Yurinsha Book News

Ivanov, S. /Vassilev, D.:
Extremals for the Sobolev Inequality and the Quaternionic Contact Yamabe Problem 445-159

The aim of this book is to give an account of some important new developments in the study of the Yamabe problem on quaternionic contact manifolds.
This book covers the conformally flat case of the quaternionic Heisenberg group or sphere, where complete and detailed proofs are given, together with a chapter on the conformal curvature tensor introduced very recently by the authors.
The starting point of the considered problems is the well-known Folland-Stein Sobolev type embedding and its sharp form that is determined based on geometric analysis.
This book also sits at the interface of the generalization of these fundamental questions motivated by the Carnot-Caratheodory geometry of quaternionic contact manifolds, which have been recently the focus of extensive research motivated by problems in analysis, geometry, mathematical physics and the applied sciences.
Through the beautiful resolution of the Yamabe problem on model quaternionic contact spaces, the book serves as an introduction to this field for graduate students and novice researchers, and as a research monograph suitable for experts as well.

Aug. 2010 200 pp.
9789814295703 9,730.
World Scientific Pub.

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

No. 445 July 2010
数理科学 友 隣 社 洋書専門

History of Mathematics,

Vol. 37: **Poincare, H.:** Translated by John Stillwell:

Papers on Topology: Analysis Situs and Its Five Supplements

(A co-publication of the AMS and the London Mathematical Society)

The papers in this book chronicle Henri Poincare's journey in algebraic topology between 1892 and 1904, from his discovery of the fundamental group to his formulation of the Poincare conjecture.
For the first time in English translation, one can follow every step (and occasional stumble) along the way, with the help of translator John Stillwell's introduction and editorial comments. 445-028
Now that the Poincare conjecture has finally been proved, by Grigory Perelman, it seems timely to collect the papers that form the background to this famous conjecture.
Poincare's papers are in fact the first draft of algebraic topology, introducing its main subject matter (manifolds) and basic concepts.
All mathematicians interested in topology and its history will enjoy this book.

Oct. 2010 241 pp.
9780821852347 8,200.

University Lecture Series,

Vol. 55: **Goldreich, O.:** 445-094

A Primer on Pseudorandom Generators

A fresh look at the question of randomness was taken in the theory of computing: A distribution is pseudorandom if it cannot be distinguished from the uniform distribution by any efficient procedure.
This paradigm, originally associating efficient procedures with polynomial-time algorithms, has been applied with respect to a variety of natural classes of distinguishing procedures.
The resulting theory of pseudorandomness is relevant to science at large and is closely related to central areas of computer science, such as algorithmic design, complexity theory, and cryptography.
This primer surveys the theory of pseudorandomness, starting with the general paradigm, and discussing various incarnations while emphasizing the case of general-purpose pseudorandom generators (withstanding any polynomial-time distinguisher).

Sep. 2010 142 pp.
9780821851920 15,710.

Fields Institute Communications,

Vol. 57: **Sivaloganathan, S.:** 445-039

New Perspectives in Mathematical Biology

In the 21st century, the interdisciplinary field of mathematical biology and medicine has firmly taken center stage as one of the major themes of modern applied mathematics, with strong links to the empirical biomedical sciences.
New Perspectives in Mathematical Biology provides an overview of the distinct variety and diversity of current research in the field.
In every chapter of this book, which covers themes ranging from cancer modeling to infectious diseases to orthopaedics and musculoskeletal tissue mechanics, there is clear evidence of the strong connections and interactions of mathematics with the biological and biomedical sciences that have spawned new models and novel insights.

Sep. 2010 139 pp.
9780821848456 10,980.

