Yurinsha Book News

Cambridge Studies in Advanced Mathematics,

Vol. 163: **Bovier, A. Jr, A.:** 504-227

Gaussian Processes on Trees:

From Spin Glasses to Branching Brownian Motion

Branching Brownian motion (BBM) is a classical object in probability theory with deep connections to partial differential equations.
This book highlights the connection to classical extreme value theory and to the theory of mean-field spin glasses in statistical mechanics.
Starting with a concise review of classical extreme value statistics and a basic introduction to mean-field spin glasses, the author then focuses on branching Brownian motion.
Here, the classical results of Bramson on the asymptotics of solutions of the F-KPP equation are reviewed in detail and applied to the recent construction of the extremal process of BBM.
The extension of these results to branching Brownian motion with variable speed are then explained.

Oct. 2016 212 pp.
9781107160491 10,740.

Cambridge Tracts in Mathematics,

Vol. 209: **Menshikov,M./Popov,S./Wade,A.:** 既報掲載 No. 248

Non-Homogeneous Random Walks:

Lyapunov Function Methods for Near-Critical Stochastic Systems

Jan. 2017 382 pp. 9781107026698 価格未定

Cambridge

http://www.yurinsha.com
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No. 504 Nov.- Dec. 2016

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Graduate Studies in Mathematics,

Vol. 177: Sauloy, J.: No. 504-097

Differential Galois Theory

Through Riemann-Hilbert Correspondence

Differential Galois theory is an important, fast developing area which appears more and more in graduate courses since it mixes fundamental objects from many different areas of mathematics in a stimulating context.
For a long time, the dominant approach, usually called Picard-Vessiot Theory, was purely algebraic.
This approach has been extensively developed and is well covered in the literature. An alternative approach consists in tagging algebraic objects with transcendental information which enriches the understanding and brings not only new points of view but also new solutions.
It is very powerful and can be applied in situations where the Picard-Vessiot approach is not easily extended.

Jan. 2017 ....
9781470430955 13,660.

Vol. 176: Cly, A. /Rolfsen, D.: No. 504-070

Ordered Groups and Topology

This book deals with the connections between topology and ordered groups.
It begins with a self-contained introduction to orderable groups and from there explores the interactions between orderability and objects in low-dimensional topology, such as knot theory, braid groups, and 3-manifolds, as well as groups of homeomorphisms and other topological structures.
The book also addresses recent applications of orderability in the studies of codimension-one foliations and Heegaard-Floer homology.
The use of topological methods in proving algebraic results is another feature of the book.
The book was written to serve both as a textbook for graduate students, containing many exercises, and as a reference for researchers in topology, algebra, and dynamical systems. A basic background in group theory and topology is the only prerequisite for the reader.

Dec. 2016 154 pp.
9781470431068 12,130.

Vol. 175: Lvey, T. /Landsberg, J.: No. 504-154

Cartan for Beginners:

Differential Geometry Via Moving Frames and Exterior Differential Systems, 2nd ed.

Two central aspects of Cartan's approach to differential geometry are the theory of exterior differential systems (EDS) and the method of moving frames.
This book presents thorough and modern treatments of both subjects, including their applications to both classic and contemporary problems in geometry.
It begins with the classical differential geometry of surfaces and basic Riemannian geometry in the language of moving frames, along with an elementary introduction to exterior differential systems.
Key concepts are developed incrementally, with motivating examples leading to definitions, theorems, and proofs.
Once the basics of the methods are established, the authors develop applications and advanced topics.

Jan. 2017 455 pp.
9781470409869 13,660.

A. M. S.

Mathematical Surveys and Monographs,

No. 504-061

Vol. 215: **Bieri, R. /Strebel, R.:**
On Groups of Pl-Homeomorphisms of the Real Line

Richard Thompson's famous group FF has the striking property that it can be realized as a dense subgroup of the group of all orientation-preserving homeomorphisms of the unit interval, but it can also be given by a simple 2-generator-2-relator presentation, in fact as the fundamental group of an aspherical complex with only two cells in each dimension.
This monograph studies a natural generalization of FF that also includes Melanie Stein's generalized FF-groups.
The main aims of this monograph are the determination of isomorphisms among the generalized FF-groups and the study of their automorphism groups.

