

お知らせ  
数理学関係洋書在庫目録  
Yurinsha Stock List 2010  
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詳細 Page 1

# Yurinsha Book News

*Graduate Studies in Mathematics,*

*Vol. 111: Brendle, S.:*

438-164

## Ricci Flow and the Sphere Theorem

In 1982, R. Hamilton introduced a nonlinear evolution equation for Riemannian metrics with the aim of finding canonical metrics on manifolds. This evolution equation is known as the Ricci flow, and it has since been used widely and with great success, most notably in Perelman's solution of the Poincaré conjecture. Furthermore, various convergence theorems have been established. This book provides a concise introduction to the subject as well as a comprehensive account of the convergence theory for the Ricci flow. The proofs rely mostly on maximum principle arguments. Special emphasis is placed on preserved curvature conditions, such as positive isotropic curvature. One of the major consequences of this theory is the Differentiable Sphere Theorem: a compact Riemannian manifold whose sectional curvatures all lie in the interval  $(1,4]$  is diffeomorphic to a spherical space form. This question has a long history, dating back to a seminal paper by H. E. Rauch in 1951, and it was resolved in 2007 by the author and Richard Schoen.

Feb. 2010

176 pp.

9780821849385

6,440.

A. M. S.

<http://www.yurinsha.com>

ホームページは毎月25日更新予定です

No. 438

Dec. 2009

数理学 友隣社 洋書専門

## お知らせ

# 数理学関係洋書在庫目録

## Yurinsha Stock List 2010

10月上旬にアップいたしました。

小社ホームページ上にて  
閲覧くださいますようお願い申し上げます。

ホームページがご覧になれない方用に、  
在庫目録をそのままCD-ROMにしたものを  
ご用意いたしました。

また、

目録データにつきましては、エクセル形式にて  
ご提供いたしますので、お気軽にお申しつけ下さい。

皆様のご利用、ご注文をお待ち申し上げます

2009年12月

(株) 友 隣 社

<http://www.yurinsha.com>

Mallios, A.:

438-134

### Modern Differential Geometry in Gauge Theories, Vol. 2: Yang-Mills Fields

Modern Differential Geometry in Gauge Theories is a two-volume research monograph that systematically applies a sheaf-theoretic approach to such physical theories as gauge theory. Beginning with Volume 1, the focus is on Maxwell fields. All the basic concepts of this mathematical approach are formulated and used thereafter to describe elementary particles, electromagnetism, and geometric prequantization.

Maxwell fields are fully examined and classified in the language of sheaf theory and sheaf cohomology.

Continuing in Volume 2, this sheaf-theoretic approach is applied to Yang-Mills fields in general.

The text contains a wealth of detailed and rigorous computations and will appeal to mathematicians and physicists, along with advanced undergraduate and graduate students, interested in applications of differential geometry to physical theories such as general relativity, elementary particle physics and quantum gravity.

Dec. 2009

234 pp.

9780817643799

16,230.

**Birkahsuer**

Page 1

*University Lecture Series,***Vol. 52: Nagel, J. /Aprodu, M.:**

438-088

**Koszul Cohomology and Algebraic Geometry**

This book is primarily concerned with applications of Koszul cohomology to algebraic geometry, with an emphasis on syzygies of complex projective curves.

The authors' main goal is to present Voisin's proof of the generic Green conjecture, and subsequent refinements.

They discuss the geometric aspects of the theory and a number of concrete applications of Koszul cohomology to problems in algebraic geometry, including applications to Hodge theory and to the geometry of the moduli space of curves.

Jan. 2010

125 pp.

9780821849644

5,340.

*Contemporary Mathematics,***Vol. 507: Arvesu, J. /Marcellan, F. /**

438-102

**Martinez-Finkelshtein, A. (eds.):****Recent Trends in****Orthogonal Polynomials & Approximation Theory**

The Int'l Workshop on Orthogonal Polynomials and Approximation Theory, held at Universidad Carlos III de Madrid, 2008, and which honored Guillermo Lopez Lagomasino on his 60th birthday. This book presents the state of the art in the theory of Orthogonal Polynomials and Rational Approximation with a special emphasis on their applications in random matrices, integrable systems, and numerical quadrature.

Mar. 2010

298 pp.

9780821848036

12,190.

**Vol. 506: Gao, Y. /Jing, N. /Lau, M. /Misra, K. / (eds.):****Quantum Affine Algebras,**

438-074

**Extended Affine Lie Algebras,****and Their Applications**

The proceedings of the conference on Quantum Affine Algebras, Extended Affine Lie Algebras, and Applications, which was held at the Banff International Research Station, Banff, 2008

Many of the papers include new results on different aspects of quantum affine algebras, extended affine Lie algebras, and their applications in other areas of mathematics and physics.

