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Page 1

Yurinsha Book News

Annals of Mathematics Studies,

Vol. 198: Gaitsgory, D. /Lurie, J.: Weil's Conjecture for Function Fields, Vol. 1

A central concern of number theory is the study of local-to-global principles, which describe the behavior of a global field K in terms of the behavior of various completions of K.
This book looks at a specific example of a local-to-global principle: Weil's conjecture on the Tamagawa number of a semisimple algebraic group G over K.
In the case where K is the function field of an algebraic curve X, this conjecture counts the number of G-bundles on X (global information) in terms of the reduction of G at the points of X (local information).
The goal of this book is to give a conceptual proof of Weil's conjecture, based on the geometry of the moduli stack of G-bundles.
Inspired by ideas from algebraic topology, it introduces a theory of factorization homology in the setting l-adic sheaves.
Using this theory, Dennis Gaitsgory and Jacob Lurie articulate a different local-to-global principle: a product formula that expresses the cohomology of the moduli stack of G-bundles (a global object) as a tensor product of local factors. Using a version of the Grothendieck-Lefschetz trace formula, Gaitsgory and Lurie show that this product formula implies Weil's conjecture.

No. 514-071/072
Feb. 2019 328 pp.
9780691182131/9780691182148 21,940./ 9,970. (Paper ed.)

Princeton Univ.

http://www.yurinsha.com
ホームページは毎月 1 日が更新予定日です

No. 514 July - Aug. 2018

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(株) 友隣社

Graduate Studies in Mathematics,

Vol. 192: Tsai, T.-P.: No. 514-036

Lectures on Navier-Stokes Equations

This book is a graduate text on the incompressible Navier-Stokes system, which is of fundamental importance in mathematical fluid mechanics as well as in engineering applications.
The goal is to give a rapid exposition on the existence, uniqueness, and regularity of its solutions, with a focus on the regularity problem.
To fit into a one-year course for students who have already mastered the basics of PDE theory, many auxiliary results have been described with references but without proofs, and several topics were omitted.
Most chapters end with a selection of problems for the reader.
After an introduction and a careful study of weak, strong, and mild solutions, thereader is introduced to partial regularity.
The coverage of boundary value problems, self-similar solutions, the uniform *L3* class including the celebrated Escauriaza-Seregin-Sverak Theorem, and axisymmetric flows in later chapters are unique features of this book that are less explored in other texts.

July 2018 224 pp.
9781470430962 13,790.

Vol. 191: Buhler, T, /Salamon, D.: No. 514-118

Functional Analysis

Functional analysis is a central subject of mathematics with applications in many areas of geometry, analysis, and physics.
This book provides a comprehensive introduction to the field for graduate students and researchers.
It includes foundational results about the dual semigroup and analytic s emigroups, an exposition of measurable functions with values in a Banach space, and a discussion of solutions to the inhomogeneous equation and their regularity properties.
The appendix establishes the equivalence of the Lemma of Zorn and the Axiom of Choice, and it contains a proof of Tychonoff's theorem.
With 10 to 20 elaborate exercises at the end of each chapter, this book can be used as a text for a one-or-two-semester course on functional analysis for beginning graduate students.
Prerequisites are first-year analysis and linear algebra, as well as some foundational material from the second-year courses on point set topology, complex analysis in one variable, and measure and integration.

July 2018 472 pp.
9781470441906 13,790.

Student Mathematical Library,

Vol. 86: Frankl, O. /Tokushige Norihide : No. 514-069

Extremal Problems for Finite Sets

One of the great appeals of Extremal Set Theory as a subject is that the statements are easily accessible without a lot of mathematical background, yet the proofs and ideas have applications in a wide range of fields including combinatorics, number theory, and probability theory.
Written by two of the leading researchers in the subject, this book is aimed at mathematically mature undergraduates, and highlights the elegance and power of this field of study.

Aug. 2018 224 pp.
9781470440398 8,640.

