The Strength of Self-Acceptance
Theory, Practice and Research

Self-acceptance is recognized in diverse schools of Christian and Eastern theology as well as in various schools of counseling and psychotherapy (e.g., Humanistic, Rational-Emotive Behavior Therapy, Cognitive Behavior Therapy, Acceptance Commitment Therapy) as a major contributor to mental health, life satisfaction and wellness.

Features
- Combines theories of personality with practical approaches
- Includes a chapter by Steven Hayes
- Includes a broad range of international scholars and multi-disciplinary contributions from theology, psychology, and counseling

Contents

Fields of interest
Clinical Psychology; Personality and Social Psychology; Psychotherapy and Counseling

Target groups
Professional/practitioner

Discount group
Professional Non-Medical

Handbook of Research on Student Engagement

Contents

Fields of interest
Child and School Psychology; Educational Psychology; Public Health

Target groups
Professional/practitioner

Discount group
Professional Non-Medical

Asperger Syndrome
A Guide for Professionals and Families

Features
- Bridges the gap between research and evidence-based practice for researchers, clinicians, and mental health and education professionals
- Explores the ongoing treatment and education needs of children with Asperger Syndrome as the grow into adulthood
- Examines a variety of therapeutic, educational, and social skills strategies for use at home as well as in classrooms and other community settings

Contents
Preface; Thomas P. Gullotta.- Chapter 1: What We Know About Asperger Syndrome: Epidemiology and Etiology; Alexia Metz.- Chapter 2: Assessment and Diagnosis of Asperger Syndrome; Ruth Aspy, Barry G. Grossman.- Chapter 3: Counseling and Other Therapeutic Strategies for Children with AS and Their Families; Sherrie Sharp.- Chapter 4: Early Intervention for Children/Youth with Asperger Syndrome; Mary Baker-Ericzén.- Chapter 5: Building Social Skills Instruction for Children With Asperger Syndrome; Brenda Smith Myles, The Zigzagurt Group.- Chapter 6: Evaluating Evidence-Based Instruction for Children with Asperger Syndrome; Raymond W. DuCharme.- Chapter 7: Comprehensive Education-Based Mental Health Services for Students Diagnosed on the Autism Spectrum; Raymond W. DuCharme, Kathleen A. McGrady, Jayantkumar K. Patel, Gualberto Ruaño.- Chapter 8: Living with AS: Real Issues, Practical Advice for Families with School-aged Children; Jennifer Blackwell.

Fields of interest
Child and School Psychology; Psychiatry; Educational Psychology

Target groups
Research

Discount group
Professional Non-Medical

Due May 2013
2012. XXVII, 840 p. 69 illus. Softcover
$74.95

Available
2012. VI, 448 p. 4 illus. Hardcover
$79.95

Due May 2013
$129.00
ISBN 978-1-4614-7015-1
Discriminatory Bullying
A New Intercultural Challenge

Contents

Fields of interest
Child and School Psychology; Cultural Studies; Migration

Target groups
Research

Discount group
Professional Non-Medical

Due June 2013
2013. Approx. 450 p. 200 illus. Hardcover
► $179.00

Handbook of Occupational Health and Wellness

R. J. Gatchel, University of Texas, Arlington, TX, USA; I. Z. Schultz, University of British Columbia, Vancouver, BC, Canada (eds)

Masculinities in a Global Era

Contents

Features
► Editor is an emerging authority in the field of masculinities research Highlights cultural diversities in masculinity research ► Introduces practical uses of the research

Fields of interest
Gender Studies; Sociology, general; Cross Cultural Psychology

Target groups
Research

Discount group
Professional Non-Medical

Due May 2013
► $179.00
ISBN 978-1-4614-6930-8

Discriminatory Bullying

E. Elamé, University of Venice, Italy

Masculinities in a Global Era

J. Gelfer, Monash University, Melbourne, VIC, Australia (Ed)

Masculinities in a Global Era extends the conversation of masculinity studies by analyzing global masculinities from a psychological perspective.