Feb. 2010

303 pp.

9780821845073

12,190.

**Vol. 505: Cifuentes, P. /Garcia-Cuerva, J. /Garrigos, G. /****Hernandez, E. /Martell, J. /Parcet, J. /Ruiz, A. /****Soria, F. /Torrea, J. /Vargas, A. (eds.):****Harmonic Analysis & Partial Differential Equations**

The Proceedings of the 8th Int'l Conference on Harmonic Analysis and Partial Differential Equations, held in El Escorial, Madrid, 2008

Featured in this book are papers by Steve Hoffmann and Carlos Kenig, which are based on two mini-courses given at the conference.

These papers present topics of current interest, which assume minimal background from the reader, and represent state-of-the-art research in a useful way for young researchers.

Feb. 2010

249 pp.

9780821847701

438-114

10,820.

**A. M. S.**

*Graduate Studies in Mathematics,***Vol. 112: Troltsch, F.:**

438-148

**Optimal Control of  
Partial Differential Equations**

Optimal control theory is concerned with finding control functions that minimize cost functions for systems described by differential equations. The methods have found widespread applications in aeronautics, mechanical engineering, the life sciences, and many other disciplines. This book focuses on optimal control problems where the state equation is an elliptic or parabolic partial differential equation. Included are topics such as the existence of optimal solutions, necessary optimality conditions and adjoint equations, second-order sufficient conditions, and main principles of selected numerical techniques. It also contains a survey on the Karush-Kuhn-Tucker theory of nonlinear programming in Banach spaces. The exposition begins with control problems with linear equation, quadratic cost function and control constraints.

Feb. 2010

408 pp.

9780821849040

9,450.

**Vol. 110: Kreck, M.:**

438-082

**Differential Algebraic Topology:  
From Stratifolds to Exotic Spheres**

This book presents a geometric introduction to the homology of topological spaces and the cohomology of smooth manifolds. The author introduces a new class of stratified spaces, so-called stratifolds. He derives basic concepts from differential topology such as Sard's theorem, partitions of unity and transversality. Based on this, homology groups are constructed in the framework of stratifolds and the homology axioms are proved. This implies that for nice spaces these homology groups agree with ordinary singular homology. Besides the standard computations of homology groups using the axioms, straightforward constructions of important homology classes are given.

Mar. 2010

215 pp.

9780821848982

7,530.

*Mathematical Surveys and Monographs,***Vol. 159: Baker, M. /Rumely, R.:**

438-055

**Potential Theory and Dynamics on  
the Berkovich Projective Line**

The authors first give a detailed description of the topological structure of the Berkovich projective line and then introduce the Hsia kernel, the fundamental kernel for potential theory. Using the theory of metrized graphs, they define a Laplacian operator on the Berkovich line and construct theories of capacities, harmonic and subharmonic functions, and Green's functions, all of which are strikingly similar to their classical complex counterparts. After developing a theory of multiplicities for rational functions, they give applications to non-Archimedean dynamics, including local and global equidistribution theorems, fixed point theorems, and Berkovich space analogues of many fundamental results from the classical Fatou-Julia theory of rational iteration.

Mar. 2010

454 pp.

9780821849248

15,070.

**A. M. S.**

*Birkhauser Advanced Texts / Basler Lehrbücher*

Greene, R.:

438-077

**The Automorphism Group of Domains**

This work examines a rich tapestry of themes and concepts that provides a comprehensive treatment of an important area of mathematics, while simultaneously covering a broader area of the geometry of domains in complex space.

At once authoritative and accessible, this text touches upon many important parts of modern mathematics: complex geometry, Finsler metrics, Bergman and Kahler geometry, curvatures, differential invariants, boundary asymptotics of geometries, group actions, and moduli spaces.

This text can serve as a "coming of age"

book for a graduate student who has completed at least one semester or more of complex analysis, and will be most welcomed by analysts and geometers engaged in current research.

Mar. 2011

450 pp.

9780817641399

13,800.

*Trends in Mathematics*

Sabadini, I. /Sommen, F. (eds.):

438-140

**Hypercomplex Analysis and Applications**

Purpose of the book is to give an overview of recent results and developments in hypercomplex analysis.

The topic covered will vary from the study of monogenic functions, its generalisations to higher spin such as the Rarita-Schwinger system, Clifford analysis on superspace, Clifford-Radon and Fourier transforms, discrete Clifford analysis (see the list of abstract).

Feb 2011

350 pp.

9783034602457

20,100.

van Huynh, D. /Lopez-Permouth, S. (eds.):

438-097

**Advances in Ring Theory**

This volume consists of refereed research and expository articles by both plenary and other speakers at the International Conference on Algebra and Applications held at Ohio University in June 2008, to honor S.K. Jain on his 70th birthday.

