

Yurinsha Book News

Graduate Texts in Mathematics,

Vol. 262: Stroock, D.:
**Essentials of
Integration Theory for Analysis**

458-148

Essentials of Integration Theory for Analysis is a substantial revision of the best-selling Birkhauser title by the same author, *A Concise Introduction to the Theory of Integration*. Highlights of this new textbook for the GTM series include revisions to Chapter 1 which add a section about the rate of convergence of Riemann sums and introduces a discussion of the Euler-MacLauren formula.

In Chapter 2, where Lebesgue's theory is introduced, a construction of the countably additive measure is done with sufficient generality to cover both Lebesgue and Bernoulli measures.

Chapter 3 includes a proof of Lebesgue's differential theorem for all monotone functions and the concluding chapter has been expanded to include a proof of Caratheodory's method for constructing measures and his result is applied to the construction of the Hausdorff measures.

Table of contents: -Preface.-1. The Classical Theory.-2. Measures.-3. Lebesgue Integration.-4. Products of Measures.-5. Changes of Variable.-6. Basic Inequalities and Lebesgue Spaces.-7. Hilbert Space and Elements of Fourier Analysis.-8. The Radon-Nikodym Theorem, Daniell Integration, and Caratheodory's Extension Theorem.

Sep. 2011

244 pp.

9781461411345

7,910.

Springer

<http://www.yurinsha.com>

ホームページは毎月25日更新予定です

No. 458

Aug. 2011

敬理科学 **友 隣 社** 洋書専門

*Graduate Studies in Mathematics,***Vol. 128: Landsberg, J.:**

458-181

**Tensors:
Geometry and Applications**

For classroom use, there is a modern introduction to multilinear algebra and to the geometry and representation theory needed to study tensors, including a large number of exercises. For researchers in the sciences, there is information on tensors in table format for easy reference and a summary of the state of the art in elementary language.

This is the first book containing many classical results regarding tensors. Particular applications treated in the book include the complexity of matrix multiplication, \mathbf{P} versus \mathbf{NP} , signal processing, phylogenetics, and algebraic statistics.

For geometers, there is material on secant varieties, G-varieties, spaces with finitely many orbits and how these objects arise in applications, discussions of numerous open questions in geometry arising in applications, and expositions of advanced topics such as the proof of the Alexander-Hirschowitz theorem and of the Weyman-Kempf method for computing syzygies.

Dec. 2011
9780821869079

438 pp.

9,030.

Vol. 127: Strom, J.:

458-093

Modern Classical Homotopy Theory

Brown's representability theorems show that homology and cohomology are also contained in classical homotopy theory.

This text develops classical homotopy theory from a modern point of view, meaning that the exposition is informed by the theory of model categories and that homotopy limits and colimits play central roles.

The exposition is guided by the principle that it is generally preferable to prove topological results using topology (rather than algebra).

The language and basic theory of homotopy limits and colimits make it possible to penetrate deep into the subject with just the rudiments of algebra.

The text does reach advanced territory, including the Steenrod algebra, Bott periodicity, localization, the Exponent Theorem of Cohen, Moore, and Neisendorfer, and Miller's Theorem on the Sullivan Conjecture.

Jan. 2012
9780821852866

834 pp.

11,590.

*Mathematical Surveys and Monographs,***Vol. 177: Myasnikov, A. /Shpilrain, V. /Ushakov, A.:**

458-083

**Non-Commutative Cryptography and
Complexity of Group-theoretic Problems**

This book is about relations between three different areas of mathematics and theoretical computer science: combinatorial group theory, cryptography, and complexity theory.

It explores how non-commutative (infinite) groups, which are typically studied in combinatorial group theory, can be used in public key cryptography.

It also shows that there is remarkable feedback from cryptography to combinatorial group theory because some of the problems motivated by cryptography appear to be new to group theory, and they open many interesting research avenues within group theory. In particular, a lot of emphasis in the book is put on studying search problems, as compared to decision problems traditionally studied in combinatorial group theory.

