Chen, Liusheng Huang, Hengchang Liu, University of Science and Technology of China

73485

**28 SWeRC: Self-Weighted Semi-Cooperative DSRC Congestion Control based on LIMERIC**

Torsten Lorenzen, Leibniz Universität Hannover

49125

**29 Throughput Analysis of In-Vehicle Internet Access via On-Road WiFi Access Points**

Wenchao Xu, Haibo Zhou, Weisen Shi, University of Waterloo; Feng Lyu, Shanghai Jiao Tong University; Xuemin (Sherman) Shen, University of Waterloo

25237

**30 TLB-VTL: 3-Level Buffer based Virtual Traffic Light Scheme for Intelligent Collaborative Intersections**

Gaochao Wang, Yandong Hou, Yanyu Zhang, Yi Zhou, Henan University; Ning Lu, Thompson Rivers University, Canada; Nan Cheng, Huawei Technologies Canada Research and Development Centre

96964

**31 Train Velocity and Data Throughput - A Large Scale LTE Cellular Measurements Study**

Johan Garcia, Stefan Alfredsson, Anna Brunstrom, Karlstad University; Claes Beckman, KTH Center for Wireless Systems, Wireless@KTH

65844

**32 V2R Communication Protocol Based on Game Theory Inspired Clustering**

Celimuge Wu, Tsutomu Yoshinaga, The university of electro-communications; Yusheng Ji, National Institute of Informatics

82603

**33 Vehicle-to-Vehicle Message Content Plausibility Check through Low-Power Beaconing**

Taeho Kim, Hyogon Kim, Korea University

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## 11. Electric Vehicles, Vehicular Electronics, and Intelligent Transportation Papers

71309

**1 Active Control of Heavy Single Unit Vehicles - Integrated Yaw Stabilization and Rollover Mitigation, and Stability Analysis Using A Novel Method**

Ali Reza Armiyoon, Christine Q. Wu, University of Manitoba

36493

**2 Analysis of A Location-Aware Probabilistic Strategy for Opportunistic Vehicle-to-Vehicle Relay**

Wei Song, Xi Tao, University of New Brunswick, Fredericton, NB, Canada

50526

**3 Autonomous Vehicle as an Intelligent Transportation Service in a Smart City**

I-Cheng Lin, Che-Yu Lin, Hsuan-Man Hung, National Taiwan University; Cui Qimei, Beijing University of Posts and Telecommunications; Kwang-Cheng Chen, University of South Florida

83840

**4 Decentralized Coordination of Electric Vehicle Charging Stations for Active Power Compensation**

Peng Zhuang, University of Alberta; Hao Liang, University of Alberta, Canada

35561

**5 Diversification of Autonomous Vehicle Driving Behavior**

Tokunbo Makanju, Shinsaku Kiyomoto, KDDI Research

86435

**6 Fog Assisted Driver Behavior Monitoring for Intelligent Transportation System**

Dr. Mohammad Aazam, Ryerson University, Toronto, Canada; Xavier Fernando, Ryerson University

17223

**7 Impact of Varying Penetration Rate of Intelligent Routing Capabilities on Vehicular Traffic Flow**

Christian Backfrieder, Manuel Lindorfer, Upper Austria University of Applied Sciences; Christoph Mecklenbräuker, TU Wien; Gerald Ostermayer, Upper Austria University of Applied Sciences

97683

**8 Impact to Longitude Velocity Control of Autonomous Vehicle from Human Driver's Distraction Behavior**

Wen Yan, Suyu Peng, Southeast University; Chunguo Li, Southeast University, Nanjing, China; Luxi Yang, Southeast University

62137

**9 In-vehicle CAN message authentication: An evaluation based on industrial criteria**

Nasser Nowdehi, Aljoscha Lautenbach, Tomas Olovsson, Chalmers University of Technology

85237

**10 Motion simulation framework and models on the battlefield**

Qian Sun, Chinese Academy of Sciences; Lin Tian, Institute of Computing Technology, Chinese Academy of Sciences; Hongning Zhao, Bule Sun, Chinese Academy of Sciences; Yiqing Zhou, Institute of Computing Technology, Chinese Academy of Sciences; Bingqiang Yang, Huawei; Jinglin Shi, Institute of computing Chinese Academy of Sciences

54354

**11 Optimizing Service Frequency for Urban Rail Transit: A Game-Theoretical Methodology**

Jiao Ma, Changle Li, Dong Weiwei, Zhe Liu, Xidian University; Tom Luan, Deakin University, Australia; Lina Zhu, Xidian University

63585

**12 Parameter Estimation of Traction Batteries by Energy and Charge Counting during Reference Cycles**

Joern Adermann, Daniel Brecheisen, Philip Wacker, Lienkamp Markus, Technical University of Munich

59119

**13 Performance Evaluation of A Hybrid-beamforming Sounder for 26 GHz Channel Measurements**

Xuefeng, Xi Chu, Jiajing Chen, Tongji University; Zhimeng Zhong, Huawei Technologies Co., Ltd.

