# **Geo-Risk 2017** Reliability-Based Design and Code Developments



#### Edited by



**GSP 283** 

Jinsong Huang, Ph.D. Gordon A. Fenton, Ph.D., P.Eng. Limin Zhang, Ph.D. D. V. Griffiths, Ph.D. PE. D.GE This is a preview. Click here to purchase the full publication.



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# GEO-RISK 2017 Reliability-Based Design and Code Developments

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## Preface

Interest and use of probabilistic methods and risk assessment tools in geotechnical engineering has grown rapidly in recent years. The natural variability of soil and rock properties, combined with a frequent lack of high quality site data, makes a probabilistic approach to geotechnical design a logical and scientific way of managing both technical and economic risk. The burgeoning field of geotechnical risk assessment is evidenced by numerous publications, textbooks, dedicated journals and sessions at general geotechnical conferences. Risk assessments are increasingly becoming a requirement in many large engineering construction projects. Probabilistic methods are also recognized in design codes as a way of delivering reasonable load and resistance factors (LRFD) to target allowable risk levels in geotechnical design.

This Geotechnical Special Publication (GSP), coming out of the *Geo-Risk 2017* specialty conference held in Denver, Colorado from June 4-7, 2017, presents contributions in sessions: 1) Reliability- and Risk-Based Code Developments, 2) Probabilistic Methods and Reliability Analysis, 3) Performance-Based Liquefaction Assessment and Mitigation, 4) Probabilistic Performance and Resilience Assessment, and 5) Load and Resistance Factor Design (LRFD) Developments and Applications.

These contributions to the use of reliability based design methodologies and to reliability based code developments in geotechnical practice are very timely, and will provide a valuable and lasting reference for practitioners and academics alike.

The editors would like to thank all of the members of ASCE Geo Institute's Technical Committee on Risk Assessment and Management and the Engineering Practice of Risk Assessment and Management Committee (TC304) of the International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE) for their ongoing support.

All the papers in this GSP went through a rigorous review process. The contributions of the reviewers are much appreciated.

#### **The Editors**

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