Available
2013. XVII, 576 p. 45 illus., 14 in color. (Handbooks in Health, Work, and Disability) Hardcover
► $499.00

Due May 2013
► $179.00
ISBN 978-1-4614-6930-8

Professional Non-Medical Discount group

Research

Discount group
Professional Non-Medical
The Experience of Meaning in Life
Classical Perspectives, Emerging Themes, and Controversies

Contents

Fields of interest
Positive Psychology; Quality of Life Research; Personality and Social Psychology

Target groups
Research

Discount group
Professional Non-Medical

Due May 2013
► $179.00
ISBN 978-94-007-6526-9

T. A. Hoffer, J. L. Shelton
Suicide Among Child Sex Offenders

By providing empirical data and multidisciplinary considerations, the book increases awareness of child sex offender suicide among the various entities which come into contact with this population of offenders. This book attempts to bring awareness of this potentially high risk population to better inform the law enforcement, corrections, and mental health communities of the unique risk factors for suicide among CSOs and provide a more effective crisis response.

Features
► Examines the degree that personality disorder symptoms increase risk for suicide among child sex offenders► Analyzes how the presence of cognitive distortions impact a child sex offender’s decision to commit suicide► Carefully studies suicide notes written by child sex offenders

Contents
Introduction.- General Suicide Research.- Literature on Suicide Notes.- Literature on Child Sex Offender Dynamics.- Research on Child Sex Offenders and Suicide.- Methodology and Results.- Child Sex Offender Characteristics.- Child Sex Crime Investigation Characteristics.- Suicide Characteristics.- Suicide notes.- Application of Interpersonal Psychological Theory to child Sex Offender Suicide.- Analysis of Suicide Notes left by Child Sex Offenders.- Multidisciplinary Considerations.- Considerations for Law Enforcement.- Considerations for Prosecutors.- Considerations for Mental Health and Community Service Providers.- Conclusion.- Future Research Directions.- Limitations of the Study.

Fields of interest
Cognitive Psychology; Sexual Behavior; Clinical Psychology

Target groups
Research

Discount group
Professional Non-Medical

Available
► $49.95
ISBN 978-1-4614-5936-1

Due April 2013
2013. XVIII, 288 p. 7 illus. in color. Hardcover
► $129.00

Vulnerable Children
Global Challenges in Education, Health, Well-Being, and Child Rights

Contents

Fields of interest
Child and School Psychology; Social Work; Maternal and Child Health

Target groups
Research

Discount group
Professional Non-Medical

Due April 2013
2013. XVIII, 288 p. 7 illus. in color. Hardcover
► $129.00
International Handbook of Peace and Reconciliation

How do ordinary people from different regions around the world define peace and reconciliation? What factors do they think are necessary for promoting reconciliation between countries? Do they believe that individuals have a right to protest against war and in favor of peace? Do they believe that apologies can improve the chances of reconciliation? What do they think are the best ways for achieving peace? Does reasoning regarding the achievability of world peace vary by region? International Handbook of Peace and Reconciliation, a companion volume to the International Handbook on War, Torture, and Terrorism, examines and analyzes how people around the world think about justice, governmental apologies, the right to protest, the peace process, the justifiability of armed conflict, the possibility of world peace, and reconciliation. To address these questions, researchers from the Group on International Perspectives on Governmental Aggression and Peace (GIPGAP) administered the Personal and Institutional Rights to Aggression and Peace Survey (PAIRTAPS) to volunteers from over 40 countries representing the major regions of the world.

Features

- A companion book to International Handbook of War, Torture, and Terrorism
- Offers hundreds of direct quotes from individuals from eight major regions of the world
- Demonstrates a grounded theory analysis of definitions of peace and reconciliation and of the role of apology in reconciliation

Fields of interest

Personality and Social Psychology; Positive Psychology

Target groups

Research

Discount group

Professional Non-Medical

Available

2013. XVI, 681 p. 1 illus. in color. (Peace Psychology Book Series, Volume 7) Hardcover

$229.00


Research, Applications, and Interventions for Children and Adolescents

A Positive Psychology Perspective

Contents

Adaptive Decision Making and Intellectural Styles

This exciting publication provides the reader with a theoretical and practical approach to adaptive decision making, based on an appreciation of cognitive styles, in a cross-cultural context. The aim of this Brief is to describe the role of thinking through different options as part of the decision-making process. Since cognitive style influences decision behavior, the book will first examine thinking styles, which involve both cognitive and emotive elements, as habits or preferences that shape and empower one's cognition and emotion.

