

Yurinsha Book News

Ribenboim, P.: Collected Works in Ordered Structures and Mathematical Logic, Vol. 1

(English and French ed.)

This two-volume collection contains Paulo Ribenboim's work on ordered structures and mathematical logic.

Two long unpublished papers and a reproduction of his first book on abelian groups are also featured in these volumes. With over 240 publications, including 13 books, Ribenboim is responsible for some of the most influential research in number theory, mathematical logic, and algebraic structures.

Together, these volumes include papers on algebraic structures on directed graphs, real algebraic geometry, applications of model theory in collaboration with Lou van den Dries, and more recent papers with Sibylla Priess-Crampe on mathematical logic programming and Ultrametric spaces.

May 2018 580 pp.
9783319721408 32,470.

Ribenboim, P.:
Collected Works in Ordered Structures and
Mathematical Logic, Vol. 2

May 2018 630 pp.
9783319721439 32,520.

Springer

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No. 512

Mar. - Apr. 2018

敬理科学 友隣社 洋書専門

*Pure and Applied Undergraduate Texts,***Vol. 31: Hutz, B.:** No. 512-023**An Experimental Introduction to
Number Theory**

This book presents material suitable for an undergraduate course in elementary number theory from a computational perspective.

It seeks to not only introduce students to the standard topics in elementary number theory, such as prime factorization and modular arithmetic, but also to develop their ability to formulate and test precise conjectures from experimental data.

Each topic is motivated by a question to be answered, followed by some experimental data, and, finally, the statement and proof of a theorem.

Apr. 2018 376 pp. 13,250.
9781470430979

*AMS/MAA Textbooks,***Vol. 39: Campbell, D.:** No. 512-009**An Open Door to Number Theory**

A well-written, inviting textbook designed for a one-semester, junior-level course in elementary number theory.

The intended audience will have had exposure to proof writing, but not necessarily to abstract algebra.

That audience will be well prepared by this text for a second-semester course focusing on algebraic number theory.

June 2018 10,070.
9781470443481

Vol. 34: Albert, J.: No. 512-222**Teaching Statistics Using Baseball, 2nd ed.**

Teaching Statistics Using Baseball is a collection of case studies and exercises applying statistical and probabilistic thinking to the game of baseball.

Baseball is the most statistical of all sports since players are identified and evaluated by their corresponding hitting and pitching statistics.

There is an active effort by people in the baseball community to learn more about baseball performance and strategy by the use of statistics.

Feb. 2017 256 pp. 9,230.
9781939512161

*CBMS-NSF Regional Conference Series in Mathematics,***Vol. 125: Zelditch, S.:** No. 512-163**Eigenfunctions of
the Laplacian on A Riemannian Manifold**

This book is an introduction to both the local and global analysis of eigenfunctions. The local analysis of eigenfunctions pertains to the behavior of the eigenfunctions on wavelength scale balls.

After re-scaling to a unit ball, the eigenfunctions resemble almost-harmonic functions. Global analysis refers to the use of wave equation methods to relate properties of eigenfunctions to properties of the geodesic flow.

The emphasis is on the global methods and the use of Fourier integral operator methods to analyze norms and nodal sets of eigenfunctions.

A somewhat unusual topic is the analytic continuation of eigenfunctions to Grauert tubes in the real analytic case, and the study of nodal sets in the complex domain.

Dec. 2017 394 pp. 13,250.
9781470410377

A. M. S.

Vol. 230: Smith, S.:

No. 512-104

**Applying the Classification of
Finite Simple Groups:
A User's Guide**

The work was largely completed by about 1983, although final publication of the "quasithin" part was delayed until 2004.

Since the 1980s, CFSG has had a huge influence on work in finite group theory and in many adjacent fields of mathematics.

This book attempts to survey and sample a number of such topics from the very large and increasingly active research area of applications of CFSG.

The book is based on the author's lectures at the September 2015 Venice Summer School on Finite Groups. With about 50 exercises from original lectures, it can serve as a second-year graduate course for students who have had first-year graduate algebra.

May 2018

231 pp.

9781470442910

20,470.

Vol. 229: Molev, A.:

No. 512-093

Sugawara Operators for Classical Lie Algebras

The emergence of the theory of quantum groups in the 1980s brought up special matrix techniques which allowed one to extend these constructions beyond polynomial invariants and produce new families of Casimir elements for finite-dimensional Lie algebras.

