$\begin{aligned} \nabla \mathcal{L}_{k} &= p(t) \\ \nabla \mathcal{L}_{k} &= \frac{1}{2} (u_{i,j} + u_{j,i}) \\ \nabla \mathcal{L}_{k} &= \frac{1}{2} (u_{i,j} + u_{j,i})$ 应用勿勞艱 **CHINESE JOURNAL OF APPLIED MECHANICS**  $(\lambda_v + \mu_v) v_{k,kl} = \mu_v v_{l,kk}$  $+\mu u_k, ll$ 

 $f_{k,lk} + \mu u_{k,ll} + \rho (f_k - \ddot{u}_k) = 0$   $M\ddot{x} + C\dot{x} + Kx = P(t)$  $u_{i,j} + u_{j,i} - (\lambda_v + \mu_v) v_{k,kl} = \mu_v v_{l,kk} - \pi_{,l} + \rho(f_l - \dot{v}_o) = 0$ 

# 2016 第33卷 第6期(卷终) Vol.33 No.6



西安交通大学主办

Ż Ł

 $+ u_{j,i})$ 

# 应用力学学报

### 第 33 卷 第 6 期 总第 142 期

#### 2016年12月15日出版

#### 目 次

基于混沌多项式方法的层流超临界翼型稳健设计研究…		
参数振动自由响应的指数三角级数逼近	黄迪山 张月月 (936)	
旋转固体火箭上面级章动不稳定动力学机理分析	任天荣 周志超 (942)	
基于变位移约束的结构材料优化设计	赵志军 荣见华 黄方林 俞燎宏 (948)	
自稳式深大基坑开挖卸载扰动位移一般规律		
动网格模拟风振对超大瘦高型冷却塔风荷载的影响	··叶 辉 熊红兵 陆 灏 雷本宏 黄志龙 (963)	
Rayleigh-Benard 对流中小扰动的发展及对流斑图	··宁利中 胡 彪 周 倩 李开继 王永起 (970)	
两点加载翼缘纵向变厚度工型截面简支梁变形的解析解	法	
	刘晓玲 王玉银 刘 明 石永久 李文斌 (976)	
固结各向同性弹性薄层与无限长圆柱体的滑动接触问题		
基于路径映射的埋入混凝土中 PZT 声能特性分析	姜 敏 陈 雨 邓洪敏 李 鹏 赵爱荣 (989)	
深水钻井隔水管在平台升沉运动下的参激振动响应分析		
基于三角对称共晶团断裂的复相陶瓷极限应力预报模型		
双薄壁墩连续刚构桥基频的统一计算模式	周勇军 于明策 陈 群 赵 煜 (1009)	
基于模态振型和平稳小波变换的悬臂梁微小缺陷识别研		
非线性弹性地基梁在随动载荷作用下的屈曲和振动		
锚固洞室中不同方向爆炸应力波传播规律及裂纹形成机		
简谐激励下的双稳态振动能量收集器动力学分析		
一类单塔斜拉桥固有频率及模态的计算与分析		
航空发动机叶片-机匣碰摩热-结构耦合仿真		
地震下含有逆坡裂隙的露天矿边坡破坏模拟与研究		
基于破坏接近度的地铁隧道流固耦合稳定性分析		
	姚华彦 邵 迅 张振华 郭 杨 袁海平 (1057)	
碾压混凝土坝防渗层及渗控结构优化分析	李明超 王孜越 郭鑫宇 闫福根 (1064)	
线性粘滞阻尼耗能框架结构地震反应分析与优化		
SDOF 体系地震输入能及其分配问题研究	·····································	
基于随动坐标系的开裂纹转子系统转动阻尼对振动稳定		
	···彭慧春 王忠宇 陶向宇 何青 甄亚欣 (1085)	
传递矩阵法分析约束悬臂裂纹管道失稳临界流速		
海壁箱梁剪力滞翘曲位移函数的改进与对比分析		
海堡相架剪刀滞翘曲位移函数的以近与对比分析 孤立煤柱非线性蠕变失稳滞后时间的研究		
英文摘要		
k		

