Yurinsha Book News

Cambridge Studies in Advanced Mathematics,

Vol. 179: Nikolski, N.:
Hardy Spaces

No. 516-133

The theory of Hardy spaces is a cornerstone of modern analysis. It combines techniques from functional analysis, the theory of analytic functions and Lesbesgue integration to create a powerful tool for many applications, pure and applied, from signal processing and Fourier analysis to maximum modulus principles and the Riemann zeta function. This book, aimed at beginning graduate students, introduces and develops the classical results on Hardy spaces and applies them to fundamental concrete problems in analysis. The results are illustrated with numerous solved exercises that also introduce subsidiary topics and recent developments. The reader's understanding of the current state of the field, as well as its history, are further aided by engaging accounts of important contributors and by the surveys of recent advances (with commented reference lists) that end each chapter. Such broad coverage makes this book the ideal source on Hardy spaces.

Feb. 2019 250 pp.
9781107184541 11,250.

Vol. 177: Peterson,E.
Formal Geometry and Bordism Operations
Dec. 2018 421 pp. 9781108428033 14,190.

Cambridge

http://www.yurinsha.com
ホームページは毎月1日が更新予定日です

No.516 Nov.- Dec. 2018

数理科学 **友 隣 社** 洋書専門

在庫書籍情報
ご提供のお知らせ

お客様各位

小社では
お客様のご希望の内容にて
リアルタイムの
在庫書籍 情報を
エクセル形式の添付ファイルにて
お送りいたします

併せましてご希望により、
シリーズ図書リスト、
ブックニュース、 各号掲載データも
エクセルファイルにて
お送りいたします。

小社ホームページ
「在庫目録オンデマンド」より
お申し込みください。

皆様のご利用、
ご注文をお待ち申し上げます。

(株) 友 隣 社

Yackel, C. /belcastro, s.-m. (eds.):
Figuring Fibers No. 516-024

Pick up this book and dive into one of eight chapters relating mathematics to fiber arts! Amazing exposition transports any interested person on a mathematical exploration that is rigorous enough to capture the hearts of mathematicians. The zenith of creativity is achieved as readers are led to knit, crochet, quilt, or sew a project specifically designed to illuminate the mathematics through its physical realization.
The beautiful finished pieces provide a visual understanding of the mathematics that can be shared with those who view them.
If you love mathematics or fiber arts, this book is for you!

Dec. 2018 232 pp.
9781470429317 6,770.

Student Mathematical Library,

Vol. 87: **Katz, M. /Reimann, J.:** No. 516-032
An Introduction to Ramsey Theory

This book takes the reader on a journey through Ramsey theory, from graph theory and combinatorics to set theory to logic and metamathematics. Written in an informal style with few requisites, it develops two basic principles of Ramsey theory: many combinatorial properties persist under partitions, but to witness this persistence, one has to start with very large objects.

Nov. 2018 207 pp.
9781470442903 8,810.

Pure and Applied Undergraduate Texts,

Vol. 33: **Osgood, B.:** No. 516-135
Lectures on the Fourier Transform and Its Applications

This book is derived from lecture notes for a course on Fourier analysis for engineering and science students at the advanced undergraduate or beginning graduate level.
Beyond teaching specific topics and techniques - all of which are important in many areas of engineering and science - the author's goal is to help engineering and science students cultivate more advanced mathematical know-how and increase confidence in learning and using mathematics, as well as appreciate the coherence of the subject.

Mar. 2019 702 pp.
9781470441913 19,480.

IAS/Park City Mathematics Series,

Vol. 25: **Mahoney, M. /Duchi, J. /Gilbert, A. (eds.):**
The Mathematics of Data No. 516-233

This book gives an introduction to the mathematical methods that form the foundations of machine learning and data science, presented by leading experts in computer science, statistics, and applied mathematics.
Although the chapters can be read independently, they are designed to be read together as they lay out algorithmic, statistical, and numerical approaches in diverse but complementary ways.
This book can be used both as a text for advanced undergraduate and beginning graduate courses, and as a survey for researchers interested in understanding how applied mathematics broadly defined is being used in data science.
It will appeal to anyone interested in the interdisciplinary foundations of machine learning and data science.