The articles are on a wide variety of areas in classical ring theory & module theory, such as rings satisfying polynomial identities, rings of quotients, group rings, homological algebra, injectivity and its generalizations, etc.

May 2010

370 pp.

9783034602853

30,250.

Schmitt, A. (ed.):

438-190

**Affine Flag Manifolds and Principal Bundles**

The book features lecture notes, survey articles, and research notes - based on workshops held in Berlin, Essen, and Madrid - explaining the significance of these and related objects (such as double affine Hecke algebras and affine Springer fibers) in representation theory (e.g., the theory of symmetric polynomials), arithmetic geometry (e.g., the fundamental lemma in the Langlands program), and algebraic geometry (e.g., affine flag manifolds as parameter spaces for principal bundles).

Novel aspects of the theory of principal bundles on algebraic varieties are also studied in the book.

Apr. 2010

290 pp.

9783034602877

20,100.

**Birkhauser**

Vol. 373: Majadas, J. /Rodicio, A.:

438-086

**Smoothness, Regularity,  
and Complete Intersection**

Written to complement standard texts on commutative algebra, this short book gives complete and relatively easy proofs of important results, including the standard results involving localisation of formal smoothness (M. Andre) and localisation of complete intersections (L. Avramov), some important results of D. Popescu and Andre on regular homomorphisms, and some results from A. Grothendieck's EGA on smooth homomorphisms.

The authors make extensive use of the Andre-Quillen homology of commutative algebras, but only up to dimension 2, which is easy to construct, and they deliberately avoid using simplicial methods.

The book also serves as an accessible introduction to some advanced topics and techniques. The only prerequisites are a basic course in commutative algebra and the first definitions in homological algebra.

May 2010

160 pp.

9780521125727

6,600.

Vol. 374: Alinhac, S.:

438-099

**Geometric Analysis of  
Hyperbolic Differential Equations**

Its self-contained presentation and 'do-it-yourself' approach make this the perfect guide for graduate students and researchers wishing to access recent literature in the field of nonlinear wave equations and general relativity. It introduces all of the key tools and concepts from Lorentzian geometry (metrics, null frames, deformation tensors, etc.) and provides complete elementary proofs.

The author also discusses applications to topics in nonlinear equations, including null conditions and stability of Minkowski space.

No previous knowledge of geometry or relativity is required.

**Contents** Preface; 1. Introduction; 2. Metrics and frames; 3. Computing with frames; 4. Energy inequalities and frames; 5. The good components; 6. Pointwise estimates and commutations; 7. Frames and curvature; 8. Nonlinear equations, a priori estimates and induction; 9. Applications to some quasilinear hyperbolic problems;

May 2010

135 pp.

9780521128223

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Vol. 370: Albeverio, A. /

438-098

**Khrennikov, Yu. /Shelkovich, V.:  
The Theory of p-adic Distributions:  
Linear and Nonlinear Models**

This relatively recent theory has become increasingly important in the last decade with exciting applications in a variety of fields, including biology, image analysis, psychology, and information science.

p-Adic mathematical physics also plays an important role in quantum mechanics and quantum field theory, the theory of strings, quantum gravity and cosmology, and solid state physics.

The authors include many new results, some of which constitute new areas in p-adic analysis related to the theory of distributions, such as wavelet theory, the theory of pseudo-differential operators and equations, asymptotic methods, and harmonic analysis.

Mar. 2010

350 pp.

9780521148566

9,240.

**Cambridge**

*Cambridge Studies in Advanced Mathematics,***Vol. 125: Kedlaye, K.:**

438-131

**p-adic Differential Equations**

Over the last 50 years the theory of p-adic differential equations has grown into an active area of research in its own right, and has important applications to number theory and to computer science.

This book, the first comprehensive and unified introduction to the subject, improves and simplifies existing results as well as including original material. Based on a course given by the author at MIT, this modern treatment is accessible to graduate students and researchers.

Exercises are included at the end of each chapter to help the reader review the material, and the author also provides detailed references to the literature to aid further study.

\*Assumes only an undergraduate-level course in abstract algebra

\*Up-to-date treatment including previously unpublished results

\*Class-tested by the author

July 2010

280 pp.

9780521768795

8,710.

**Vol. 124: Lux, K. /Pahlings, H.:**

438-085

**Representations of Groups:  
A Computational Approach**

The representation theory of finite groups has seen rapid growth in recent years with the development of efficient algorithms and computer algebra systems.

This is the first book to provide an introduction to the ordinary and modular representation theory of finite groups with special emphasis on the computational aspects of the subject.

Evolving from courses taught at Aachen University, this well-paced text is ideal for graduate-level study.

