Librería
Bonilla y Asociados
desde 1950

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Front research in this field
New results about this topic
Theory and applications are shown together
Nonlinear functional analysis is an important branch of contemporary mathematics. It's related to topology, ordinary differential equations, partial differential equations, groups, dynamical systems, differential geometry, measure theory, and more. In this book, the author presents some new and interesting results on fundamental methods in nonlinear functional analysis, namely variational, topological and partial order methods, which have been used extensively to solve existence of solutions for elliptic equations, wave equations, Schrödinger equations, Hamiltonian systems etc., and are also used to study the existence of multiple solutions and properties of solutions. This book is useful for researchers and graduate students in the field of nonlinear functional analysis.

Chapter 1 contains preliminaries. In Chapter 2, three kinds of operators are introduced: increasing operators, decreasing operators, and mixed monotone operators. In Chapter 3, the minimax methods are presented and in Chapter 4, the author uses bifurcation and critical point theory to study structures of the solutions of elliptic equations. Chapter 5 is concerned with a class of Monge-Ampère equations. In Chapter 6, the superlinear system of Hammerstein integral equations and applications is studied. Chapter 7 is devoted to the Dancer-Fucik spectrum. In Chapter 8, some results on sign-changing solutions are introduced. In Chapter 9, a local minimizer problem of a functional in differential topology is studied. Chapter 10 focuses on a class of nonlocal Kirchhoff elliptic problems via different methods. In Chapter 11, the focus is on free boundary problems, Schrödinger systems from Bose-Einstein condensate and competing systems with many species.

Content Level » Research

Keywords » Critical point - Elliptic equation - Fixed point - Schrodinger equation - Variational

method

Related subjects » Analysis