Dec. 2018 325 pp.
9781470435752 17,610.

A. M. S.

Graduate Studies in Mathematics,

Vol. 196: Stynes, M. /Stynes, D. (eds.): No. 516-245

Convection-Diffusion Problems:
An Introduction to Their Analysis and Numerical Solution

Many physical problems involve diffusive and convective processes.
When diffusion dominates convection, standard numerical methods work satisfactorily. But when convection dominates diffusion, the standard methods become unstable, and special techniques are needed to compute accurate numerical approximations of the unknown solution.
This convection-dominated regime is the focus of the book.
After discussing at length the nature of solutions to convection-dominated convection-diffusion problems, the authors motivate and design numerical methods that are particularly suited to this class of problems.
At first they examine finite-difference methods for two-point boundary value problems, as their analysis requires little theoretical background.
Upwinding, artificial diffusion, uniformly convergent methods, and Shishkin meshes are some of the topics presented.
Throughout, the authors are concerned with the accuracy of solutions when the diffusion coefficient is close to zero.

Dec. 2018 156 pp.
9781470448684 14,060.

Vol. 195: Beck, M. /Sanyal, R.: No. 516-025

Combinatorial Reciprocity Theory:
An Invitation to Enumerative Geometric Combinatorics

Combinatorial reciprocity is a very interesting phenomenon, which can be described as follows: A polynomial, whose values at positive integers count combinatorial objects of some sort, may give the number of combinatorial objects of a different sort when evaluated at negative integers (and suitably normalized).
Such combinatorial reciprocity theorems occur in connections with graphs, partially ordered sets, polyhedra, and more.
Using the combinatorial reciprocity theorems as a leitmotif, this book unfolds central ideas and techniques in enumerative and geometric combinatorics.
Written in a friendly writing style, this is an accessible graduate textbook with almost 300 exercises, numerous illustrations, and pointers to the research literature.

Dec. 2018 314 pp.
9781470422004 12,360.

Vol. 194: Sullivant, S.: No. 516-086

Algebraic Statistics

Algebraic statistics uses tools from algebraic geometry, commutative algebra, combinatorics, and their computational sides to address problems in statistics and its applications.
The starting point for this connection is the observation that many statistical models are semialgebraic sets.
The algebra/statistics connection is now over twenty years old, and this book presents the first broad introductory treatment of the subject.
Along with background material in probability, algebra, and statistics, this book covers a range of topics in algebraic statistics including algebraic exponential families, likelihood inference, Fisher's exact test, bounds on entries of contingency tables, design of experiments, identifiability of hidden variable models, phylogenetic models, and model selection.

Dec. 2018 490 pp.
9781470435172 14,060.

A. M. S.

Mathematical Surveys and Monographs,

Vol. 235: **Ammari, H. /Fitzpatrick, B. / Kang, H. /Ruiz, M. /Yu, S. /Zhang, H.: Mathematical and Computational Methods in Photonics and Phononics** No. 516-091

An emphasis is placed on analyzing sub-wavelength resonators, super-focusing and super-resolution of electromagnetic and acoustic waves, photonic and phononic crystals, electromagnetic cloaking, and electromagnetic and elastic metamaterials and metasurfaces.
Throughout this book, the authors demonstrate the power of layer potential techniques for solving challenging problems in photonics and phononics when they are combined with asymptotic analysis.
This book might be of interest to researchers and graduate students working in the fields of applied and computational mathematics, partial differential equations, electromagnetic theory, elasticity, integral equations, and inverse and optimal design problems in photonics and phononics.

Oct. 2018 509 pp.
9781470448004 22,700.

Vol. 234: **Bogachev, V.: Weak Convergence of Measures** No. 516-186

This book provides a thorough exposition of the main concepts and results related to various types of convergence of measures arising in measu6e theory, probability theory, functional analysis, partial differential equations, mathematical physics, and other theoretical and applied fields.
Particular attention is given to weak convergence of measures.
The principal material is oriented toward a broad circle of readers dealing with convergence in distribution of random variables and weak convergence of measures.
The book contains the necessary background from measure theory and functional analysis.
Large complementary sections aimed at researchers present the most important recent achievements.

