

目 次

专家论坛

光纤光栅制作方法及传感应用 王义平, 唐 剑, 尹国路, 钟晓勇, 廖常锐 (809)

论 文

基于环向应变的燃气管道泄漏监测试验 任 亮, 夏梦颖, 姜 涛, 贾子光, 崔晓蕾 (820)

渐变刚度钢板弹簧的非线性有限元分析 王 勇, 李舜酩, 张袁元, 曹倩倩 (826)

基于 LMD 能量特征的滚动轴承故障诊断方法 石瑞敏, 杨兆建 (832)

重频结构大修改动力重分析的矩阵摄动法 刘志军, 王晓军, 干为民 (837)

高压辊磨机液压系统参数对辊隙偏差影响 曾义聪, 徐海良, 陈 奇, 吴 波 (841)

磁流变阻尼器抑制转子系统振动试验 何立东, 王 铜, 黄秀金 (849)

融合量子理论的结构元素尺寸自适应调整策略 张培林, 陈彦龙, 李 兵, 吴定海 (854)

基于非线性退化模型的加速度计寿命评估 李 瑞, 汪立新, 周志杰, 赵曦晶 (860)

基于小波分析的简支梁桥损伤识别 刘习军, 相林杰, 张素侠 (866)

基于向量自回归模型的损伤识别方法 刘 纲, 罗 钧, 方 鹏, 秦 阳 (873)

基于信号时频分析理论识别时变模态参数实验 杨 凯, 于开平, 白云鹤 (880)

基于 EEMD 排列熵的高速列车转向架故障特征分析 秦 娜, 蒋 鹏, 孙永奎, 金炜东 (885)

车辆垂向轮轨力识别方法与试验 朱 涛, 肖守讷, 阳光武, 胡光忠 (892)

手机移动平台的虚拟轴承诊断仪的开发及应用 尹爱军, 张 泉, 孙 兵 (897)

基于 CEMD 的燃油消耗率提取方法 王小飞, 曲建岭, 高 峰, 姚凌虹, 孙文柱 (902)

随机和认知不确定性量化的置信区域法 孙东阳, 陈国平, 张保强 (908)

移动质量简支梁耦合时变系统建模与实验设计 马志赛, 刘 莉, 周思达, 杨 武 (913)

压缩机转子系统的振动可靠性灵敏度设计 朱丽莎, 张义民, 杜尊令 (921)

水电机组飞轮力矩的在线检测方法 张 飞, 耿在明, 付 婧, 潘罗平 (927)

基于单一敏感质量的三轴电容加速度计的设计 陈立国, 袁 飞, 陈 涛, 孙立宁 (932)

基于 LCD 的自适应小波脊线解调及齿轮故障诊断 罗颂荣, 程军圣 (938)

基于传递率函数的运行模态分析方法 张永年, 王 彤, 夏遵平 (945)

基于 EMD 与峭度滤波的煤岩界面识别 丛晓妍, 王增才, 王保平, 彭伟利 (950)

非线性轮对陀螺系统的稳定性及分叉研究	张 波, 曾 京, 董 浩 (955)
高超声速飞行器模型振动及传力特性研究	文 娟, 刘伟雄, 高宏力, 黄海凤, 张筱辰, 李世超 (961)
履带车辆肘内式半主动油气悬挂性能研究	高晓东, 顾 亮, 管继富, 李 毅, 刘 锐, 邢艳明 (968)
导线舞动对输电杆塔作用的试验技术	杨晓辉, 楼文娟, 陈贵宝, 吕中宾 (973)
故障转子挤压油膜阻尼器减振特性实验	桑潇潇, 廖明夫, 李 为 (977)
路面功率谱密度换算及不平度建模理论研究	杜 峰, 葛晓成, 陈 翔, 丁金全 (981)
第 35 卷第 5 期英文摘要	(987)

广告 · 信息

欢迎订阅《振动、测试与诊断》(853) 北京森德格科技有限公司 (872) 扬州英迈克测控技术有限公司 (999)
优泰动态信号分析系统 (1000) 上海维逸机电设备有限公司 (1001) 东方振动和噪声技术研究所 (1002)

振动、测试与诊断 (双月刊)		第 35 卷 第 5 期	责任编辑: 王 平 朱德培
ZHENDONG CESHI YU ZHENDUAN		2015 年 10 月出版	英文编辑: Jacqueline PO NGO
主 管	中华人民共和国工业和信息化部	印 刷	南京航空航天大学印刷厂
主 办	南京航空航天大学	发 行	江苏省邮政局
	全国高校机械工程测试技术研究会	邮发代号	28-239
主 编	赵淳生 (中科院院士)	发行范围	公 开 发 行
编辑出版	《振动、测试与诊断》编辑部	电 话	(025)84893332
地 址	南京市御道街 29 号	E - mail	qchen@nuaa.edu.cn
邮 编	210016	网 址	http://zdcn.nuaa.edu.cn
		创刊日期	1980 年 10 月

CONTENTS

TECHNICAL COMMENT

The Fabrication Method and Sensing Application of Fiber Grating

..... *Wang Yiping, Tang Jian, Yin Guolu, Zhong Xiaoyong, Liao Changrui* (809)

PAPERS

Leakage Detection of Gas Pipeline Based on Hoop Strain Monitoring

..... *Ren Liang, Xia Mengying, Jiang Tao, Jia Ziguang, Cui Xiaolei* (820)

Nonlinear Finite Element Analysis of Leaf Spring with Variable Stiffness

..... *Wang Yong, Li Shunming, Zhang Yuanyuan, Cao Qianqian* (826)

Fault Diagnosis of Rolling Bearing Based on Energy Feature of Local Mean Decomposition

