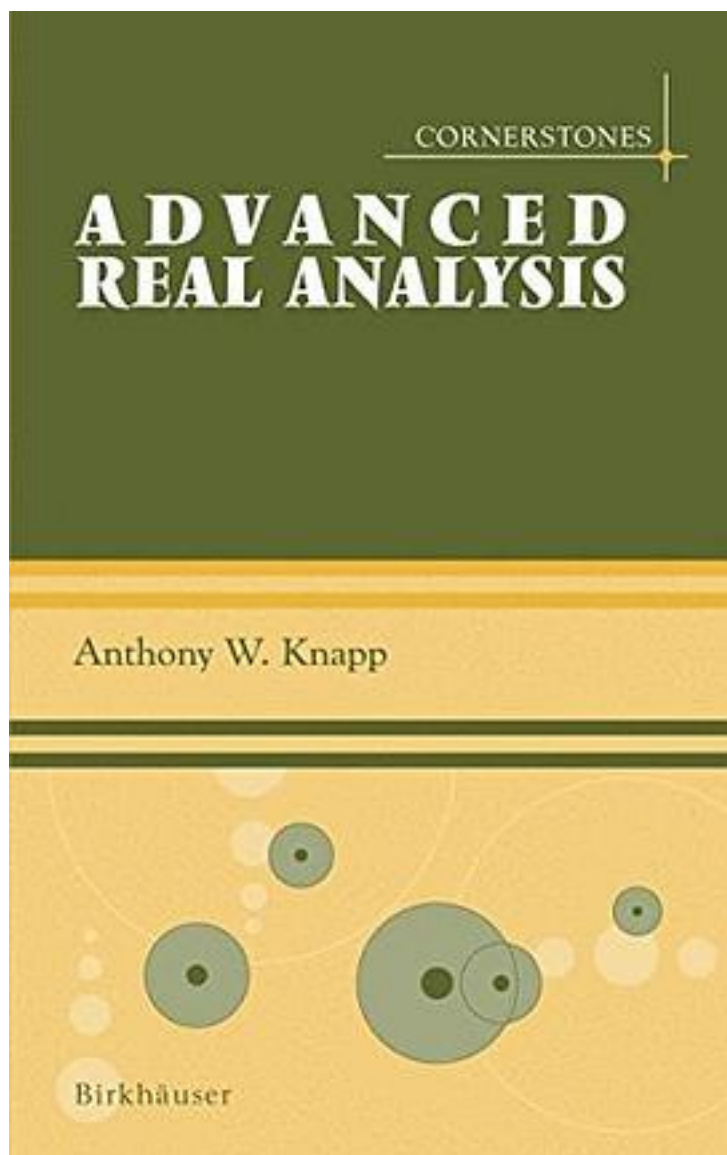


# Advanced Real Analysis



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著者:Anthony W. Knapp

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Advanced Real Analysis systematically develops those concepts and tools in real analysis that are vital to every mathematician, whether pure or applied, aspiring or established. Along with a companion volume Basic Real Analysis (available separately or together as a Set via the Related Links nearby), these works present a comprehensive treatment with a global view of the subject, emphasizing the connections between real analysis and other branches of mathematics.

Key topics and features of Advanced Real Analysis:

- \* Develops Fourier analysis and functional analysis with an eye toward partial differential equations
- \* Includes chapters on Sturm–Liouville theory, compact self-adjoint operators, Euclidean Fourier analysis, topological vector spaces and distributions, compact and locally compact groups, and aspects of partial differential equations
- \* Contains chapters about analysis on manifolds and foundations of probability
- \* Proceeds from the particular to the general, often introducing examples well before a theory that incorporates them
- \* Includes many examples and nearly two hundred problems, and a separate 45-page section gives hints or complete solutions for most of the problems
- \* Incorporates, in the text and especially in the problems, material in which real analysis is used in algebra, in topology, in complex analysis, in probability, in differential geometry, and in applied mathematics of various kinds

Advanced Real Analysis requires of the reader a first course in measure theory, including an introduction to the Fourier transform and to Hilbert and Banach spaces. Some familiarity with complex analysis is helpful for certain chapters. The book is suitable as a text in graduate courses such as Fourier and functional analysis, modern analysis, and partial differential equations. Because it focuses on what every young mathematician needs to know about real analysis, the book is ideal both as a course text and for self-study, especially for graduate students preparing for qualifying examinations. Its scope and approach will appeal to instructors and professors in nearly all areas of pure mathematics, as well as applied mathematicians working in analytic areas such as statistics, mathematical physics, and differential equations. Indeed, the clarity and breadth of Advanced Real Analysis make it a welcome addition to the personal library of every mathematician.

作者介绍:

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标签

数学分析

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评论

任意常偏微分方程可以等价于作用在初始条件的算子。关于解微分方程三个基本问题：特解，所有解，符合边界值和初值的解，常微分方程三个问题紧密关联而偏微分方程没有关系。常微分方程的存在和唯一性问题的解法给偏微分方程作为铺垫。测度-泛函-积分

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