Features

► Provides the reader with a theoretical and practical approach to adaptive decision making for effective functioning in a fast-paced world
► Considers many different cognitive styles for decision making
► Contextualizes decision making across many different cultures

Contents

Chapter 1: Introduction to the Role of Decision Making through Thinking Styles
Chapter 2: Case study - International fields of interest
Chapter 3: Case study - International literature Review of Critical Thinking and Intellectual Styles
Chapter 4: Conclusion and Directions

Fields of interest

Personality and Social Psychology; Industrial, Organisational and Economic Psychology; Operation Research/Decision Theory

Target groups

Research

Discount group

Professional Non-Medical

Due March 2013

2013. XI, 114 p. 2 illus., 1 in color. (SpringerBriefs in Psychology, Volume 13)
► $49.95
ISBN 978-1-4614-6707-6

Available

2013. XIV, 312 p. 19 illus., 14 in color. Hardcover
► $129.00

Due April 2013

2013. XIV, 690 p. 38 illus., 30 in color. (Cross-Cultural Advancements in Positive Psychology, Volume 4)
► $229.00
ISBN 978-94-007-6367-8

Psychology

Is Science Compatible with Free Will?

Exploring Free Will and Consciousness in the Light of Quantum Physics and Neuroscience

Contents

1 Introduction Peter Adams and Antoine Suarez
Hamilton-Jacobi Equations: Approximations, Numerical Analysis and Applications

Cetraro, Italy 2011, Editors: Paola Loreti, Nicoletta Anna Tchou
Scientific editor: P. Loreti, Sapienza Università di Roma, Italy; N. Tchou, Université de Rennes 1, France

Features
► It contains a quick and up to date introduction to viscosity solutions of Hamilton-Jacobi equations for graduate students or young researchers. ► Two approaches to large time behavior of periodic solutions of Hamilton-Jacobi Equations are given: PDE and weak KAM theory. ► Contributions on hot topics like for example numerical for mean field games should be of interest for many researchers.

Contents
Finite Difference Methods For Mean Field Games. - An Introduction to the Theory of Viscosity Solutions for First-Order Hamilton-Jacobi Equations and Applications. - A Short Introduction to Viscosity Solutions and the Large Time Behavior of Solutions of Hamilton-Jacobi Equations. - Idempotent/Tropical Analysis, the Hamilton-Jacobi and Bellman Equations.

Fields of interest
Calculus of Variations and Optimal Control; Optimization; Partial Differential Equations; Computational Mathematics and Numerical Analysis

Target groups
Research

Discount group
Professional Non-Medical

Nonlinear Optimization Applications Using the GAMS Technology

The purpose of this book is to develop a wide collection of nonlinear optimization applications from the real-world expressed in the GAMS (General Algebraic Modeling System) language.

Features
► Collects nonlinear optimization applications from the real world and expresses them using GAMS: General Algebraic Modeling System ► Presents solutions to real-world nonlinear optimization problems in a manner that is easy to understand and follow ► Discusses problems that are of interest to scientists of various disciplines including practitioners in operations research, management, and mathematical programming researchers

Contents

Fields of interest
Calculus of Variations and Optimal Control; Optimization; Engineering Design; Math Applications in Computer Science

Target groups
Research

Discount group
Professional Non-Medical

Due April 2013


Due June 2013


Excursions in Harmonic Analysis, Volume 1

The February Fourier Talks at the Norbert Wiener Center

Contents
Applications of q-Calculus in Operator Theory

The approximation of functions by linear positive operators is an important research topic in general mathematics and it also provides powerful tools to application areas such as computer-aided geometric design, numerical analysis, and solutions of differential equations. q-Calculus is a generalization of many subjects, such as hypergeometric series, complex analysis, and particle physics. This monograph is an introduction to combining approximation theory and q-Calculus with applications, by using well-known operators. The presentation is systematic and the authors include a brief summary of the notations and basic definitions of q-calculus before delving into more advanced material. The many applications of q-calculus in the theory of approximation, especially on various operators, which includes convergence of operators to functions in real and complex domain forms the gist of the book.

Features
► The first book on q-calculus in approximation theory
► Provides a good resource for researchers and teachers
► Features many applications of q calculus in the theory of approximation

Contents
Introduction of q-calculus.- q-Discrete operators and their results.- q-Bernstein type integral operators.- q-Summation integral operators.- Statistical convergence of q-operators.- q-Complex operators.

Fields of interest
Approximations and Expansions; Functions of a Complex Variable; Functional Analysis

Target groups
Research

Discount group
Professional Non-Medical

Hypoelliptic Laplacian and Bott–Chern Cohomology

A Theorem of Riemann–Roch–Grothendieck in Complex Geometry

The book provides the proof of a complex geometric version of a well-known result in algebraic geometry: the theorem of Riemann–Roch–Grothendieck for proper submersions. It gives an equality of cohomology classes in Bott–Chern cohomology, which is a refinement for complex manifolds of de Rham cohomology.