Nov. 2018 286 pp.
9781470447380 20,510.

Proceedings of Symposia in Applied Mathematics,

Vol. 75: **Damron, M. /Rassoul-Agha, F. / Seppalainen, T. (eds.): Random Growth Models** No. 516-193

The study of random growth models began in probability theory about 50 years ago, and today this area occupies a central place in the subject.
The considerable challenges posed by these models have spurred the development of innovative probability theory and opened up connections with several other parts of mathematics, such as partial differential equations, integrable systems, and combinatorics. These models also have applications to fields such as computer science, biology, and physics.
This volume is based on lectures delivered at the 2017 AMS Short Course "Random Growth Models" held 2017 in Atlanta, GA.
The articles in this book give an introduction to the most-studied models; namely, first- and last-passage percolation, the Eden model of cell growth, and particle systems, focusing on the main research questions and leading up to the celebrated Kardar-Parisi-Zhang equation.

Oct. 2018 256 pp.
9781470435530 18,490.

A. M. S.

Proceedings of Symposia in Pure Mathematics

Vol. 100: **Melissa Liu, C.-C. /Mulase, M. (eds.):** No. 516-078
Topological Recursion and Its Influence in Analysis, Geometry, and Topology

The papers contained in the volume present a snapshot of rapid and rich developments in the emerging research field known as topological recursion. It has its origin around 2004 in random matrix theory and also in Mirzakhani's work on the volume of moduli spaces of hyperbolic surfaces. Topological recursion has played a fundamental role in connecting seemingly unrelated areas of mathematics such as matrix models, enumeration of Hurwitz numbers and Grothendieck's dessins d'enfants, Gromov-Witten invariants, the A-polynomials and colored polynomial invariants of knots, WKB analysis, and quantization of Hitchin moduli spaces.
In addition to establishing these topics, the volume includes survey papers on the most recent key accomplishments: discovery of the unexpected relation to semi-simple cohomological field theories and a solution to the remodeling conjecture.
It also provides a glimpse into the future research direction; for example, connections with the Airy structures, modular functors, Hurwitz-Frobenius manifolds, and ELSV-type formulas.

Dec. 2018 549 pp.
9781470435417 22,520.

Translations of Mathematical Monographs,

Vol. 247: **Marchenko, V. /Slavin, V.:** No. 516-235
Inverse Problems in the Theory of Small Oscillations

This book treats inverse problems in the theory of small oscillations of systems with finitely many degrees of freedom, which requires finding the potential energy of a system from the observations of its oscillations. Since oscillations are small, the potential energy is given by a positive definite quadratic form whose matrix is called the matrix of potential energy. Hence, the problem is to find a matrix belonging to the class of all positive definite matrices.
This is the main difference between inverse problems studied in this book and the inverse problems for discrete analogues of the Schrodinger operators, where only the class of tridiagonal Hermitian matrices are considered.

Dec. 2018 176 pp.
9781470448905 21,340.

Tata Institute of Fundamental Research Lectures on Math. and Physics,

Vol. 19: **Srinivas, V. /Roushon, S. /Rao, R. / Parameswaran, A. /Krishna, A. (eds.):** No. 516-085
K-Theory

Several branches of K-theory, like algebraic cycles, triangulated categories of motives, motivic cohomology, motivic homotopy theory, Chow groups of varieties, Euler class theory, equivariant K-theory as well as classical K-theory have developed considerably in recent years, giving rise to newer directions to the subject as well as proving results of "classical" interest.
The colloquium brought together experts in these various branches and their talks covered this wide spectrum, highlighting the interconnections and giving a better perspective of the whole subject area.

Nov. 2018 400 pp.
9789386279743 33,870.

