Continuous Selections Of Multivalued Mappings 1st Edition

The book presents surveys describing recent developments in most of the primary subfields of General Topology, and its applications to Algebra and Analysis during the last decade, following the previous editions (North Holland, 1992 and 2002). The book was prepared in connection with the Prague Topological Symposium, held in 2011. During the last 10 years the focus in General Topology changed and therefore the selection of topics differs from that chosen in 2002. The following areas experienced significant developments: Fractals, Coarse Geometry/Topology, Dimension Theory,

Set Theoretic Topology and Dynamical Systems.

Lecture notes in pure and applied mathematics

Doklady

Annales Polonici Mathematici

Analele Universit??ii Bucure?ti

Mappings and Dimension

This book is devoted to the topological fixed point theory of multivalued mappings including applications to differential inclusions and mathematical economy. It is the first monograph dealing with the fixed point theory of multivalued mappings in metric ANR spaces. Although the theoretical material was tendentiously selected with respect to applications, the text is self-contained. Current results are presented.

Measurability of Multifunctions of Two Variables

Mathematical Reviews

Recent Progress in General Topology II
CMUC

Toru?, February 15- 18, 2OO6
Continuous Selections of
Multivalued MappingsSpringer
Science & Business Media
Studia Universitatis Babe?-
Bolyai
Bulletin of the Polish Academy of
Sciences
Soviet Mathematics
Bulletin of the Belgian
Mathematical Society, Simon
Stevin
Mathematica. Sectio A
**This book is an attempt to
give a systematic
presentation of results and
meth ods which concern the
fixed point theory of**

multivalued mappings and some of its applications. In selecting the material we have restricted ourselves to study ing topological methods in the fixed point theory of multivalued mappings and applications, mainly to differential inclusions. Thus in Chapter III the approximation (on the graph) method in fixed point theory of multi valued mappings is presented. Chapter IV is devoted to the homo logical methods and contains more general results, e. g. , the Lefschetz Fixed Point Theorem, the

fixed point index and the topological degree theory. In Chapter V applications to some special problems in fixed point theory are formulated. Then in the last chapter a direct application's to differential inclusions are presented. Note that Chapter I and Chapter II have an auxiliary character, and only results con nected with the Banach Contraction Principle (see Chapter II) are strictly related to topological methods in the fixed point theory. In the last section of our book (see Section 75)

we give a bibliographical guide and also signal some further results which are not contained in our monograph. The author thanks several colleagues and my wife Maria who read and com mented on the manuscript. These include J. Andres, A. Buraczewski, G. Gabor, A. Gorka, M. Gorniewicz, S. Park and A. Wieczorek. The author wish to express his gratitude to P. Konstanty for preparing the electronic version of this monograph. Journal of analysis and its application Mathematics

Russian Mathematical Surveys
Discrete and Continuous Dynamical Systems
Mathematica Japonicae

The book presents surveys describing recent developments in most of the primary subfields of General Topology and its applications to Algebra and Analysis during the last decade. It follows freely the previous edition (North Holland, 1992), Open Problems in Topology (North Holland, 1990) and Handbook of Set-Theoretic Topology (North Holland, 1984). The book was prepared in connection with the Prague

Topological Symposium, held in 2001. During the last 10 years the focus in General Topology changed and therefore the selection of topics differs slightly from those chosen in 1992. The following areas experienced significant developments: Topological Groups, Function Spaces, Dimension Theory, Hyperspaces, Selections, Geometric Topology (including Infinite-Dimensional Topology and the Geometry of Banach Spaces). Of course, not every important topic could be included in this book. Except surveys, the book contains several historical essays

written by such eminent topologists as: R.D. Anderson, W.W. Comfort, M. Henriksen, S. Mardeŝić, J. Nagata, M.E. Rudin, J.M. Smirnov (several reminiscences of L. Vietoris are added). In addition to extensive author and subject indexes, a list of all problems and questions posed in this book are added. List of all authors of surveys: A. Arhangel'skii, J. Baker and K. Kunen, H. Bennett and D. Lutzer, J. Dijkstra and J. van Mill, A. Dow, E. Glasner, G. Godefroy, G. Gruenhage, N. Hindman and D. Strauss, L. Hola and J. Pelant, K. Kawamura, H.-P. Kuenzi, W.

