Yurinsha Book News

Surveys in Differential Geometry,

444-046

Vol. 14: Yau, S.-T. et al. (eds.): Geometry of Riemann Surfaces and their moduli spaces

Table of Contents:

Apr. 2010 418 pp.
9781571461407 12,070.

International Press

No. 444 June 2010

新刊特集

Colloquium Publications,

Vol. 58: Shahidi, F.: 444-091

Eisenstein Series and Automorphic L-Functions

This book presents a treatment of the theory of L-functions developed by means of the theory of Eisenstein series and their Fourier coefficients, a theory which is usually referred to as the Langlands-Shahidi method.
The information gathered from this method, when combined with the converse theorems of Cogdell and Piatetski-Shapiro, has been quite sufficient in establishing a number of new cases of Langlands functoriality conjecture; at present, some of these cases cannot be obtained by any other method.
These results have led to far-reaching new estimates for Hecke eigenvalues of Maass forms, as well as definitive solutions to certain problems in analytic and algebraic number theory.
This book gives a detailed treatment of important parts of this theory, including a rather complete proof of Casselman-Shalika's formula for unramified Whittaker functions as well as a general treatment of the theory of intertwining operators.

Aug. 2010 207 pp.
9780821849897 7,810.

Clay Mathematics Proceedings,

Vol. 9: Akhtar, R. /Brosnan, P. /Joshua, R. (eds.):

The Geometry of Algebraic Cycles 444-054

The subject of algebraic cycles has its roots in the study of divisors, extending as far back as the nineteenth century.
Since then, and in particular in recent years, algebraic cycles have made a significant impact on many fields of mathematics, among them number theory, algebraic geometry, and mathematical physics.
The present volume contains articles on all of the above aspects of algebraic cycles.
It also contains a mixture of both research papers and expository articles, so that it would be of interest to both experts and beginners in the field.

July 2010 187 pp.
9780821851913 7,380.

CBMS Regional Conference Series in Mathematics,

Vol. 113: Wolpert, S.: 444-097

Families of Riemann Surfaces and Weil-Petersson Geometry

A unified approach is provided for an array of results.
The exposition covers Wolpert's work on twists, geodesic-lengths and the Weil-Petersson symplectic structure; Wolpert's expansions for the metric, its Levi-Civita connection and Riemann tensor.
The exposition also covers Brock's twisting limits, visual sphere result and pants graph quasi isometry, as well as the Brock-Masur-Minsky construction of ending laminations for Weil-Petersson geodesics.
The rigidity results of Masur-Wolf and Daskalopoulos-Wentworth, following the approach of Yamada, are included.
The book concludes with a generally self-contained treatment of the McShane-Mirzakhani length identity, Mirzakhani's volume recursion, approach to Witten-Kontsevich theory by hyperbolic geometry, and prime simple geodesic theorem.

July 2010 118 pp.
9780821849866 5,110.

A. M. S.

University Lecture Series,

Vol. 54: Mackay, J. /Tyson, J.: 444-165

Conformal Dimension: Theory and Application

Conformal dimension measures the extent to which the Hausdorff dimension of a metric space can be lowered by quasisymmetric deformations. Introduced by Pansu in 1989, this concept has proved extremely fruitful in a diverse range of areas, including geometric function theory, conformal dynamics, and geometric group theory.

This survey leads the reader from the definitions and basic theory through to active research applications in geometric function theory, Gromov hyperbolic geometry, and the dynamics of rational maps, amongst other areas.

It reviews the theory of dimension in metric spaces and of deformations of metric spaces.

It summarizes the basic tools for estimating conformal dimension and illustrates their application to concrete problems of independent interest.

Numerous examples and proofs are provided.Working from basic definitions through to current research areas, this book can be used as a guide for graduate students interested in this field, or as a helpful survey for experts.

Aug. 2010 153 pp.
9780821852293 5,820.

