

ACTA MECHANICA SINICA 2010

ANNUAL SUBJECT INDEX

Gengdong Chen: Memorial to Xuesen Qian **2010, 26(1): 1**

Xiqiao Feng · Mao Sun: Foreword: About the Special Topic of Mechanics and biomimetics of biomaterials and animal locomotion
2010, 26(1): 3

Gengdong Chen: Twenty-five years of excellence: a retrospective glance of Acta Mechanica Sinica **2010, 26(6): 793-794**

Fluid Mechanics

Lei Wang · Jiankang Wu: Flow behavior in microchannel made of different materials with wall slip velocity and electro-viscous effects **2010, 26(1): 73**

Chunxiao Xu: Multi-scale analysis of subgrid stress and energy dissipation in turbulent channel flow **2010, 26(1): 81**

Dengming Wang · Youhe Zhou: Particle dynamics in dense shear granular flow **2010, 26(1): 91**

L. Fang · Wouter J.T. Bos · X.Z. Zhou · L. Shao · Jean-Pierre Bertoglio: Corrections to the scaling of the second-order structure function in isotropic turbulence **2010, 26(2): 151**

K. Boorsma · X. Zhang, N. Molin: Landing gear noise control using perforated fairings **2010, 26(2): 159**

Y.L. Zhang · M. Sun: Dynamic flight stability of a hovering model insect: lateral motion **2010, 26(2): 175**

K.B. Lim · W.B. Tay: Numerical analysis of the s1020 airfoils in tandem under different flapping configurations **2010, 26(2): 191**

Z. Li · K.Q. Zhu: Effects of relaxation time on start-up time for starting flow of Maxwell fluid in a pipe **2010, 26(2): 209**

J.L. Liu: Theoretical analysis on capillary adhesion of micro-sized plates with a substrate **2010, 26(2): 217**

Chien-Chou Tseng · Yingjie Wei · Guoyu Wang · Wei Shyy: Modeling of turbulent, isothermal and cryogenic cavitation under attached conditions **2010, 26(3): 325**

F. Mao · Y.P. Shi · J.Z. Wu: On a general theory for compressing process and aeroacoustics: linear analysis **2010, 26(3): 355**

Bo Zhao · Jiping Cui · Jing Fan: Calculation of Hugoniot properties for shocked nitromethane based on the improved Tsien's EOS **2010, 26(3): 365**

Yanlai Zhang · Mao Sun: Wing kinematics measurement and aerodynamics of free-flight maneuvers in drone-flies **2010, 26(3): 371**

Jiann Lin Chen: Attitude dynamics of a cylinder floating in immiscible fluids **2010, 26(3): 383**

Jian Fang · Lipeng Lu · Liang Shao: Heat transport mechanisms of low Mach number turbulent channel flow with spanwise wall oscillation **2010, 26(3): 391**

Guoyong Zheng: Nonlinear aeroelastic analysis of a two-dimensional wing with control surface in supersonic flow **2010, 26(3): 401**

Zhifu Gu · Letian Yang · Yan Li · Bin Chen: Aeroelastic modeling of wind loading on a cable-net supported glass wall **2010, 26(3): 409**

Yan-Lai Zhang · Mao Sun: Dynamic flight stability of hovering model insects: theory versus simulation using equations of motion coupled with Navier-Stokes equations **2010, 26(4): 509**

Jian-Zhong Lin · Yan-Hua Liu: Nanoparticle nucleation and coagulation in a mixing layer **2010, 26(4): 521**

M.D. Manshadi · K. Ghorbanian · M.R. Soltani: Experimental study on correlation between turbulence and sound in a subsonic wind tunnel **2010, 26(4): 531**

A. Mahmood · C. Fetecau · N.A. Khan · M. Jamil: Some exact solutions of the oscillatory motion of a generalized second grade fluid in an annular region of two cylinders **2010, 26(4): 541**

Le-Tian Yang · Zhi-Fu Gu: Wind tunnel simulation of wind loading on a solid structure of revolution **2010, 26(4): 551**

Hui-Qin Zhang · Jia-Chun Li: Analysis of current induced by long internal solitary waves in stratified ocean **2010, 26(5): 653**

Feng-Quan Zhong · Xue-Jun Fan · Gong Yu · Jian-Guo Li · Chih-Jen Sung: Performance of supersonic model combustors with staged injections of supercritical aviation kerosene **2010, 26(5): 661**