77074

**14 Reliability comparison of bidirectional automotive dc/dc converters**

Michael Muerken, AUDI AG; Peter Gratzfeld, Karlsruher Institut of Technologie

35444

**15 Stable Matching Based Cooperative V2V Charging Mechanism for Electric Vehicles**

Rongqing Zhang, Colorado State University; Xiang Cheng, Peking University; Anonymous Account 62109, Anonymous

15867

**16 Towards an Application for Real-Time Travel Mode Detection in Urban Centers**

Elton Soares, Carlos Alvaro Quintella, Carlos Alberto Vieira Campos, Federal University of the State of Rio de Janeiro

31560

**17 Vehicle-to-Grid Frequency Regulation Signal Optimization based on Inhomogeneous Hidden Markov Model**

Yuan Liu, University of Alberta; Hao Liang, University of Alberta, Canada

72658

**18 Whether to Charge or Discharge an Electric Vehicle? An Optimal Approach in Polynomial Time**

Ruilong Deng, University of Alberta; Hao Liang, University of Alberta, Canada

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## 12. Future Trends and Emerging Technologies Papers

68633

**1 Achieving Unconditional Security for MIMO-BAN Under Short Blocklength Wiretap Code**

Tang Jie, University of Electronic Science and Technology of China; Hong Wen, University of Elec. Science and Tech. of China; Kai Zeng,

George Mason University; Lin Hu, Song Lin Chen, University of Electronic Science and Technology of China

26241

**2 Adaptive Distributed Laser Charging for Efficient Wireless Power Transfer**

Qingqing Zhang, Tongji University; Xiaojun Shi, China Electronics Technology Group Corporation; Qingwen Liu, Tongji University; Anonymous Account 67608, Anonymous; Pengfei Xia, Tongji University; Yong Liao, China Academy of Electronics and Information Technology

98346

**3 A Joint Batch-Routing and Channel Assignment Approach in Hybrid Data Center Networks**

Boutheina DAB, University Paris-Est; Ilhem Fajjari, Orange Labs; Nadjib Aitsaadi, ESIEE Paris

26043

**4 A New Node Centrality Evaluation Model for Multi-community Weighted Social Networks**

Jingru Li, Li Yu, Huazhong University of Science and Technology; Jia Zhao, Wuhan Zhongyuan Electronics Group Co., Ltd.; Chaozhun Wen, Huazhong University of Science and Technology

42457

**5 A PHY-Aided Secure IoT Healthcare System With Collaboration of Social Networks**

Peng Hao, Xianbin Wang, The University of Western Ontario

66171

**6 BeamSpace MIMO-NOMA for Millimeter-Wave Communications Using Lens Antenna Arrays**

Bichai Wang, Linglong Dai, Tsinghua University; Xiqi Gao, Southeast University; Lajos Hanzo, University of Southampton

31216

**7 Cooperative Jamming Aided Secrecy Enhancement in Wireless Networks With Multiple Eavesdroppers**

Lin Hu, University of Electronic Science and Technology of China; Hong Wen, University of Elec. Science and Tech. of China; Bin Wu, Tianjin University; Tang Jie, Fei Pan, University of Electronic Science and Technology of China; Zhengguang Zhang, University of Elec. Science and Tech. of China; Yixin Jiang, Southern Electric Power Research Institute; Aidong Xu, Electric Power Research Institute China Southern Power Grid

27556

**8 Cooperative Neural Fitted Learning for Distributed Energy Management in Microgrids via Wireless Networks**

Weirong Liu, Peng Zhuang, Yuan Liu, University of Alberta; Hao Liang, University of Alberta, Canada; Zhiwu Huang, Jun Peng, Central South University

53457

**9 Delay Analysis of a Reliable Broadcast Scheme for 12V/V2I Communications**

Dr. Atef Abdrabou, United Arab Emirates University; Sagar Naik, University of Waterloo, Canada

57138

**10 Design and Analysis of an Iterative Quantum Receiver With Photon-Number-Resolving Detector**

Chenjia Wei, Lingda Wang, Xiaolin Zhou, Pengfei Tian, Fudan University; Julian Cheng, University of British Columbia

18077

**11 Design of TD-LTE based Signal Indoor Distribution System**

Tingting Yang, Ouyang Zhenfeng, Dalian Maritime University; Jiajia Liu, Xidian University; Zhou Su, Shanghai University; Tom Luan, Deakin University, Australia

10170

**12 Dynamics of Communication, Caching and Computing Resource Sharing: a Game Model**

Hanwen Zhang, Gang Liu, Zheng Ma, Pingzhi Fan, Southwest Jiaotong University

38097

**13 Energy Efficient Packet Transmission Strategies for Wireless Body Area Networks with Rechargeable Sensors**

Zhen Zhao, Shiwei Huang, Jun Cai, University of Manitoba

35691

**14 Load Balancing Oriented Computation Offloading in Mobile Cloudlet**

Danhui Yao, Lin Gui, Shanghai Jiao Tong University; Fen Hou, University of Macau; Fei Sun, Shanghai Jiao Tong University; Daihui Mo, Institute of China Electronic Equipment System Engineering Corporation; Hangguan Shan, Zhejiang University

85929

**15 MIMO Radars with Orthogonal Waveforms: A Novel Approach for Enhanced Performance under Swerling Targets**

Faran Awais Butt, Lahore University of Management Sciences (LUMS); Ijaz Haider Naqvi, Lahore University of Management Sciences; Usman Riaz, Air University Islamabad

12422

**16 MOSTPC: Performance of A Massive Oblique Space-Time-Polarization Precoding System over Ricean-K Fading Channel**

Chenggui Lou, Bin Cao, Lin Gao, Harbin Institute of Technology; Limin Sun, University of Chinese Academy of Sciences; Zhang Qinyu, Harbin Institute of Tech.

