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2.6.5 Application to Nonlinear Wave Equations - A Theorem of Paul Rabinowitz; 2.7 Set-Valued Contractions; 2.7.1 End Points; 2.8 Iterated Function Systems (IFS) and Attractor; 2.8.1 Applications; 2.9 Large Contractions; 2.9.1 Large Contractions; 2.9.2 The Transformation; 2.9.3 An Existence Theorem; 2.10 Random Fixed Point and Set-Valued Random Contraction; 3. Some Fixed Point Theorems in Partially Ordered Sets; 3.1 Fixed Point Theorems and Applications to Economics; 3.2 Fixed Point Theorem on Partially Ordered Sets; 3.3 Applications to Games and Economics; 3.3.1 Game; 3.3.2 Economy; 3.3.3 Pareto Optimum; 3.3.4 The Contraction Mapping Principle in Uniform Space via Kleene's Fixed Point Theorem; 3.3.5 Applications on Double Ranked Sequence; 3.4 Lattice Theoretical Fixed Point Theorems of Tarski; 3.5 Applications of Lattice Fixed Point Theorem of Tarski to Integral Equations; 3.6 The Tarski-Kantorovitch Principle; 3.7 The Iterated Function Systems on $(2X; \cdot)$; 3.8 The Iterated Function Systems on $(C(X); \cdot)$; 3.9 The Iterated Function System on $(K(X); \cdot)$; 3.10 Continuity of Maps on Countably Compact and Sequential Spaces; 3.11 Solutions of Impulsive Differential Equations; 3.11.1 A Comparison Result; 3.11.2 Periodic Solutions; 4. Topological Fixed Point Theorems; 4.1 Brouwer Fixed Point Theorem; 4.1.1 Schauder Projection; 4.1.2 Fixed Point Theorems of Set Valued Mappings with Applications in Abstract Economy; 4.1.3 Applications; 4.1.4 Equilibrium Point of Abstract Economy; 4.2 Fixed Point Theorems and KKM Theorems; 4.2.1 Duality in Fixed Point Theory of Set Valued Mappings; 4.3 Applications on Minimax Principles; 4.3.1 Applications on Sets with Convex Sections; 4.4 More on Sets with Convex Sections; 4.5 More on the Extension of KKM Theorem and Ky Fan's Minimax Principle

Sommario/riassunto

This book provides a comprehensive overview of the authors' pioneering contributions to nonlinear set-valued analysis by topological methods. The coverage includes fixed point theory, degree theory, the KKM principle, variational inequality theory, the Nash equilibrium point in mathematical economics, the Pareto optimum in optimization, and applications to best approximation theory, partial equations and boundary value problems. Self-contained and unified in presentation, the book considers the existence of equilibrium points of abstract economics in topological vector spaces from the viewpo