

FINAL PROGRAM



# GEO-RISK 2023

Arlington, Virginia | July 23-26, 2023

Advances in Theory and Innovation in Practice



[www.geo-risk.org](http://www.geo-risk.org)

Venue: DoubleTree by Hilton Washington, DC – Crystal City





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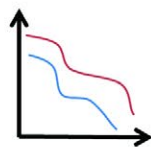
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## Sunday, July 23

7:00 – 11:00 a.m.	<b>Registration Open</b>   <i>Crystal Ballroom Foyer</i>
8:00 a.m. – 12:00 p.m.	<b>Short Course: Risk-Informed Decision Making in Geotechnical Engineering</b>   <i>D.V.Griffiths, Madison</i>
8:00 a.m. – 5:00 p.m.	<b>Short Course: Quantitative Risk Assessment in Geotechnical Engineering</b>   <i>Monroe</i>
11:00 a.m. – 1:00 p.m.	<b>Registration Closed for Lunch</b>
1:00 – 5:00 p.m.	<b>Exhibitor Move-in</b>   <i>Lincoln Ballroom</i>
1:00 – 6:00 p.m.	<b>Registration Open</b>   <i>Crystal Ballroom Foyer</i>
5:00 – 6:30 p.m.	<b>Exhibit Hall Open</b>   <i>Lincoln Ballroom</i>
5:00 – 6:30 p.m.	<b>Welcome Reception</b>   <i>Lincoln Ballroom</i>

