

振动与冲击

JOURNAL OF VIBRATION AND SHOCK

振动
与
冲击

第四十二卷

第十七期

二〇二三年九月

ZHENDONG YU CHONGJI

半月刊 | 第42卷 | **17** / 2023

ISSN 1000-3835



9 771000 383233

万方数据

中国振动工程学会
上海交通大学 主办
上海市振动工程学会

目 次

空间桁架结构特征响应信息对模型修正的影响机理分析..... 周林仁, 叶文许 (1)

隧道洞口落石防护分流式引导系统原位试验与数值分析..... 齐 欣, 邓芊芊, 赵 雷, 等 (9)

基于 ALE 算法的高速水射流对船体表面冲击特性研究 熊 庭, 康 丁, 方珍龙 (17)

新型弹性侧支撑长轨枕式减振轨道结构力学特性研究 曹子勇, 和振兴, 苏 程, 等 (25)

考虑弹性振动的城市轨道交通车辆频变吸振器减振方法 文永蓬, 徐 硕, 董昊亮 (35)

不同内径圆环砂岩试件温水耦合动态劈裂力学试验研究 平 琦, 高 祺, 王 晨 (43)

顶部方形开洞对超高层建筑风荷载影响的大涡模拟研究 郑德乾, 吴俊昊, 马文勇, 等 (52)

基于蝶形准零刚度弹簧的双梁超材料低频带隙研究 陈晓刚, 赵凯美, 聂京凯, 等 (61)

考虑多次余震作用的地下结构抗震性能研究 王建宁, 张广宇, 徐 建, 等 (70)

一种基于流固耦合问题的低频散射声场预报方法 唐永壮, 周其斗, 谢志勇, 等 (78)

Taylor 撞击塑性变形的尺寸效应研究 沈子楷, 戴湘晖, 王可慧, 等 (86)

半穿式应急钢桁梁上弦杆面外屈曲临界力研究 赵 曼, 陈士通, 孙志星, 等 (96)

一种多轴向耦合随机激励下缺口试件振动疲劳寿命预测方法..... 骆政波, 范 鑫, 刘 峰, 等 (105)

高速柔性转子 - 非定心 SFD 系统响应特征分析与试验验证 卢 愈, 唐振寰, 成晓鸣, 等 (114)

一种考虑局部颈缩及损伤演化的改进失效准则在铝合金板冲击有限元分析中的应用
..... 陈楚天, 刘 斌, 张晓丹, 等 (120)

高压磨料水射流切割破碎岩石的单轴力学特征研究..... 黄 飞, 赵志旗, 李树清, 等 (128)

某型号卫星控制力矩陀螺隔振装置设计和试验技术研究..... 孙晓晨, 郭 彤, 李晓莉, 等 (135)

五模块铰接有轨电车调簧算法研究..... 刘伟渭, 陈靖雨, 高明杰, 等 (144)

基于参考信号重建的双层隔振系统主动控制试验研究..... 章 锐, 韩志远, 王朝政, 等 (153)

液压阻尼型橡胶隔振器动态特性建模方法..... 刘雪莱, 韩愈琪, 江 健, 等 (160)

