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| 1. Record Nr.           | UNINA990009134150403321  |
| Autore                  | Pringsheim, Fritz  |
| Titolo                  | [Recensione a] Lenel Otto : das Edictum perpetuum : ein versuch zu seiner Wiederherstellung / Fritz Pringsheim |
| Pubbl/distr/stampa      | Weimar : Bohlaus, [s.d.]   |
| Descrizione fisica      | P. 726-741 ; in 8°   |
| Disciplina              | 340.5  |
| Locazione               | FGBC   |
| Collocazione            | BIBL. SOLAZZI BUSTA 3 (5) 34   |
| Lingua di pubblicazione | Tedesco  |
| Formato                 | Materiale a stampa   |
| Livello bibliografico   | Monografia   |
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| 2. Record Nr.           | UNINA9910810941503321   |
| Autore                  | Mei Chiang C  |
| Titolo                  | Homogenization methods for multiscale mechanics // Chiang C. Mei, Bogdan Vernescu   |
| Pubbl/distr/stampa      | Hackensack, N.J., : World Scientific, 2010  |
| ISBN                    | 1-283-14381-X<br>9786613143815<br>981-4282-45-6   |
| Edizione                | [1st ed.]   |
| Descrizione fisica      | 1 online resource (350 p.)  |
| Altri autori (Persone)  | VernescuBogdan  |
| Disciplina              | 515.3/53  |
| Soggetti                | Homogenization (Differential equations)<br>Mathematical physics   |
| Lingua di pubblicazione | Inglese   |
| Formato                 | Materiale a stampa  |
| Livello bibliografico   | Monografia  |
| Note generali           | Description based upon print version of record.   |
| Nota di bibliografia    | Includes bibliographical references and index.  |
| Nota di contenuto       | Introductory examples of homogenization method. Long waves in a layered elastic medium ; Short waves in a weakly stratified elastic |

medium ; Dispersion of passive solute in pipe flow ; Typical procedure of homogenization analysis -- Diffusion in a composite. Basic equations for two components in perfect contact ; Effective equation on the macroscale ; Effective boundary condition ; Symmetry and positiveness of effective conductivity ; Laminated composites ; Bounds for effective conductivity ; Hashin-Shtrikman bounds ; Other approximate results for dilute inclusions ; Thermal resistance at the interface ; Laminated composites with thermal resistance ; Bounds for the effective conductivity ; Chemical transport in aggregated soil ; Appendix 2A : heat transfer in a two-slab system -- Seepage in rigid porous media. Equations for seepage flow and Darcy's law ; Uniqueness of the cell boundary-value problem ; Symmetry and positiveness of hydraulic conductivity ; Numerical computation of the permeability tensor ; Seepage of a compressible fluid ; Two-dimensional flow through a three-dimensional matrix ; Porous media with three scales ; Brinkman's modification of Darcy's law ; Effects of weak fluid inertia ; Appendix 3A : spatial averaging theorem -- Dispersion in periodic media or flows. Passive solute in a two-scale seepage flow ; Macrodispersion in a three-scale porous medium ; Dispersion and transport in a wave boundary layer above the seabed ; Appendix 4A : derivation of convection-dispersion equation ; Appendix 4B : an alternate form of macrodispersion tensor -- Heterogeneous elastic materials. effective equations on the macroscale ; The effective elastic coefficients ; Application to fiber-reinforced composite ; Elastic panels with periodic microstructure ; Variational principles and bounds for the elastic moduli ; Hashin-Shtrikman bounds ; Partially cohesive composites ; Appendix 5A : properties of a tensor of fourth rank -- Deformable porous media. Basic equations for fluid and solid phases ; Scale estimates ; Multiple-scale expansions ; Averaged total momentum of the composite ; Averaged mass conservation of fluid phase ; Averaged fluid momentum ; Time-Harmonic motion ; Properties of the effective coefficients ; Computed elastic coefficients ; Boundary-layer approximation for macroscale problems ; Appendix 6A : properties of the compliance tensor ; Appendix 6B : variational principle for the elastostatic problem in a cell -- Wave propagation in inhomogeneous media. Long wave through a compact cylinder array ; Bragg scattering of short waves by a cylinder array ; Sound propagation in a bubbly liquid ; One-dimensional sound through a weakly random medium ; Weakly nonlinear dispersive waves in a random medium ; Harmonic generation in random media.

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### Sommario/riassunto

In many physical problems several scales present either in space or in time, caused by either inhomogeneity of the medium or complexity of the mechanical process. A fundamental approach is to first construct micro-scale models, and then deduce the macro-scale laws and the constitutive relations by properly averaging over the micro-scale. The perturbation method of multiple scales can be used to derive averaged equations for a much larger scale from considerations of the small scales. In the mechanics of multiscale media, the analytical scheme of upscaling is known as the Theory of Homogenization

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