お知らせ
数理科学関係洋書在庫目録
Yurinsha Stock List 2010 は
ホームページにアップ
詳細 Page 1

Yurinsha Book News

Springer Monographs in Mathematics

Shimura, G.: 43-071

Arithmetic of Quadratic Forms

* Discusses algebraic number theory and the theory of semisimple algebras
* Discusses classification over an algebraic number field and classification over the ring of algebraic integers
* Discusses local class field theory

This book is divided in two parts.
The first part is preliminary and consists of algebraic number theory and the theory of semisimple algebras.
There are two principal topics: classification of quadratic forms and quadratic diophantine equations.
The first topic is further divided into two types of theories: classification over an algebraic number field and classification over the ring of algebraic integers.
To ensure the book would be concise, the author proved basic theorems in local class field theory only in some special cases, and the Hilbert reciprocity law only over the rational number field.
However, the author stated the main theorems with an arbitrary number field as the base field, so the reader familiar with class field theory will be able to learn the arithmetic theory of quadratic forms with no further references.

Dec. 2009 260 pp.
9781441917317 14,830.

Springer

http://www.yurinsha.com
ホームページは毎月25日更新予定です

No. 437 Nov. 2009
数理科学 友隣社 洋書専門

お 知 ら せ

数理科学関係洋書在庫目録

Yurinsha Stock List 2010

１０月上旬にアップいたしました。

小社ホームページ上にて
閲覧くださいますようご案内申し上げます。

なお、目録データにつきましては、
エクセル形式にてもご提供いたしますので、
ご希望の場合には、
お気軽にお申し付け下さい。

皆様のご利用、ご注文をお待ち申し上げます

２００9年１０月

㈱ 友 隣 社

http://www.yurinsha.com

Jerison, D. /Mazur, B. /Mrowka, T. /Schmid, W. /
Stanley, R. /Yau, S.-T. (eds.):

CDM 2008: 437-113

Current Developments in Mathematics, 2008

Contents: The Evolution Problem in General Relativity (Mihalis Dafermos) Very Large Graphs (Lazlo Lovasz) On the Classification of Topological Field Theories (Jacob Lurie) Properly embedded minimal planar domains with infinite topology are Riemann minimal examples (William H. Meeks III and Joaquin Perez) Unearthing the Visions of a Master: Harmonic Maass Forms and Number Theory (Ken Ono)

Oct. 2009 454 pp.
9781571461391 8,130.

Jerison, D. /Mazur, B. /Mrowka, T. /Schmid, W. /
Stanley, R. /Yau, S.-T. (eds.):

CDM 2007:

Current Developments in Mathematics 2007

Apr. 2009 245 pp.
9781571461346 6,860.

International Press

CBMS Regional Conference Series in Mathematics,

Vol. 111: Rosenberg, J.:
Topology, C*-Algebras, and String Duality

The book is an interdisciplinary approach to duality symmetries in string theory. 437-129
It can be read by either mathematicians or theoretical physicists, and involves a more-or-less equal mixture of algebraic topology, operator algebras, and physics.
There is also a bit of algebraic geometry, especially in the last chapter.
The main objective of the book is to show how several seemingly disparate subjects are closely linked with one another, and to give readers an overview of some areas of current research, even if this means that not everything is covered systematically.

Dec. 2009 110 pp.
9780821849224 4,590.

Student Mathematical Library,

Vol. 52: Pesin, Y. /Climenhaga, V.:
Lectures on Fractal Geometry and Dynamical Systems

The first half of the book introduces some of the key ideas in fractal geometry and dimension theory--Cantor sets, Hausdorff dimension, box dimension--using dynamical notions whenever possible, particularly one-dimensional Markov maps and symbolic dynamics.
Various techniques for computing Hausdorff dimension are shown, leading to a discussion of Bernoulli and Markov measures and of the relationship between dimension, entropy, and Lyapunov exponents.
In the second half of the book some examples of dynamical systems are considered and various phenomena of chaotic behaviour are discussed, including bifurcations, hyperbolicity, attractors, horseshoes, and intermittent and persistent chaos.