G.B. Sinclair: On the pressure and stress singularities induced by steady flows of a pair of nonmiscible, incompressible, viscous fluids in contact with a wall **2010, 26(5): 669**

Sohail Nadeem · Noreen Sher Akbar: Peristaltic flow of Sisko fluid in a uniform inclined tube **2010, 26(5): 675**

Bing Wang · Xue-Ying Deng · Bao-Feng Ma · Zhen Rong: Effects of tip perturbation and wing locations on rolling oscillation induced by forebody vortices **2010, 26(5): 787**

Xin-Liang Li · De-Xun Fu · Yan-Wen Ma · Xian Liang: Direct numerical simulation of compressible turbulent flows **2010, 26(6): 795-806**

Zhen-Su She · Xi Chen · You Wu · Fazle Hussain: New perspective in statistical modeling of wall-bounded turbulence **2010, 26(6): 847-861**

Hao Liu · Toshiyuki Nakata · Na Gao · Masateru Maeda · Hikaru Aono · Wei Shyy: Micro air vehicle-motivated computational biomechanics in bio-flights: aerodynamics, flight dynamics and maneuvering stability **2010, 26(6): 863-879**

Solid Mechanics

Ladislav Ceniga: Thermal-stress induced phenomena in two-component material. Part II **2010, 26(1): 101**

Yanhong Cai · Haoran Chen · Xiaozhi Hu: Dynamic fracture analysis of adhesive bonded material under normal loading **2010, 26(1): 107**

Y.R. Zhao · Y.M. Xing · Z.K. Lei · F.C. Lang: Interfacial stress transfer behavior in a specially-shaped fiber/matrix pullout test **2010, 26(1): 113**

T. Xu · W.J. Zuo · T.S. Xu · G.C. Song · R.C. Li: An adaptive reanalysis method for genetic algorithm with application to fast truss optimization **2010, 26(2): 225**

W.G. Li · F. Yang · D.N. Fang: The temperature-dependent fracture strength model for ultra-high temperature ceramics **2010, 26(2): 235**

S.H. Guo: An eigen theory of waves in piezoelectric solids **2010, 26(2): 241**

G.F. Wei · K.T. Li · H.H. Jiang: Incompatible numerical manifold method for fracture problems **2010, 26(2): 247**

H. Yuan · F.P. Li: Peeling behavior and spalling resistance of CFRP sheets bonded to bent concrete surfaces **2010, 26(2): 257**

C. Zheng · S.C. Wu · X.H. Tang · J.H. Zhang: A novel twice-interpolation finite element method for solid mechanics problems **2010, 26(2): 265**

Zhenghua Qian · Feng Jin · Sohichi Hirose: A novel type of transverse surface wave propagating in a layered structure consisting of a piezoelectric layer attached to an elastic half-space **2010, 26(3): 417**

Xiaozhi Wu · Shaofeng Wang · Ruiping Liu: Peierls stress for $\langle 110 \rangle \{001\}$ mixed dislocation in SrTiO_3 within framework of constrained path approximation **2010, 26(3): 425**

Xi-Qiao Feng · Yue Li · Yan-Ping Cao · Shou-Wen Yu · Yuan-Tong Gu: Design methods of rhombic tensegrity structures **2010, 26(4): 559**

D.J. Colquitt · A.B. Movchan · I.S. Jones · W. Daniels: Frequency related localisation of harmonic elastic waves in stratified welds **2010, 26(4): 567**

He-Ming Wen · Bin Lan: Analytical models for the penetration of semi-infinite targets by rigid, deformable and erosive long rods **2010, 26(4): 573**

Li-Ling He · Xiao-Wei Chen · Xiang He: Parametric study on mass loss of penetrators **2010, 26(4): 585**

Rong-Hou Xia · Xiao-Geng Tian · Ya-Peng Shen: MD simulation of a copper rod under thermal shock **2010, 26(4): 599**

Juan Chen · Chong-Jun Li · Wan-Ji Chen: Construction of n -sided polygonal spline element using area coordinates and B-net method **2010, 26(5): 685**

Ladislav Ceniga: Thermal stresses in two- and three-component anisotropic materials **2010, 26(5): 695**

Xiu-Hui Hou · Zi-Chen Deng · Jia-Xi Zhou · Tie-Quan Liu: Symplectic analysis for elastic wave propagation in two-dimensional cellular structures **2010, 26(5): 711**