A. M. S.

Mathematical Surveys and Monographs,

Vol. 233: **Krylov, N.:** No. 514-149

Sobolev and Viscosity Solutions for Fully Nonlinear Elliptic and Parabolic Equations

This book concentrates on first boundary-value problems for fully nonlinear second-order uniformly elliptic and parabolic equations with discontinuous coefficients.
We look for solutions in Sobolev classes, local or global, or for viscosity solutions Most of the auxiliary results, such as Aleksandrov's elliptic and parabolic estimates, the Krylov-Safonov and the Evans-Krylov theorems, are taken from old sources, and the main results were obtained in the last few years.
Presentation of these results is based on a generalization of the Fefferman-Stein theorem, on Fang-Hua Lin's like estimates, and on the so-called "ersatz" existence theorems, saying that one can slightly modify"any" equation and get a "cut-off" equation that has solutions with bounded derivatives.

Sep. 2018 456 pp.
9781470447403 20,260.

Vol. 232: **Khavinson, D. /Lundberg, E.:** No. 514-088

Linear Holomorphic Partial Differential Equations and Classical Potential Theory

Why do solutions of linear analytic PDE suddenly break down? What is the source of these mysterious singularities, and how do they propagate? Is there a mean value property for harmonic functions in ellipsoids similar to that for balls? Is there a reflection principle for harmonic functions in higher dimensions similar to the Schwarz reflection principle in the plane? How far outside of their natural domains can solutions of the Dirichlet problem be extended? Where do the continued solutions become singular and why? This book invites graduate students and young analysts to explore these and many other intriguing questions that lead to beautiful results illustrating a nice interplay between parts of modern analysis and themes in "physical" mathematics of the nineteenth century.

July 2018 212 pp.
9781470437800 20,260.

Vol. 231: **Kaniuth, E. /To-Ming Lau, A.:** No. 514-084

Fourier and Fourier-Stieltjes Algebras on Locally Compact Groups

The theory of the Fourier algebra lies at the crossroads of several areas of analysis. Its roots are in locally compact groups and group representations, but it requires a considerable amount of functional analysis, mainly Banach algebras.
In recent years it has made a major connection to the subject of operator spaces, to the enrichment of both.
In this book two leading experts provide a road map to roughly 50 years of research detailing the role that the Fourier and Fourier-Stieltjes algebras have played in not only helping to better understand the nature of locally compact groups, but also in building bridges between abstract harmonic analysis, Banach algebras, and operator algebras.
All of the important topics have been included, which makes this book a comprehensive survey of the field as it currently exists.

June 2018 306 pp.
9780821853658 20,260.

A. M. S.

Proceedings of Symposia in Pure Mathematics,

Vol. 99: **Munoz, V. /Smith, I. /Thomas, R. (eds.):** No. 514-196

Modern Geometry:
A Celebration of the Work of Simon Donaldson

This book contains a collection of survey articles of exciting new developments in geometry, written in tribute to Simon Donaldson to celebrate his 60th birthday.
Reflecting the wide range of Donaldson's interests and influence, the papers range from algebraic geometry and topology through symplectic geometry and geometric analysis to mathematical physics.
Their expository nature means the book acts as an invitation to the various topics described, while also giving a sense of the links between these different areas and the unity of modern geometry.

Aug. 2018 416 pp.
9781470440947 22,090.

Vol. 98: **Kashani-Poor, A.-K. /Minasian, R. /** No. 514-085
Nekrasov, N. /Pioline, B. (eds.):

String-Math 2016

This volume contains the proceedings of the conference String-Math 2016, which was held, at College de France, Paris, France.
String-Math is an annual conference covering the most significant progress at the interface of string theory and mathematics.
The two fields have had a very fruitful dialogue over the last thirty years, with string theory contributing key ideas which have opened entirely new areas of mathematics and modern mathematics providing powerful concepts and tools to deal with the intricacies of string and quantum field theory.
The papers in this volume cover topics ranging from supersymmetric quantum field theories, topological strings, and conformal nets to moduli spaces of curves, representations, instantons, and harmonic maps, with applications to spectral theory and to the geometric Langlands program.

June 2018 294 pp.
9781470435158 22,090.

CBMS Regional Conference Series in Mathematics,

Vol. 127: **Friedman, A.:** No. 514-128

Mathematical Biology:
Modeling and Analysis

The fast growing field of mathematical biology addresses biological questions using mathematical models from areas such as dynamical systems, probability, statistics, and discrete mathematics.
This book considers models that are described by systems of partial differential equations, and it focuses on modeling, rather than on numerical methods and simulations.
The models studied are concerned with population dynamics, cancer, risk of plaque growth associated with high cholesterol, and wound healing.
A rich variety of open problems demonstrates the exciting challenges and opportunities for research at the interface of mathematics and biology.
This book primarily addresses students and researchers in mathematics who do not necessarily have any background in biology and who may have had little exposure to PDEs.

