



力学学报 (双月刊)

Chinese Journal of Theoretical and
Applied Mechanics

1957 年 创刊

2017 年

第 49 卷 第 3 期

目 次

题词	郑哲敏 黄克智 李家春 胡海岩 王自强
忆甲子峥嵘 谋未来发展——写在《力学学报》创刊 60 周年	《力学学报》编委会 (485)
创刊 60 周年专栏	
复合材料层合板壳非线性力学的研究进展	刘人怀 薛江红 (487)
页岩气高效开采的力学问题与挑战	柳占立 庄 苗 孟庆国 詹世革 黄克智 (507)
大长细比导弹的气动弹性降阶模型	杨执钧 黄 锐 刘豪杰 赵永辉 胡海岩 王 乐 (517)
地下结构地震响应的计算模型	林 皋 (528)
非牛顿流体固粒悬浮流的若干问题	张培杰 林建忠 (543)
非线性被动隔振的若干进展	陆泽琦 陈立群 (550)
时滞耦合系统非线性动力学的研究进展	张 舒 徐 鉴 (565)
超弹性镍钛形状记忆合金单轴相变棘轮行为的宏观唯象本构模型	周 廷 阚前华 康国政 邱 博 (588)
具有表面效应的压电半空间中的表面波	周伟建 陈伟球 (597)
含氢原子缺陷晶界的剪切行为	赵东伟 郁汶山 申胜平 (605)
流体力学	
振动激发对高超声速气动力/热影响	张子健 刘云峰 姜宗林 (616)
基于制造解的非结构二阶有限体积离散格式的精度测试与验证	王年华 张来平 赵 钟 赫 新 (627)
超临界 CO ₂ -水两相流与 CO ₂ 毛细捕获:微观孔隙模型实验与数值模拟研究	胡 冉 陈益峰 万嘉敏 周创兵 (638)
固体力学	
应变局部化分析的嵌入强间断多尺度有限元法	卢梦凯 张洪武 郑勇刚 (649)
无网格局部强弱法求解不规则域问题	杨建军 郑健龙 (659)
基于能量等效原理的应变局部化分析: I. 一维解析解	武守信 魏吉瑞 杨舒蔚 (667)
短纤维增强三元乙丙橡胶横观各向同性黏-超弹性本构模型	谈炳东 许进升 孙朝翔 贾云飞 范兴贵 (677)
动力学与控制	
随机激励下滞迟系统的稳态响应闭合解	刘 俊 陈林聪 孙建桥 (685)
Caputo 导数下分数阶 Birkhoff 系统的准对称性与分数阶 Noether 定理	张 毅 (693)
生物、工程及交叉力学	
计算动力学中的伪弧长方法研究	宁建国 原新鹏 马天宝 李 健 (703)
高瓦斯煤层冲击地压发生条件与影响因素	尹万蕾 潘一山 李忠华 (716)
岩土的一种强度准则及其变换应力法	万 征 秋仁东 郭金雪 (726)
科学基金	
2017 年度力学科学处基金项目受理情况	詹世革 张攀峰 王建山 曹东兴 (741)

Chinese Journal of Theoretical and Applied Mechanics

(Bimonthly)

Vol. 49, No. 3, 2017

CONTENTS

Inscriptions Zheng Zhemin Huang Keh-chih Li Jiachun Hu Haiyan Wang Tzuchiang
To the 60th anniversary of *Chinese Journal of Theoretical and Applied Mechanics* Editorial Board (485)

The 60th anniversary column

- Development of nonlinear mechanics for laminated composite plates and shells Liu Renhuai Xue Jianghong (487)
Problems and challenges of mechanics in shale gas efficient exploitation
..... Liu Zhanli Zhuang Zhuo Meng Qingguo Zhan Shige Huang Keh-Chih (507)
Aeroelastic model of reduced-order for a slender missile Yang Zhijun Huang Rui Liu Haojie Zhao Yonghui Hu Haiyan Wang Le (517)
A computational model for seismic response analysis of underground stuctures Lin Gao (528)
Review of some researches on suspension of solid particle in non-newtonian fluid Zhang Peijie Lin Jianzhong (543)
Some recent progresses in nonlinear passive isolations of vibrations Lu Zeqi Chen Liqun (550)
Review on nonlinear dynamics in systems with coupling delays Zhang Shu Xu Jian (565)
A macroscopic phenomenological constitutive model for the uniaxial transformation ratcheting of super-elastic NiTi shape memory alloy
..... Zhou Ting Kan Qianhua Kang Guozheng Qiu Bo (588)
Surface waves in a piezoelectric half-space with surface effect Zhou Weijian Chen Weiqiu (597)
Shear response of grain boundaries with hydrogen defects Zhao Dongwei Yu Wenshan Shen Shengping (605)

Fluid Mechanics

- Effect of vibration excitation on hypersonic aerodynamic and aerothermodynamic Zhang Zijian Liu Yunfeng Jiang Zonglin (616)
Accuracy verification of unstructured second-order finite volume discretization schemes based on the method of manufactured solutions
..... Wang Nianhua Zhang Laiping Zhao Zhong He Xin (627)
Supercritical CO₂ water displacements and CO₂ capillary trapping: micromodel experiment and numerical simulation
..... Hu Ran Chen Yifeng Wan Jiamin Zhou Chuangbing (638)

Solid Mechanics

- Embedded strong discontinuity model based multiscale finite element method for strain localization analysis
..... Lu Mengkai Zhang Hongwu Zheng Yonggang (649)
Meshless local strong-weak (MLSW) method for irregular domain problems Yang Jianjun Zheng Jianlong (659)
Analysis of strain localization by energy equivalence: I. One-dimensional analytical solution Wu Shouxin Wei Jirui Yang Shuwei (667)
A transversely isotropic visco-hyperelastic constitutive model for short fiber reinforced EPDM
..... Tan Bingdong Xu Jinsheng Sun Chaoxiang Jia Yunfei Fan Xinggui (677)

Dynamics, Vibration and Control

- The closed-form solution of steady state response of hysteretic system under stochastic excitation
..... Liu Jun Chen Lincong Sun Jian-Qiao (685)
Quasi-symmetry and Noether's theorem for fractional Birkhoffian systems in terms of Caputo derivatives Zhang Yi (693)

Biomechanics, Engineering and Interdisciplinary Mechanics

- Pseudo arc-length numerical algorithm for computational dynamics Ning Jianguo Yuan Xinpeng Ma Tianbao Li Jian (703)
Condition and influence factor of rock burst in high gassy coal seam Yin Wanlei Pan Yishan Li Zhonghua (716)
A kind of strength and yield criterion for geomaterials and its transformation stress method Wan Zheng Qiu Rendong Guo Jinxue (726)

Science Foundation

- The introduction of application projects on mechanics in 2017 Zhan Shige Zhang Panfeng Wang Jianshan Cao Dongxing (741)