Dec. 2016 174 pp.
9781470429010 16,890.

Vol. 214: **Speck, J.:**
Shock Formation in Small-Data Solutions to 3d Quasilinear Wave Equations.

No. 504-174

In 1848 James Challis showed that smooth solutions to the compressible Euler equations can become multivalued, thus signifying the onset of a shock singularity.
Today it is known that, for many hyperbolic systems, such singularities often develop. However, most shock-formation results have been proved only in one spatial dimension. Serge Alinhac's groundbreaking work on wave equations in the late 1990s was the first to treat more than one spatial dimension.
In 2007, for the compressible Euler equations in vorticity-free regions, Demetrios Christodoulou remarkably sharpened Alinhac's results and gave a complete description of shock formation.
In this monograph, Christodoulou's framework is extended to two classes of wave equations in three spatial dimensions.
It is shown that if the nonlinear terms fail to satisfy the null condition, then for small data, shocks are the only possible singularities that can develop.

Dec. 2016 ....
9781470428570 16,890.

Courant Lecture Notes,

Vol. 27: **Varadhan, S.:**

No. 504-256

Large Deviations

The theory of large deviations deals with rates at which probabilities of certain events decay as a natural parameter in the problem varies.
This book, which is based on a graduate course on large deviations at the Courant Institute, focuses on three concrete sets of examples:
(i) diffusions with small noise and the exit problem,
(ii) large time behavior of Markov processes and their connection to the Feynman-Kac formula and the related large deviation behavior of the number of distinct sites visited by a random walk, and
(iii) interacting particle systems, their scaling limits, and large deviations from their expected limits.
For the most part the examples are worked out in detail, and in the process the subject of large deviations is developed.

Dec. 2016 104 pp.
9780821840863 5,530.

A. M. S.

Progress in Mathematics,

Vol. 321: **Mourtada, H. /**
Sarioglu, C. /Soule, C. /Zeytin, A. (eds.):
Algebraic Geometry and Number Theory:
Summer School, Galatasaray University, 2014

No. 504-093

This lecture notes volume presents significant contributions from the "Algebraic Geometry and Number Theory" Summer School, held at Galatasaray University, Istanbul, June 2-13, 2014.
It addresses subjects ranging from Arakelov geometry and Iwasawa theory to classical projective geometry, birational geometry and equivariant cohomology.
Its main aim is to introduce these contemporary research topics to graduate students who plan to specialize in the area of algebraic geometry and/or number theory.
All contributions combine main concepts and techniques with motivating examples and illustrative problems for the covered subjects.
Naturally, the book will also be of interest to researchers working in algebraic geometry, number theory and related fields.

Jan. 2017 .... 9783319477787 13,400.

Vol. 320: **Auel, A. /**
Hassett, B. /Varilly-Alvarado, A. /Viray, B. (eds.):
Brauer Groups and Obstruction Problems:
Moduli Spaces and Arithmetic

No. 504-055

The contributions in this book explore various contexts in which the derived category of coherent sheaves on a variety determines some of its arithmetic.
This setting provides new geometric tools for interpreting elements of the Brauer group. With a view towards future arithmetic applications, the book extends a number of powerful tools for analyzing rational points on elliptic curves, e.g. isogenies among curves, torsion points, modular curves, and the resulting descent techniques, as well as higher-dimensional varieties like K3 surfaces.
Inspired by the rapid recent advances in our understanding of K3 surfaces, the book is intended to foster cross-pollination between the fields of complex algebraic geometry and number theory.

May 2017 .... 9783319468518 16,530.

Birkhauser Advanced Texts /Basler Lehrbucher Series

Fonda, A.:

No. 504-128

Playing Around Resonance:
An Invitation to the Search of Periodic Solutions for Second Order Ordinary Differential Equations.

This book provides an up-to-date description of the methods needed to face the existence of solutions to some nonlinear boundary value problems.
All important and interesting aspects of the theory of periodic solutions of ordinary differential equations related to the physical and mathematical question of resonance are treated. The author has chosen as a model example the periodic problem for a second order scalar differential equation.
In a paedagogical style the author takes the reader step by step from the basics to the most advanced existence results in the field.

Feb. 2017 310 pp. 9783319470894 22,450.

