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Titolo	Practice of Optimisation Theory in Geotechnical Engineering // by Zhen-Yu Yin, Yin-Fu Jin
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Descrizione fisica	1 online resource (XXXVII, 356 p. 304 illus., 276 illus. in color.)
Disciplina	624.15
Soggetti	Engineering geology Engineering—Geology Foundations Hydraulics Geotechnical engineering Mechanics Mechanics, Applied Numerical analysis Computer simulation Geoengineering, Foundations, Hydraulics Geotechnical Engineering & Applied Earth Sciences Solid Mechanics Numerical Analysis Simulation and Modeling
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Methodology of parameter identification -- Optimisation algorithms -- Laboratory tests for mechanical behaviours of soils -- Constitutive modeling of soils -- ErosOpt platform -- Appendix A: NMS -- Appendix B: NMGA -- Appendix C: NMDE.
Sommario/riassunto	This book presents the development of optimization platform for geotechnical engineering which is one of the key components in smart geotechnics. The book discusses the fundamentals of the optimization algorithm with constitutive models of soils. Helping readers easily understand the optimization algorithm applied in geotechnical

engineering, this book first introduces the methodology of the optimization-based parameter identification, and then elaborates the principle of three newly developed efficient optimization algorithms, followed by the ideas of a variety of laboratory tests and formulations of constitutive models. Moving on to the application of optimization methods in geotechnical engineering, this book presents an optimization-based parameter identification platform with a practical and concise interface based on the above theories. The book is intended for undergraduate and graduate-level teaching in soil mechanics and geotechnical engineering and other related engineering specialties. It is also of use to industry practitioners, due to the inclusion of real-world applications, opening the door to advanced courses on both modeling and algorithm development within the industrial engineering and operations research fields.