Nov. 2011
9780821853603

413 pp.

12,810.

A. M. S.

Mathematical Surveys and Monographs,

Vol. 176: Kloeden, P. /Rasmussen, M.: 458-134
Nonautonomous Dynamical Systems

The theory of nonautonomous dynamical systems in both of its formulations as processes and skew product flows is developed systematically in this book. The focus is on dissipative systems and nonautonomous attractors, in particular the recently introduced concept of pullback attractors. Linearization theory, invariant manifolds, Lyapunov functions, Morse decompositions and bifurcations for nonautonomous systems and set-valued generalizations are also considered as well as applications to numerical approximations, switching systems and synchronization. Parallels with corresponding theories of control and random dynamical systems are briefly sketched. With its clear and systematic exposition, many examples and exercises, as well as its interesting applications, this book can serve as a text at the beginning graduate level. It is also useful for those who wish to begin their own independent research in this rapidly developing area.

Sep. 2011 264 pp. 10,250.
 9780821868713

Contemporary Mathematics,

Vol. 551: Araujo-Gomez, J. /Diarra, B. /Escassut, A. (eds.): 458-104
Advances in Non-Archimedean Analysis

This volume contains papers based on lectures given at the Eleventh International Conference on p-adic Functional Analysis, which was held from July 5-9, 2010, in Clermont-Ferrand, France.

The articles collected here feature recent developments in various areas of non-Archimedean analysis: Hilbert and Banach spaces, finite dimensional spaces, topological vector spaces and operator theory, strict topologies, spaces of continuous functions and of strictly differentiable functions, isomorphisms between Banach functions spaces, and measure and integration.

Other topics discussed in this volume include p-adic differential and q-difference equations, rational and non-Archimedean analytic functions, the spectrum of some algebras of analytic functions, and maximal ideals of the ultrametric corona algebra.

Sep. 2011 280 pp. 458-102
 9780821852910 12,080.

Vol. 550: Barkatou, Y. /Berhanu, S. / 458-104
Meziani, A. /Meziani, R. /Mir, N. (eds.):
Geometric Analysis of

Several Complex Variables and Related Topics

This volume contains the proceedings of the Workshop on Geometric Analysis of Several Complex Variables and Related Topics, which was held from May 10-14, 2010, in Marrakesh, Morocco.

The articles in this volume present current research and future trends in the theory of several complex variables and PDE. Of note are two survey articles, the first presenting recent results on the solvability of complex vector fields with critical points while the second concerns the Lie group structure of the automorphism groups of CR manifolds.

The other articles feature original research in major topics of analysis dealing with analytic and Gevrey regularity, existence of distributional traces, the $\bar{\partial}$ -Neumann operator, automorphisms of hypersurfaces, holomorphic vector bundles, spaces of harmonic forms, and Gysin sequences.

Sep. 2011 196 pp. 8,420.
 9780821852576

A. M. S.

Progress in Mathematics,

Vol. 295: Joseph, A. /Melnikov, A. /Penkov, I. (eds.):
Highlights in Lie Algebraic Methods 458-075

An outgrowth of a two-week summer session at Jacobs University in Bremen, Germany in 2009 ("Structures in Lie Theory, Crystals, Derived Functors, Harish-Chandra Modules, Invariants and Quivers"), this volume consists of expository and research articles that highlight the various Lie algebraic methods used in mathematical research today.

Key topics discussed include spherical varieties, Littelmann Paths and Kac-Moody Lie algebras, finite W-algebras, modular representations and primitive ideals, representation theory of Artin algebras and quivers, Kac-Moody superalgebras, categories of Harish-Chandra modules, cohomological methods, and cluster algebras.

Dec. 2011 230 pp.
 9780817682736 13,190.

Vol. 289: Colombo, F. /Sabadini, I. /Struppa, D.:
Noncommutative Functional Calculus:
Theory and Applications of Slice Hyperholomorphic Functions
 Apr. 2011 222 pp. 9783034801096 14,070.

