# GEO-CONGRESS 2024

## FOUNDATIONS, RETAINING STRUCTURES, GEOSYNTHETICS, AND UNDERGROUND ENGINEERING

#### SELECTED PAPERS FROM SESSIONS OF GEO-CONGRESS 2024

February 25–28, 2024 Vancouver, British Columbia, Canada

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### **Preface**

This Volume is the third of six Geotechnical Special Publications (GSPs) containing papers from Geo-Congress 2024: Bridging Government, Industry, and Academia for Resilient Mega-Communities, held in Vancouver, British Columbia, Canada on February 25-28, 2024. Notably, this was the first Geo-Congress held outside of the United States, and the Canadian Geotechnical Society and Vancouver Geotechnical Society served as partnering organizations. The conference hosted the Terzaghi, Peck, Seed, and Prakash Lectures, numerous invited presentations on selected topics addressing the state of the art and practice in geotechnical engineering, and many technical sessions, panel sessions, short courses, and student competitions.

The call-for-papers was distributed internationally and resulted in 885 submissions. Several strong technical themes were observed in the submissions. These included cold regions engineering, machine learning and artificial intelligence, and sustainability, in addition to other traditionally strong tracks such as deep foundations, geosystems, and geoenvironmental engineering. We see these tracks as a reflection of both the location of the Geo-Congress and the topics currently at the forefront of geotechnical research and practice.

This volume includes a collection of papers in the fields of Deep Foundations, Earth Retaining Structures, Geosynthetics, Shallow Foundations, and Underground Engineering. Each paper was subjected to a rigorous technical assessment by two or more independent peer reviewers. Acceptance required concurrence by at least two peer reviewers, and final decisions were made only after review coordinators confirmed that authors satisfactorily addressed any reviewer comments on their original submission. Ultimately, this resulted in acceptance of 366 papers in total, 53 of which are in this volume. All accepted papers are presented at the conference as posters or technical talks and are eligible for applicable ASCE Awards.

The success of this conference and proceedings would not have been possible without the participation and collaboration of many individuals, including the tireless staff at the Geo-Institute: Barbara Curtis, Lucy King, Krystina Scott, Sean Herpolsheimer, and Brad Keelor. We would also like to extend our gratitude to the Session Chairs and Reviewers, who provided thorough reviews and assessments of the submissions in a timely manner.

#### The Editors,

T. Matthew Evans, Ph.D. Nina Stark, Ph.D. Susan Chang, Ph.D., P.E.

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## **Contents**

### Deep Foundations

Prediction for Lateral Response of Monopiles: Deep Learning Model on
Small Datasets Using Transfer Learning1  Mohammed Alduais, Amir Hosein Taherkhani, Qipei (Gavin) Mei, and Fei Han
Aronaninica / nadais, / min 1105cm Tanerkham, Qiper (Gavin) ivier, and 1 ci 11an
Pile Setup in Glacial Soils of Northern Missouri8
Brent L. Rosenblad, Ruaa Al-Forati, and Andy Boeckmann
Effect of Pile Modeling Options on the Short-Term Stability Analysis of a
Clay Slope Stabilized with Piles17
Emre Tekdemir and Irem Zeynep Yildirim
Downdrag Analysis on Piles by Cyclic Hyperbolic t-z Curves28
Roman D. Hryciw, Ries Plescher, and Xiaotong Sun
Contribute Total and Halfard Dilatin Contribute And An December 44
Centrifuge Testing on Helical Piles in Sand Subjected to Pseudostatic  Monotonic and Cyclic Loads38
Naveel Islam, Lijun Deng, Rick Chalaturnyk, and Luke Penner
Naveer Islam, Lijun Deng, Rick Charaturnyk, and Luke Telmer
Analysis of Laterally Loaded Large-Diameter Rigid Piles Considering
Vertical and Horizontal Soil Displacements48
Abhisek Paul and Dipanjan Basu
Evaluation of Soil Improvement Surrounding Drilled Displacement Piles
Installed in Homogeneous Cohesionless Soil Sites through Pre- and
Post-Installation CPT Data
Genesis Figueroa, Tim Siegel, Morgan NeSmith, and Anne Lemnitzer
Case Study on Ground Deformations and Vibrations Induced by Impact Pile Driving in Central Florida69
Jorge E. Orozco-Herrera, Berk Turkel, Luis G. Arboleda-Monsalve,
and Larry Jones
Pile Length Estimation Based on Guided Waves and Periodic Analysis79
Shihao Cui, Pooneh Maghoul, and Hamed Layssi
An Analytical Approach to Determine Point-of-Fixity of Deep
Foundation Utilizing Nonlinear Response from <i>p-y</i> Analysis87
Fahim M. Rhuiyan, Ramin Motamed, and Rai V. Siddharthan

