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Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Effects of Soil Deposition on the Initial Stress State in Model Tests Experimental Results and FE Simulation -- Demonstrator Experiments on Significant Effects During Pile Installation -- On Soil Deformation and Stress Redistribution Around Pressed-in and Vibrated Displacement Pile Tips -- Modelling of Soil Structure Interaction by Applying a Hypoplastic Material Behaviour within Mortar Contact Formulation -- Vibro-Injection Pile Installation in Sand: Part I - Interpretation as Multi-Material Flow -- Vibro-Injection Pile Installation in Sand: Part II - Numerical and Experimental Investigation -- Numerical Modelling of the Effective-stress Evolution in Saturated Soil around a Vibrating Pile Toe -- A Numerical Approach to the Solution of Dynamic Boundary Value Problems for Fluid-Saturated

Solids -- Neohypoplasticity - Estimation of Small Strain Stiffness -- Improved Integration of High-cycle Accumulated Strain Using Hierarchical and EAS Finite Elements -- Simulation of Soils under Rapid Cyclic Loading Conditions -- Experimental Strain Response-Envelopes of Granular Materials for Monotonous and Low-Cycle Loading Processes.

Sommario/riassunto

The book provides suitable methods for the simulations of boundary value problems of geotechnical installation processes with reliable prediction for the deformation behavior of structures in static or dynamic interaction with the soil. It summarizes the basic research of a research group from scientists dealing with constitutive relations of soils and their implementations as well as contact element formulations in FE-codes. Numerical and physical experiments are presented providing benchmarks for future developments in this field. Boundary value problems have been formulated and solved with the developed tools in order to show the effectivity of the methods. Parametric studies of geotechnical installation processes in order to identify the governing parameters for the optimization of the process are given in such a way that the findings can be recommended to practice for further use. For many design engineers in practice the assessment of the serviceability of nearby structures due to geotechnical installation processes is a very challenging task. Some hints about possible effects and their consideration are given in this book which may provide a help for such estimations which are still not possible to be given in a satisfactory manner.