Xu Guo · Geng-Dong Cheng: Recent development in structural design and optimization **2010, 26(6): 807-823**

Hua-Lin Fan · Tao Zeng · Dai-Ning Fang · Wei Yang: Mechanics of advanced fiber reinforced lattice composites **2010, 26(6): 825-835**

Dai-Ning Fang · Yu-Long Li · Han Zhao: On the behaviour characterization of metallic cellular materials under impact loading **2010, 26(6): 837-846**

- Jian Wu · Ming Li · Wei-Qiu Chen · Dae-Hyeong Kim · Yun-Soung Kim · Yong-Gang Huang · Keh-Chih Hwang · Zhan Kang · John A. Rogers:** A strain-isolation design for stretchable electronics **2010, 26(6): 881-888**
- Zheng Chang · Jin Hu · Geng-Kai Hu:** Transformation method and wave control **2010, 26(6): 889-898**
- Hong-Wu Zhang · Jing-Kai Wu · Jun Lü · Zhen-Dong Fu:** Extended multiscale finite element method for mechanical analysis of heterogeneous materials **2010, 26(6): 899-920**
- Ayyoub Mehdizadeh · Renwei Mei · James F. Klausner · Nima Rahmatian:** Interaction forces between soft magnetic particles in uniform and non-uniform magnetic fields **2010, 26(6): 921-929**
- Guo-Qing Cai · Cheng-Gang Zhao · Xiao-Ming Qin:** Structural bonding-breakage constitutive model for natural unsaturated clayey soils **2010, 26(6): 931-939**
- Ismail Mechab · Hassen Ait Atmane · Abdeloua hed Tounsi · Hichem Abdesslem Belhadj · El Abbas Adda Bedia:** A two variable refined plate theory for the bending analysis of functionally graded plates **2010, 26(6): 941-949**

Dynamics, Vibration and Control

- L. Jin · S.J. Xu:** Underactuated spacecraft angular velocity stabilization and three-axis attitude stabilization using two single gimbal control moment gyros **2010, 26(2): 279**
- G.P. Cai · Y.Y. Teng · C.W. Lim:** Active control and experiment study of a flexible hub-beam system **2010, 26(2): 289**
- Q.K. Han · H.L. Yao · B.C. Wen:** Parameter identifications for a rotor system based on its finite element model and with varying speeds **2010, 26(2): 299**
- Isaac Elishakoff · Jason Yost:** Design for a specified natural frequency of elastically constrained axially graded bars **2010, 26(2): 313**
- X. Kang · X.Y. He · C.J. Tay · C. Quan:** Non-contact evaluation of the resonant frequency of a microstructure using ultrasonic wave **2010, 26(2): 317**
- Qingkai Han · Lina Hao · Hao Zhang · Bangchun Wen:** Achievement of chaotic synchronization trajectories of master-slave manipulators with feedback control strategy **2010, 26(3): 433**
- Shimin Wang · Jieqiong Xu · Qi Wang:** The mechanism of stiffness increase phenomenon of a rubbing disk **2010, 26(3): 441**
- Guangwen Xiao · Xinbiao Xiao · Jun Guo · Zefeng Wen · Xuesong Jin:** Track dynamic behavior at rail welds at high speed **2010, 26(3): 449**
- Qingjie Cao · Marian Wiercigroch · Ekaterina Pavlovskaja · Shaopu Yang:** Bifurcations and the penetrating rate analysis of a model for percussive drilling **2010, 26(3): 467**
- Chunyu Zhao · Hongtao Zhu · Yimin Zhang · Bangchun Wen:** Synchronization of two coupled exciters in a vibrating system of spatial motion **2010, 26(3): 477**
- Jian Wei · Shijie Xu:** A new control law based on characteristic exponent assignment for libration point orbit maintenance **2010, 26(3): 495**
- Zhaohong Qin · Yushu Chen:** Singular analysis of bifurcation systems with two parameters **2010, 26(3): 501**
- Xiao-Feng Wang · Qing-Shan Yang · Qi-Lin Zhang:** A new beam element for analyzing geometrical and physical nonlinearity **2010, 26(4): 605**
- Chang-Guo Wang · Hui-Feng Tan · Xing-Wen Du · Xiao-Dong He:** A new model for wrinkling and collapse analysis of membrane inflated beam **2010, 26(4): 617**
- Fu-Xiang Dong · Jia-Zhen Hong · Kun Zhu · Zheng-Yue Yu:** Numerical and experimental studies on impact dynamics of a planar flexible multibody system **2010, 26(4): 635**
- Keivan Kiani · Ali Nikkhoo · Bahman Mehri:** Assessing dynamic response of multispan viscoelastic thin beams under a moving mass via generalized moving least square method **2010, 26(5): 721**
- Jian-Hua Rong · Jue-Hong Yi:** A structural topological optimization method for multi-displacement constraints and any initial topology configuration **2010, 26(5): 735**
- C.W. Lim · C. Li · Ji-Lin Yu:** Dynamic behaviour of axially moving nanobeams based on nonlocal elasticity approach **2010, 26(5): 755**
- Hui Zhang · Shu-Tian Liu · Xiong Zhang:** Topology optimization of 3D structures with design-dependent loads **2010, 26(5): 767**
- Guo-Ping Cai · Long-Xiang Chen:** Delayed feedback control experiments on some flexible structures **2010, 26(6): 951-965**