Birkhauser

Monographs and Research Notes in Mathematics

Banasiak,J./Lamb,W./Laurencot,P. No. 504-106

Analytic Methods for

Coagulation- Fragmentation Models.

The book begins with an in-depth survey of coagulation-fragmentation models, followed by a detailed presentation of relevant earlier results in the field.
The mathematical tools necessary for the modern development of the theory as well as essential facts from infinite-dimensional dynamical systems, are introduced.
The next few chapters are devoted to methods suitable to cases where the process is dominated by fragmentation.
The following chapter focuses on weak compactness methods for solving coagulation-fragmentation equations.
The final chapter deals with the long-term asymptotic behaviour of solutions to coagulation and fragmentation equations.

July 2017 350 pp.
9781498772655 16,970.

Cherniha,R./Serov,M./Pliukhin,O. No. 503-118

Nonlinear Reaction- Diffusion- Conviction Equations:

Lie and Conditional Symmetry, Exact Solutions and their Applications

It is well known that symmetry-based methods are very powerful tools for investigating nonlinear partial differential equations (PDEs), notably for their reduction to those of lower dimensionality (e.g. to ODEs) and constructing exact solutions.
This book is devoted to (1) search Lie and conditional (non-classical) symmetries of nonlinear RDC equations, (2) constructing exact solutions using the symmetries obtained, and (3) their applications for solving some biologically and physically motivated problems.
The book summarises the results derived by the authors during the last 10 years and those obtained by some other authors.

July 2017 250 pp.
9781498776172 16,970.

Coriasco,S.:

Microlocal Analysis on R^n and on Noncompact Mani

June 2017 *250 pp.* *9781482249583* *18,420.*

Monographs on Statistics and Applied Probability

Lee,Y./Nelder,J. No. 503-245

Generalized Linear Models with Random Effects:

Unified Analysis via H-likelihood, 2nd ed.

This is the second edition of a monograph on generalized linear models with random effects that extends the classic work of McCullagh and Nelder.
It has been thoroughly updated, with around 80 pages added, including new material on the extended likelihood approach that strengthens the theoretical basis of the methodology, new developments in variable selection and multiple testing, and new examples and applications.
It includes an R package for all the methods and examples that supplement the book.

Dec. 2016 432 pp.
9781498720618 15,940.

Chapman Hall / C R C Press

Williamson, J.: No. 504-053

Lectures on Inductive Logic

Logic is a field studied mainly by researchers and students of philosophy, mathematics and computing.
Inductive logic seeks to determine the extent to which the premisses of an argument entail its conclusion, aiming to provide a theory of how one should reason in the face of uncertainty.
It has applications to decision making and artificial intelligence, as well as how scientists should reason when not in possession of the full facts.
In this book, Jon Williamson embarks on a quest to find a general, reasonable, applicable inductive logic (GRAIL), all the while examining why pioneers such as Ludwig Wittgenstein and Rudolf Carnap did not entirely succeed in this task.

Dec. 2016 220 pp.
9780199666478 10,160.

Oxford Graduate Texts in Mathematics

Vol. 26: **Liu, F.-C.:** No. 504-151/152

Real Analysis

Real Analysis is indispensable for in-depth understanding and effective application of methods of modern analysis.
This concise and friendly book is written for early graduate students of mathematics or of related disciplines hoping to learn the basics of Real Analysis with reasonable ease.
The essential role of Real Analysis in the construction of basic function spaces necessary for the application of Functional Analysis in many fields of scientific disciplines is demonstrated with due explanations and illuminating examples.

Oct. 2016 288 pp.
9780198790426/9780198790433 12,940./6,470. (Paper ed.)

Woodhouse, N. /Witten, E. /Bridson, M. /Hofer, H. / Lackenby, M. /Pandharipande, R.: No. 504-218

Lectures on Geometry

This volume contains a collection of papers based on lectures delivered by distinguished mathematicians at Clay Mathematics Institute events over the past few years.
It is intended to be the first in an occasional series ofvolumes of CMI lectures.
Although not explicitly linked, the topics in this inaugural volume have a common flavourand a common appeal to all who are interested in recent developments in geometry.
They are intended to beaccessible to all who work in this general area, regardless of their own particular research interests.