## Monday, July 24

8:30 – 10:30 a.m.	<b>Morning Plenary Session</b>   <i>Salon AB</i> <b>Moderators:</b> Shadi Najjar, Bob Gilbert, Limin Zhang <b>Opening Statement:</b> Conference Chairs <b>Keynote Lecture: Spatial Variability – From Point Process, Spatial Average, to Mobilized Value:</b> Jianye Ching ( <i>Suzanne Lacasse Lecture</i> ) <b>Keynote Lecture:</b> Mike Grimm, <i>USGS</i> <b>Featured Paper: Social Media Crowdsourcing for Damage Assessment Following Earthquakes,</b> Lingyao Li, Zihui Ma, Michelle Bensi, Gregory Baecher <b>Featured Paper: Risk Assessment Framework for Statistical Analysis of Cut Slopes Using Track Inspection Videos and Satellite Imagery,</b> Michael Palese, Te Pei, Tong Qiu, Allan Zarembski, Chaopeng Shen, Joseph Palese <b>Questions and Answers</b>		
7:00 a.m. – 12:45 p.m.	<b>Registration Open</b>   <i>Crystal Ballroom Foyer</i>		
8:00 – 8:30 a.m.	<b>Early Morning Break</b>   <i>Lincoln Ballroom</i>		
8:00 a.m. – 4:30 p.m.	<b>Exhibits Open</b>   <i>Lincoln Ballroom</i>		
10:30 – 11:00 a.m.	<b>Mid-Morning Break</b>   <i>Lincoln Ballroom</i>		
11:00 a.m. – 12:45 p.m.	<b>Technical Sessions</b>		
Track A   Washington Ballroom	Track B   Salon C	Track C   Wilson/Harrison	Track D   Salon AB
<b>Georisk in Climate Change, Sustainability, and Decarbonization I</b> <b>Moderator:</b> Limin Zhang	<b>Probabilistic Analyses for Seismic Hazards</b> <b>Moderators:</b> Adrian Rodriguez-Marek and Ashly Cabas Mijares	<b>Data-Driven and Probabilistic Site Characterization I</b> <b>Moderators:</b> Hui Wang and Takayuki Shuku	<b>Panel-Based Session: Project Delivery Risk in Deep Foundations–Legal and Operational Approaches</b> <b>Moderators:</b> Richard Kalson and Alexander Filotti
<b>Assessing and Mitigating Flood Risk at United States Diplomatic Missions with High Settlement Susceptibility,</b> Carrie Campbell, David Keller, Noelle Trent, Julian Mancini <b>Storm-Based Forecasting of Natural Terrain Landslides,</b> Te Xiao, Limin Zhang <b>Uncertainty-Based Climate-adaptive Design Optimization of Shallow Foundation,</b> Vahidreza Mahmoudabadi, Nadarajah Ravichandran <b>River Damming Threats by Climate-driven Glacier Detachments,</b> Ruochen Jiang, Limin Zhang, Wenjun Lu <b>Prediction of Landslide Dam Formation Using Machine Learning Techniques,</b> Shihao Xiao, Limin Zhang, Te Xiao, Ruochen Jiang <b>A Unified Framework of Vulnerability Assessment for Valley-Crossing Bridges Exposed to Compounding Mountain Geohazards,</b> Wenjun Lu, Limin Zhang, Ruochen Jiang <b>Risk of River Blockage Induced by Debris Flows,</b> Xin He, Limin Zhang, Wenjun Lu <b>Numerical Simulation of Post-Fire Hazards Using a Triggering-propagation Model,</b> Liang Gao, Limin Zhang	<b>Regional Dependence of Strong Ground Motion in the Chilean Subduction Zone,</b> Gonzalo Montalva, Jorge Basualto, Esteban Saez, Gonzalo Yanez, Nicolas Bastias <b>Development of a Site Response and Hazard Model for the US Atlantic and Gulf Coastal Plains,</b> Cassie Gann-Phillips, Ashly Cabas, Chris Cramer, Zachary Militello, James Kaklamanos <b>Estimation of Seismic Intensities Based on the Spatial Distribution of Asperities in Megathrust Earthquakes,</b> José Tomás Drápela, Gonzalo Montalva, Marcos Moreno, Alexandra Quiroga <b>Evaluating the Performance of Non-Ergodic Ground Motion Models in the Ridgecrest Area,</b> Jorge Macedo, Chenying Liu, Albert Kotke <b>Numerical Modelling of Kinematic Megathrust Rupture for Seismic Hazard Assessment in the Near-Source Regions,</b> Diego Cárdenas, Gonzalo Montalva <b>Modeling the Spatial Correlation of Systematic Source Effects in Non-Ergodic Ground Motion Models for the Ridgecrest Area,</b> Chenying Liu, Jorge Macedo <b>A Tool to Evaluate Deformation from Seismically Induced Landslides in the San Francisco Bay Area for System-Wide Risk Analyses,</b> Adam Wade, Michael Greenfield, Jennifer Wilson, Christopher Hitchcock, Michael Boone, Albert Kotke, Ben Leshchinsky, Joseph Wartman	<b>Discrete Element Modeling to Evaluate the Effects of Porosity on Regolith Responses during Cone Penetration Process,</b> Lei Wang, Omer Okur, Jesus Badal, Liang Zhang, Qiusi Chen <b>Uncertainty Quantification in Predicting UCS Using Fully Bayesian Gaussian Process Regression,</b> Chao Song, Tengyuan Zhao <b>Comparison of Data-driven Site Characterization Methods in a Real Case History,</b> Takayuki Shuku, Menglu Huang <b>Machine Learning of Sparse Site Investigation Data for Landslide Risk Assessment,</b> Chao Shi, Yu Wang <b>Analysis of Tunnel Deformational Performance Considering Geological Uncertainty and Spatial Variability,</b> Qihao Jiang, Jinzhang Zhang, Dongming Zhang <b>Data-drive Site Characterization for Benchmark Examples Using Sparse Bayesian Learning,</b> Jianye Ching <b>Simulating Soil Stratigraphic Profile Using Image Warping,</b> Hui Wang, Xingxing Wei	<b>Panel Discussion</b> This invited panel session will explore the differences in risks of the classic Design-Bid-Build (DBB) delivery system and the Design-Build project delivery system. Panelists will elaborate on the opportunities that the Design-Build is presenting to the geotechnical design and construction companies. <b>Panelists</b> Kevin Cargill, <i>Schnabel Foundation Company</i> Larry Moore, <i>GeoStructures, Inc.</i> Richard D. Kalson, <i>Deep Foundations Institute; Litigation Benesch Friedlander Coplan &amp; Aronoff LLP</i> Alexander Filotti, <i>Deep Foundations Institute; Cimalta Construction Corp.</i>

