

Yurinsha Book News

Proceedings of Symposia in Pure Mathematics,

**Vol. 96: Li, S. /Lian, B. /Song, W. /
Yau, S.-T. (eds.):
String-Math 2015**

510-089

This volume contains the proceedings of the conference String-Math 2015, which was held from December 31, 2015-January 4, 2016, at Tsinghua Sanya International Mathematics Forum in Sanya, China.

Two of the main themes of this volume are frontier research on Calabi-Yau manifolds and mirror symmetry and the development of non-perturbative methods in supersymmetric gauge theories.

The articles present state-of-the-art developments in these topics. String theory is a broad subject, which has profound connections with broad branches of modern mathematics.

In the last decades, the prosperous interaction built upon the joint efforts from both mathematicians and physicists has given rise to marvelous deep results in supersymmetric gauge theory, topological string, M-theory and duality on the physics side, as well as in algebraic geometry, differential geometry, algebraic topology, representation theory and number theory on the mathematics side.

Advanced graduate students, post-docs, and post Ph.D.mathematicians and mathematical physicists interested in string theory.

Nov. 2017

295 pp.

9781470429515

21,120.

A. M. S.

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No. 510

Nov. - Dec. 2017

敬理科学 **友隣社** 洋書専門

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年始は1月5日(金)から通常通り営業いたします

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(株) 友 隣 社

Mathematical Surveys and Monographs,

Vol. 226: Aguiar, M. /Mahajan, S.: No. 510-030

Topics in Hyperplane Arrangements

Part I gives a detailed discussion on faces, flats, chambers, cones, gallery intervals, lunes and other geometric notions associated with arrangements. The Tits monoid plays a central role. Another important object is the category of lunes which generalizes the classical associative operad. Also discussed are the descent and lune identities, distance functions on chambers, and the combinatorics of the braid arrangement and related examples. Part II studies the structure and representation theory of the Tits algebra of an arrangement.

It gives a detailed analysis of idempotents and Peirce decompositions, and connects them to the classical theory of Eulerian idempotents.

It introduces the space of Lie elements of an arrangement which generalizes the classical Lie operad.

Nov. 2017 608 pp.
9781470437114 26,650.

Vol. 225: Bonk, M. /Meyer, D.: No. 510-197

Expanding Thurston Maps

This monograph is devoted to the study of the dynamics of expanding Thurston maps under iteration.

A Thurston map is a branched covering map on a two-dimensional topological sphere such that each critical point of the map has a finite orbit under iteration. A Thurston map is called expanding if, roughly speaking, preimages of a fine open cover of the underlying sphere under iterates of the map become finer and finer as the order of the iterate increases. Every expanding Thurston map gives rise to a fractal space, called its visual sphere.

Many dynamical properties of the map are encoded in the geometry of this visual sphere.

Dec. 2017 496 pp.
9780821875544 28,330.

Contemporary Mathematics,

Vol. 698: Blokh, A. /Bunimovich, L. (eds.): No. 510-230

**Dynamical Systems,
Ergodic Theory, and Probability:
In Memory of Kolya Chernov**

The book is devoted to recent advances in the theory of chaotic and weakly chaotic dynamical systems and its applications to statistical mechanics.

The papers present new original results as well as comprehensive surveys.

Sep. 2017 316 pp.
9781470427733 18,600.

Vol. 697: Broglia, F. /Delon, F. (eds.): No. 510-048

**Ordered Algebraic Structures and
Related Topics**

Papers contained in this volume cover topics in real analytic geometry, real algebra, and real algebraic geometry including complexity issues, model theory of various algebraic and differential structures, Witt equivalence of fields, and the moment problem.

Sep. 2017 366 pp.
9781470429669 18,600.

A. M. S.

*Contemporary Mathematics,***Vol. 696: Basmajian, A. /Minsky, Y.:**

No. 510-120

In the Tradition of Ahlfors-Bers

The Ahlfors-Bers Colloquia commemorate the mathematical legacy of Lars Ahlfors and Lipman Bers.