Oct. 2016 176 pp.
9780198784913 9,600.

Lecture Notes of the Les Houches Summer School,

Vol. 103: **Chamon, C. /Goerbig, M.:** No. 504-307

Topological Aspects of Condensed Matter Physics

Topological quantum phenomena are being uncovered at unprecedented rates in novel material systems.
The consequences are far reaching, from the possibility of carrying currents and performing computations without dissipation of energy, to the possibility of realizing platforms for topological quantum computation.

Dec. 2016 608 pp.
9780198785781 8,320.

Oxford

Lecture Notes in Mathematics,

Vol. 2174: **Zuniga-Galindo, W.:** No. 504-100
Pseudodifferential Equations
Over Non-Archimedean Spaces

Focusing on p-adic and adelic analogues of pseudodifferential equations, this monograph presents a very general theory of parabolic-type equations and their Markov processes motivated by their connection with models of complex hierarchic systems.

The Gelfand-Shilov method for constructing fundamental solutions using local zeta functions is developed in a p-adic setting and several particular equations are studied, such as the p-adic analogues of the Klein-Gordon equation. Pseudodifferential equations for complex-valued functions on non-Archimedean local fields are central to contemporary harmonic analysis and mathematical physics and their theory reveals a deep connection with probability and number theory.

Feb. 2017 160 pp.
9783319467375 6,090.

Vol. 2172: **Beauville, A. /Hassett, B. /Kuznetsov, A. /Verra, A.:**
Rationality Problems in Algebraic Geometry:
Levico Terme, Italy 2015

Providing an overview of the state of the art on rationality questions in algebraic geometry, this volume gives an update on the most recent developments. It offers a comprehensive introduction to this fascinating topic, and will certainly become an essential reference for anybody working in the field.

Rationality problems are of fundamental importance both in algebra and algebraic geometry. No. 504-058

Historically, rationality problems motivated significant developments in the theory of abelian integrals, Riemann surfaces and the Abel-Jacobi map, among other areas, and they have strong links with modern notions such as moduli spaces, Hodge theory, algebraic cycles and derived categories.

Nov. 2016 140 pp.
9783319462080 6,090.

Vol. 2171: **Wright, S.:** No. 504-099
Quadratic Residues and Non-Residues

This book offers an account of the classical theory of quadratic residues and non-residues with the goal of using that theory as a lens through which to view the development of some of the fundamental methods employed in modern elementary, algebraic, and analytic number theory.

The first three chapters present some basic facts and the history of quadratic residues and non-residues and discuss various proofs of the Law of Quadratic Reciprosity in depth, with an emphasis on the six proofs that Gauss published. The remaining seven chapters explore some interesting applications of the Law of Quadratic Reciprocity, prove some results concerning the distribution and arithmetic structure of quadratic residues and non-residues, provide a detailed proof of Dirichlet's Class-Number Formula, and discuss the question of whether quadratic residues are randomly distributed.

Oct. 2016 340 pp.
9783319459547 7,830.

Springer

Lecture Notes in Mathematics,

Vol. 2170: **Kobayashi Toshiyuki/ Kubo Toshihisa/ Pevzner, M.: Conformal Symmetry Breaking Operators for Differential Forms on Spheres**

The authors give a complete classification of all such conformally covariant Differential operators, and find their explicit formula in the flat coordinates in terms of basic operators in differential geometry and classical hypergeometric polynomials. Resulting families of operators are natural generalizations of the Rankin-Cohen brackets for modular forms and Juhl's operators from conformal holography. No. 504-088

The matrix-valued factorization identities among all possible combinations of conformally covariant differential operators are also established.

The main machinery of the proof relies on the "F-method" recently introduced and developed by the authors.

It is a general method to construct intertwining operators between C∞-induced representations or to find singular vectors of Verma modules in the context of branching rules, as solutions to differential equations on the Fourier transform side.

Oct. 2016 190 pp.
9789811026560 6,090.

Vol. 2169: **Klartag, B. /Milman, , E. (eds.): Geometric Aspects of Functional Analysis: Israel Seminar (GAFA) 2014-2016** No. 504-144

As in the previous Seminar Notes, the current volume reflects general trends in the study of Geometric Aspects of Functional Analysis, understood in a broad sense. A classical theme in the Local Theory of Banach Spaces which is well represented in this volume is the identification of lower-dimensional structures in high-dimensional objects. More recent applications of high-dimensionality are manifested by contributions in Random Matrix Theory, Concentration of Measure and Empirical Processes.