Dong-Xing Cao · Wei Zhang · Ming-Hui Yao: Analytical and experimental studies on nonlinear characteristics of an L-shape beam structure 2010, 26(6): 967-976

Computational Mechanics

Haijun Niu · Qing Wang · Yongping Zheng · Yubo Fan: A new method for computing the uniaxial modulus of articular cartilages using modified inhomogeneous triphasic model 2010, 26(1): 121

Hexi Baoyin · Junfeng Li: Coupled trajectory and attitude stability of displaced orbits 2010, 26(1): 127

Jingrui Zhang: The output torque estimation of MCMG for agile satellites 2010, 26(1): 141

Xilong Yu · Fei Li · Lihong Chen · Xinyu Zhang: Spatial resolved temperature measurement based on absorption spectroscopy using a single tunable diode laser 2010, 26(1): 147

Song Cen · Tao Zhang · Chen-Feng Li · Xiang-Rong Fu · Yu-Qiu Long: A hybrid-stress element based on Hamilton principle 2010, 26(4): 625

G. Aryanpour · M. Farzaneh: Analysis of axial strain in one-dimensional loading by different models 2010, 26(5): 745

Experimental Mechanics

J.Y. Liu · Y.J. Lu · Z.P. Li: Experimental investigation about the effect of non-axisymmetric wake impact on a low speed axial compressor 2010, 26(2): 305

Ming Xu · Ying-Hong Jia · Shi-Jie Xu: The J_2 invariant relative configuration of spaceborne SAR interferometer for digital elevation measurement 2010, 26(4): 643

Biomechanics

Lingtian Gao · Ying Liu · Qinghua Qin · Xiqiao Feng: Morphological stability analysis of vesicles with mechanical–electrical coupling effects 2010, 26(1): 5

Xuefeng Yao · Peng Wang · Ruchun Dai · Hisen Yang Yeh: Microstructures and properties of cancellous bone of avascular necrosis of femoral heads 2010, 26(1): 13

Jie Zhao · Chen Chen · Yan Liang · Jian Wang: Mechanical properties and structure of *Haliotis discus hannai* Ino and *Hemifusus tuba* conch shells: A comparative study 2010, 26(1): 21

Joseph Cadman · Shiwei Zhou · Yuhang Chen · Wei Li · Richard Appleyard · Qing Li: Characterization of cuttlebone for a biomimetic design of cellular structures 2010, 26(1): 27

Yanan Wang · Qinghua Qin: Parametric study of control mechanism of cortical bone remodeling under mechanical stimulus 2010, 26(1): 37

Chuijie Wu · Liang Wang: Where is the rudder of a fish? —The mechanism of swimming and control of self-propelled fish school 2010, 26(1): 45

Guanhao Wu · Lijiang Zeng: Measuring the kinematics of a free-flying hawk-moth (*Macroglossum stellatarum*) by a comb-fringe projection method 2010, 26(1): 67

Xiao-Ling Wang · Qing-Ping Sun: Mechanical analysis of phase transition experiments of the bacterial flagellar filament 2010, 26(5): 777

Raffaella Paparcone · Steven Cranford · Markus J. Buehler: Compressive deformation of ultralong amyloid fibrils 2010, 26(6): 977-986