ANHA: Applied and Numerical Harmonic Analysis

Joyner, D. /Kim, J.-L.: 458-077
Selected Unsolved Problems in
Coding Theory

Using an original mode of presentation and emphasizing the computational nature of the subject, this book explores a number of the unsolved problems that continue to exist in coding theory. A well-established and still highly relevant branch of mathematics, the theory of error-correcting codes is concerned with reliably transmitting data over a 'noisy' channel.

Despite its frequent use in a range of contexts-the first close-up pictures of the surface of Mars, taken by the NASA spacecraft Mariner 9, were transmitted back to Earth using a Reed-Muller code-the subject contains interesting problems that have to date resisted solution by some of the most prominent mathematicians of recent decades.

Nov. 2011 248 pp.
 9780817682552 8,790.

Progress in Nonlinear Differential Equations & Their Applications,

Vol. 82: Ambrosetti, A. /Arcaya, D.: 458-098
An Introduction to

Nonlinear Functional Analysis & Elliptic Problems

An Introduction to Nonlinear Functional Analysis and Elliptic Problems is divided into two parts: the first discusses key results such as the Banach contraction principle, a fixed point theorem for increasing operators, local and global inversion theory, Leray-Schauder degree, critical point theory, and bifurcation theory; the second part shows how these abstract results apply to Dirichlet elliptic boundary value problems.

The exposition is driven by numerous prototype problems and exposes a variety of approaches to solving them. Complete with a preliminary chapter, an appendix that includes further results on weak derivatives, and chapter-by-chapter exercises, this book is a practical text for an introductory course or seminar on nonlinear functional analysis.

Aug. 2011 209 pp.
 9780817681135 8,790.

Birkhauser

Frontiers in Mathematics

Bustamante, J.:

458-112

**Algebraic Approximation:
A Guide to Past and Current Solutions**

This book contains an exposition of several results related with direct and converse theorems in the theory of approximation by algebraic polynomials in a finite interval. In addition, some facts concerning trigonometric approximation that are necessary for motivation and comparisons are included. The selection of papers that are referenced and discussed document some trends in polynomial approximation from the 1950s to the present day.

Table of contents: Preface.- Some notes on trigonometric approximation.- The end points effect.- Looking for new moduli.- Exact estimates and asymptotic.- Construction of special operators.- Bibliography.

Sep. 2011

210 pp.

9783034801935

8,790.

Snygg, J.:

458-088

**A New Approach to Differential Geometry
Using Clifford's Geometric Algebra**

Differential geometry is the study of curvature and calculus of curves and surfaces. Because of an historical accident, the Geometric Algebra devised by William Kingdom Clifford (1845-1879) has been overlooked in favor of the more complicated and less powerful formalism of differential forms and tangent vectors to deal with differential geometry. Fortuitously a student who has completed an undergraduate course in linear algebra is better prepared to deal with the intricacies of Clifford algebra than with the formalism currently used. Clifford algebra enables one to demonstrate a close relation between curvature and certain rotations. This is an advantage both conceptually and computationally-particularly in higher dimensions.

Table of contents: Preface.- Introduction.- Clifford Algebra in Euclidean 3-Space.- Clifford Algebra in Minkowski 4-Space.- Clifford Algebra in Flat n-Space.- Curved Spaces.- The Gauss-Bonnet Formula.- Non-Euclidean (Hyperbolic) Geometry.- Some Extrinsic Geometry in E^n .- Ruled Surfaces Continued.- Lines of Curvature.- Minimal Surfaces.- Some General Relativity.- Matrix Representation of a Clifford Algebra.- Construction of Coordinate Dirac Matrices.- A Few Terms of the Taylor's Series for the Urd?-Copernican Model for the Outer Planets.- A Few Terms of the Taylor's Series for Kepler's Orbits.- References.- Index.

Dec. 2011

465 pp.

9780817682828

10,020.