Sugawara operators are analogs of Casimir elements for the affine Kac-Moody algebras. The goal of this book is to describe algebraic structures associated with the affine Lie algebras, including affine vertex algebras, Yangians, and classical \mathfrak{W} -algebras, which have numerous ties with many areas of mathematics and mathematical physics, including modular forms, conformal field theory, and soliton equations.

An affine version of the matrix technique is developed and used to explain the elegant constructions of Sugawara operators, which appeared in the last decade.

An affine analogue of the Harish-Chandra isomorphism connects the Sugawara operators with the classical \mathfrak{W} -algebras, which play the role of the Weyl group invariants in the finite-dimensional theory.

Mar. 2018

304 pp.

9781470436599

20,470.

Vol. 228: Qin, Z.:

No. 512-101

**Hilbert Schemes of Points and
Infinite Dimensional Lie Algebras**

Hilbert schemes, which parametrize subschemes in algebraic varieties, have been extensively studied in algebraic geometry for the last 50 years.

The most interesting class of Hilbert schemes are schemes $X[n]$ of collections of n points (zero-dimensional subschemes) in a smooth algebraic surface X .

Schemes $X[n]$ turn out to be closely related to many areas of mathematics, such as algebraic combinatorics, integrable systems, representation theory, and mathematical physics, among others.

This book surveys recent developments of the theory of Hilbert schemes of points on complex surfaces and its interplay with infinite dimensional Lie algebras.

It starts with the basics of Hilbert schemes of points and presents in detail an example of Hilbert schemes of points on the projective plane.

Mar. 2018

336 pp.

9781470441883

20,470.

A. M. S.

*Mathematical Surveys and Monographs,***Vol. 40 - No. 7: Gorenstein, D. /Lyons, R.:** No. 512-075**The Classification of the Finite Simple Groups,****No. 7: Part III, Chap. 7-11:****the Generic Case, Stages 3b and 4a**

(This volume completes the construction, begun in Volume 40.5, of a collection of neighboring centralizers of a particularly nice form.

All of this is then applied to complete the identification of the alternating groups of degree at least 13.

The book is suitable for graduate students and researchers interested in the theory of finite groups.

Mar. 2018
9780821840696

344 pp.
20,470.

*Graduate Studies in Mathematics,***Vol. 188: Cutkosky, S.:**

No. 512-068

Introduction to Algebraic Geometry

This book presents a readable and accessible introductory course in algebraic geometry, with most of the fundamental classical results presented with complete proofs.

An emphasis is placed on developing connections between geometric and algebraic aspects of the theory. Differences between the theory in characteristic 0 and positive characteristic are emphasized.

The basic tools of classical and modern algebraic geometry are introduced, including varieties, schemes, singularities, sheaves, sheaf cohomology, and intersection theory.

Basic classical results on curves and surfaces are proved. More advanced topics such as ramification theory, Zariski's main theorem, and Bertini's theorems for general linear systems are presented, with proofs, in the final chapters.

With more than 200 exercises, the book is an excellent resource for teaching and learning introductory algebraic geometry.

May 2018
9781470435189

488 pp.
13,920.

*Proceedings of Symposia in Pure Mathematics,***Vol. 97: de Fernex, T. /Hassett, B. /Mustata, M. /** No. 512-109**Olsson, M. /Popa, M. /Thomas, R. (eds.):****Algebraic Geometry:****Salt Lake City, 2015** Parts 1 and 2

The most recent Summer Institute in Algebraic Geometry was held July 2015 at the University of Utah in Salt Lake City, sponsored by the AMS with the collaboration of the Clay Mathematics Institute.

These volumes include surveys growing out of plenary lectures and seminar talks during the meeting.

Some present a broad overview of their topics, while others develop a distinctive perspective on an emerging topic.

Topics span both complex algebraic geometry and arithmetic questions, specifically, analytic techniques, enumerative geometry, moduli theory, derived categories, birational geometry, tropical geometry, Diophantine questions, geometric representation theory, characteristic p and p -adic tools, etc.

The resulting articles will be important references in these areas for years to come.

May 2018
9781470446673

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41,780.