A. M. S.

Progress in Mathematics,

Vol. 326: **Kac, V. /Popov, V. (eds.):** No. 516-068

Lie Groups, Geometry, and Representation Theory: In Honor of Bertram Kostant

Kostant's fundamental work in all of these areas has provided deep new insights and connections, and has created new fields of research.
This volume features the only published articles of important recent results of the contributors with full details of their proofs.
Key topics include:
*Poisson structures and potentials (A. Alekseev, A. Berenstein, B. Hoffman) *Vertex algebras (T. Arakawa, K. Kawasetsu) *Modular irreducible representations of semisimple Lie algebras (R. Bezrukavnikov, I. Losev) *Asymptotic Hecke algebras (A. Braverman, D. Kazhdan) *Tensor categories and quantum groups (A. Davydov, P. Etingof, D. Nikshych) *Nil-Hecke algebras and Whittaker D-modules (V. Ginzburg) *Toeplitz operators (V. Guillemin, A. Uribe, Z. Wang) *Kashiwara crystals (A. Joseph) *Characters of highest weight modules (V. Kac, M. Wakimoto) *Alcove polytopes (T. Lam, A. Postnikov) *Representation theory of quantized Gieseker varieties (I. Losev) *Dirac operator and equivariant index (P.-E. Paradan, M. Vergne) *Modality of representations and geometry of θ-groups (V. L. Popov) *Distributions on homogeneous spaces (N. Ressayre) *Reduction of orthogonal representations (J.-P. Serre)

Nov. 2018 538 pp.
9783030021900 21,780.

Compact Textbooks in Mathematics

Wang, A.: No. 516-149

Lecture Notes in Real Analysis

This compact textbook is a collection of the author's lecture notes for a two-semester graduate-level real analysis course.
While the material covered is standard, the author's approach is unique in that it combines elements from both Royden's and Folland's classic texts to provide a more concise and intuitive presentation.
Illustrations, examples, and exercises are included that present Lebesgue integrals, measure theory, and topological spaces in an original and more accessible way, making difficult concepts easier for students to understand.

Oct. 2018 200 pp.
9783319989556 8,910.

Trends in Mathematics,

Vol. 9: **Alberich-Carraminana, M. / Galindo, C. /Kuronya, A. /Roe, J. (eds.):** No. 516-039

Extended Abstracts February 2016: Positivity and Valuations

They include brief research articles reporting new results, descriptions of preliminary work or open problems, and the outcome of work in groups initiated during the workshop.
The general subject is the application of valuation theory to positivity questions in algebraic geometry.
The topics covered range from purely algebraic problems like finite generation of semigroups and algebras defined by valuations, and properties of the associated Poincare series, to more geometric questions like resolution of singularities and properties of Newton-Okounkov bodies, linked with non-archimedean geometry and tropical geometry.

Nov. 2018 118 pp.
9783030000264 13,860.

Birkhauser

Chapman & Hall/CRC Research Notes in Mathematics,

Guenther, R. /Lee, J.: No. 516-222

Sturm-Liouville Problems: Theory and Numerical Implementation

Sturm-Liouville problems arise naturally in solving technical problems in engineering, physics, and more recently in biology and the social sciences. These problems lead to eigenvalue problems for ordinary and partial differential equations.
This book addresses, in a unified way, the key issues that must be faced in science and engineering applications when separation of variables, variational methods, or other considerations lead to Sturm-Liouville eigenvalue problems and boundary value problems.

Oct. 2018 406 pp.
9781138345430 24,970.

Textbooks in Mathematics

Chahal, J.: No. 516-046

Fundamentals of Linear Algebra

This Book is like no other book on the subject.
By following a natural and unified approach to the subject it has, in less than 250 pages, achieved a more complete coverage of the subject than books with more than twice as many pages.
For example, the textbooks in use in the U.S. prove the existence of a basis only for finite dimensional vector spaces.
This book proves it for any given vector space.

Dec. 2018 272 pp.
9781138590502 22,500.