Nov. 2009 314 pp.
9780821848890 7,090.

Contemporary Mathematics,

Vol. 504: Ausoni, C. /Hess, K. /Scherer, J. (eds.): 437-052
Alpine Perspectives on Algebraic Topology

This volume contains the proceedings of the Third Arolla Conference on Algebraic Topology, which took place in Arolla, Switzerland, 2008.
This volume includes research papers on stable homotopy theory, the theory of operads, localization and algebraic K-theory, as well as survey papers on the Witten genus, on localization techniques and on string topology--offering a broad perspective of modern algebraic topology.

Dec. 2009 254 pp.
9780821848395 10,980.

Vol. 503: de Jeu, M. et al. (eds.): 437-143
Operator Structures and Dynamical Systems

This volume contains the proceedings of a Leiden Workshop on Dynamical Systems and their accompanying Operator Structures which took place at the Lorentz Center in Leiden, The Netherlands, 2008.
These papers offer a panorama of selfadjoint and non-selfadjoint operator algebras associated with both noncommutative and commutative (topological) dynamical systems and related subjects.

Dec. 2009 317 pp.
9780821847473 13,760.

A. M. S.

Contemporary Mathematics,

Vol. 502: Ene, V. /Miller, E. (ed.): 437-068
Combinatorial Aspects of Commutative Algebra
This volume contains the proceedings of the Exploratory Workshop on Combinatorial Commutative Algebra and Computer Algebra, which took place in Mangalia, 2008.
It includes research papers and surveys reflecting some of the current trends in the development of combinatorial commutative algebra and related fields.
This volume focuses on the presentation of the newest research results in minimal resolutions of polynomial ideals (combinatorial techniques and applications), Stanley-Reisner theory and Alexander duality, and applications of commutative algebra and of combinatorial and computational techniques in algebraic geometry and topology.
Dec. 2009 184 pp.
9780821847589 9,590.

Vol. 501: Dekimpe, K. /Igodt, P. /Valette, A. (eds.):
Discrete Groups and Geometric Structures
This volume reports on research related to Discrete Groups and Geometric Structures, as presented during the International Workshop held 2008, in Kortrijk, Belgium.
Readers will benefit from impressive survey papers by John R. Parker on methods to construct and study lattices in complex hyperbolic space and by Ursula Hamenstadt on properties of group actions with a rank-one element on proper \textrm{CAT}(0)-spaces.
Nov. 2009 156 pp. 437-065
9780821846476 8,200.

Vol. 500: Briet, P. /Germinet, F. /Raikov, G. (eds.):
Spectral and Scattering Theory for Quantum Magnetic Systems 437-104
This volume contains the proceedings of the conference on Spectral and Scattering Theory for Quantum Magnetic Systems, which took place at CIRM, Luminy, 2008.
The main purpose of this conference was to bring together a number of specialists in the mathematical modelling of magnetic phenomena in quantum mechanics, to mark the recent progress as well as to outline the future development in this area.
Nov. 2009 186 pp.
9780821847442 9,590.

Vol. 499: Giambruno, A. /Polcino Milies, C. /
Sehgal, S. (eds.): 437-071
Groups, Rings and Group Rings
This volume represents the proceedings of the conference on Groups, Rings and Group Rings, held July 28-August 2, 2008, in Ubatuba, Brazil.Papers in this volume contain results in active research areas in the theory of groups, group rings and algebras (including noncommutative rings), polynomial identities, Lie algebras and superalgebras.
In particular, topics such as growth functions on varieties, groups of units in group rings, representation theory of Lie algebras, Jordan, alternative and Leibniz algebras, graded identities, automorphisms of trees, and partial actions, are discussed.
Nov. 2009 270 pp.
9780821847718 12,370.

