

## 目次

### 航天工程

车载光学测量设备任务调度问题建模与求解 ..... 柴 华,宋旭民,赵 乾,胡 涛(1)

Bang-Bang 控制方式旋转导弹气动特性数值分析 ..... 徐一航,陈少松,周 航(10)

基于改进核极限学习机和集成学习理论的目标机动轨迹预测  
..... 寇英信,奚之飞,徐 安,李战武,杨爱武(23)

数值模拟气液针栓式火箭发动机喷雾燃烧对声学激励的响应 ..... 金 焯,沈赤兵,林 森,杨林涛(36)

高温燃气与不同构型的再生冷却面板对流传热的数值模拟 ..... 胡江玉,王 宁,周 进,潘 余(46)

通气空泡与超音速尾喷流耦合作用实验研究 ..... 赵小宇,向 敏,刘 波,张为华(53)

复合固体推进剂颗粒填充模型及其统计特性分析 ..... 颜小婷,夏智勋,那旭东,沙本尚(61)

### 信息与通信工程·计算机科学与技术

群时延傅里叶分解模型及其估计方法 ..... 肖志斌,黄仰博,唐小妹,刘增军,倪少杰(72)

结合  $Y^d U^a V^a$  颜色模型和改进 MobileNetV3 的视频烟雾检测方法  
..... 刘 通,程江华,华宏虎,罗笑冰,程 榜(80)

北斗系统星载原子钟周期性波动的频谱分析校正方法 ..... 李骁逸,龚 航,彭 竞,于美婷,孙广富(86)

利用全球探空站背景场资料分析不同掩星数据偏差特性 ..... 张秋昭,王耀兴,沈 震(93)

跨模态检索中的相似性漂移问题 ..... 郑奇斌,刁兴春,王彦臻,曹建军,刘 艺,秦 伟(99)

蒙特卡洛剖分投影法的爆震弹破片平均比动能评估 ..... 刘星雨,战仁军,欧阳的华,李永利(107)

高速 SpaceFibre 总线节点的系统设计 ..... 祝 平,朱 岩,安军社,江源源,周 莉(117)

### 控制科学与工程·材料科学与工程·电子科学与技术

强化学习在多阶段装备组合规划问题中的应用 ..... 张骁雄,丁 松,李明浩,丁 鲲,王 龙,义余江(127)

动态威胁环境下单无人机测向定位航迹优化算法 ..... 陈方正,郝绍杰(137)

液压水锤效应引起液体喷溅特性及其影响因素试验研究 ..... 陈安然,李向东,周兰伟,纪杨子燚(144)

不同热解温度石英杂化酚醛复合材料渗透率测试 ..... 王丽燕,陈伟华,崔占中,王振峰,王 筠,纪兵兵(153)

921A 钢在海水中腐蚀的力学化学效应 ..... 王向军,徐庆林,宋玉苏,王海光(160)

随移动窗推进的带电粒子束团长程传输模拟分析  
..... 郝建红,王 希,张 芳,赵 强,薛碧曦,范杰清,董志伟(168)

# JOURNAL OF NATIONAL UNIVERSITY OF DEFENSE TECHNOLOGY

Vol. 43 No. 5

October 2021

## CONTENTS

### Aerospace Engineering

- Modeling and solving for task dispatch problem of vehicular optical observation equipment  
..... CHAI Hua, SONG Xumin, ZHAO Qian, HU Tao ( 1 )
- Numerical study on the aerodynamic characteristics of the rotating projectile based on Bang-Bang control method  
..... XU Yihang, CHEN Shaosong, ZHOU Hang ( 10 )
- Maneuver trajectory prediction of target based on improved KELM and ensemble learning theory  
..... KOU Yingxin, XI Zhifei, XU An, LI Zhanwu, YANG Aiwu ( 23 )
- Numerical simulation on spray combustion responses to acoustic excitation in a gas-liquid pintle rocket engine  
..... JIN Xuan, SHEN Chibing, LIN Sen, YANG Lintao ( 36 )
- Numerical simulation on convective heat transfer between high-temperature gas and regenerative cooling panels of different configurations  
..... HU Jianguyu, WANG Ning, ZHOU Jin, PAN Yu ( 46 )
- Experimental study on the coupling effect of ventilated cavity and supersonic tail jet  
..... ZHAO Xiaoyu, XIANG Min, LIU Bo, ZHANG Weihua ( 53 )
- Particle packing model of composite solid propellant and its statistical analysis ... YAN Xiaoting, XIA Zhixun, NA Xudong, SHA Benshang ( 61 )

### Information and Communication Engineering · Computer Science and Technology

- Fourier decomposition model of group delay and its estimation method  
..... XIAO Zhibin, HUANG Yangbo, TANG Xiaomei, LIU Zengjun, NI Shaojie ( 72 )
- Video smoke detection method combining  $Y^d U^a V^a$  color model and improved MobileNetV3  
..... LIU Tong, CHENG Jianguhua, HUA Honghu, LUO Xiaobing, CHENG Bang ( 80 )
- Correction method for periodic fluctuation of the BDS satellite atomic clocks based on spectrum analysis  
..... LI Xiaoyi, GONG Hang, PENG Jing, YU Meiting, SUN Guangfu ( 86 )
- Deviation characteristics analysis of different occultation data using IGRA Sounding data  
..... ZHANG Qiuzhao, WANG Yaoxing, SHEN Zhen ( 93 )
- Similarity drifting problem in cross-modal retrieval ..... ZHENG Qibin, DIAO Xingchun, WANG Yanzhen, CAO Jianjun, LIU Yi, QIN Wei ( 99 )
- Evaluation of the average specific kinetic energy of stun grenade fragments by Monte Carlo subdivision projection simulation  
..... LIU Xingyu, ZHAN Renjun, OUYANG Dihua, LI Yongli ( 107 )
- System design of high-speed SpaceFibre node ..... ZHU Ping, ZHU Yan, AN Junshe, JIANG Yuanyuan, ZHOU Li ( 117 )

### Control Science and Engineering · Materials Science and Engineering · Electronic Science and Technology

- Application of reinforcement learning in multi-period weapon portfolio planning problems  
..... ZHANG Xiaoxiong, DING Song, LI Minghao, DING Kun, WANG Long, YI Yujiang ( 127 )
- Trajectory optimization of single UAV for bearing-only target localization in dynamic threats ..... CHEN Fangzheng, HAO Shaojie ( 137 )
- Experimental study on the characteristics and influencing factors of liquid spurt caused by hydrodynamic ram  
..... CHEN Anran, LI Xiangdong, ZHOU Lanwei, JI Yangzhiyi ( 144 )
- Test on the permeability of quartz hybrid phenolic material under different pyrolysis temperatures  
..... WANG Liyan, CHEN Weihua, CUI Zhanzhong, WANG Zhenfeng, WANG Yun, JI Bingbing ( 153 )
- Mechanochemical effect of 921A steel corrosion in seawater ..... WANG Xiangjun, XU Qinglin, SONG Yusu, WANG Haiguang ( 160 )
- Simulation analysis of long-range propagation of charged particle beams propelled by moving window  
..... Hao Jianhong, Wang Xi, Zhang Fang, Zhao Qiang, Xue Bixi, Fan Jieqing, Dong Zhiwei ( 168 )