

Sustainable Civil Infrastructures

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About this Series

Sustainable Infrastructure impacts our well-being and day-to-day lives. The infrastructures we are building today will shape our lives tomorrow. The complex and diverse nature of the impacts due to weather extremes on transportation and civil infrastructures can be seen in our roadways, bridges, and buildings. Extreme summer temperatures, droughts, flash floods, and rising numbers of freeze-thaw cycles pose challenges for civil infrastructure and can endanger public safety. We constantly hear how civil infrastructures need constant attention, preservation, and upgrading. Such improvements and developments would obviously benefit from our desired book series that provide sustainable engineering materials and designs. The economic impact is huge and much research has been conducted worldwide. The future holds many opportunities, not only for researchers in a given country, but also for the worldwide field engineers who apply and implement these technologies. We believe that no approach can succeed if it does not unite the efforts of various engineering disciplines from all over the world under one umbrella to offer a beacon of modern solutions to the global infrastructure. Experts from the various engineering disciplines around the globe will participate in this series, including: Geotechnical, Geological, Geoscience, Petroleum, Structural, Transportation, Bridge, Infrastructure, Energy, Architectural, Chemical and Materials, and other related Engineering disciplines.

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João Pombo · Guoqing Jing
Editors

Recent Developments in Railway Track and Transportation Engineering

Proceedings of the 1st GeoMEast International
Congress and Exhibition, Egypt 2017
on Sustainable Civil Infrastructures

 Springer



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ISSN 2366-3405

Sustainable Civil Infrastructures

ISBN 978-3-319-61626-1

DOI 10.1007/978-3-319-61627-8

ISSN 2366-3413 (electronic)

ISBN 978-3-319-61627-8 (eBook)

Library of Congress Control Number: 2017946440

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Printed on acid-free paper

This Springer imprint is published by Springer Nature

The registered company is Springer International Publishing AG

The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Preface

Toward building sustainable and longer civil infrastructures, the engineering community around the globe continues undertaking research and development to improve existing design, modeling, and analytical capability. Such initiatives are also the core mission of the Soil-Structure Interaction Group in Egypt (SSIGE) to contribute to the ongoing research toward sustainable infrastructure. This conference series “GeoMEast International Congress and Exhibition” is one of these initiatives.

Ancient peoples built their structures to withstand the test of time. If we think in the same way, our current projects will be a heritage for future generations. In this context, an urgent need has quickly motivated the SSIGE and its friends around the globe to start a new congress series that can bring together researchers and practitioners to pursue “Sustainable Civil Infrastructures.” The GeoMEast 2017 is a unique forum in the Middle East and Africa that transfers from the innovation in research into the practical wisdom to serve directly the practitioners of the industry.

More than eight hundred abstracts were received for the first edition of this conference series “GeoMEast 2017” in response to the Call for Papers. The abstracts were reviewed by the Organizing and Scientific Committees. All papers were reviewed following the same procedure and at the same technical standards of practice of the TRB, ASCE, ICE, ISSMGE, IGS, IAEG, DFI, ISAP, ISCP, ITA, ISHMII, PDCA, IUGS, ICC, and other professional organizations who have supported the technical program of the GeoMEast 2017. All papers received a minimum of two full reviews coordinated by various tracks chairs and supervised by the volumes editors through the Editorial Manager of the SUCI “Sustainable Civil Infrastructure” book series. As a result, 15 volumes have been formed of the final +320 accepted papers. The authors of the accepted papers have addressed all the comments of the reviewers to the satisfaction of the tracks chairs, the volumes editors, and the proceedings editor. It is hoped that readers of this proceedings of the GeoMEast 2017 will be stimulated and inspired by the wide range of papers written by a distinguished group of national and international authors.

Publication of this quality of technical papers would not have been possible without the dedication and professionalism of the anonymous papers reviewers. The names of these reviewers appear in the acknowledgment that follows. For any additional reviewers whose names were inadvertently missed, we offer our sincere apologies.

We are thankful to Dr. Hany Farouk Shehata, Dr. Nabil Khelifi, Dr. Khalid M. ElZahaby, Dr. Mohamed F. Shehata, and to all the distinguished volumes editors of the proceedings of the GeoMEast 2017. Appreciation is extended to the authors and track chairs for their significant contributions. Thanks are also extended to Springer for their coordination and enthusiastic support to this conference. The editors acknowledge the assistance of Ms. Janet Sterritt-Brunner, Mr. Arulmurugan Venkatasalam in the final production of the 15 edited volumes “Proceedings of GeoMEast 2017”.

Contents

Experimental and Numerical Behavior of Railway Track Over Geogrid Reinforced Ballast Underlain by Soft Clay	1
Mohammed Y. Fattah, Mahmood R. Mahmood, and Mohammed F. Aswad	
Assessment of Turnout-Related Derailments by Various Causes	27
Serdar Dindar and Sakdirat Kaewunruen	
Performance Level of Road Geometric Design Based on Motorcycle – Cars Linear Speed Profile	40
Joewono Prasetijo, Guohui Zhang, Zaffan Farhana Zainal, Wan Zahidah Musa, and Nickholas Anting Anak Guntor	
Influence of Asymmetrical Topology on Structural Behaviours of Bearers and Sleepers in Turnout Switches and Crossings	51
Sakdirat Kaewunruen, Alex M. Remennikov, and Serdar Dindar	
Geological Hazard Risk Evaluation for Railway Network of Guizhou Province in China	61
Rui Tang, Weidong Wang, Jie Ma, and Yanping Chen	
Prediction of Travel Time Estimation Accuracy in Connected Vehicle Environments	72
Osama A. Osman and Sherif Ishak	
Application of Traffic Conflict Techniques as Surrogate Safety Measures: A Sustainable Solution for Developing Countries	88
S.M. Sohel Mahmud, Luis Ferreira, Shamsul Hoque, and Ahmad Tavassoli	
Evaluation of Railroad Ballast Field Degradation Using an Image Analysis Approach	106
Maziar Moaveni, Erol Tutumluer, John M. Hart, and Mike McHenry	
Influence of Subgrade Differential Settlement on Riding Performance of High-Speed Train	121
Yanmei Cao and Jiting Qu	

**Prediction of Metro Train-Induced Vibrations on a Historic Building:
The Case of the Round City and Chengguang Hall in Beijing** 133
Meng Ma, Yanmei Cao, Xiaojing Sun, and Weining Liu

**Performance of Polyurethane Polymer in the Transition Zones
of Ballasted and Ballastless Track** 142
Qi Wei and Li Cheng-hui

**Road Performance Prediction Model for the Libyan Road Network
Depending on Experts' Knowledge and Current Road Condition
Using Bayes Linear Regression** 153
Abdussalam Heba and Gabriel J. Assaf

Author Index 169