## Monday, July 24 *(continued)*

12:45 – 2:00 p.m.	<b>Registration Closed for Lunch</b>		
12:45 – 2:00 p.m.	<b>Lunch in Exhibit Hall   <i>Lincoln Ballroom</i></b>		
2:00 – 3:45 p.m.	<b>Technical Sessions</b>		
Track A   Washington Ballroom	Track B   Salon C	Track C   Wilson/Harrison	Track D   Salon AB
<b>Geological and Ground Model Uncertainties</b> <b>Moderators:</b> Tengyuan Zhao, Xin Liu, and Hsein Juang	<b>Big Data, Artificial Intelligence, and ML in Geo-Engineering</b> <b>Moderators:</b> Shadi Najjar and Mohamad Hallal	<b>Modelling Spatial Variability in Geotechnical Engineering</b> <b>Moderators:</b> Vaughan Griffiths and Bryant Robbins	<b>Panel-Based Session: Reliability-Based Design in Code Development and Application</b> <b>Moderators:</b> Kerstin Lesny and Johan Spross
<b>Probabilistic Assessment of Soil Liquefaction Potential Using CPT-Based Smart Site Investigation Strategy</b> , Zheng Guan, Yu Wang <b>A Method for Probabilistic Assessment of Slope Bearing Capacity of Slopes Considering Stratigraphic Uncertainty</b> , Hui Wang, Zehang Qian <b>The Effect of Joint Spacing Uncertainty on the Landslide Debris Accumulation Features – Insights from a Sedimentary Dip Slope Case</b> , Yu-Han Cheng, Chih-Chen Yeh, Chih-Hsiang Yeh, Wen-Chao Huang <b>Self-Checking the Reliability of Engineering Geological Models</b> , Antonio Dematteis, Wayne Barnett, Trevor Carter <b>The LiDAR-based 3D Stratigraphic Model Calibrated with Limited Borehole Data</b> , Chih-Hsiang Yeh, Yu-Chen Lu, Hsein Juang, Jia-Jyun Dong <b>Stratigraphic Uncertainty Reduction Considering the Location of Additional Borehole</b> , Wan-Ying Chien, Bo-Sheng Ciou, Yu-Chen Lu, Chih-Hsiang Yeh, Wen-Yi Hung	<b>Data-Driven Evaluation of Project Risk Registers</b> , Abdolmajid Erfani, Zihui Ma, Qingbin Cui, Gregory Boecher <b>Comparison of Hybrid Models Based on Infinite Slope Stability Analysis and Different Data-driven Approaches for Regional Landslide Susceptibility Mapping</b> , Xin Wei, Hai Li, Paolo Gardoni, Lulu Zhang <b>Spatial Estimation of Unconfined Compressive Strength of Osaka Plain by Deep Learning and Consideration on Its Estimation Accuracy</b> , Kazuhiro Oda, Shoko Yamamoto, Masahiro Kondoh <b>A Comparative Study of Ensemble Methods for Prediction of Surface Settlement Induced by TBM Tunneling</b> , Tatiana Richa, Selmane Libdaoui, Jean-Michel Pereira, Gilles Chapron, Lina Maria Guayacan Carrillo <b>Tackling Geotechnical Risks in Tailings Dams Using High-Resolution UAV Imaging and Advanced Image Processing</b> , Jose Gomez, Milad Ghahramaniasalou, Javad Sattarvand <b>Stochastic Estimation of Hydraulic Conductivity Using Self-organizing Map</b> , Hyunki Kim, Kyueongma Koo, Joram Kim, Lucas Vasca <b>Landslide Susceptibility Mapping for Road Corridors by Using a Combined