Torres Del Castillo, G.:

458-190

**Differentiable Manifolds:
A Theoretical Physics Approach**

The work's first three chapters introduce the basic concepts of the theory, such as differentiable maps, tangent vectors, vector and tensor fields, differential forms, local one-parameter groups of diffeomorphisms, and Lie derivatives. These tools are subsequently employed in the study of differential equations (Chapter 4), connections (Chapter 5), Riemannian manifolds (Chapter 6), Lie groups (Chapter 7), and Hamiltonian mechanics (Chapter 8). Throughout, the book contains examples, worked out in detail, as well as exercises intended to show how the formalism is applied to actual computations and to emphasize the connections among various areas of mathematics.

Dec. 2011

266 pp.

9780817682705

7,910.

Birkhauser

Encyclopedia of Mathematics and its Applications,

Vol. 144: Caspard, N. /Leclerc, B. /Monjardet, B.: 458-045

**Finite Ordered Sets:
Concepts, Results and Use**

Ordered sets are ubiquitous in mathematics and have significant applications in computer science, statistics, biology and the social sciences.

As the first book to deal exclusively with finite ordered sets, this book will be welcomed by graduate students and researchers in all of these areas.

Beginning with definitions of key concepts and fundamental results, the authors then present applications of these structures in fields such as preference modelling and aggregation, operational research and management, cluster and concept analysis, and data mining.

Feb. 2012

330 pp.

9781107013698

9,990.

AIMS Library of Mathematical Sciences

Schroers, B.:

458-145

Ordinary Differential Equations

Ordinary Differential Equations introduces key concepts and techniques in the field and shows how they are used in current mathematical research and modelling. It deals specifically with initial value problems,

which play a fundamental role in a wide range of scientific disciplines, including mathematics, physics, computer science, statistics and biology.

This practical book is ideal for students and beginning researchers working in any of these fields who need to understand the area of ordinary differential equations in a short time.

Oct. 2011

128 pp.

9781107697492

2,880.

Cambridge Studies in Advanced Mathematics,

Vol. 49: Stanley, R.:

458-090/091

Enumerative Combinatorics, 2nd ed.

Richard Stanley's two-volume basic introduction to enumerative combinatorics has become the standard guide to the topic for students and experts alike.

This thoroughly revised second edition of Volume 1 includes ten new sections and more than 300 new exercises, most with solutions, reflecting numerous new developments since the publication of the first edition in 1986.

The material in Volume 1 was chosen to cover those parts of enumerative combinatorics of greatest applicability and with the most important connections with other areas of mathematics.

The four chapters are devoted to an introduction to enumeration, sieve methods, partially ordered sets, and rational generating functions.

Much of the material is related to generating functions, a fundamental tool in enumerative combinatorics.

In this new edition, the author brings the coverage up to date and includes a wide variety of additional applications and examples, as well as updated and expanded chapter bibliographies. Many of the less difficult new exercises have no solutions so that they can more easily be assigned to students.

The material on P-partitions has been rearranged and generalized; the treatment of permutation statistics has been greatly enlarged; and there are also new sections on q-analogues of permutations, hyperplane arrangements, the cd-index, promotion and evacuation, and differential posets.

Oct. 2011

550 pp.

9781107015425 /9781107602625

13,200./5,760. (Paper ed.)

Cambridge

*Cambridge Tracts in Mathematics,***Vol. 190: Chu, C.-H.:**

458-116

Jordan Structures in Geometry and Analysis

Jordan theory has developed rapidly in the last three decades, but very few books describe its diverse applications.

Here, the author discusses some recent advances of Jordan theory in differential geometry, complex and functional analysis, with the aid of numerous examples and concise historical notes.

These include: the connection between Jordan and Lie theory via the Tits-Kantor-Koecher construction of Lie algebras; a Jordan algebraic approach to infinite dimensional symmetric manifolds including Riemannian symmetric spaces; the one-to-one correspondence between bounded symmetric domains and JB^* -triples; and applications of Jordan methods in complex function theory.

Jan. 2012

300 pp.

9781107016170

9,600.

