

Thermodynamique classique ,propagation de la chaleur

Objekttyp: **Chapter**

Zeitschrift: **L'Enseignement Mathématique**

Band (Jahr): **46 (2000)**

Heft 1-2: **L'ENSEIGNEMENT MATHÉMATIQUE**

PDF erstellt am: **24.09.2024**

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Clifford TRUESDELL, Kumbakonam Ramamani RAJAGOPAL. — **An introduction to the mechanics of fluids.** — Modeling and simulation in science, engineering and technology. — Un vol. relié, 16×24, de XII, 277 p. — ISBN 0-8176-4014-2. — Prix: SFr. 128.00. — Birkhäuser, Boston, 2000.

This new advanced text/reference presents an introduction to many aspects of fluid mechanics, with particular emphasis on the description and response of nonlinear fluids. Results are developed and established with rigor, and the topics span from Euler fluids to fluids that have memory. *Topics and features:* Integrated chapter exercises. — Numerous detailed, worked examples and results. — Visometric flows. — Nonlinear fluids. — Navier-Stokes fluids. — Compressible and incompressible Euler fluids and flows.

Thermodynamique classique, propagation de la chaleur

Vincent GIOVANGIGLI.— **Multicomponent flow modeling.** — Modeling and simulation in science, engineering and technology. — Un vol. relié, 16×24, de XVI, 321 p. — ISBN 0-8176-4048-7. — Prix: SFr. 118.00. — Birkhäuser, Boston, 1999.

This book provides a complete interdisciplinary overview of multicomponent flow modeling and analysis. The goal of this book is to give a detailed presentation of the governing equations – including the expression of multicomponent transport coefficients – obtained from the kinetic theory of gases. Another goal is to analyze the mathematical properties of the model, more specifically, to investigate thermochemistry properties, the structure of multicomponent transport, and well posedness of the resulting system of partial differential equations. Finally, the book discusses the numerical simulation of reactive flows and presents complex chemistry-flame simulations.

Mécanique quantique

Jean-Noël CHAZALVIEL. — **Coulomb screening by mobile charges: applications to materials science, chemistry, and biology.** — Un vol. relié, 17×24,5, de X, 355 p. — ISBN 0-9176-3950-0. — Prix: SFr. 128.00. — Birkhäuser, Boston, 1999.

This work is the first comprehensive treatment of screening, particularly with respect to out-of-equilibrium systems. It is divided into two parts. The first outlines the principles of screening at equilibrium or near equilibrium, while the second is devoted to the case of strong deviations from equilibrium. A great strength of this text is its unique interdisciplinary exposition, which sometimes leads to an unconventional presentation of classical results. Following the introduction of each major concept, applications to different subject areas are described, and further developed by problems, with solutions provided. The extensive list of references will be useful to both graduate student and researcher.

Sam TREIMAN. — **The odd quantum.** — Un vol. relié, 16,5×24, de VIII, 262 p. — ISBN 0-691-00926-0. — Prix: US\$24.95. — Princeton University Press, Princeton, 1999.

The author begins with an overview of quantum mechanics. He sketches the early development of the field by Einstein, Bohr, Heisenberg, Schrödinger, and others, and he makes clear how the quantum outlook flies in the face of common sense. As he explains, the quantum world is intrinsically probabilistic. For example, a particle is not in general in some particular place at a given instant, nor does it have a definite momentum. Weaving together impeccable and up-to-date science, engaging writing, and a talent for clear explanation honed over Treiman's distinguished career as a physicist and teacher, this book provides a remarkable survey of a field that changed the course of modern scientific and philosophical thought.