Features
► Gives an important application of the theory of the hypoelliptic Laplacian in complex algebraic geometry
► Provides an introduction to applications of Quillen’s superconnections in complex geometry with hypoelliptic operators
► Presents several techniques partly inspired from physics, which concur to the proof of a result in complex algebraic geometry
► The method of hypoelliptic deformation of the classical Laplacian was developed by the author during the last ten years

Contents
Introduction.- 1 The Riemannian adiabatic limit.- 2 The holomorphic adiabatic limit.- 3 The elliptic superconnections.- 4 The elliptic superconnection forms.- 5 The elliptic superconnection forms.- 6 The hypoelliptic superconnections.- 7 The hypoelliptic superconnection forms.- 8 The hypoelliptic superconnection forms of vector bundles.- 9 The hypoelliptic superconnection forms.- 10 The exotic superconnection forms of a vector bundle.- 11 Exotic superconnections and Riemann–Roch–Grothendieck.- Bibliography.- Subject Index.- Index of Notation.

Fields of interest
K-Theory; Partial Differential Equations; Global Analysis and Analysis on Manifolds

Target groups
Research

Discount group
Professional Non-Medical
**Mathematics**

**D. Boffi**, University of Pavia, Italy; **F. Brezzi**, Institute for Advanced Study, Pavia, Italy; **M. Fortin**, Université Laval, Quebec, QC, Canada

**Mixed Finite Element Methods and Applications**

Non-standard finite element methods, in particular mixed methods, are central to many applications. In this text the authors, Boffi, Brezzi and Fortin present a general framework, starting with a finite dimensional presentation, then moving on to formulation in Hilbert spaces and finally considering approximations, including stabilized methods and eigenvalue problems. This book also provides an introduction to standard finite element approximations, followed by the construction of elements for the approximation of mixed formulations in H(div) and H(curl).

**Features**

- A self contained presentation of the mathematical theory of mixed FEM
- Applications to elliptic problems, elasticity, electromagnetism, Stokes’ problem
- An augmented version of a classical book

**Contents**


**Fields of interest**
Computational Mathematics and Numerical Analysis; Computational Science and Engineering; Appl.Mathematics/Computational Methods of Engineering

**Target groups**
Research

**Discount group**
Professional Non-Medical

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**A. Bretto**, University of Caen, France

**Hypergraph Theory**

**An Introduction**

This book provides an introduction to hypergraphs, its aim being to overcome the lack of recent manuscripts on this theory. In the literature hypergraphs have many other names such as set systems and families of sets. This work presents the theory of hypergraphs in its most original aspects, while also introducing and assessing the latest concepts on hypergraphs. The variety of topics, their originality and novelty are intended to help readers better understand the hypergraphs in all their diversity in order to perceive their value and power as mathematical tools. This book will be a great asset to upper-level undergraduate and graduate students in computer science and mathematics. It has been the subject of an annual Master’s course for many years, making it also ideally suited to Master’s students in computer science, mathematics, bioinformatics, engineering, chemistry, and many other fields. It will also benefit scientists, engineers and anyone else who wants to understand hypergraphs theory.

**Features**

- Presents rigorous mathematics of hypergraph theory
- Includes applications relevant for engineering
- Written by an expert in the field

**Contents**


**Fields of interest**
Graph Theory; Discrete Mathematics in Computer Science; Communications Engineering; Networks

**Target groups**
Research

**Discount group**
Professional Non-Medical

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**A. Chorin, O. H. Hald**, University of California, Berkeley, CA, USA

**Stochastic Tools in Mathematics and Science**

„Stochastic Tools in Mathematics and Science” covers basic stochastic tools used in physics, chemistry, engineering and the life sciences. The topics covered include conditional expectations, stochastic processes, Brownian motion and its relation to partial differential equations, Langevin equations, the Liouville and Fokker-Planck equations, as well as Markov chain Monte Carlo algorithms, renormalization, basic statistical mechanics, and generalized Langevin equations and the Mori-Zwanzig formalism. The applications include sampling algorithms, data assimilation, prediction from partial data, spectral analysis, and turbulence. The book is based on lecture notes from a class that has attracted graduate and advanced undergraduate students from mathematics and from many other science departments at the University of California, Berkeley. Each chapter is followed by exercises. The book will be useful for scientists and engineers working in a wide range of fields and applications.