Naturally, the Gaussian measure plays a central role in many of these topics, and is also studied in this volume; in particular, the recent breakthrough proof of the Gaussian Correlation Conjecture is revisited.

Feb. 2017 370 pp.
9783319452814 12,180.

Vol. 2168: **Donati-Martin, C. /Lejay, A. /Rouault, A. (eds.): Seminaire de Probabilites XLVIII**

In addition to its further exploration of the subject of peacocks, introduced in recent Seminaires de Probabilites, this volume continues the series's focus on current research themes in traditional topics such as stochastic calculus, filtrations and random matrices. No. 504-235

Also included are some particularly interesting articles involving harmonic measures, random fields and loop soups.

The featured contributors are Mathias Beiglbock, Martin Huesmann and Florian Stebegg, Nicolas Juillet, Gilles Pags, Dai Taguchi, Alexis Devulder, Matyas Barczy and Peter Kern, I. Bailleul, Jurgen Angst and Camille Tardif, Nicolas Privault, Anita Behme, Alexander Lindner and Makoto Maejima, Cedric Lecouvey and Kilian Raschel, Christophe Profeta and Thomas Simon, etc.

Sep. 2016 108 pp.
9783319444642 19,140.

Springer

RSME Springer Series

Jevtic, M. /Vukotic, D. /Arsenovic, M.: No. 504-140

Taylor Coefficients and Coefficient Multipliers of Hardy and Bergman-Type Spaces

This book aims to provide a systematic overview of the theory of Taylor coefficients of functions in some classical spaces of analytic functions and especially of the coefficient multipliers between spaces of Hardy type.
It is intended to serve as a complete reference on the subject and is the first of its kind in this area.
After several introductory chapters covering the basic material, a large number of results obtained over the past 80 years or so, up to the most recent ones, are treated in detail.
Several chapters end with practical applications and related topics that graduate students and experts in other subjects may find useful for their own purposes.

Jan. 2017 310 pp.
9783319456430 16,530.

Ergebnisse der Mathematik und ihrer Grenzgebiete 3 Folge

Band 62: **Benoist, Y. /Qint, J.-F.:** No. 504-188

Random Walks on Reductive Groups

The classical theory of Random Walks describes the asymptotic behavior of sums of independent identically distributed random real variables.
This book explains the generalization of this theory to products of independent identically distributed random matrices with real coefficients.
Under the assumption that the action of the matrices is semisimple - or, equivalently, that the Zariski closure of the group generated by these matrices is reductive - and under suitable moment assumptions, it is shown that the norm of the products of such random matrices satisfies a number of classical probabilistic laws.

Dec. 2016 321 pp.
9783319477190 19,140.

Graduate Texts in Mathematics,

Vol. 173: **Diestel, R.:** No. 504-074

Graph Theory, 5th ed.

This standard textbook of modern graph theory, now in its fifth edition, combines the authority of a classic with the engaging freshness of style that is the hallmark of active mathematics.
It covers the core material of the subject with concise yet reliably complete proofs, while offering glimpses of more advanced methods in each field by one or two deeper results, again with proofs given in full detail.

Oct. 2016 429 pp.
9783662536216 9,220.

Differential-Algebraic Equations Forum

Ilchmann, A. /Reis, T.: No. 504-139

Surveys in Differential-Algebraic Equations, IV

The present volume comprises survey articles on various fields of Differential-Algebraic Equations (DAEs) which have widespread applications in controlled dynamical systems, especially in mechanical and electrical engineering and a strong relation to (ordinary) differential equations.

Jan. 2017 300 pp.
9783319466170 16,530.

Springer

Developments in Mathematics,

Vol. 46: Grines, V. /Medvedev, T. /Pochinka, O.: No. 504-131

Dynamical Systems on 2-and 3-Manifolds

This book provides an introduction to the topological classification of smooth structurally stable diffeomorphisms on closed orientable 2- and 3-manifolds. The topological classification is one of the main problems of the theory of dynamical systems and the results presented in this book are mostly for dynamical systems satisfying Smale's Axiom A.
The main results on the topological classification of discrete dynamical systems are widely scattered among many papers and surveys.

