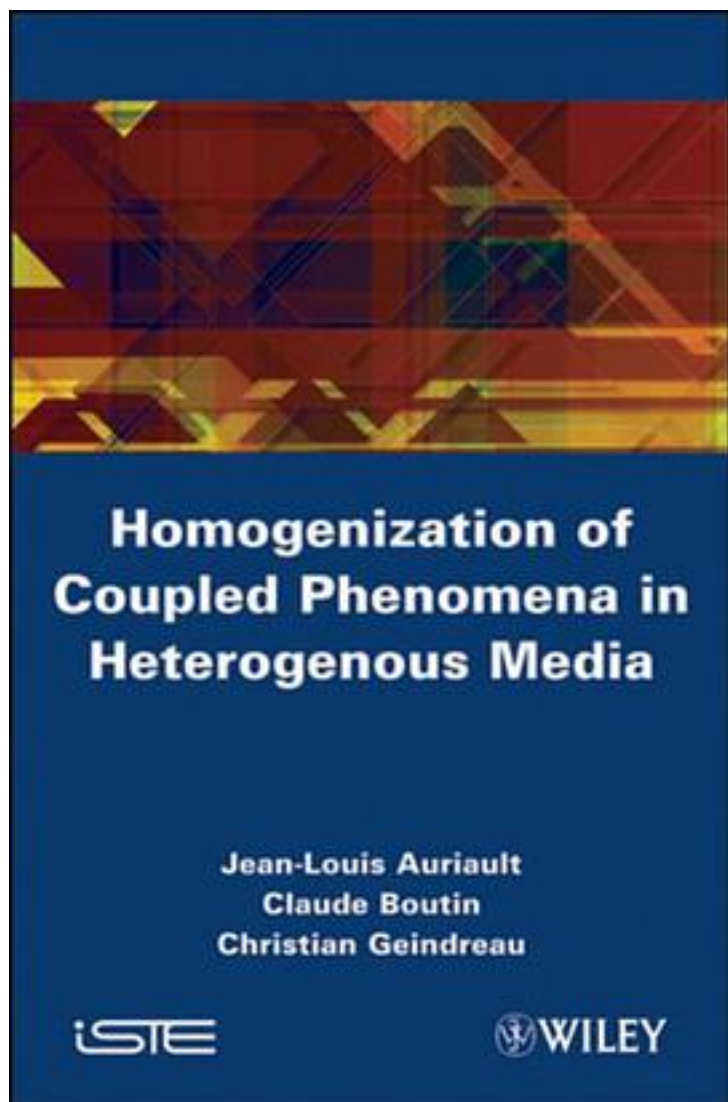


Homogenization of Coupled Phenomena in Heterogenous Media



[Homogenization of Coupled Phenomena in Heterogenous Media_ 下载链接1](#)

著者:Auriault, Jean-louis/ Boutin, Claude/ Geindreau, Christian

出版者:

出版时间:2009-8

装帧:

isbn:9781848211612

Both naturally-occurring and man-made materials are often heterogeneous materials formed of various constituents with different properties and behaviours. Studies are usually carried out on volumes of materials that contain a large number of heterogeneities. Describing these media by using appropriate mathematical models to describe each constituent turns out to be an intractable problem. Instead they are generally investigated by using an equivalent macroscopic description - relative to the microscopic heterogeneity scale - which describes the overall behaviour of the media. Fundamental questions then arise: Is such an equivalent macroscopic description possible? What is the domain of validity of this macroscopic description? The homogenization technique provides complete and rigorous answers to these questions. This book aims to summarize the homogenization technique and its contribution to engineering sciences. Researchers, graduate students and engineers will find here a unified and concise presentation. The book is divided into four parts whose main topics are Introduction to the homogenization technique for periodic or random media, with emphasis on the physics involved in the mathematical process and the applications to real materials. Heat and mass transfers in porous media Newtonian fluid flow in rigid porous media under different regimes Quasi-statics and dynamics of saturated deformable porous media Each part is illustrated by numerical or analytical applications as well as comparison with the self-consistent approach.

作者介绍:

目录:

[Homogenization of Coupled Phenomena in Heterogenous Media_下载链接1](#)

标签

评论

[Homogenization of Coupled Phenomena in Heterogenous Media_下载链接1](#)

[Homogenization of Coupled Phenomena in Heterogenous Media_下载链接1](#)