Mathematics

H. Ammari, École Normale Supérieure Mathématiques et Applications, Paris, France; J. Garnier, University Paris VII, Paris, France; W. Jing, École Normale Supérieure, Paris, France; H. Kang, Inha University, Incheon, Korea, Republic of (South Korea); M. Lim, Korean Advanced Institute of Science and Technology (KASIT), Daejeon, Korea, Republic of (South Korea); K. Solna, University of California, Irvine School of Physical Sciences, Irvine, CA, USA; H. Wang, École Normale Supérieure, Paris, France

Mathematical and Statistical Methods for Multistatic Imaging

This book covers recent mathematical, numerical, and statistical approaches for multistatic imaging of targets with waves at single or multiple frequencies. The waves can be acoustic, elastic, or electromagnetic. They are generated by point sources on a transmitter array and measured on a receiver array. An important problem in multistatic imaging is to quantify and understand the trade-offs between data size, computational complexity, signal-to-noise ratio, and resolution.

Features
► Fundamental contributions to multistatic imaging ► New dictionary-matching techniques for imaging ► Matlab codes for the main algorithms described in the book are provided

Contents

Field of interest
Mathematical Applications in the Physical Sciences

Target groups
Research

Discount group
Professional Non-Medical

Due November 2013

Originally published as volume 135 in the series Progress in Mathematics

► $79.99
ISBN 978-3-0348-0732-6

Due January 2014

► $119.00
ISBN 978-3-642-41497-8


Geometry - Intuitive, Discrete, and Convex

A Tribute to László Fejes Tóth

The present volume is a collection of a dozen survey articles, dedicated to the memory of the famous Hungarian geometer, László Fejes Tóth, on the 99th anniversary of his birth.

Features
► A collection of survey articles dedicated to the memory of László Fejes Tóth ► Each article reviews recent progress in an important field in intuitive, discrete and convex geometry ► Some of the papers include results that have never been published before

Contents

Fields of interest
Combinatorics; Convex and Discrete Geometry; Polytopes

Target groups
Research

Discount group
Professional Non-Medical

Due December 2013

2014. X. 343 p. 61 illus., 47 in color. (Lecture Notes in Mathematics, Volume 2098) Softcover
► $89.99
ISBN 978-3-642-41490-9

W. O. Amrein, Université de Genève, Genève, Switzerland; A. Boutet de Monvel, Université Paris Diderot, Paris, France; V. Georgescu, Université de Cergy-Pontoise, Cergy-Pontoise, France

C0-Groups, Commutator Methods and Spectral Theory of N-Body Hamiltonians

The conjugate operator method is a powerful recently developed technique for studying spectral properties of self-adjoint operators. One of the purposes of this volume is to present a refinement of the original method due to Mourre leading to essentially optimal results in situations as varied as ordinary differential operators, pseudo-differential operators and N-body Schrödinger hamiltonians.

Features
► Well-written research monograph that stimulates the further theory evolution of the field ► Self-contained and accessible to advanced students ► Provides auxiliary background material and develops the necessary tools from functional analysis

Contents

Fields of interest
Functions of a Complex Variable; Associative Rings and Algebras; Algebraic Topology

Target groups
Research

Discount group
Professional Non-Medical

...
Paul Lévy and Maurice Fréchet
50 Years of Correspondence in 107 Letters

The fascinating correspondence between Paul Lévy and Maurice Fréchet spans an extremely active period in French mathematics during the twentieth century. The letters of these two Frenchmen show their vicissitudes of research and passionate enthusiasm for the emerging field of modern probability theory. The letters cover various topics of mathematical importance including academic careers and professional travels, issues concerning students and committees, and the difficulties both mathematicians met to be elected to the Paris Academy of Sciences. The technical questions that occupied Lévy and Fréchet on almost a daily basis are the primary focus of these letters, which are charged with elation, frustration and humour. Their mathematical victories and setbacks unfolded against the dramatic backdrop of the two World Wars and the occupation of France, during which Lévy was obliged to go into hiding.