A. M. S.

Vol. 37: Amenta, A. /Auscher, P.: No. 512-112**Elliptic Boundary Value Problems with
Fractional Regularity Data:
The First Order Approach**

A co-publication of the AMS and Centre de Recherches Mathématiques
In this monograph the authors study the well-posedness of boundary value
problems of Dirichlet and Neumann type for elliptic systems on the upper
half-space with coefficients independent of the transversal variable and with
boundary data in fractional Hardy-Sobolev and Besov spaces.

The authors use the so-called "first order approach" which uses minimal
assumptions on the coefficients and thus allows for complex coefficients and
for systems of equations.

This self-contained exposition of the first order approach offers new results
with detailed proofs in a clear and accessible way and will become a valuable
reference for graduate students and researchers working in
partial differential equations and harmonic analysis.

May 2018 152 pp. 19,290.
9781470442507

*Contemporary Mathematics,***Vol. 704: Escassut, A. /Perez-Garcia, C. /** No. 512-129**Shamseddine, K. (eds.):****Advances in Ultrametric Analysis**

Articles included in this book feature recent developments in various areas of
non-Archimedean analysis: summation of p -adic series, rational maps on
the projective line over \mathbb{Q}_p , non-Archimedean Hahn-Banach theorems,
ultrametric Calkin algebras, G -modules with a convex base, non-compact Trace
class operators and Schatten-class operators in p -adic Hilbert spaces, algebras of
strictly differentiable functions, inverse function theorem and mean value
theorem in Levi-Civita fields, ultrametric spectra of commutative non-unital
Banach rings, classes of non-Archimedean Kothe spaces, p -adic Nevanlinna
theory and applications, and sub-coordinate representation of p -adic functions.
Moreover, a paper on the history of p -adic analysis with a comparative summary
of non-Archimedean fields is presented.

Through a combination of new research articles and a survey paper, this book
provides the reader with an overview of current developments and techniques in
non-Archimedean analysis as well as a broad knowledge of some of the sub-areas
of this exciting and fast-developing research area.

Apr. 2018 296 pp. 19,630.
9781470434915

Vol. 701: Lario, J.-C. /Murty, K. (eds.): No. 512-083**Number Theory Related to**

This volume contains the proceedings of the Barcelona-Boston-Tokyo Number
Theory Seminar, which was held in memory of Fumiyuki Momose,
a distinguished number theorist from Chuo University in Tokyo.
Momose, who was a student of Yasutaka Ihara, made important contributions to
the theory of Galois representations attached to modular forms,
rational points on elliptic and modular curves, modularity of some families of
Abelian varieties, and applications of arithmetic geometry to cryptography.
Papers contained in this volume cover these general themes in addition to
discussing Momose's contributions as well as recent work and new results.

Feb. 2018 228 pp. 19,630.
9781470419912

A. M. S.

**Vol. 176: Fleig, P. /Gustafsson, H. /
Kleinschmidt, H. /Persson, D.:** No. 512-070
Eisenstein Series and

**Automorphic Representations:
With Applications in String Theory**

This introduction to automorphic forms on adelic groups $G(\mathbb{A})$ emphasises the role of representation theory. The exposition is driven by examples and collects and extends many results scattered throughout the literature, in particular the Langlands constant term formula for Eisenstein series on $G(\mathbb{A})$ as well as the Casselman-Shalika formula for the p -adic spherical Whittaker function. This book also covers more advanced topics such as spherical Hecke algebras and automorphic L -functions.

Many of these mathematical results have natural interpretations in string theory, and so some basic concepts of string theory are introduced with an emphasis on connections with automorphic forms.

Throughout the book special attention is paid to small automorphic representations which are of particular importance in string theory, but are also of independent mathematical interest.

June 2018 575 pp. 15,940.
9781107189928

London Mathematical Society Lecture Note Series,

Vol. 449: Praeger, C. /Schneider, C.: No. 512-100
Permutation Groups and
Cartesian Decompositions

Permutation groups, their fundamental theory and applications are discussed in this introductory book. It focuses on those groups that are most useful for studying symmetric structures such as graphs, codes and designs.

Modern treatments of the O'Nan-Scott theory are presented not only for primitive permutation groups but also for the larger families of quasiprimitive and innately transitive groups, including several classes of infinite permutation groups. Their precision is sharpened by the introduction of a cartesian decomposition concept. This facilitates reduction arguments for primitive groups analogous to those, using orbits and partitions, that reduce problems about general permutation groups to primitive groups.

The results are particularly powerful for finite groups, where the finite simple group classification is invoked.