The core of this legacy lies in the fields of geometric function theory, Teichmüller theory, hyperbolic geometry, and partial differential equations. Today we see the influence of Ahlfors and Bers on algebraic geometry, mathematical physics, dynamics, probability, geometric group theory, number theory and topology. Recent years have seen a flowering of this legacy with an increased interest in their work.

Sep. 2017 251 pp. 18,600.
9781470426514

*Graduate Studies in Mathematics,***Vol. 185: Lafountain, D. /Menasco, W.:**

No. 510-213

Braid Foliations in Low-Dimensional Topology

This book is a self-contained introduction to braid foliation techniques, which is a theory developed to study knots, links and surfaces in general 3-manifolds and more specifically in contact 3-manifolds.

With style and content accessible to beginning students interested in geometric topology, each chapter centers around a key theorem or theorems. The particular braid foliation techniques needed to prove these theorems are introduced in parallel, so that the reader has an immediate "take-home" for the techniques involved.

Nov. 2017 304 pp. 13,910.
9781470436605

Vol. 184: Derksen, H. /Weyman, J.:

No. 510-061

An Introduction to Quiver Representations

It gives a thorough and modern treatment of the algebraic approach based on Auslander-Reiten theory as well as the approach based on geometric invariant theory. The material in the opening chapters is developed starting slowly with topics such as homological algebra, Morita equivalence, and Gabriel's theorem. Next, the book presents Auslander-Reiten theory, including almost split sequences and the Auslander-Reiten transform, and gives a proof of Kac's generalization of Gabriel's theorem.

Dec. 2017 344 pp. 13,910.
9781470425562

Vol. 183: Ford, T.:

No. 510-067

Separable Algebras

This book presents a comprehensive introduction to the theory of separable algebras over commutative rings. After a thorough introduction to the general theory, the fundamental roles played by separable algebras are explored.

For example, Azumaya algebras, the henselization of local rings, and Galois theory are rigorously introduced and treated. Interwoven throughout these applications is the important notion of étale algebras.

Essential connections are drawn between the theory of separable algebras and Morita theory, the theory of faithfully flat descent, cohomology, derivations, differentials, reflexive lattices, maximal orders, and class groups.

Oct. 2017 637 pp. 15,750.
9781470437701

A. M. S.

Vol. 447: Monod, N.:

No. 510-095

New Directions in Locally Compact Groups

This collection of expository articles by a range of established experts and newer researchers provides an overview of the recent developments in the theory of locally compact groups. It includes introductory articles on totally disconnected locally compact groups, profinite groups, p-adic Lie groups and the metric geometry of locally compact groups.

Concrete examples, including groups acting on trees and Neretin groups, are discussed in detail. An outline of the emerging structure theory of locally compact groups beyond the connected case is presented through three complementary approaches: Willis theory of the scale function, global decompositions by means of subnormal series, and the local approach relying on the structure lattice. An introduction to lattices, invariant random subgroups and L2-invariants, and a brief account of the Burger-Mozes construction of simple lattices are also included.

A final chapter collects various problems suggesting future research directions.

| | | |
|---------------|------|---------|
| Apr. 2018 | | |
| 9781108413121 | | 16,590. |

Vol. 446: Metzler, W. /Rosebrock, S. (eds.):

No. 510-217

Advances in Two-Dimensional Homotopy and Combinatorial Group Theory

This volume presents the current state of knowledge in all aspects of two-dimensional homotopy theory.

Building on the foundations laid a quarter of a century ago in the volume *Two-dimensional Homotopy and Combinatorial Group Theory (LMS 197)*, the editors here bring together much remarkable progress that has been obtained in the intervening years. And while the fundamental open questions, such as the Andrews-Curtis Conjecture and the Whitehead asphericity problem remain to be (fully) solved, this book will provide both students and experts with an overview of the state of the art and work in progress.

Ample references are included to the LMS 197 volume, as well as a comprehensive bibliography bringing matters entirely up to date.

| | | |
|---------------|------|---------|
| Jan. 2018 | | |
| 9781316600900 | | 10,890. |

Vol. 445: van der Hoek, J. /Elliott, R.:

No. 510-259

Introduction to Hidden Semi-Markov Models

Markov chains and hidden Markov chains have applications in many areas of engineering and genomics.