Chapman & Hall/C R C Press

Surveys in Differential Geometry,

Vol. 22: **F Cao, H.-D. (ed.):** No. 516-154

Celebrating the 50th Anniversary of the Journal of Differential Geometry

This volume presents several of those papers, which include:
Denis Auroux on speculations on homological mirror symmetry for hypersurfaces in \mathbb{C}^n;
Frances Kirwan on variation of non-reductive geometric invariant theory;
Camillo De Lellis on the Onsager theorem;
Simon Donaldson's remarks on G_2-manifolds with boundary;
Daniel Freed on equivariant Chern-Weil forms and determinant lines;
Kenji Fukaya on construction of Kuranishi structures on the moduli spaces of pseudo-holomorphic disks;
Larry Guth on recent progress in quantitative topology;
Blain Lawson on Lagrangian potential theory and a Lagrangian equation of Monge-Ampere type;
Alena Pirutka on intersections of three-quadrics in \mathbb{P}^7;
Bong Lian on period integrals and tautological systems;
Yujiro Kawamata on birational geometry and derived categories;
Fernando C. Marques on the space of cycles, a Weyl law for minimal hypersurfaces, and Morse index estimates;
Duong Phong on new curvature flows in complex geometry;
and Steve Zelditch on local and global analysis of nodal sets.

Oct. 2018 414 pp.
9781571463616 14,360.

International Press

Advanced Studies in Pure Mathematics,

Vol. 78: **Izumiya Shyuichi /Ishikawa Goo / Yamamoto Minoru /Saji Kentaro / Yamamoto Takahiro /Takahashi Masatomo : Singularities in Generic Geometry** No. 516-168

from Preface: The fourth workshop was held at Kobe University in Kobe, Japan from 3 to 6 June 2015 and the Research Institute of Mathematical science (RIMS) in Kyoto, Japan from 8 to 10 June 2015.
The workshop had 81 mathematicians as participants, with 23 participants from abroad coming from nine different countries (Brazil, China, France, Italy, Mexico, Poland, Russia, Spain and the USA), and there were 33 talks and 16 poster presentations. The program focused on applications of singularity theory to differential geometry and differential topology.
The scientific committee consisted of Professors A.Davydov (Moscow - Vladimir), T. Fukui (Saitama), P. Giblin (Liverpool), T. Nishimura (Yokohama), T. Ohmoto (Sapporo), M. C. Romero Fuster (Valencia), O. Saeki (Fukuoka), M. A. Soares Ruas (Sao Carlos), F. Sanchez Bringas (Mexico city) and F. Tari (Sao Carlos)
Eighteen of the speakers glow present their works in written forms, as research articles, surveys or expositions in this volume.
All papers here were strictly peer-reviewed and selected following the standards of mathematical research journals.
We would like to express our gratitude to the authors for their contributions, and to the referees for contributing to the selection process.

Sep. 2018 486 pp.
(M.S.J.) 9784864970556 9,630.

Vol. 77: **Hibi Takayuki (ed.): The 50th Anniversary of Grobner Bases** No. 516-030

Preface: Tracking back through the history, the vague shade of Grobner bases already appeared in the famous paper by F. S. Macaulay in 1927.
The problem which Macaulay studied was to find a combinatorial characterization of Hilbert functions of residue class rings of the polynomial ring modulo homogeneous ideals.
Macaulay succeeded in discovering the fundamental fact that the Hilbert function of the residue class ring of an arbitrary homogeneous ideal coincides with that of a certain monomial ideal.
Macaulay's work had stimulated the algebraic study on enumerative combinatorics and promoted the birth of the historic area called "Commutative Algebra and Combinatorics, which originated in the work by Richard Stanley in 1975 on the upper bound conjecture for spheres by using the algebraic theory of Cohen - Macaulay rings.
The modern definition of Grobner bases was independently introduced by Heisuke Hironaka in 1964 and Bruno Buchberger in 1965.
Hironaka caught the idea of standard bases in the process of solving the outstanding problem, the resolution of singularities of algebraic varieties.
On the other hand, Buchberger created the notion of Grobner bases in his dissertation whose research topic had been given by his advisor Wolfgang Grobner.

Aug. 2018 432 pp.
9784864970525 6,760.

VoL 76: **Konno Hitoshi /Sakai Hidetaka / Shiraishi Junichi /Suzuki Takao /Yamada Yasuhiko (eds.)**
Representation Theory, Special Functions and Painleve Equations - RIMS 2015
June 2018 562 pp. 9784864970501 9,630.