71003

**17 Multi-Path TCP Incomplete Information Repeated Bayesian Game**

Mohammad Javad shamani, UNSW; Saeid Rezaei, West Tehran Islamic Azad University; Aruna Seneviratne, Data 61 group, NICTA; Hamed Kebriaei, University of Tehran

47132

**18 Novel Asymmetric Zero Correlation Zone Sequence Sets for Code Division Multiple Access**

Longye Wang, Xiaoli Zeng, Tibet University; Hong Wen, University of Elec. Science and Tech. of China; Gaoyuan Zhang, HAUST

82634

**19 Optimal Stochastic Package Delivery Planning with Deadline: A Cardinality Minimization in Routing**

Suttinee Sawadsitang, Nanyang Technological University; Jiang Siwei, Singapore Institute of Manufacturing Technology (SIMTech) A\*STAR; Dusit Niyato, Ping Wang, Nanyang Technological University

22678

**20 Physical Layer Security Assisted 5G Network Security**

Fei Pan, University of Electronic Science and Technology of China; Yixin Jiang, Southern Electric Power Research Institute; Hong Wen, University of Elec. Science and Tech. of China; Runfa Liao, University of Electronic Science and Technology of China; Aidong Xu, Electric Power Research Institute China Southern Power Grid

59841

**21 PQuery: Achieving Privacy-Preserving Query with Communication Efficiency in Internet of Things**

Nafiseh Izadi Yekta, Rongxing LU, University of New Brunswick

72734

**22 Quantum Multiuser Communication Systems with Adaptive Feedback Measurement and Chip-Interleaved Iter-PIC Receiver**

Lingda Wang, Xiaolin Zhou, Pengfei Tian, Fudan University

25887

**23 Resource Allocation for Content Delivery in Cache-enabled OFDMA Small Cell Networks**

Xiuhua Li, University of British Columbia; Xiaofei Wang, Keqiu Li, Tianjin University; Hongjun Chi, Shandong Academy of Sciences; Victor C. M. Leung, The University of British Columbia

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56257

**24 Resource Allocation for Energy Harvesting Assisted D2D Communications Underlying OFDMA Cellular Networks**

Shuo Yu, Ryerson University; Waleed Ejaz, Ryerson University, Canada; Ling Guan, Alagan Anpalagan, Ryerson University

96769

**25 Selective Free Data Access to Cellular Networks**

Behdad Heidarpour, École de technologie supérieure; Zbigniew Dziong, ETS; Wing Cheong Lau, The Chinese University of Hong Kong; Shahin Vakilinia, Concordia university

52168

**26 Stochastic Game between Cloud Broker and Cloudlet for Mobile Cloud Computing**

Fenghui Zhang, West Anhui university; Yuan Liu, University of Alberta; Weirong Liu, Hao Liang, Yi Zang, University of Alberta, Canada; Maosheng Fu, West Anhui university

40153

**27 Time-saving First: Coflow Scheduling for Datacenter Networks**

Wuyunzhaola Borjigin, Muroran Institute of Technology; Kaoru Ota, Muroran Institute of Technology, Japan; Mianxiong Dong, Muroran Institute of Technology

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## Recent Results Papers

90486

**1 Addressing Deep Indoor Coverage in Narrowband-5G**

Sandip Gangakhedkar, Huawei Technologies Duesseldorf GmbH; Dr. Ömer Bulakci, Huawei Technologies GRC; Joseph Eichinger, Huawei Technologies Duesseldorf GmbH

95444

**2 A Fresh Look into the Handoff Mechanism of IEEE 802.11s under Mobility**

Adnan Noor Mian, Tayyaba Liaqat, Abdul Hameed, Information Technology University, Lahore

23905

**3 A Multi-Class Dispatching and Charging Scheme for Autonomous Electric Mobility On-Demand**

Syrine Belakaria, Mustafa Ammous, Sameh Sorour, Ahmed Abdel-Rahim, University of Idaho

21307

**4 Analysis of LTE Relay Interface for Self-Backhauling in LTE Mesh Networks**

Romain Favraud, Navid Nikaein, Eurecom

18673

**5 A Novel Airborne Self Organising Architecture for 5G+ Networks**

Hamed Ahmadi, University College Dublin; Konstantinos Katzis, European University Cyprus; Muhammad Zeeshan Shakir, University of the West of Scotland

56461

**6 Application of Short Erasure Correcting Codes for Cognitive Radio**

Muhammad Moazam Azeem, Université Pierre et Marie CURIE (UPMC), Paris; Abdul Baqi Khan, Jubail University College; Uzma Azeem, Yanbu University College

10793

**7 A Protocol for Data Discovery and Retrieval in Content-Centric and Delay-Tolerant Networks**

Cláudio Diego Souza, Danielle Ferreira, Carlos Alberto Vieira Campos, Federal University of the State of Rio de Janeiro

73349

**8 Associating Spatial Information to Directional Millimeter Wave Channel Measurements**

Erich Zöchmann, Martin Lerch, Stefan Pratschner, Ronald Nissel, Sebastian Caban, Markus Rupp, TU Wien

