

IEEE COMMUNICATIONS LETTERS

A PUBLICATION OF THE IEEE COMMUNICATIONS SOCIETY



JANUARY 2016

VOLUME 20

NUMBER 1

ICLEF6

(ISSN 1089-7798)

EDITORIAL

- A Farewell Note and Reviewer Appreciation Program 2015 *G. K. Karagiannidis* 3
A Welcome Message From the New Editor-in-Chief *O. A. Dobre* 4

APPLICATION SYSTEMS

- On the Impact of Network State Collection on the Performance of SDN Applications *M. Aslan and A. Matrawy* 5

CODING THEORY AND TECHNIQUES

- Construction of Quantum LDPC Codes From Classical Row-Circulant QC-LDPCs
..... *Z. Babar, P. Botsinis, D. Alanis, S. Xin Ng, and L. Hanzo* 9
Construction of High-Performance Array-Based Non-Binary LDPC Codes With Moderate Rates *S. Zhao and X. Ma* 13
Efficient Algorithms for Systematic Polar Encoding *H. Vangala, Y. Hong, and E. Viterbo* 17
Spatially Coupled Repeater-Combiner-Convolutional Codes *W. Hou, S. Lu, and J. Cheng* 21
Row and Column Extensions of 4-Cycle Free LDPC Codes *M. Gholami and A. Nassaj* 25
Two-Weight and Three-Weight Linear Codes From Square Functions *C. Tang, Y. Qi, and D. Huang* 29
A Lower Bound for Burst Error Correcting Capability of Low Rate Binary Cyclic Codes *S. Vafi and N. R. Majid* 33
Tree Analysis of BATS Codes *S. Yang and Q. Zhou* 37
On q -ary Linear Quasi-Constant-Weight Codes *Z. Liu and X. Zeng* 41

COMMUNICATION THEORY

- Maximum Likelihood SNR Estimation of Hyper Cubic Signals Over Gaussian Channel *M. A. Raza and A. Hussain* 45
Hierarchical Pairwise Error Probability for Hierarchical Decode and Forward Strategy in PLNC *J. Sykora* 49
Secrecy Outage Probability in Multi-RAT Heterogeneous Networks *H. Wu, X. Tao, N. Li, and J. Xu* 53
Low-Complexity Detection of Binary CPM With Small Modulation Index *Z. Xi, J. Zhu, and Y. Fu* 57

COMMUNICATION THEORY AND CODING APPLICATIONS

- On Some New Families of Almost Difference Sets Constructed From Cyclotomic Classes of Order 12
..... *M. Qi, S. Xiong, J. Yuan, W. Rao, and L. Zhong* 61

FLOW/CONGESTION CONTROL

- Mass-Count Disparity in Mobile Traffic *J. Chung, Y. Won, B. Park, and J. Won-Ki Hong* 65

(Contents Continued on Page 1)