**Features**

- Exercises are included at the end of each chapter
- An unusual feature of the book is its treatment of the effect of temporal correlations
- Ideas are presented within a clean, clear, and systematic framework

**Contents**


**Fields of interest**
Probability Theory and Stochastic Processes; Statistical Physics, Dynamical Systems and Complexity; Classical Continuum Physics

**Target groups**
Graduate

**Discount group**
Professional Non-Medical
Mathematics

**Measure Theory**

Second Edition

**Contents**


**Fields of interest**

Measure and Integration; Analysis; Probability Theory and Stochastic Processes

**Target groups**

Graduate

**Discount group**

Professional Non-Medical

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**Drinfeld Moduli Schemes and Automorphic Forms**

**The Theory of Elliptic Modules with Applications**

Drinfeld Moduli Schemes and Automorphic Forms: The Theory of Elliptic Modules with Applications is based on the author's original work establishing the correspondence between ell-adic rank r Galois representations and automorphic representations of GL(r) over a function field, in the local case, and, in the global case, under a restriction at a single place. It develops Drinfeld's theory of elliptic modules, their moduli schemes and covering schemes, the simple trace formula, the fixed point formula, as well as the congruence relations and a "simple" converse theorem, not yet published anywhere. This version, based on a recent course taught by the author at The Ohio State University, is updated with references to research that has extended and developed the original work.

**Features**

- Provides a quick introduction to the Langlands correspondence for function fields via the cohomology of Drinfeld moduli varieties
- Complete exposition of the theory of elliptic modules, their moduli schemes and covering schemes, as well as new congruence relations and a "simple" converse theorem
- Covers material that is known to experts and will be accessible to graduate students

**Contents**

Elliptic Moduli.- Hecke Correspondences.- Trace Formulae.- Higher Reciprocity Laws.

**Fields of interest**

Number Theory; Topological Groups, Lie Groups; Category Theory, Homological Algebra

**Target groups**

Graduate

**Discount group**

Professional Non-Medical

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**Total Domination in Graphs**

Total Domination in Graphs gives a clear understanding of this topic to any interested reader who has a modest background in graph theory. This book provides and explores the fundamentals of total domination in graphs.

**Features**

- Provides a comprehensive treatment on total domination in graphs
- Includes a chapter on open questions and conjectures
- Features topics that include the interaction between total domination in graphs and transversals in hypergraphs, the association with total domination in graphs and diameter-2-critical graphs
- Investigates upper bounds on the total domination number of a planar graph of small diameter

**Contents**


**Fields of interest**

Graph Theory; Analysis; Number Theory

**Target groups**

Research

**Discount group**

Professional Non-Medical

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**Due April 2013**

2nd ed. 2013. XX, 438 p. 4 illus. (Birkhäuser Advanced Texts Basler Lehrbücher) 
- $79.95

ISBN 978-1-4614-6955-1

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**Available**

2013. V, 154 p. 5 illus. (SpringerBriefs in Mathematics) 
- Softcover - $49.95

ISBN 978-1-4614-5887-6

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**Due May 2013**

2013. X, 95 p. 69 illus. (Springer Monographs in Mathematics) Hardcover 
- $109.00

H. Hida, University of California, Los Angeles, CA, USA

Elliptic Curves and Arithmetic Invariants

This book contains a detailed account of the result of the author's recent Annals paper and JAMS paper on arithmetic invariant, \( \mu \)-invariant, \( L \)-invariant, and similar topics. This book can be regarded as an introductory text to the author's previous book \( p \)-Adic Automorphic Forms on Shimura Varieties. Written as a down-to-earth introduction to Shimura varieties, this text includes many examples and applications of the theory that provide motivation for the reader.

Features

- Contains top-notch research that will interest both experts and advanced graduate students
- Written by an expert renowned for his discovery that modular forms fall into families, otherwise known as "Hida families"
- Limits material to elliptic modular curves and the corresponding Shimura curves in order to make the book more accessible to graduate students
- Includes many exercises, examples, and applications that provide motivation for the reader

