2022 14th International **Conference on Wireless Communications and Signal Processing (WCSP 2022)**

Nanjing, China 1-3 November 2022

Pages 1-603



IEEE Catalog Number: CFP2270A-POD ISBN:

978-1-6654-5086-7

Copyright © 2022 by the Institute of Electrical and Electronics Engineers, Inc. All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

*** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

 IEEE Catalog Number:
 CFP2270A-POD

 ISBN (Print-On-Demand):
 978-1-6654-5086-7

 ISBN (Online):
 978-1-6654-5085-0

Additional Copies of This Publication Are Available From:

Curran Associates, Inc 57 Morehouse Lane Red Hook, NY 12571 USA Phone: (845) 758-0400

Fax: (845) 758-2633

E-mail: curran@proceedings.com Web: www.proceedings.com



2022 IEEE the 14th International Conference on Wireless Communications and Signal Processing (WCSP 2022)

Table of Contents

WCSP 2022 Committeex	
◆ AI and Blockchain Enabled Communications and Security Symposium	
Distributed RISs-Aided Secure Wireless Network Under Practical Phase Shift Model: A Deep Reinforceme	
Learning Approach	⊥
Block Propagation in Blockchain-Based 6G Network: From a Communication Perspective	6
Location-Based Reliable Sharding in Blockchain-Enabled Fog Computing Networks	12
GaS-PBFT: A Game-based Node Selection Consensus Mechanism for Internet of Things	17
Application-Based Cooperative Content Caching via Tensor Domain Adaptation Networks	22
Power Coverage Optimization in Cellular Radio Networks Using Neural Architecture Search	28
Blockchain-enabled Edge Computing Framework for Hierarchic Cluster-based Federated Learning	33
Joint Mining Offloading and Computing Resource Optimization in Mobile Blockchain System	38
A Deep Reinforcement Learning Approach for Multi-UAV-Assisted Data Collection in Wireless Powered Id	
Zhiming Li, Juan Liu, Lingfu Xie, Xijun Wang, Ming Jin	

Low-Cost Traffic Perception for Road Detector Data Estimation: A Deep Learning Approach	50
Caoyi Zha, Jianzhe Xue, Qinghong Shen, Haibo Zho	
ZSFA: Zero-Shot Fingerprint Augmentation for WiFi Fingerprint Based Indoor Localization	55
Intelligent Reflective Surface-Assisted MEC Securely Calculates Offloading Policy	60
◆ Computer Vision and Image Processing Symposium	
A Lightweight Network with Lane Feature Enhancement for Multilane Drivable Area Detection	66
Hybrid Attention Fusion Segmentation Network for Diffuse Large B-cell Lymphoma in PET-CT	72
Large Kernel Attention Hashing for Efficient Image Retrieval	77
Machine Learning-based Multi-classification for First-Episode Schizophrenics, Ultra-high risk Schizoph	renics,
and Healthy Controls	84
Wenmei Li, Nuoya Yu, Wei Yan, Rongrong Zhang	
UM-Net: An MLP-based Image Segmentation Network	89
Xinwei Liu, Li Huang, Jian Xiao	
Underwater Image Restoration Based on An Improved Underwater Image Formation Model	95
Efficient Shared Feature Learning for Cross-modality Person Re-identification	100
TSANet: Two-subnet Attention Network for Single Image Dehazing	106
Fast and Accurate Detection of UAV Objects Based on Mobile-Yolo Network	112
Jun Wang, Wang Hongjun, Jian Liu, Rui Zhou, Chunhao Chen, Chuang Liu	
Building Scale-Attentive Visual Transformers for Intelligent Electric Power System Inspection	117
A UAV Target Detection Algorithm Based on YOLOv4-Tiny and Improved WBF	122

