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
A New Method of Spectrum Sensing in Cognitive Radio Based on Statistical Covariance Matrix ........................................... 72
Zhaocong Sun, Xiaojun Jing, and Jia Li

An Enhanced Double Threshold Energy Detection in Cognitive Radio ................................................................. 80
Xuan Zhou, Xiaojun Jing, Hai Huang, and Jia Li

An Energy Detection Based on Coefficient of Variation for Spectrum Sensing in Cognitive Radio .......................... 87
Wenwen Zhang, Xiaojun Jing, and Jia Li

Performance Analysis for User-Centric Cloud Radio Access Network in Millimeter Wave ........................................ 95
Yangying Zhang, Hai Huang, Xiaojun Jing, and Jia Li

Millimeter Wave Cloud Radio Access Network Coverage and Capacity ................................................................. 103
Jinxia Hu, Xiaojun Jing, and Jia Li

Optimal Downtilts for 3D Beamforming Based on Greedy Algorithm in Massive MIMO Networks with Imperfect CSI .... 112
Kang Zhang, Kwanhak Jon, and Songlin Sun

Dynamic User Scheduling Algorithms for Massive MIMO Multicast System .............................................................. 121
Xinran Zhang and Songlin Sun

A Bat Algorithm Based on Centroid Strategy ................................................. 129
Siqing You, Tongjuan Liu, Fei Xue, Hongjie Liu, and Zhaoqun Qi

Algorithms Optimization and Implementation

An Optimized Daisy-chain Topology for Multi-load Interconnection in High–speed and High–density Electronic Systems .... 139
Fengrui Guo, Xingming Li, Shanqing Hu, and Yanyan Qin

Realization and Optimization of Pulse Compression Algorithm on OpenCL-Based FPGA Heterogeneous Computing Platform .... 147
Jiacheng Yu, Xingming Li, Shanqing Hu, and Yuwei Wang

The Research of SAR Processing Performance Based on Multi-core GPU ............................................................... 156
Yuwei Wang, Xingming Li, Shanqing Hu, and Jiacheng Yu

Ship Detection in Optical Satellite Images Based on Sparse Representation ............................................................. 164
Haotian Zhou, Yin Zhuang, Liang Chen, and Hao Shi
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 of Satellite
Jinpeng Wang, Yue Wang, Yi Zhan, Mingyu Xie, and Jianzhao Ding

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

Application of Computer Simulation Technology in Observing Effectiveness Analysis of the Satellite
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
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
Mingxin Li, Tianbiao Tang, Juanjuan Tan, Hao Guo, and Hongxi Liao

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

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

Research on High-Efficient Dynamic Evaluation Method of Operation Stability in Mobile Radio Network
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
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
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
Shiyu Zhou, Xiuyan Xia, Meng Ran, Luhan Wang, and Chen Cheng
A Downlink Coverage Self-optimizing Algorithm for LTE Cellular Networks Based on Big Data Analytics .......................... 373 
Jie Gao, Xinzhou Cheng, Lexi Xu, Lijuan Cao, and Chen Cheng

Research on Wireless Network Planning of Railway TD-LTE System ............................................................. 381 
Kai Yu, Yanli Yu, and Jie Xiong

Data Mining Based Modeling and Application of Mobile Video Service Awareness ............................................. 389 
Kun Chao, Pengfei Wang, Haina Ye, Lexi Xu, Xinzhou Cheng, Mingjun Mu, and Chen Cheng

The Research of Virtual Drive Test Based on MR and CDR ..... 397 
Zhiqiang Lv, Saibin Yao, Ling Li, Yongjia Qi, and Jialong Liang

Big Data Research on Driving Behavior Model and Auto Insurance Pricing Factors Based on UBI ................................. 404 
Heng Zhang, Lexi Xu, Xinzhou Cheng, Weiwei Chen, and Xueqing Zhao

Compliance Testing for Data Quality Assurance: Definitions, Models and Applications ........................................... 412 
Xu Mao, Fei Su, Kuitong Xian, and Kaicheng Xu

Telecom Big Data Based Electromagnetic Wave Research Under Haze and Rainstorm ........................................ 420 
Xinzhou Cheng, Lexi Xu, Tao Zhang, Chen Cheng, Weiwei Chen, Heng Zhang, Yuwei Jia, and Haina Ye

Analysis and Optimization of Video Fluency Based on Big Data ...... 429 
Mingjun Mu, Yuwei Jia, Weiwei Chen, and Yongfeng Wang

Clothing Recommendation System Based on Advanced User-Based Collaborative Filtering Algorithm ............................. 436 
Yu Liu, Jingwen Nie, Lexi Xu, Yue Chen, and Bingyu Xu

OSS Data Based LTE Wireless Coverage Efficiency Analysis Method ................................................................. 444 
Xingyu Fan, Jun Lu, and Weiwei Chen

A Radio Network Differentiation Parameter Optimization Algorithm Based on Clustering ........................................ 452 
Guanggen Guo, Baisong Ren, Gang An, Wendong Wu, Lexi Xu, Hongxing Bai, and Zhongxi Zhao

A Value-Added Service Strategy for 3G Mobile Network Based on Network Resource Utilization .......................... 460 
Lijuan Cao, Yuwei Jia, Chuntao Song, Jie Gao, and Xinzhou Cheng
Big Data and Location Based Dynamic Power Control for Small Cell Networks .................................................. 468
Yi Li, Yucang Yang, Xingyu Fan, Jun Lu, and Weiwei Chen

Big Data Based Recommendation Scheme in APP Marketing Field . . . . 475
Yuwei Jia, Kun Chao, Lijuan Cao, Mingjun Mu, and Xinzhou Cheng

Research on Propagation Prediction Model Localization Over the Tropical Maritime Environment ............................. 483
Lianbo Song, Xiaofei Chen, Jian Wang, Jialin Huang,
Yafang Xu, Chao Dou, and Cheng Yang

A Novel Architecture and Machine Learning Algorithm for Real Estate ............................................................. 491
Chen Cheng, Xinzhou Cheng, Mingqiang Yuan, Kun Chao,
Shiyu Zhou, Jie Gao, Lexi Xu, and Tao Zhang

Multi-index Evaluation Analysis of Region Network Development: A Cluster Empirical Study ................................. 500
Haina Ye, Wensheng Li, Jian Guan, Xiaodong Cao, Xinzhou Cheng,
mingqiang yuAn, and kun chao

Author Index .......................................................... 509
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