39281

**9 A Suboptimal Approach for Minimum Transmit Power NOMA Beamforming**

Jinho Choi, Gwangju Institute of Science and Technology

65096

**10 Capacity Analysis and Optimization of Millimeter Wave Cellular Networks with Beam Scanning**

Rui Xu, Jiancun Fan, Ying Zhang, Xinmin Luo, Xi'an Jiaotong University

61366

**11 Cognitive Radio Based Resource Allocation for Sum Rate Maximization in Dual Satellite Systems**

Dai Nguyen, INRS, University of Quebec; Minh Tri Nguyen, Long Le, INRS- University of Quebec

56151

**12 Constellation Design for Quadrature Spatial Modulation**

Binh Vo, Ha H. Nguyen, University of Saskatchewan; H. D. Tuan, University of Technology, Sydney

33898

**13 Cross-Correlation Properties of Large-Scale Parameters Based on LTE Channel Measurements in High-Speed Railway Scenarios**

Nan Zhang, Cheng Tao, Tao Zhou, Beijing Jiaotong University

60932

**14 Digital Cancellation of the Remodulation Effect in IQ RFDAC Based LTE Direct Conversion Transmitters**

Jovan Markovic, Ram Sunil Kanumalli, Peter Preyler, Christian Mayer, DMCE GmbH & Co KG, Freistadter Straße 400, 4040 Linz; Mario Huemer, Johannes Kepler University Linz

68506

**15 Distributed Power Allocation in MIMO Interference Relay Networks with Direct Links via ADMM**

Cenk M. Yetis, Ronald Y. Chang, Academia Sinica

41887

**16 Energy-Efficient Hybrid Transceiver Designs for Millimeter Wave Communication Systems**

Deepa Jagyasi, P. Ubaidulla, International Institute of Information Technology (IIIT), Hyderabad

97213

**17 Energy Efficient Multiple Association in CoMP based 5G Cloud-RAN Systems**

Lilatul Ferdouse, Ali Alnoman, Ryerson University; Adrian Bulzacki, ARB Labs; Alagan Anpalagan, Ryerson University

59172

**18 Energy-saving Algorithm with Dimension Reduction on the Uplink for Multimedia Push**

Huangqing Chen, Tsinghua University; Zhihe Li, Zhong Xiaofeng, University of Tsinghua; Jing Wang, Tsinghua University

74902

**19 Fairness-Aware Interference Coordination by Combined SFR and CoMP for Heterogeneous Networks**

Luyao Xu, Harbin Institute of Technology, Shenzhen; Shaohua Wu, Harbin Institute of Technology; Jiao Xu, Ye Wang, Harbin Institute of Technology, Shenzhen; Zhang Qinyu, Harbin Institute of Tech.

12807

**20 Feasibility Study of Providing Backward Compatibility with MPTCP to WiGig/IEEE 802.11ad**

Kien Nguyen, NICT; Mirza Golam Kibria, National Institute of Information and Communication Technology; Kentaro Ishizu, Fumihide Kojima, NICT

95851

**21 Fuzzy-Based Joint User Association and Resource Allocation in HetNets**

Ali Alnoman, Lilatul Ferdouse, Alagan Anpalagan, Ryerson University

64587

**22 High Speed Beam Tracking Demonstrated Using a 28 GHz 5G Trial System**

Kjell Larsson, Ericsson Research; Björn Halvarsson, Damanjit Singh, Ericsson AB; Ranvir Chana, Jawad Manssour, Ericsson; Minsoo Na, Changsoon Choi, Sungho Jo, SK Telecom

69237

**23 IEEE 802.11ax: Joint Effects of Power Control and IQ Imbalance Mitigation Schemes on the Performance of OFDM Uplink Multi-User MIMO**

Roger Hoefel, Federal University of Rio Grande do Sul

82911

**24 Impact of Preamble-Priority-Aware Downlink Control Signaling Scheduling on LTE/LTE-A Network Performance**

Carlos A. Astudillo, Tiago P.C. de Andrade, Nelson L.S. da Fonseca, University of Campinas

51992

**25 Investigating the Performance of the Random Access Channel in NB-IoT**

Ruki Harwahu, Ray-Guang Cheng, NTUST; Chia-Hung Wei, Foxconn Advanced Communication Academy (FACA)

80861

**26 Low Complexity Decoding for Spinal Codes: Sliding Feedback Decoding**

Siyue Xu, Shenzhen Graduate School, Harbin Institute of Technology; Shaohua Wu, Harbin Institute of Technology; Junxin LUO, Jian JIAO, Shenzhen Graduate School, Harbin Institute of Technology; Zhang Qinyu, Harbin Institute of Tech.