This book provides a basic introduction to the subject by first developing the theory of Markov processes in an elementary discrete time, finite state framework suitable for senior undergraduates and graduates.

The authors then introduce semi-Markov chains and hidden semi-Markov chains, before developing related estimation and filtering results.

Genomics applications are modelled by discrete observations of these hidden semi-Markov chains.

This book contains new results and previously unpublished material not available elsewhere. The approach is rigorous and focused on applications.

| | | |
|---------------|------|---------|
| Feb. 2018 | | |
| 9781108441988 | | 13,410. |

Cambridge

*Harvard CMSA Series in Mathematics,***Vol. 1: Bieri, L. /Chrusciel, B. /Yau, S.-T. (eds.):** No. 510-123**Nonlinear Analysis in Geometry
and Applied Mathematics**Part of the program year 2015-2016 on "Nonlinear Equations" at
the Harvard Center of Mathematical Sciences and ApplicationsDuring the 2015-2016 year at Harvard University's Center of
Mathematical Sciences and Applications (CMSA), several researchers working
in mathematical general relativity presented lectures on modern topics of
research in the field of "Non-linear Equations".This volume presents articles-by those researchers and their co-authors-drawn
from their CMSA lectures.Specific topics include the Cauchy problem for the Einstein equations in
cosmological and non-cosmological settings; investigation of stability as well
as singularities (black holes) of classes of spacetimes; initial data engineering;
gravitational radiation; and asymptotics of spacetimes, quasi-local energies,
and their limits.Oct. 2017
9781571463449164 pp.
7,560.*Advanced Lectures in Mathematics,***Vol. 39: Ji, L. (ed.):**

No. 510-211

Hodge Theory and L²-AnalysisThis volume consists of survey papers and introductions pertaining to
Hodge theory, variation of Hodge structures, L²-methods in complex analysis
and geometry, and related results in algebraic geometry.Contributors include some of the world's leading experts: Ayoub, Bierstone,
Griffiths, M. Green, Hain, and Ohsawa.Sep. 2017
9781571463517622 pp.
8,400.*Surveys of Modern Mathematics,***Vol. 14: Ji, L. /Looijenga, E.:**

No. 510-082

**Introduction to Moduli Spaces of
Riemann Surfaces and Tropical Curves**The concept of Riemann surfaces was introduced in Riemann's thesis, and
the moduli space of Riemann surfaces was defined by Riemann in
a masterpiece a few years later.Due to a broad connection with many subjects in mathematics
and physics, Riemann surfaces and their moduli spaces
have been intensively studied and should continue to attract attention in
years to come.Recently, there has been an explosion of interest in and work on
tropical algebraic curves-analogues of algebraic curves over
the complex numbers and hence of Riemann surfaces.This book is an accessible introduction to all these topics, with special
emphasis given to their many connections with subjects such as
algebraic geometry, complex analysis, hyperbolic geometry, topology,
geometric group theory, and mathematical physics.Sep. 2017
9781571463531232 pp.
8,060.**International Press**

Seminaires et Congres,

Vol. 30: Ammari, K. /Lebeau, G. (eds.):
PDE's, Dispersion,
Scattering and Control Theory

No. 510-115

This book results from notes of the lectures given in Monastir from 10 to 14 June 2013 during the workshop about the dispersion and scattering theory and control theory of partial differential equations.

This volume contains surveys of active research topics, along with original research papers containing exciting new results on the PDE's, dispersion, scattering and control theory.

2017
 9782856298589

153 pp.

価格未定

Asterisque,

Vol. 391: Kelly, S.:

No. 510-162

Voevodsky Motives and L Dh-Descent

This work applies Gabber's theorem on alterations to Voevodsky's work on mixed motives. We extend many fundamental theorems to $DM(k, \mathbb{Z}[1/p])$ where p is the exponential characteristic of the perfect field k .