*London Mathematical Society Lecture Note Series,***Vol. 394: Bielawski, R. /Houston, K. /Speight, M. (eds.):
Variational Problems in Differential Geometry**

The field of geometric variational problems is fast-moving and influential. These problems interact with many other areas of mathematics and have strong relevance to the study of integrable systems, mathematical physics and PDEs. The workshop 'Variational Problems in Differential Geometry' held in 2009 at the University of Leeds brought together internationally respected researchers from many different areas of the field.

Topics discussed included recent developments in harmonic maps and morphisms, minimal and CMC surfaces, extremal Kahler metrics, the Yamabe functional, Hamiltonian variational problems and topics related to gauge theory and to the Ricci flow.

These articles reflect the whole spectrum of the subject and cover not only current results, but also the varied methods and techniques used in attacking variational problems. With a mix of original and expository papers, this volume forms a valuable reference for more experienced researchers and an ideal introduction for graduate students and postdoctoral researchers.

Oct. 2011

175 pp.

458-163

9780521282741

7,480.

Vol. 393: Coates, J. /Kim, M. /**Pop, F. /Saidi, M. /Schneider, P. (eds.):
Non-Abelian Fundamental Groups and
Iwasawa Theory**

458-065

Number theory currently has at least three different perspectives on non-abelian phenomena: the Langlands programme, non-commutative Iwasawa theory and anabelian geometry. In the second half of 2009, experts from each of these three areas gathered at the Isaac Newton Institute in Cambridge to explain the latest advances in their research and to investigate possible avenues of future investigation and collaboration.

For those in attendance, the overwhelming impression was that number theory is going through a tumultuous period of theory-building and experimentation analogous to the late 19th century, when many different special reciprocity laws of abelian class field theory were formulated before knowledge of the Artin-Takagi theory.

Jan. 2012

200 pp.

9781107648852

7,150.

Cambridge

Consani, C. /Connes, A.(eds.): 458-066

**Noncommutative Geometry,
Arithmetic and Related Topics:**

Proceedings of the 21st Meeting of the Japan-U.S. Mathematics Institute
This valuable collection of essays by some of the world's leading scholars in
mathematics presents innovative and field-defining work at the intersection
of noncommutative geometry and number theory.

The interplay between these two fields centers on the study of the rich
structure of the adèle class space in noncommutative geometry,
an important geometric space known to support and provide a geometric
interpretation of the Riemann Weil explicit formulas in number theory.

This space and the corresponding quantum statistical dynamical system are
fundamental structures in the field of noncommutative geometry.

Several papers in this volume focus on the "field with one element" subject, a
new topic in arithmetic geometry; others highlight recent developments in
noncommutative geometry, illustrating unexpected connections with tropical
geometry, idempotent analysis, and the theory of hyper-structures in algebra.

Jan. 2012 312 pp. 10,370.
9781421403526

Johns Hopkins*Springer Monographs in Mathematics*

Barbu, V. /Precupanu, T.: 2nd Revised and Enlarged ed.

Convexity and Optimization in Banach Spaces

This edition has been updated to include new results pertaining to advanced
concepts of subdifferential for convex functions and new duality results
in convex programming.

The last chapter, concerned with convex control problems, has been rewritten
and completed with new research concerning boundary control systems,
the dynamic programming equations in optimal control theory and periodic
optimal control problems. Finally, the structure of the book has been modified
to highlight the most recent progression in the field including fundamental
results on the theory of infinite-dimensional convex analysis and includes
helpful bibliographical notes at the end of each chapter.

Oct. 2011 353 pp. 458-103
9789400722460 15,830.

