

### JOURNAL OF

# **Engineering Mechanics**

AUGUST 2016 · VOLUME 142 · ISSUE 8

## Contents

#### **PUBLICATIONS**

Bruce Gossett, Managing Director and Publisher

#### JOURNALS DEPARTMENT

Angela Cochran, Director, Journals

Kelly Anderson, Managing Editor, Journals

Holly Koppel, Managing Editor, Journals

Elizabeth Guertin, Publishing Manager, Journals

Jennifer Chapman, Senior Editorial Coordinator

Candice G. Eccles, Editorial Coordinator

Laurie Hertneky, Publications Coordinator

#### PRODUCTION DEPARTMENT

Matt Boyle, Director, Publications Production

Michael Gentry, Production Workflow Manager

Rajashree Ranganathan, Manager, Journals Production

Heather DiAngelis, Senior Production Editor

Katie Fluke, Production Editor DeAndréa Johnson, Production Editor

Patricia Jones Kershaw, Production Editor

Hannah Patterson, Production Editor

Xi Van Fleet, Senior Manager, Information Services

#### **TECHNICAL PAPERS**

Pole-Residue Method for Numerical Dynamic Analysis Sau-Lon James Hu, Fushun Liu, Bin Gao, and Huajun Li

Revisiting Nonlinear In-Plane Elastic Buckling and Postbuckling Analysis of Shallow Circular Arches under a Central Concentrated Load

Yong-Lin Pi, Mark Andrew Bradford, and Yan-Lin Guo

Mesoscopic Scale Instability in Particulate Materials

François Nicot, Guillaume Veylon, Zhu Huaxiang, Jean Lerbet, and Félix Darve

Large Eddy Simulation of Unidirectional and Wave Flows through Vegetation
Agnimitro Chakrabarti, Qin Chen, Heather D. Smith, and Don Liu

Fast Equivalent Linearization Method for Nonlinear Structures under Nonstationary Random Excitations

Cheng Su, Huan Huang, and Haitao Ma

Nonlinear Biaxial Structural Vibration under Bidirectional Random Excitation with Incident 04016050 Angle  $\theta$  by Tail-Equivalent Linearization Method

04016045

04016046

04016047

04016048

04016049

04016052

04016054

06016005

06016006

08216001

08216002

Reza Raoufi and Mohsen Ghafory-Ashtiany

Experimental and Theoretical Study of Viscoelastic Dampers with Different Matrix Rubbers 04016051

Zhao Dong Xu, Ya Xin Liao, Teng Ge, and Chao Xu

Water Hammer Analysis and Parameter Estimation in Polymer Pipes with Weak Strain-Rate Feedback

E. Yao, G. Kember, and D. Hansen

Tail-Equivalent Linearization of Inelastic Multisupport Structures Subjected to Spatially 04016053

Varying Stochastic Ground Motion
Ziqi Wang and Armen Der Kiureghian

Modeling Temperature-Dependent Behavior of Soft Clay

L. Z. Wang, K. J. Wang, and Y. Hong

**TECHNICAL NOTES** 

Role of Roots of Orthogonal Polynomials in the Dynamic Response of Stochastic Systems 06016004

E. Jacquelin, S. Adhikari, M. I. Friswell, and J.-J. Sinou

Scaling Analysis of Pier-Scouring Processes
Nian Sheng Cheng, Yee Meng Chiew, and Xingwei Chen

Modeling Attenuation of Storm Surge over Deformable Vegetation: Parametric Study

Haihong Zhao and Qin Chen

CORRECTIONS

Erratum for "New Model for Ductile Fracture of Metal Alloys. I: Monotonic Loading"

by Huajie Wen and Hussam Mahmoud

Huajie Wen and Hussam Mahmoud

Erratum for "New Model for Ductile Fracture of Metal Alloys. II: Reverse Loading"

by Huajie Wen and Hussam Mahmoud

Huajie Wen and Hussam Mahmoud



Journals Department ASCE

1801 Alexander Bell Drive Reston, VA 20191-4382 Telephone: (703) 295-6290 E-mail: journal-services@asce.org