A. M. S.

Graduate Studies in Mathematics,

Vol. 108: Outerelo, E. /Ruiz, J.: 437-165

Mapping Degree Theory

This textbook treats the classical parts of mapping degree theory, with a detailed account of its history traced back to the first half of the 18th century. After a historical first chapter, the remaining four chapters develop the mathematics.
An effort is made to use only elementary methods, resulting in a self-contained presentation.
Even so, the book arrives at some truly outstanding theorems: the classification of homotopy classes for spheres and the Poincare-Hopf Index Theorem, as well as the proofs of the original formulations by Cauchy, Poincare, and others.
Although the mapping degree theory you will discover in this book is a classical subject, the treatment is refreshing for its simple and direct style.

Dec. 2009 244 pp.
9780821849156 8,620.

Mathematical Surveys and Monographs,

Vol. 157: Chen, X.: 437-178

Random Walk Intersections: Large Deviations and Related Topics

The material covered in this book involves important and non-trivial results in contemporary probability theory motivated by polymer models, as well as other topics of importance in physics and chemistry.
The development carefully provides the basic definitions of mutual intersection and self-intersection local times for Brownian motions and the accompanying large deviation results.
The book then proceeds to the analogues of these concepts and results for random walks on lattices of R^d.
This includes suitable integrability and large deviation results for these models and some applications.
Moreover, the notes and comments at the end of the chapters provide interesting remarks and references to various related results, as well as a good number of exercises.

Jan. 2010 357 pp.
9780821848203 12,510.

AMS/IP Studies in Advanced Mathematics,

Vol. 47: Grigor'yan, A.: 437-115

Heat Kernel and Analysis on Manifolds

The heat kernel has long been an essential tool in both classical and modern mathematics but has become especially important in geometric analysis as a result of major innovations beginning in the 1970s.
The methods based on heat kernels have been used in areas as diverse as analysis, geometry, and probability, as well as in physics.
This book is a comprehensive introduction to heat kernel techniques in the setting of Riemannian manifolds, which inevitably involves analysis of the Laplace-Beltrami operator and the associated heat equation.
The first ten chapters cover the foundations of the subject, while later chapters deal with more advanced results involving the heat kernel in a variety of settings.

Dec. 2009 482 pp.
9780821849354 16,540.

A. M. S.

London Mathematical Society Lecture Note Series,

Vol. 372: Lepowsky, J. /McKay, J. /Tuite, M. (eds.).):
Moonshine
- The First Quarter Century and Beyond:
Proceedings of a Workshop on 437-078
the Moonshine Conjectures and Vertex Algebras

In 1979, John Conway and Simon Norton's famous paper, 'Monstrous Moonshine', outlined the remarkable connection between the monster group M and the theory of modular functions.
The search for an explanation of this phenomenon involved the development and application of diverse areas of mathematics, including (generalized) Kac-Moody algebras, vertex (operator) algebras, automorphic forms and elliptic cohomology, together with string and conformal field theory from theoretical physics.
This volume consists of seventeen papers based on talks presented at a workshop held to mark the anniversary of 'Monstrous Moonshine'.
Containing a mixture of expository and current research material, they illustrate its extensive impact and reflect the broad range of research activity that has stemmed from the Moonshine conjectures.
Potential directions for future development are also discussed.

Apr. 2010 360 pp.
9780521106641 11,880.

Vol. 370: Albeverio, A. /Khrennikov, Yu. /Shelkovich, V.:
The Theory of p-Adic Distributions:
Linear and Nonlinear Models 437-095

This is the first book devoted to the theory of p-adic wavelets and pseudo-differential equations in the framework of distribution theory.
This relatively recent theory has become increasingly important in the last decade with exciting applications in a variety of fields, including biology, image analysis, psychology, and information science.
p-Adic mathematical physics also plays an important role in quantum mechanics and quantum field theory, the theory of strings, quantum gravity and cosmology, and solid state physics.
The authors include many new results, some of which constitute new areas in p-adic analysis related to the theory of distributions, such as wavelet theory, the theory of pseudo-differential operators and equations, asymptotic methods, and harmonic analysis.

Mar. 2010 350 pp.
9780521148566 9,240.