Attributes and Semantic Constrained GAN for Face Sketch-Photo Synthesis	127
STSANet: Retinal Vessel Segmentation via Spatial-Temporal and Self-Attention Encoding	132
Multi-scale/attention Convolutional Network for Diffuse Large B Lymphoma Segmentation in PET I Wei Zhai, Jianxin Chen, Daiyong Min, Ang Li, Chong Jiang, Jingyan Xu	mage 138
A Robust Vehicle Detection Model Based on Attention and Multi-scale Feature Fusion	143
Defect Reconstruction for Class-imbalanced Power System Defect Recognition Hongxing Wang, Mei Wu, Yu Song, Xin Zhang, Weiping Mao	149
◆ Edge Computing and Intelligence Symposium	
Bi-directional Deep Transfer Learning for RIS-enhanced Multi-cell OFDMA Systems	154
Multi-Slot Dynamic Computing Resource Optimization in Edge Computing Pengyu Chen, Han Xu, Xingwang Fan, Jing Hu, Tiecheng Song	160
Federated Multi-Agent Reinforcement Learning for Collaborative Edge Caching in Content Delivery	
Jialing Chang, Naifu Zhang, Meixia Tao, Hu Tuo	166
Asynchronous Federated Learning Based Mobility-aware Caching in Vehicular Edge Computing Wenhua Wang, Yu Zhao, Qiong Wu, Qiang Fan, Cui Zhang, Zhengquan Li	171
DDQN Based Handover Scheme in Heterogeneous Network	176
Age of Information Analysis of NOMA-MEC Offloading with Dynamic Task Arrivals Lei Liu, Jingzhou Qiang, Yanting Wang, Fan Jiang	181
Quality-Aware User Scheduling for Federated Mobile Crowdsensing	187
Malicious Models-based Federated Learning in Fog Computing Networks Xiaoge Huang, Yang Ren, Yong He, Qianbin Chen	192
Estimating Age of Information Using Finite Order Moments	197

Joint Optimization of Energy Consumption and Latency Based on DRL: An Edge Server Activation and	Task
Scheduling Scheme in IIoT	203
Rui Ma, Xiaotian Zhou, Haixia Zhang, Dongfeng Yuan	
EEG Artifact Removal Based on Independent Component Analysis and Outlier Detection	209
Learning-driven Cost-Efficient Multi-access Mobile Edge Computing via NOMA-SWIPT Transmission Chenglong Dou, Ning Huang, Yuan Wu, Liping Qian, Bin Lin, Zhiguo Shi	215
Federated Spatio-Temporal Traffic Flow Prediction Based on Graph Convolutional Network	221
Design of Delay-Optimal Robust Edge Computing in 6G Wireless Networks	226
Optimal Power Control for Over-The-Air Federated Edge Learning Using Statistical Channel Knowledge Xichen Yu, Bingnan Xiao, Wei Ni, Xin Wang	э 232
◆ Emerging Areas in Communications Symposium	
Dynamic Distributed-Layered Semi-Grant-Free NOMA Scheme for Uplink Transmissions	238
5G Virtual Private Network Planning Methodology Analysis	243
CNN-BiLSTM-based Learnable Viterbi Signal Detection without Channel State Information	247
A New Approach to Dealing with the PAPR Problem for OFDM Systems via Deep Learning	252
Design and Optimization on Covert Communication-Oriented Short Packet D2D	257
Beamforming Optimization for Full-Duplex NOMA Enabled Integrated Sensing and Communication Kai Chen, Ruoguang Li, Li Wang, Lianming Xu, Aiguo Fei	264
Statistical CSI-based Beamforming Design for Massive MIMO-enabled URLLC Networks	269
IRS-Assisted UAV Covert Communication via Location and Power Optimization	275