Interferometry SAR and Machine Learning Techniques</b> , Ardy Arsyad	<b>Proposed Framework to Assess the Influence of Ground Motion Residual Correlation on the Joint Seismic Hazard</b> , Emily Gibson, Michelle Bensi <b>Effect of Permeability Random Field on Piping Risk of a River Dike</b> , Shin-ichi Nishimura, Go Kubota, Ryota Ohashi, Toshifumi Shibata, Takayuki Shuku <b>Probabilistic Assessment of Landslide Risk Considering Spatial Variation of Soil Parameters</b> , Himanshu Rana, G.L. Sivakumar Babu <b>Constant Covariance Matrix Approach in the Random Bearing Capacity Evaluation of Two-Layered Soil</b> , Marcin Chwała, Marek Kawa, Wojciech Pula <b>Quantifying Uncertainty in the Critical Secant Gradient Function</b> , Bryant Robbins, Vaughan Griffiths <b>Characteristic Strength of a Slope with Spatial Variability and Cross-Correlation</b> , Scott Cylwik, Sina Javankhoshdel, Brigid Cami, Terence Ma <b>Probabilistic Assessment of Earthen Levees Considering Soil Spatial Variability</b> , Weiwei Zhan, Liang Zhang, Lei Wang <b>Identification of Horizontal Auto-Correlation Parameters Using Inclined Cone Penetration Tests – Preliminary Results</b> , Yong-Keng Tan, Jianye Ching	<b>Panel Discussion</b> The panel addresses the use of reliability-based design in code development and application and compares recent developments in North America and Asia. Four impulse presentations are followed by a panel discussion on 'How to close the gap between theory and practice'. The discussion is focused on the question of what is required to close the gap between theoretical approaches and practical applications in view of knowledge and acceptance by the geotechnical community. <b>Panelists</b> Gregory Boecher, <i>University of Maryland, USA</i> Richard Bathurst, <i>Royal Military College of Canada, Canada</i> Kok-Kwang Phoon, <i>Singapore University of Technology and Design, Singapore</i> Kerstin Lesny, <i>University of Siegen, Germany</i> Johan Spross, <i>KTH Royal Institute of Technology, Sweden (moderator)</i>
2:00 – 4:30 p.m.	<b>Registration Open   <i>Crystal Ballroom Foyer</i></b>		
3:45 – 4:00 p.m.	<b>Afternoon Break   <i>Lincoln Ballroom</i></b>		
4:00 – 5:30 p.m.	<b>Afternoon Plenary Session   <i>Salon AB</i></b> <b>Moderators:</b> Bob Gilbert and Jianye Ching <b>Keynote Lectures:</b> Exploring Data-Driven Site Characterization, Kok-Kwang Phoon, <i>Singapore University of Technology &amp; Design</i> <b>Bright Spark Lecture:</b> Revolutionizing Geotechnical Engineering: The Role of Machine Learning in Enhancing Prediction, Analysis, and Design, Sara Khoshnevisan, <i>University of Cincinnati</i> <b>Featured Paper:</b> Random Field Analysis of Laterally Loaded Monopile Foundations, Vaughan Griffiths, Jinsong Huang, Gordon Fenton <b>Questions and Answers</b>		