Analysis of the Load-Sharing Behavior of Disconnected Filed Raft Foundation Using Non-Linear Soil-Structure Interaction	07
Vincent Zanjani, Satheeshkumar M, and Rob Smith	97
Soil-Structure Interface Resistance Changes due to Rigid Awns	106
Ryan D. Beemer, Joe Tom, Kaylee Tucker, Ann C. Sychterz, and Isabella Bernardi	
A Study of Laterally Loaded Piles after Failure	114
Foundation Design for Crowchild Trail Short-Term Improvements	125
Geofoam Bridge Approaches for 11-MN Module	140
Rollins P. Brown	
Effect of Feature Selection Technique on the Pile Capacity Predicted Using Machine Learning	153
Baturalp Ozturk, Antonio Kodsy, and Magued Iskander	
Updated Group Reduction Factors for Large Pile Groups under Lateral Loads	164
Cyclic Lateral Load Testing of Model Pile Segments in Sand: Equipment	
Development and Early Results	174
Sanjeev Malhotra and Byron W. Byrne	
Design of Drilled Shaft with Environmental Impact Considerations:	40.4
A Parametric Study Mina Lee and Dipanjan Basu	186
Tima 200 and 2 ipanjan 2 asa	
Drilled Shaft Load Tests to Investigate Side Friction Development along	
Drilled Shafts in Very Weak Porous Limestone	196
Jose R. Railliez, Matias R. Fiedialli, and Miguel A. Fando	
Four-Point Bending Test of Micropile Threaded Connections	206
Sebastian Montoya-Vargas, Aaron Gallant, and William G. Davids	
Further Examination of a New Empirical Model for Predicting	
Underwater Noise due to Pile Driving	215
Raphael Crowley, Amanda Schaaf, Consolatha Mushi, Mariam Makoleo,	
Emily Sapp, Jim Gelsleichter, and Brian T. Kopp	
Evaluation of the Response of Piled Raft Systems in Soft Soil Undergoing	
Consolidation and Pore Pressure Drawdown	225
Indraneel Sengupta, Nihar Ranjan Patra, and Sathiyamoorthy Rajesh	

Stuart Childs, James Williams, and Gurpreet Bala	236
Shared Anchoring of Marine Renewable Energy Devices Utilizing Monopiles	246
Axial Analysis of Small Capacity Helical Piles in Saemangeum Based on the Load Transfer Method	257
Hyeong-Joo Kim, Peter Rey T. Dinoy, Hyeong-Soo Kim, Tae-Woong Park, James Vincent Reyes, Young-Soung Joung, Jun-Young Park, Voltaire Anthony A. Corsino Jr., and Kevin Bagas Mawuntu	
Long-Term Behavior of Pile Groups Resting on Multi-Layered Deposits Subjected to Combined Compressive and Lateral Loads Venkata Balaiah Kami and Anumita Mishra	267
Pile Capacity Reduction due to Wetting in Saharan Deserts and Its Effect on the Serviceability of Cairo Monorail	278
Ahmed Abd Elmageed, Mohamed Hassan, Ahmed Nader, and Omar Alawneh	
Earth Retaining Structures	
Geometric Limits of Foamed Glass Aggregate Fill behind Cantilever Walls and Abutments	286
Michael P. McGuire, Theresa Andrejack Loux, and Archie Filshill	200
Design of Geosynthetic MSE Walls Supporting Bridge Abutment Footings Using the Stiffness Method	296
Richard J. Bathurst and Reza Jamshidi Chenari	
Effect of Partial Drainage on Optimized Parameters Based on Deformations of a Deep Supported Excavation	305
Experience with Recent Soil Nail Construction in California	315
Deep Excavation in Clayey Soils for a Sanitary Sewer Pump Station in Maple Ridge, British Columbia	331
Adam McIntyre, (Uthaya) M. Uthayakumar, Reno Fiorante, and Negar Zakipour	
Vertical Settlement of Strip Footings on Top of Geosynthetic-Reinforced Retaining Abutment Walls	343
D. IVIUNIADHA INAHHIAHHICZHAU AHU JIC HAH	