Smart Handover Scheme for a 5G-Enabled Ambulance	281
Yao Zhao, Xianchao Zhang	
Multi-connection BP Decoding for Polar Codes	287
Liuchang Yang, Dianhong Wang, Zhongxiu Feng, Yangyang Liu, Lixia Xiao	
Multi-Access Edge Computing using Mode Division Multiple Access	292
Lei Wang, Haizhou Wang, Xue Jiang, Jingwu Cui, Baoyu Zheng	
A Lightweight Broad Learning System for Wireless Traffic Prediction	298
Xinyu Li, Yajun Chen, Mengwen Diao, Hengfa Liu, Xiao Liu, Xin Wei	
Unsupervised Learning-Based Joint Precoding and Phase Shift Design for RIS-Assisted mmWave	
Communication Systems	303
Yang Jiao, Yu Han, Xiao Li, Shi Jin	
Probabilistic Jamming Aided Covert Communication in the Finite Blocklength Regime	309
Ruiqian Ma, Weiwei Yang, Kaixin Cheng, Xingbo Lu	
Channel Charting-Based Pilot Assignment over Spatially Correlated Channels	315
Yamei Xu, Ming Zhao, Sihai Zhang, Gaoning He	
Slice Freshness Guaranteed Resource Allocation in Vehicular Networks	321
Yaping Cui, Xisheng Yang, Peng He, Ruyan Wang, Dapeng Wu	
Automatic Modulation Recognition Based on Multi-Channel Neural Network Model Model	326
Xianchao Zhang, Shengyu Ma, Jian Shi, Panpan Li, Guangxue Yue	
An Edge Based Framework for Risk Assessment of Communicable Disease	331
Ruochen Huang, Yong Li, Wei Feng, Xin Zhang, Tao Shan, Yun Liu	
Characterizing the Energy-Efficiency Region of Symbiotic Radio Communications	336
Sihan Wang, Jingran Xu, Yong Zeng	
TAN: Temporal Attention Enhanced Network for Cellular Traffic Prediction	342
Huaiyu Wu, Junyuan Wang, Chang Liu	
Tactile Signal Reconstruction Assisted by Video Processing	347
Mingkai Chen, Yu Xie	
Deep Reinforcement Learning for the Capacitated Vehicle Routing Problem with Soft Time Window Wang Xiaohe, Shi Xinli	352

◆ Information Theory and Coding Symposium

Upper Bounds on the Capacity of Multiple-Antenna Optical Intensity Channels: A Sphere-Packing Per	spective
	356
Sufang Yang, Longguang Li, Jintao Wang	
Learning Based Joint Coding-Modulation for Digital Semantic Communication Systems	361
Yufei Bo, Yiheng Duan, Shuo Shao, Meixia Tao	
Coded Distributed Graph-Based Semi-Supervised Learning	367
Ying Du, Siqi Tany, Kaifeng Han, Jiamo Jiang, Zhiqin Wang, Li Chen	
A Demo of Semantic Communication: Rosefinch	373
Hao Dong, Weijie Yue, Kai Niu	
Block Markov Superposition Transmission of Fourier Transform Pair Codes	378
Xiao Ma, Dian Chen, Yaping Lv	
All Integral Points Satisfying Linear Rank Inequalities on Four or Less Variables are Representable	383
Jiahong Wu, Nan Liu, Wei Kang	
Concatenation of SC-LDGM Codes with Outer BCH Codes	388
Yixin Wang, Xiao Ma	
ORB-Enhanced Belief Propagation Decoding of Polar Codes	393
Xintao Jin, Zhenyuan Chen, Yuejun Wei, Wenyi Zhang, Huarui Yin, Liping Li	
End-to-end Delay Analysis for Coded Computing with Multi-Task Arrival	398
Zhongming Ji, Li Chen, Xiaohui Chen, Guo Wei	
Optimality of Polar Codes in Additive Steganography under Constant Distortion Profile	404
Qiyi Yao, Weiming Zhang, Nenghai Yu	
Improved Decoder by Partially Permuted Factor Graphs of Polar Codes	409
Hongji Cui, Kai Niu, Junwei Ren	
On Scalable Source Coding Problem with Side Information Privacy	415
Jian Lu, Yinfei Xu, Zhenchao Zhu	
◆ Integrated Sensing, Communication, and Computing Symposium	
Waveform Design for MIMO-OFDM Based Dual-functional Radar and Communication Systems	421
Tianchen Liu, Liang Wu, Zaichen Zhang, Jian Dang, Bingcheng Zhu, Yin Yao, Liu Dongsheng	

