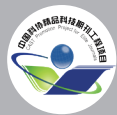


ISSN 0459-1879

CN 11-2062/O3



EI COMPENDEX
核心期刊

力学学报

Chinese Journal of Theoretical and Applied Mechanics

第 53 卷 第 3 期 Vol. 53 No. 3

2021



中国科学院力学研究所 主办
中国力学学会
力学学报期刊社 出版

万方数据



力学学报 (月刊)

Chinese Journal of Theoretical and Applied Mechanics

1957年创刊
2021年
第53卷 第3期

目次

研究综述

负泊松比结构力学设计、抗冲击性能及在车辆工程应用与展望 吴文旺 肖登宝 孟嘉旭 刘凯 牛迎浩 薛睿 张鹏 丁文杰 叶璇 凌雪 毕颖 夏勇 (611)

冰工程中关键力学问题专题

冰工程中的关键力学问题专题序 季顺迎 (639)
海冰与波流耦合动力学的研究进展 倪宝玉 曾令东 熊航 吴其远 (641)
河渠冰水力学研究进展和趋势 郭新蕾 王涛 付辉 潘佳佳 路锦枝 郭永鑫 李甲振 (655)
桥墩-冰塞-局部冲刷相关问题研究进展 王军 侯智星 隋觉义 程铁杰 (672)
基于DEM-FEM耦合方法的海上风机结构冰激振动分析 杨冬宝 高俊松 刘建平 宋础 季顺迎 (682)
冰激振动中的锁频共振分析 黄国君 (693)
基于主成分分析与支持向量机的渠道闸前冰输移与堆积判别模型 梁乃生 脱友才 邓云 贾云霄 (703)
气垫平台破冰阻力的模型试验研究 黄焱 孙策 田育丰 (714)
冰激结构频率锁定振动的发生机理及简单分析方法 屈衍 黄子威 邹科 尹昊阳 张大勇 (728)

Fluid Mechanics

基于机器学习的非结构网格阵面推进生成技术初探 王年华 鲁鹏 常兴华 张来平 (740)
返回舱高雷诺数再入过程底部流动稳定性 朱德华 沈清 杨武兵 (752)
湍流边界层等动量区演化机理的实验研究 王超伟 王康俊 李彪辉 姜楠 (761)
一种在网格内部捕捉间断的Walsh函数有限体积方法 任炯 王刚 (773)

固体力学

圆弧形超表面对透射声波的可调控制与功能转换 陈阿丽 王新萌 汪越胜 (789)
梯度纳米晶NiTi形状记忆合金的超弹性和形状记忆效应相场模拟 徐波 康国政 (802)
表面粗糙度对TC4钛合金柱壳剪切带形成的影响 杨涛 刘龙飞 杨智程 胡力 卢立伟 石献坤 (813)
非连续问题中单元分割的模板方法 王理想 文龙飞 肖桂仲 田荣 (823)

动力学与控制

随机参数系统不确定性量化的泛函观点与整体灵敏度分析 万志强 陈建兵 Michael Beer (837)
三时间尺度下非光滑电路中的簇发振荡及机理 毛卫红 张正娣 张苏珍 (855)
加性和乘性三值噪声激励下周期势系统的动力学分析 靳艳飞 王贺强 (865)
ANCF/CRBF平面梁闭锁问题及闭锁缓解研究 张大羽 罗建军 王辉 马小飞 (874)

生物、工程及交叉力学

探测器对超音速刚性盘-缝-带型降落伞系统的影响 龚升 吴锤结 (890)
近地小行星极短弧定轨的进化算法研究 李鑫冉 赵海斌 (902)
基于偏转距离近似模型的动能撞击小行星防御任务脉冲轨道优化研究 王艺睿 李明涛 周炳红 (912)

Chinese Journal of Theoretical and Applied Mechanics

(Monthly)

Vol. 53, No.3, 2021

CONTENTS

Research Review

- Mechanical design, impact energy absorption and applications of auxetic structures in automobile lightweight engineering . . .
..... Wu Wenwang, Xiao Dengbao,
Meng Jiayu, Liu Kai, Niu Yinghao, Xue Rui, Zhang Peng, Ding Wenjie, Ye Xuan, Ling Xue, Bi Ying, Xia Yong (611)

