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## 内容概要

本书旨在介绍大量运用于线性分析中的不等式，并且详细介绍它们的具体应用。本书以柯西不等式开头，grothendieck不等式结束，中间用许多不等式串成一个完整的篇幅，如，loomiswhitney不等式、最大值不等式、hardy和hilbert不等式、超收缩和拉格朗日索伯列夫不等、beckner以及等等。这些不等式可以用来研究函数空间的性质，它们之间的线性算子，以及绝对和算子。书中拥有许多完整和标准的结果，提供了许多应用，如勒贝格分解定理和勒贝格密度定理、希尔伯特变换和其他奇异积分算子、鞅收敛定理、特征值分布、lidskii积公式、mercer定理和littlewood 4/3定理。

本书由(英)加林著。

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作者简介

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## 章节摘录

版权页：插图： Many of the inequalities that we shall establish originally concern finite sequences and finite sums . We then extend them to infinite sequences and infinite sums , and to functions and integrals , and it is these more general results that are useful in applications . Although the applications can be useful in simple settings —concerning the Riemann integral of a continuous function , for example—the extensions are usually made by a limiting process . For this reason we need to work in the more general setting of measure theory , where appropriate limit theorems hold . We give a brief account of what we need to know ; the details of the theory will not be needed , although it is hoped that the results that we eventually establish will encourage the reader to master them . If you are not familiar with measure theory , read through this chapter quickly , and then come back to it when you find that the need arises . Suppose that  $X$  is a set . A measure ascribes a size to some of the subsets of  $X$  . It turns out that we usually cannot do this in a sensible way for all the subsets of  $X$  , and have to restrict attention to the measurable subsets of  $X$  . These are the 'good' subsets of  $X$  , and include all the sets that we meet in practice . The collection of measurable sets has a rich enough structure that we can carry out countable limiting operations . A  $\sigma$ -field is a collection of subsets of a set  $X$  which satisfies ( i ) if  $(A_i)$  is a sequence in  $\mathcal{A}$  then  $\bigcup_{i=1}^{\infty} A_i \in \mathcal{A}$  , and ( ii ) if  $A \in \mathcal{A}$  then the complement  $X \setminus A \in \mathcal{A}$  . Thus ( iii ) if  $(A_i)$  is a sequence in  $\mathcal{A}$  then  $\bigcap_{i=1}^{\infty} A_i \in \mathcal{A}$  . The sets in  $\mathcal{A}$  are called  $\sigma$ -measurable sets ; if it is clear what  $X$  is , they are simply called the measurable sets .



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