92476

**27 Modeling and Prediction of Vehicle Routes Based on Hidden Markov Model**

Ademar Takeo Akabane, University of Campinas; Richard W Pazzi, University of Ontario Institute of Technology; Edmundo Roberto Mauro Madeira, University of Campinas; Leandro Villas, Institute of Computing - University of Campinas

68605

**28 Multi-Technology Data Collection: Short and Long Range Communication**

Rúben Oliveira, Miguel Luís, Instituto de Telecomunicações; Lucas Guardalben, Instituto de telecomunicações; Susana Sargento, IT - Universidade de Aveiro

43133

**29 Non-Orthogonal Coded Access for Contention-Based Transmission in 5G**

Qing Wang, Beijing Jiaotong University; Zhuyuan Zhao, Nokia; Deshan Miao, Nokia Bell Labs, Beijing, China; Yuantao Zhang, Nokia; Jingyuan Sun, Nokia Bell Labs, Beijing, China; Ming Liu, Zhangdui Zhong, Beijing Jiaotong University

28957

**30 Online Cloud Offloading using Heterogeneous Enhanced Remote Radio Heads**

Yousef Shnaiwer, King Fahd University of Petroleum and Minerals; Sameh Sorour, University of Idaho; Parastoo Sadeghi, The Australian National University; Tareq Y. Al-Naffouri, King Abdullah University of Science and Technology

41823

**31 On Spectral Sharing Based on Power Control for Aerial and Ground Communication Links**

Fumie Ono, NICT; Hideki Ochiai, Yokohama National University; Ryu Miura, National Institute of Information and Communications Technology; Fumihide Kojima, NICT

86608

**32 Optimal Deployment Density for Maximum Coverage of Drone Small Cells**

Jiejie Xie, PLA University of Science and Technology; Chao Dong, Nanjing Institute of Communications Engineering; Aijing Li, Hai Wang, Weijun Wang, PLA University of Science and Technology

49206

**33 Optimal FemtoCell density for Maximizing Throughput in 5G Heterogeneous Networks Under Outage Constraints**

Talha Mir, Linglong Dai, Yang Yang, Wenqian Shen, Bichai Wang, Tsinghua University

27184

**34 Optimal Question Answering Routing in Dynamic Online Social Networks**

Imad Ali, Academia Sinica and National Tsing Hua University; Ronald Y. Chang, Academia Sinica; Jo-Chi Chuang, Cheng-Hsin Hsu, National Tsing Hua University; Cenk M. Yetis, Academia Sinica

82472

**35 Optimal Routing with In-Route Charging of Mobility-on-Demand Electric Vehicles**

Mustafa Ammous, Syrine Belakaria, Sameh Sorour, Ahmed Abdel-Rahim, University of Idaho

43004

**36 Outage-Based Admission Control for Multi-User MISO Transmission with Imperfect CSIT**

Stefan Schwarz, Technische Universität (TU) Wien

55329

**37 Outage Performance Analysis on Multiuser Linear Network Coded Cooperation System Considering Path Loss**

Wenbiao Ji, Qian Hu, Zhenzhou Tang, Wenzhou University

76433

**38 Performance Analysis of EDCA for IEEE 802.11p/DSRC based V2V Communication in Discrete Event System**

LeWang, WPI; Renato F. Iida, Alexander Wyglinski, Worcester Polytechnic Institute

89122

**39 Performance Analysis of Vehicle Platooning using a Cellular Network**

Murali Narasimha, Huawei Technologies; Vip Desai, Huawei; Anthony Soong, Huawei Technologies; George Calcev, Huawei U.S. Wireless R&D; Philippe Sartori, Huawei; Weimin Xiao, Huawei U.S. Wireless R&D

44478

**40 Performance and PAPR Analysis of Single-Carrier Massive MIMO Systems with Channel Imperfections**

Heshani Gamage, Nandana Rajatheva, Matti Latva-aho, University of Oulu

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22097

**41 Performance Evaluation of Vehicle-to-Vehicle Communication for Cooperative Collision Avoidance at Urban Intersections**

Ibrahim Rashdan, German Aerospace Center; Fabian de Ponte Müller, Martin Schmidhammer, Stephan Sand, German Aerospace Center (DLR)

73976

**42 Privacy-Preserving Intra-MME Group Handover Via MRN in LTE-A Networks for Repeated Trips**

Zaher Hadda, Al-Aqsa University; Ahmad Alsharif, Ahmed B Sherif, Mohamed Mahmoud, Tennessee Tech University

39270

**43 Privacy-Preserving Ride Sharing Organization Scheme for Autonomous Vehicles in Large Cities**

Ahmed B Sherif, Ahmad Alsharif, Jacob E Moran, Mohamed Mahmoud, Tennessee Tech University

57884

**44 Real-Time Hazard Symbol Detection and Localization Using UAV Imagery**

Nils Tijtgat, Bruno Volckaert, Filip De Turck, Universiteit Gent

33874

**45 Swift Indoor Benchmarking Methodology for Mobile Broadband Networks**

Michael Rindler, Sebastian Caban, Martin Lerch, Philipp Svoboda, Markus Rupp, TU Wien

38285

**46 The Communicative Vehicle: Multiple Antennas in a Chassis Antenna Cavity**

Gerald Artner, Technische Universitaet Wien

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## W1: IEEE Workshop on Next Generation Backhaul/Fronthaul Networks (BackNets?2017) Papers

53567

**1 3D Transition Matrix Solution for a Path Dependency Problem of Markov Chains-Based Prediction in Cellular Networks**

Metin Ozturk, Paulo Valente Klaine, Muhammad Ali Imran, University of Glasgow

73497

**2 An Energy Efficient Integral Routing Algorithm for Software-defined Networks**

Ghadeer, Mohamad Khattar Awad, Kuwait University

80411

**3 Auction Based Spectrum Efficient Offloading Mechanism in HetNets**

Lu Wang, Pu Cheng, Sihai Zhang, Zhou Wuyang, University of Science and Technology of China