Vol. 360: Zilber, B.: 437-171
Zariski Geometries:
Geometryfrom the Logician's Point of View

This book presents methods and results from the theory of Zariski structures and discusses their applications in geometry as well as various other mathematical fields.
Its logical approach helps us understand why algebraic geometry is so fundamental throughout mathematics and why the extension to noncommutative geometry, which has been forced by recent developments in quantum physics, is both natural and necessary.
Beginning with a crash course in model theory, this book will suit not only model theorists but also readers with a more classical geometric background.

Mar. 2010 255 pp.
9780521735605 7,260.

Cambridge

Cambridge Studies in Advanced Mathematics,

Vol. 122: **Kalikow, S. /McCutcheon, R.:** 437-119
An Outline of Ergodic Theory

This informal introduction provides a fresh perspective on isomorphism theory, which is the branch of ergodic theory that explores the conditions under which two measure preserving systems are essentially equivalent.
It contains a primer in basic measure theory, proofs of fundamental ergodic theorems, and material on entropy, martingales, Bernoulli processes, and various varieties of mixing.
Original proofs of classic theorems - including the Shannon-McMillan-Breiman theorem, the Krieger finite generator theorem, and the Ornstein isomorphism theorem - are presented by degrees, together with helpful hints that encourage the reader to develop the proofs on their own.
Hundreds of exercises and open problems are also included, making this an ideal text for graduate courses.

Apr. 2010 230 pp.
9780521194402 価格未定

New Mathematical Monographs,

Vol. 15: **Schertz, R.:** 437-086
Complex Multiplication

This is a self-contained account of the state of the art in classical complex multiplication that includes recent results on rings of integers and applications to cryptography using elliptic curves.
The author is exhaustive in his treatment, giving a thorough development of the theory of elliptic functions, modular functions and quadratic number fields and providing a concise summary of the results from class field theory. The main results are accompanied by numerical examples, equipping any reader with all the tools and formulas they need.
Topics covered include: the construction of class fields over quadratic imaginary number fields by singular values of the modular invariant j and Weber's tau-function; explicit construction of rings of integers in ray class fields and Galois module structure; the construction of cryptographically relevant elliptic curves over finite fields; proof of Berwick's congruences using division values of the Weierstrass p-function; relations between elliptic units and class numbers.

Apr. 2010 375 pp.
9780521766685 13,070.

Cambridge Series in Statistical and Probabilistic Mathematics,

Vol. 30: **Morters, P. /Peres, Y.:** 437-200
Brownian Motion

Starting with the construction of Brownian motion, the book then proceeds to sample path properties like continuity and nowhere differentiability. Notions of fractal dimension are introduced early and are used throughout the book to describe fine properties of Brownian paths.
The relation of Brownian motion and random walk is explored from several viewpoints, including a development of the theory of Brownian local times from random walk embeddings.

Mar. 2010 420 pp.
9780521760188 価格未定

---

*Vol. **:* **Maindonald, J. /Braun, W.:** 詳報掲載 **No. 199**
Data Analysis and Graphics Using R: An Example-Based Approach, 3rd ed.
May 2010 *560 pp.* *9780521762939* *価格未定*

Cambridge

Lecture Notes in Mathematics,

Vol. 1987: **Brasselet, J.-P. /Seade, J. /Suwa Tatsuo : Vector Fields on Singular Varieties**

437-035

Vector fields on manifolds play a major role in mathematics and other sciences.
In particular, the Poincare-Hopf index theorem gives rise to the theory of Chern classes, key manifold-invariants in geometry and topology.
It is natural to ask what is the 'good' notion of the index of a vector field, and of Chern classes, if the underlying space becomes singular.
The question has been explored by several authors resulting in various answers, starting with the pioneering work of M.-H. Schwartz and R. MacPherson. We present these notions in the framework of the obstruction theory and the Chern-Weil theory.
The interplay between these two methods is one of the main features of the monograph.

Dec. 2009 250 pp.
9783642052040 9,080.