A. M. S.

Contemporary Mathematics,

Vol. 521: Kohel, D. /Rolland, R. (eds.): 445-102
Arithmetic, Geometry,
Cryptography and Coding Theory 2009

This volume contains the proceedings of the 12th conference on Arithmetic, Geometry, Cryptography and Coding Theory, held in Marseille, France from March 30 to April 3, 2009, as well as the first Geocrypt conference, held in Point-a-Pitre, Guadeloupe from April 27 to May 1, 2009, and the European Science Foundation exploratory workshop on Curves, Coding Theory, and Cryptography, held in Marseille, France from March 25 to 29, 2009.
The articles contained in this volume come from three related symposia organized by the group Arithmetique et Theorie de l'Information in Marseille. The topics cover arithmetic properties of curves and higher dimensional varieties with applications to codes and cryptography.

Sep. 2010 166 pp.
9780821849552 8,200.

Vol. 520: Lladser, M. /Maier, R. / 445-105
Mishna, M. /Rechnitzer, A. (eds.):
Algorithmic Probability and Combinatorics

This volume contains the proceedings of the AMS Special Sessions on Algorithmic Probability and Combinatorics held at DePaul University on October 5-6, 2007 & at the University of British Columbia on October 4-5, 2008.
This volume collects cutting-edge research and expository on algorithmic probability and combinatorics.
It includes contributions by well-established experts and younger researchers who use generating functions, algebraic and probabilistic methods as well as asymptotic analysis on a daily basis.
Walks in the quarter-plane and random walks (quantum, rotor and self-avoiding), permutation tableaux, and random permutations are considered.
In addition, articles in the volume present a variety of saddle-point and geometric methods for the asymptotic analysis of the coefficients of single- and multi-variable generating functions associated with combinatorial objects and discrete random structures.
The volume should appeal to pure and applied mathematicians, as well as mathematical physicists; in particular, anyone interested in computational aspects of probability, combinatorics and enumeration.

Aug. 2010 240 pp.
9780821847831 10,980.

DIMACS: Discrete Mathematics & Theoretical Computer Science,

Vol. 75: Gumel, A. /Lenhart, S. (eds.): 445-269
Modeling Paradigms and
Analysis of Disease Transmission Models

This volume stems from two DIMACS activities, the U.S.-Africa Advanced Study Institute and the DIMACS Workshop, both on Mathematical Modeling of Infectious Diseases in Africa, held in South Africa in the summer of 2007.
It contains both tutorial papers and research papers.
Students and researchers should find the papers on modeling and analyzing certain diseases currently affecting Africa very informative.
In particular, they can learn basic principles of disease modeling and stability from the tutorial papers where continuous and discrete time models, optimal control, and stochastic features are introduced.

Sep. 2010 278 pp.
9780821843840 14,460.

A. M. S.

Arnold, V.: 445-071/072

Dynamics, Statistics and Projective Geometry of Galois Fields

V. I. Arnold reveals some unexpected connections between such apparently unrelated theories as Galois fields, dynamical systems, ergodic theory, statistics, chaos and the geometry of projective structures on finite sets. The author blends experimental results with examples and geometrical explorations to make these findings accessible to a broad range of mathematicians, from undergraduate students to experienced researchers.

Dec. 2010 120 pp.

9780521872003 /9780521692908 価格未定 / 価格未定 (Paper ed.)

London Mathematical Society Student Texts,

Vol. 76: **Williams, K.:** 445-117/118

Number Theory in the Spirit of Liouville

Joseph Liouville is recognised as one of the great mathematicians of the nineteenth century, and one of his greatest achievements was the introduction of a powerful new method into elementary number theory. This book provides a gentle introduction to this method, explaining it in a clear and straightforward manner.

The many applications provided include applications to sums of squares, sums of triangular numbers, recurrence relations for divisor functions, convolution sums involving the divisor functions, and many others.

All of the topics discussed have a rich history dating back to Euler, Jacobi, Dirichlet, Ramanujan and others, and they continue to be the subject of current mathematical research.

Williams places the results in their historical and contemporary contexts, making the connection between Liouville's ideas and modern theory.

Nov. 2010 310 pp.

9781107002531/9780521175623 15,180./6,600. (Paper ed.)