Contemporary Mathematics,

Vol. 519: Felix, Y. /Lupton, G. /Smith, S. (eds.):

Homotopy Theory of Function Spaces and Related Topics

444-071

This volume contains the proceedings of the Workshop on Homotopy Theory of Function Spaces and Related Topics, which was held at the Mathematisches Forschungsinstitut Oberwolfach, in Germany, from April 5-11, 2009.

This volume contains fourteen original research articles covering a broad range of topics that include: localization and rational homotopy theory, evaluation subgroups, free loop spaces, Whitehead products, spaces of algebraic maps, gauge groups, loop groups, operads, and string topology.

In addition to reporting on various topics in the area, this volume is supposed to facilitate the exchange of ideas within Homotopy Theory of Function Spaces, and promote cross-fertilization between Homotopy Theory of Function Spaces and other areas.

Aug. 2010 255 pp.
9780821849293 12,640.

Vol. 518: Mcguire, G. /Mullen, G. / Panario, D. /Shparlinski, I. (eds.): 444-088

Finite Fields: Theory and Applications

This volume contains the proceedings of the Ninth International Conference on Finite Fields and Applications, held in Ireland, July 13-17, 2009.

It includes survey papers by all invited speakers as well as selected contributed papers. Finite fields continue to grow in mathematical importance due to applications in many diverse areas.

This volume contains a variety of results advancing the theory of finite fields and connections with, as well as impact on, various directions in number theory, algebra, and algebraic geometry. Areas of application include algebraic coding theory, cryptology, and combinatorial design theory.

Aug. 2010 383 pp.
9780821847862 16,330.

A. M. S.

Zhang, Q.: 444-149

Sobolev Inequalities, Heat Kernels under Ricci Flow, and the Poincare Conjecture

Focusing on Sobolev inequalities and their applications to analysis on manifolds and Ricci flow, this book introduces the field of analysis on Riemann manifolds and uses the tools of Sobolev imbedding and heat kernel estimates to study Ricci flows, especially with surgeries.
The author explains key ideas, difficult proofs, and important applications in a succinct, accessible, and unified manner.
The book first discusses Sobolev inequalities in various settings, including the Euclidean case, the Riemannian case, and the Ricci flow case. It then explores several applications and ramifications, such as heat kernel estimates, Perelman's W entropies and Sobolev inequality with surgeries, and the proof of Hamilton's little loop conjecture with surgeries. Using these tools, the author presents a unified approach to the Poincare conjecture that clarifies and simplifies Perelman's original proof.
Since Perelman solved the Poincare conjecture, the area of Ricci flow with surgery has attracted a great deal of attention in the mathematical research community. Along with coverage of Riemann manifolds, this book shows how to employ Sobolev imbedding and heat kernel estimates to examine Ricci flow with surgery.

July 2010 432 pp.
9781439834596 11,050.

Atkinson, F. /Mingarelli, A.: 444-103

Multiparameter Eigenvalue Problems: Sturm-Liouville Theory

With special attention to the Sturm-Liouville theory, this book discusses the full multiparameter theory as applied to second-order linear equations. It considers the spectral theory of these multiparameter problems in detail for both the regular and singular cases.
The text covers eignencurves, the essential spectrum, eigenfunctions, oscillation theorems, the distribution of eigencurves, the limit point, limit circle theory, and more. This text is the culmination of more than two decades of research by F.V. Atkinson, one of the masters in the field, and his successors, who continued his work after he passed away in 2002.

Jan. 2011 320 pp.
9781439816226 14,140.

Chapman & Hall/CRC Applied Mathematics & Nonlinear Science

Kythe, P.: 444-129

Green's Functions & Partial Differential Equations: Theory, Applications and Computation

This book provides complete coverage of Green's functions, which have become an important topic of interest in recent years.
Along with MathematicaR and MATLABR code, it supplies the necessary background material and presents a large number of examples and exercises from different areas of mathematics, applied science, and engineering.
The book includes boundary value problems involving ordinary differential equations, partial differential equations, and stochastic differential equations. The author describes various methods for solving these problems, including classical methods, Bernoulli's separation method, integral transform, conformal mapping, and wavelet transform.