June 2018 333 pp. 15,100.
9780521675062

Vol. 448: Bunge, M. /Gago, F.: No. 512-173
Synthetic Differential Topology

Snowflakes, a series of eight readers for students of classes 1 to 8, is meant primarily to inculcate in children a love for reading as well as appropriate reading skills. Just as each individual snowflake is unique, the content of the series is unique in terms of its literary linguistic and pedagogical merit. The selections include a wide range of stories, poems, prose pieces, plays and excerpts which have been collated from both classic and contemporary sources.

Care has been taken to ensure that they expose students to diverse genres and socio-cultural contexts.

Apr. 2018 13,420.
9781108447232

Cambridge

Krantz, S.:

No. 512-025

The Elements of Advanced Mathematics, 4th ed.

The Elements of Advanced Mathematics, Fourth Edition is the latest edition of the author's bestselling series of texts.

Expanding on previous editions, the new Edition continues to provide students with a better understanding of proofs, a core concept for higher level mathematics. To meet the needs of instructors, the text is aligned directly with course requirements.

Jan. 2018 390 pp. 16,520.
9781138506312

Krantz, S.:

No. 512-143

Elementary Introduction to the Lebesgue Integral

It is important and useful to have a text on the Lebesgue theory that is accessible to bright undergraduates.

This is such a text. Going back to the days of Isaac Newton and Gottfried Wilhelm von Leibniz, and even to Newton's teacher Isaac Barrow, the integral has been a mainstay of mathematical analysis.

The integral is a device for amalgamating information.

It is a powerful and irreplaceable tool. The text concentrates on the real line.

The student will be familiar with the real numbers and will be comfortable internalizing the new ideas of measure theory in that context.

Apr. 2018 188 pp. 12,740.
9781138482760

Washington, L. /Kraft, J.:

No. 512-107

An Introduction to**Number Theory with Cryptography, 2nd ed.**

The authors have written the text in an engaging style to reflect number theory's increasing popularity. The book is designed to be used by sophomore, junior, and senior undergraduates, but it is also accessible to advanced high school students and is appropriate for independent study.

It includes a few more advanced topics for students who wish to explore beyond the traditional curriculum.

Jan. 2018 578 pp. 18,880.
9781138063471

Discrete Mathematics and Its Applications**Bajnok, B.:**

No. 512-261

Additive Combinatorics:**A Menu of Research Problems**

This book deals with additive combinatorics, a vibrant area of current mathematical research. Additive combinatorics - an offspring of combinatorial number theory and additive number theory - can be described as the study of combinatorial properties of sumsets in additive structures.

It is a rather new field that is just now coming to its own; although some of its results have been known for centuries, many of its fundamental questions have only been settled recently or are still unsolved. For this and many other reasons, additive combinatorics provides an excellent area for research by students of any background: it has intriguing and promising questions for everyone.

June 2018 488 pp. 16,520.
9780815353010

Chapman & Hall

Vol. 2213: Ferenczi, S. /Kulaga-Przymus, J. / Lemanczyk, M. (eds.): No. 512-130

**Ergodic Theory and Dynamical Systems in
Their Interactions with
Arithmetics and Combinatorics**

This book concentrates on the modern theory of dynamical systems and its interactions with number theory and combinatorics.

The greater part begins with a course in analytic number theory and focuses on its links with ergodic theory, presenting an exhaustive account of recent research on Sarnak's conjecture on Mobius disjointness.

Selected topics involving more traditional connections between number theory and dynamics are also presented, including equidistribution, homogenous dynamics, and Lagrange and Markov spectra. In addition, some dynamical and number theoretical aspects of aperiodic order, some algebraic systems, and a recent development concerning tame systems are described.

June 2018 390 pp. 7,170.
9783319749075

Vol. 2212: Farina, A. /Mikelic, A. / Saccomandi, G. /Sequeira, A. /Toro, E.: No. 512-292

**Non-Newtonian Fluid Mechanics and
Complex Flows:
Levico Terme, 2016**

This book presents a series of challenging mathematical problems which arise in the modeling of Non-Newtonian fluid dynamics.

It focuses in particular on the mathematical and physical modeling of a variety of contemporary problems, and provides some results.

The flow properties of Non-Newtonian fluids differ in many ways from those of Newtonian fluids.