Contents

1. Non-triviality of Arithmetic Invariants
2. Elliptic Curves and Modular Forms
3. Invariants, Shimura Variety and Hecke Algebra
4. Review of Scheme Theory
5. Geometry of Variety
6. Elliptic and Modular Curves over Rings
7. Modular Curves as Shimura Variety
8. Non-vanishing Modulo \( p \) of Hecke \( L \)-values
9. \( p \)-Adic Hecke \( L \)-functions and their \( \mu \)-invariants
10. Toric Subschemes in a Split Formal Torus
11. Hecke Stable Subvariety and their \( \mu \)-invariants
12. \( p \)-Adic Hecke \( L \)-functions as Shimura Variety
13. Non-vanishing Modulo \( p \) of Hecke \( L \)-values
14. Hecke \( L \)-functions
15. Modularity of \( L \)-functions
16. \( p \)-Adic Automorphic Forms

Fields of interest

Number Theory; Algebraic Geometry

Target groups

Research

Discount group

Professional Non-Medical

A. H. Louie, Ottawa, ON, Canada

The Reflection of Life

Functional Entailment and Imminence in Relational Biology

A. H. Louie's The Reflection of Life: Functional Entailment and Imminence in Relational Biology is a continuation of the exploratory journey in relational biology which began with his 2009 monograph More Than Life Itself: A Synthetic Continuation in Relational Biology. The theme of his first book was 'What is life?'; the theme of this sequel is "How do two life forms interact?" Biology is a subject concerned with organization of relations. Relational biology is the approach that advocates 'function dictates structure', rather than 'structure implies function'. It is mathematics decoded into biological realizations. The book demonstrates some of the powers of the approach of relational biology, and illustrates how pertinent problems in biology can be better addressed this way.

Features

- Presents further developments in the field of relational biology by focusing on the theme "How do two life forms interact?" 
- Advances the field of relational biology from both a mathematical and a biological point-of-view
- Introduces "imminence mappings" which facilitate further investigation of functional entailment in complex relational networks

Contents

Mapping Origins
- From Points to Sets
- Principles of Set-Valued Mappings
- Censusing Independence
- Set-Valued Mappings Redux
- The Logic of Entailment
- The Imminence Mapping
- Imminence of Life
- Imminence in Models
- Connections
- Symbiosis
- Pathophysiology
- Relational Virology
- Therapeutics

Fields of interest

Mathematical and Computational Biology; Functional Analysis; General Algebraic Systems

Target groups

Graduate

Discount group

Professional Non-Medical

Due April 2013

2013. XVIII, 448 p. (Springer Monographs in Mathematics) Hardcover

- $129.00

Due June 2013

2013. Approx. 520 p. Softcover

- approx. $69.95
- ISBN 978-3-0348-0635-0

Due April 2013


- $109.00
A. Meskens, Artesis Hogeschool Antwerpen, Belgium

**Practical mathematics in a commercial metropolis**

**Mathematical life in late 16th century Antwerp**

Describes the development and the ultimate demise of the practice of mathematics in sixteenth century Antwerp. Against the background of the violent history of the Religious Wars the story of the practice of mathematics in Antwerp is told through the lives of two protagonists Michiel Coignet and Peeter Heyns. The book touches on all aspects of practical mathematics from teaching and instrument making to the practice of building fortifications of the practice of navigation.

**Features**
- First study of the social situation of 16th century mathematics teachers and the effects of external influences on their social position
- Lavishly illustrated with archival and iconographic material
- Includes a chapter on a forgotten mathematical practice, winegauging, which led Kepler to solids of revolution and infinitesimals

**Contents**
1 Preface
2 Introduction
3 The Family Coignet
4 Peeter Heyns and the Nymphs of the Laurel Tree
5 The Arithmetic Teacher and his School
6 The Antwerp arithmetic books
7 Winegauging
8 Instrumentmakers
9 The Art of Navigation
10 Mapping the World
11 Looking towards the Stars
12 Ballistics and fortifications
13 Conclusion
Appendices
Index

**Fields of interest**
- History of Science
- History of Mathematical Sciences
- History and Philosophical Foundations of Physics

**Target groups**
- Research

**Discount group**
- Professional Non-Medical

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D. Mitrea, University of Missouri, Columbia, MO; USA
I. Mitrea, Temple University, Philadelphia, PA, USA
M. Mitrea, University of Missouri, Columbia, MO, USA
S. Monniaux, Université Aix-Marseille III, France

**Groupoid Metrization Theory**

**With Applications to Analysis on Quasi-Metric Spaces and Functional Analysis**

The topics in this research monograph are at the interface of several areas of mathematics such as harmonic analysis, functional analysis, analysis on spaces of homogeneous type, topology, and quasi-metric geometry. The presentation is self-contained with complete, detailed proofs, and a large number of examples and counterexamples are provided.