On Performance Evaluation of OTFS and OFDM Modulations for Sensing	427
Bowen Wang, Nanxi Li, Zheng Jiang, Jianchi Zhu, Xiaoming She, Peng Chen	
Exploiting Cell-Free Massive MIMO for Computational Imaging	432
Joint Transmit Waveform and Passive Beamforming Design for RIS-aided MIMO DFRC System Biao Sun, Longyao Ran, Shengyao Chen, Feng Xi	438
Construction of Wideband Radio Environment Map Based on Compressed Sensing Ensong Yang, Hui Yu, Xiaohao Mo, Ao Gao	444
Fusion of 5G Carrier Phase Ranging and 5G CSI Fingerprinting for Indoor Positioning	450
An Intelligent Indoor Localization System in the NLOS Environment Based on Deep Learning an	•
Lu Sun, Liang Wu, Zaichen Zhang, Jian Dang, Yulong Shen, Gefeng Huang, Liliang Ding	
Energy Efficiency Maximization in an IRS-Assisted Dual-Functional Radar and Communication System <i>Zhenhao Yu, Fuhui Zhou, Weizhi Zhong, Yuhang Wu, Qihui Wu</i>	stem 460
Position and Orientation Independent Wireless Gesture Recognition	466
Adaptive Waveform Optimization for MIMO Integrated Sensing and Communication Sytems Bas	ed on
Mutual Information	472
Pilot-Based Delay and Doppler Estimation in 6G Integrated Communication and Sensing Network Xiaozhou Zhang, Jing Jin, Liang Ma, Yajuan Wang, Mengting Lou, Tao Jiang, Qixing Wang, G Jiangzhou Wang	
◆ Intelligent Signal Processing Symposium	
Specific Radar Emitter Identification Using 1D-CBAM-ResNet	483
Exploiting Spectral Resource Allocation Scheme for TDOA-Based Multiple Source Localization Lanlan Huang, Yue Zhao, Zan Li, Chao Wang, Benjian Hao	489
Wideband Sparse Cascaded Channel Estimation for RIS-Assisted Wireless Systems	495

An Accurate Earthquake Localization Algorithm Using the TDOA Measurements between P and S Waves 501 Liehu Wu, Jingna Fan, Yanbin Zou
Semantics-Guided Contrastive Joint Source-Channel Coding for Image Transmission
FPGA-Based Implementation of Discrete Fractional Fourier Transform Algorithm
Forecasting Stock Indexes with Metabolic DWT and MWA-GM(1,1)
Deep Reinforcement Learning Based Resource Allocation for URLLC User-Centric Network
Lightweight Neural Networks for Automatic Classification of ECG Signals
Feasibility Analysis and Target Detection Technology of Passive Radar Based on 5G Signal
Design and Analysis of Amplitude-Phase-Form Detection in Residual Phase Noise
AoI-Aware Spectrum and Power Allocation for High-Speed Railway Networks
A Novel Channel Identification Architecture for mmWave Systems Based on Eigen Features
MADDPG-Based Power Allocation Algorithm for Network-Assisted Full-Duplex Cell-Free MmWave Massive MIMO Systems with DAC Quantization
Qingrui Fan, Yu Zhang, Zhaoye Wang, Jiamin Li, Pengcheng Zhu, Dongming Wang A Model-Driven Network Based on ISTA for Massive MIMO Signal Detection
Optical Wireless Communications Symposium
A Novel Beam Adjustment Method Based on Galvo Scanner for Optical Wireless Communication
Indoor Visible Light Positioning Based on Extreme Learning Machine with Local Training Samples 573 Ren Liu, Zhonghua Liang, Zhenyu Wang, Mengan Song, Wei Li

Signal Processing in Twin-field Quantum Key Distribution	578
Shuang Wang, Zhen-Qiang Yin, De-Yong He, Wei Chen, Guang-Can Guo, Zheng-Fu Han	
A Novel Security Underwater Visible Light Communication System based on Phase Scrambling by Utilizir	ng a
Chaos Map	582
Zhilan Lu, Wenqing Niu, Nan Chi	
◆ Internet of Things Symposium	
A Traffic Scheduling Algorithm Combined with Ingress Shaping in TSN	586
Wenxuan Han, Yanjue Li, Changchuan Yin	
Active User Detection for Uplink NOMA Communication: Deep Learning ApproachActive User Detection for Uplink NOMA Communication: Deep Learning Approach	592
Chuanhang Yu, Chenglin Li, Gang Wu	
A QoS Sensitive Networking Scheme Based on BLE Audio	598
Guangyue He, Weiwei Xia, Yiming Zhao, Feng Yan, Lianfeng Shen, Yinong Zhang, Yingbin Gao	
Multivariate Time-Series Anomaly Detection in IoT Using Attention-Based Gated Recurrent Unit	604
Yifeng Tan, Guobing Li, Yuxuan Chen, Guomei Zhang	
Resource Allocation of E2E Slices in Softwarized UAVs-Assisted 6G Terrestrial Networks	610
Haotong Cao, Xiaoming Wang, Rui Jiang, Ting Liu, Lei Xue, Daniel Xiapu Luo	
Object Detection Model Based on Dual Visual Pathway	615
Ruixuan Chen, Xiao Yao, Yifeng Zeng	
Finding the Truth from Uncertain Time Series Based on Entropy	620
Bo Jiang, Jizhou Sun	
Direction of Arrival Estimation Based on Simplified Dictionary Matching Pursuit Algorithm with Rotationa	I
Invariance	625
Yiming Zhao, Weiwei Xia, Guangyue He, Feng Yan, Lianfeng Shen, Yinong Zhang, Yingbin Gao	
Application of Transformer with Auto-Encoder in Motor Imagery EEG Signals	631
Rui Jiang, Liuting Sun, Xiaoming Wang, Youyun Xu	
Deep Learning Based Localization Scheme for UAV Aided Wireless Sensor Networks	638
Hanjun Zhang, Feng Yan, Hao Li, Kai Ding, Tao Wu, Weiwei Xia, Lianfeng Shen	
A Measurement Campaign of Industrial Environment for Ultra Reliable IIoT Systems	644
Oiwei Zhang. Tian Hong Loh. Dong Zhou. Fei Shen. Zhipei Huang. Fei Oin	