Two applications are an isomorphism of Suslin that compares higher Chow groups and etale cohomology, and calculation of the motivic Steenrod algebra.

2018
 9782856298619

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価格未定

Cours Specialises - Collection SMF,

Vol. 24: Mangolte, F.:

No. 510-092

Varietes algebriques reelles

The first three chapters introduce the basis and classical methods of real and complex algebraic geometry. The last three chapters each focus on one more specific aspect of real algebraic varieties.

A panorama of classical knowledge is made as well as major developments of the last twenty years in terms of topology and geometry of varieties of dimension two and three, without forgetting the curves, the central subject of Hilbert's famous sixteenth problem. Various level exercises are given, and the solutions of many of them are provided at the end of each chapter.

2017
 9782856298640

484 pp.

価格未定

Panoramas et synthèses,

Vol. 8: Cerveau, D. /Ghys, E. /Sibony, N. /Yoccoz, J.-C.:

Dynamique et Geometrie Complexes Reprint ed. 1999

In the last twenty years, the theory of holomorphic dynamical systems has had a resurgent activity, in particular concerning the fine analysis of Julia sets associated to polynomials and rational maps in one complex variable. Simultaneously, closely related theories have had a similar rapid development, for instance, the qualitative theory of differential equations in the complex domain.

The meeting "Etat de la recherche" held in the ENS Lyon in January 1997 aimed at a presentation of the present state of the art in this area,

emphasizing the unity linking the various sub-domains.

No. 510-131

Nov. 2017
 9782856290781

234 pp.

価格未定

Societe Mathematique de France

SEMA SIMAI Springer Series

Jin, S. /Pareschi, L. (eds.):

No. 510-160

**Uncertainty Quantification for
Hyperbolic and Kinetic Equations**

This book explores recent advances in uncertainty quantification for hyperbolic, kinetic, and related problems.

The contributions address a range of different aspects, including: polynomial chaos expansions, perturbation methods, multi-level Monte Carlo methods, importance sampling, and moment methods.

The interest in these topics is rapidly growing, as their applications have now expanded to many areas in engineering, physics, biology and the social sciences.

Accordingly, the book provides the scientific community with a topical overview of the latest research efforts.

Apr. 2018

290 pp.

9783319671093

19,000.

Fields Institute Communications,

Vol. 80: Smith, G. /Sturmfels, B. (eds.):

No. 510-105

Combinatorial Algebraic Geometry:**Selected Papers From the 2016 Apprenticeship Program**

This volume consolidates selected articles from the 2016 Apprenticeship Program at the Fields Institute, part of the larger program on Combinatorial Algebraic Geometry that ran from July through December of 2016.

Written primarily by junior mathematicians, the articles cover a range of topics in combinatorial algebraic geometry including curves, surfaces, Grassmannians, convexity, abelian varieties, and moduli spaces.

This book bridges the gap between graduate courses and cutting-edge research by connecting historical sources, computation, explicit examples, and new results.

Nov. 2017

419 pp.

9781493974856

22,000.

Ergebnisse der Mathematik und ihrer Grenzgebiete 3 Folge

Band 67: Hytonen, T. /van Neerven, J.:

No. 510-156

Analysis in Banach Space, Vol. II:**Probabilistic Methods and Operator Theory**

This second volume of Analysis in Banach Spaces, Probabilistic Methods and Operator Theory, is the successor to Volume I, Martingales and Littlewood-Paley Theory.

It presents a thorough study of the fundamental randomisation techniques and the operator-theoretic aspects of the theory.

The first two chapters address the relevant classical background from the theory of Banach spaces, including notions like type, cotype, K-convexity and contraction principles.

In turn, the next two chapters provide a detailed treatment of the theory of R-boundedness and Banach space valued square functions developed over the last 20 years.

In the last chapter, this content is applied to develop the holomorphic functional calculus of sectorial and bi-sectorial operators in Banach spaces.

Dec. 2017

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9783319698076

22,000.

