国 防 科 技 大 学 学 报

2021 年 4 月　　GUOFANG　KEJI　DAXUE　XUEBAO　　第 43 卷 第 2 期

目　　次

控制科学与工程·信息与通信工程

针对多振源密频及波动线谱主动控制的改进算法及试验…… 李　彦,何　琳,王迎春,王春雨,尹天齐(1)

卡尔曼滤波框架下优化增益异类噪声处理方法及其应用…… 赵　岩,王　宁,韦道知(11)

频域加权 LQR 控制器改进设计…… 李　欣,张进秋(19)

基于随机森林的重要性测度指标体系 …… 宋述芳,何入洋(25)

面向复杂几何模型的多级并行四面体网格生成算法…… 徐　权,刘田田,冷珏琳,杨　洋,郑　澎(33)

无人机位置欺骗诱导策略…… 史鹏亮,王晓宇,薛　瑞(40)

基于北斗信号的降雨信息监测方法…… 安　豪,严　卫,卞双双,邓志武,张义生(47)

低调谐增益变化的 10 GHz 电感电容式压控振荡器设计

…… 齐晓斐,于　杰,孙旭涛,高铭阳,张志勇,赵　武(54)

航天工程·材料科学与工程

航天器软件的研发路线 …… 吕良庆(61)

无人机对地目标多帧融合定位与误差收敛特性分析…… 鲁亚飞,吴岸平,陈清阳(66)

SpaceFibre 网络服务质量时隙资源分配算法 …… 郑静雅,安军社(74)

无奇点三维攻击时间控制滑模导引律…… 常思江,吴　放,陈升富(84)

新型航空铝合金材料复杂形貌点蚀损伤应力集中效应分析…… 刘治国,李旭东,陈　川(93)

机械工程

考虑多轴应力与共振影响的随机振动疲劳寿命预测

…… 白　金,李　静,仇原鹰,盛　英,孙　红,王海东,王肇喜(102)

微结构阵列超精密车床快刀伺服装置及试验研究 …… 关朝亮,刘俊峰,李　飞,王贵林(109)

钎杆内孔的液压低频振动扩孔工艺实验 …… 徐林红,刘志凡,高　尚,饶建华(117)

加权随机模拟的时变可靠性分析方法…… 袁修开,郑振轩,罗冬秀(125)

考虑刚度影响的双输入转矩分流式齿轮系统均载特性 …… 魏　维,郭文勇,韩江桂,余平波(132)

圆柱形装药驱动轴向预制破片飞散特性…… 李　茂,高圣智,侯海量,李　典,郑红伟,李永清,朱　锡(141)

新型扫雷装药爆炸场特性分析及应用 …… 吴克刚,王　博(148)

本期责任编辑: 王　嘉,梁　慧　　**英文摘要审校:** 熊立桃,何咏梅　　**封面设计:** 陈巧巧

期刊基本参数: CN 43-1067/T * 1956 * b * A4 * 154 * zh * P * ￥20.00 * 1200 * 20 * 2021-04

JOURNAL OF NATIONAL UNIVERSITY OF DEFENSE TECHNOLOGY

Vol. 43 No. 2 April 2021

CONTENTS

Control Science and Engineering · Information and Communication Engineering

Improved algorithm and experiments for active control of dense and fluctuating frequency sinusoidal vibration induced by multi-sources ····· *LI Yan*, *HE Lin*, *WANG Yingchun*, *WANG Chunyu*, *YIN Tianqi* (1)

Optimal gain processing method of heterogeneous noises based on Kalman filtering framework and its application ····· *ZHAO Yan*, *WANG Ning*, *WEI Daozhi* (11)

Improved design of frequency weighted LQR controller ····· *LI Xin*, *ZHANG Jinqiu* (19)

Importance measure index system based on random forest ····· *SONG Shufang*, *HE Ruyang* (25)

Multilevel parallel tetrahedral mesh generation for complex geometric models ····· *XU Quan*, *LIU Tiantian*, *LENG Juelin*, *YANG Yang*, *ZHENG Peng* (33)

Induction strategy for unmanned aerial vehicle position spoofing ····· *SHI Pengliang*, *WANG Xiaoyu*, *XUE Rui* (40)

Method to monitor rainfall information based on BeiDou signal ····· *AN Hao*, *YAN Wei*, *BIAN Shuangshuang*, *DENG Zhiwu*, *ZHANG Yisheng* (47)

Design of a 10 GHz LC-VCO with low tuning gain fluctuation ····· *QI Xiaofei*, *YU Jie*, *SUN Xutao*, *GAO Mingyang*, *ZHANG Zhiyong*, *ZHAO Wu* (54)

Aerospace Engineering · Materials Science and Engineering

Research and development method of software on spacecraft ····· *LYU Liangqing* (61)

Analysis of UAV multi-frame fusion location and error convergence characteristic for ground target ····· *LU Yafei*, *WU Anping*, *CHEN Qingyang* (66)

Time-slot allocation algorithm of quality of service for SpaceFibre ····· *ZHENG Jingya*, *AN Junshe* (74)

Nonsingular sliding mode guidance law for impact time control in three-dimensional space ····· *CHANG Sijiang*, *WU Fang*, *CHEN Shengfu* (84)

Stress concentration effect analysis of new aviation aluminum alloy pitting corrosion damage with complex morphology ····· *LIU Zhiguo*, *LI Xudong*, *CHEN Chuan* (93)

Mechanical Engineering

Random vibration fatigue life prediction considering the effects of multi-axial stress and resonance ····· *BAI Jin*, *LI Jing*, *QIU Yuanying*, *SHENG Ying*, *SUN Hong*, *WANG Haidong*, *WANG Zhaoxi* (102)

Fast tool servo system of ultra-precision turning machine for microstructure arrays and its experimental study ····· *GUAN Chaoliang*, *LIU Junfeng*, *LI Fei*, *WANG Guilin* (109)

Experiment on hydraulic low frequency vibration reaming process of drill rod inner hole ····· *XU Linhong*, *LIU Zhifan*, *GAO Shang*, *RAO Jianhua* (117)

Weighted stochastic simulation for time-variant reliability analysis ····· *YUAN Xiukai*, *ZHENG Zhenxuan*, *LUO Dongxiu* (125)

Load sharing characteristics of dual-input torque-spilt gear system considering stiffness ····· *WEI Wei*, *GUO Wenyong*, *HAN Jianggui*, *YU Pingbo* (132)

Projection characteristics of axial prefabricated fragments driven by cylindrical charge ····· *LI Mao*, *GAO Shengzhi*, *HOU Hailiang*, *LI Dian*, *ZHENG Hongwei*, *LI Yongqing*, *ZHU Xi* (141)

Analysis and application of explosion field characteristics of new mine clearance charge ····· *WU Kegang*, *WANG Bo* (148)