

<<偏微分方程>>

图书基本信息

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前言

A considerable amount of new material has been added to this edition. There is an extensive discussion of real analytic functions of several variables in Chapter 3. This permits estimation of the size of the domain of existence in the Cauchy-Kowalevski theorem. A first application of these estimates consists in a rigorous proof of a new version of Holmgren's uniqueness theorem for linear analytic partial differential equations (only sketched in the earlier editions). As another application (following Schauder) we give a second proof for existence of solutions of the initial value problem for symmetric hyperbolic systems in Chapter 5. Chapter 6 now includes a more detailed study of the Hilbert spaces with applications to the boundary behavior of solutions of the Dirichlet problem in higher dimensions. To Chapter 7 there has been added a proof of Widder's theorem on non-negative solutions of the heat equation. Finally, a new chapter, Chapter 8, contains H. Lewy's construction of a linear differential equation without solutions. There are also more problems, designed, in part, to extend the material discussed in the text. I am particularly indebted to my colleague Percy A. Deift of the Courant Institute of New York University, to Prof. A. Garder of the Southern Illinois University at Edwardsville, Illinois, and to Dr. George Dassios of the National Technical University of Athens, Greece, for taking the trouble to compile lists of errors in the third edition. I hope that these have all been corrected and not too many new ones added in the present edition.

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内容概要

本书是一部非常优秀的介绍偏微分方程的入门书籍，可以作为研究生阶段学习的基石。本书详尽地介绍了偏微分方程理论的重要方面，并从数学分析的角度做了进一步的探讨。本书是第4版，增加了全新的一章讲述无解线性方程的Lewy例子。

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