**Features**
- Provides a thorough study of the birth of modern probability theory
- Provides lively and profound portraits of Paul Lévy and Maurice Fréchet
- Gives an insight into mathematical life during twentieth-century France

**Contents**
Introduction.- Introduction to the correspondence.- 107 Letters from Paul Lévy to Maurice Fréchet.

**Target groups**
Research

**Discount group**
Professional Non-Medical

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The mimetic finite difference method for elliptic problems

This book describes the theoretical and computational aspects of the mimetic finite difference method for a wide class of multidimensional elliptic problems, which includes diffusion, advection-diffusion, Stokes, elasticity, magneto-statics and plate bending problems. The modern mimetic discretization technology developed in part by the Authors allows one to solve these equations on unstructured polygonal, polyhedral and generalized polyhedral meshes. The book provides a practical guide for those scientists and engineers that are interested in the computational properties of the mimetic finite difference method such as the accuracy, stability, robustness, and efficiency. Many examples are provided to help the reader to understand and implement this method. This monograph also provides the essential background material and describes basic mathematical tools required to develop further the mimetic discretization technology and to extend it to various applications.

**Features**
- This is the first book on modern mimetic technology
- The theoretical analysis is complemented by simple examples
- The book covers a broad range of applications

**Fields of interest**
Computational Mathematics and Numerical Analysis; Mathematical Applications in the Physical Sciences; Partial Differential Equations

**Target groups**
Research

**Discount group**
Professional Non-Medical

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Coarse Geometry and Randomness

**École d’Été de Probabilités de Saint-Flour XLI – 2011**

These lecture notes study the interplay between randomness and geometry of graphs. The first part of the notes reviews several basic geometric concepts, before moving on to examine the manifestation of the underlying geometry in the behavior of random processes, mostly percolation and random walk. The study of the geometry of infinite vertex transitive graphs, and of Cayley graphs in particular, is fairly well developed. One goal of these notes is to point to some random metric spaces modeled by graphs that turn out to be somewhat exotic, that is, they admit a combination of properties not encountered in the vertex transitive world.

**Features**
- Includes many exercises of varying difficulty levels
- Investigates many open problems
- Presents topics not covered by any other book

**Contents**

**Target groups**
Research

**Discount group**
Professional Non-Medical

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Due December 2013

2014. XVII, 270 p. 9 illus., 2 in color. (Sources and Studies in the History of Mathematics and Physical Sciences) Hardcover
- $69.99

Due December 2013

- approx. $139.00
ISBN 978-3-319-02662-6

Due November 2013

2014. X, 110 p. (Lecture Notes in Mathematics / École d’Été de Probabilités de Saint-Flour, Volume 2100) Softcover
- $49.99
ISBN 978-3-319-02575-9
Mathematical Models and Numerical Simulation in Electromagnetism

**Features**
- Combines a rigorous mathematical description of electromagnetic models with numerous examples related to real engineering applications.
- Includes a chapter devoted to nonlinear magnetics, paying particular attention to hysteresis and the mathematical description of the Preisach model.
- The weak formulations introduced for each mathematical model have been chosen among the most suitable to perform computer simulation of electromagnetic processes.

**Contents**
1. The harmonic oscillator.
2. The Series RLC Circuit.
3. Linear electrical circuits.
4. Maxwell’s equations in free space.
5. Some solutions of Maxwell’s equations in free space.
6. Maxwell’s equations in material regions.
7. Electrostatics.
8. Direct current.
10. The eddy currents model.
11. An introduction to nonlinear magnetics.
12. Electrostatics with MaxFEM.
13. Direct current with MaxFEM.
14. Magnetostatics with MaxFEM.
15. Eddy currents with MaxFEM.
16. RLC circuits with MaxFEM.
A. Elements of graph theory.
B. Vector Calculus.
C. Function spaces for electromagnetism.
D. Harmonic regime: average values.
E. Linear nodal and edge finite elements.
F. Maxwell’s equations in Lagrangian coordinates.

**Fields of interest**
- Computational Mathematics and Numerical Analysis
- Electrical Engineering
- Magnetism
- Magnetic Materials

**Target groups**
- Graduate

**Discount group**
- Professional Non-Medical

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Lévy Matters III

**Lévy-Type Processes: Construction, Approximation and Sample Path Properties**

This volume presents recent developments in the area of Lévy-type processes and more general stochastic processes that behave locally like a Lévy process. Although written in a survey style, quite a few results are extensions of known theorems, and others are completely new. The focus is on the symbol of a Lévy-type process: a non-random function which is a counterpart of the characteristic exponent of a Lévy process.

**Features**
- Over the past 10-15 years, we have seen a revival of general Lévy process theory, as well as a burst of new applications. There is a lively and growing research community in this area.
- Expository articles help to disseminate important theoretical and applied research, especially to young researchers like PhD students and postdocs.
- The respective chapters will appeal to various target groups.
- Presents a unique blend of analysis and stochastics, with many findings appearing for the first time in a monograph.