Springer

Vol. 23: Chiossi, S. /Fino, A. /

No. 510-052

Podesta, F. /Musso, E. /Vezzoni, L. (eds.):

**Special Metrics and Group Actions
in Geomtry**

The volume is a follow-up to the INdAM meeting "Special metrics and quaternionic geometry" held in Rome in November 2015.

It offers a panoramic view of a selection of cutting-edge topics in differential geometry, including 4-manifolds, quaternionic and octonionic geometry, twistor spaces, harmonic maps, spinors, complex and conformal geometry, homogeneous spaces and nilmanifolds, special geometries in dimensions 5-8, gauge theory, symplectic and toric manifolds, exceptional holonomy and integrable systems.

The workshop was held in honor of Simon Salamon, a leading international scholar at the forefront of academic research who has made significant contributions to all these subjects.

Dec. 2017

300 pp.

9783319675183

19,000.

Lecture Notes in Mathematics,

Vol. 2202: Nishitani Tatsuo :

No. 510-176

**Cauchy Problem for Differential Operators with
Double Characteristics**

Combining geometrical and microlocal tools, this monograph gives detailed proofs of many well/ill-posed results related to the Cauchy problem for differential operators with non-effectively hyperbolic double characteristics. Previously scattered over numerous different publications, the results are presented from the viewpoint that the Hamilton map and the geometry of bicharacteristics completely characterizes the well/ill-posedness of the Cauchy problem.

A doubly characteristic point of a differential operator P of order m (i.e. one where $P_m = dP_m = 0$) is effectively hyperbolic if the Hamilton map FP_m has real non-zero eigen values.

When the characteristics are at most double and every double characteristic is effectively hyperbolic, the Cauchy problem for P can be solved for arbitrary lower order terms.

Nov. 2017

192 pp.

9783319676111

7,000.

Vol. 2200: Ball, J. /Feireisl, E. /Otto, F.:

No. 510-119

**Mathematical Thermodynamcis of Complex Fluids:
Cetraro, Italy 2015**

The main goal of this book is to provide an overview of the state of the art in the mathematical modeling of complex fluids, with particular emphasis on its thermodynamical aspects.

The central topics of the text, the modeling, analysis and numerical simulation of complex fluids, are of great interest and importance both for the understanding of various aspects of fluid dynamics and for its applications to special real-world problems.

New emerging trends in the subject are highlighted with the intent to inspire and motivate young researchers and PhD students.

Nov. 2017

82 pp.

9783319675992

7,000.

Springer

Springer Monographs in Mathematics

Bellassoued, M. /Yamamoto Masahiro :
**Carleman Estimates and Applications to
 Inverse Problems for Hyperbolic Systems**

No. 510-121

This book is a self-contained account of the method based on Carleman estimates for inverse problems of determining spatially varying functions of differential equations of the hyperbolic type by non-over determining data of solutions. The formulation is different from that of Dirichlet-to-Neumann maps and can often prove the global uniqueness and Lipschitz stability even with a single measurement. These types of inverse problems include coefficient inverse problems of determining physical parameters in inhomogeneous media that appear in many applications related to electromagnetism, elasticity, and related phenomena.

Nov. 2017 247 pp. 19,000.
 9784431565987

Springer Undergraduate Mathematics

Field, M.:
Essential Real Analysis

No. 510-142

This book provides a rigorous introduction to the techniques and results of real analysis, metric spaces and multivariate differentiation, suitable for undergraduate courses. Starting from the very foundations of analysis, it offers a complete first course in real analysis, including topics rarely found in such detail in an undergraduate textbook such as the construction of non-analytic smooth functions, applications of the Euler-Maclaurin formula to estimates, and fractal geometry.

Nov. 2017 450 pp. 7,000.
 9783319675459

Isaev, A.:
Twenty-One Lectures on Complex Analysis

No. 510-158

At its core, this concise textbook presents standard material for a first course in complex analysis at the advanced undergraduate level. This distinctive text will prove most rewarding for students who have a genuine passion for mathematics as well as certain mathematical maturity. Primarily aimed at undergraduates with working knowledge of real analysis and metric spaces, this book can also be used to instruct a graduate course.