Mar. 2011 352 pp.
9781439840085 17,010.

Chapman & Hall/CRC

444-065

Chartrand, G. /Lesniak, L. /Zhang, P.:
Graphs and Digraphs, 5th ed.

Written for advanced undergraduate and beginning graduate students, the fifth edition of this best-selling book provides a wide range of new examples along with historical discussions of mathematicians, problems, and conjectures.
It features new and expanded coverage of such topics as toughness, graph minors, perfect graphs, list colorings, nowhere zero flows, list edge colorings, the road coloring problem, and the rainbow number of a graph.

Dec. 2010 480 pp.
9781439826270 11,050.

444-115

Cerone, P. /Dragomir, S.:
Mathematical Inequalities: A Perspective

This book provides an overview of the expanding field of mathematical inequalities and their applications. Instead of focusing on narrow treatments of various mathematical inequalities, the authors present a number of classical and recent results across the field, covering integral inequalities, discrete inequalities, and inequalities in abstract spaces.
They also make new connections and investigate intimate relationships between inequalities.
Written in an accessible manner, the text offers simple proofs for young researchers yet incorporates sufficient detail to appeal to experts and graduate students in real and functional analysis.

Dec. 2010 350 pp.
9781439848968 17,010.

444-116

Chui, C. /Devilliers, J.:
Wavelet Subdivision Methods: GEMS for Rendering Curves and Surfaces

Focusing on subdivision curves and surfaces, this book details wavelet methods for geometric design, editing, and algorithm development.
It presents a unified study of the theory, methods, and construction algorithms for the ideal wavelet families associated with existing subdivision schemes.
Requiring no advanced mathematics knowledge, including Fourier analysis and time-frequency analysis, the text provides all of the necessary background on wavelet mathematics and curve and surface subdivisions.

Aug. 2010 472 pp.
9781439812150 9,490.

Chapman & Hall/CRC Financial Mathematics Series

444-184

El-Karoui, N.:
Dynamic Pricing and Hedging of Derivatives: Stochastic and Numerical Methods

Written by a leading academic and practitioner in the field, Dynamic Pricing and Hedging of Derivatives: Stochastic and Numerical Methods provides a comprehensive introduction to derivatives.
The author describes the various financial instruments and theoretical and practical methods that have been implemented to evaluate the derivative market. Split into three well-researched parts, the book first details the fundamentals of derivatives.

Mar. 2011 406 pp.
9781439803172 11,050.

Chapman & Hall/CRC

Discrete Mathematics and Its Applications

Imrich, W. /Klavzar, S. /Hammack, R.: 444-079

Product Graphs, 2nd ed.

Now in its second edition, this book provides the first comprehensive account of the four standard products of graphs.
It systematically treats the Cartesian, strong, direct, and lexicographic product of graphs and graphs isometrically embeddable into them.
The text collects a wealth of information previously widely scattered in the literature on products of graphs, in particular, information on hypercubes, median graphs, Hamming graphs, triangle-free graphs, and vertex-transitive graphs.
It also covers colorings, automorphisms, homomorphisms, domination, the capacity of products of graphs, as well as applications to chemical graph theory and computational biology.

Apr. 2011 450 pp.
9781439813041 14,140.

Jamison, R.: 444-080

Introduction to Closure Systems

The notion of closure pervades mathematics, especially in the fields of topology and projective geometry.
Demonstrating this pervasiveness in the field, this graduate-level book provides a complete introduction to closure systems.
With an emphasis on finite spaces and algebraic closures, the text covers graph theory, ordered sets, lattices, projective geometry, and formal logic as they apply to the study of closures.
Each chapter presents a vignette to illustrate the topic covered.
The author also includes numerous exercises as well as concrete examples to support the material discussed.

Mar. 2011 352 pp.
9781439819913 12,810.