Vol. 75: **Cvetkovic, D. /Rowlinson, P. /Simic, S.:**

An Introduction to the Theory of Graph Spectra

Nov. 2009 388 pp. 9780521118392/9780521134088 13,360./5,280.(Paper ed.)

Encyclopedia of Mathematics and its Applications,

Vol. 140: **Vakil, N.:** 445-186

Real and Abstract Analysis: A Treatment Through Modern Infinitesimals

Real and Abstract Analysis provides a course in mathematical analysis using the methods of modern infinitesimals, which are developed within the framework of Internal Set Theory (IST) introduced by Edward Nelson in 1977. After motivating IST through an ultrapower construction, the book provides a careful development of the theory representing each external class as a proper class.

The basic standard and nonstandard properties of the real numbers follow, together with a thorough discussion of the central topics of analysis, beginning with those usually discussed in an advanced undergraduate course and gradually moving to topics suitable for more advanced readers.

This book provides readers with an opportunity to attain increasing levels of expertise in applying modern infinitesimals as they progress through the chapters. It may be used for reference, self-study, and as a resource for advanced undergraduate or graduate courses.

Feb. 2011 530 pp.

9781107002029 13,070.

Cambridge

London Mathematical Society Lecture Note Series,

Vol. 382: Krajicek, J.: 445-162
Forcing with Random Variables and Proof Complexity

This book introduces a new approach to building models of bounded arithmetic, with techniques drawn from recent results in computational complexity. Propositional proof systems and bounded arithmetics are closely related. In particular, proving lower bounds on the lengths of proofs in propositional proof systems is equivalent to constructing certain extensions of models of bounded arithmetic.
This offers a clean and coherent framework for thinking about lower bounds for proof lengths, and it has proved quite successful in the past.
This book outlines a brand new method for constructing models of bounded arithmetic, thus for proving independence results and establishing lower bounds for proof lengths.
The models are built from random variables defined on a sample space which is a non-standard finite set and sampled by functions of some restricted computational complexity. It will appeal to anyone interested in logical approaches to fundamental problems in complexity theory.

Dec. 2010 280 pp.
9780521154338 8,980.

Vol. 380: Manoel, M. /Fuster, M. /Wall, C.: 445-106
Real and Complex Singularities

The biennial meetings at Sao Carlos have helped create a worldwide community of experts and young researchers working on singularity theory, with a special focus on applications to a wide variety of topics in both pure and applied mathematics.
The tenth meeting, celebrating the 60th birthdays of Terence Gaffney and Maria Aparecida Soares Ruas, was a special occasion attracting the best known names in the area.
This volume contains contributions by the attendees, including three articles written or co-authored by Gaffney himself, and survey articles on the existence of Milnor fibrations, global classifications and graphs, pairs of foliations on surfaces, and Gaffney's work on equisingularity.

Oct. 2010 420 pp.
9780521169691 10,560.

Vol. 379: Esparza, J.: 445-057
Finite and Algorithmic Model Theory

Intended for researchers and graduate students in theoretical computer science and mathematical logic, this volume contains accessible surveys by leading researchers from areas of current work in logical aspects of computer science, where both finite and infinite model-theoretic methods play an important role.
Notably, the articles in this collection emphasize points of contact and connections between finite and infinite model theory in computer science that may suggest new directions for interaction.
Among the topics discussed are: algorithmic model theory, descriptive complexity theory, finite model theory, finite variable logic, model checking, model theory for restricted classes of finite structures, and spatial databases.
The chapters all include extensive bibliographies facilitating deeper exploration of the literature and further research.

Dec. 2010 350 pp.
9780521718202 9,450.

Cambridge

Lecture Notes in Mathematics,

Vol. 2005: Yang, D. /Sickel, W.: 445-187

Morrey and Campanato Meet Besov, Lizorkin and Triebel

Based on three formally different developments, namely, the theory of Besov and Triebel-Lizorkin spaces, the theory of Morrey and Campanato spaces and the theory of Q spaces, the authors develop a unified framework for all of these spaces. As a byproduct, the authors provide a completion of the theory of Triebel-Lizorkin spaces when $p = \infty$.