Nov. 2017 192 pp. 7,000.
 9783319681696

Developments in Mathematics,

**Vol. 52: Cvetkovic-Ilic, D. /Wei, Y. (eds.):
 Algebraic Properties of Generalized Inverses**

No. 510-060

This book addresses selected topics in the theory of generalized inverses. Following a discussion of the "reverse order law" problem and certain problems involving completions of operator matrices, it subsequently presents a specific approach to solving the problem of the reverse order law for $\{1\}$ -generalized inverses.

Oct. 2017 184 pp. 10,000.
 9789811063480

Springer

Gentle, J.:

No. 510-236

Matrix Algebra:**Theory, Computations and Applications in Statistics**

Matrix algebra is one of the most important areas of mathematics for data analysis and for statistical theory. This much-needed work presents the relevant aspects of the theory of matrix algebra for applications in statistics. It moves on to consider the various types of matrices encountered in statistics, such as projection matrices and positive definite matrices, and describes the special properties of those matrices.

Finally, it covers numerical linear algebra, beginning with a discussion of the basics of numerical computations, and following up with accurate and efficient algorithms for factoring matrices, solving linear systems of equations, and extracting eigenvalues and eigenvectors.

Oct. 2017

646 pp.

9783319648668

16,000.

*Applied Mathematical Sciences,**Vol. 197: Serov, V.:*

No. 510-182

**Fourier Series, Fourier Transform and
Their Applications to Mathematical Physics**

Having outgrown from a series of half-semester courses given at University of Oulu, this book consists of four self-contained parts.

The first part, Fourier Series and the Discrete Fourier Transform, is devoted to the classical one-dimensional trigonometric Fourier series with some applications to PDEs and signal processing. The second part, Fourier Transform and Distributions, is concerned with distribution theory of L. Schwartz and its applications to the Schrodinger and magnetic Schrodinger operations. The third part, Operator Theory and Integral Equations, is devoted mostly to the self-adjoint but unbounded operators in Hilbert spaces and their applications to integral equations in such spaces. The fourth and final part, Introduction to Partial Differential Equations, serves as an introduction to modern methods for classical theory of partial differential equations.

Nov. 2017

477 pp.

9783319652610

16,000.

Universitext

Hamilton, M.:

No. 510-210

Mathematical Gauge Theory:**With Applications to the Standard Model of Particle Physics**

This book explains the mathematical background behind the Standard Model, translating ideas from physics into a mathematical language and vice versa.

The first part of the book covers the mathematical theory of Lie groups and Lie algebras, fibre bundles, connections, curvature and spinors.

The second part then gives a detailed exposition of how these concepts are applied in physics, concerning topics such as the Lagrangians of gauge and matter fields, spontaneous symmetry breaking, the Higgs boson and mass generation of gauge bosons and fermions.

The book also contains a chapter on advanced and modern topics in particle physics, such as neutrino masses, CP violation and Grand Unification.

Dec. 2017

609 pp.

9783319684383

14,000.

Springer

Liu, Y.:

No. 510-086

Algebraic Elements of Graphs

This book studies algebraic representations of graphs in order to investigate combinatorial structures via local symmetries. Topological, combinatorial and algebraic classifications are distinguished by invariants of polynomial type and algorithms are designed to determine all such classifications with complexity analysis. Being a summary of the author's original work on graph embeddings, this book is an essential reference for researchers in graph theory.

Sep. 2017 410 pp. 23,990.
9783110480733

Matveev, A.:

No. 510-089

Farey Sequences:**Duality and Maps Between Subsequences**

As a first comprehensive overview on Farey sequences and subsequences, this monograph is intended as a reference for anyone looking for specific material or formulas related to the subject.

Nov. 2017 200 pp. 11,990.
9783110546620

Gigli, N.:

No. 510-141

Measure Theory in Non-Smooth Spaces

Analysis in singular spaces is becoming an increasingly important area of research, with motivation coming from the calculus of variations, PDEs, geometric analysis, metric geometry and probability theory, just to mention a few areas. In all these fields, the role of measure theory is crucial and an appropriate understanding of the interaction between the relevant measure-theoretic framework and the objects under investigation is important to a successful research.