## Tuesday, July 25

7:00 a.m. – 12:45 p.m.	<b>Registration Open</b>   <i>Crystal Ballroom Foyer</i>		
8:00 – 8:30 a.m.	<b>Early Morning Break</b>   <i>Lincoln Ballroom</i>		
8:00 a.m. – 4:30 p.m.	<b>Exhibits Open</b>   <i>Lincoln Ballroom</i>		
8:30 – 10:30 a.m.	<b>Morning Plenary Session</b>   <i>Salon AB</i> <b>Moderators:</b> Limin Zhang and Shadi Najjar <b>Keynote Lecture:</b> Risk in Geotechnical Engineering: Legal, Economic and Engineering Perspectives, Rodrigo Salgado, <i>Purdue University</i> <b>Keynote Lecture:</b> Travelers Infrastructure Study, Kailey Tri and Jennifer Moore, Travelers <b>Featured Paper:</b> Use of Artificial Neural Networks for Predicting Site Response from Ambient Noise HVSR, Balakumar Anbazhagan, Adrian Rodriguez-Marek, Mohsen Esteghamati, Albert Kottke, Norman Abrahamson <b>Featured Paper:</b> Risk and Return Analysis for Geotechnical Asset Management, Ahmad Alhasan, Jerry Dimaggio <b>Questions and Answers</b>		
10:30 – 11:00 a.m.	<b>Mid-Morning Break</b>   <i>Lincoln Ballroom</i>		
11:00 a.m. – 12:45 p.m.	<b>Technical Sessions</b>		
<b>Track A   Washington Ballroom</b>	<b>Track B   Salon C</b>	<b>Track C   Wilson/Harrison</b>	<b>Track D   Salon AB</b>
<b>Modelling and Characterization of Geotechnical Uncertainty</b> <b>Moderators:</b> Wojciech Pula, Giovanna Vessia, Diego Di Curzio	<b>Georisk in Climate Change, Sustainability, and Decarbonization – II</b> <b>Moderators:</b> Limin Zhang	<b>Soil-Structure Interaction in Reliability Assessments of Geosystems</b> <b>Moderator:</b> Assile Abou Diab	<b>Panel-Based Session: Risks and Rewards of Foundation Re-Use</b> <b>Moderator:</b> Derrick Dasenbrock
<b>Model Uncertainty in Below-slope Stress Conditions: Experimental and Numerical Investigation</b> , David Reid, Riccardo Fanni, Andy Fourie <b>Statistical Estimation of Loess Landslide Impact by Multivariate Normal Distribution Models with Consideration of Transformation Methods</b> , Dongdong Yan, Tengyuan Zhao, Ling Xu <b>Calculating Reliable Engineering Geological Model through Stochastic Co-Simulation Applied to CPTu Data</b> , Diego Di Curzio, Giovanna Vessia <b>Effect of Uncertainty in Design Decisions for Driven Piles in Soil with High Boulder Content</b> , Chiara Cannizzaro, Maedeh Alinejad, Anders-Beijer Lundberg, Stefan Larsson, Johan Spross <b>Borehole and CPTU Integrated Probabilistic Site Characterization with Noisy Data Filtering</b> , Qiuzhu Ma, Haifeng Zou, Te Xiao, Limin Zhang <b>Application of Interval Field Method to the Stability Analysis of Slopes in Presence of Uncertainties</b> , Chengxin Feng, Matthias Faes, Matteo Broggi, Michael Beer <b>Automated Interpretation and Evaluation of Spatial Variability and Model Uncertainty in Geotechnical Site Characterization</b> , Xin Peng, Jesse Rauser	<b>A Bayesian Forecast Framework for Climatic Parameters in Geotechnical Modeling</b> , Austin Olais, Claudia Zapata, Yasser Soltanpour <b>The Effect of Initial Ice Content on the Dynamics of Glacial Debris Flow Revealed from Multi-phase Modelling</b> , Tengfei Wang, Ping Shen <b>An Apparatus to Monitor Suction Evolution and Water Migration within a Soil Mass for Climate-Adaptive Infrastructure</b> , Aditi Rana, Ashwani Sharma, Ashutosh Kumar, Arash Azizi, Sravan Mugunda, Shraf Osman, David Toll <b>Stability of Moraine Deposits under Changing Climate on the Tibetan Plateau</b> , Taosheng Huang, Ping Shen, <b>Probability Density Function of Geometrical Properties of Soil Desiccation Cracks at Different Relative Humidity Levels</b> , Ali Vafaei, Farshid Vahedifard, Amin Amirlatifi, Chao-Sheng Tang <b>Analyses of Cold Region Pavement Adaptation for Climate Change</b> , Yusheng Jiang, Shafi Ulah, Xudong Fan, Xiong Yu	<b>Reliability Assessment of Pile-founded T-walls using Kriging Method</b> , Liang Zhang, Lei Wang <b>Probabilistic Analysis of Layered Soil on Shallow Foundation Settlement Using a Hardening Soil Model</b> , Daniel Teshager, Marcin Chwala, Wojciech Pula <b>Assessment of Model Uncertainty for Settlement-prediction Models of Spread Footings on Clays Reinforced with Aggregate Piers</b> , Abdurrahman Almkati, Shadi Najjar, Salah Sadek <b>Stone Column Ground Improvement Analysis: Gaps</b> , Wjdan Sahi, Haluk Aktan <b>Bearing Capacity of Strip Footings Seated on Granular Layers over Spatially Variable Undrained Soft Clay</b> , Richard Bathurst, Reza Jamshidi Chenari <b>Assessing Uncertainty in Consolidation Settlement Calculations</b> , Robert Bachus, Glenn Rix, Thomas Brandon	<b>Panel Discussion</b> This invited panel session will explore risks and opportunities associated with the reuse of existing structural foundations for new construction and feature a dynamic moderated discussion including audience participation. <b>Panelists</b> Donald Green, <i>Michael Baker International</i> Anil Agrawal, <i>City College of New York</i> Augusto Lucarelli, <i>Itasca Consulting</i> Joe Smith, <i>Arup</i> Derrick Dasenbrock, <i>Federal Highway Administration</i>
12:45 – 2:00 p.m.	<b>Registration Closed for Lunch</b>		
12:45 – 2:00 p.m.	<b>Lunch in Exhibit Hall</b>   <i>Lincoln Ballroom</i>		