Aug. 2018 100 pp.
9781470447151 8,340.

A. M. S.

Contemporary Matheamticians,

Macpherson, R. /Tu, L. (eds.): No. 514-023
Raoul Bott: Collected Papers, Vol. 1 -5

The Collected Papers of Raoul Bott are contained in five volumes, with each volume covering a different subject and each representing approximately a decade of Bott's work. The volumes are: Volume 1: Topology and Lie Groups (1950's) Volume 2: Differential Operators (1960's) Volume 3: Foliations (1970's) Volume 4: Mathematics Related to Physics (1980's) Volume 5: Completive Articles and Additional Biographic Material (1990's)

Apr. 2018 3070 pp.
9783319758152 108,350.

Trends in Mathematics

Clader, E. /Ruan, Y. (eds.): No. 514-058
B-Model Gromov-Witten Theory

This book collects various perspectives, contributed by both mathematicians and physicists, on the B-model and its role in mirror symmetry. Mirror symmetry is an active topic of research in both the mathematics and physics communities, but among mathematicians, the "A-model" half of the story remains much better-understood than the B-model. It begins with an overview ofseveral methods by which mirrors have been constructed, and from there, gives a thorough account of the "BCOV" B-model theory from a physical perspective; this includes the appearance of such phenomena as the holomorphic anomaly equation and connections to number theory via modularity.

Nov. 2018 ....
9783319942193 21,670.

Advanced Courses in Mathematics - CRM Barcelona

Dung, D. /Temlyakov, V. /Ullrich, T.: No. 514-124
Hyperbolic Cross Approximation

Motivated by numerous applications, the last two decades have seen great success in studying multivariate approximation. The multivariate problems turn out to be much more difficult than their univariate counterparts. Recent findings have established that multivariate mixed smoothness classes play a fundamental role in high-dimensional approximation.

Oct. 2018 190 pp.
9783319922393 7,880.

Compact Textbooks in Mathematics

Soltan, P.: No. 514-163
A Primer on Hilbert Space Operators

The topics covered include functional calculus and spectral theorems, compact operators, trace class and Hilbert-Schmidt operators, self-adjoint extensions of symmetric operators, and one-parameter groups of operators. The exposition of the material on unbounded operators is based on a novel tocalled the z-transform, which provides a way to encode full information aboutunbounded operators in bounded ones, hence making many technical aspects of the theory less involved.

Aug. 2018 161 pp.
9783319920603 7,480.

Birkhauser

Cambridge Studies in Advanced Mathematics,

Vol. 174: **Garrett, P.:** No. 514-085

Modern Analysis of
Automorphic Forms by Example, Vol. 2

This is Volume 2 of a two-volume book that provides a self-contained introduction to the theory and application of automorphic forms, using examples to illustrate several critical analytical concepts surrounding and supporting the theory of automorphic forms.
The two-volume book treats three instances, starting with some small unimodular examples, followed by adelic GL2, and finally GLn.
Volume 2 features critical results, which are proven carefully and in detail, including automorphic Green□ functions, metrics and topologies on natural function spaces, unbounded operators, vector-valued integrals, vector-valued holomorphic functions, and asymptotics.

Oct. 2018 .... 9781108473842 16,670.

London Mathematical Society Lecture Note Series,

*Vol. ***:* **Ben Ayed, M. /Ali Jendoubi, M. / Rebai, Y. /Riahi, H. /Zaag, H.:** No. 514-072

Partial Differential Equations arising from Physics and Geometry

The papers originate from a 2015 research school organized by CIMPA and MIMS in Hammamet, Tunisia to celebrate the 60th birthday of the late Professor Abbas Bahri.
The opening chapter commemorates his life and work.
While the research presented in this book is cutting-edge, the treatment throughout is at a level accessible to graduate students.
It includes short courses offering readers a unique opportunity to learn the state of the art in evolution equations and mathematical models in physics, which will serve as an introduction for students and a useful reference for established researchers.
Finally, the volume includes many open problems to inspire the next generation.