Loehr, N.: **Bijective Combinatorics**
Feb. 2011 *608 pp.* *9781439848845* *11,140.*

Boztas, S. (ed.): **Handbook of Codes and Sequaences with Applications in Communication, Computing & Information Security** 詳報掲載 No. 006
Apr. 2011 *806 pp.* *9781420088281* *18,120.*

Cohen, H. /Frey, G. /Avanzi, R. /Doche, C. /Lange, T. / Nguyen, K. /Vercauteren, F.: 444-009

Handbook of Elliptic and Hyperelliptic Curve Cryptography, 2nd ed.

This handbook provides a complete reference on elliptic and hyperelliptic curve cryptography.
Addressing every aspect of the field, the book contains all of the background necessary to understand the theory and security of cryptosystems as well as the algorithms that can be used to implement them.
This second edition features the latest developments on pairing-based cryptography, new ideas on index-calculus attacks, improved algorithms for genus-2 arithmetic, and a number of other new additions.
It also includes many new applications and provides better explanations on some of the more mathematical presentations.

Feb. 2011 1024 pp.
9781439840009 15,690.

Chapman & Hall/CRC

EMS Series of Lectures in Mathematics

Holden, H. /Karlsen, K.-A. /Risebro, N.: 444-125

Splitting Methods for Partial Differential Equations with Rough Solutions: Analysis and MATLAB programs

Operator splitting (or the fractional steps method) is a very common tool to analyze nonlinear partial differential equations both numerically and analytically. By applying operator splitting to a complicated model one can often split it into simpler problems that can be analyzed separately. In this book one studies operator splitting for a family of nonlinear evolution equations, including hyperbolic conservation laws and degenerate convection-diffusion equations.
Common for these equations is the prevalence of rough, or non-smooth, solutions, e.g., shocks.
Rigorous analysis is presented, showing that both semi-discrete and fully discrete splitting methods converge. For conservation laws, sharp error estimates are provided and for convection-diffusion equations one discusses a priori and a posteriori correction of entropy errors introduced by the splitting.

Apr. 2010 236 pp.
9783037190784 6,880.

EMS Textbooks in Mathematics

Zehnder, E.: 444-148

Lectures on Dynamical Systems: Hamiltonian Vector Fields and Symplectic Capacities

This book originated from an introductory lecture course on dynamical systems given by the author for advanced students in mathematics and physics at the ETH Zurich.
The first part centres around unstable and chaotic phenomena caused by the occurrence of homoclinic points.
The existence of homoclinic points complicates the orbit structure considerably and gives rise to invariant hyperbolic sets nearby.
The orbit structure in such sets is analyzed by means of the shadowing lemma, whose proof is based on the contraction principle.
This lemma is also used to prove S. Smale's theorem about the embedding of Bernoulli systems near homoclinic orbits.
The chaotic behavior is illustrated in the simple mechanical model of a periodically perturbed mathematical pendulum.
The second part of the book is devoted to Hamiltonian systems.
The Hamiltonian formalism is developed in the elegant language of the exterior calculus. The theorem of V. Arnold and R. Jost shows that the solutions of Hamiltonian systems which possess sufficiently many integrals of motion can be written down explicitly and for all times.
The existence proofs of global periodic orbits of Hamiltonian systems on symplectic manifolds are based on a variational principle for the old action functional of classical mechanics. The necessary tools from variational calculus are developed. There is an intimate relation between the periodic orbits of Hamiltonian systems and a class of symplectic invariants called symplectic capacities. From these symplectic invariants one derives surprising symplectic rigidity phenomena. This allows a first glimpse of the fast developing new field of symplectic topology.

May 2010 363 pp.
9783037190814 9,170.