Ghergu, M. /Radulescu, V.: 458-122

Nonlinear PDEs:**Mathematical Models in Biology, Chemistry & Population Genetics**

The emphasis throughout the present volume is on the practical application
of theoretical mathematical models helping to unravel the underlying
mechanisms involved in processes from mathematical physics and biosciences.
It has been conceived as a unique collection of abstract methods dealing
especially with nonlinear partial differential equation that are applied to
understand concrete processes involving some important applications related
to phenomena such as: boundary layer phenomena for viscous fluids,
population dynamics, dead core phenomena; etc. It addresses researchers and
post-graduate students working at the interplay between mathematics and
other fields of science and technology and is a comprehensive introduction to
the theory of nonlinear partial differential equations and its main principles
also presents their real-life applications in various contexts: mathematical
physics, chemistry, mathematical biology, and population genetics.

Sep. 2011 392 pp. 15,830.
9783642226632

Springer

Prestel, A. /Delzell, C.:

458-050

Mathematical Logic and Model Theory

Mathematical Logic and Model Theory: A Brief Introduction offers a streamlined yet easy-to-read introduction to mathematical logic and basic model theory. It presents, in a self-contained manner, the essential aspects of model theory needed to understand model theoretic algebra. As a profound application of model theory in algebra, the last part of this book develops a complete proof of Ax and Kochen's work on Artin's conjecture about Diophantine properties of p-adic number fields.

Aug. 2011

193 pp.

9781447121756

8,790.

Hindry, M.:

458-073

Arithmetics

Number theory is a branch of mathematics which draws its vitality from a rich historical background. It is also traditionally nourished through interactions with other areas of research, such as algebra, algebraic geometry, topology, complex analysis and harmonic analysis.

More recently, it has made a spectacular appearance in the field of theoretical computer science and in questions of communication, cryptography and error-correcting codes.

Providing an elementary introduction to the central topics in number theory, this book spans multiple areas of research.

Nov. 2011

321 pp.

9781447121305

10,550.

Grosse-Erdmann, K. /Peris ManguillotA.:

458-126

Linear Chaos

It is commonly believed that chaos is linked to non-linearity, however many (even quite natural) linear dynamical systems exhibit chaotic behavior. The study of these systems is a young and remarkably active field of research, which has seen many landmark results over the past two decades. Linear dynamics lies at the crossroads of several areas of mathematics including operator theory, complex analysis, ergodic theory and partial differential equations.

At the same time its basic ideas can be easily understood by a wide audience. Written by two renowned specialists, Linear Chaos provides a welcome introduction to this theory.

Sep. 2011

385 pp.

9781447121695

8,790.

Jost, J.:

Riemannian Geometry & Geometric Analysis, 6th ed.

The previous edition introduced and explained the ideas of the parabolic methods that had found a spectacular success in the work of Perelman at the examples of closed geodesics and harmonic forms. It also discussed further examples of geometric variational problems from quantum field theory, another source of profound new ideas and methods in geometry.

The 6th edition includes a systematic treatment of eigenvalues of Riemannian manifolds and several other additions.

Also, the entire material has been reorganized in order to improve the coherence of the book.

Aug. 2011

612 pp.

9783642212970

11,430.

Springer

Joswig, M.: 458-076

Essentials of Tropical Combinatorics

The goal of this book is to explain, at the graduate student level, how tropical geometry can be accessed via geometric combinatorics. This way the book offers a viable path to a topic of very active research. At the same time the reader learns how a number of seemingly unrelated combinatorial results fall into place, once viewed through the "tropical lens". No attempt is made to cover the entire field of tropical geometry, which has been evolving too rapidly anyway to be covered by a book so small.

Apr. 2012 180 pp. 7,030.
9781441983657

Springer Proceedings in Mathematics,

Vol. 9: Blomer, V. /Mihailescu, P. (eds.): 458-060

**Contributions in Analytic & Algebraic Number Theory:
Festschrift In Honor of S. J. Patterson**

This book is a collection of surveys and original work from experts in the fields of algebraic number theory, analytic number theory, harmonic analysis, and hyperbolic geometry. A portion of the collected contributions were developed from lectures presented at the "Patterson 60++ International Conference on the Occasion of the 60th Birthday of Samuel J. Patterson," held at the University of Gottingen, July 27-29, 2009.