**Features**
- Provides treatment of metrization from a wide, interdisciplinary perspective, with accompanying applications ranging across diverse fields
- Replete with extensive reference material and useful techniques
- Includes cutting-edge results in the field of metrization

**Contents**
1 Introduction
2 Semigroupoids and Groupoids
3 Quantitative Metrization Theory
4 Applications to Analysis on Quasi-Metric Spaces
5 Non-locally Convex Functional Analysis
6 Functional Analysis on Quasi-Pseudonormed Groups
7 References
8 Symbol Index
9 Subject Index
10 Author Index

**Fields of interest**
- Abstract Harmonic Analysis
- Functional Analysis
- Topology

**Target groups**
- Research

**Discount group**
- Professional Non-Medical

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A. Mukherjee, IIT Kharagpur, India
M. Choudhury, Microsoft Research India, Bangalore, India
F. F. Turzi, University of Nice Sophia Antipolis, France
N. Ganguly, IIT Kharagpur, India
B. Mitra, Université Catholique de Louvain, Louvain-la-Neuve, Belgium (Eds)

**Dynamics On and Of Complex Networks, Volume 2**

**Applications to Time-Varying Dynamical Systems**

This self-contained book systematically explores the statistical dynamics on and of complex networks with a special focus on time-varying networks. In the constantly changing modern world, there is an urgent need to understand problems related to systems that dynamically evolve in either structure or function, or both. This work is an attempt to address such problems in the framework of complex networks.

**Features**
- Comprehensive and concise presentation of the current trends in dynamical networks from experts in various disciplines
- Relevant in-depth reviews of important literature giving the reader a clear picture of the major issues and challenges related to this field of research
- Independent research that reports surprising dynamical properties of naturally occurring systems when looked under the lens of complex networks
- A comprehensive glossary of all the essential terms related to dynamical networks that can be easily referenced

**Contents**
Part I: Social and Biological Dynamics
Part II: Information Dynamics
Part III: Theoretical Advancements

**Fields of interest**
- Complex Systems
- Complex Networks
- Communications Engineering, Networks

**Target groups**
- Research

**Discount group**
- Professional Non-Medical

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Due March 2013

2013. XV, 270 p. 137 illus. (Archimedes, Volume 31)
Hardcover
$179.00

Available

2013. XII, 479 p. 1 illus. (Applied and Numerical Harmonic Analysis)
Hardcover
$129.00

Due May 2013

2013. XV, 341 p. 92 illus., 66 in color. (Modeling and Simulation in Science, Engineering and Technology)
$129.00
ISBN 978-1-4614-6728-1

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Birkhäuser
Pluripotential Theory

Cetraro, Italy 2011, Editors: Filippo Bracci, John Erik Fornæss

Scientific editor: F. Bracci, Università di Roma “Tor Vergata”, Italy; J. E. Fornæss, The University of Michigan, Ann Arbor, MI, USA

Pluripotential theory is a very powerful tool in geometry, complex analysis and dynamics. This volume brings together the lectures held at the 2011 CIME session on „pluripotential theory” in Cetraro, Italy. This CIME course focused on complex Monge–Ampère equations, applications in Cetraro, Italy. This CIME course focused on complex Monge–Ampère equations, applications in Cetraro, Italy. This CIME course focused on complex Monge–Ampère equations, applications in Cetraro, Italy. This CIME course focused on complex Monge–Ampère equations, applications in Cetraro, Italy. This CIME course focused on complex Monge–Ampère equations, applications in Cetraro, Italy. This CIME course focused on complex Monge–Ampère equations, applications

Features

- Four self-contained advanced courses
- Written by leading experts in the field materials
- Presented with new proofs
- Many open problems presented

Contents


Fields of interest

Geometry; Algebraic Geometry; Several Complex Variables and Analytic Spaces

Target groups

Research

Discount group

Professional Non-Medical
E. Stormer, University of Oslo, Norway

Positive Linear Maps of Operator Algebras

This volume, setting out the theory of positive maps as it stands today, reflects the rapid growth in this area of mathematics since it was recognized in the 1990s that these applications of C*-algebras are crucial to the study of entanglement in quantum theory. The author, a leading authority on the subject, sets out numerous results previously unpublished in book form. In addition to outlining the properties and structures of positive linear maps of operator algebras into the bounded operators on a Hilbert space, he guides readers through proofs of the Stinespring theorem and its applications to inequalities for positive maps. The text examines the maps’ positivity properties, as well as their associated linear functionals together with their density operators. It features special sections on extremal positive maps and Choi matrices.