Many biological fluids exhibit a non-Newtonian behavior, as do many naturally occurring or technologically relevant fluids such as molten polymers, oil, mud, lava, salt solutions, paint, and so on. The term "complex flows" usually refers to those fluids presenting an "internal structure".

Modern research on complex flows has increased considerably in recent years due to the many biological and industrial applications.

Apr. 2018 290 pp. 7,170.
9783319747958

Vol. 2211: Figalli, A. /Peral, I. /Valdinoci, E.: No. 512-131

**Partial Differential Equations and
Geometric Measure Theory:
Cetraro, Italy 2014**

This book collects together lectures by some of the leaders in the field of partial differential equations and geometric measure theory.

It features a wide variety of research topics in which a crucial role is played by the interaction of fine analytic techniques and deep geometric observations, combining the intuitive and geometric aspects of mathematics with analytical ideas and variational methods.

The problems addressed are challenging and complex, and often require the use of several refined techniques to overcome the major difficulties encountered.

Apr. 2018 190 pp. 7,170.
9783319740416

Springer

Vol. 2210: Tu Cuong, N. / Tuan HOA, L. / Viet TRUNG, N. (eds.): No. 512-106

**Commutative Algebra and Its Interactions to
Algebraic Geometry:
VIASM 2013 - 2014**

The first lecture is on Weyl algebras (certain rings of differential operators) and their D-modules, relating non-commutative and commutative algebra to algebraic geometry and analysis in a very appealing way.

The second lecture concerns local systems, their homological origin, and applications to the classification of Artinian Gorenstein rings and the computation of their invariants.

The third lecture is on the representation type of projective varieties and the classification of arithmetically Cohen-Macaulay bundles and Ulrich bundles. Related topics such as moduli spaces of sheaves, liaison theory, minimal resolutions, and Hilbert schemes of points are also covered.

The last lecture addresses a classical problem: how many equations are needed to define an algebraic variety set-theoretically? It systematically covers (and improves) recent results for the case of toric varieties.

June 2018 200 pp. 7,170.
9783319755649

Vol. 2209: Budzynski, P. / Jablonski, Z. / Jung, I. / Stochel, J.: No. 512-117
**Unbounded Weighted Composition
Operators in L₂-Spaces**

This book establishes the foundations of the theory of bounded and unbounded weighted composition operators in L₂-spaces.

It develops the theory in full generality, meaning that the corresponding composition operators are not assumed to be well defined.

A variety of seminormality properties of unbounded weighted composition operators are characterized. The first-ever criteria for subnormality of unbounded weighted composition operators are provided and the subtle interplay between the classical moment problem, graph theory and the injectivity problem for weighted composition operators is revealed.

The relationships between weighted composition operators and the corresponding multiplication and composition operators are investigated.

Apr. 2018 140 pp. 7,170.
9783319740386

Vol. 2208: Schmidt, G. / Winter, M.: No. 512-190
Relational Topology

This book introduces and develops new algebraic methods to work with relations, often conceived as Boolean matrices, and applies them to topology. Although these objects mirror the matrices that appear throughout mathematics, numerics, statistics, engineering, and elsewhere, the methods used to work with them are much less well known. In addition to their purely topological applications, the volume also details how the techniques may be successfully applied to spatial reasoning and to logics of computer science.

Topologists will find several familiar concepts presented in a concise and algebraically manipulable form which is far more condensed than usual, but visualized via represented relations and thus readily graspable.

May 2018 180 pp. 7,100.
9783319744506

Springer

**Vol. 2207: Baricz, A. /Masirevic, D. (eds.):
Series of Bessel and Kummer-Type Functions**

This book is devoted to the study of certain integral representations for Neumann, Kapteyn, Schlomilch, Dini and Fourier series of Bessel and other special functions, such as Struve and von Lommel functions. The aim is also to find the coefficients of the Neumann and Kapteyn series, as well as closed-form expressions and summation formulas for the series of Bessel functions considered. Some integral representations are deduced using techniques from the theory of differential equations.

Apr. 2018 200 pp. 7,170.
9783319743493

Mathematical Lectures from Peking University

Broue, M.: No. 512-055

On Characters of Finite Groups

This book explores the classical and beautiful character theory of finite groups. It does it by using some rudiments of the language of categories. Originally emerging from two courses offered at Peking University, primarily for third-year students, it is now better suited for graduate courses, and provides broader coverage than books that focus almost exclusively on groups.