Oct. 2016 293 pp.
9783319448466 19,140.

Springer Undergraduate Mathematics

Barbu, V.: No. 504-108

Differential Equations

Including various examples from physics, mechanics, natural sciences, engineering and automatic theory, Differential Equations is a bridge between the abstract theory of differential equations and applied systems theory. Particular attention is given to the existence and uniqueness of the Cauchy problem, linear differential systems, stability theory and applications to first-order partial differential equations.

Jan. 2017 213 pp.
9783319452609 6,090.

Springer Proceedings in Mathematics and Statistics,

Vol. 188: Loeffler, D. /Zerbes, , F. (eds.): No. 504-091

Elliptic Curves, Modular Forms and Iwasawa Theory:
In Honour of John H. Coates' 70th Birthday, Cambridge, 2015

This collection of contributions covers a range of topics in number theory, concentrating on the arithmetic of elliptic curves, modular forms, and Galois representations.
The main unifying theme is Iwasawa theory, a field that John Coates himself has done much to create.This collection is indispensable reading for researchers in Iwasawa theory, and is interesting and valuable for those in many related fields.

Oct. 2016 466 pp.
9783319450315 25,230.

Probability Theory and Stochastic Modelling,

Vol. 79: Govindan, T.: No. 504-259

Yosida Approximations of Stochastic Differential Equations in Infinite Dimensions and Applications

The book begins with a motivational chapter that introduces the reader to several different models that play recurring roles throughout the book as the theory is unfolded, and invites readers from different disciplines to see immediately that the effort required to work through the theory that follows is worthwhile.
From there, the author presents the necessary prerequisite material, and then launches the reader into the main discussion of the monograph, namely, Yosida approximations of SDEs, Yosida approximations of SDEs with Poisson jumps, and their applications.

Oct. 2016 400 pp.
9783319456829 19,140.

Springer

Peking University Series in Mathematics,

Vol. 6: Ching Chang, K. /Zhang, T.: No. 504-119

Lecture Notes on Calculus of Variations

The book contains 20 lectures covering both the theoretical background material as well as an abundant collection of applications.

Lectures 1-8 focus on the classical theory of calculus of variations.

Lectures 9-14 introduce direct methods along with their theoretical foundations.

Lectures 15-20 showcase a broad collection of applications.

The book offers a panoramic view of the very important topic on calculus of variations. This is a valuable resource not only to mathematicians, but also to those students in engineering, economics, and management, etc.

Nov. 2016 400 pp.
9789813144682 19,710.

Series on Complexity, Nonlinearity and Chaos,

Vol. 5: Baleanu, D. /Diethelm, K. /Scalas, E. /Trujillo, J.:

Fractional Calculus: No. 504-261

Models and Numerical Methods, 2nd ed

This book will give readers the possibility of finding very important mathematical tools for working with fractional models and solving fractional differential equations, such as a generalization of Stirling numbers in the framework of fractional calculus and a set of efficient numerical methods. Moreover, we will introduce some applied topics, in particular fractional variational methods which are used in physics, engineering or economics. We will also discuss the relationship between semi-Markov continuous-time random walks and the space-time fractional diffusion equation, which generalizes the usual theory relating random walks to the diffusion equation. These methods can be applied in finance, to model tick-by-tick (log)-price fluctuations, in insurance theory, to study ruin, as well as in macroeconomics as prototypical growth models.

Dec. 2016 476 pp.
9789813140035 25,410.

Hofmann, R.: No. 504-319/320

The Thermodynamics of Quantum Yang-Mills Theory: Theory and Applications, 2nd ed.

This latest edition enhances the material of the first edition with a derivation of the value of the action for each of the Harrington-Shepard calorons/anticalorons that are relevant for the emergence of the thermal ground state. Also included are discussions of the caloron center versus its periphery, the role of the thermal ground state in U(1) wave propagation, photonic particle-wave duality, and calculational intricacies and book-keeping related to one-loop scattering of massless modes in the deconfining phase of an SU(2) Yang-Mills theory. Moreover, a derivation of the temperature-redshift relation of the CMB in deconfining SU(2) Yang-Mills thermodynamics and its application to explaining an apparent early re-ionization of the Universe are given.

