<<特征值，不等式和遍历理论>>

图书基本信息

书名：<<特征值，不等式和遍历理论>>

13位ISBN编号：9787510052675

10位ISBN编号：751005267X

出版时间：2013-1

出版时间：世界图书出版公司

作者：陈木法

页数：228

前言

First, let us explain the precise meaning of the compressed title. The word "eigenvalues" means the first nontrivial Neumann or Dirichlet eigenvalues, or the principal eigenvalues. The word "inequalities" means the Poincare inequalities, the logarithmic Sobolev inequalities, the Nash inequalities, and so on. Actually, the first eigenvalues can be described by some Poincare inequalities, and so the second topic has a wider range than the first one. Next, for a Markov process, corresponding to its operator, each inequality describes a type of ergodicity. Thus, study of the inequalities and their relations provides a way to develop the ergodic theory for Markov processes. Due to these facts, from a probabilistic point of view, the book can also be regarded as a study of "ergodic convergence rates of Markov processes, " which could serve as an alternative title of the book. However, this book is aimed at a larger class of readers, not only probabilists. The importance of these topics should be obvious. On the one hand, the first eigenvalue is the leading term in the spectrum, which plays an important role in almost every branch of mathematics. On the other hand, the ergodic convergence rates constitute a recent research area in the theory of Markov processes. This study has a very wide range of applications. In particular, it provides a tool to describe the phase transitions and the effectiveness of random algorithms, which are now a very fashionable research area. ……

<<特征值，不等式和遍历理论>>

内容概要

This book surveys, in a popular way, the main progress made in the field by our group. It consists of ten chapters plus two appendixes. The first chapter is an overview of the second to the eighth ones. Mainly, we study several different inequalities or different types of convergence by using three mathematical tools: a probabilistic tool, the coupling methods （Chapters 2 and 3）; a generalized Cheeger's method originating in Riemannian geometry （Chapter 4）; and an approach coming from potential theory and harmonic analysis （Chapters 6 and 7）. The explicit criteria for different types of convergence and the explicit estimates of the convergence rates （or the optimal constants in the inequalities） in dimension one are given in Chapters 5 and 6; some generalizations are given in Chapter 7. The proofs of a diagram of nine types of ergodicity （Theorem 1.9） are presented in Chapter 8.

书籍目录

章节摘录

版权页： 插图：

编辑推荐

《特征值,不等式和遍历理论》读者对象为数学、统计、经济领域的学生和相关的科研人员。

<<特征值，不等式和遍历理论>>

版权说明