**Contents**
- A Primer on Feller Semigroups and Feller Processes.
- Feller Generators and Symbols.
- Construction of Feller Processes.
- Transformations of Feller Processes.
- Sample Path Properties.
- Global Properties.
- Approximation.
- Open Problems.
- References.
- Index.

**Fields of interest**
- Probability Theory and Stochastic Processes
- Mathematics, general
- Functional Analysis

**Target groups**
- Research

**Discount group**
- Professional Non-Medical

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Green’s Functions in the Theory of Ordinary Differential Equations

This book provides a complete and exhaustive study of the Green’s functions. Professor Cabada first proves the basic properties of Green’s functions and discusses the study of nonlinear boundary value problems. Classic methods of lower and upper solutions are explored, with a particular focus on monotone iterative techniques that flow from them. In addition, Cabada proves the existence of positive solutions by constructing operators defined in cones. The book will be of interest to graduate students and researchers interested in the theoretical underpinnings of boundary value problem solutions.

**Features**
- Provides a comprehensive development of the theory of Green’s functions.
- Focuses on the qualitative properties of such functions.
- Contains a comprehensive bibliography of classic and recent works on the subject.

**Contents**
3. Appendix B. Expressions of Some Particular Green’s Functions.

**Fields of interest**
- Ordinary Differential Equations
- Several Complex Variables and Analytic Spaces
- Operator Theory

**Target groups**
- Research

**Discount group**
- Professional Non-Medical

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**Partial Differential Equations: Theory, Control and Approximation**

In Honor of the Scientific Heritage of Jacques-Louis Lions

**Contents**


**Fields of interest**

Partial Differential Equations; Calculus of Variations and Optimal Control; Optimization; Numerical Analysis

**Target groups**

Research

**Discount group**

Professional Non-Medical

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**Convergence Estimates in Approximation Theory**

The study of linear positive operators is an area of mathematical studies with significant relevance to computer-aided geometric design, numerical analysis, and differential equations. This book focuses on the convergence of linear positive operators in real and complex domains. The theoretical aspects of these operators have been an active area of research over the past few decades. In this volume, authors Gupta and Agarwal explore new and more efficient methods of applying this research to studies in Optimization and Analysis. The text will be of interest to upper-level students seeking an introduction to the field and to researchers developing innovative approaches.

**Features**

- Covers general approximation methods on linear positive operators
- Provides key results on study of convergence, its direct results, rate of convergence, and asymptotic behavior
- Presents convergence in real and complex domains

**Contents**


**Fields of interest**

Approximations and Expansions; Operator Theory; Analysis

**Target groups**

Research

**Discount group**

Professional Non-Medical
Computational Methods for Three-Dimensional Microscopy Reconstruction

Approaches to the recovery of three-dimensional information on a biological object, which are often formulated or implemented initially in an intuitive way, are concisely described here based on physical models of the object and the image-formation process.

Features
- Features authors from three expert groups that have made pioneering contributions to this field
- Provides interdisciplinary content that will appeal to mathematicians and biologists alike
- Includes mathematically concise statements of image formation and structure recovery problems

Contents

Fields of interest
Physiological, Cellular and Medical Topics; Computational Biology/Bioinformatics; Bioinformatics

Target groups
Research

Discount group
Professional Non-Medical

Due December 2013
► $129.00

Mathematical Modeling in Economics, Ecology and the Environment

Features
- Exposes modern practice of applied mathematical modeling in economics, population biology, and environmental sciences
- Studied relations among various economic, population, and environmental models
- Demonstrates how integrated mathematical models are built from simple components
- Explains investigation techniques for models and provides interpretation of results

Contents

Fields of interest
Mathematical Modeling and Industrial Mathematics; Economics/Management Science, general; Math. Appl. in Environmental Science

Target groups
Graduate

Discount group
Professional Non-Medical

Due November 2013
2nd ed. 2014. XII, 242 p. 34 illus., 8 in color. (Springer Optimization and Its Applications, Volume 88) Hardcover
► $79.99

Facets of Combinatorial Optimization

Festschrift for Martin Grötschel

Contents
Irving Kaplansky (1917 - 2006) was a leading authority on algebra. He contributed greatly to the structure of Banach algebras, to locally compact groups and group representations. From 1945 to 1984, Professor Kaplansky taught mathematics at the University of Chicago, where he chaired the department from 1962 to 1967. In 1984 he became Director of the Mathematical Sciences Research Institute in Berkeley, California, a post he held until 1992. Irving Kaplansky received many awards and honors - among them, in 1989, the American Mathematical Society's Steele Prize. This book is a collection of 22 of his research papers. Each is followed up with new comments, often including references to later papers by other authors. In addition there are eight hitherto unpublished items. These cover a variety of topics and will be of interest to many readers.