June 2016 544 pp.
9789813100473/9789813100480 18,480./10,470. (Paper ed.)

World Scientific Pub.

Asterisque,

Vol. 381: **Barbieri-Viale, L. /Kahn, B.:** No. 504-056

On the Derived Category of 1-Motieves

We embed the derived category of Deligne 1-motives over a perfect field into the étale version of Voevodsky's triangulated category of geometric motives, after inverting the exponential characteristic.
We then show that this full embedding "almost" has a left adjoint LAlb. Applying LAlb to the motive of a variety we get a bounded complex of 1-motives, that we compute fully for smooth varieties and partly for singular varieties. Among applications, we give motivic proofs of Roĭtman type theorems and new cases of Deligne's conjectures on 1-motives.

2016 254 pp.
9782856298374 価格未定

Memoires de la Societe Mathematique de France,

Numero 149: **Beuzart-Plessis, R.:** No. 504-059

La conjecture locale de Gross-Prasad pour les representations temperees des groupes unitaires

Let *E/F* be a quadratic extension of p-adic fields and let G=U(V), H=U(W) be unitary groups of two hermitian spaces *V* and *W* over *E*.
Assume that *V* contains *W* and that the orthogonal complement of *W* in *V* is an odd-dimensional quasisplit hermitian space (i.e.2pt whose unitary group is quasisplit over *F*).
For π and σ smooth irreducible representations of respectively *G(F)* and *H(F)*, Gan, Gross and Prasad have defined a multiplicity $m(\pi,\sigma)$.
In the particular case where *W* is of codimension 1 in *V*, this multiplicity is just the dimension of the intertwining space $\_H(F)(\pi,\sigma)$.
When and are tempered, we state and prove an integral formula for this multiplicity. We then deduce from this formula a weak version of the local Gross-Prasad conjecture for tempered representations of unitary groups.
This article represents a straight continuation of recent work of Waldspurger dealing with special orthogonal groups.

2016 191 pp.
9782856298411 価格未定

Panoramas et syntheses,

Vol. 48: **Le, T. /Lescop, C. /Lipshitz, R. /Turner, P.:** No. 504-203

Lectures on Quantum Topology in Dimension Three

This monograph contains three lecture series from the SMF school "Geometric and quantum topology in dimension 3", which was held at CIRM in June 2014. These lectures present recent progress on the study of 3-manifold and link invariants. Thang Lê describes the state of the art about the AJ conjecture, which relates generalizations of the Jones polynomial to the Cooper, Culler, Gillet, Long and Shalen A-polynomial, which is defined from *SL_2*(C)-representation spaces of link exterior fundamental groups.
In 1999, Khovanov defined a homology theory for knots of R^3 whose Euler characteristic is the Jones polynomial. Paul Turner presents the latest developments and the applications of this categorification of the Jones polynomial in a useful guide of the literature around this extensively studied topic.
These lectures are introduced by a partial survey of the history of these invariants, written by Christine Lescop.

2016 174 pp.
9782856298428 価格未定

Societe Mathematique de France

Thas, K. (ed.): No. 504-098

Absolute Arithmetic and \mathbb F_1 -Geometry

It has been known for some time that geometries over finite fields, their automorphism groups and certain counting formulae involving these geometries have interesting guises when one lets the size of the field go to 1.
On the other hand, the nonexistent field with one element, \mathbb F_1, presents itself as a ghost candidate for an absolute basis in Algebraic Geometry to perform the Deninger-Manin program, which aims at solving the classical Riemann Hypothesis.
This book, which is the first of its kind in the $\mathbb F_1$-world, covers several areas in $\mathbb F_1$-theory, and is divided into four main parts --- Combinatorial Theory, Homological Algebra, Algebraic Geometry and Absolute Arithmetic.

July 2016 397 pp.
9783037191576 11,830.