Jan. 2019 486 pp. 9781108431637 14,810.

New Mathematical Monographs,

Vol. 34: **Schwede, S.:** No. 514-050

Global Homotopy Theory

Equivariant homotopy theory started from geometrically motivated questions about symmetries of manifolds. Several important equivariant phenomena occur not just for a particular group, but in a uniform way for all groups. Prominent examples include stable homotopy, K-theory or bordism.
Global equivariant homotopy theory studies such uniform phenomena, i.e. universal symmetries encoded by simultaneous and compatible actions of all compact Lie groups. This book introduces graduate students and researchers to global equivariant homotopy theory.
The framework is based on the new notion of global equivalences for orthogonal spectra, a much finer notion of equivalence than is traditionally considered.

Oct. 2018 846 pp. 9781108425810 31,900.

Cambridge

Cambridge Texts in Applied Mathematics,

Vol. 58: Graham, M.:
Microhydrodynamics,
Brownian Motion, and Complex Fluids

This is an introduction to the dynamics of fluids at small scales, the physical and mathematical underpinnings of Brownian motion, and the application of these subjects to the dynamics and flow of complex fluids such as colloidal suspensions and polymer solutions.
It brings together continuum mechanics, statistical mechanics, polymer and colloid science, and various branches of applied mathematics, in a self-contained and integrated treatment that provides a foundation for understanding complex fluids, with a strong emphasis on fluid dynamics.
Students and researchers will find that this book is extensively cross-referenced to illustrate connections between different aspects of the field.

Nov. 2018 280 pp.
9781107024649 /9781107695931 14,810./6,600. (Paper ed.)

Vol. 57: **Boissonnat, J.-D. /Chazal, F. /Yvinec, M.:**
Geometric and Topological Inference

Geometric and topological inference deals with the retrieval of information about a geometric object using only a finite set of possibly noisy sample points.
It has connections to manifold learning and provides the mathematical and algorithmic foundations of the rapidly evolving field of topological data analysis.
Building on a rigorous treatment of simplicial complexes and distance functions, this self-contained book covers key aspects of the field, from data representation and combinatorial questions to manifold reconstruction and persistent homology.
It can serve as a textbook for graduate students or researchers in mathematics, computer science and engineering interested in a geometric approach to data science.

Jan. 2019 300 pp.
9781108419390/9781108410892 16,400./ 6,600. (Paper ed.)

Cambridge Monographs on Mathematical Physics

Harko, T. /Lobo, F.:
Extensions of F(R) Gravity:
Curvature-Matter Couplings and
Hybrid Metric-Palatini Gravity

Various extensions to Einstein's General Theory of Relativity have been proposed, and this book presents a detailed theoretical and phenomenological analysis of several leading, modified theories of gravity.
Theories with generalised curvature-matter couplings are first explored, followed by hybrid metric-Palatini gravity.
This timely book first discusses key motivations behind the development of these modified gravitational theories, before presenting a detailed overview of their subsequent development, mathematical structure, and cosmological and astrophysical implications.
Covering recent developments and with an emphasis on astrophysical and cosmological applications, this is the perfect text for graduate students and researchers.

Nov. 2018 472 pp.
9781108428743 29,620.

Cambridge

EMS Series of Lectures in Mathematics,

Kessar, R. /Malle, G. (eds.): No. 514-086

Local Representation Theory and Simple Groups

The book contains extended versions of seven short lecture courses given during a semester programme on "Local Representation Theory and Simple Groups" held at the Centre Interfacultaire Bernoulli of the EPF Lausanne.
These focussed on modular representation theory of finite groups, modern Clifford theoretic methods, the representation theory of finite reductive groups, as well as on various applications of character theory and representation theory, for example to base sizes and to random walks.
These lectures are intended to form a good starting point for g raduate students and researchers who wish to familiarize themselves with the foundations of the topics covered here.
Furthermore they give an introduction to current research directions, including the state of some open problems in the field.

Apr. 2018 369 pp.
9783037191859 8,670.