Many of the included chapters were contributed by invited participants. This volume presents and investigates the most recent developments in various key topics in analytic number theory and several related areas of mathematics.

Nov. 2011 284 pp. 15,830.
9781461412182

Developments in Mathematics,

Vol. 24: Kakol, J. /Kubis, W. /Lopez-Pellicer, M.: 458-133

**Descriptive Topology in
Selected Topics of Functional Analysis**

Descriptive Topology in Selected Topics of Functional Analysis is a self-contained volume that applies recent developments and classical results in descriptive topology to study the classes of infinite-dimensional topological vector spaces that appear in functional analysis.

Such spaces include Frechet spaces, LF-spaces and their duals, and the space of continuous real-valued functions $C(X)$ on a completely regular Hausdorff space X , to name a few.

Nov. 2011 482 pp. 21,110.
9781461405283

Applied Mathematical Sciences,

Vol. 180: Schuss, Z.: 458-146

Nonlinear Filtering and Optimal Phase Tracking

This book offers an analytical rather than measure-theoretical approach to the derivation of the partial differential equations of nonlinear filtering theory. The basis for this approach is the discrete numerical scheme used in Monte-Carlo simulations of stochastic differential equations and Wiener's associated path integral representation of the transition probability density.

July 2011 400 pp. 10,020.
9781461404866

Springer

Series on Number Theory and Its Applications,

Hamahata Yoshinori /Ichikawa Takashi / 458-072

Murase Atsushi /Sugano Takashi (eds.):

Geometry and Analysis of

Automorphic Forms of Several Variables:Proceedings of the Int'l Symposium in honor of Takayuki Oda
on the Occasion of His 60th Birthday, The University of Tokyo, 2009

This volume contains contributions of principal speakers of the symposium on geometry and analysis of automorphic forms of several variables, held in September 2009 at Tokyo, Japan, in honor of Takayuki Oda's 60th birthday. It presents both research and survey articles in the fields that are the main themes of his work.

The volume may serve as a guide to developing areas as well as a resource for researchers who seek a broader view and for students who are beginning to explore automorphic form.

Sep. 2011

320 pp.

9789814355599

14,400.

Li, H.:

Grobner Bases in Ring Theory

458-078

This monograph strives to introduce a solid foundation on the usage of Grobner bases in ring theory by focusing on noncommutative associative algebras defined by relations over a field K .

It also reveals the intrinsic structural properties of Grobner bases, presents a constructive PBW theory in a quite extensive context and, along the routes built via the PBW theory, the book demonstrates novel methods of using Grobner bases in determining and recognizing many more structural properties of algebras, such as the Gelfand-Kirillov dimension, Noetherianity, (semi-)primeness, PI-property, finiteness of global homological dimension, Hilbert series, (non-)homogeneous p -Koszulity, PBW-deformation, and regular central extension.

Aug. 2011

295 pp.

9789814365130

11,590.

Wang, B. /Huo, Z. /Hao, C. /Guo, Z.:

458-155

**Harmonic Analysis Method for
Nonlinear Evolution Equations, I**

This monograph provides a comprehensive overview on a class of nonlinear evolution equations, such as nonlinear Schrodinger equation, nonlinear Klein-Gordon equation, KdV equation as well as Navier-Stokes equations and Boltzmann equation.

The global wellposedness to the Cauchy problem for those equations is systematically studied by using the harmonic analysis methods.

Sep. 2011

300 pp.

9789814360739

11,960.

Vermani, L. /Vermani, S.:

A Course in Discrete Mathematical Structures

This book provides a broad introduction to some of the most fascinating and beautiful areas of Discrete Mathematical Structures.

It starts with a chapter on sets, before providing examples in logic, and a presentation on the Principal of Mathematical Introduction.

Computational techniques are also provided, as well as a study on elementary properties of graphs, trees and lattices.

458-261/262

Aug. 2011

500 pp.

9781848166967 /9781848167070

14,640./7,320. (Paper ed.)

World Scientific Pub.