## Tuesday, July 25 *(continued)*

2:00 – 3:45 p.m. Technical Sessions			
Track A   Washington Ballroom	Track B   Salon C	Track C   Wilson/Harrison	Track D   Salon AB
<b>Risk and Reliability in Rock Engineering and Risk and Resilience in Excavation and Tunneling</b> <b>Moderators:</b> Johan Spross, Iason Papaioannou, Bilal Ayyub and Sara Khoshnevisan	<b>Risk Assessment for Dams, Levees, Embankments, and Slopes</b> <b>Moderators:</b> Farrokh Nadim, Lei Wang, Luo Ning and Jinhui Li	<b>Uncertainty and Risk Characterization of Liquefaction</b> <b>Moderators:</b> Jack Montgomery	<b>Panel-Based Session: Risk in Underground Construction</b> <b>Moderators:</b> Lizan Gilbert, Tom Pennington
<b>Bayesian Updating for Rock Properties Based on a Rock Database</b> , Takayuki Shuku, Yasuhiro Yokota, Kensuke Date, Masako Ishii, Takeru Kumagai <b>Mining Applications for Probabilistic Design</b> , Catrin Edelbro, Jennifer Hellberg, Johan Spross <b>Dirichlet Distribution for Tunnel Construction Class Proportions in Probabilistic Time and Cost Estimations</b> , Johan Spross, Jack Lidmar <b>Small- and Medium-Scale Assessment of Rockfall Coefficients of Restitution</b> , Bruma Souza, Marion Bost, Jean Benoit, Philippe Reiffsteck, Christophe Pruvost, Nicolas Vermorel <b>The Importance of Cross-correlation in Probabilistic Analyses of Rock Slopes Using Generalized Hoek-Brown Criterion</b> , Joy Foley, Brigid Cami, Terence Ma, Sina Javankhoshdel, Jim Cremeens, Joe Carvalho <b>A Soil Clustering and Anomaly Detection Based on EPBM Data Using Principal Component Analysis and Local Outlier Factor</b> , Dayu Apoji, Kenichi Soga <b>Probabilistic Assessment of Marginal Facies in the Mercia Mudstone Group Formation for Tunneling Risk Management on the North Bristol Relief Sewer Project</b> , Jacob Grasmick, Gareth Jones, Angus Maxwell <b>Framework to Enable Regional 3D Probabilistic Assessment of Excavation Induced Structural Damage Using a Monte-Carlo Method</b> , Jinyan Zhao, Stefan Ritter, Matthew DeJong	<b>Probability of Levee Instability Following Rapid Drawdown</b> , Daniel VandenBerge, Prince Turkson <b>The Stability Analysis of the Double-Row Steel Sheet Pile Cofferdam with Sandy and Cohesive Foundation under Surge Wave Action</b> , Ming Peng, Zhi Li, Yan Zhu, Jingliang Zhang <b>Loss Assessment of Dike-Break Induced Flood Disaster: A Case Study in the Poyang Lake District in China</b> , Shui-Hua Jiang, Wen-Huan Li, He Huang, Huan-Le Zhi, Jinsong Huang <b>Risk-informed Approach to the Evaluation of Relief Wells for Levee Systems</b> , Stefan Flynn, Michael Navin <b>Reliability-Based Design of Infinite Frictional Slopes Reinforced by Inclusion of Fibers</b> , Assile Abou Diab, Shadi Najjar, Salah Sadek <b>How Intelligent Monitoring Solutions Can Mitigate Slope Failure Risk</b> , Raphael Victor <b>Reclamation's Approach to Construction Risk Analysis and Risk Assessment</b> , Dom Galic <b>A Framework for Quantitative Risk Analysis of Dams</b> , Martin McCann, Glenn Rix	<b>Evaluation of Liquefaction Probability of Earth-fill Dam over Next 50 Years Using Geostatistical Method Based on CPTU</b> , Kazunari Imaide, Shin-ichi Nishimura <b>Variability Quantification of LEAP 2017 Experiments</b> , Nithyagopal Goswami, Mourad Zeghal <b>Development of Hazard Map for the Risk of Exceeding the Intolerable Liquefaction-induced Settlement for a Powerline System, Portland, Oregon</b> , Michelle Deng, King Chin, Melanie Walling <b>Uncertainty Characterization of Surface Lateral Displacement and Settlement of LEAP-2020 Experimental Data</b> , Mourad Zeghal, Alejandro Sepulveda <b>A Tool To Evaluate Liquefaction and Resulting Permanent Ground Deformation in the San Francisco Bay Area</b> , Michael Greenfield, Michelle Guckenheimer, Adam Wade, Jennifer Wilson, Christopher Hitchcock, Albert Kottke, Michael Boone <b>Uncertainty in Liquefaction-Induced Settlement in Numerical Simulations Due to Model Calibration</b> , Devdeep Basu, Jack Montgomery, Armin Stuedlein <b>Liquefaction Hazard Assessment of Kathmandu Valley Using Deterministic and Probabilistic Approaches</b> , Indra Acharya, Mandip Subedi, Rajan KC <b>SSHAC Evaluation of the Seismic Fragility for an Embankment Dam</b> , Martin McCann, Zach Ruby	
2:00 – 4:30 p.m. Registration Open   <i>Crystal Ballroom Foyer</i>			
3:45 – 4:00 p.m. Afternoon Break   <i>Lincoln Ballroom</i>			
4:00 – 5:30 p.m. <b>Afternoon Plenary Session</b>   <i>Salon AB</i> <b>Moderators:</b> Bob Gilbert and Jianye Ching <b>Keynote Lecture: Functional Recovery: A Paradigm Shift for Better-than-Code Design for Multihazards</b> , Sissy Nikolaou, <i>National Institute of Standards and Technology</i> <b>Bright Spark Lecture: Seismic Site Response: Are We Investigating a Large Enough Spatial Area?</b> Mohammad Hallal, <i>UC Berkeley</i> <b>Featured Paper: Predicting Within-site Variability of Seismic Site Response Using a Geospatial Modeling Approach</b> , Weiwei Zhan, Laurie Baise, James Kaklamanos <b>Questions and Answers</b>			
7:15 – 10:30 p.m. <b>Monuments by Moonlight Tour</b>   <i>Hotel Lobby</i>			