Joint Resource Allocation and Location Optimization for UAV-Assisted IoT Wireless Networks in the 6	
Chenyu Zhang, Haibo Dai, Baoyun Wang, Chunguo Li	649
Joint Edge Computing and Caching Based on D3QN for Lunar Internet of Things Geng Chen, Jingli Sun, Fei Shen, Qingtian Zeng	655
Task Scheduling via Modifed Deep Reinforcement Learning for MEC-Enabled Industrial IoT	661
Distributed Radar Interval Distance Estimation Based On Deep Neural Network	667
◆ Large Scale Distributed Signal Processing Symposium	
Resource Allocation for V2X Assisted Automotive Radar System based on Reinforcement Learning	672
A Novel High Capacity Transmission Frame Structure in Directional-Beam-Based Networks with Large Propagation Delays	677
Research on Transmission Performance of Wireless Communication System in V2X	683
On the Performance of Non-Orthogonal Transmission Enabled Two-Tier CoMP Networks	689
Deep Reinforcement Learning for the Joint AoI and Throughput Optimization of the Random Access Sys	
Hanyu Zhao, Hanxiao Yu, Zhongpei Zhang, Ming Zeng, Zesong Fei	
Spatial-Temporal Context-Aware Location Prediction Based on Bidirectional Self-Attention Network	701
Maximum Likelihood DOA Estimation Aided by Magnitude Measurements	707
Dynamic Beam Hopping of Double LEO Multi-beam Satellite based on Determinant Point Process	713
Adaptive mmWave Beam Tracking in 3D Scenes via Multi-Agent Deep Q Learning	719

Robust Low-Rank Matrix Factorization via Block Iteratively Reweighted Least-Squares	725
Nanxi Li, Zhen-Qing He, Jianchi Zhu, Xiaoming She, Peng Chen, Ying-Chang Liang	
◆ Mobile and Computing Networks Symposium	
Deep-Reinforcement-Learning-Based Doppler Compensation for High-Mobility Cell-Free Massive	MIMO
Systems	731
Xizhao Zhang, Jie Ling, Yaqi Li, Jiamin Li, Pengcheng Zhu, Dongming Wang	
The Transmission Scheme for UAV MIMO System Based on Reinforcement Learning	736
Wenyi Zhang, Chen Liu, Ge Wang, Yunchao Song	
A Formation Control Algorithm for Air-Ground Cooperative UAV	741
Mengyuan Chen, Bo Li, Jinglong Wang, Gang Wang	
A Suggest-And-Improve RAN Slicing Strategy for Mobile Networks	748
Chengdong Yang, Tianyu Wang, Zhe Xiaoy, Shaowei Wang	
Service-Oriented Topology Reconfiguration of UAV Networks with Deep Reinforcement Learning	753
Ziyan Chen, Nan Cheng, Zhisheng Yin, Jingchao He, Ning Lu	
Coverage Analysis of Cell-Edge Users in Reconfigurable Intelligent Surface-Assisted Cellular Networks	759
Hanwen Chen, Howard H. Yang, Qin Tao, Caijun Zhong	
Joint Precoding and Jamming Design for Secure Transmission in NOMA-ISAC Networks	764
Dongdong Li, Zhutian Yang, Nan Zhao, Zhilu Wu, Yonghui Li, Dusit Niyato	
On the Uplink Performance of Multi-User MC-CDMA Satellite-Terrestrial Deliveries	770
Yi Zhang, Weihao Yan, Tian Yuan, Ping Yan, Jinpeng Song, Xiangyuan Bu	
Task Delay Minimization in Multi-UAV-Assisted Mobile Edge Computing System	776
Ye Wu, Feng Tian, Yinqiu Jiang, Xin Wei	
Computation-Intensive Status Update in UAV Relay-Assisted IoT with Short Packet Communications	782
Xianbang Diao, Yueming Cai	
Effective Computational Efficiency Maximization in Cooperative NOMA Based MEC System	788
Lei Wang, Xin Liu, Xue Jiang, Jingwu Cui, Baoyu Zheng	
An Effective Capacity Empowered Resource Allocation Approach in Low-Latency C-V2X	794
Yicheng Xie, Kai Yu, Zhixuan Tang, Luofang Jiao, Jianzhe Xue, Haibo Zhou	