万方数据

新型 CFCB 点阵夹芯结构面外压缩载荷下能量吸收特性研究	赵众豪, 池瑜莉, 冯峻良, 等 (166)
基于整车多学科性能提升的轮胎优化设计	高丰岭, 王登峰, 吴志新, 等 (175)
多频激励作用下悬索时滞减振控制研究	夏 慧, 彭 剑, 李禄欣, 等 (182)
装备振动功率谱密度统计归纳误差研究	申加康, 徐 俊, 张建军, 等 (188)
改进小波阈值函数和 ACEWT 方法的滚动轴承故障声发射信号特征提取	于 洋, 李 贇, 杨 平, 等 (194)
基于参数化滤波的旋转设备特征频率提取	位 莎, 杨 阳, 杜明刚, 等 (203)
极端波浪作用下跨海箱形桥梁上部结构流固耦合特性研究	黄 博, 唐 尧, 杨志莹, 等 (210)
混合润滑结合面法向接触刚度模型研究	兰国生, 冀成龙, 李 祥, 等 (220)
近断层地震动作用下易液化深厚覆盖层场地上高土石坝动力响应	李 闯, 宋志强, 刘升欢 (228)
带高防抛网边主梁斜拉桥气动性能试验研究	李前名, 李春光, 马行川, 等 (238)
一种应用于射流破岩的孔隙形状近似法	马小晶, 周新超, 肖新朋, 等 (245)
铆钉布置对搭接接头强度的影响及优化设计	韩昊兵, 徐文涛, 卿 华, 等 (253)
地效翼的颤振特性研究	赵奥博, 郑冠男, 黄程德, 等 (265)
冲击载荷下实心与空心颗粒材料缓冲性能的对比试验研究	王浩宇, 赵婷婷, 冯云田, 等 (275)
外包型钢加固箍筋锈蚀混凝土柱恢复力模型研究	李 强, 董嘉辉, 常迪文, 等 (284)
基于多域多尺度深度特征自适应融合的焊缝缺陷检测研究	张 睿, 高美蓉, 傅留虎, 等 (294)
大跨度钢管混凝土系杆拱桥吊杆索力分析	王宪玉, 王兴武, 梁 孝, 等 (306)
基于力电响应的压电悬臂梁疲劳寿命预测	冯逸亭, 刘文光, 吴兴意 (314)



本期广告索引

彩色广告

- 封二 南京安正软件工程有限公司
- 封三 北京东方振动和噪声技术研究所
- 封四 扬州英迈克测控技术有限公司
- 前插 1 南京安正软件工程有限公司

- 前插 2 PCB 压电传感技术(北京)有限公司

彩色广告

- 后插 1 杭州锐达数字技术有限公司
- 后插 2 杭州锐达数字技术有限公司

CONTENTS

Mechanism analysis for effects of characteristic response information of space truss structure on its model correction	ZHOU Linren, YE Wenxu (1)
In-situ tests and numerical analysis of a diversion guidance system for rockfall protection at tunnel entrance	QI Xin, DENG Qianqian, ZHAO Lei, et al (9)
Impact characteristics analysis of high-speed water jet against hull surface based on ALE algorithm	XIONG Ting, KANG Ding, FANG Zhenlong (17)
Mechanical characteristics of new type long sleeper damping track structure with elastic lateral support	CAO Ziyong, HE Zhenxing, SU Cheng, et al (25)
Vibration reduction method for urban rail vehicles considering elastic vibration using frequency varying vibration absorbers	WEN Yongpeng, XU Shuo, DONG Haoliang (35)
Mechanical test study on thermo-water coupled dynamic splitting of annular sandstone specimens with different inner diameters	PING Qi, GAO Qi, WANG Chen (43)
Large eddy simulation for effects of square opening at top on wind load of super tall building	ZHENG Deqian, WU Junhao, MA Wenyong, et al (52)
Low frequency band gap of twin-beam metamaterial based on butterfly quasi-zero stiffness spring	CHEN Xiaogang, ZHAO Kaimei, NIE Jingkai, et al (61)
Aseismic performance of underground structure considering multiple aftershocks	WANG Jianning, ZHANG Guangyu, XU Jian, et al (70)
A method for low frequency scattering sound field prediction based on fluid-structure interaction	TANG Yongzhuang, ZHOU Qidou, XIE Zhiyong, et al (78)
Size effect of Taylor impact plastic deformation	SHEN Zikai, DAI Xianghui, WANG Kehui, et al (86)
Out of plane buckling critical force of upper chord of a semi-through emergency steel truss beam	ZHAO Man, CHEN Shitong, SUN Zhixing, et al (96)
A method for predicting vibration fatigue life of notched specimens under multi-axial coupled random excitation	LUO Zhengbo, FAN Xin, LIU Feng, et al (105)
Analysis and test verification for response characteristics of high-speed flexible rotor-non centered SFD system	LU Yu, TANG Zhenhuan, CHENG Xiaoming, et al (114)
Application of an improved failure criterion considering local necking and damage evolution in finite element analysis of aluminum alloy plate impact	CHEN Chutian, LIU Bin, ZHANG Xiaodan, et al (120)
Uniaxial mechanical characteristics of rocks cut and crushed by high-pressure abrasive water jet	HUANG Fei, ZHAO Zhiqi, LI Shuqing, et al (128)
Design and test technology of a certain satellite control moment gyro vibration isolation device	SUN Xiaochen, GUO Tong, LI Xiaoli, et al (135)
Five-module floating train springs adjustment algorithm	LIU Weiwei, CHEN Jingyu, GAO Mingjie, et al (144)
Test study on active control of two-stage vibration isolation system based on reference signal reconstruction	ZHANG Rui, HAN Zhiyuan, WANG Chaozheng, et al (153)
Modeling method for dynamic characteristics of hydraulic damping rubber isolator	LIU Xuelai, HAN Yuqi, JIANG Jian, et al (160)

