

**EARTHQUAKE GEOTECHNICAL ENGINEERING****4th International Conference on Earthquake  
Geotechnical Engineering - Invited Lectures**KYRIAZIS D. PITILAKIS  
EDITOR

The book contains the invited keynote and theme lectures presented at the 4th International Conference on Geotechnical Earthquake Engineering (4ICEGE). The conference was held in Thessaloniki, Greece, from 25 to 28 June, 2007, and was organized by the Technical Committee of Earthquake Geotechnical Engineering (TC4) of the International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE), the Hellenic Scientific Society of Soil Mechanics and Geotechnical Engineering and the Laboratory of Soil Dynamics and Geotechnical Earthquake Engineering of Aristotle University of Thessaloniki.

It provides a comprehensive overview of the progress achieved to date in soil dynamics and geotechnical earthquake engineering, as well as in engineering seismology and seismic risk assessment and management. In situ and laboratory testing, theoretical issues and numerical modeling of soil dynamics, seismic hazard with emphasis on the long-period ground motion displacements, site effects and microzonation, liquefaction assessment and mitigation, soil-structure interaction, performance based design of geotechnical structures, earthquake resistant design and performance of shallow and deep foundations, retaining structures, embankments and dams, underground structures and lifelines, are all among the different topics covered in this book. Interdisciplinary subjects such as vulnerability assessment of, transportation networks and lifelines as well as of geotechnical structures are also discussed. Finally, the book provides a thorough presentation of the existing worldwide important large-scale testing facilities and geotechnical strong ground motion arrays.

The book is organized in nineteen chapters written by distinguished experts and includes the 2nd Ishihara Lecture given by Prof. Izzat M. Idriss in honor of Prof. Kenji Ishihara. The aim is to present the current state of knowledge and engineering practice, addressing recent and ongoing developments while also projecting innovative ideas for future research and development.

*Audience*

Earthquake geotechnical and structural engineers, civil engineers, geologists, geophysicists and seismologists will find in this book the most recent advances in soil dynamics, earthquake and geotechnical engineering, as well as their interfaces with geology, geophysics and engineering seismology. It is of interest not only to scientists, engineers and students, but also to those interested in earthquake hazard assessment and mitigation.

ISBN 978-94-017-7663-9



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