

目 次

· 专 题 综 述 ·

航天动力学软件发展评述.....罗亚中 孙振江 乔 栋 (549)

· 应 用 研 究 ·

侵彻试验尺度效应和相似准则.....蒋 东 黄瑞源 余道建 周 刚 (561)
带滑移铰空间机器人运动规划的混合优化策略.....姚其家 戈新生 (566)
基于周期延拓的步进式正弦扫频阻抗控制方法.....张步云 汪若尘 孙晓东 曾发林 (573)
整星隔振用磁流变阻尼器神经网络模型.....王 楠 潘忠文 王 旭 祁 峰 陈照波 (579)
基于修正模态应变能指标的板结构损伤定位.....梁振彬 董 聪 张华昕 (585)
扩展有限元与遗传算法相结合的结构缺陷反演分析.....王佳萍 杜成斌 江守燕 (591)
书页搭接之摩擦力研究.....卫梦希 黎立云 王博楠 王园园 王 雪 张小峰 (597)
改进宾汉姆流变模型及其参数辨识.....张亮亮 王晓健 (602)

· 教 育 研 究 ·

多节拍器耦合系统的动力学建模与分析——动量(矩)定理的应用.....王晓军 吕 敬 王 琪 (606)
理论力学课程英译名称引发的思考.....汤可可 王华宁 (609)
土力学教学实践中几个小问题的思考.....祝恩阳 李晓强 杜亚楠 (612)
斯托克斯阻力公式的简单推导.....王先智 (617)
工程流体力学关于沿程阻力的教学探讨.....顾 磊 倪福生 (620)
基于 CDIO 模式的材料力学实践教学研究与探索.....周双喜 韩 震 黄 强 (623)
教授讲题
平面桁架杆件内力的虚位移原理求解.....薛艳霞 苏振超 (627)

· 力 学 纵 横 ·

身边力学的趣话

高铁为什么长这样?——不是跑得快,而是飞得低.....郭迪龙 郭 易 杨国伟 (629)
浮力杂谈.....尤明庆 (632)
涡是搓出来的吗?.....赵军方 (635)
太空拔河胜负再分析.....杜茂林 陈 平 王德荣 (638)

大学生园地

复合摆和耦合摆运动的可视化.....周成博 宋一诺 范光华 (641)

小问题.....(647)

2017 年总目录.....(648)

CONTENTS

Review

Survey of astrodynamics software development LUO Yazhong SUN Zhenjiang QIAO Dong (549)

Applied Research

Similarity laws and scaling of penetration tests
JIANG Dong HUANG Ruiyuan YU Daojian ZHOU Gang (561)
 Hybrid optimization strategy for motion planning of space robot system with prismatic joint
YAO Qijia GE Xinsheng (566)
 Impedance control method of stepped swept sine vibration test based on periodic extension
ZHANG Buyun WANG Ruochen SUN Xiaodong ZENG Falin (573)
 Neural network model of magnetorheological damper for vibration isolation platform of whole-spacecraft
WANG Lei PAN Zhongwen WANG Xu QI Feng CHEN Zhaobo (579)
 The damage localization for plate structures based on modified modal strain energy index
LIANG Zhenbin DONG Cong ZHANG Huaxin (585)
 The inverse analysis of internal defects (inclusions) in structures using a combined XFEM and GA method
WANG Jiaping DU Chengbin JIANG Shouyan (591)
 Friction mechanisms of overlapped sheets of two books under horizontal uniaxial tension
WEI Mengxi LI Liyun WANG Bonan WANG Yuanyuan WANG Xue ZHANG Xiaofeng (597)
 Improved Bingham rheological model and its parameter identification ...ZHANG Liangliang WANG Xiaojian (602)

Research on Education

Dynamic modeling and analysis of multi-metronome coupling systems—application of momentum (angular momentum) theorem WANG Xiaojun LÜ Jing WANG Qi (606)
 Reflection on English translation of course name Theoretical MechanicsTANG Keke WANG Huaning (609)
 Thinking of several problems in soil mechanics teachingZHU Enyang LI Xiaoqiang DU Ya'nan (612)
 A simple derivation of the Stokes formula of the drag WANG Xianzhi (617)
 On the teaching of friction resistance in engineering fluid mechanics GU Lei NI Fusheng (620)
 The teaching reform and practice of experimental of material mechanics based on CDIO pattern
ZHOU Shuangxi HAN Zhen HUANG Qiang (623)

Professor's desk

Solution to internal forces of bars of a planar truss by principle of virtual displacement
XUE Yanxia SU Zhenchao (627)

The Field of Mechanics

On mechanics around us

Why does the high-speed train look like this? GUO Dilong GUO Yi YANG Guowei (629)
 Talks about buoyancyYOU Mingqing (632)
 Are vortices twisted by shear stress? ZHAO Junfang (635)
 Reconsidering the outcome of a tug-of-war in space DU Maolin CHEN Ping WANG Derong (638)

College student column

Visualization of the vibration of compound pendulum and coupled pendulum
ZHOU Chengbo SONG Yinuo FAN Guanghua (641)

Question (647)

Contents of *Mechanics in Engineering* Vol.39, 2017 (648)