

Zeitschrift: L'Enseignement Mathématique
Herausgeber: Commission Internationale de l'Enseignement Mathématique
Band: 46 (2000)
Heft: 3-4: L'ENSEIGNEMENT MATHÉMATIQUE

Kapitel: Mécanique des particules et systèmes

Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften auf E-Periodica. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. Das Veröffentlichen von Bildern in Print- und Online-Publikationen sowie auf Social Media-Kanälen oder Webseiten ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. [Mehr erfahren](#)

Conditions d'utilisation

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. La reproduction d'images dans des publications imprimées ou en ligne ainsi que sur des canaux de médias sociaux ou des sites web n'est autorisée qu'avec l'accord préalable des détenteurs des droits. [En savoir plus](#)

Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. Publishing images in print and online publications, as well as on social media channels or websites, is only permitted with the prior consent of the rights holders. [Find out more](#)

Download PDF: 25.04.2026

ETH-Bibliothek Zürich, E-Periodica, <https://www.e-periodica.ch>

program... has built-in automatic proving facilities... allows simultaneous manipulation and construction in different views... has “native support” for non-euclidean geometries... has advanced facilities for geometric loci... is “internet-aware” (written in Java)... produces high-quality printouts... is based on mathematical logic.

Mécanique des particules et systèmes

Nicola BELLOMO, Luigi PREZIOSI, Antonio ROMANO. — **Mechanics and dynamical systems with *Mathematica*[®]**. — Modeling and simulation in science, engineering and technology. — Un vol. relié, 16 × 24, de XIII, 417 p. — ISBN 0-8176-4007-X. — Prix: SFr. 128.00. — Birkhäuser, Boston, 2000.

This book provides a systematic and unified treatment of mechanics and dynamical systems, addressing modeling, qualitative analysis, and simulations of physical systems using ordinary differential equations. The scientific computational components are presented using the software program *Mathematica*, both in worked examples and in the end-of-chapter problems. Special attention is given to classical mechanics models in light of new computational methods and concepts from dynamical systems. The book's nine chapters are organized into three unified parts: mathematical methods for differential equations; methods of classical mechanics; and dynamics, stochastic models, and discretization of continuous models.

Mécanique des solides, élasticité et plasticité

Teodor M. ATANACKOVIC, Ardéshir GURAN. — **Theory of elasticity for scientists and engineers**. — Un vol. relié, 16 × 24, de XII, 374 p. — ISBN 3-8176-4072-X. — Prix: SFr. 128.00. — Birkhäuser, Boston, 2000.

This new book treats classical elasticity theory from a modern point of view. It is intended as a general introduction to the various branches of elasticity theory and its applications. In the first part of the book, the theory of stress and strain is treated in a standard way. The important feature here is that the nonlinear stress tensor is the basis from which the linearized version is obtained. Next, the standard derivation of the Hooke's law for isotropic elastic and the Duhamel-Neumann law for thermoelastic body is presented. After that various generalizations of the Hooke's law for one-dimensional case are given. The three-dimensional generalizations of the Hooke's law are also discussed and the influence of geometric non-linearity on finite deformations in a linear state of stress is examined. The book contains solutions to numerous problems in two and three dimensions.

Mécanique des fluides, acoustique

Carlo CERCIGNANI. — **Rarefied gas dynamics: from basic concepts to actual calculations**. — Cambridge texts in applied mathematics. — Un vol. broché, 15 × 23, de XVIII, 320 p. — ISBN 0-521-65992-2. — Prix: £18.95 (relié: £50.00). — Cambridge University Press, Cambridge, 2000.

The aim of this book is to present the concepts, methods, and applications of kinetic theory to rarefied gas dynamics. After introducing the basic tools, problems in plane geometry are treated using approximation techniques (perturbation and numerical methods). These same techniques are later used to deal with two- and three-dimensional problems. The models include not only monatomic but also polyatomic gases, mixtures, and chemical reactions. A special chapter is devoted to evaporation and condensation phenomena.