Mathematical Society of Japan

Lecture Notes in Mathematics,

Vol. 2229: **Klein, S.:** No. 516-119

A Spectral Theory for Simply Periodic Solutions of the Sinh-Gordon Equation

This book develops a spectral theory for the integrable system of 2-dimensional, simply periodic, complex-valued solutions u of the sinh-Gordon equation. Such solutions (if real-valued) correspond to certain constant mean curvature surfaces in Euclidean 3-space.
Spectral data for such solutions are defined (following ideas of Hitchin and Bobenko) and the space of spectral data is described by an asymptotic characterization. Using methods of asymptotic estimates, the inverse problem for the spectral data is solved along a line, i.e. the solution u is reconstructed on a line from the spectral data. Finally, a Jacobi variety and Abel map for the spectral curve are constructed and used to describe the change of the spectral data under translation of the solution u.
The book's primary audience will be research mathematicians interested in the theory of infinite-dimensional integrable systems, or in the geometry of constant mean curvature surfaces.

Feb. 2019 290 pp.
9783030012755 8,770.

Vol. 2228: **Li, W.-W.:** No. 516-070

Zeta Integrals, Schwartz Spaces and Local Functional Equations

This book focuses on a conjectural class of zeta integrals which arose from a program born in the work of Braverman and Kazhdan around the year 2000, the eventual goal being to prove the analytic continuation and functional equation of automorphic L-functions.
Developing a general framework that could accommodate Schwartz spaces and the corresponding zeta integrals, the author establishes a formalism, states desiderata and conjectures, draws implications from these assumptions, and shows how known examples fit into this framework, supporting Sakellaridis' vision of the subject.
The collected results, both old and new, and the included extensive bibliography, will be valuable to anyone who wishes to understand this program, and to those who are already working on it and want to overcome certain frequently occurring technical difficulties.

Nov. 2018 140 pp.
9783030012878 7,800.

Universitext

Rosenthal, D. /Rosenthal, D. /Rosenthal, P.: No. 516-082

A Readable Introduction to Real Mathematics, 2nd ed.

Designed for an undergraduate course or for independent study, this text presents sophisticated mathematical ideas in an elementary and friendly fashion.
The fundamental purpose of this book is to teach mathematical thinking while conveying the beauty and elegance of mathematics.
The book contains a large number of exercises of varying difficulty, some of which are designed to help reinforce basic concepts and others of which will challenge virtually all readers.
The sole prerequisite for reading this text is high school algebra.

Nov. 2018 265 pp.
9783030006310 8,770.

Springer

Springer Monographs in Mathematics

Passi, I. /Singh, M. /Yadev, M.: Automorphisms of Finite Groups

No. 516-080

It is broadly divided into three parts: the first part offers an exposition of the fundamental exact sequence of Wells that relates automorphisms, derivations and cohomology of groups, along with some interesting applications of the sequence.
The second part offers an account of important developments on a conjecture that a finite group has at least a prescribed number of automorphisms if the order of the group is sufficiently large.
A non-abelian group of prime-power order is said to have divisibility property if its order divides that of its automorphism group.
The final part of the book discusses the literature on divisibility property of groups culminating in the existence of groups without this property.

Dec. 2018 200 pp.
9789811328947 16,830.

Edmunds, D. /Evans, W.: Elliptic Differential Operators and Spectral Analysis

This book deals with elliptic differential equations, providing the analytic background necessary for the treatment of associated spectral questions, and covering important topics previously scattered throughout the literature. No. 516-104
Starting with the basics of elliptic operators and their naturally associated function spaces, the authors then proceed to cover various related topics of current and continuing importance.
Particular attention is given to the characterisation of self-adjoint extensions of symmetric operators acting in a Hilbert space and, for elliptic operators, the realisation of such extensions in terms of boundary conditions.

Mar. 2019 310 pp.
9783030021245 21,780.

