Contents

Wireless Communication Systems

Application of NSGA-II Algorithm to Energy and Spectral Efficiency
Trade-off in Massive MIMO Systems with Antenna Selection .......... 3
Qiaoqiao Zhang, Xuebin Sun, and Dianjun Chen

A PHY-Based Secret Sharing Scheme in MIMO Systems ............. 11
Zhuoru Jian, Hai Huang, Xiaojun Jing, and Jia Li

Long Short-Term Memory Network for Wireless
Channel Prediction ................................................. 19
Xiaoyun Tong and Songlin Sun

A Practical Implementation of TD-LTE and GSM Signals
Identification via Compressed Sensing ............................. 27
Jianyi Yang, Liang Yin, Lin Sang, Xin Zhang, Siqing You,
and Hongjie Liu

Monitoring and Avoidance of Atmospheric Duct on Interference
Optimization in TD-LTE System .................................. 36
Ao Shen, Yang Zhang, Bao Guo, Guozhi Wang, Yan Gao,
Jixiang Liu, Dayang Liu, Yi Liu, Xiaochun Hu, and Tao Xie

Load Balancing and Interference Management
in Heterogeneous Networks ......................................... 46
Rihan Wu, Songlin Sun, and Yasir Ullah

QoE Evaluation Model for Wireless Video Network Business ....... 53
Tao Tian, Songlin Sun, Chenwei Wang, and Xinzhou Cheng

A Spectrum Sensing Scheme with Multiple Users ................. 65
Junsheng Mu, Xiaojun Jing, Chenchen Sun, and Jia Li
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A New Method of Spectrum Sensing in Cognitive Radio Based on Statistical Covariance Matrix</td>
<td>72</td>
</tr>
<tr>
<td>Zhaocong Sun, Xiaojun Jing, and Jia Li</td>
<td></td>
</tr>
<tr>
<td>An Enhanced Double Threshold Energy Detection in Cognitive Radio</td>
<td>80</td>
</tr>
<tr>
<td>Xuan Zhou, Xiaojun Jing, Hai Huang, and Jia Li</td>
<td></td>
</tr>
<tr>
<td>An Energy Detection Based on Coefficient of Variation for Spectrum Sensing in Cognitive Radio</td>
<td>87</td>
</tr>
<tr>
<td>Wenwen Zhang, Xiaojun Jing, and Jia Li</td>
<td></td>
</tr>
<tr>
<td>Performance Analysis for User-Centric Cloud Radio Access Network in Millimeter Wave</td>
<td>95</td>
</tr>
<tr>
<td>Yangying Zhang, Hai Huang, Xiaojun Jing, and Jia Li</td>
<td></td>
</tr>
<tr>
<td>Millimeter Wave Cloud Radio Access Network Coverage and Capacity</td>
<td>103</td>
</tr>
<tr>
<td>Jinxia Hu, Xiaojun Jing, and Jia Li</td>
<td></td>
</tr>
<tr>
<td>Optimal Downtilts for 3D Beamforming Based on Greedy Algorithm in Massive MIMO Networks with Imperfect CSI</td>
<td>112</td>
</tr>
<tr>
<td>Kang Zhang, Kwanhak Jon, and Songlin Sun</td>
<td></td>
</tr>
<tr>
<td>Dynamic User Scheduling Algorithms for Massive MIMO Multicast System</td>
<td>121</td>
</tr>
<tr>
<td>Xinran Zhang and Songlin Sun</td>
<td></td>
</tr>
<tr>
<td>A Bat Algorithm Based on Centroid Strategy</td>
<td>129</td>
</tr>
<tr>
<td>Siqing You, Tongjuan Liu, Fei Xue, Hongjie Liu, and Zhaoqun Qi</td>
<td></td>
</tr>
<tr>
<td>Algorithms Optimization and Implementation</td>
<td></td>
</tr>
<tr>
<td>An Optimized Daisy-chain Topology for Multi-load Interconnection in High-speed and High-density Electronic Systems</td>
<td>139</td>
</tr>
<tr>
<td>Fengrui Guo, Xingming Li, Shanqing Hu, and Yanyan Qin</td>
<td></td>
</tr>
<tr>
<td>Realization and Optimization of Pulse Compression Algorithm on OpenCL-Based FPGA Heterogeneous Computing Platform</td>
<td>147</td>
</tr>
<tr>
<td>Jiacheng Yu, Xingming Li, Shanqing Hu, and Yuwei Wang</td>
<td></td>
</tr>
<tr>
<td>The Research of SAR Processing Performance Based on Multi-core GPU</td>
<td>156</td>
</tr>
<tr>
<td>Yuwei Wang, Xingming Li, Shanqing Hu, and Jiacheng Yu</td>
<td></td>
</tr>
<tr>
<td>Ship Detection in Optical Satellite Images Based on Sparse Representation</td>
<td>164</td>
</tr>
<tr>
<td>Haotian Zhou, Yin Zhuang, Liang Chen, and Hao Shi</td>
<td></td>
</tr>
</tbody>
</table>
Application of Back Propagation Neural Network with Simulated Annealing Algorithm in Network Intrusion Detection Systems. 172
Chen Chang, Xuebin Sun, Dianjun Chen, and Chenwei Wang

