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Titolo	Standort-Check Deutschland / Bertelsmann Stiftung
Pubbl/distr/stampa	Gutersloh, 2005-
Descrizione fisica	Online-Ressource
Disciplina	330 360 320
Soggetti	Zeitschrift
Lingua di pubblicazione	Tedesco
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Titolo	Constitutive modeling of soils and rocks [[electronic resource] /] / edited by Pierre-Yves Hicher, Jian-Fu Shao
Pubbl/distr/stampa	London, : ISTE Hoboken, NJ, : John Wiley & Sons, 2008
ISBN	1-282-25384-0 9786613814494 0-470-61108-1 0-470-39366-1
Descrizione fisica	1 online resource (457 p.)
Collana	ISTE
Altri autori (Persone)	HicherPierre-Yves ShaoJian-Fu
Disciplina	624.1/51015118 624.1513
Soggetti	Engineering geology - Mathematical models Soil mechanics - Mathematical models
Lingua di pubblicazione	Inglese
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Note generali	"First published in France in 2002 by Hermes Science/Lavoisier entitled 'Modeles de comportement des sols et des roches' ... " --T.p. verso.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Constitutive Modeling of Soils and Rocks; Table of Contents; Preface to the English Edition; Preface to the French; Chapter 1. The Main Classes of Constitutive Relations; 1.1. Introduction; 1.2. The rheological functional; 1.3. Incremental formulation of constitutive relations; 1.4. Rate-independent materials; 1.4.1. Non-linearity of G and H; 1.4.2. Anisotropy of G and H; 1.4.3. Homogenity of degree 1 of G and H; 1.5. Notion of tensorial zones; 1.6. The main classes of rate-independent constitutive relations; 1.6.1. Constitutive relations with one tensorial zone 1.6.2. Constitutive relations with two tensorial zones1.6.3. Constitutive relations with four tensorial zones; 1.6.4. Constitutive relations with n tensorial zones (n > 4); 1.6.5. Constitutive relations with an infinite number of tensorial zones; 1.6.6. Conclusion; 1.7. The main constitutive relations for rate-dependent materials; 1.7.1. First class of incremental strain decomposition; 1.7.2. Second class of incremental strain decomposition; 1.8. General conclusions; 1.9. References; Chapter 2. Mechanisms of Soil Deformation; 2.1. Introduction; 2.2. Remolded soil behavior 2.3. Relationships between discontinuous and continuous medium2. 3.1. Granular materials; 2.3.2. Remolded clayey materials; 2.3.3. Granular materials with intergranular glue; 2.4. Natural soils; 2.5. Conclusion; 2.6. References; Chapter 3. Elastoplastic Modeling of Soils: Monotonous Loadings; 3.1. Introduction; 3.2. Elastoplasticity equations; 3.2.1. Basic concepts; 3.2.2. Yield surface and elastic domain; 3.2.3. Plastic flow rule; 3.2.4. Incremental relations for one plastic mechanism model; 3.2.5. Incremental relationships for multi-mechanism elastoplasticity 3.3. Constitutive laws and laboratory tests3.4. Characterization of natural cohesive soil behavior; 3.4.1. Analysis of triaxial test results; 3.4.2. Analysis of oedometer tests; 3.4.3. Elasto-viscoplasticity or elastoplasticity?; 3.5. Characterization of frictional soil behavior; 3.5.1. Analysis of triaxial test results; 3.5.2. Elastoplasticity framework for frictional soils; 3.6. Principles for the derivation of elastoplastic models; 3.6.1. Elastic behavior; 3.6.2. Estimation of the plastic behavior; 3.6.3. Failure surface; 3.6.4. Total and plastic strains; 3.6.5. Plastic potential 3.6.6. Yield surface3.7. Three-dimensional aspect of the models and calculation of geotechnical works; 3.8. Examples of perfect elastoplastic models; 3.8.1. The Mohr-Coulomb model; 3.8.2. The Drucker-Prager model; 3.9. Examples of elastoplastic models with hardening; 3.9.1. University of Cambridge models (Cam-Clay models); 3.9.2. Nova model (1982 version); 3.9.3. Melanie model; 3.10. Conclusions; 3.11. Notations; 3.12. References; Chapter 4. Elastoplastic Modeling of Soils: Cyclic Loading; 4.1. Soil behavior under drained loading; 4.1.1. Isotropic and oedometric cyclic loading 4.1.2. Cyclic triaxial loading
Sommario/riassunto	This title provides a comprehensive overview of elastoplasticity relating to soil and rocks. Following a general outline of the models of behavior and their internal structure, each chapter develops a different area of this subject relating to the author's particular expertise. The first half of the book concentrates on the elastoplasticity of soft soils and rocks, while the second half examines that of hard soils and rocks.