《波浪和海床交互作用的多孔介质馈

图书基本信息

书名：《波浪和海床交互作用的多孔介质理论》

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内容概要

《波浪和海床交互作用的多孔介质理论(英文版)》主要针对海洋岩土工程领域中核心问题，波浪一海床交互作用现象及其相关工程，进行一系列详尽的理论介绍及其相应的工程应用，主要内容包括相关研究最新进展及未来具挑战性的问题、波浪及海床相互作用问题的理论阐述以及海洋结构物附近的流固土耦合过程。

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章节摘录

版权页： 插图： Thomas' model [43, 44]: Using two-nodal elements, only an isotropic seabedwith uniform permeability and Young's modulus subject two-dimensional waveswas considered in the mathematical derivation of his first paper [43]. In his secondpapers [44], the model verification includes the comparison between his modeland the previous analytical solutions for a seabed of infinite thickness [30, 51].Both single and two-layered seabed are considered. It is noted that the soil response in Gibson soil was mentioned in his paper [44]. However, Thomas [44]only directly modified the analytical solution for a saturated semi-infinite seabedfor a semi-infinite Gibson soil by G' = dG/dz, without modifying the originalgoverning equations. As presented in later section, variable modulus will resultin few extra items in the governing equations. Thus, treating the soil response inGibson soil by simply modifying G to G' = dG/dz may not be a rigorous way.Furthermore, Thomas' model didn't include the influences of either variable soilcharacteristics (such as permeability and Young's modulus) or cross-anisotropicsoil behavior, which is one of the main concerns in this study.Jeng's model [15, 21, 24, 26]: A series of closed form analytical solutions havebeen developed by the first author for the wave-induced seabed response in thevicinity of a vertical wall. In his models, both isotropic and cross-anisotropicseabeds have been considered with infinite and finite thickness, as well as a lay-ered medium. The influence of variable permeability in an isotropic seabed hasalso been discussed [24, 26].

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编辑推荐

《波浪和海床交互作用的多孔介质理论(英文版)》作者针对核心理论作详尽阐述，并将其以适合工业界应用的形式展示，不仅为学术界科研人员提供理论基础，同时也为工程界提供有效的设计参考准则。

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精彩短评

1、书中很系统的归纳总结了海洋岩土学科的发展和最新研究成果。书中的理论推导部分很详细，语句精炼而准确，为海洋岩土方向研究生的必读书籍。

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