◆ Quantum Signal Processing Symposium
Optimized meta-VQE Algorithm for Better Trend Learning of Ground State Energy
A Delegated Quantum Approximate Optimization Algorithm
Channel Modeling Based on Quantum Generative Adversarial Network
Quantum Computation Using Coherent Ising Machines Based on Spiking Neural Networks
Measurement-Device-Independent Three-party Quantum Secure Direct Communication Based on Entanglement Swapping
Simple Quantum Communication Protocol Based on Bell Test
◆ Satellite Communications Symposium
Power Allocation for NOMA-Assisted Integrated Satellite-Aerial-Terrestrial Networks with Practical Constraints
Haifeng Shuai, Kenfeng Guo, Kang An, Shibing Zhu, Rui Liu
Ergodic Capacity and Outage Probability Analysis of RIS-Aided Hybrid Satellite-Terrestrial Networks
Dynamic Beam Assignment-based Secure Beamforming Scheme in Large-scale Multi-beam LEO Satellite Constellation
One-Step Grant-Free Random Access for Burst Short Packets in Satellite-Terrestrial Integrated Network 848 Xu Han, Xuefei Zhang, Jin Xu, Xiaofeng Tao
Performance Analysis of RIS-Assisted RF/FSO System for Hybrid Satellite-Terrestrial Relay Network with Decode-and-Forward Protocol
Shuyuan Lu, Guanjun Xu, Lin Qu, Qinyu Zhang, Zhaohui Song

Game Theoretic Traffic Scheduling and Hybrid QoSAware Routing in Software Defined Satellite Networks 8 Jianan Du, Chaowei Wang, Cheng Wang, Fan Jiang, Weidong Wang	859
Multi-Dimensional Resource Optimal Allocation Scheme for Tiansuan Constellation	865
Energy-Efficient Coded Content Placement for Satellite-Terrestrial Cooperative Caching Network	871
TCP Performance in Satellite Backhauling for Maritime Communications: A ns-3 Study	877
Multidimensional Direct Fractional Programming based Multicast Beamforming Design in Space-Grou Integration Networks	
Huizhen Qiu, Hongming Zhang, Mugen Peng	
FedHAP: Fast Federated Learning for LEO Constellations using Collaborative HAPs	888
◆ Unmanned Aerial Vehicle Communications Symposium	
Joint Sensor Localization and Data Collection in UAV-Assisted Wireless Sensor Network	894
Performance Analysis of Dual-Hop UAV-Assisted FSO Communication System with DF Protocol	900
Lifetime Maximization for UAV-Enabled Integrated Localization and Communication Networks in Emerger Scenarios	•
Xinyu Yu, Zhenyu Liu, Lianming Xu, Li Wang	
Mean-Field Multi-Agent Reinforcement Learning for Adaptive Anti-Jamming Channel Selection in U	
Feng Du, Jun Li, Yan Lin, Zhe Wang, Yuwen Qian	
Aerial Reconfigurable Intelligent Surface Assisted Maritime Wireless Communications	916
Environment-aware Path Planning for UAV-assisted Search and Rescue	922
An Extended Family of No-Hit-Zone Frequency Hopping Sequences for UAVs Cluster Communication <i>Wendong Gao, Lei Guan, Zan Li, Jiangbo Si, Pei Hui, Hang Fu</i>	928