Key mechanical problems in ice engineering

- Preface of key mechanical problems in ice engineering Ji Shunying (639)
Review on the interaction between sea ice and waves/currents Ni Baoyu, Zeng Lingdong, Xiong Hang, Wu Qiyuan (641)
Progress and trend in the study of river ice hydraulics
..... Guo Xinlei, Wang Tao, Fu Hui, Pan Jiajia, Lu Jinzhi, Guo Yongxin, Li Jiazhen (655)
Advances in research work regarding impacts of bridge piers on ice accumulation and local scour processes
..... Wang Jun, Hou Zhixing, Sui Jueyi, Cheng Tiejie (672)
Analysis of ice-induced structure vibration of offshore wind turbines based on DEM-FEM coupled method
..... Yang Dongbao, Gao Junsong, Liu Jianping, Song Chu, Ji Shunying (682)
Study on frequency lock-in resonance in ice-induced vibration Huang Guojun (693)
Classification model of ice transport and accumulation in front of channel gates based on PCA-SVM
..... Liang Naisheng, Tuo Youcai, Deng Yun, Jia Yunxiao (703)
Experimental study of the ice breaking resistance on an air cushion platform Huang Yan, Sun Ce, Tian Yufeng (714)
Mechanism and simple analysis method of ice induced frequency lock-in vibration of offshore structures
..... Qu Yan, Huang Ziwei, Zou Ke, Yin Haoyang, Zhang Dayong (728)

Fluid Mechanics

- Preliminary investigation on unstructured mesh generation technique based on advancing front method and machine learning
methods Wang Nianhua, Lu Peng, Chang Xinghua, Zhang Laiping (740)
Base flow stability of return capsule during reentry process with high Reynolds number
..... Zhu Dehua, Shen Qing, Yang Wubing (752)
Experimental investigation on the evolution mechanism of uniform momentum zones in turbulent boundary layer
..... Wang Chaowei, Wang Kangjun, Li Biaohui, Jiang Nan (761)
A finite volume method with Walsh basis functions to capture discontinuity inside grid Ren Jiong, Wang Gang (773)

Solid Mechanics

- Tunable control and functional switch of transmitted acoustic waves by an arch-shaped metasurface
..... Chen Ali, Wang Xinmeng, Wang Yuesheng (789)
Phase field simulation on the super-elasticity and shape memory effect of gradient nanocrystalline NiTi shape memory alloy .
..... Xu Bo, Kang Guozheng (802)
Effect of surface roughness on the formation of shear band in Ti-6Al-4V alloy cylindrical shell
..... Yang Tao, Liu Longfei, Yang Zhicheng, Hu Li, Lu Liwei, Shi Xiankun (813)
A templated method for partitioning of solid elements in discontinuous problems
..... Wang Lixiang, Wen Longfei, Xiao Guizhong, Tian Rong (823)

Dynamics, Vibration and Control

- Functional perspective of uncertainty quantification for stochastic parametric systems and global sensitivity analysis
..... Wan Zhiqiang, Chen Jianbing, Michael Beer (837)
Bursting oscillations and its mechanism in a nonsmooth system with three time scales
..... Mao Weihong, Zhang Zhengdi, Zhang Suzhen (855)
Dynamical analysis of a periodic potential driven by additive and multiplicative trichotomous noises
..... Jin Yanfei, Wang Heqiang (865)
Locking problem and locking alleviation of ANCF/CRBF planar beam elements
..... Zhang Dayu, Luo Jianjun, Wang Hui, Ma Xiaofei (874)

Biomechanics, Engineering and Interdisciplinary Mechanics

- The influence of the capsule on the supersonic rigid disk-gap-band parachute system Gong Sheng, Wu Chuijie (890)
Study on evolutionary algorithms for initial orbit determination of near-earth asteroids with too-short-arc
..... Li Xinran, Zhao Haibin (902)
Impulsive trajectory optimization of kinetic impactor missions for asteroid deflection based on an approximation deflection
model Wang Yirui, Li Mingtao, Zhou Binghong (912)