84784

**4 Case Study on Using the User-Centric-Backhaul Scheme to Unlock the Realistic Backhaul**

Mona Jaber, University of Surrey; Muhammad Ali Imran, University of Glasgow; Anvar Tukmanov, BT Research and Innovation; Andy Sutton, University of Salford; Rahim Tafazolli, University of Surrey

10680

**5 Energy-Aware Sensor Networks via Sensor Selection and Power Allocation**

Lama Niyazi, Effat University; Anas Chaaban, King Abdullah University of Science and Technology; Hayssam Dahrouj, Effat University; Tareq Y. Al-Naffouri, King Abdullah University of Science and Technology; Mohamed-Slim Alouini, King Abdulah University of Science and Technology (KAUST)

35128

**6 Improvement on the Performance of Predictive Handover Management by Setting a Threshold**

Metin Ozturk, Paulo Valente Klaine, Muhammad Ali Imran, University of Glasgow

63689

**7 Transmission Rate Maximization in Self-Backhauled Wireless Small Cell Networks**

Maryam Lashgari, School of ECE, College of Engineering, University of Tehran; Behrouz Maham, Nazarbayer University; Walid Saad, Virginia Tech

99446

**8 Transport Network Design for Fronthaul**

Philippe Sehier, Anne Bouillard, Fabien Matthieu, Thomas Deiss, Nokia

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## W2: (3rd RAFNET) Research Advancements in Future Internet Architectures Papers

83423

**1 A New Similarity Computation Method in Collaborative Filtering based Recommendation System**

Xiaokun Wu, Yongfeng Huang, Tsinghua University; Shihui Wang, Hubei University

76666

**2 A novel architecture for Information Sharing & Exchange between IoT systems**

Hui Zhang, China Electronics Standardization Institute

38383

**3 A Novel Framework for Software Defined Wireless Sensor Networks**

Khandakar Ahmed, Victoria University; Nazmus Nafi, RMIT University; Waleed Ejaz, Ryerson University, Canada; Mark A Gregory, RMIT University; Asad Masood Khattak, Zayed University

89235

**4 Delay Constraint Location Privacy Scheme in VANETs**

Humera Yasmeen, Abdul Wahid, Munam Ali Shah, COMSATS Institute of Information Technology

84812

**5 E-Lithe: A lightweight secure DTLS for IoT**

Asma Haroon, Munam Ali Shah, Abdul Wahid, COMSATS Institute of Information Technology

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18989

**6 Native ICN Deployment in LTE Networks**

Prakash Suthar, Cisco Systems Inc; Milan Stolic, Anil Jangam, Cisco Systems

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### W3: Vehicular Information Services for the Internet of Things (VISIT 17) Papers

18656

**1 A Priority Algorithm to Control the Traffic Signal for Emergency Vehicles**

Md Asaduzzaman, Krishnamurthy Vidyasankar, Memorial University of Newfoundland

76239

**2 Connecting the Autonomous: A Distributed Game Theory Approach for VANET Connectivity**

Marina Wagdy, Ahmad Mostafa, Ahmed Hamad, The British University in Egypt

25061

**3 Joint Subjective and Objective Data Capture and Analytics for Automotive Applications**

Mathias Johanson, Jonas Jalming, Alkit Communications AB; Emmanuel Frécon, RISE SICS; Boel Nelson, Tomas Olovsson,

Chalmers University of Technology; Mats Gjertz, Volvo Car Corporation

76853

**4 Performance Evaluation of Multicast Video Distribution with User Cooperation in LTE-A Vehicular Environments**

Jayashree Thota, University Of Bristol; Berna Bulut, Angela Doufexi, Simon Armour, University of Bristol

85707

**5 VehiCache: Vehicle Updates via Mobile Phones**

Nadav Lavi, General Motors; Tal Philosofof, GM; Moshe Laifenfeld, SpaceGate

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### W5: 5G Millimeter-Wave Channel Measurement, Models, and Systems Papers

59509

**1 A Compact, Wide Field-of-View Gradient-index Lens Antenna for Millimeter-wave MIMO on Mobile Devices**

Wenlong Bai, Jonathan Chisum, University of Notre Dame

67102

**2 Beamwidth-Dependent Directional Propagation Loss Analysis based on 28 and 38 GHz Urban Micro-Cellular (UMi) Measurements**

Juyul Lee, Jinyi Liang, Jae Joon Park, Myung-Don Kim, ETRI

29791

**3 Effect of Human Crowd Obstruction on the Performance of an Urban Small-Cell Millimeter-Wave Access Network**

Mohammed Zahid ASLAM, Yoann CORRE, SIRADEL; Yves LOSTANLEN, ENGIE - SIRADEL

20463

**4 Fast Link Configuration for mmWave Multiuser MIMO Downlink Using Spatial AoD Angular Supports**

Gilwon Lee, University of Texas at Austin; Robert W. Heath Jr., The University of Texas at Austin

18592

**5 Measurements and Characterization of Surface Scattering at 60 GHz**

Angelos A. Goulianos, University of Bristol; Moray Rumney, Keysight Technologies, UK; Mark Beach, Andrew Nix, Evangelos Mellios,

Alberto Loaize Freire, Thomas Barrat, University of Bristol; Pete Cain, Keysight Technologies, UK

