

## **PROBABILISTIC PROPERTIES OF DETERMINISTIC SYSTEMS**

In the past few years there has been an explosive growth in the study of physical, biological, and economic systems that can be profitably studied using densities. Because of the general inaccessibility of the mathematical literature to the nonspecialist, little diffusion of the applicable mathematics into the study of these “chaotic” systems has taken place. This book will help bridge that gap.

To show how densities arise in simple deterministic systems, the authors give a unified treatment of a variety of mathematical systems generating densities, ranging from one-dimensional discrete time transformations through continuous time systems described by integro-partial-differential equations. Examples have been drawn from many fields to illustrate the utility of the concepts and techniques presented, and the ideas in this book should thus prove useful in the study of a number of applied sciences.

The authors assume that the reader has a knowledge of advanced calculus and differential equations. Basic concepts from measure theory, ergodic theory, the geometry of manifolds, partial differential equations, probability theory and Markov processes, and stochastic integrals and differential equations are introduced as needed. Physicists, chemists, and biomathematicians studying chaotic behavior will find this book of value. It will also be a useful reference or text for mathematicians and graduate students working in ergodic theory and dynamical systems.



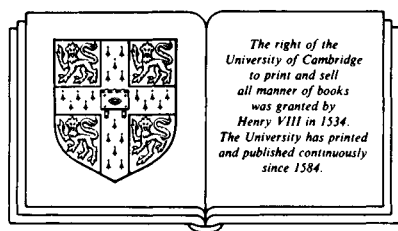
# Probabilistic properties of deterministic systems

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