Oct. 2010 272 pp.
9783642146053 7,820.

Vol. 2004: Diethelm, K.: 445-147

The Analysis of Fractional Differential Equations

Fractional calculus was first developed by pure mathematicians in the middle of the 19th century. Some 100 years later, engineers and physicists have found applications for these concepts in their areas. However there has traditionally been little interaction between these two communities.
In particular, typical mathematical works provide extensive findings on aspects with comparatively little significance in applications, and the engineering literature often lacks mathematical detail and precision.
This book bridges the gap between the two communities.
It concentrates on the class of fractional derivatives most important in applications, the Caputo operators, and provides a self-contained, thorough and mathematically rigorous study of their properties and of the corresponding differential equations.

Sep. 2010 246 pp.
9783642145735 7,820.

Vol. 2002: Potzsche, C.: 445-175

Geometric Theory of Discrete Nonautonomous Dynamical Systems

Nonautonomous dynamical systems provide a mathematical framework for temporally changing phenomena, where the law of evolution varies in time due to seasonal, modulation, controlling or even random effects.
Our goal is to provide an approach to the corresponding geometric theory of nonautonomous discrete dynamical systems in infinite-dimensional spaces by virtue of 2-parameter semigroups (processes).

Sep. 2010 398 pp.
9783642142574 12,170.

Vol. 2001: Duquesne, T. /Reichmann, O. / Sato, K.-I. /Schwab, C. /Barndorff-Nielsen, O.(eds.): 詳報掲載 No. 151

Levy Matters I

Aug. 2010 195 pp. 9783642140068 7,820.

Vol. 1999: Schoutens, H.: 445-111

The Use of Ultraproducts in Commutative Algebra

This work wants to make a strong case against these prejudices.
More precisely, it studies ultraproducts of Noetherian local rings from a purely algebraic perspective, as well as how they can be used to transfer results between the positive and zero characteristics, to derive uniform bounds, to define tight closure in characteristic zero, and to prove asymptotic versions of homological conjectures in mixed characteristic.

Aug. 2010 200 pp.
9783642133671 7,820.

Springer

Fontana, M. / 445-093
Kabbaj, S.-E. /Olberding, B. /Swanson, I. (eds.):
Commutative Algebra:
Noetherian and Non-Noetherian Perspectives

This volume presents several of the most recent results from various areas related to both Noetherian and non-Noetherian commutative algebra. The authors of these chapters are internationally renowned for their important contributions to various aspects of current research in commutative algebra. Some topics presented in the volume include: generalizations of cyclic modules, zero divisor graphs, class semigroups, forcing algebras, syzygy bundles, tight closure, Gorenstein dimensions, tensor products of algebras over fields, as well as many others.

Oct. 2010 488 pp.
9781441969897 19,130.

Springer Monographs in Mathematics

Dudley, R. /Norvaisa, R.: 445-148
Concrete Functional Calculus

Concrete Functional Calculus focuses primarily on differentiability of some nonlinear operators on functions or pairs of functions, including composition of two functions, and the product integral, taking a matrix- or operator-valued coefficient function into a solution of a system of linear differential equations with the given coefficients.

Oct. 2010 672 pp.
9781441969491 17,390.

Duistermaat, J.: 445-089
Discrete Integrable Systems:
QRT Maps and Elliptic Surfaces

The rich subject matter in this book brings in mathematics from different domains, especially from the theory of elliptic surfaces and dynamics. The material comes from the author's insights and understanding of a birational transformation of the plane derived from a discrete sine-Gordon equation, posing the question of determining the behavior of the discrete dynamical system defined by the iterates of the map. The aim of this book is to give a complete treatment not only of the basic facts about QRT maps, but also the background theory on which these maps are based.

Sep. 2010 620 pp.
9781441971166 13,040.