European Mathematical Society

Advanced Lectures in Mathematics,

Vol. 12: Ji, L. /Liu, K. /Yau, S.-T. (eds.): 444-081
Cohomology of Groups and Algebraic K-Theory

Cohomology of groups is a fundamental tool in many subjects of modern mathematics. One important generalized cohomology theory is the algebraic K-theory. Indeed, algebraic K-groups of rings are important invariants of the rings and have played important roles in algebra, topology, number theory, etc. This volume consists of expanded lecture notes from a 2007 seminar at Zhejiang University in China, at which several leading experts presented introductions, to and surveys of, many aspects of cohomology of groups and algebraic K-theory, along with their broad applications.

Mar. 2010 517 pp.
9781571461445 9,230.

Vol. 11: Lee, Y.-I. /Lin, C.-S. /Tsui, M.-P. (eds.): 444-162
Recent Advances in Geometric Analysis

This volume presents an account of recent advances in geometric analysis and related topics, including Ricci flow, affine normal flow, geometric analysis on pseudo-convex hypersurfaces, Alexandrov space, manifolds with special holonomy, and the singular plateau problem. These papers, many by leading experts in the field, are drawn from lectures presented at the 2007 International Conference in Geometric Analysis, held at Taiwan University.

Mar. 2010 229 pp.
9781571461438 7,100.

Vol. 10: Bian, B. /Li, S. /Wang, X.-J. (eds.): 444-109
Trends in Partial Differential Equations

In a career of nearly sixty years of mathematical research, Guangchang Dong's influence on the development of partial differential equations in China has been immense, at both teaching and research levels. To celebrate Prof. Dong's eightieth birthday, an international conference called Elliptic and Parabolic Equations and Applications was held in August 2008 at Zhejiang University in Hangzhou, China.
This volume presents fifteen papers in all — some drawn from lectures given at the conference, others by his friends and former students.

Mar. 2010 527 pp.
9781571461421 9,230.

Vol. 9: Ji, L. /Liu, K. /Yau, S.-T. /ZhengZ.-J. (eds.):
Automorphic Forms and the Langlands Program

Classical modular forms on the upper half plane, with respect to 444-082
the modular group SL(2,Z) and its congruence subgroups, have arisen naturally in number theory, complex analysis, topology, mathematical physics, and many other subjects.
The closely related automorphic representations are basic notions in the celebrated Langlands program, which was proposed by Langlands in the late 1960s and has since revolutionized the fields of number theory, arithmetic algebraic geometry, and representation theory.
This volume consists of expanded lecture notes from a 2007 international conference in Guangzhou, China, at which several leading experts in number theory presented introductions to, and surveys of, many aspects of automorphic forms and the Langlands program.

Mar. 2010 319 pp.
9781571461414 7,810.

Mancosu, P.: 444-030

The Adventure of Reason: Interplay Between Philosophy of Mathematics and Mathematical Logic, 1900-1940

Paolo Mancosu presents a series of innovative studies in the history and the philosophy of logic and mathematics in the first half of the twentieth century. The Adventure of Reason is divided into five main sections: history of logic (from Russell to Tarski); foundational issues (Hilbert's program, constructivity, Wittgenstein, Godel); mathematics and phenomenology (Weyl, Becker, Mahnke); nominalism (Quine, Tarski); semantics (Tarski, Carnap, Neurath). Mancosu exploits extensive untapped archival sources to make available a wealth of new material that deepens in significant ways our understanding of these fascinating areas of modern intellectual history.

2010 480 pp.
9780199546534 13,260.

Weir, A.: 444-052

Truth Through Proof: A Formalist Foundation for Mathematics

Truth Through Proof defends an anti-platonist philosophy of mathematics derived from game formalism. Classic formalists claimed implausibly that mathematical utterances are truth-valueless moves in a game.
Alan Weir aims to develop a more satisfactory successor to game formalism utilising a widely accepted, broadly neo-Fregean framework, in which the proposition expressed by an utterance is a function of both sense and background circumstance.
This framework allows for sentences whose truth-conditions are not representational, which are made true or false by conditions residing in the circumstances of utterances but not transparently in the sense.
Applications to projectivism and fiction pave the way for the claim that mathematical utterances are made true or false by the existence of concrete proofs or refutations, though these truth-making conditions form no part of their sense or informational content.