59368

**6 Methods for Channel Sounder Measurement Verification**

Kate Remley, NIST; Camillo Gentile, National Institute of Standards and Technology; Alenka Zajic, Georgia Institute of Technology; Jeanne Quimby, NIST

77209

**7 Modeling of Directional Fading Channels for Millimeter Wave Systems**

Naveed Iqbal, Huawei; Christian Schneider, Technische Universität Ilmenau; Jian Luo, Huawei Technologies Duesseldorf GmbH; Diego Dupleich, Ilmenau university of technology, Germany; Robert Mueller, Reiner Thomä, Technische Universität Ilmenau

32605

**8 UAV Air-to-Ground Channel Measurements and Modeling at 60 GHz**

Wahab Ali Gulzar, NCSU; Ozgur Ozdemir, Ismail Guvenc, North Carolina State University

61805

**9 Unsupervised Clustering for Millimeter-Wave Channel Propagation Modeling**

Camillo Gentile, National Institute of Standards and Technology

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### W6: Networked Vehicles for Intelligent Transportation and Smart Grids (NetV) Papers

72731

**1 A Decentralized Load Balancing Approach for Neighbouring Charging Stations via EV Fleets**

Mushu Li, Lian Zhao, Ryerson University

45136

**2 A Study on Networking Functionalities and Challenges for Machine-to-Machine Mobile Networks**

Yeh-Cheng Lin, Chia-Peng Lee, Phone Lin, National Taiwan University

23245

**3 A TD-LTE-A Based Efficient Radio Access Scheme for Real-time Data Transmission over Relay Unmanned Aerial Vehicle Networks**

Yuki Takahashi, Yuichi Kawamoto, Hiroki Nishiyama, Tohoku University; NEI KATO, TOHOKU UNIVERSITY; Fumie Ono, NICT; Ryu Miura, National Institute of Information and Communications Technology

94245

**4 Coverage control of wheeled mobile robots for unknown moving targets interception**

Zhi-Hong GUAN, Kai Luo, Bin HU, Huazhong University of Science and Technology; Xuemin (Sherman) Shen, University of Waterloo

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29990

**5 Dynamic Charging Scheduling for EV Parking Lots with Renewable Energy**

Yongmin Zhang, Lin Cai, University of Victoria

60534

**6 Incentive for Distributed Optimization in Multi-User Network: A Study of Two Scenarios**

Jie Gao, Mushu Li, Peter He, Lian Zhao, Ryerson University

85313

**7 Loop-free Enhanced Intersection-based Perimeter Georouting with Carry-and-forward for Urban VANETs**

Mehdi Tavakoli Garrosi, Leibniz Universität Hannover; Xi Xiang, Leibniz Universität Hannover; Mohsen Noroozi, Leibniz Universität Hannover

25234

**8 Path loss measurement and modeling for low-altitude UAV access channels**

Kun Wang, Ruonan Zhang, Northwestern Polytechnical University; Liang Wu, Huawei Technologies Ltd.; Zhimeng Zhong, Huawei

Technologies Co., Ltd.; Lin He, Jiawei Liu, Xiaoyan Pang, Northwestern Polytechnical University

55872

**9 Performance Analysis of Connectivity Considering User Behavior in V2V and V2I Communication Systems**

Bin Pan, Hao Wu, Beijing Jiaotong University

71950

**10 Performance Analysis of High Speed Railways Communications Inside a Tunnel Using LTE-R**

Kuldeep S. Gill, Paulo Victor R. Ferreira, Alexander Wyglinski, Worcester Polytechnic Institute

37018

**11 Remote estimation over control area networks**

Aditya Mahajan, McGill University

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## W8: Resource Allocation and Spectrum Management in Internet of Things (IoT) Papers

19847

**1 Adaptive Switching for Efficient Energy Harvesting in Energy Constraint IoT Devices**

Arif Obaid, Ryerson University; Fatima Hussain, University of Guelph; Xavier Fernando, Ryerson University

58708

**2 A Voyage-Based Cooperative Resource Allocation Scheme in Maritime Broadband Access Network**

Ailing Xiao, Ning Ge, Liuguo Yin, Chuan'ao Jiang, Tsinghua University

18900

**3 C-V2X based basic safety related ITS spectrum requirement analysis**

Lu Gao, QUALCOMM; Yan Li, Qualcomm Technologies Inc.; Jim Misener, Shailesh Patil, QUALCOMM

44485

**4 Optimal Network Selection Based on Software Defined Wireless Networks of 5G**

Haiqi Jiang, Huazhong University of Science and Technology

65532

**5 Optimal Power Allocation for Cognitive Radios with Multiple Status Changes in Primary User Traffic**

Mian Qin, Zhengzhou University; shouyi yang, zhengzhou university; Ruizhe Zhang, Fang Wang, Zhengzhou University

47882

**6 Wireless Information and Power Transfer: Issues, Advances and Challenges**

Tharindu Perera, Tomsk Polytechnic University; Dushantha Nalin K. Jayakody, National Research Tomsk Polytechnic University, Russia; Symeon Chatzinotas, SnT, University of Luxembourg; Vishal Sharma, Soonchunhyang University

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## W9: Non-Orthogonal Multiple Access Techniques for 5G Radio Access Papers