Energy absorption characteristics of a novel CFCB lattice sandwich structure under out-of-plane compressive load	ZHAO Zhonghao, CHI Yuli, FENG Junliang, et al (166)
Tire optimization design based on multidisciplinary performance improvement of entire vehicle	GAO Fengling, WANG Dengfeng, WU Zhixin, et al (175)
Time delay vibration reduction control for suspension cable under multi-frequency excitation	XIA Hui, PENG Jian, LI Luxin, et al (185)
Statistical induction error of equipment vibration power spectral density	SHEN Jiakang, XU Jun, ZHANG Jianjun, et al (188)
Improved wavelet threshold function and ACEWT method for feature extraction of acoustic emission signals from rolling bearing faults	YU Yang, LI Yun, YANG Ping, et al (194)
Feature frequency extraction of rotating equipment based on parameterized filtering	WEI Sha, YANG Yang, DU Minggang, et al (203)
Fluid-structure interaction characteristics of superstructure of a cross-sea box bridge under extreme wave action	HUANG Bo, TANG Yao, YANG Zhiying, et al (210)
Normal contact stiffness model of mixed lubrication joint surface	LAN Guosheng, JI Chenglong, LI Xiang, et al (220)
Dynamic response of high earth-rock dam on site with easily liquefied and deep overburden under near fault ground motion	LI Chuang, SONG Zhiqiang, LIU shenghuan (228)
Test study on aerodynamic performance of a side main beam cable-stayed bridge with high anti-throwing net	LI Qianming, LI Chunguang, MA Xingchuan, et al (238)
A pore shape approximation method applied in jet breaking rock	MA Xiaojing, ZHOU Xinchao, XIAO Xinpeng, et al (245)
Effects of rivet arrangement on strength of lap joint and its optimization design	HAN Haobing, XU Wentao, QING Hua, et al (253)
Flutter characteristics of ground effect wings	ZHAO Aobo, ZHENG Guannan, HUANG Chengde, et al (265)
Contrastive experiments for buffering capacities of solid and hollow particle materials under impact load	WANG Haoyu, ZHAO Tingting, FENG Yuntian, et al (275)
Restoring force model of corroded stirrup concrete columns reinforced with epiboly profiled steel	LI Qiang, DONG Jiahui, CHANG Diwen, et al (284)
Weld defect detection based on adaptive fusion of multi-domain and multi-scale deep features	ZHANG Rui, GAO Meirong, FU Liuhu, et al (294)
Analysis of suspension cable force of large-span steel tube concrete tied arch bridge	WANG Xianyu, WANG Xingwu, LIANG Xiao, et al (306)
Fatigue life prediction of piezoelectric cantilever beam based on electromechanical response	FENG Yiting, LIU Wenguang, WU Xingyi (314)

JOURNAL OF VIBRATION AND SHOCK

Vol. 42 No. 17 SEPTEMBER 2023

Editorial Office: 1954 Huashan Rd. Shanghai, 200030, China

Issuer Abroad: China National Publishing Industry Trading Corporation

(Post-Office Box No. 728, Beijing, China)



系统化的设计

使振动源方便可控

扬州英迈克测控技术有限公司

Y M C P I E Z O T R O N I C S I N C

YMC振动/模态激励系统



- ◆ 振动标准台：传感器校准
- ◆ 小型振动试验台：小型例行试验
- ◆ 模态激振器：模态试验与激励
- ◆ 脉冲力锤：冲击激励