Ohsawa, T.: L^2 Approaches in Several Complex Variables:

Towards the Oka-Cartan Theory with Precise Bounds
In Chapter 1, the classical questions of several complex variables motivating the development of this field are reviewed after necessary preparations from the basic notions of those variables and of complex manifolds such as holomorphic functions, pseudoconvexity, differential forms, and cohomology.
In Chapter 2, the L2 method of solving the d-bar equation is presented emphasizing its differential geometric aspect.
In Chapter 3, a refinement of the Oka-Cartan theory is given by this method. The L2 extension theorem with an optimal constant is included, obtained recently by Z. Blocki and separately by Q.-A. Guan and X.-Y. Zhou.
In Chapter 4, various results on the Bergman kernel are presented, including recent works of Maitani-Yamaguchi, Berndtsson, Guan-Zhou, and Berndtsson-Lempert. No. 516-134
Most of these results are obtained by the L2 method.
In the last chapter, rather specific results are discussed on the existence and classification of certain holomorphic foliations and Levi flat hypersurfaces as their stables sets.
These are also applications of the L2 method obtained during the past 15 years.

Nov. 2018 244 pp.
9784431568513 16,830.

Springer

Undergraduate Texts in Mathematics

Ghorpade, S. /Limaye, B.: No. 516-108

A Course in Calculus and Real Analysis, 2nd ed.

Offering a unified exposition of calculus and classical real analysis, this textbook presents a meticulous introduction to single - variable calculus. Throughout, the exposition makes a distinction between the intrinsic geometric definition of a notion and its analytic characterization, establishing firm foundations for topics often encountered earlier without proof.
Each chapter contains numerous examples and a large selection of exercises, as well as a "Notes and Comments" section, which highlights distinctive features of the exposition and provides additional references to relevant literature.

Nov. 2018 550 pp.
9783030013998 11,880.

Takloo-Bighash, R.: No. 516-087

A Pythagorean Introduction to Number Theory

Right triangles are at the heart of this textbook's vibrant new approach to elementary number theory. Inspired by the familiar Pythagorean theorem, the author invites the reader to ask natural arithmetic questions about right triangles, then proceeds to develop the theory needed to respond. Throughout, students are encouraged to engage with the material by posing questions, working through exercises, using technology, and learning about the broader context in which ideas developed.

Dec. 2018 287 pp.
9783030026035 8,910.

CMS Books in Mathematics

Hambleton, S. /Williams, H.: No. 516-060

Cubic Fields with Geometry

Many such problems can be considered geometrically; both in terms of the geometry of numbers and geometry of the associated cubic Diophantine equations that are similar in many ways to the Pell equation. With over 50 geometric diagrams, this book includes illustrations of many of these topics.
The book may be thought of as a companion reference for those students of algebraic number theory who wish to find more examples, a collection of recent research results on cubic fields, an easy-to-understand source for learning about Voronoi's unit algorithm and several classical results which are still relevant to the field, and a book which helps bridge a gap in understanding connections between algebraic geometry and number theory.

Dec. 2018 510 pp.
9783030014025 21,780.

Texts and Readings in Mathematics,

Vol. 75: **Bose, A. /Chatterjee, S.:** No. 516-187

U-Statistics, Mm-Estimators and Resampling.

This is an introductory text on a broad class of statistical estimators that are minimizers of convex functions.
It covers the basics of U-statistics and Mm-estimators and develops their asymptotic properties. It also provides an elementary introduction to resampling, particularly in the context of these estimators.
The last chapter is on practical implementation of the methods presented in other chapters, using the free software R.

Sep. 2018 174 pp.
9789811322471 9,900.

Springer

Asterisque,

Vol. 401: **Szeftel, J.:** No. 516-177

Parametrix for Wave Equations on A Rough Background III: Space-Time Regularity of the Phase

This book is dedicated to the construction and the control of a parametrix to the homogeneous wave equation $\Box_g\varphi=0$, where g is a rough metric satisfying the Einstein vacuum equations.
Controlling such a parametrix as well as its error term when one only assumes L^2 bounds on the curvature tensor R of g is a major step of the proof of the bounded L^2 curvature conjecture proposed by Sergiu Klainerman and solved by Sergiu Klainerman, Igor Rodnianski and the author.
On a more general level, this book deals with the control of the eikonal equation on a rough background, and with the derivation of L^2 bounds for Fourier integral operators on manifolds with rough phases and symbols, and as such is also of independent interest.

