

## 目 次

### 专题:飞行器设计与结构强度分析技术

- 复合材料层合结构层向理论及应用进展 ..... 沈海军,李伟(1)  
热流体层板装置研究进展及应用综述 ..... 尹亮,刘伟强(15)  
超声速二元机翼随机混沌运动分析 ..... 闫盖,方明霞,杨英豪,沈海军(23)  
反对称铺层碳纤维复合材料圆柱壳的双稳态应力特性 ..... 张淑杰,李国泽,周阳,沈海军(32)  
复合材料层合板疲劳寿命形状参数与门槛值分析方法 ..... 李嘉骞,沈海军(38)  
燃烧室压力对潜入式喷管喉衬热应力的影响 ..... 龚建良,胥会祥(45)

### 计算机科学与技术·信息与通信工程·管理科学与工程

- 面向多点交互的多模态振动反馈触觉再现系统 ..... 陆熊,林闻旭,高永强,黄晓梅,陈春晓,刘佳(52)  
均匀圆阵主特征矢量分析解相干算法 ..... 倪柳柳,陈辉,倪萌钰,王晓戈(58)  
磁绝缘传输线阴极准直建模与仿真

- ..... 何德雨,呼义翔,曾江涛,杨实,周亚伟,孙江,尹佳辉,丛培天(66)  
运用科学计量学的人工智能安全技术评估 ..... 吴集,梁江海,刘书雷(73)  
前缘和转轴影响翼摇滚特性的数值模拟 ..... 杨小亮,黄世林,杨起,柴振霞,孙喜万,刘伟(79)  
中国超算技术赶超发展模式探析 ..... 苏诺雅(86)  
基于转置卷积神经网络的翼型结冰冰形图像化预测方法 ..... 何磊,钱炜祺,易贤,王强,张显才(98)  
卫星隐身技术研究进展及发展趋势 ..... 胡豪斌,张翔,廖文和,孔祥鲲(107)

### 控制科学与工程·机械工程

- 点邻域尺度差异描述的点云配准算法 ..... 陆军,陈坤,范哲君(128)  
重力扰动对SINS水平姿态的影响 ..... 安文,许江宁,吴苗,李峰(135)  
光学波导中原子干涉的加速度测量 ..... 魏春华,梁磊,左承林,颜树华,杨俊(142)  
大深度复合同振式矢量水听器设计 ..... 王文龙,孙芹东,王超,韩梅(149)  
直接挤出成型用环氧树脂的流变性及其可打印性 ..... 李欣,孙崇飞,尚建忠,罗自荣,卢钟岳,牛晓茹(159)  
拦截高速机动目标的捕获区及微分对策导引律 ..... 毛柏源,李君龙,张锐,张鹏飞(165)

# JOURNAL OF NATIONAL UNIVERSITY OF DEFENSE TECHNOLOGY

Vol. 43 No. 3

June 2021

## CONTENTS

### **Special Topic: Analysis Technology of Aircraft Design and Structural Strength**

Review of layerwise theory for composite materials laminated structures and its applications .....	SHEN Haijun, LI Wei ( 1 )
Research progress and application of thermal fluid platelet devices .....	YIN Liang, LIU Weiqiang ( 15 )
Analysis of stochastic chaotic motion on supersonic two-dimensional airfoil ...	YAN Gai, FANG Mingxia, YANG Yinghao, SHEN Haijun ( 23 )
Stress characteristics of bi-stable cylindrical shells with anti-symmetric laminated carbon fiber composite .....	ZHANG Shujie, LI Guoze, ZHOU Yang, SHEN Haijun ( 32 )
Analysis method of life shape parameter and fatigue threshold of composite laminates .....	LI Jiaqian, SHEN Haijun ( 38 )
Influence of chamber pressure on thermal stress for submerged nozzle insert throat .....	GONG Jianliang, XU Huixiang ( 45 )

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

#### **Management Science and Engineering**

Vibration feedback based multi-modal haptic rendering system for multi-contact interaction .....	LU Xiong, LIN Minxu, GAO Yongqiang, HUANG Xiaomei, CHEN Chunxiao, LIU Jia ( 52 )
Uniform circular array decoherence algorithm based on principal eigenvector analysis .....	NI Liuli, CHEN Hui, NI Mengyu, WANG Xiaoge ( 58 )
Alignment modeling and simulation of magnetically insulated transmission line cathode .....	HE Deyu, HU Yixiang, ZENG Jiangtao, YANG Shi, ZHOU Yawei, SUN Jiang, YIN Jiahui, CONG Peitian ( 66 )
Artificial intelligence security technology evaluation applying scientometrics .....	WU Ji, LIANG Jianghai, LIU Shulei ( 73 )
Numerical investigation of wing rock characteristics influenced by leading edge and roll-axis .....	YANG Xiaoliang, HUANG Shilin, YANG Qi, CHAI Zhenxia, SUN Xiwan, LIU Wei ( 79 )
Study on development mode of China's supercomputing technology .....	SU Nuoya ( 86 )
Graphical prediction method of airfoil ice shape based on transposed convolution neural networks .....	HE Lei, QIAN Weiqi, YI Xian, WANG Qiang, ZHANG Xiancai ( 98 )
Progress and prospect in satellite stealth technology .....	HU Haobin, ZHANG Xiang, LIAO Wenhe, KONG Xiangkun ( 107 )

#### **Control Science and Engineering · Mechanical Engineering**

Point cloud registration algorithm based on scale difference descriptor of point neighborhood .....	LU Jun, CHEN Kun, FAN Zhejun ( 128 )
Influence of gravity disturbance for SINS horizontal attitude .....	AN Wen, XU Jiangning, WU Miao, LI Feng ( 135 )
Acceleration measurement of atomic interference in optical waveguide .....	WEI Chunhua, LIANG Lei, ZUO Chenglin, YAN Shuhua, YANG Jun ( 142 )
Design of large depth combined co-vibrating vector hydrophone .....	WANG Wenlong, SUN Qindong, WANG Chao, HAN Mei ( 149 )
Rheological property and printability of epoxy resin materials for direct extrusion fabrication .....	LI Xin, SUN Chongfei, SHANG Jianzhong, LUO Zirong, LU Zhongyue, NIU Xiaoru ( 159 )
Capture zones and differential game guidance law for high-speed maneuvering target interception .....	MAO Boyuan, LI Junlong, ZHANG Rui, ZHANG Pengfei ( 165 )