Vol. 1986: **Antoine, J.-P. /Trapani, C.: Partial Inner Product Spaces: Theory and Applications**

437-096

Partial Inner Product (PIP) Spaces are ubiquitous, e.g. Rigged Hilbert spaces, chains of Hilbert or Banach spaces (such as the Lebesgue spaces Lp over the real line), etc.
In fact, most functional spaces used in (quantum) physics and in signal processing are of this type.
The book contains a systematic analysis of PIP spaces and operators defined on them. Numerous examples are described in detail and a large bibliography is provided.
Finally, the last chapters cover the many applications of PIP spaces in physics and in signal/image processing, respectively.
As such, the book will be useful both for researchers in mathematics and practitioners of these disciplines.

Nov. 2009 332 pp.
9783642051357 14,130.

Vol. 1985: **Lins, T.: Layer-Adapted Meshes for Reaction-Convection-Diffusion Problems**

437-123

This book on numerical methods for singular perturbation problems - in particular, stationary reaction-convection-diffusion problems exhibiting layer behaviour is devoted to the construction and analysis of layer-adapted meshes underlying these numerical methods.
A classification and a survey of layer-adapted meshes for reaction-convection-diffusion problems are included.
This structured and comprehensive account of current ideas in the numerical analysis for various methods on layer-adapted meshes is addressed to researchers in finite element theory and perturbation problems. Finite differences, finite elements and finite volumes are all covered.

Dec. 2009 310 pp.
9783642051333 14,130.

Vol. 1984: **Caselles, V. /Monasse, P.:** 詳報掲載 **No. 060**
Geometric Description of Topographic Maps & Applications to Image Processing
Nov. 2009 180 pp. 9783642046100 7,060.

Springer

Graduate Texts in Mathematics,

Vol. 256: Kemper, G.: 436-078

A Course in Commutative Algebra

Kemper's "Course in Commutative Algebra" presents a thorough, modern introduction to the subject.
With carefully selected topics presented in a natural geometric context, the author's key focus is on concepts and results in the field.
But, while emphasizing theory, the presentation is enriched with three chapters covering computational aspects of the subject.
This user-friendly textbook motivates the reader with numerous examples, figures, and exercises, and is well designed for a one- or two-semester course in a classroom setting.

Jan. 2010 240 pp.
9783642035449 10,090.

The IMA Volumes in Mathematics & its Applications,

Vol. 152: Baez, J. /May, J. (ed.): 437-038

Towards Higher Categories

The idea is to give some of the motivations behind this subject.
There are then two survey articles, by Julie Bergner and Simona Paoli, about (infinity,1) categories and about the algebraic modelling of homotopy n-types.
These are areas that are particularly well understood, and where a fully integrated theory exists.
The main focus of the book is on the richness to be found in the theory of bicategories, which gives the essential starting point towards the understanding of higher categorical structures.

Sep. 2009 268 pp.
9781441915238 18,170.

Undergraduate Texts in Mathematics

Ghorpade, S. /Limaye, B.: 437-113

A Course in Multivariable Calculus and Analysis

The emphasis is on correlating general concepts and results of multivariable calculus with their counterparts in one-variable calculus.
For example, when the general definition of the volume of a solid is given using triple integrals, the authors explain why the shell and washer methods of one-variable calculus for computing the volume of a solid of revolution must give the same answer.

Dec. 2009 476 pp.
9781441916204 12,110.

Grabe, M.: 437-189

Generalized Gaussian Error Calculus

Since experimentalists realized that measurements in general are burdened by unknown systematic errors, the classical, widespread used evaluation procedures scrutinizing the consequences of random errors alone turned out to be obsolete.
As a matter of course, the error calculus to-be, treating random and unknown systematic errors side by side, should ensure the consistency and traceability of physical units, physical constants and physical quantities at large.

Nov. 2009 319 pp.
9783642033049 24,230.

Springer

Algebra and Applications,

Vol. 12: **Wehrfritz, B.:** 437-092
Group and Ring Theoretic Properties of Polycyclic Groups

Polycyclic groups are built from cyclic groups in a specific way.
They arise in many contexts within group theory itself but also more generally in algebra, for example in the theory of Noetherian rings.
They also touch on some aspects of topology, geometry and number theory.
The first half of this book develops the standard group theoretic techniques for studying polycyclic groups and the basic properties of these groups.
The second half then focuses specifically on the ring theoretic properties of polycyclic groups and their applications, often to purely group theoretic situations.