### Geosynthetics

Some Rehabilitation Schemes for Geosynthetic-Reinforced Soil  Abutments on Soft Soil Foundations350  Pouya Pishgah and Reza Jamshidi Chenari
<b>Liquefaction Resistance of Fiber-Reinforced Pond Ash359</b> Sujay Teli and Ajanta Sachan
Variability in Membrane Behavior of Geosynthetic Clay Liners
Characterization of the Long-Term Tensile Stiffness of Geogrids at the Serviceability Limit of Strain378
Michael P. McGuire, Evaline Bearce, Elise G. Hummel, and Laura Spencer
Evaluating the In Situ Elastic Modulus of Foamed Glass Aggregate Using Static Plate Load Tests387
Michael P. McGuire, Theresa Andrejack Loux, and Archie Filshill
Geocell-Reinforced Capping Layer in Rail Tracks Subjected to Cyclic Loading:  Laboratory and Numerical Modeling Study397  Trung Ngo and Buddhima Indraratna
Importance of Product-Specific Testing in Determining Durability  Reduction Factor for Polyester Geogrids in High pH Conditions407  Laura M. Spencer and John M. Lostumbo
Interface Shear Strength of Sand with 3D Printed Geocells
Vertical Deformation Analyses for Multi-Axial Geogrid Stabilized Platform Using Conventional Techniques and Back-Analyses with Composite Approach425 Lois G. Schwarz and Mark H. Wayne
Investigation of the Effect of Geosynthetics on Climate-Induced Changes in Unsaturated Soil Behavior Using Non-Parametric Measure436 Md. Jobair Bin Alam, Maalvika Aggarwal, and Naima Rahman
A Numerical Study of Drainage Characteristics of Nonwoven  Geotextile on the Performance of a Reinforced Soil Wall  Comprising Unsaturated Marginal Backfill447  Amalesh Jana and Arindam Dev

Upendra Modalavalasa and Ayothiraman Ramanathan  Rehabilitation Design of Railway Tracks Using High-Strength Polymeric Geocell	Performance of Encased Stone Column Aggregates Using Large-Scale Triaxial Testing459
Polymeric Geocell	8
Shallow Foundations  New Case Studies to Validate the GT Direct CPT Method for Footings on Sand	
New Case Studies to Validate the GT Direct CPT Method for Footings on Sand	Arghya K. Chatterjee, Sanat K. Pokharel, and Marc Breault
Resistance of Shallow Footings to Moment Loads during Seismic Events	Shallow Foundations
Veon Sam Kim and Radoslaw L. Michalowski  **Underground Engineering**  Influence of Ground-Borne Vibrations from the Installation of Rockfill Columns on a Buried Structure	
Influence of Ground-Borne Vibrations from the Installation of Rockfill Columns on a Buried Structure	
Columns on a Buried Structure	Underground Engineering
Silvia Nobre, Marolo Alfaro, and James Blatz  Numerical Investigations on Stability Analysis of Buried Pipelines with  Varying Cross-Sectional Shapes to Blast Loading	
Varying Cross-Sectional Shapes to Blast Loading	
Tapobrata Lodh and Kaustav Chatterjee  Analysis of Abrasive Reusability Performed with Different Energy Parameters in Rock Drilling Using Waterjets	• • •
Parameters in Rock Drilling Using Waterjets518	• •
	Parameters in Rock Drilling Using Waterjets518
Hyun-Jong Cha, Jun-Sik Park, Eun-Soo Hong, and Tae-Min Oh	Hyun-Jong Cha, Jun-Sik Park, Eun-Soo Hong, and Tae-Min Oh
Two Decades' Worth of Lessons Learned from the Use of Distributed Fiber Optics for Ground Characterization and with Tunneling	Fiber Optics for Ground Characterization and with Tunneling528