## Wednesday, July 26

7:30 a.m. – 12:30 p.m.	<b>Registration Open</b>   <i>Crystal Ballroom Foyer</i>		
8:00 – 8:30 a.m.	<b>Early Morning Break</b>   <i>Lincoln Ballroom</i>		
8:00 a.m. – 2:00 p.m.	<b>Exhibits Open</b>   <i>Lincoln Ballroom</i>		
8:30 – 10:30 a.m.	<b>Morning Plenary Session</b>   <i>Salon AB</i> <b>Moderators:</b> Shadi Najjar and Limin Zhang <b>Keynote Lecture:</b> Liquefaction Issues in Risk Analyses for Embankments, Ross Boulanger, <i>University of California Davis</i> <b>Keynote Lecture:</b> Risk Evaluation for Offshore Spudcan Installation, Lisa Li, <i>Harbin Institute of Technology</i> <b>Featured Paper:</b> Risk-Based Earthen Dam Design and Mitigation Considering ALARP for All Potential Consequences, William Roberds, Alan Keizur, Anand Govindasamy, Peter Chapman <b>Student Competition:</b> Presentations from Finalists <b>Questions and Answers</b>		
10:30 – 11:00 a.m.	<b>Mid-Morning Break</b>   <i>Lincoln Ballroom</i>		
11:00 a.m. – 12:30 p.m.	<b>Technical Sessions</b>		
<b>Track A   Washington Ballroom</b>	<b>Track B   Salon C</b>	<b>Track C   Wilson/Harrison</b>	<b>Track D   Salon AB</b>
<b>Advances in Computational Methods for Geotechnical Uncertainty Quantification, Modeling and Risk Assessment</b> <b>Moderators:</b> Te Xiao and Jianye Ching	<b>Data-Driven and Probabilistic Site Characterization - II</b> <b>Moderators:</b> Yu Wang	<b>Risk Assessment and Management in Offshore Engineering &amp; Georisk in Engineering Education</b> <b>Moderators:</b> Zenon Medina Cetina and Lei Wang	<b>Application of Bayesian Methods in Geotechnical Engineering</b> <b>Moderators:</b> Iason Papaioannou and Johan Spröss
<b>Quantile-Based First-Order Second-moment Method for Efficient Slope Reliability Analysis,</b> Chengchuan Yin, Zhiyong Yang, Te Xiao, Xueyou Li <b>Enhancing Failure Probability Estimation for a Site-Specific Slope by Considering Its Survival Records from Past Rainfall Events,</b> Liu Xin, Yu Wang <b>Estimation of Limit State Probabilities of Consolidation Settlement by Adaptive Gaussian Process Regression and Importance Sampling,</b> Tomoka Nakamura, Ikumasa Yoshida, Yu Otake <b>Reducing Uncertainty and Risk of a Dam by Site Investigation, Quantitative Analysis, Model Calibration, and Observational Method,</b> Dan Ding, Andrew Boeckmann, Paul Axtell, Eric Loehr <b>3D City-Scale Marine Geological Model for Hong Kong,</b> Haifeng Zou, Xiao Te, Yifei Zhang, Yuebin Liu, Limin Zhang <b>Probabilistic Analysis of a Nailed Wall Considering Excavation Stages,</b> Shengfeng Huang, Pooya Dastpak, Sina Javankhoshdel, Daniel Dias, Rita Sousa	<b>Data-Driven Site Characterization Based on a Markov Random Field Model,</b> Takayuki Shuku <b>Optimization of 3D Borehole Layout Strategy Considering Stratigraphic Uncertainty,</b> Wei Yan, Wan-Huan Zhou, Ping Shen <b>Estimation of Spatial Distribution Considering Indirect Data Using Gaussian Process Regression,</b> Yuto Tsuda, Yukihisa Tomizawa, Ikumasa Yoshida, Yu Otake <b>Efficient Simulation of 2D Non-Stationary CPT Profiles from Incomplete Dataset Using Machine Learning Methods,</b> Tengyuan Zhao, Yu Wang <b>Inferring Semi-parametric Gaussian Process Model Parameters for Missing Geotechnical Data Prediction,</b> Jiawei Xi, Jinsong Huang, Yuting Zhang <b>The Effect of Posterior Distribution Sampling Schemes on Probabilistic Dynamic CPT Rate-effect