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Titolo	Probabilistic Approaches for Geotechnical Site Characterization and Slope Stability Analysis / / by Zijun Cao, Yu Wang, Dianqing Li
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Descrizione fisica	1 online resource (XVI, 190 p. 55 illus., 7 illus. in color.)
Disciplina	624.15
Soggetti	Engineering geology Engineering—Geology Foundations Hydraulics Geotechnical engineering Numerical analysis Computer simulation Geoengineering, Foundations, Hydraulics Geotechnical Engineering & Applied Earth Sciences Numerical Analysis Simulation and Modeling
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Introduction -- Literature Review -- Bayesian Framework for Geotechnical Site Characterization -- Quantification of Prior Knowledge through Subjective Probability Assessment -- Probabilistic Characterization of Young's Modulus of Soils Using Standard Penetration Tests -- Probabilistic Site Characterization Using Cone Penetration Tests -- Practical Reliability Analysis of Slope Stability by Advanced Monte Carlo Simulations in a Spreadsheet -- Efficient Monte Carlo Simulation of Parameter Sensitivity in Probabilistic Slope Stability Analysis -- Summary and Concluding Remarks.
Sommario/riassunto	This is the first book to revisit geotechnical site characterization from a probabilistic point of view and provide rational tools to probabilistically

characterize geotechnical properties and underground stratigraphy using limited information obtained from a specific site. This book not only provides new probabilistic approaches for geotechnical site characterization and slope stability analysis, but also tackles the difficulties in practical implementation of these approaches. In addition, this book also develops efficient Monte Carlo simulation approaches for slope stability analysis and implements these approaches in a commonly available spreadsheet environment. These approaches and the software package are readily available to geotechnical practitioners and alleviate them from reliability computational algorithms. The readers will find useful information for a non-specialist to determine project-specific statistics of geotechnical properties and to perform probabilistic analysis of slope stability.

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