<<巴拿赫空间理论讲义>>

图书基本信息

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内容概要

This book grew out of a one-semester course given by the second author in 2001 and a subsequent two-semester course in 2004-2005, both at the University of Missouri-Columbia. The text is intended for a graduate student who has already had a basic introduction to functional analysis; the'aim is to give a reasonably brief and self-contained introduction to classical Banach space theory.

Banach space theory has advanced dramatically in the last 50 years and we believe that the techniques that have been developed are very powerful and should be widely disseminated amongst analysts in general and not restricted to a small group of specialists. Therefore we hope that this book will also prove of interest to an audience who may not wish to pursue research in this area but still would like to understand what is known about the structure of the classical spaces.

Classical Banach space theory developed as an attempt to answer very natural questions on the structure of Banach spaces; many of these questions date back to the work of Banach and his school in Lvov. It enjoyed, perhaps, its golden period between 1950 and 1980, culminating in the definitive books by Lindenstrauss and Tzafriri [138] and [139], in 1977 and 1979 respectively. The subject is still very much alive but the reader will see that much of the basic groundwork was done in this period.

At the same time, our aim is to introduce the student to the fundamental techniques available to a Banach space theorist. As an example, we spend much of the early chapters discussing the use of Schauder bases and basic sequences in the theory. The simple idea of extracting basic sequences in order to understand subspace structure has become second-nature in the subject, and so the importance of this notion is too easily overlooked.

It should be pointed out that this book is intended as a text for graduate students, not as a reference work, and we have selected material with an eye to what we feel can be appreciated relatively easily in a quite leisurely two-semester course. Two of the most spectacular discoveries in this area during the last 50 years are Enfio's solution of the basis problem [54] and the Gowers-Maurey solution of the unconditional basic sequence problem [71]. The reader will find discussion of these results but no presentation. Our feeling, based on experience, is that detouring from the development of the theory to present lengthy and complicated counterexamples tends to break up the flow of the course. We prefer therefore to present only relatively simple and easily appreciated counterexamples such as the James space and Tsirelson's space. We also decided, to avoid disruption, that some counterexamples of intermediate difficulty should be presented only

in the last optional chapter and not in the main body of the text.

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章节摘录

 插图： Remark 13.4.5.By(iii)of Proposition 13.4.4,we see that the basis(en)∞n=1of χ is boundedly-complete and that χ can be isometrically identified withthe dual of y=[en*]∞n=1 χ*. For n ∈N let Tn={m:n m)and Tn+={m:n m). Lemma 13.4.6.Suppose ξ ∈Coo is supported On[1,N]and η ∈Coo is sup—ported on[N+1,∞).Then || ξ + η ||x≤(|| ξ ||2x+|| η ||2x)1/2+N1/2 sup m≥N+1 ||Tm η ||x.

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编辑推荐

《巴拿赫空间理论讲义(英文版)》是一部讲述巴拿赫空间的教程。
独立性强，只需简单的泛函分析知识即可完全读懂这本《巴拿赫空间理论讲义(英文版)》。

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