Contents

Field of interest
K-Theory

Target groups
Research

Discount group
Professional Non-Medical

Selected Papers and Other Writings

Spontaneous potential (SP) well-logging is one of the most common and useful well-logging techniques in petroleum exploitation. This monograph is the first of its kind on the mathematical model of spontaneous potential well-logging and its numerical solutions. The mathematical model established in this book shows the necessity of introducing Sobolev spaces with fractional power, which seriously increases the difficulty of proving the well-posedness and proposing numerical solution schemes.

Features
► A unique resource on the mathematical model of spontaneous potential well-logging and its numerical solutions ► Presents advanced research results achieved by the authors over many years ► The theory and method presented are well suited to meeting practical needs in petroleum exploitation

Contents

Fields of interest
Partial Differential Equations; Geophysics/Geodesy; Numerical Analysis

Target groups
Research

Discount group
Professional Non-Medical

Mathematical Model of Spontaneous Potential Well-Logging and Its Numerical Solutions

Advances in Dynamic Games

Theory, Applications, and Numerical Methods

Contents

V. Křivan, Biology Centre AS CR, České Budějovice, Czech Republic; G. Zaccour, HEC Montréal Dépt. Méthodes, Montreal, QC, Canada (Eds)

Game Theory, Economics, Social and Behavioral Sciences; Game Theory/Mathematical Methods; Applied Mathematics/Computational Methods of Engineering

Target groups
Research

Discount group
Professional Non-Medical

Mathematical Model of Spontaneous Potential Well-Logging and Its Numerical Solutions

Due December 2013

Only available in print

► approx. $89.99

Due December 2013

► $129.00
ISBN 978-3-319-02689-3

Due October 2013

2013. VII, 67 p. 28 illus., 14 in color. (SpringerBriefs in Mathematics) Softcover
► $54.99
ISBN 978-3-642-41424-4
Multiple Wiener-Itô Integrals
With Applications to Limit Theorems

The goal of this Lecture Note is to prove a new type of limit theorems for normalized sums of strongly dependent random variables that play an important role in probability theory or in statistical physics. Here non-linear functionals of stationary Gaussian fields are considered, and it is shown that the theory of Wiener-Itô integrals provides a valuable tool in their study. More precisely, a version of these random integrals is introduced that enables us to combine the technique of random integrals and Fourier analysis. The most important results of this theory are presented together with some non-trivial limit theorems proved with their help. This work is a new, revised version of a previous volume written with the goal of giving a better explanation of some of the details and the motivation behind the proofs. It does not contain essentially new results; it was written to give a better insight to the old ones. In particular, a more detailed explanation of generalized fields is included to show that what is at the first sight a rather formal object is actually a useful tool for carrying out heuristic arguments.

Field of interest
Probability Theory and Stochastic Processes

Target groups
Research

Discount group
Professional Non-Medical

Quantum Variational Calculus

This Brief puts together two subjects, quantum and variational calculus by considering variational problems involving Hahn quantum operators. The main advantage of its results is that they are able to deal with nondifferentiable (even discontinuous) functions, which are important in applications. Possible applications in economics are discussed. Economists model time as continuous or discrete. Although individual economic decisions are generally made at discrete time intervals, they may well be less than perfectly synchronized in ways discrete models postulate. On the other hand, the usual assumption that economic activity takes place continuously, is nothing else than a convenient abstraction that in many applications is far from reality. The Hahn quantum calculus helps to bridge the gap between the two families of models: continuous and discrete. Quantum Variational Calculus is self-contained and unified in presentation.

Features
► Introduces readers to the treatment of the calculus of variations with q-differences and Hahn difference operators
► Provides the reader with the first extended treatment of quantum variational calculus
► Shows how the techniques described can be applied to economic models as well as other mathematical systems

Contents
The Classical Calculus of Variations.- The Hahn Quantum Variational Calculus.- The Power Quantum Calculus.- Conclusion.