*Advanced Lectures in Mathematics,***Vol. 18: Ji, L.:** 458-131**Geometry and Analysis, No. 2**

Presented herein are parts 3 and 4 of a collection of substantial papers presented by distinguished speakers at the conference "Geometric Analysis: Present and Future," held at Harvard University in 2008.

Among the speakers were Edward Witten, Yum-Tong Siu, Richard Hamilton, Nigel Hitchin, Blaine Lawson, Andrew Strominger, Cumrun Vafa, Wilfried Schmid, Victor Guillemin, Ngaiming Mok, and Demetrios Christodoulou.

Also included is an overview of the works of Shing-Tung Yau.

This volume serves well as both a reference and up-to-date summary of geometric analysis and its applications to many different areas of mathematics.

July 2011

563 pp.

9781571462251

10,370.

Vol. 17: Ji, L.:**Geometry and Analysis, No. 1**

458-130

July 2011

542 pp.

9781571462244

10,370.

Vol. 16: Ji, L. /Yau, S.-T. (eds.):**Transformation Groups and Moduli Spaces of Curves**

458-074

Transformation groups have played a fundamental role in many areas of mathematics such as differential geometry, geometric topology, algebraic topology, algebraic geometry, and number theory. One of the basic reasons for their importance is that symmetries are described by groups. Quotients of smooth manifolds by group actions are usually not smooth manifolds.

On the other hand, if the actions of the groups are proper, then the quotients are orbifolds. An important example is given by the action of the mapping class groups on Teichmüller spaces: The quotients give the moduli spaces of Riemann surfaces (or algebraic curves) and are orbifolds.

This volume consists of expanded lecture notes from two summer schools given in 2008: "Transformation Groups and Orbifolds" and "Geometry of Teichmüller Spaces and Moduli Spaces."

July 2011

299 pp.

9781571462237

9,150.

**Clozel, L. /Harris, M. /Labesse, J.-P. /Ngo, V.-C. (eds.):
On the Stabilization of the Trace Formula**

This is the first volume of a projected series of two or three collections of mainly expository articles on the arithmetic theory of automorphic forms. The books are intended primarily for two groups of readers.

The first group is interested in the structure of automorphic forms on reductive groups over number fields, and specifically in qualitative information about the multiplicities of automorphic representations.

The second group is interested in the problem of classifying l -adic representations of Galois groups of number fields.

458-064

Langlands' conjectures elaborate on the notion that these two problems overlap to a considerable degree.

The goal of this series of books is to gather into one place much of the evidence that this is the case, and to present it clearly and succinctly enough so that both groups of readers are not only convinced by the evidence but can pass with minimal effort between the two points of view.

June 2011

527 pp.

9781571462275

12,200.

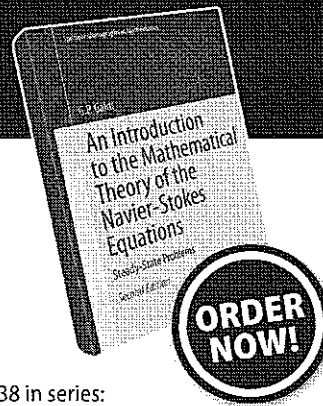
International Press

An Introduction to the Mathematical Theory of the Navier-Stokes Equations

Steady-State Problems

Series:
Springer Monographs
in Mathematics

G.P. Galdi



Originally published as volume 38 in series:
Springer Tracts in Natural Philosophy
2nd ed., 2011, XII, 1018 p. 1 illus., Hardcover,
ISBN 978-0-387-09619-3 ► EUR 114.95

About this book: _____

- Chapter and summary sections included.
- Exercises at the ends of the chapters
- Two new chapters have been added

This book is the new edition of the original two volume book, under the same title, published in 1994.

In this new edition, the two volumes have merged into one and two more chapters on steady generalized osseen flow in exterior domains and steady Navier–Stokes flow in three-dimensional exterior domains have been added. Most of the proofs given in the previous edition were also updated.

詳細は ► <http://www.springer.com> をご覧ください

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