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Descrizione fisica	1 online resource (249 pages)
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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	1. Reliability as a basis for geotechnical design / Kok-Kwang Phoon -- 2. General principles on reliability according to ISO2394 / Johan V. Retief, Mahongo Dithinde, and Kok-Kwang Phoon -- 3. Uncertainty representation of geotechnical design parameters / Kok-Kwang Phoon, Widjojo A. Prakoso, Yu Wang, and Jianye Ching -- 4. Statistical characterization of multivariate geotechnical data / Jianye Ching, Dian-Qing Li, and Kok-Kwang Phoon -- 5. Statistical characterization of model uncertainty / Mahongo Dithinde, Kok-Kwang Phoon, Jianye Ching, Limin Zhang, and Johan V. Retief -- 6. Semi-probabilistic reliability-based design / Kok-Kwang Phoon and Jianye Ching -- 7. Direct probability-based design methods / Yu Wang, Timo Schweckendiek, Wenping Gong, Tengyuan Zhao, and Kok-Kwang Phoon.
Sommario/riassunto	The latest 4th edition of the international standard on the principles of reliability for load bearing structures (ISO2394:2015) includes a new Annex D dedicated to the reliability of geotechnical structures. The

emphasis in Annex D is to identify and characterize critical elements of the geotechnical reliability-based design process. This book contains a wealth of data and information to assist geotechnical engineers with the implementation of semi-probabilistic or full probabilistic design approaches within the context of established geotechnical knowledge, principles, and experience. The introduction to the book presents an overview on how reliability can play a complementary role within prevailing norms in geotechnical practice to address situations where some measured data and/or past experience exist for limited site-specifi c data to be supplemented by both objective regional data and subjective judgment derived from comparable sites elsewhere. The principles of reliability as presented in ISO2394:2015 provides the common basis for harmonization of structural and geotechnical design. The balance of the chapters describes the uncertainty representation of geotechnical design parameters, the statistical characterization of multivariate geotechnical data and model factors, semi-probabilistic and direct probability-based design methods in accordance to the outline of Annex D. This book elaborates and reinforces the goal of Annex D to advance geotechnical reliability-based design with geotechnical needs at the forefront while complying with the general principles of reliability given by ISO2394:2015. It serves as a supplementary reference to Annex D and it is a must-read for designing geotechnical structures in compliance with ISO2394:2015.