

图书基本信息

书名：<<波浪和海床交互作用的多孔介质理论>>

13位ISBN编号：9787313090065

10位ISBN编号：7313090064

出版时间：2013-1

出版时间：上海交通大学出版社

作者：郑东生

版权说明：本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问：<http://www.tushu007.com>

<<波浪和海床相互作用的多孔介质 >>

内容概要

《波浪和海床相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—海床相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。

作者简介

作者：（澳大利亚）郑东生

书籍目录

1 Introduction 1.1 Introduction 1.2 Hot Research Topics 1.3 Outline of the Book References 2 Recent Advances
 2.1 Introduction 2.2 Waves Propagating over a Porous Seabed : Theoretical Models. (Transient Mechanism)
 2.2.1 Un-coupled Models (or Drained Models) 2.2.2 Biot's Consolidation Model (Quasi-Static Model) 2.2.3
 u-p Approximation 2.2.4 Dynamic Models 2.2.5 Poro-Elastoplastic Models 2.3 Waves Propagating over a Porous
 Seabed : Theoretical Model (Residual Mechanism) 2.4 Waves Propagating over a Porous Seabed : Physical
 Modeling 2.4.1 Field Measurements 2.4.2 Laboratory Experiments 2.5 Waves Propagating over a Porous Seabed :
 Wave Damping and Seepage Flux in a Porous Seabed 2.5.1 Wave Damping in a Fine Sediments 2.5.2 Wave-Driven
 Seepage Flux 2.6 Wave-Induced Seabed Instability 2.6.1 Shear Failure 2.6.2 Liquefaction References 3
 Wave-Induced Soil Response in an Isotropic Seabed 3.1 Introduction 3.2 A Short-Crested Wave System 3.3
 Boundary Value Problem 3.3.1 Governing Equations 3.3.2 Boundary Conditions 3.4 General Solutions 3.4.1 Basic
 Theoretical Framework 3.4.2 Soil Response in a Seabed of Infinite Thickness 3.4.3 Soil Response in a Porous Seabed
 of Finite Thickness 3.4.4 Soil Response in a Layered Seabed 3.4.5 Limiting Two-Dimensional Conditions 3.4.6 A
 Special Case : Fully Saturated Isotropic Seabed of Infinite Thickness 3.5 Verification 3.5.1 Comparison with
 Two-Dimensional Experimental Data 3.5.2 Comparison with Two-Dimensional Analytical Solutions 3.5.3
 Comparison with Numerical Model [18, 40, 41] 3.6 Results and Discussion 3.6.1 Effect of Wave Characteristics
 3.6.2 Effect of Soil Characteristics 3.6.3 Effect of a Combined Obliquity-Permeability Parameter 3.6.4 Effect of a
 Top Layer 3.7 Summary 3.8 List of Coefficients B_i and C_i References 4 Wave-Induced Seabed Instability 4.1
 Introduction 4.2 Shear Failure 4.2.1 Principal Stresses 4.2.2 Mohr-Coulomb's Criterion 4.3 Soil Liquefaction 4.3.1
 Excess Pore Pressure 4.3.2 Criteria of Liquefaction 4.3.3 Seepage Force 4.4 Wave-Induced Seabed Instability 4.4.1
 Effect of Wave Characteristics 4.4.2 Effect of Soil Characteristics 4.4.3 Effect of Combined Obliquity-Permeability
 Parameter 4.4.4 Temporal Variation in Wave-Induced Liquefaction 4.5 Seabed Protection 4.5.1 Effects of a Top
 Layer 4.5.2 Methodology of Seabed Protection 4.6 Summary References 5 Wave-Induced Seabed Response
 in Non-homogeneous Anisotropic Seabed 6 Dynamic Analysis for Wave-seabed Interaction 7 Wave Propagation
 over Coulomb-Damped Seabed 8 Random Wave-Induced Seabed Response 9 Wave-Induced Pore Pressure
 Accumulation in Marine Sediments 10 Wave-Induced Progressive Liquefaction in a Porous Seabed Index

章节摘录

版权页：插图： Thomas' model [43, 44]: Using two-nodal elements, only an isotropic seabed with uniform permeability and Young's modulus subject two-dimensional waves was considered in the mathematical derivation of his first paper [43]. In his second papers [44], the model verification includes the comparison between his model and 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 seabed for a semi-infinite Gibson soil by $G' = dG/dz$, without modifying the original governing equations. As presented in later section, variable modulus will result in few extra items in the governing equations. Thus, treating the soil response in Gibson 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 soil characteristics (such as permeability and Young's modulus) or cross-anisotropic soil 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 have been developed by the first author for the wave-induced seabed response in the vicinity of a vertical wall. In his models, both isotropic and cross-anisotropic seabeds have been considered with infinite and finite thickness, as well as a layered medium. The influence of variable permeability in an isotropic seabed has also been discussed [24, 26].

编辑推荐

《波浪和海床相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。

版权说明

本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问:<http://www.tushu007.com>