The aim of this book, which gathers contributions from leading specialists with different backgrounds, is that of creating a collection of various aspects of measure theory occurring in recent research with the hope of increasing interactions between different fields.

Aug. 2017 246 pp. 19,990.
9783110550832

de Gruyter Series in Nonlinear Analysis and Applications,

Glebov, S. /Kiselev, O.:

No. 510-142

**Nonlinear Equations with Small Parameter, Vol. 2:
Waves and Boundary Problems**

This is the second volume of Nonlinear Equations with Small Parameter containing new methods of construction of global asymptotics of solutions to nonlinear equations with small parameter.

They allow one to match asymptotics of various properties with each other in transition regions and to get unified formulas for connection of characteristic parameters of approximate solutions.

This approach underlies modern asymptotic methods and gives a deep insight into crucial nonlinear phenomena. These are beginnings of chaos in dynamical systems, incipient solitary and shock waves, oscillatory processes in crystals, engineering constructions and quantum systems.

Feb. 2018 390 pp. 23,990.
9783110533835

de Gruyter

Vol. 64: Tsuji Takeshi / No. 510-107
Takahashi Hiroki /Hoshi Yuichiro (eds.):
Algebraic Number Theory and Related Topics 2014

2014年12月に京都大学数理解析研究所で開催された研究集会「代数的整数論とその周辺」の講演者により執筆された査読付きの論文集である。そのテーマは、代数的整数論、岩澤理論、 p 進ガロア表現、 p 進コホモロジー、 l 進コホモロジー、分岐理論、代数的サイクル、保型形式とガロア表現、ポリアログ関数など整数論に関連した幅広い分野にわたる。講演者自身の研究成果に関する論文16編に加え、本集会で企画された4つの概説講演:「Log abelian varieties」, 「Perfectoid 空間 I - 基礎理論について -」, 「Perfectoid 空間 II - 数論への応用について -」, 「 \mathbb{Z}_p 拡大の非アーベル岩澤理論」の講演者により寄稿された4編の概説論文が収録されている。整数論に関連した様々な分野における最新の研究の様子を知ることができる論文集である。

May 2017 330 pp. 2,000.
 9781000023640

Vol. 63: Kawashita Mishio /Kato Keiichi / No. 510-161
Misawa Masashi /Ogawa Takayoshi (eds.):
Regularity and Singularity for

Partial Differential Equations with Conservation Laws

この講義録別冊は、2015年6月に京都大学数理解析研究所において開催された研究集会「保存則をもつ偏微分方程式に対する解の正則性・特異性の研究」の報告集である。この報告集は研究集会における講演者らによる9編の寄稿論文に加え、研究集会に参加した研究者らによる投稿論文2編を加えた合計11編の論文からなる。近年の偏微分方程式に関する研究は従来の解析的な議論のみを用いて進めることは難しい。様々な分野との関連を意識し、研究対象に応じて異なった研究手法を取り入れながら研究を進める必要がある。この研究集会はこのような近年の流れを意識して計画されており、この報告集に収録された論文は、このような動向に対する記録である。そのような情報を必要とする研究者・これから関連分野に進もうと考えている学生などにこの報告集はお勧めである。

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Vol. 62: Hasegawa Koji /Yamada Yasuhiko (eds.): No. 510-078
String Theory, Integrable Systems and
Representation Theory

この講義録別冊は、数理解析研究所における研究集会「超弦理論・表現論・可積分系の数理」(2013)の報告集である。この集会では、超弦理論の数理的側面との関係を念頭に、可積分系および表現論の近年の進展を概観することを目的とし、新たな共形場理論の例の構成とその解析に関する土屋昭博氏の講演をはじめ、18の発表が行われた。本報告集は、共形場の入門的解説を含む土屋氏の上記研究など、6編の論文からなる。いずれも理論の定式化や拡張、差分化、楕円化、双対性といった今日的課題への試みといえ、この分野を展望する手掛かりとなろう。

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