Dec. 2018 321 pp.
9782856298824 13,860.

Panoramas et syntheses,

Vol. 3: **Bertin, J. /Demailly, J.-P/Illusie, L. /Peterset, Ch.:**

Introduction a la theorie de Hodge

deuxieme edition

This monograph develops a number of fundamental concepts and results of Hodge Theory. It is mainly aimed to students and researchers, non-experts in the field, who wish to get acquainted in depth with the subject and obtain precise up-to-date information on the current status of the theory. The manuscript is divided in three parts, each of them devoted to various and complementary aspects of the theory: analytic aspects (L^2 methods), algebraic aspects (use of characteristic pmethods), applications to algebraic geometry through a study of variations of Hodge structures and mirror symmetry conjectures for Calabi-Yau manifolds. No. 516-043

Dec. 2018 272 pp.
9782856298848 価格未定

Memoires de la Societe Mathematique de France,

Numero 156: **Sabbah, C.:** No. 516-083

Irregular Hodge Theory

We introduce the category of irregular mixed Hodge modules consisting of possibly irregular holonomic D-modules which can be endowed in a canonical way with a filtration, called the irregular Hodge filtration. Mixed Hodge modules with their Hodge filtration naturally belong to this category, as well as their twist by the exponential of any meromorphic function. This category is stable by various standard functors, which produce many more filtered objects.
The irregular Hodge filtration satisfies the E_1-degeneration property with respect to any projective morphism.
This generalizes some results previously obtained by H.Esnault, J.-D.Yu and the author. We also show that, modulo a condition on eigenvalues of monodromies, any rigid irreducible holonomic D-module on the complex projective line underlies an irregular pure Hodge module.

Dec. 2018 126 pp.
9782856298879 価格未定

Societe Mathematique de France

Sirakov, B. /de Souza, P. (eds.): No. 516-026

Proceedings of the International Congress of Mathematicians 2018

(In 4 Volumes)

The Proceedings of the ICM publishes the talks, by invited speakers, at the conference organized by the International Mathematical Union every 4 years. It covers several areas of Mathematics and it includes the Fields Medal and Nevanlinna, Gauss and Leelavati Prizes and the Chern Medal laudatios.

April 2019 5000 pp.
9789813272873 143,650.

Trends in Abstract and Applied Analysis

Graef, J. /Henderson, J.: No. 516-112

Ordinary Differential Equations and Boundary Value Problems

The authors give a systematic introduction to boundary value problems (BVPs) for ordinary differential equations.
The book is a graduate level text and good to use for individual study.
With the relaxed style of writing, the reader will find it to be an enticing invitation to join this important area of mathematical research.
Starting with the basics of boundary value problems for ordinary differential equations, linear equations and the construction of Green's functions are presented clearly.

Nov. 2018 342 pp.
9789813274020 16,560.

Series in Real Analysis, Series

Tvrdy, M. /Antunes Monteiro, G. /Slavik, A.: No. 516-148

Kurzweil Stieltjes Integral Theory and Applications: Theory and Applications

The book is primarily devoted to the Kurzweil-Stieltjes integral and its applications in functional analysis, theory of distributions, generalized elementary functions, as well as various kinds of generalized differential equations, including dynamic equations on time scales.
It continues the research that was paved out by some of the previous volumes in the Series in Real Analysis.
Moreover, it presents results in a thoroughly updated form and, simultaneously, it is written in a widely understandable way, so that it can be used as a textbook for advanced university or PhD courses covering the theory of integration or differential equations.

Sep. 2018 << Aug. 2015 404 pp.
9789814641777 25,010.

Advanced Textbooks in Mathematics

Dmitry, B.: No. 516-161

Conformal Maps and Geometry

Geometric function theory is one of the most interesting parts of complex analysis, an area that has become increasingly relevant as a key feature in the theory of Schramm-Loewner Evolution.
Though Riemann mapping theorem is frequently explored, there are few texts that discuss general theory of univalent maps, conformal invariants, and Loewner Evolution.

Feb. 2019 230 pp.
9781786346131 14,870.

World Scientific Publishing