



中国科技核心期刊

ISSN 1000-0801
CN 11-2103/TN

电信科学

Telecommunications Science

第38卷第8期 Vol. 38 No. 8 | 2022年8月 Aug. 2022



中国通信学会



人民邮电出版社有限公司

中国·北京 Beijing, China

目 次

专题：无人机空地无线通信技术

无人机辅助 MEC 系统：架构、关键技术与未来挑战张天魁，徐 瑜，刘元玮，杨鼎成，任元红 [2022237](3)

面向群体快速融合的仿生无人机集群架构 曾子鸣，董 超，朱小军，贾子晔 [2022240](17)

基于 5G 无人机通信的多智能体异构网络选择方法
.....丁 雨，李晨凯，韩会梅，卢为党，任元红，高 原，曹 江 [2022239](28)

无人机辅助无蜂窝大规模 MIMO 中的空地协同调度 邓丹昊，王朝炜，江 帆，王卫东 [2022242](37)

基于抛物方程的无人机通信场景传播特性分析 韩 慧，郝玉龙，杨 铖，王 健 [2022247](45)

面向空天应急通信系统的空地连续覆盖技术研究与应用陈盛伟，李 帆，杨光平，周 剑，苏 郁 [2022241](54)

研究与开发

基于混合精度 ADC 量化的大规模 MIMO 系统能效联合优化算法
.....曹海燕，汪忠亮，徐 好，陈千鸿，许方敏 [2022150](65)

5G 通导融合高精度定位技术进展及仿真验证平台
.....贾兴华，刘 鹏，齐望东，刘升恒，黄永明，李佳璐，徐 佳 [2022164](75)

基于 LSTM 流量预测的路由规划和切换 诸葛斌，王林超，宋 杨，邵 瑜，董黎刚，蒋 献 [2022172](86)

一种基于多跳 D2D 和社交感知的新颖中继选择算法 李 良，杨新杰[2022235](101)

5G 核心网业务模型的智能化预测研究 冯 楠，刘贺林，周 泉，杨海俊，付蜜能，钟大平[2022046](111)

广义正交码索引调制系统的性能分析 卞李娜，冯会真，金小萍，楼维中，瞿崇晓[2022166](120)

5G 网络大数据智能分析技术 李爱华，吴晓波，陈 超，魏 彬，史嫒嫒[2022052](129)

工程与应用

5G 网络自动化：从人工运维到全自治 詹 勇，吴 枫[2022088](140)

电信运营商知识图谱技术体系研究及应用实践 赵东明[2022145](151)

基于 AI 的全场景智能基站节电系统设计与实现
.....赵 伟，李 贝，孟 宁，王廷伟，林俊钊，陈 乐，胡煜华，杨汉源[2022169](163)

运营商级 SD-WAN 组网 NTP 时钟同步方案 赵乾良，王 羽，汤 凌，颜永明[2022092](171)

基于知识库的制造业能耗优化平台技术研究 杨伟伟，王思宁，郑贵德，宋亚琼[2022142](178)

Telecommunications Science

Vol.38 No.8 August 2022

Contents

Topic: UAV-Assisted Air-Ground Wireless Communication Technology

- UAV-assisted MEC systems: architecture, key technology, and future challenges
..... ZHANG Tiankui, XU Yu, LIU Yuanwei, YANG Dingcheng, REN Yuanhong [2022237](3)
- Bionic UAV architecture for fast swarm fusion ZENG Ziming, DONG Chao, ZHU Xiaojun, JIA Ziyi [2022240](17)
- Multi-agent heterogeneous network selection method based on 5G UAV communication
..... DING Yu, LI Chenkai, HAN Huimei, LU Weidang, REN Yuanhong, GAO Yuan, CAO Jiang [2022239](28)
- Coordinated air-ground scheduling for UAV-assisted cell-free massive MIMO
..... DENG Danhao, WANG Chaowei, JIANG Fan, WANG Weidong [2022242](37)
- Analysis of propagation characteristics of UAV communication scenarios based on parabolic equation
..... HAN Hui, HAO Yulong, YANG Cheng, WANG Jian [2022247](45)
- Research and application of air-to-ground continuous coverage technology for air-space emergency communication system
..... CHEN Shengwei, LI Fan, YANG Guangping, ZHOU Jian, SU Yu [2022241](54)

Research and Development

- Energy efficiency joint optimization algorithm for mixed-ADC massive MIMO systems
..... CAO Haiyan, WANG Zhongliang, XU Hao, CHEN Qianhong, XU Fangmin [2022150](65)
- Technical perspective and simulation platform for 5G integrated communication and high precision localization
..... JIA Xinghua, LIU Peng, QI Wangdong, LIU Shengheng, HUANG Yongming, LI Jialu, XU Jia [2022164](75)
- Routing planning and handoff based on LSTM traffic prediction
..... ZHUGE Bin, WANG Linchao, SONG Yang, SHAO Yu, DONG Ligang, JIANG Xian [2022172](86)
- A multi-hop D2D and social awareness based novel relay selection algorithm LI Liang, YANG Xinjie [2022235](101)
- Research on 5G core network service model intelligent prediction
..... FENG Nan, LIU Helin, ZHOU Quan, YANG Haijun, FU Mineng, ZHONG Daping [2022046](111)
- Performance analysis of generalized orthogonal code index modulation system
..... BIAN Lina, FENG Huizhen, JIN Xiaoping, LOU Weizhong, QU Chongxiao [2022166](120)
- Big data intelligent analysis technology for 5G network
..... LI Aihua, WU Xiaobo, CHEN Chao, WEI Bin, SHI Yuanyuan [2022052](129)

Engineering and Application

- 5G network automation: from manual operating to full autonomous ZHAN Yong, WU Feng [2022088](140)
- Research and application practice of knowledge graph technology system for telecom-operators
..... ZHAO Dongming [2022145](151)
- Design and implementation of AI-based all-scenario intelligent base station power-saving system
..... ZHAO Wei, LI Bei, MENG Ning, WANG Tingwei, LIN Junfan, CHEN Le, HU Yuhua, YANG Hanyuan [2022169](163)
- Carrier-grade NTP clock synchronization scheme of SD-WAN network
..... ZHAO Qiangen, WANG Yu, TANG Ling, YAN Yongming [2022092](171)
- Research on manufacturing energy consumption optimization platform technology based on knowledge-base
..... YANG Weiwei, WANG Sining, ZHENG Guide, SONG Yaqiong [2022142](178)