Ceccherini-Silberstein, T. /Tullio, G. /Coornaert, M.:
Cellular Automata and Groups

The authors present a self-contained exposition of the theory of cellular automata on groups and explore its deep connections with recent developments in geometric group theory and other branches of mathematics and theoretical computer science. 445-082
The topics treated include in particular the Garden of Eden theorem for amenable groups and the Gromov-Weiss surjunctivity theorem as well as the solution of the Kaplansky conjecture on the stable finiteness of group rings for sofic groups. Based on the interplay between amenability, geometric and combinatorial group theory, and symbolic dynamics it considers linear cellular automata: this gives applications to the theory of group rings that have no counterpart in other books on the same topics.

July 2010 450 pp.
9783642140334 15,650.

Springer

Universitext

Dudziak, J.: 445-149

Vitushkin's Conjecture for Removable Sets

Vitushkin's conjecture, a special case of Painleve's problem, states that a compact subset of the complex plane with finite linear Hausdorff measure is removable for bounded analytic functions if and only if it intersects every rectifiable curve in a set of zero arclength measure.
Chapters 6-8 of this carefully written text present a major recent accomplishment of modern complex analysis, the affirmative resolution of this conjecture. Four of the five mathematicians whose work solved Vitushkin's conjecture have won the prestigious Salem Prize in analysis.
Chapters 1-5 of this book provide important background material on removability, analytic capacity, Hausdorff measure, arclength measure, and Garabedian duality that will appeal to many analysts with interests independent of Vitushkin's conjecture.
The fourth chapter contains a proof of Denjoy's conjecture that employs Melnikov curvature.

Aug. 2010 272 pp.
9781441967084 7,730.

Canuto, C. /Tabacco, A.: 445-137

Mathematical Analysis II., 2nd ed.

The purpose of this textbook is to present an array of topics in Calculus, and conceptually follow our previous effort Mathematical Analysis I.
The present material is partly found, in fact, in the syllabus of the typical second lecture course in Calculus as offered in most Italian universities.
While the subject matter known as 'Calculus 1' is more or less standard, and concerns real functions of real variables, the topics of a course on 'Calculus 2'can vary a lot, resulting in a bigger flexibility.
For these reasons the Authors tried to cover a wide range of subjects, not forgetting that the number of credits the current programme specifications confers to a second Calculus course is not comparable to the amount of content gathered here.
The reminders disseminated in the text make the chapters more independent from one another, allowing the reader to jump back and forth, and thus enhancing the versatility of the book.

Sep. 2010 543 pp.
9788847017832 10,430.

Gibbings, J.:

Dimensional Analysis

445-152

For experiments, dimensional analysis enables the design, checks the validity, orders the procedure and synthesises the data.
Additionally it can provide relationships between variables where standard analysis is not available.
This widely valuable analysis for engineers and scientists is here presented to the student, the teacher and the researcher.
It is the first complete modern text that covers developments over the last three decades while closing all outstanding logical gaps.
Dimensional Analysis also lists the logical stages of the analysis, so showing clearly the care to be taken in its use while revealing the very few limitations of application. As the conclusion of that logic, it gives the author's original proof of the fundamental and only theorem.

Jan. 2011 528 pp.
9781849963169 17,390.

Springer

Undergraduate Texts in Mathematics

Beck, M. /Geoghegan, R.: 445-007
The Art of Proof: Basic Training for Deeper Mathematics

The Art Of Proof is designed for a one-semester or two-quarter course.
A typical student will have studied calculus (perhaps also linear algebra) with reasonable success.
With an artful mixture of chatty style and interesting examples, the student's previous intuitive knowledge is placed on solid intellectual ground.
The topics covered include: integers, induction, algorithms, real numbers, rational numbers, modular arithmetic, limits, and uncountable sets.
Methods, such as axiom, theorem and proof, are taught while discussing the mathematics rather than in abstractisolation.
Some of the proofs are presented in detail, while others (some with hints) may be assigned to the student or presented by the instructor.