Sep. 2010 256 pp.
9780199541492 7,730.

Oxford University Press

Simon, B.: 444-142

Szegö's Theorem and Its Descendants

This book presents a comprehensive overview of the sum rule approach to spectral analysis of orthogonal polynomials, which derives from Gabor Szegö's classic 1915 theorem and its 1920 extension.
Barry Simon emphasizes necessary and sufficient conditions, and provides mathematical background that until now has been available only in journals.
Topics include background from the theory of meromorphic functions on hyperelliptic surfaces and the study of covering maps of the Riemann sphere with a finite number of slits removed.
This allows for the first book-length treatment of orthogonal polynomials for measures supported on a finite number of intervals on the real line.
In addition to the Szegö and Killip-Simon theorems for orthogonal polynomials on the unit circle (OPUC) and orthogonal polynomials on the real line (OPRL), Simon covers Toda lattices, the moment problem, and Jacobi operators on the Bethe lattice.

Dec. 2010 720 pp.
9780691147048 14,390.

Princeton University Press

New Series: *Bocconi & Springer Series,*

The Bocconi & Springer Series aims to publish research monographs and advanced textbooks covering a wide variety of topics in the fields of mathematics, statistics, finance, economics and financial economics.- Concerning textbooks, the focus is to provide an educational core at a typical Master's degree level, publishing books and also offering extra material that can be used by teachers, students and researchers.- The series is born in cooperation with Bocconi University Press, the publishing house of the famous academy, the first Italian university to grant a degree in economics, andwhich today enjoys international recognition in business, economics, and law.

444-139

Vol. 1: **Peccati, G. /Taqqu, M.:**
Wiener Chaos:
Moments, Cumulants and Diagram Formulae:
A Survey with computer implementation

The concept of Wiener chaos generalizes to an infinite-dimensional setting the properties of orthogonal polynomials associated with probability distributions on the real line.
It plays a crucial role in modern probability theory, with applications ranging from Malliavin calculus to stochastic differential equations and from probabilistic approximations to mathematical finance.
This book is concerned with combinatorial structures arising from the study of chaotic random variables related to infinitely divisible random measures. The combinatorial structures involved are those of partitions of finite sets, over which Mobius functions and related inversion formulae are defined.

July 2010 **200 pp.**
9788847016781 **9,540.**

Developments in Mathematics,

444-066

Vol. 18: **Colliot-Thelene, J. /Garibaldi, S. / Sujatha, R. /Suresh, V. (eds.):**
Quadratic Forms,
Linear Algebraic Groups, and Cohomology

This volume of invited works collects the most recent research and developments in quadratic forms, linear algebraic groups, and cohomology; topics that are each at the intersection of algebra, number theory and algebraic geometry. The contributions to this volume are the work of renowned experts and present new results related to the research of Raman Parimala, to whom this collection is dedicated.
Some specific topics presented in this volume include, Iwasawa theory, Witt groups and sheafs, Chow motives, quaternion algebras, p-adic curves, and progress on the Kato conjecture as well as topics of recent interest such as field patching and a proof of the Serre's Conjecture II for function fields of complex surfaces.
This volume is intended for researchers and graduate students specializing in algebra, number theory, and algebraic geometry and may be suitable for supplementary use in an advanced graduate course.