Dec. 2009 130 pp.
9781848829404 16,150.

Universitext

Brezis, H.: 437-103
Functional Analysis, Sobolev Spaces and Partial Differential Equations

This textbook is a completely revised, updated, and expanded English edition of the important Analyse fonctionnelle (1983).
In addition, it contains a wealth of problems and exercises (with solutions) to guide the reader.
Uniquely, this book presents in a coherent, concise and unified way the main results from functional analysis together with the main results from the theory of partial differential equations (PDEs).
Although there are many books on functional analysis and many on PDEs, this is the first to cover both of these closely connected topics.
Since the French book was first published, it has been translated into Spanish, Italian, Japanese, Korean, Romanian, Greek and Chinese.

Feb. 2010 455 pp.
9780387709130 8,980.

Rosenberg, A.: 437-244
The Pillars of Computation Theory: State, Encoding, Nondeterminism

Computation theory is a discipline that strives to use mathematical tools and concepts in order to expose the nature of the activity that we call 'computation' and to explain a broad range of observed computational phenomena. Why is it harder to perform some computations than others? Are the differences in difficulty that we observe inherent, or are they artifacts of the way we try to perform the computations?
Even more basically: how does one reason about such questions?
This book strives to endow upper-level undergraduate students and lower-level graduate students with the conceptual and manipulative tools necessary to make Computation theory part of their professional lives.
The author tries to achieve this goal via three stratagems that set this book apart from most other texts on the subject.

Nov. 2009 340 pp.
9780387096384 8,980.

Bapat, R.: **Graphs and Matrices** 詳報掲載 No. 054
Jan. 2010 *180 pp.* *9781848829800* *10,090.*

Springer

Lecture Notes of the Unione Matematica Italiana,

Vol. 8: Voros, A.: 437-090

Zeta Functions over Zeros of Zeta Functions

The famous zeros of the Riemann zeta function and its generalizations (L-functions, Dedekind and Selberg zeta functions) are analyzed through several zeta functions built over those zeros.
These 'second-generation' zeta functions have surprisingly many explicit, yet largely unnoticed properties, which are surveyed here in an accessible and synthetic manner, and then compiled in numerous tables.
No previous book has addressed this neglected topic in analytic number theory. Concretely, this handbook will help anyone faced with symmetric sums over zeros like Riemann's.
More generally, it aims at reviving the interest of number theorists and complex analysts toward those unfamiliar functions, on the 150th anniversary of Riemann's work.

Dec. 2009 159 pp.
9783642052026 7,060.

Vol. 7: Tarter, L.: 437-136

The General Theory of Homogenization: A Personlized Introduction

Homogenization is not about periodicity, or G-convergence, but about understanding which effective equations to use at macroscopic level, knowing which partial differential equations govern mesoscopic levels, without using probabilities (which destroy physical reality); instead, one uses various topologies of weak type, the G-convergence of Sergio Spagnolo, the H-convergence of Francois Murat and the author, and some responsible for the appearance of nonlocal effects, which many theories in continuum mechanics or physics guessed wrongly.

Dec. 2009 434 pp.
9783642051944 14,130.

Applied Mathematical Sciences,

Vol. 170: Schuss, Z.: 437-208

Theory and Applications of Stochastic Processes: An Analytic Approach

This book offers an analytical approach to stochastic processes that are most common in the physical and life sciences.
Its aim is to make probability theory readily accessible to scientists trained in the traditional methods of applied mathematics, such as integral, ordinary, and partial differential equations and in asymptotic methods, rather than in probability and measure theory.
The book includes many detailed illustrations, applications, examples and exercises.

Jan. 2010 356 pp.
9781441916044 10,890

Vol. 158: Oertel, H. (ed.): 437-241

Prandtl-Essentials of Fluid Mechanics, 3rd ed.

It is based on the 12th German edition with additional material included.
All Chapters have been revised and extended, and there are new chapters on fluid mechanical instabilities and turbulence, microflows and biofluid mechanics.

Nov. 2009 740 pp.
9781441915634 14,130.

Springer