Deep Reinforcement Learning Assisted UAV Trajectory and Resource Optimization for NOMA Networks 9 Peixin Chen, Jian Zhao, Furao Shen)33
Multi-Objective Utility Optimization-Based Cooperative Mission Planning for UAVs9 Xuan Li, Rong Chai, Rouzhi Tang)39
◆ Wireless Transmission Technology and Networking Symposium	
RIS-Aided Robust Secure Beamforming Design Against Pilot Spoofing Attack9 Lingyun Chai, Tong Bai, Lin Bai)44
MIMO Secure Communication with Reconfigurable Intelligent Surface: Finite-Alphabet Inputs)5C
A Deterministic Communication Technique in the 5G-Adv/6G Access Network Systems) 55
Phase Noise Estimation in Time Domain for OFDM System)61
Progressive Linear Precoder Optimization for Multicast Retransmission) 67
Average Spectral Efficiency for TDD-based non-Stationary XL-MIMO with VR Estimation	
Qidi Li, Yanyan Wang, Li Li, Xiaohu Tang, Xike Ren)78
Gaussian Approximation Based Low Complexity Soft Demapper for Spatial Modulation Aided MIMO-LE	
Shunlei Zhang, Jian Song	
Single Threshold Packet Scheduling Policy for AoI Minimization in Resource-Constrained Network9 Yonghao Ji, Xiaoli Xu	990
Active Reconfigurable Intelligent Surface (RIS) Aided Secure Wireless Transmission Under a Shared Pov	ver
Source Between Transmitter and RIS9 **Limeng Dong, Wanyu Yan**	996
SNR Analysis for RIS-Aided Communication System in Near- and Far-Fields10 <i>Qiping Yang, Ruisi He, Bo Ai</i>)01

Hybrid Beamforming Design with Finite Resolution Phase Shifters in Multi-User Systems	1007
Liyuan Wen, Hua Qian, Xiliang Luo, Kai Kang	
Information Geometry Approach for Massive MIMO Channel Estimation	1012
Jiyuan Yang, An-An Lu, Yan Chen, Xiqi Gao, Xiang-Gen Xia, Dirk Slock	
CNN-Based Auto Fully-Digital Compensation Method for User Equipment with IQ Imbalance	1018
Wenbin Dong, Huarui Yin, Li Chen	
Semi-Supervised Learning for MIMO Detection	1023
Peiyan Ao, Runhua Li, Rongchao Sun, Jiang Xue	
Physical Layer Authentication Based on DOA and Rotational State	1028
Weiyang Xu, Lingling Tao, Qinglin Xu	
Pilot-Assisted Time-Varying Channel Estimation for Universal Filtered Multicarrier Modulation	1034
Fuping Si, Jianping Zheng, Changju Chen	
Exploiting Markov Random Field Sparsity for Wideband Channel Estimation in Massive MIMO Syst	ems1040
Xiaofeng Liu, Wenjin Wang, Xinrui Gong, Xiao Fu, Xiqi Gao, Xiang-Gen Xia	
Secure Transmission of IRS-assisted A2G Multiuser Communication System with Hardware Impairm	nents1046
Tianhao Cheng, Buhong Wang, Kunrui Cao, Runze Dong, Danyu Diao	
Signal Detection for HF Skywave Massive MIMO-OFDM with Slepian Transform	1052
Linfeng Song, Ding Shi, Lu Gan, Xiqi Gao	1050
A Novel Transmission Strategy for Hybrid RIS Aided Millimeter Wave OTFS Systems	1058
Multi-floor Indoor Location Method Based on Fusion-CNN	1064
Yepeng Xu, Yuanpeng Zhao, Yan Yang, Dengyin Zhang	1004
Packet Loss and Delay Analysis for a Wireless Fading Channel Using Stochastic Network Calculus	1070
Pengxiang Li, Yao Wei, Nanxi Li, Tao Huang, Ning Jin	1070
Learning to Beamform in Multi-Group Multicast with Imperfect CSI	1075
Zhe Zhang, Meixia Tao, Ya-Feng Liu	
Multi-Source Fusion Localization Technology Based on Convolutional Neural Networks	1081
Zengshan Tian, Zhuangyin Xiao, Yudong Huang	