Oct. 2010 182 pp.
9781441970220 5,210.

Bolyai Society Mathematical Studies,

Vol. 20: **Katona, G. /Schrijver, A. /Szonyi, T. (eds.):**
Fete of Combinatorics and Computer Science

Discrete Mathematics and theoretical computer science are closely linked research areas with strong impacts on applications and various other scientific disciplines. Both fields deeply cross fertilize each other.
One of the persons who particularly contributed to building bridges between these and many other areas is Laszlo Lovasz, whose outstanding scientific work has defined and shaped many research directions in the past 40 years.
A number of friends and colleagues, all top authorities in their fields of expertise gathered at the two conferences in August 2008 in Hungary, celebrating Lovasz' 60th birthday.
It was a real fete of combinatorics and computer science. 445-100
Some of these plenary speakers submitted their research or survey papers prior to the conferences.
These are included in the volume "Building Bridges".
The other speakers were able to finish their contribution only later, these are collected in the present volume.

Aug. 2010 450 pp.
9783642135798 19,130.

Applied Mathematical Sciences,

Vol. 172: **Broer, H. /Takens, F.:** 445-134
Dynamical Systems and Chaos

This book starts from the phenomenological point of view reviewing examples.
This book aims at a wide audience where the first four chapters have been used for an undergraduate course in Dynamical Systems.
Material from the last two chapters and from the appendices has been used quite a lot for master and PhD courses.
All chapters are concluded by an exercise section.
The book is also directed towards researchers, where one of the challenges is to help applied researchers acquire background for a better understanding of the data that computer simulation or experiment may provide them with the development of the theory.

Nov. 2010 344 pp.
9781441968692 8,690.

Springer

Li, Ta-Tsien. (ed.): 445-041/042

Problems and Solutions in Mathematics, 2nd ed.

This book contains a selection of more than 500 mathematical problems and their solutions from the PhD qualifying examination papers of more than ten famous American universities.
The mathematical problems cover six aspects of graduate school mathematics: Algebra, Topology, Differential Geometry, Real Analysis, Complex Analysis and Partial Differential Equations.
While the depth of knowledge involved is not beyond the contents of the textbooks for graduate students, discovering the solution of the problems requires a deep understanding of the mathematical principles plus skilled techniques.
For students, this book is a valuable complement to textbooks. Whereas for lecturers teaching graduate school mathematics, it is a helpful reference.

Feb. 2011 650 pp.
9789814304955 /9789814304962 17,990./9,170. (Paper ed.)

Duverney, D.: 445-090/091

Number Theory:
An Elementary Introduction Through Diophantine Problems

This textbook presents an elementary introduction to number theory and its different aspects: approximation of real numbers, irrationality and transcendence problems, continued fractions, diophantine equations, quadratic forms, arithmetical functions and algebraic number theory.
These topics are covered in 12 chapters and more than 200 solved exercises.
Clear, concise, and self-contained, this textbook may be used by undergraduate and graduate students, as well as highschool mathematics teachers.
More generally, it will be suitable for all those who are interested in number theory, this fascinating branch of mathematics.

May 2010 350 pp.
9789814307451/ 9789814307468 10,840./4,730. (Paper ed.)

Ungar, A.: 445-218

Barycentric Calculus in Euclidean and Hyperbolic Geometry:
A Comparative Introduction

The word barycentric is derived from the Greek word barys (heavy), and refers to center of gravity. Barycentric calculus is a method of treating geometry by considering a point as the center of gravity of certain other points to which weights are ascribed. Hence, in particular, barycentric calculus provides excellent insight into triangle centers.
This unique book on barycentric calculus in Euclidean and hyperbolic geometry provides an introduction to the fascinating and beautiful subject of novel triangle centers in hyperbolic geometry along with analogies they share with familiar triangle centers in Euclidean geometry.
As such, the book uncovers magnificent unifying notions that Euclidean and hyperbolic triangle centers share.
In his earlier books the author adopted Cartesian coordinates, trigonometry and vector algebra for use in hyperbolic geometry that is fully analogous to the common use of Cartesian coordinates, trigonometry and vector algebra in Euclidean geometry. As a result, powerful tools that are commonly available in Euclidean geometry became available in hyperbolic geometry as well, enabling one to explore hyperbolic geometry in novel ways.