An Improved Binary Bee Colony Algorithm for Satellite Resource Scheduling Method 181
Pan Zhao, Xuebin Sun, and Ping Chen

Automatic Liver Segmentation on CT Images 189
Torecan Celik, Hong Song, Lei Chen, and Jian Yang

An Improved Blind Spectrum Sensing Algorithm Based on QR Decomposition and SVM 197
Yaqin Chen, Xiaojun Jing, Wenting Liu, and Jia Li

Sentiment Analysis Using Modified LDA 205
Jingyi Ye, Xiaojun Jing, and Jia Li

Co-training Based on Multi-type Text Features 213
Wenting Liu, Xiaojun Jing, Yaqin Chen, and Jia Li

GNSS Spooﬁng Jamming Recognition Based on Machine Learning 221
Pan Gao, Songlin Sun, Zhen Zeng, and Chenwei Wang

TinyPEP: Tiny Pairwise-Key Establishment Protocol for Wireless Sensor Networks 229
Wei Liu and Rong Luo

An Innovative Indoor Location Algorithm Based on Supervised Learning and WIFI Fingerprint Classiﬁcation 238
Cong Chao and Men Xiaoran

Satellites and Remote Sensing

Deep Learning and Machine Learning for Object Detection in Remote Sensing Images 249
Guowei Yang, Qiang Luo, Yinding Yang, and Yin Zhuang

Design and Implementation of Automatic Interpretation System for Remote Sensing Image 257
Linna Ni and Yu Jiang

An Improved Cloud Detection Method of Optical Remote Sensing Image 265
Yang Gao, Hao-tian Zhou, and Liang Chen

A Novel Method to Analyze Dual Camera Pointing Direction Difference of Remote Sensing Satellite 272
Kan Cheng, Zihao Cui, Tao He, and Mengjie Shi
Application of Wi-Fi Wireless Network on Attitude and Orbit Control System of Satellite .................................................. 281
Jinpeng Wang, Yue Wang, Yi Zhan, Mingyu Xie, and Jianzhao Ding

Design and Implementation of the GEO Remote Sensing Satellite for Intelligent Applications ........................................... 290
Fengjing Liu, Ning Liu, Xiang Li, and Guo Li

Application of Computer Simulation Technology in Observing Effectiveness Analysis of the Satellite ............................... 298
Yunhe Liu, Fengjing Liu, Kuai Yu, Jian Liu, Yongheng Zou, and Guo Li

Investigation on the Electromagnetic Field Leakage Effect Dominated by the Cable Penetration for a Spacecraft ............... 309
Ran Li, XiaoYong Yang, Xiang Li, and Xuyang Du

Big Data Workshop

Research on Impact of LTE RSSI Based on Network Data Correlation Analysis and Optimization Practice .................. 319
Mingxin Li, Tianbiao Tang, Juanjuan Tan, Hao Guo, and Hongxi Liao

Customer Churn Analysis for Telecom Operators Based on SVM ................................................................. 327
Runsha Dong, Fei Su, Shan Yang, Xinzhou Cheng, and Weiwei Chen

Evaluating LTE Service Performance for High-Speed Rail Cells via User Classification Model ...................................... 334
Alexis Huet, Mantian (Mandy) Hu, Jibin Wang, and Ye Ouyang

Jian Guan, Wensheng Li, Haina Ye, Jie Gao, Yongfeng Wang, and Xinzhou Cheng

A Novel PCI Optimization Method in LTE System Based on Intelligent Genetic Algorithm ................................. 350
Ao Shen, Bao Guo, Yan Gao, Tao Xie, Xiaochun Hu, Yang Zhang, Jinhu Shen, Yuan Fang, Guozhi Wang, and Yi Liu

Data Mining for Base Station Evaluation in LTE Cellular Systems .... 356
Lexi Xu, Xueqing Zhao, Yanli Yu, Yuting Luan, Xinzhou Cheng, Jie Gao, Jian Guan, and Kun Chao

Blind Video Quality Assessment Based on Human Visual Speed Perception and Nature Scene Statistic .................. 365
Shiyu Zhou, Xiuyan Xia, Meng Ran, Luhan Wang, and Chen Cheng
Signal and Information Processing, Networking and Computers
Proceedings of the 3rd International Conference on Signal and Information Processing, Networking and Computers (ICSINC)
Sun, S.; Chen, N.; Tian, T. (Eds.)
2018, XIV, 511 p. 265 illus., Hardcover