Fields of interest
Calculus of Variations and Optimal Control; Optimization; Control; Game Theory/Mathematical Methods

Target groups
Research

Discount group
Professional Non-Medical

Advances in Lie Superalgebras

Features
► Virtually the first advanced volume (which is not a textbook) related to Lie superalgebras
► Provides a rather complete account of the newest trends in research on Lie superalgebras
► Contains contributions of many leading experts in the field

Contents

Features
► Provides the reader with
► Virtually the first advanced volume (which is not a textbook) related to Lie superalgebras
► Provides a rather complete account of
► Contains contributions of many leading experts in the field

Fields of interest
Algebra; Topology

Target groups
Research

Discount group
Professional Non-Medical
A. Quarteroni, École Polytechnique Fédérale de Lausanne Chaire de Modélisation, Lausanne, Switzerland

**Numerical Models for Differential Problems**

In this text, we introduce the basic concepts for the numerical modelling of partial differential equations.

**Features**

- Author faces here the basic concepts for the numerical modeling of partial differential equations
- An outstanding reference work in this branch of applied mathematics
- In particular, the author discusses the algorithmic and computer implementation aspects and provides a number of easy-to-use programs

**Contents**

2. Elements of functional analysis.
3. Elliptic equations.
5. Parabolic equations.
6. Generation of 1D and 2D grids.
9. The finite volume method.
10. Spectral methods.
11. Discontinuous element methods (DG and mortar).
15. Nonlinear hyperbolic problems.
18. Domain decomposition methods.
19. Reduced basis approximation for parametrized partial differential equations.

**Fields of Interest**

Mathematics, general; Analysis; Numerical Analysis

**Target groups**

Lower undergraduate

**Discount group**

Professional Non-Medical

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A. Selberg, Heidelberg, Germany

**Collected Papers I**

From the Foreword by K. Chandrasekharan: The early work of Atle Selberg lies in the fields of analysis and number theory. It concerns the Riemann zeta-function, Dirichlet’s L-functions, the Fourier coefficients of modular forms, the distribution of prime numbers and the general sieve method. It is brilliant, and unsurpassed, and in the finest classical tradition. His later work cuts across many fields: function theory, operator theory, spectral theory, group theory, topology, differential geometry, and number theory. It has enlarged and transfigured the whole concept and structure of arithmetic. It exemplifies the modern tradition at its sprightly best, and makes him one of the master mathematicians of our time. This publication will enable the reader to perceive the depth and originality of Atle Selberg’s ideas and results, and sense the scale and intensity of their influence on contemporary mathematical thought.

**Contents**

41 original papers by Atle Selberg.

- Bibliography.
- Acknowledgements

**Fields of Interest**

Mathematics, general; Analysis; Operator Theory

**Target groups**

Research

**Discount group**

Professional Non-Medical

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A. Selberg, Heidelberg, Germany

**Collected Papers II**

From the Foreword by K. Chandrasekharan: The early work of Atle Selberg lies in the fields of analysis and number theory. It concerns the Riemann zeta-function, Dirichlet’s L-functions, the Fourier coefficients of modular forms, the distribution of prime numbers, and the general sieve method. It is brilliant, and unsurpassed, and in the finest classical tradition. His later work cuts across many fields: function theory, operator theory, spectral theory, group theory, topology, differential geometry, and number theory. It has enlarged and transfigured the whole concept and structure of arithmetic. It exemplifies the modern tradition at its sprightly best, and makes him one of the master mathematicians of our time. This publication will enable the reader to perceive the depth and originality of Atle Selberg’s ideas and results, and sense the scale and intensity of their influence on contemporary mathematical thought.

**Contents**

Contents: Linear Operators and Automorphic Forms.
- Remarks on the Distribution of Poles of Eisenstein Series.
- Old and New Conjectures and Results about a Class of Dirichlet Series.

- Lectures on Sieves.
- Bibliography.
- Acknowledgements

**Field of Interest**

Number Theory

**Target groups**

Research

**Discount group**

Professional Non-Medical

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Due October 2013

2nd ed. 2014. XVIII, 656 p. (MS&A, Volume 8)
Hardcover
- $69.99

Due January 2014

Only available in print
(Springer Collected Works in Mathematics) Softcover
- approx. $89.99
ISBN 978-3-642-41022-2

Due January 2014

Only available in print
1 illus. (Springer Collected Works in Mathematics) Softcover
- approx. $89.99
ISBN 978-3-642-41022-2
Genericity in Nonlinear Analysis

This book presents an extensive collection of state-of-the-art results and references in nonlinear functional analysis demonstrating how the generic approach proves to be very useful in solving many interesting and important problems. Nonlinear analysis plays an ever-increasing role in theoretical and applied mathematics, as well as in many other areas of science such as engineering, statistics, computer science, economics, finance, and medicine. The text may be used as supplementary material for graduate courses in nonlinear functional analysis, optimization theory, and approximation theory, and is a treasure trove for instructors, researchers, and practitioners in mathematics and in the mathematical sciences.

