

<<Shape optimization b>>

图书基本信息

书名：<<Shape optimization by the homogenization method由均匀化方法的形状优化>>

13位ISBN编号：9780387952987

10位ISBN编号：0387952985

出版时间：2001-10

作者：Allaire, Gregoire

页数：456

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>

## <<Shape optimization b>>

### 内容概要

"The book is very well structured, very clearly written, very well motivated, and complete in its treatment of modeling, analysis and simulation. It will be a basic reference for whoever wants to deeply understand homogenization from the point of view of its application to optimal design. The treatment is right to the point, a quality that is very much appreciated by readers. In summary, I believe this text may become a main source for the subject of optimal design and shape optimization." ( Mathematical Reviews )

<<Shape optimization b>>

书籍目录

Preface Notation

1 Homogenization

1.1 Introduction to Periodic Homogenization

1.1.1 A Model Problem in Conductivity

1.1.2 Two-scale Asymptotic Expansions

1.1.3 Variational Characterizations and Estimates of the Effective Tensor

1.1.4 Generalization to the Elasticity System

1.2 Definition of H-convergence

1.2.1 Some Results on Weak Convergence

1.2.2 Problem Statement

1.2.3 The One-dimensional Case

1.2.4 Main Results

1.3 Proofs and Further Results

1.3.1 Tartar's Method

1.3.2 G-convergence

1.3.3 Homogenization of Eigenvalue Problems

1.3.4 A Justification of Periodic Homogenization

1.3.5 Homogenization of Laminated Structures

1.3.6 Corrector Results

1.4 Generalization to the Elasticity System

1.4.1 Problem Statement

1.4.2 H-convergence

1.4.3 Lamination Formulas

2 The Mathematical Modeling of Composite Materials

2.1 Homogenized Properties of Composite Materials

2.1.1 Modeling of Composite Materials

2.1.2 The G-closure Problem

2.2 Conductivity

2.2.1 Laminated Composites

2.2.2 Hashin-Shtrikman Bounds

2.2.3 G-closure of Two Isotropic Phases

2.3 Elasticity

2.3.1 Laminated Composites

2.3.2 Hashin-Shtrikman Energy Bounds

2.3.3 Toward G-closure

2.3.4 An Explicit Optimal Bound for

Shape Optimization

3 Optimal Design in Conductivity

3.1 Setting of Optimal Shape Design

3.1.1 Definition of a Model Problem

3.1.2 A first Mathematical Analysis

3.1.3 Multiple State Equations

3.1.4 Shape Optimization as a Degeneracy Limit

3.1.5 Counterexample to the Existence of Optimal Designs

3.2 Relaxation by the Homogenization Method

3.2.1 Existence of Generalized Designs

3.2.2 Optimality Conditions

3.2.3 Multiple State Equations

3.2.4 Gradient of the Objective Function

3.2.5 Self-adjoint Problems

3.2.6 Counterexample to the Uniqueness of Optimal Designs

4 Optimal Design in Elasticity

4.1 Two-phase Optimal Design

4.1.1 The Original Problem

4.1.2 Counterexample to the Existence of Optimal Designs

4.1.3 Relaxed Formulation of the Problem

4.1.4 Compliance Optimization

.....

5 Numerical Algorithms

Index

## <<Shape optimization b>>

### 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>