Zurich Lectures in Advanced Mathematics

Thomas, A.: No. 514-105

Geometric and Topological Aspects of Coxeter Groups and Buildings

Coxeter groups are groups generated by reflections, and they appear throughout mathematics.
Tits developed the general theory of Coxeter groups in order to develop the theory of buildings.
Buildings have interrelated algebraic, combinatorial and geometric structures, and are powerful tools for understanding the groups which act on them.
These notes focus on the geometry and topology of Coxeter groups and buildings, especially nonspherical cases.
Part I describes Coxeter groups and their geometric realisations, particularly the Davis complex, and Part II gives a concise introduction to buildings.

May 2018 160 pp.
9783037191897 6,700.

EMS Series of Congress Report

Gesztesy, F. /Hanche-Olsen, H. /Jakobsen, E. / Lyubarskii, Y. /Risebro, N. /Seip, K. (eds.): No. 514-130

Non-Linear Partial Differential Equations, Mathematical Physics, and Stochastic Analysis

This volume is dedicated to Helge Holden on the occasion of his 60th anniversary.
It collects contributions by numerous scientists with expertise in non-linear partial differential equations, mathematical physics, and stochastic analysis, reflecting to a large degree Helge Holden's longstanding research interests.
Accordingly, the problems addressed in the contributions deal with a large range of topics, including, in particular, infinite-dimensional analysis, linear and nonlinear PDEs, stochastic analysis, spectral theory, completely integrable systems, random matrix theory, and chaotic dynamics and sestina poetry.

May 2018 502 pp.
9783037191866 19,310.

European Mathematical Society

Graduate Texts in Mathematics,

Vol. ***: Lee, J.: No. 514-190

Introduction to Riemannian Manifolds, 2nd ed.

The second edition has been adapted, expanded, and aptly retitled from Lee's earlier book, Riemannian Manifolds: An Introduction to Curvature. Numerous exercises and problem sets provide the student with opportunities to practice and develop skills; appendices contain a brief review of essential background material. While demonstrating the uses of most of the main technical tools needed for a careful study of Riemannian manifolds, this text focuses on ensuring that the student develops an intimate acquaintance with the geometric meaning of curvature.

July 2018 436 pp.
9783319917542 12,800.

Springer Monographs in Mathematics

Mordukhovich, B.: No. 514-155

Variational Analysis and Applications

Building on fundamental results in variational analysis, this monograph presents new and recent developments in the field as well as selected applications. Accessible to a broad spectrum of potential readers, the main material is presented in finite-dimensional spaces.
Infinite-dimensional developments are discussed at the end of each chapter with comprehensive commentaries which emphasize the essence of major results, track the genesis of ideas, provide historical comments, and illuminate challenging open questions and directions for future research.

Aug. 2018 634 pp.
9783319927732 23,640.

Bolyai Society Mathematical Studies,

Vol. 27: Ambrus, G. /Barany, I. /Boroczky, K. / Fejes Toth, G. /Pach, J. (eds.): No. 514-171

New Trends in Intuitive Geometry

This volume contains 17 surveys that cover many recent developments in Discrete Geometry and related fields.
Besides presenting the state-of-the-art of classical research subjects like packing and covering, it also offers an introduction to new topological, algebraic and computational methods in this very active research field.
The readers will find a variety of modern topics and many fascinating open problems that may serve as starting points for research.

July 2018 395 pp.
9783662574126 19,700.

Lecture Notes in Mathematics,

Vol: 2223: Alvarez Lopez, J. /Candel, A.: No. 514-170

Generic Coarse Geometry of Leaves

This book provides a detailed introduction to the coarse quasi-isometry of leaves of a foliated space and describes the cases where the generic leaves have the same quasi-isometric invariants.
Every leaf of a compact foliated space has an induced coarse quasi-isometry type, represented by the coarse metric defined by the length of plaque chains given by any finite foliated atlas.

Aug. 2018 180 pp.
9783319941318 6,890.

Springer

Lecture Notes in Mathematics,

Vol. 2217: **Bezuglyi, S. /Jorgensen, P.:** No. 514-116

Transfer Operators, Endomorphisms, and Measurable Partitions

This entails a whole new set of tools, often quite different from those used for the "easier" and well-documented case of automorphisms.
Among them is the construction of a family of positive operators, arising naturally as a dual picture to that of endomorphisms.
The setting is motivated by a number of recent applications, including wavelets, multi-resolution analyses, dissipative dynamical systems, and quantum theory.

