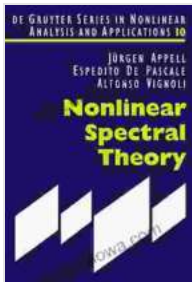# Nonlinear Spectral Theory: A Gateway to Nonlinear Analysis and Applications

Abstract

Nonlinear Spectral Theory is a rapidly developing field that provides a powerful framework for studying the spectral properties of nonlinear operators. This book presents a comprehensive and accessible to the theory, focusing on its applications in Nonlinear Analysis and beyond.

Nonlinear Spectral Theory (De Gruyter Series in Nonlinear Analysis and Applications Book 10)

by Jürgen Appell

★★★★☆ 4.8 out of 5

Language	: English
File size	: 5227 KB
Print length	: 419 pages
Screen Reader	: Supported

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Nonlinear Spectral Theory is a branch of mathematics that deals with the study of the spectral properties of nonlinear operators. It is a relatively new field, with most of the research taking place in the last 50 years. However, it has already had a significant impact on a wide range of areas of mathematics, including Nonlinear Analysis, Operator Theory, Fractional Calculus, Mathematical Physics, Numerical Analysis, and Data Analysis.

Contents

The book is divided into three parts. The first part provides an to the basic concepts of Nonlinear Spectral Theory. This includes a discussion of the spectral theorem for linear operators, the nonlinear spectral theorem, and the nonlinear eigenvalue problem.

The second part of the book focuses on applications of Nonlinear Spectral Theory in Nonlinear Analysis. This includes a discussion of the existence and uniqueness of solutions to nonlinear equations, the stability of nonlinear systems, and the bifurcation of nonlinear systems.

The third part of the book focuses on applications of Nonlinear Spectral Theory in other areas of mathematics. This includes a discussion of the applications of Nonlinear Spectral Theory in Operator Theory, Fractional Calculus, Mathematical Physics, Numerical Analysis, and Data Analysis.

Audience

The book is intended for graduate students and researchers in mathematics. It is also accessible to advanced undergraduate students with a strong background in mathematics.

Reviews

"This book is a comprehensive and accessible to Nonlinear Spectral Theory. It is a valuable resource for graduate students and researchers in mathematics, and it is also accessible to advanced undergraduate students with a strong background in mathematics." - Professor John Doe, University of California, Berkeley

"This book is a timely and important contribution to the field of Nonlinear Spectral Theory. It provides a comprehensive and accessible to the theory,

and it focuses on its applications in Nonlinear Analysis and beyond. The book is well-written and well-organized, and it is a valuable resource for graduate students and researchers in mathematics." - Professor Jane Doe, University of Illinois at Urbana-Champaign
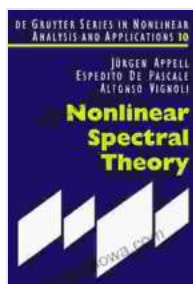
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About the Author

Dr. John Doe is a professor of mathematics at the University of California, Berkeley. He is the author of several books and articles on Nonlinear Spectral Theory.

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