Corrections,</b> Stefano Collico, Marcos Arroya <b>Inferring Spatial Variation of Soil Classification by Both CPT and Borehole Data,</b> Hassan Kamyab, Jianye Ching <b>A New Performance Metric for 2D/3D Data-driven Site Characterization Methods,</b> Takayuki Shuku	<b>Influences of Initial Conditions of Submarine Debris Flows on Their Runout Scenarios in Shenhu Area, South China Sea,</b> Yangming Chen, Lulu Zhang <b>Axial Cyclic Behavior of FRP Composite Seawater Sea-Sand Concrete Piles,</b> Numan Malik, Wenbo Chen, Jian-Hua Yin, Pei-Chen Wu, Ze-Jian Chen <b>Remote Sensing-Based Risk Assessment of Coastal Erosion to Offshore Communities,</b> Zaid Suleiman, Xiong Yu <b>Risk Assessment/Avoidance for Impacts of Dredging on Existing Shoreline Structures,</b> Rakam Lama Tamang, Michael Byle, Vinay Singhal, Senda Ozkan <b>Deterministic and Probabilistic Rock Plane Slope Stability Analysis,</b> Jiliang Li, Thiago Leao, Jinyuan Zhai <b>Current Status of GeoRisk Education in Japan,</b> Natsuki Doi, Takayuki Shuku <b>Developing Mixed Reality Game for Enhanced Learning of Geotechnical Experiments and Geotechnical Design,</b> Chenchen Huang, Luobin Cui, Cheng Zhu, Ying Tang	<b>Effect of Learning Function on Reliability Analysis of Geotechnical Engineering Systems Using Adaptive Bayesian Compressive Sensing and Monte Carlo Simulation,</b> Peiping Li, Yu Wang <b>Calibration of Highly Computationally Intensive Propagation Models of Flow-Like Natural Hazards,</b> Colette Buchs, Jocelyn Minini <b>A Simplified Method of Incorporating Testing Data and Monitored Behaviour for Predicting Surface Settlement Using Bayesian Back Analysis,</b> Merrick Jones, Shan Huang, Jinsong Huang <b>Sequential Bayesian Updating of Spatially Varying Soil Parameters and Probability of Failure Caused by Rainfall Using Slope Performance Records,</b> Min Pan, Shui-Hua Jiang, Xin Liu, Gu-Quan Song <b>Dealing with Uncertainties in Detecting and Characterizing Quick Clay in Norway,</b> Iason Papaioannou, Thi Minh Hue Le, Anteneh Tsegaya, Jean-Sebastien L'Heureux <b>Benchmarking 3D Subsurface Models from Bayesian Compressive Sampling Using Real Data,</b> Borui Lyu, Yu Wang
12:30 – 2:00 p.m.	<b>Lunch in Exhibit Hall</b>   <i>Lincoln Ballroom</i>		
2:00 – 4:00 p.m.	<b>Closing Plenary Session</b>   <i>Salon AB</i> <b>Moderators:</b> Limin Zhang and Shadi Najjar <b>ASCE Award Winning Keynotes</b> <b>2021   J. James R. Croes Medal:</b> Chen, J., Gilbert, R. B., Ku, A., Chen, J. Y., & Marshall, P. W. <i>Calibration of Model Uncertainties for Fixed Steel Offshore Platforms Based on Observed Performance in Gulf of Mexico Hurricanes,</i> Bob Gilbert <b>2021   Thomas A. Middlebrooks Award:</b> Bathurst, R. J., Allen, T. M., Lin, P., & Bozorgzadeh, N. <i>LRFD Calibration of Internal Limit States for Geogrid MSE Walls,</i> Richard Bathurst <b>2023   J. James R. Croes Medal:</b> Stuedlein, A., Huffman, J., Barbosa, A., and Belejo, A., <i>Probabilistic Structural System Response to Differential Settlement Resulting from Spatially Variable Soil,</i> Armin Stuedlein <b>2023   Arthur Casagrande Professional Development Award,</b> Bryant Robbins <i>A New Approach for Predicting Progression of Backward Erosion Piping</i> <b>Questions and Answers</b>		
2:00 – 5:00 p.m.	<b>Exhibitor Moveout</b>   <i>Lincoln Ballroom</i>		

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