Features
- Comprehensive treatment of generic nonlinear analysis methodology and its use in solving general classes of interesting and important problems
- May be used as supplementary text in graduate courses in nonlinear functional analysis, optimization theory, and approximation theory
- Written by highly prolific authors in the field with decades of experience

Contents

Fields of interest
Functional Analysis; Operator Theory; Calculus of Variations and Optimal Control; Optimization

Target groups
Research

Due December 2013
2014. XIV, 494 p. (Developments in Mathematics, Volume 34) Hardcover
$149.00
ISBN 978-1-4614-9532-1

A Comet of the Enlightenment
Anders Johan Lexell's Life and Discoveries

The Finnish mathematician and astronomer Anders Johan Lexell (1740–1784) was a long-time close collaborator as well as the academic successor of Leonhard Euler at the Imperial Academy of Sciences in St Petersburg. Lexell was initially invited by Euler from his native town of Åbo (Turku) in Finland to Saint Petersburg to assist in the mathematical processing of the astronomical data of the forthcoming transit of Venus of 1769. A few years later he became an ordinary member of the Academy. This is the first-ever full-length biography devoted to Lexell and his prolific scientific output. His rich correspondence especially from his grand tour to Germany, France and England reveals him as a lucid observer of the intellectual landscape of enlightened Europe.

Features
- The first-ever full-length biography of the mathematician and astronomer Anders Johan Lexell (1740–1784)
- Sheds new light on the collaboration with Leonhard Euler
- Interesting study of a scientist's grand tour through enlightened Europe

Contents
1 Setting the scene.- 2 The humble beginnings.- 3 New prospects in St Petersburg.- 4 Formation of an Academician.- 5 Professor of astronomy.- 6 Professional relations and correspondence.- 7 Academic events in St Petersburg.- 8 Lexell's work in mathematics.- 9 Academic Journey 1780–1781.- 10 Return to an Academy in crisis.- 12 A sketch of Lexell's personality.- 13 Conclusion.- 14 Appendices.

Fields of interest
History of Mathematical Sciences; Geometry; Astronomy, Astrophysics and Cosmology

Target groups
Research

Due February 2014
$129.00
ISBN 978-3-319-00617-8

Discrete Dynamical Models

This book provides an introduction to the analysis of discrete dynamical systems. The content is presented by an unitary approach that blends the perspective of mathematical modeling together with the ones of several discipline as Mathematical Analysis, Linear Algebra, Numerical Analysis, Systems Theory and Probability. After a preliminary discussion of several models, the main tools for the study of linear and non-linear scalar dynamical systems are presented, paying particular attention to the stability analysis. Linear difference equations are studied in detail and an elementary introduction of Z and Discrete Fourier Transform is presented.

Features
- The multi-disciplinary and modellistic approach provides a broad overview of the applications
- A large number of step-by-step exercises and their worked solutions help the reader to learn quickly
- The notion of chaotic dynamics is introduced through an in-depth study of the logistic model
- Vector-valued discrete dynamical systems are focussed especially in connection to Markov chains, positive systems, demography and page-rank algorithm

Contents
1 Recursive phenomena and difference equations.- 2 Linear difference equations.- 3 Discrete dynamical systems: one-step scalar equations.- 4 Complex behavior of nonlinear dynamical systems: bifurcations and chaos.- 5 Discrete dynamical systems: vector equations.- 6 Markov chains.- 7 Matrix.- 8 Solutions.

Fields of interest
Dynamical Systems and Ergodic Theory; Difference and Functional Equations; Linear and Multilinear Algebras, Matrix Theory

Target groups
Upper undergraduate

Discount group
Professional Non-Medical

Due March 2014
2014. Approx. 400 p. 128 illus. (UNITEXT / La Matematica per il 3+2, Volume 76) Softcover
$69.99
ISBN 978-3-319-02290-1