Computation-Dependent Routing Based Low-Latency Decentralized Collaborative Computing Strategy fo
Satellite-Terrestrial Integrated Network
Buyun Ma, Zhiyuan Ren, Wei Guo, Wenchi Cheng, Hailin Zhang
Hybrid Spectrum Access for V2V Heterogeneous Networks with Deep Reinforcement Learning1093
Jingfei Huang, Jingyi Peng, Honglin Xiang, Lingjie Li, Yang Yang
A New Low-Complexity WMMSE Algorithm for Downlink Massive MIMO Systems1096
Ningxin Zhou, Zheng Wang, Lanxin He, Yang Huang
Rapid On-Off-Division Duplex Based on Successive Interference Cancellation1102
Chani Kong, Hancheng Lu, Fengqian Guo, Qiaojia Lu, Xinyu Yang
Resource Management and Computing Offloading to Minimize Power Consumption Cost in Slice-MEC
System
Lei Wang, Xinjie Yao, Xue Jiang, Jingwu Cui, Baoyu Zheng
A Cost-sensitive SVM Based Approach for Root Cause Diagnosis in Wireless Networks1114
Wang Qi, Pan Zhiwen, Liu Nan, You Xiaohu
Simultaneous Information Relaying and Jamming via IRS to Secure NOMA Networks1119
Mengyi Ji, Jian Chen, Lu Lv, Qingqing Wu, Zhiguo Ding, Long Yang
A Novel 3D Geometry-Based Channel Model for Massive MIMO V2V Communication in Curved Tunne
Environments1129
Maotao Li, Nan Ma, JianQiao Chen, Yamao Zhao
DRL-based Joint Beamforming Design for RIS-assisted mmWave MU-MISO system113
Ken Long, Jinsong Lin, Guifang Zhao, Yunhong Zhou, Yangzhou Mei
Active Reconfigurable Intelligent Surface Aided Communication with Partial CSI1137
Gui Zhou, Cunhua Pan, Hong Ren
Energy Efficiency Maximization via Joint Beamforming and Power Control for URLLC Service in
Network-Assisted Full Duplex Systems
Yuting Yin, Bo Liu, Pengcheng Zhu, Jiamin Li, Yan Wang
Dual Quadrature Phase Reflection Modulation for RIS-Assisted Integrated Sensing and Communication1150
Mei Gao, Wenchi Cheng, Wei Zhang, Wei Xie
Optimized Uplink Transmission for C-RAN with Hybrid Analog-digital Beamforming and Resolution-adaptive
ADCs1156
Min Hua, Fei Gao, Xinlai Luo, Wenqing Li, Zhiyong Chen, Bin Xia

IRS-Aided Secure Communications over an Untrusted AF Relay System	1161
Ying Gao, Deli Qiao, Haifeng Qian	
MixerNet: Deep Learning for Eigenvector-Based CSI Feedback	1167
Hongrui Shen, Long Zhao, Fei Wang, Yuhua Cao	
Energy-Efficient Optimization for Multi-cell Distributed Massive MIMO URLLC Systems	1172
Xiaoyue Zhu, Bo Liu, Pengcheng Zhu, Jiamin Li, Yan Wang	
Deep Reinforcement Learning Based Resource Allocation for Intelligent Reflecting Surface Assisted	d Dynamic
Spectrum Sharing	1178
Jianxin Guo, Zhe Wang, Jun Li, Jie Zhang	
Active Constraints Inspired Zero-Forcing Precoder Design under Per-Antenna Power Constraints	1184
Xianzhi Hu, Xuchu Dai	
Grant-Free NOMA over Universal Filtered Multicarrier	1189
Changju Chen, Jianping Zheng, Fuping Si	
Personalized Wireless Resource Allocation in Multi-connectivity B5G C-V2X Networks	1195
Ziyi Lu, Tianqi Zhang, Xiangjie Ji, Bo Qian, Luofang Jiao, Haibo Zhou	
Performance of Multiple Intelligent Reflecting Surfaces Assisted Communication	1201
Donglin Jia, Yi Zhong, Robert C. Qiu, Xiaohu Ge	
Author Index	