A Convex Optimization Framework for Service Rate Allocation in Finite Communications Buffers	<i>M. Ghamkhari and H. Mohsenian-Rad</i>	69
LOCAL AND METROPOLITAN AREA NETWORKS		
Addressing With an Improved DAD for 6LoWPAN	<i>X. Wang, H. Cheng, and Y. Yao</i>	73
MODULATION AND SIGNAL DESIGN		
Distributed Low-Density Lattice Codes	<i>B. Chen, D. N. K. Jayakody, and M. F. Flanagan</i>	77
Noncoherent Multiple-Symbol Detector of Binary CPFSK in Physical-Layer Network Coding	<i>X. Dang, Z. Liu, B. Li, and X. Yu</i>	81
Binary CPMs With Improved Spectral Efficiency	<i>M. Messai, A. Piemontese, G. Colavolpe, K. Amis, and F. Guilloud</i>	85
MULTIPLE ACCESS PROTOCOLS		
Complexity of Routing in Store-and-Forward LEO Satellite Networks	<i>Y. Lu, Y. Zhao, F. Sun, and D. Qin</i>	89
NETWORK SECURITY		
Defense Against SSDF Attack in Cognitive Radio Networks: Attack-Aware Collaborative Spectrum Sensing Approach	<i>A. A. Sharifi and M. J. Musevi Niya</i>	93
OPTICAL COMMUNICATIONS SYSTEMS		
A Tight Upper Bound on Channel Capacity for Visible Light Communications	<i>R. Jiang, Z. Wang, Q. Wang, and L. Dai</i>	97
OPTICAL NETWORKS		
Fast Lightpath Hopping Enabled by Time Synchronization for Optical Network Security	<i>Y. Li, N. Hua, Y. Song, S. Li, and X. Zheng</i>	101
SIGNAL PROCESSING		
A New and Accurate Estimator With Analytical Expression for Frequency Estimation	<i>X. Liang, A. Liu, X. Pan, Q. Zhang, and F. Chen</i>	105
SYNCHRONIZATION TECHNIQUES		
A Robust NDA Carrier Tracking Method for LDPC-Coded Systems With Symbol Rate Sampling	<i>Y. Li, B. Tian, K. Yi, Q. Yu, D. Sun, and Z. Liu</i>	109
WIRELESS COMMUNICATION THEORY		
Performance Analysis of TDD Reciprocity Calibration for Massive MU-MIMO Systems With ZF Beamforming	<i>D. Liu, W. Ma, S. Shao, Y. Shen, and Y. Tang</i>	113
Maximal Rank Correlation	<i>O. Etesami and A. Gohari</i>	117
Error Exponents for Distributed Detection	<i>V. V. Mai, Y. Jeong, and H. Shin</i>	121
Lattice-Reduction-Aided Sphere Decoding for MIMO Detection Achieving ML Performance	<i>J. Liu, S. Xing, and L. Shen</i>	125
WIRELESS NETWORKS		
Towards an Application-Aware Resource Scheduling With Carrier Aggregation in Cellular Systems	<i>H. Shajaiah, A. Abdelhadi, and T. C. Clancy</i>	129
Joint Optimization for Optimal Power Allocation in OFDMA Femtocell Networks	<i>M. Robat Mili, K. A. Hamdi, F. Marvasti, and M. Bennis</i>	133
Wireless Sensor Network Localization in Harsh Environments Using SDP Relaxation	<i>P. M. Ghari, R. Shahbazian, and S. A. Ghorashi</i>	137
A Consensus-Based Coverage Algorithm For Self-Organizing Femtocell Networks	<i>K. Şenel and M. Akar</i>	141
A Resource Allocation Perspective on Caching to Achieve Low Latency	<i>H. Hsu and K.-C. Chen</i>	145
Enabling Tunneling in CCN	<i>G. Zhang, X. Chen, Y. Lu, and Q. Gao</i>	149
Reduced Early Handover for Energy Saving in LTE Networks	<i>K. Kanwal and G. A. Safdar</i>	153
On the Utilization of Spectrum Opportunity in Cognitive Radio Networks	<i>M. Ozger and O. B. Akan</i>	157
Coexistence of Wi-Fi and Cellular With Listen-Before-Talk in Unlicensed Spectrum	<i>Y. Song, K. W. Sung, and Y. Han</i>	161

WIRELESS SYSTEMS

Novel Single-RF MIMO System Based on Repetitive Pulse Width Modulation	<i>D. Park, M. Kim, and D.-H. Cho</i>	165
A Hybrid WiFi/Magnetic Matching/PDR Approach for Indoor Navigation With Smartphone Sensors	<i>Y. Li, Y. Zhuang, H. Lan, Q. Zhou, X. Niu, and N. El-Sheimy</i>	169
Predictive Modelling of RF Energy for Wireless Powered Communications	<i>F. Azmat, Y. Chen, and N. Stocks</i>	173
Energy Efficient Power Allocation for Multicell Distributed Antenna Systems . . .	<i>J. Wang, W. Feng, Y. Chen, and S. Zhou</i>	177
Robust Power-Splitting SWIPT Beamforming for Broadcast Channels	<i>J. Liao, M. R. A. Khandaker, and K.-K. Wong</i>	181
Joint Transceiver Design for Incremental Channel Estimation in Distributed MIMO Systems	<i>Y. Zhang, W. Feng, Y. Chen, and N. Ge</i>	185
Energy Optimization in Dense OFDM Networks	<i>J. Chen, H. Zhuang, and Z. Luo</i>	189
Joint Modulation Classification and Antenna Number Detection for MIMO Systems	<i>M. Turan, M. Öner, and H. A. Çırpan</i>	193