Jan. 2018 246 pp. 9,220.
9789811068782

Algorithms and Combinatorics,

Vol. 21: Korte, B. /Vygen, J.: No. 512-263

**Combinatorial Optimization:
Theory and Algorithms, 6th ed**

This comprehensive textbook on combinatorial optimization places special emphasis on theoretical results and algorithms with provably good performance, in contrast to heuristics. It is based on numerous courses on combinatorial optimization and specialized topics, mostly at graduate level. This book reviews the fundamentals, covers the classical topics (paths, flows, matching, matroids, NP-completeness, approximation algorithms) in detail, and proceeds to advanced and recent topics, some of which have not appeared in a textbook before.

Dec. 2017 690 pp. 16,400.
9783662560389

Undergraduate Texts in Mathematics

Stanley, R.: No. 512-105

**Algebraic Combinatorics:
Walks, Trees, Tableaux, and More**

Written by one of the foremost experts in the field, Algebraic Combinatorics is a unique undergraduate textbook that will prepare the next generation of pure and applied mathematicians. The combination of the author's extensive knowledge of combinatorics and classical and practical tools from algebra will inspire motivated students to delve deeply into the fascinating interplay between algebra and combinatorics.

July 2018 326 pp. 10,250.
9783319771724

Springer

Vol. 26: Bracci, F. (ed.):

No. 512-115

**Geometric Function Theory in
Higher Dimension**

The book collects the most relevant outcomes from the INdAM Workshop "Geometric Function Theory in Higher Dimension" held in Cortona, 2016. The Workshop was mainly devoted to discussions of basic open problems in the area, and this volume follows the same line.

In particular, it offers a selection of original contributions on Loewner theory in one and higher dimensions, semigroups theory, iteration theory and related topics.

Written by experts in geometric function theory in one and several complex variables, it focuses on new research frontiers in this area and on challenging open problems.

The book is intended for graduate students and researchers working in complex analysis, several complex variables and geometric function theory.

Feb. 2018 175 pp. 15,780.
9783319731254

Vol. 25: Bianchi, G. /Colesanti, A.:

No. 512-278

Analytic Aspects of Convexity

This book presents the proceedings of the international conference Analytic Aspects in Convexity, which was held in Rome in October 2016.

It offers a collection of selected articles, written by some of the world's leading experts in the field of Convex Geometry, on recent developments in this area: theory of valuations; geometric inequalities; affine geometry; and curvature measures.

The book will be of interest to a broad readership, from those involved in Convex Geometry, to those focusing on Functional Analysis, Harmonic Analysis, Differential Geometry, or PDEs.

The book is addressed to PhD students and researchers, interested in Convex Geometry and its links to analysis.

Feb. 2018 111 pp. 15,780.
9783319718330

Springer Undergraduate Mathematics

Brzezinski, J.:

No. 512-061

Galois Theory Through Exercises

This textbook offers a unique introduction to classical Galois theory through many concrete examples and exercises of varying difficulty (including computer-assisted exercises).

In addition to covering standard material, the book explores topics related to classical problems such as Galois's theorem on solvable groups of polynomial equations of prime degrees, Nagell's proof of non-solvability by radicals of quintic equations, Tschirnhausen's transformations, lunes of Hippocrates, and Galois resolvents.

Topics related to open conjectures are also discussed, including exercises related to the inverse Galois problem and cyclotomic fields.

The author presents proofs of theorems, historical comments and useful references alongside the exercises, providing readers with a well-rounded introduction to the subject and a gateway to further reading.

Feb. 2018 291 pp. 7,170.
9783319723259

Springer

*EMS Tracts in Mathematics,***Vol. 28: Henrot, A. /Pierre, M.:** No. 512-136**Shape Variation and Optimization:****A Geometrical Analysis**

This book provides a self-contained introduction to modern mathematical approaches to shape optimization, relying only on undergraduate level prerequisite but allowing to tackle open questions in this vibrant field. The analytical and geometrical tools and methods for the study of shapes are developed.

In particular, the text presents a systematic treatment of shape variations and optimization associated with the Laplace operator and the classical capacity. Emphasis is also put on differentiation with respect to domains and a FAQ on the usual topologies of domains is provided. The book ends with geometrical properties of optimal shapes, including the case where they do not exist.

