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envelo 3.3.2. Incidence of scale effect on rockfill slope stability; 3.3.3. Scale effects on deformation features; 3.4. Conclusions; 3.5. Bibliography; Chapter 4. Waste Rock Behavior at High Pressures: Dimensioning High Waste Rock Dumps; 4.1. Introduction; 4.2. Development of new laboratory equipment for testing coarse materials; 4.2.1. Triaxial and oedometric equipment at the IDIEM; 4.3. Mining rock waste; 4.3.1. In situ grain size distribution; 4.3.2. Analyzed waste rock 4.4. Characterization of mechanical behavior of the waste rock 4.4.1. Oedometric tests; 4.4.2. Triaxial tests; 4.4.3. Oedometric test results; 4.4.4. Triaxial test results; 4.5. Evolution of density; 4.6. Stability analysis and design considerations; 4.7. Operation considerations; 4.7.1. Basal drainage system; 4.7.2. Water management; 4.7.3. Foundation conditions; 4.7.4. Effects of rain and snow; 4.7.5. Effects of in situ leaching on waste rock; 4.7.6. Designing for closure; 4.8. Conclusions; 4.9. Acknowledgements; 4.10. Bibliography Chapter 5. Models by Jean Biarez for the Behavior of Clean Sands and Remolded Clays at Large Strains 5.1. Introduction; 5.2. Biarez's model for the oedometer test; 5.3. Perfect plasticity state and critical void ratio; 5.4. Normally and over consolidated isotropic loading; 5.4.1. Analogy between sands and clays; 5.4.2. Normally consolidated state (ISL); 5.4.3. Overconsolidated state (Cs); 5.5. The drained triaxial path for sands and clays; 5.5.1. The reference behavior; 5.5.2. The mathematical model; 5.6. The undrained triaxial path for sands 5.6.1. Simplified Roscoe formula for undrained consolidated soils

Sommario/riassunto

This book addresses the latest issues in multiscale geomechanics. Written by leading experts in the field as a tribute to Jean Biarez (1927-2006), it can be of great use and interest to researchers and engineers alike. A brief introduction describes how a major school of soil mechanics came into being through the exemplary teaching by one man. Biarez's life-long work consisted of explaining the elementary mechanisms governing soil constituents in order to enhance understanding of the underlying scientific laws which control the behavior of constructible sites and to incorporate these scient