Features
► Written by one of the founders of the theory of positive linear maps ► First and only book in the literature devoted entirely to positive maps ► Contains the necessary background to study the operator algebra part of quantum information theory

Contents
Introduction.- 1 Generalities for positive maps.- 2 Jordan algebras and projection maps.- 3 Extremal positive maps.- 4 Choi matrices and dual functionals.- 5 Mapping cones.- 6 Dual cones.- 7 States and positive maps.- 8 Norms of positive maps.- Appendix: A.1 Topologies on B(H).- A.2 Tensor products.- A.3 An extension theorem.- Bibliography.- Index.

Fields of interest
Functional Analysis; Linear and Multilinear Algebras, Matrix Theory; Mathematical Methods in Physics

Target groups
Research

Discount group
Professional Non-Medical

T. Sunada

Topological Crystallography

With a View Towards Discrete Geometric Analysis

Geometry in ancient Greece is said to have originated in the curiosity of mathematicians about the shapes of crystals, with that curiosity culminating in the classification of regular convex polyhedra addressed in the final volume of Euclid’s Elements. Since then, geometry has taken its own path and the study of crystals has not been a central theme in mathematics, with the exception of Kepler’s work on snowflakes. Only in the nineteenth century did mathematics begin to play a role in crystallography as group theory came to be applied to the morphology of crystals. This monograph follows the Greek tradition in seeking beautiful shapes such as regular convex polyhedra.

Features
► Useful for both mathematicians and practical scientists, who know how ideas developed in pure mathematics are applied to a practical problem ► Designed to be as self-contained as possible, so that the reader can start from the scratch and reach the advanced level of the field ► This monograph will give a surprise to the reader since he will discover that a problem in one area leads us into a quite different area of mathematics.

Contents
Preface.List of Symbols-Topological crystals—Introduction—1 Quotient objects 2 Generalities on graphs3 Homology groups of graphs4 Covering graphs5 Topological crystal16 Canonical placement7 Explicit construction8 Miscellany Appendix-Bibliography-Index

Fields of interest
Algebraic Topology; Differential Geometry; Graph Theory

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S. Varadhan, New York University, New York, NY, USA
R. Bhatia, A. Bhatt, K. Parthasarathy, Indian Statistical Institute, New Delhi, India (Eds)

Collected Papers of S.R.S. Varadhan

Volume 1: Limit Theorems, Review Articles.
- Volume 2: PDE, SDE, Diffusions, Random Media.- Volume 3: Large Deviations.- Volume 4: Particle Systems and Their Large Deviations

Volume I includes the introductory material, the papers on limit theorems and review articles. Volume II includes the papers on PDE, SDE, diffusions, and random media. Volume III includes the papers on large deviations. Volume IV includes the papers on particle systems. From the Preface: Srinivasa Varadhan began his research career at the Indian Statistical Institute (ISI), Calcutta, where he started as a graduate student in 1959. His first paper appeared in Sankhya, the Indian Journal of Statistics in 1962. Together with his fellow students V. S. Varadarajan, R. Ranga Rao and K. R. Parthasarathy, Varadhan began the study of probability on topological groups and on Hilbert spaces, and quickly gained an international reputation.

Features
► With contributions by international experts ► Provides a clear overview of the works of Professor Varadhan ► Useful as a self-study guide

Contents

Field of interest
Probability Theory and Stochastic Processes

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A. J. Zaslavski, Technion – Israel Institute of Technology, Haifa, Israel

Structure of Solutions of Variational Problems

Structure of Solutions of Variational Problems is devoted to recent progress made in the studies of the structure of approximate solutions of variational problems considered on subintervals of a real line. Results on properties of approximate solutions which are independent of the length of the interval, for all sufficiently large intervals are presented in a clear manner. Solutions, new approaches, techniques and methods to a number of difficult problems in the calculus of variations are illustrated throughout this book. This book also contains significant results and information about the turnpike property of the variational problems. This well-known property is a general phenomenon which holds for large classes of variational problems. The author examines the following in relation to the turnpike property in individual (non-generic) turnpike results, sufficient and necessary conditions for the turnpike phenomenon as well as in the non-intersection property for extremals of variational problems.

Features
► Looks into the current progress made in the study of the structure of approximate solutions of variational problems ► Establishes a non-intersection property for optimal solutions over infinite horizon ► Launches the strong turnpike property for autonomous variational problems

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