Marciszewski, K. Martin and M.
Mislove and M. Reed, R. Pol
and H. Torunczyk, D. Repovs
and P. Semenov, D.
Shakhmatov, S. Solecki, M.
Tkachenko.
Mathematică
Continuous Selections of
Multivalued Mappings
Mathématiques
Operations Research and
Systems (CLAIO 2000):
Probability and mathematical
programming
Selection Theory for Infinite
Dimensional Spaces and
Continuous Single-valued
Approximations to Upper Semi-
continuous Multivalued
Mappings

This textbook is devoted to a compressed and self-contained exposition of two important parts of contemporary mathematics: convex and set-valued analysis. In the first part, properties of convex sets, the theory of separation, convex functions and their differentiability, properties of convex cones in finite- and infinite-dimensional spaces are discussed. The second part covers some important parts of set-valued analysis. There the properties of the Hausdorff metric and various continuity concepts of set-valued maps are considered. The great attention is paid also to measurable set-valued functions, continuous, Lipschitz and some special types of selections, fixed point and

coincidence theorems, covering set-valued maps, topological degree theory and differential inclusions. Contents: Preface Part I: Convex analysis Convex sets and their properties The convex hull of a set. The interior of convex sets The affine hull of sets. The relative interior of convex sets Separation theorems for convex sets Convex functions Closedness, boundedness, continuity, and Lipschitz property of convex functions Conjugate functions Support functions Differentiability of convex functions and the subdifferential Convex cones A little more about convex cones in infinite-dimensional spaces A problem of linear programming More about convex sets and convex

hulls Part II: Set-valued analysis Introduction to the theory of topological and metric spaces The Hausdorff metric and the distance between sets Some fine properties of the Hausdorff metric Set-valued maps. Upper semicontinuous and lower semicontinuous set-valued maps A base of topology of the spaceHc(X) Measurable set-valued maps. Measurable selections and measurable choice theorems The superposition set-valued operator The Michael theorem and continuous selections. Lipschitz selections. Single-valued approximations Special selections of set-valued maps Differential inclusions Fixed points and coincidences of maps in metric

spaces Stability of coincidence points and properties of covering maps Topological degree and fixed points of set-valued maps in Banach spaces Existence results for differential inclusions via the fixed point method Notation Bibliography Index Annales de la faculté des sciences de Toulouse Fixed Point Theory for Decomposable Sets sciences mathématiques et naturelles Matematică Soviet Mathematics - Doklady Decomposable sets since T. R. Rockafellar in 1968 are one of basic notions in nonlinear analysis, especially in the theory of multifunctions. A subset K of measurable

functions is called decomposable if (Q) for all and measurable A. This book attempts to show the present stage of "decomposable analysis" from the point of view of fixed point theory. The book is split into three parts, beginning with the background of functional analysis, proceeding to the theory of multifunctions and lastly, the decomposability property. Mathematicians and students working in functional, convex and nonlinear analysis, differential inclusions and optimal control should find this book of

interest. A good background in fixed point theory is assumed as is a background in topology.

Topological Fixed Point Theory of Multivalued Mappings

Pacific Journal of Mathematics

Fundamenta Mathematicae

Recent Progress in General Topology III

This book is dedicated to the theory of continuous selections of multi valued mappings, a classical area of mathematics (as far as the formulation of its fundamental problems and methods of solutions are concerned) as well as !'J-n area which has been intensively

developing in recent decades and has found various applications in general topology, theory of absolute retracts and infinite-dimensional manifolds, geometric topology, fixed-point theory, functional and convex analysis, game theory, mathematical economics, and other branches of modern mathematics. The fundamental results in this the ory were laid down in the mid 1950's by E. Michael. The book consists of (relatively independent) three parts - Part A: Theory, Part B: Results, and Part C: Applications. (We shall refer to these parts simply by their names). The target audience for the first part are students of mathematics (in their senior year or in their first year of graduate

school) who wish to get familiar with the foundations of this theory. The goal of the second part is to give a comprehensive survey of the existing results on continuous selections of multivalued mappings. It is intended for specialists in this area as well as for those who have mastered the material of the first part of the book. In the third part we present important examples of applications of continuous selections. We have chosen examples which are sufficiently interesting and have played in some sense key role in the corresponding areas of mathematics.

Selected Topics
Scientiae Mathematicae
Japonicae

Topological Methods in Nonlinear Analysis Juliusz Schauder Center Winter School on Methods in Multivalued Analysis Annales Universitatis Mariae Curie-Skłodowska