
Preliminary review / Publisher’s description: The book contains a detailed treatment of thermodynamic formalism on general compact metrizable spaces. Topological pressure, topological entropy, variational principle, and equilibrium states are presented in detail. Abstract ergodic theory is also given a significant attention. Ergodic theorems, ergodicity, and Kolmogorov-Sinai metric entropy are fully explored. Furthermore, the book gives the reader an opportunity to find rigorous presentation of thermodynamic formalism for distance expanding maps and, in particular, subshifts of finite type over a finite alphabet. It also provides a fairly complete treatment of subshifts of finite type over a countable alphabet. Transfer operators, Gibbs states and equilibrium states are, in this context, introduced and dealt with. Their relations are explored. All of this is applied to fractal geometry centered around various versions of Bowen’s formula in the context of expanding conformal repellors, limit sets of conformal iterated function systems and conformal graph directed Markov systems. A unique introduction to iteration of rational functions is given with emphasize on various phenomena caused by rationally indifferent periodic points. Also, a fairly full account of the classical theory of Shub’s expanding endomorphisms is given; it does not have a book presentation in English language mathematical literature.

See the review of Vol. 1 in Zbl 07353469.

MSC:

82-01 Introductory exposition (textbooks, tutorial papers, etc.) pertaining to statistical mechanics