May 2010 **345 pp.**
9781441962102 **19,670.**

Vol. 19: **Djoric, M. /Okumura, M.:**
CR Submanifolds of Complex Projective Space
Nov. 2009 *176 pp.* *9781441904331* *14,200.*

Vol. 20: **Rosales, J. /Garcia-Sanchez, P.:**
Numerical Semigroups
Oct. 2009 *190 pp.* *9781441901590* *14,130.*

Springer

Lecture Notes in Mathematics,

444-056

Vol. 1997: Banagl, M.:
Intersection Spaces, Spatial Homolohy Truncation, and String Theory

The present monograph introduces a method that assigns to certain classes of stratified spaces cell complexes, called intersection spaces, whose ordinary rational homology satisfies generalized Poincare duality.
The cornerstone of the method is a process of spatial homology truncation, whose functoriality properties are analyzed in detail.
The material on truncation is autonomous and may be of independent interest to homotopy theorists.
The cohomology of intersection spaces is not isomorphic to intersection cohomology and possesses algebraic features such as perversity-internal cup-products and cohomology operations that are not generally available for intersection cohomology.
A mirror-symmetric interpretation, as well as applications to string theory concerning massless D-branes arising in type IIB theory during a Calabi-Yau conifold transition, are discussed.

July 2010 213 pp.
9783642125881 8,580.

Archimedes,

444-045

Vol. 26: Wuthrich, A.:
The Genesis of Feynman Diagrams

In a detailed reconstruction of the genesis of Feynman diagrams the author reveals that their development was constantly driven by the attempt to resolve fundamental problems concerning the uninterpretable infinities that arose in quantum as well as classical theories of electrodynamic phenomena.
Accordingly, as a comparison with the graphical representations that were in use before Feynman diagrams shows, the resulting theory of quantum electrodynamics, featuring Feynman diagrams, differed significantly from earlier versions of the theory in the way in which the relevant phenomena were conceptualized and modelled.

May 2010 200 pp.
9789048192274 19,090.

Lecture Notes in Physics,

444-227

Vol. 808: Benatti, F. / Fannes, M. /Floreanini, R. /Petritis, D. (eds.):
Quantum Information, Computation and Cryptography:
An Introductory Survey of Theory, Technology and Experiments

This multi-authored textbook addresses graduate students with a background in physics, mathematics or computer science.
No research experience is necessary.
Consequently, rather than comprehensively reviewing the vast body of knowledge and literature gathered in the past twenty years, this book concentrates on a number of carefully selected aspects of quantum information theory and technology.
Given the highly interdisciplinary nature of the subject, the multi-authored approach brings together different points of view from various renowned experts, providing a coherent picture of the subject matter.

May 2010 350 pp.
9783642119132 13,360.

Springer

Newstead, P.: 444-089

Coherent Systems on Algebraic Curves

This is a developing theory which generalizes the classical theory of linear systems and has applications to higher rank Brill-Noether theory, and projective embeddings of curves and syzygies.
"Coherent Systems on Algebraic Curves" begins by describing the construction of the moduli spaces and their basic properties, before proceeding on to construction methods, coherent systems in genus 0 and 1, existence of coherent systems in higher genus, irreducibility and smoothness of the moduli spaces, and special results for rank 2 and coherent systems on special curves.
Many well-worked examples and open problems are included, and links with the projective geometry of curves, emphasized.

Oct. 2010 200 pp.
9789814304177 9,370.

Mickens, R.: 444-133

Truly Nonlinear Oscillations: Harmonic Balance, Parameter Expansions, Iteration, and Averaging Methods

The volume gives a general overview of the author's work on harmonic balance, iteration and combined linearization-averaging methods.
However, full discussions are also presented on parameter expansion procedures and a first-order averaging technique for TNL oscillators.
The calculational basis of each method is clarified by applying them to a set of standard TNL oscillator equations.
This allows a direct comparison to be made among the various methods.
The book is self-contained and therefore suitable for both classroom use and self-study by students and professionals who desire to learn, understand, and apply this technique to the field of nonlinear oscillations.

June 2010 260 pp.
9789814291668 12,070.

