Characterization, Modeling and Evaluation of Geotechnical Engineering Systems 2014

Selected Papers from the Proceedings of the Geo-Hubei International Conference on Sustainable Infrastructure 2014

Geotechnical Special Publication Number 248

Yichang, Hubei, China 20 – 22 July 2014

Editors:

L. Ge J. Ni A. Correia M. Bai

ISBN: 978-1-63266-966-7

Printed from e-media with permission by:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2014) by the American Society of Civil Engineers All rights reserved.

Printed by Curran Associates, Inc. (2014)

For permission requests, please contact the American Society of Civil Engineers at the address below.

American Society of Civil Engineers 1801 Alexander Bell Drive Reston, VA 20191

Phone: (800) 548-2723 Fax: (703) 295-6333

www.asce.org

Additional copies of this publication are available from:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 USA Phone: 845-758-0400 Fax: 845-758-2634 Email: curran@proceedings.com Web: www.proceedings.com

Table of Contents

1Pathologic Interpretation of the Loading and Cracking Process of SCARC Specimens Using Fiber Bragg Gratings

Benjamin Smith, Shen En Chen, Bin Shi, Guangqing Wei, and Zhengfu Bian

- 9Distinct Element Model Analysis of Mechanical Behavior of Rock with Interconnected Non-Persistent Joints
- P. L. P. Wasantha and P. G. Ranjith
- 17 Experimental Study of Marble Elastoplastic Parameters and Its Application

Weihua Zhao, Hongcai Wang, Changxing Long, Huixu Zhang, Binbin Guo, and Dongsheng Sun

25<u>Thermo-Mechanical Coupling Deformation of Gas Coal and Its Failure Mode and Mechanism</u>

Changbing Zhou, ZhiJun Wan, Yuan Zhang, and JingYi Cheng

33Experimental Study on Energy Evolution Process of Fracture Propagation of Marble under Different Stress Paths

Yu Cong, Zaiquan Wang, and Liming Zhang

42Analysis of Tilted Primary Diaphragm Wall in Very Soft Clay

James C. Ni, Chih-Hung Shih, and Hwei-Wen Hwang

50Jacking Tilted Building by Automatic Multiple Grouting

Wen-Chieh Cheng, James C. Ni, and Hwei-Wen Hwang

58<u>Verification of Design Criteria for Bridge Approach Slabs</u>

Sarah Skorpen and Nicolaas Dekker

66Evaluation of the Settlement of Embankments Supported by Cast-in-Place Concrete Tubular Piles

Feng Yu, Cheng-jie Wu, Hong-kai Liu, and Tang-dai Xia

74<u>Utilizing Chemical Treatment in Improving Bearing Capacity of Highly Expansive Clays</u>

E. Mutaz and Muawia Dafalla

83Analysis on the Subgrade Settlement and Deformation of Lightly Expansive Red Clay

Jianbo Yuan and Ying He

92Evaluation of Residential Area Rehabilitation in Khartoum State

Hussein Elarabi

102<u>Performance and Analytic Modeling of Tunnel Lining Segment under Cyclic Loading</u> James C. Ni and Wen-Chieh Cheng