EMS Tracts in Mathematics,

Vol. 25: Cornulier, Y. /de la Harpe, P.: No. 504-071

Metric Geometry of Locally Compact Groups

The main aim of this book is the study of locally compact groups from a geometric perspective, with an emphasis on appropriate metrics that can be defined on them.
The approach has been successful for finitely generated groups, and can favourably be extended to locally compact groups. Parts of the book address the coarse geometry of metric spaces, where 'coarse' refers to that part of geometry concerning properties that can be formulated in terms of large distances only. This point of view is instrumental in studying locally compact groups.
Basic results in the subject are exposed with complete proofs, others are stated with appropriate references.
Most importantly, the development of the theory is illustrated by numerous examples, including matrix groups with entries in the the field of real or complex numbers, or other locally compact fields such as p-adic fields, isometry groups of various metric spaces, and, last but not least, discrete group themselves.

Sep. 2016 243 pp.
9783037191668 10,790.

EMS Series of Lectures in Mathematics,

Barilari, D. /Boscain, U. /Sigalotti, M. (eds.): No. 504-109

Geometry, Analysis and Dynamics on Sub-Riemannian Manifolds

Sub-Riemannian manifolds model media with constrained dynamics: motion at any point is only allowed along a limited set of directions, which are prescribed by the physical problem.
From the theoretical point of view, sub-Riemannian geometry is the geometry underlying the theory of hypoelliptic operators and degenerate diffusions on manifolds. In the last twenty years, sub-Riemannian geometry has emerged as an independent research domain, with extremely rich motivations and ramifications in several parts of pure and applied mathematics, such as geometric analysis, geometric measure theory, stochastic calculus and evolution equations together with applications in mechanics, optimal control and biology.

June 2016 332 pp.
9783037191620 7,660.

Yurinsha Book News

RIMS Kokyuroku Bessatsu

B57: Honda Naofumi /Okada Yasunori /Yamazaki Susumu : Several aspects of microlocal analysis

No. 504-086

この講究録別冊は、京都大学数理解析研究所の援助を受け、
2014 年 10 月に京都大学数理解析研究所で開催された研究集会
「超局所解析の諸相」の報告集です．この研究集会では、代数解析に関連する
諸分野の最新の研究成果の報告が行われました．
この論文集には，この研究集会の講演者による最近の代数解析の動向を
知る上で役立つ論文が計 19 編収められています．
ここに収められた日本を代表する優れた研究者による論文は代数解析の
各分野の最先端の研究の概要を知るための有用な情報源として、
この分野の研究者や愛好家・大学院生にお薦めの 1 巻です．

May 2016 **296 pp.**
9781000023480 **1,700.**

B56: Kubo Hideo /Sugimoto Mitsuru : Harmonic Analysis and Nonlinear Partial Differential Equations

No. 504-147

この講究録別冊は 2014 年 6 月から 7 月にかけて京都大学数理解析研究所で
開催された研究集会「調和解析と非線形偏微分方程式」の講演者による
原著論文を編集したものである。
厳しい査読を経た 9 篇の論文で構成されており、時間周波数解析を含む
調和解析固有の深い理論、非線形偏微分方程式の調和解析的方法論、
非線形偏微分方程式の解析から生じる調和解析の話題など、調和解析と
非線形偏微分方程式の相互作用による最新の発展を知る事ができる。

Apr. 2016 **215 pp.**
9781000023473 **1,300.**

B55: Nishimura Takashi : Theory of singularities of smooth mappings and around It

No. 504-211

２０１３年１１月に京都大学数理解析研究所で開催された国際研究集会
"Theory of singularities of smooth mappings and around it" の講演者に
よる査読付きの論文集である。
部分多様体の幾何学への特異点論の応用、可微分写像芽対の同値関係、
ミルナーファイバーのオイラー標数、接線曲面の特異点、超曲面の射影、
安定写像、特異点の大域的理論、特異点の判定法、可微分写像芽の分岐、
制御理論への特異点論の応用など、可微分写像の特異点論に関連した幅広い
分野にわたる個別の研究成果についての 13 編の論文に加え、サブリーマン
幾何学に関する 1 編の概説論文が収められている。可微分写像の特異点論と
その周辺における最新の進展状況を知るのに役立つ論文集となっている。

Apr. 2016 **284 pp.**
9781000023466 **1,600.**

B54: Nakazawa Takashi : Topology Optimization Theory and Applications Toward Wide Fields of Nature Sciences

Oct. 2015 **98 pp.**
9781000023428 **1,000.**

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