Moskowitz, M. /Paliogiannis, F.: 444-135

A Course in Functions of Severl Real Variables

This book begins with the basics of the geometry and topology of Euclidean space and continues with the main topics in the theory of functions of several real variables including limits, continuity, differentiation and integration.
All topics and in particular, differentiation and integration, are treated in depth and with mathematical rigor.
The classical theorems of differentiation and integration are proved in detail and many of them with novel proofs.
The authors develop the theory in a logical sequence building one theorem upon the other, enriching the development with numerous explanatory remarks and historical footnotes.
In this title, a number of well chosen illustrative examples and counter-examples clarify the theory and teach the reader how to apply it to solve problems in mathematics and other sciences and economics.
Each of the chapters concludes with groups of exercises and problems, many of them with detailed solutions while others with hints or final answers.
More advanced topics, such as Morse's lemma, Brouwer's fixed point theorem, Picard's theorem and the Weierstrass approximation theorem are discussed in stared sections.

Nov. 2010 450 pp.
9789814299268/9789814299275 9,800./5,540. (paper ed.)

World Scientific Pub.

Asterisque,

Vol. 331: Berger, L. /Breuil, C. /Colmez, P. (eds.): 444-059
Representations *p*-adiques de groupes *p*-adiques III
Global and geometrical methods
Nov. 2010 469 pp.
9782856292822 価格未定

Vol. 330: Berger, L. /Breuil, C. /Colmez, P. (eds.): 444-060
Representations *p*-adiques de groupes *p*-adiques II
Dec. 2010 554 pp.
9782856292815 価格未定

Vol. 329: Levy, T.: 444-084
Two-Dimensional Markovian Holonomy Fields
This text defines and studies a class of stochastic processes indexed by curves drawn on a compact surface and taking their values in a compact Lie group. We call these processes two-dimensional Markovian holonomy fields. The prototype of these processes, and the only one to have been constructed before the present work, is the canonical process under the Yang-Mills measure, first defined by Ambar Sengupta and later by the author. The Yang-Mills measure sits in the class of Markovian holonomy fields very much like the Brownian motion in the class of Levy processes.
Dec. 2010 172 pp.
9782856292839 価格未定

Vol. 326: Bourbaki, N.: 444-063
Seminaire Bourbaki, Vol. 2007/ 2008: Exposes 982-996
As in the preceding volumes of this seminar, one finds here fifteen survey lectures on topics of current interest: four lectures on algebraic geometry, one on number theory, one on probability theory, four on differential geometry, three about groups or Lie algebras, one concerning dynamical systems and one about mathematical physics.
Dec. 2009 410 pp.
9782856292693 18,910.

Vol. 324: Bellaiche, J. /Chenevier, G.: 444-058
Families of Galois Representations and Selmer Groups
This book presents an in-depth study of the families of Galois representations carried by the -adic eigenvarieties attached to unitary groups. The study encompasses some general algebraic aspects (properties of the space of representations of a group in the neighbourhood of a point, reducibility loci, pseudocharacters), and other aspects more specific to Galois groups of local or number fields.
Dec. 2009 314 pp.
9782856292648 16,890.

Vol. 323: Cano, F.et al. (eds.):
Equations Differentielles et singularites: En l'honneur de J. M.Aroca 444-008
This volume contains 23 papers about "Differential Equations & Singularities" written on the occasion of the congress in honour of J.M. Aroca, which took place in Las Casas del Tratado (Tordesillas) which house the Instituto I. de Estudios de Iberoamerica y Portugal of the University of Valladolid, 2006.
Dec. 2009 488 pp.
9782856292631 21,010.

The Societe Mathematique de France

Aspects of Mathematics,

Vol. 40: Abbaspour, H. /Marcolli, M. /Tradler, T.: 444-038
Deformation Spaces:
Perspectives on algebro-geometric moduli

The first instances of deformation theory were given by Kodaira and Spencer for complex structures and by Gerstenhaber for associative algebras.
Since then, deformation theory has been applied as a useful tool in the study of many other mathematical structures, and even today it plays an important role in many developments of modern mathematics.
This volume collects a few self-contained and peer-reviewed papers by experts which present up-to-date research topics in algebraic and motivic topology, quantum field theory, algebraic geometry, noncommutative geometry and the deformation theory of Poisson algebras.
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