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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
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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.