期刊基本参数 CN61-1112/O3\*1984\*S\*A4\*206\*zh\*p\*¥45\*1000\*28\*2016-012

## **Chinese Journal of Applied Mechanics**

Vol.33 No.6

Dec. 2016

#### CONTENTS

CONTENTS
Robust design of laminar flow supercritical airfoil based on PCE method <i>Zhao Ke Guo Zhaodian Li Quan Zhang Yanjun</i> (i)
Exponential trigonometric series approach to free response of parametric vibration Huang Dishan Zhang Yueyue (i)
Research on mechanics of nutation instability for a spinning solid rocket upper stage
Ren Tianrong Zhou Zhichao (ii) Topology optimization of micro structures with varied displacement constraints
<i>Zhao Zhijun Rong Jianhua\ Huang Fanglin Yu Liaohong</i> (ii) Universal rule of excavation and unloading disturbance displacement of autostable deep foundation pit
<i>Fan Jianjun Du Jialun Wang Yingyi Huang Xingchun</i> (iii) Effects of wind-induced vibration on the pressure distribution of cooling tower using dynamic mesh method <i>Ye Hui Xiong Hongbing Lu Hao Lei Benhong Huang Zhilong</i> (iii)
Growth of perturbation and convective patterns in Rayleigh-Benard convection <i>Ning Lizhong Hu Biao Zhou Qian Li Kaiji Wang Yongqi</i> (iv)
Theoretical deformation solution of I-section beam with longitudinally variable thickness flange under two point loading
Sliding contact problem of an infinite cylinder and the bonded elastic thin layer 
Acoustic energy characteristics analysis of PZT embedded in concrete based on mapping results onto a path 
Parametrically excited vibration analysis of deepwater drilling riser deduced by the heave motion of platform <i>Wang Yanbin Gao Deli Fang Jun</i> (vi)
Ultimate stress of composite ceramic based on the fracture of triangular symmetric eutectic colonies 
Uniform calculation pattern for fundamental vibration frequency of continuous rigid frame bridge with double-thin-wall piers <i>Thou Yongjun Yu Mingce Chen Qun Zhao Yu</i> (vii) Research on small damage detection in cantilever beam based on vibration mode and stationary wavelet
transform
<i>Li Qinglu Zeng Yueping</i> (viii) Research on the propagation law of explosive stress waves and formation mechanism of cracks in the cavern reinforced by rockbolts under explosion load in different positions <i>Wang Guangyong Wang Chao Yu Yongqiang</i> (viii)
<i>Wang Guangyong Wang Chao Yu Yongqiang</i> (VIII) Dynamics analysis of bistable vibration energy harvester under harmonic excitation <i>Li Sunmeng Wu Ziying Niu Fengqi</i> (ix)
Calculation and analysis of natural frequencies and mode shapes of a cable-stayed bridge with a single rigid tower <i>Li Zhuan'gan Song Mitao Cao Dengqing Sun Baocang</i> (ix)
Simulation of thermal-structural coupling field during aero-engine blade-to-case rub-impact <i>Wang Lili Li Shunming Lai Shaojiang Wen Jing</i> (x)
Simulation and research on open-pit mine slope failure containing inverse fracture under the earthquake <i>Cui Tiejun Li Shasha Ma Yundong Wang Laigui</i> (x)
Hydro-mechanical coupling analysis of shield tunnel based on failure approach index 
Seepage simulation and optimization for impervious structures of roller compacted concrete dam <i>Li Mingchao Wang Ziyue Guo Xinyu Yan Fugen</i> (xi)
Analysis and optimization of seismic response for linear viscous damping energy dissipation frame structure <i>Zhang Min Li Yang</i> (xii)
Study of earthquake input energy and its distribution for SDOF system <i>Tu Bingbing</i> (xii) Influence of rotation damping on the stability of the vibration of the cracked rotor in rotating operation <i>Peng Huichun Wang Zhongyu Tao Xiangyu He Qing Zhen Yaxin</i> (xiii)
Transfer matrix method to analyze critical instability flow velocity of restrained cantilever pipe conveying fluid with cracks
An improvement and comparative analysis of shear lag warping displacement function in thin-walled box girder <i>Zhang Yuping Hu Huoquan Li Chuanxi Chen Honglin</i> (xiv)
Lag time study on nonlinear creep buckling of the isolated coal pillar <i>Yin Wanlei Pan Yishan Li Zhonghua Song Yanfang</i> (xiv)