July 2018 125 pp.
9783319924168 10,830.

Vol. 2215: **Donati-Martin, C. (eds.):** No. 514-206

Seminaire de Probabilites XLIX

This 49th volume offers a good sample of the main streams of current research on probability and stochastic processes, in particular those active in France.
This includes articles on latest developments on diffusion processes, large deviations, martingale theory, quasi-stationary distribution, random matrices, and many more.

Aug. 2018 417 pp.
9783319924199 13,790.

Universitext

Marcus, D.: No. 514-095

Number Fields, 2nd ed.

Requiring no more than a basic knowledge of abstract algebra, this text presents the mathematics of number fields in a straightforward, pedestrian manner.
It therefore avoids local methods and presents proofs in a way that highlights the important parts of the arguments.

July 2018 191 pp.
9783319902326 7,480.

Kadets, V.: No. 514-139

A Course in Functional Analysis and Measure Theory

Starting from basic topics before proceeding to more advanced material, the book covers measure and integration theory, classical Banach and Hilbert space theory, spectral theory for bounded operators, fixed point theory, Schauder bases, the Riesz-Thorin interpolation theorem for operators, as well as topics in duality and convexity theory.

Oct. 2018 532 pp.
9783319920030 10,830.

Pages, G.: No. 514-221

Numerical Probability: An Introduction with Applications to Finance

This textbook provides a self-contained introduction to numerical methods in probability with a focus on applications to finance.
Topics covered include the Monte Carlo simulation, stochastic optimization and approximation, discretization schemes of stochastic differential equations, as well as optimal quantization methods.

July 2018 492 pp.
9783319902746 9,850.

Springer

Undergraduate Texts in Mathematics

No. 514-100

Olver, P. /Shakiban, C.:
Applied Linear Algebra, 2nd ed.

This textbook develops the essential tools of linear algebra, with the goal of imparting technique alongside contextual understanding.
This approach encourages students to develop not only the technical proficiency needed to go on to further study, but an appreciation for when, why, and how the tools of linear algebra can be used across modern applied mathematics.
Providing an extensive treatment of essential topics such as Gaussian elimination, inner products and norms, and eigenvalues and singular values, this text can be used for an in-depth first course, or an application-driven second course in linear algebra.
In this second edition, applications have been updated and expanded to include numerical methods, dynamical systems, data analysis, and signal processing, while the pedagogical flow of the core material has been improved.

June 2018 633 pp.
9783319910406 11,820.

Asmar, N. /Grafakos, L.:
No. 514-112
Complex Analysis and Applications

This textbook is intended for a one semester course in complex analysis for upper level undergraduates in mathematics.
Applications, primary motivations for this text, are presented hand-in-hand with theory enabling this text to serve well in courses for students in engineering or applied sciences.
The overall aim in designing this text is to accommodate students of different mathematical backgrounds and to achieve a balance between presentations of rigorous mathematical proofs and applications.

Dec. 2018 450 pp.
9783319940625 9,840.

Springer Undergraduate Mathematics

Moerdijk, I. /van Oosten, J.:
No. 514-045
Sets, Models and Proofs

This textbook provides a concise and self-contained introduction to mathematical logic, with a focus on the fundamental topics in first-order logic and model theory.
Including examples from several areas of mathematics (algebra, linear algebra and analysis), the book illustrates the relevance and usefulness of logic in the study of these subject areas.

Oct. 2018 165 pp.
9783319924137 6,500.

Erdmann, K. /Holm, T.:
No. 514-063
Algebras and Representation Theory

The book starts with basic topics on algebras and modules, covering fundamental results such as the Jordan-Holder theorem on composition series, the Artin-Wedderburn theorem on the structure of semisimple algebras and the Krull-Schmidt theorem on indecomposable modules.
The authors then go on to study representations of quivers in detail, leading to a complete proof of Gabriel's celebrated theorem characterizing the representation type of quivers in terms of Dynkin diagrams.

Nov. 2018 305 pp.
9783319919973 6,890.

Springer

Wiley Series in Probability and Statistics

Agresti, A.: No. 514-200

An Introduction to

Categorical Data Analysis, 3rd ed.