Sep. 2010 300 pp.
9789814304931 11,950.

World Scientific Pub.

Panoramas et syntheses,

Vol. 29: **Kim, M. /Ramdorai, S. /Lafforgue, L. / Genestier, A. /Ngo, B.-C.:** 445-101

Autour des motifs: Asian-French summer school on algebraic geometry and number theory, Vol. 1

This volume contains the first part of the lecture notes of the Asian-French Summer School on Algebraic Geometry and Number Theory, which was held at the Institut des Hautes Etudes Scientifiques (Bures-sur-Yvette) and the Universite Paris-Sud XI (Orsay) in July 2006.
This summer school was devoted to the theory of motives and its recent developments, and to related topics, notably Shimura varieties and automorphic representations.
The contributions in this first part are expanded versions of the talks introducing the theory of motives by M.Kim and R.Sujatha, the lecture notes Quelques remarques sur le principe de fonctorialite by L. Lafforgue, and Lectures on Shimura varieties by A. Genestier and Ngo B. C.

July 2010 ....
9782856292921 価格未定

Vol. 28: **Berthon, C. /Buet, C. / Coulombel, J.-F. / Despres, B. /Dubois, J. / Goudon, T. /Morel, J. /Turpault, R.** 445-129

Mathematical Models and Numerical Methods for Radiative Transfer

This volumes describes some aspects of modern radiative transfer theory, dealing with models where the transport equation for the radiative energy is coupled to hydrodynamic systems.
The discussion is specifically oriented to the design of dedicated efficient numerical methods. In particular, details are given on: --- asymptotic regimes and asymptotic models that lead to diffusion approximations, --- intermediate models like the M model based on an entropy minimization closure, --- the analysis of shock profiles in radiative hydrodynamics.

June 2010 ....
9782856292747 5,920.

Vol. 27: **Curien, P.-L. /Herbelin, H. / Krivine, J.-L. /Mellies, P.-A.:**

Interactive models of computation and program behaviour 445-055

The contributions can be read independently and use or introduce fundamental tools in the field: categories, realizability, abstract machines. Throughout the volume, a unifying theme is that of games and strategies, that turns the correspondance between proofs and programmes (the so-called Curry-Howard isomorphism) into a triangle whose third corner emphasizes interaction and duality between a program and its environement or between a proof and counter-proofs.
The introduction to the volume places the contributions in perspective and provides a gentle beginner's introduction to the lambda-calculus, which is and remains the backbone of the whole field.

June 2010 275 pp.
9782856292730 10,090.

Vol. 17: **Andre, Y.:** 2004 Printing

Une Introduction Aux Motifs (Motifs Purs, Motifs Mixtes, Periodes)

Dec. 2010 261 pp. 9782856292709 価格未定

The Societe Mathematique de France

Memoirs,

Vol. 24: Asuke Taro : 445-073

Godbillon-Vey Class of Teansversely Holomorphic Foliations

from Preface:
The aim of this monograph is to discuss Secondary characteristic classes of transversely holomorphic foliations such as the Godbillon-Vey class. Main subjects are non-triviality of the Godbillon-Vey class and its rigidity under deformations.
Some of results and constructions seem well-known for specialist, while new results are contained.
Intended as an introduction to the theory of secondary characteristic classes of transversely holomorphic foliations, a brief review of fundamental materials and several known results are also presented.
In addition, some properties related to dynamical properties of complex codimension-one foliations are discussed.

June 2010 130 pp.
9784931469617 2,115.

