GEOTECHNICAL SPECIAL PUBLICATION NO. 199

GeoFlorida 2010

Advances in Analysis, Modeling & Design

SPONSORED BY
The Geo-Institute of the American Society of Civil Engineers

EDITED BY
Dante Fratta, Ph.D., P.E.
Anand J. Puppala, Ph.D., P.E
Balasingam Muhunthan, Ph.D., P.E.

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ISBN: 978-0-7844-1095-0

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Preface

In the past few years, there has been considerable progress made in the modeling of fundamental soil behavior, in the analysis of geotechnical problems, and in the development of systematic methods to incorporate uncertainties. Additionally, there are important trends in place concerning the design practices, such as the use of Load Resistant Factor Design (LRFD) in geotechnical engineering design and a greater need to understand and quantify geo-related uncertainty and risk. This Geotechnical Special Publication *Advances in Geotechnical Engineering Analysis, Modeling, and Design* contains technical papers that address these issues. This Geotechnical Special Publication is also the official proceedings of the GeoFlorida 2010 Conference, the annual congress of the Geo-Institute of ASCE dedicated to the above theme. It includes the full-length, peer-reviewed papers accepted for the conference.

More than six hundred abstracts were received in response to the Call for Papers. The abstracts were reviewed by the Organizing Committee and five hundred and sixty invitations were extended to prepare and submit full-length papers. Three hundred eighty full-length papers were received in response to these invitations. In addition, the Organizing Committee invited world experts for four keynote lectures. The keynote lectures and the authors are:

- "The use of numerical analysis in geotechnical engineering practice" by Lidija Zdravkovic and David Potts
- "Risk assessment in geotechnical engineering" by Gordon Fenton and Vaughan Griffiths
- "Prediction in geo-environmental engineering: how good are our models?" By Craig Benson,
- "Static and dynamic analysis of penetrometers in soil deposits" by David Airey, Shiao Chow, John Carter, and Majidreza Nazem

All papers, both "submitted" and "keynote" papers were reviewed following the same procedure and at the same technical standards of practice of the Geo-Institute of the American Society of Civil Engineers. All papers received a minimum of two full reviews coordinated by the various Session Chairs and supervised by the conference editors. Standard editorial review forms and checklists were applied to maintain uniform technical standards of the papers. As a result, three hundred and thirty seven papers were accepted for oral and poster presentations at the conference and published in this Geotechnical Special Publication. The authors of the accepted papers have addressed all the comments of the reviewers to the satisfaction of the session chairs. It is hoped that readers of *Advances in Geotechnical Engineering Analysis, Modeling and Design* will be stimulated and inspired by the wide range of papers written by a distinguished group of national and international authors. The

papers are eligible for discussion in the *Journal of Geotechnical and Geo-environmental Engineering* and for ASCE award nominations.

A publication of this quality would not have been possible without the dedication and professionalism of the paper 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 Professors Patrick Fox and Vaughan Griffiths, the GeoFlorida 2010 Conference Co-chairs, and Professor Rodrigo Salgado who coordinated the technical program. Appreciation is extended to the invited speakers, authors and session chairs for their significant contributions. Thanks are also extended to ASCE Geo-Institute staff especially Carol Bowers, its Director, and Lauren Tighe, its Board and meeting Specialist, for their coordination and enthusiastic support to this conference, and to the G-I Conference Manager, Stacey Gardiner of the Gardiner Group for her splendid organization. All of the submission activities of the papers for this conference were managed online by MIRA SMART and we thank Patrick Driscoll for his tireless services. The editors also acknowledge the assistance of Ms. Donna Dickert at ASCE Geo-Institute in the final production of this CD-ROM Geotechnical Special Publication.

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February 2010

Acknowledgements

The Publications Committee members of the Geo Florida 2010 Conference would like to specially thank the following individuals who proposed and organizes the different sessions and who reviewed one or more papers for this Geotechnical Special Publication.

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