Feb. 2018 379 pp. 13,940.
9783037191781

*EMS Series of Congress Report***Buczynski, J. /Michalek, M. /Leipzig, I. /Postinghel, E.:****Schubert Varieties, Equivariant Cohomology****and Characteristic Classes:**

No. 512-062

Impanga 15

This volume is a collection of contributions by the participants of the conference IMPANGA15, organized by participants of the seminar, as well as notes from the major lecture series of the seminar in the period 2010-2015. Both original research papers and self-contained expository surveys can be found here.

The articles circulate around a broad range of topics within algebraic geometry such as vector bundles, Schubert varieties, degeneracy loci, homogeneous spaces, equivariant cohomology, Thom polynomials, characteristic classes, symmetric functions and polynomials, and algebraic geometry in positive characteristic.

Jan. 2018 354 pp. 25,990.
9783037191828

IRMA - Lecture Notes in Mathematics and Theoretical Physics,

No. 512-118

Vol. 28: Bugeaud, Y.:**Linear Forms in Logarithms and Applications**

The aim of this book is to serve as an introductory text to the theory of linear forms in the logarithms of algebraic numbers, with a special emphasis on a large variety of its applications.

We wish to help students and researchers to learn what is hidden inside the blackbox, Baker's theory of linear forms in logarithms' (in complex or in p -adic logarithms) and how this theory applies to many Diophantine problems, including the effective resolution of Diophantine equations, the abc-conjecture, and upper bounds for the irrationality measure of some real numbers.

Written for a broad audience, this accessible and self-contained book can be used for graduate courses (some 30 exercises are supplied).

Specialists will appreciate the inclusion of over 30 open problems and the rich bibliography of over 450 references.

Feb. 2018 240 pp. 7,790.
9783037191835

European Mathematical Society

Vol. I: Meyer, Y.:

(Asterisque 1-Reimpression 2017)

**Trois problemes
sur les sommes trigonometriques**

No. 512-092

Dans ce livre, écrit il y a maintenant quarante cinq ans, trois problèmes concernant les sommes trigonométriques avaient été abordés.

Aujourd'hui le second chapitre est devenu le plus important, car il a conduit à la théorie mathématique des quasi-cristaux et aux travaux d'Alexander Olevskii et de ses collaborateurs sur l'échantillonnage irrégulier.

Dec. 2017

9782856294338

6,970.

Vol. 394: Xie, J.:

No. 512-258

**The Dynamical Mordell-Lang Conjecture for
Polynomial Endomorphisms of the Affine Plane**

In this paper we prove the Dynamical Mordell-Lang Conjecture for polynomial endomorphisms of the affine plane over the algebraic numbers.

More precisely, let f be an endomorphism of the affine plane over the algebraic numbers. Let x be a point in the affine plane and C be a curve.

If the intersection of C and the orbits of x is infinite, then C is periodic.

Dec. 2017

9782856298695

110 pp.

9,130.

Vol. 393: Biedermann, G. /Raptis, G. /Stelzer, M.: No. 512-051

The realization space of an unstable coalgebra

Unstable coalgebras over the Steenrod algebra form a natural target category for singular homology with prime field coefficients.

The realization problem asks whether an unstable coalgebra is isomorphic to the homology of a topological space.

We study the moduli space of such realizations and give a description of this in terms of cohomological invariants of the unstable coalgebra.

Dec. 2017

9782856298688

148 pp.

9,220.

Cours spécialisés

Vol. 25: Alberti, G. /Capdeboscq, Y.:

No. 512-047

Lectures on Elliptic Methods for Hybrid Inverse Problems

In recent years, several new imaging modalities have been developed in order to be able to detect physical parameters simultaneously at a high spatial resolution and with a high sensitivity to contrast.

These new approaches typically rely on the interaction of two physical imaging methods, and the corresponding mathematical models are the so-called hybrid, or coupled-physics, inverse problems.

The combination of two physical modalities poses new mathematical challenges: the analysis of this new class of inverse problems requires the use of various mathematical tools, often of independent interest.

This book intends to provide a first comprehensive course on some of these tools (mainly related to elliptic partial differential equations) and on their applications to hybrid inverse problems.

Jan. 2018

9782856298725

354 pp.

25,990.

Societe Mathematique de France

Xin, Y.: No. 512-194

**Minimal Submanifolds and Related Topics:
With Exercises and Examples, 2nd ed.**

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