71250

**1 A Nonbinary LDPC-Coded SCMA System with Optimized Codebook Design**

Qingli He, B. Bai, Dan Feng, Hengzhou Xu, Min Zhu, Xidian University

99748

**2 A Novel Opportunistic NOMA Scheme for 5G Massive MIMO Multicast Communications**

Ke Xiao, Shun Dai, North China University of Technology; Humphrey Rutagemwa, Bo Rong, Communications Research Centre Canada; Gong Liang, Academy of Broadcast Planning; Kadoch Michel, Ecole de technologie supérieure

43081

**3 A Novel Uplink NOMA Scheme Based on Low Density Superposition Modulation**

Chengxin Jiang, Zhanji Wu, Beijing University of Posts and Telecommunications

56912

**4 A survey of Non-Orthogonal Multiple Access for 5G**

kun lu, Zhanji Wu, Xuanbo shao, Beijing University of Posts and Telecommunications

87083

**5 Bandwidth Minimization under Probabilistic Constraints and Statistical CSI for NOMA**

Krishna Chitti, Fredrik Rusek, Lund University; Tumula V. K. Chaitanya, Huawei Technologies Sweden AB

66985

**6 Blind Multiple User Detection for Grant-free MUSA without Reference Signal**

Zhifeng Yuan, Chunlin Yan, Yifei Yuan, Weimin Li, ZTE Corporation

92920

**7 Detection of Carrier-Interferometry Code Based Overloaded Multi-carrier CDMA Signals**

Ming-Xiu Li, Yu T. Su, National Chiao Tung University

50293

**8 Hybrid Message Passing based Low Complexity Receiver for SCMA System over Frequency Selective Channels**

Weijie Yuan, Beijing Institute of Technology; Huiming Huang, Beijing Space Inform. Relay & Transmission Technol. Res. Center; Nan Wu, Beijing Institute of Technology; Lei Zhou, BSIR; Jingming Kuang, Beijing Institute of Technology



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71624

**9 Investigation of Non-Orthogonal Multiple Access Techniques for Future Cellular Networks**

Ryan Keating, Rapeepat Ratasuk, Nokia Networks; Amitava Ghosh, Nokia

33616

**10 Joint Pattern Assignment and Power Allocation in PDMA**

Jie Zeng, Bei Liu, Xin Su, Tsinghua University

62099

**11 Low complexity detection algorithm for low PAPR interleaving based NoMA schemes**

Chen Qian, Qi Xiong, Bin Yu, Chengjun Sun, Samsung Electronics

64287

**12 Non-Orthogonal Multiple Access with Low Code Rate Spreading and Short Sequence Based Spreading**

Sergey Sosnin, Intel Corp.; Gang Xiong, Intel Corporation; Debdeep Chatterjee, Intel; Yongjun Kwak, Intel Corporation

50507

**13 On Power Allocation and User Grouping for Sparse Coded Non-Orthogonal Multiple Access in the Downlink**

Johannes Dommel, Staphan Fähse, Lars Thiele, Fraunhofer HHI

16549

**14 On the Performance of IDMA-based Non-Orthogonal Multiple Access Schemes**

Afshin Haghighat, InterDigital Communications Corporation; Shahrokh Nayeb Nazar, Robert Olesen, InterDigital

50910

**15 On the performance of Non-orthogonal Multiple Access (NOMA) in a Cloud-RAN system**

Rupesh Singh Rai, Jiangzhou Wang, H. Zhu, University of Kent

76701

**16 Resource Spread Multiple Access ? A Novel transmission scheme for 5G Uplink**

Yiqing Cao, Haitong Sun, Joseph Soriaga, Tingfang Ji, Qualcomm Technologies Inc.

56370

**17 SCMA-Based Uplink and Downlink Resource Reuse for Clustered mMTC**

FangSheng Zhong, Ming Zhao, Zhou Wuyang, University of Science and Technology of China

19962

**18 Statistical QoS Provisioning for Half/Full-Duplex Cooperative Non-Orthogonal Multiple Access**

Xianhao Chen, Gang Liu, Zheng Ma, Southwest Jiaotong University

73902

**19 System-level performance of C-NOMA: a cooperative scheme for capacity enhancements in 5G mobile networks**

Andrea Marciano, Henrik L. Christiansen, Technical University of Denmark

81485

**20 Two Simplified Multiuser Detection Algorithms For Uplink SCMA Systems Via Generalized Approximate Message Passing**

Yu Huang, Tsinghua University; Yunzhou Li, Tsinghua University;; Jing Wang, Tsinghua University

24626

**21 Ultra-Dense Networks in 5G: Interference Management via Non-Orthogonal Multiple Access and Treating Interference as Noise**

Navid Naderializadeh, Oner Orhan, Intel Corporation; Hosein Nikopour, Intel Labs; Shilpa Talwar, Intel Corporation

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## W11: From 4G to Beyond 5G (B5G) Systems: Expectations, Realities and Disruptions Papers

50668

**1 Asymmetric links beamforming for mmWave overlay in LTE-based heterogeneous network**

Alexander Maltsev, Andrey Pudov, Ilya Bolotin, Intel; Olesya Bolkhovskaya, University of Nizhny Novgorod

67214

**2 Initial Results on Deep Learning for Joint Channel Equalization and Decoding**

Hao Ye, Geoffrey Ye Li, Georgia Institute of Technology