The use of statistical methods for categorical data has increased dramatically, particularly for applications in the biomedical and social sciences.
This book, Third Edition summarizes these methods and shows readers how to use them using software.
Readers will find a unified generalized linear models approach that connects logistic regression and loglinear models for discrete data with normal regression for continuous data.

Nov. 2018 384 pp.
9781119405269 24,900.

Paolella, M.: No. 514-202

Fundamental Statistical Inference

This clear and accessible book for beginning graduate students offers a practical and detailed approach to the field of statistical inference, providing complete derivations of results, discussions, and MATLAB programs for computation.
It emphasizes details of the relevance of the material, intuition, and discussions with a view towards very modern statistical inference.
In addition to classic subjects associated with mathematical statistics, topics include an intuitive presentation of the (single and double) bootstrap for confidence interval calculations, shrinkage estimation, tail (maximal moment) estimation, and a variety of methods of point estimation besides maximum likelihood, including use of characteristic functions, and indirect inference.
Practical examples of all methods are given.

Aug. 2018 664 pp.
9781119417866 19,090.

Tsay, R. /Chen, R.: No. 514-229

Nonlinear Time Series Analysis

The authors explore the advantages and limitations of the nonlinear models and methods and review the improvements upon linear time series models.
The need for this book is based on the recent developments in nonlinear time series analysis, statistical learning, dynamic systems and advanced computational methods.

July 2018 544 pp.
9781119264057 23,240.

Wiley Series in Survey Methodology

Johnson, T. /Pennell, B.-E. (eds.): No. 514-215

Advances in Comparative Survey Methodology

This book examines the most recent advances in methodology and operations as well as the technical developments in international survey research.
With contributions from a panel of international experts, the text includes information on the use of Big Data in concert with survey data, collecting biomarkers, the human subject regulatory environment, innovations in data collection methodology and sampling techniques, use of paradata across the survey lifecycle, metadata standards for dissemination, and new analytical techniques.

Sep. 2018 1120 pp.
9781118884980 23,240.

Wiley

de Gruyter Studies in Mathematics,

Vol. **: Herfort, W. /Hofmann, K. /Russo, F.: No. 514-078

Periodic Locally Compact Groups:
A Study of A Class of Totally Disconnected Topological Groups

This authoritative book on periodic locally compact groups is divided into three parts. The first part covers the necessary background material on locally compact groups, the second part develops a general structure theory of locally compact near abelian groups, while the third part uses this theory for a complete and novel presentation of Mukhin's results which generalized Iwasawa's work for abstract groups in the case of locally compact groups.

Sep. 2018 320 pp.
9783110598476 20,480.

Vol. **: Maruskin, J.: No. 514-153

Dynamical Systems and Geometric Mechanics:
An Introduction, 2nd ed.

Introduction to Dynamical Systems and Geometric Mechanics provides a comprehensive tour of two fields that are intimately entwined: dynamical systems is the study of the behavior of physical systems that may be described by a set of nonlinear first-order ordinary differential equations in Euclidean space, whereas geometric mechanics explores similar systems that instead evolve on differentiable manifolds.
In the first we discuss linearization and stability of trajectories and fixed points, invariant manifold theory, periodic orbits, Poincare maps, Floquet theory, the Poincare-Bendixson theorem, bifurcations, and chaos.
The second part of the text begins with a self-contained chapter on differential geometry that introduces notions of manifolds, mappings, vector fields, the Jacobi-Lie bracket, and differential forms.

Oct. 2018 280 pp.
9783110597295 19,690.

Vol. **: Meerschaert, M. /Sikorskii, A. /Zayernouri, M.:

Stochastic and Computational Models for Fractional Calculus

No. 514-220

Fractional calculus is a rapidly growing field of research, at the interface between probability, differential equations, and mathematical physics.
It is used to model anomalous diffusion, in which a cloud of particles spreads in a different manner than traditional diffusion.
This monograph develops the basic theory of fractional calculus and anomalous diffusion, from the point of view of probability.
In this book, we will see how fractional calculus and anomalous diffusion can be understood at a deep and intuitive level, using ideas from probability.
It covers basic limit theorems for random variables and random vectors with heavy tails.
This includes regular variation, triangular arrays, infinitely divisible laws, random walks, and stochastic process convergence in the Skorokhod topology.
The basic ideas of fractional calculus and anomalous diffusion are closely connected with heavy tail limit theorems.
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