..... *Shi Ruimin, Yang Zhaojian* (832)

Matrix Perturbation Method of Dynamical Reanalysis for Large Modified Structures with

Repeated Eigenvalues *Liu Zhijun, Wang Xiaojun, Gan Weimin* (837)

Research on Influence of High Pressure Grinding Rolls' Hydraulic System Parameters on Roll

Cap Deviations *Zeng Yicong, Xu Hailiang, Chen Qi, Wu Bo* (841)

Experimental Study on the Rotor System Vibration Control by Magneto-Rheological Dampers

..... *He Lidong, Wang Kai, Huang Xiujin* (849)

Adaptive Adjustment Strategy of Structuring Element Length Integrating Quantum Theory

..... *Zhang Peilin, Chen Yanlong, Li Bing, Wu Dinghai* (854)

Lifetime Evaluation of Accelerometer Based on Nonlinear Degradation Model

..... *Li Rui, Wang Lixin, Zhou Zhijie, Zhao Xijing* (860)

Damage Identification of Simply Supported Beam Bridges Based on Wavelet Analysis

..... *Liu Xijun, Xiang Linjie, Zhang Suxia* (866)

Vector Autoregression Time Series Based Damage Assessment Method

..... *Liu Gang, Luo Jun, Fang Peng, Qing Yang* (873)

Experimental Investigation on Estimation of Time-Varying Modal Parameters Using Time-

Frequency Analysis *Yang Kai, Yu Kaiping, Bai Yunhe* (880)

Fault Diagnosis of High Speed Train Bogie Based on EEMD and Permutation Entropy

..... *Qin Na, Jiang Peng, Sun Yongkui, Jin Weidong* (885)

Vertical Wheel/Rail Force Identification Method for Railway Vehicle and Its Test Validation

..... *Zhu Tao, Xiao Shoune, Yang Guangwu, Hu Guangzhong* (892)

The Development of Virtual Bearing Diagnostic Instrument Based on Mobile Phone and Its

Application *Yin Aijun, Zhang Quan, Sun Bing* (897)

Research of Fuel Consumption Extraction Using Complex Empirical Mode Decomposition

..... *Wang Xiaofei, Qu Jianling, Gao Feng, Yao Linghong, Sun Wenzhu* (902)

Confidence Region Method for Quantification of Aleatory and Epistemic Uncertainty	Sun Dongyang , Chen Guoping , Zhang Baoqiang	(908)
Modeling and Experimental Design of the Coupled Moving-Mass and Simply Supported Beam		
Time-Varying System	Ma Zhisai , Liu Li , Zhou Sida , Yang Wu	(913)
Vibration Reliability Sensitivity Design on Compressor Rotor System		
	Zhu Lisha , Zhang Yimin , Du Zunling	(921)
Flywheel Moment On-Line Determination Method and Application in Hydraulic-Turbine Unit		
	Zhang Fei , Geng Zaiming , Fu Jing , Pan Luoping	(927)
Design of Tri-axis Capacitive MEMS Accelerometer Based on Single Mass		
	Chen Liguo , Yuan Fei , Chen Tao , Sun Lining	(932)
Adaptive Wavelet Ridge Demodulation Based on LCD Method and Its Application for Gear Fault		
Diagnosis	Luo Songrong , Cheng Junsheng	(938)
Transmissibility Based Operational Modal Analysis		
	Zhang Yongnian , Wang Tong , Xia Zunping	(945)
Application of Filtering Method Based on EMD and Kurtosis in Coal-Rock Interface Recognition		
	Cong Xiaoyan , Wang Zengcai , Wang Baoping , Peng Weili	(950)
Stability and Bifurcation of Nonlinear Gyroscopic Wheelset System		
	Zhang Bo , Zeng Jing , Dong Hao	(955)
Vibration and Load Transmission Characteristics of Hypersonic Vehicle Model		
	Wen Juan , Liu Weixiong , Gao Hongli , Huang Haifeng , Zhang Xiaochen , Li Shichao	(961)
Research on In-Arm Semi-active Hydro-Pneumatic Suspension of Tracked Vehicle		
	Gao Xiaodong , Gu Liang , Guan Jifu , Li Yi , Liu Rui , Xing Yanming	(968)
The Experimental Technology of the Dynamic Response Characteristics of Tower During		
Conductor Galloping	Yang Xiaohui , Lou Wenjuan , Chen Guibao , Lü Zhongbin	(973)
Experimental Study on the Damping Performance of Squeeze Film Damper in Rotor with Faults		
	Sang Xiaoxiao , Liao Mingfu , Li Wei	(977)
Conversion of Spatial Power Spectral Density and Study on Road Irregularity Modeling Theory		
	Du Feng , Ge Xiaocheng , Chen Xiang , Ding Jinquan	(981)
Abstracts of Vol. 35 No. 5 in English		(987)

Journal of Vibration, Measurement & Diagnosis(Bimonthly)

Vol. 35	No. 5	Publishing Date	Oct. 2015	Start Publication	October 1980
Responsible Institution	Ministry of Industry and Information Technology of the People's Republic of China	English Editor	Jacqueline PO NGO	Printed by	NUAA Printing House
Sponsored by	Nanjing University of Aeronautics & Astronautics	Address	29 Yudao Street, Nanjing, China	Zipcode	210016
	University Association of Mechanics Engineering Measurement Technology	Tel	(025)84893332	E-mail	qchen@nuaa.edu.cn
Edited & Published by	Editorial Department of JVMD	Website	http://zdc.nuaa.edu.cn	Distributed by	Jiangsu Province Post Bureau
Editor in Chief	Zhao Chunsheng	Post Office Distribution Code	28-239		