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The main scientific and engineering goal of this book is to deal simultaneously with soil dynamics/vibrations and wave propagation in soils (including seismic waves). These various fields are generally considered separately and the links between them, both from a scientific and practical point of view, are unexplored. They are usually considered in separate disciplines such as earthquake geotechnical engineering, civil engineering, mechanics, geophysics, seismology, numerical modeling, etc.

The objective of this book is to offer a single publication on various aspects of soil dynamics and wave propagation in soils (including blast induced vibrations, traffic induced vibrations, dynamic compaction, soil-structure interactions, etc.), dealing with 1D and 2D/3D wave propagation in heterogeneous and attenuating media with application to laboratory and in situ dynamic characterization of soils, giving an overview of various numerical methods (e.g., FEM, BEM) to simulate wave propagation (including numerical errors, radiation/absorbing conditions, and wave field interactions) and wave propagation in complex geological structures (e.g., layered geoelements, seismic explosions).

WAVES AND VIBRATIONS IN SOILS
EARTHQUAKES, TRAFFIC, SHOCKS, CONSTRUCTION WORKS

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