Vol. 23: Sergeev, A.: 445-214

Kahler Geometry of Loop Spaces

In this book we study three important classes of infinite-dimensional Kahler manifolds — loop spaces of compact Lie groups, Teichmuller spaces of complex structures on loop spaces, and Grassmannians of Hilbert spaces.
Each of these manifolds has a rich Kahler geometry, considered in the first part of the book, and may be considered as a universal object in a category, containing all its finite-dimensional counterparts.
On the other hand, these manifolds are closely related to string theory.

May 2010 212 pp.
9784931469600 3,124.

Advanced Studies in Pure Mathematics,

Vol. 58: Nakamura, I. /Weng, L.: 445-107

Algebraic and Arithmetic Structures of Moduli Spaces (Sapporo 2007)

from Preface:
The conference "Algebraic and Arithmetic Structures of Moduli Spaces" was held in September 2007, at Sapporo.
Twenty talks were delivered by invited speakers from USA, UK, Germany, Holland, India, Russia and Japan.
The subjects of the talks are mainly on algebraic geometry and arithmetic geometry, but also on complex geometry, though many of them were focused more or less on moduli spaces.
The plan to publish this proceedings was made at the very beginning of the preparation of the conference.
The topics that are discussed in the articles are diverse in nature such as class field theory, zeta functions, moduli of arithmetic vector bundles, moduli of complex vector bundles, moduli of abelian varieties and theory of display which relates to arithmetic theory of moduli of abelian varieties, moduli of Fermat varieties and some topics on cubic threefolds.
This reflects the atomosphere of the conference pretty well.

June 2010 502 pp.
9784931469594 8,381.

IRMA - Lecture Notes in Mathematics and Theoretical Physics,

Vol. 16: Cortes, V. (ed.): 445-013
Handbook of Pseudo-Riemannian Geometry and Supersymmetry

The main themes covered are: *special geometry and supersymmetry *generalized geometry *geometries with torsion *para-geometries *holonomy theory *symmetric spaces and spaces of constant curvature *conformal geometry *wave equations on Lorentzian manifolds
The intended audience consists of advanced students and researchers working in differential geometry, string theory and related areas.
The emphasis is on geometrical structures occurring on target spaces of supersymmetric field theories. Some of these structures can be fully described in the classical framework of pseudo-Riemannian geometry.
Others lead to new concepts relating various fields of research, such as special Kahler geometry or generalized geometry.

June 2010 964 pp.
9783037190791 20,530.

EMS Tracts in Mathematics,

Vol. 11: Triebel, H.: 445-185
Bases in Function Spaces, Sampling, Discrepancy, Numerical Integration

The first chapters of this book deal with Haar bases, Faber bases and some spline bases for function spaces in Euclidean n-space and n-cubes. This is used in the subsequent chapters to study sampling and numerical integration preferably in spaces with dominating mixed smoothness.
The subject of the last chapter is the symbiotic relationship between numerical integration and discrepancy, measuring the deviation of sets of points from uniformity.
This book is addressed to graduate students and mathematicians having a working knowledge of basic elements of function spaces and approximation theory, and who are interested in the subtle interplay between function spaces, complexity theory and number theory (discrepancy).

June 2010 305 pp.
9783037190852 10,090.

Vol. 10: Turaev, V.:
Homotopy Quantum Field Theory
With Appendices by 445-217
Michael Muger and Alexis Virelizier

Homotopy Quantum Field Theory (HQFT) is a branch of Topological Quantum Field Theory founded by E.Witten and M.Atiyah.
It applies ideas from theoretical physics to study principal bundles over manifolds and, more generally, homotopy classes of maps from manifolds to a fixed target space.
This book is the first systematic exposition of Homotopy Quantum Field Theory. It starts with a formal definition of an HQFT and provides examples of HQFTs in all dimensions. The main body of the text is focused on 2-dimensional and 3-dimensional HQFTs.
A study of these HQFTs leads to new algebraic objects: crossed Frobenius group-algebras, crossed ribbon group-categories, and Hopf group-coalgebras.

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