The authors provide over 200 exercises, both theoretical and computational, and include worked examples using the computer algebra system GAP. These make the abstract theory tangible and engage students in real hands-on work.

Aug. 2010

220 pp.

9780521768078

15,220.

**Vol. 123: Lawler, G. /Limic, V.:**

438-219

**Random Walks**

Random walks are stochastic processes formed by successive summation of independent, identically distributed random variables and are one of the most studied topics in probability theory.

This contemporary introduction evolved from courses taught at Cornell University and the University of Chicago by the first author, who is one of the most highly regarded researchers in the field of stochastic processes.

This text meets the need for a modern reference to the detailed properties of an important class of random walks on the integer lattice.

It is suitable for probabilists, mathematicians working in related fields, and for researchers in other disciplines who use random walks in modeling.

\*Suitable for researchers from a variety of fields who use random walks in modeling \*Extensive bibliography assists further reading

\*Contains over 80 exercises

July 2010

300 pp.

9780521519182

9,240.

**Cambridge**

Bremner, M.:

438-064

**Lattice Basis Reduction:  
An Introduction to the LLL Algorithm  
and Its Applications**

First realized in the 1980s by Lenstra, Lenstra, and Lovasz, the LLL algorithm was originally intended to factor polynomials with rational coefficients. It improved upon the existing lattice reduction algorithm in order to solve integer linear programming problems and was later adapted for use in cryptanalysis.

This book provides an introduction to the theory and applications of lattice basis reduction and the LLL algorithm.

With numerous examples and suggested exercises, the text discusses various applications of lattice basis reduction to polynomial factorization, cryptography, number theory, and matrix canonical forms.

Dec. 2010

250 pp.

9781439807026

13,050.

438-080

Johnson, N.:

**Combinatorial of Spreads and Parallelisms**

For at least forty years, translation planes, spreads, nets, and parallelisms have played a central role in finite geometry.

Finite geometry is an important, wide-ranging research area in mathematics with strong connections to algebra and combinatorics.

It also has relevant practical applications in coding theory and cryptography.

Written by an active researcher in translation planes, spreads, nets, and parallelisms, this book introduces parallelisms and spreads in a comprehensive manner.

Aug. 2010

500 pp.

9781439819463

28,570.

C R C Press

*Monographs on Statistics and Applied Probability,*

Vol. \*\*\*: Basu, A. /Huang, W.-T. /

Shioya Hiroyuki /Park, C.:

**Statistical Inference:**

**The Minimum Distance Approach**

This book gives a comprehensive account of density-based minimum distance methods and their use in statistical inference.

It covers statistical distances, density-based minimum distance methods, discrete and continuous models, asymptotic distributions, robustness, computational issues, residual adjustment functions, graphical descriptions of robustness, penalized and combined distances, multisample methods, weighted likelihood, and multinomial goodness-of-fit tests.

June 2010

320 pp.

9781420099652

13,050.

Vol. \*\*\*: Wu, L.: Mixed -Effects Models with Incomplete Data 438-236

Dec. 2009

320 pp.

9781420074024

13,050.

Vol. \*\*\*: Fuh, C.-D. /Aston, J.: Hidden Markov Models 437-206

Oct. 2010

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9781420080001

14,400.

Vol. \*\*\*: Marco, R.: Models for Dependent Time Series 438-226

June 2010

256 pp.

9781584886501

13,050.

Chapman &amp; Hall

*Lecture Notes in Mathematics,**Vol. 1990: Bouc, S.:*

438-061

**Biset Functors for Finite Groups**

This volume exposes the theory of biset functors for finite groups, which yields a unified framework for operations of induction, restriction, inflation, deflation and transport by isomorphism.

The first part recalls the basics on biset categories and biset functors.

The second part is concerned with the Burnside functor and the functor of complex characters, together with semisimplicity issues and an overview of Green biset functors.

The last part is devoted to biset functors defined over  $p$ -groups for a fixed prime number  $p$ .

This includes the structure of the functor of rational representations and rational  $p$ -biset functors.

The last two chapters expose three applications of biset functors to long-standing open problems, in particular the structure of the Dade group of an arbitrary finite  $p$ -group.

Feb. 2010

310 pp.

9783642112966

14,200.

*Vol. 1988: Broue, M.:***Introduction to Complex Reflection Groups and Their Braid Groups**

438-064

Weyl groups are particular cases of complex reflection groups, i.e.

finite subgroups of  $\mathrm{GL}_r(\mathbb{C})$  generated by (pseudo)reflections.

These are groups whose polynomial ring of invariants is a polynomial algebra. It has recently been discovered that complex reflection groups play a key role in the theory of finite reductive groups, giving rise as they do to braid groups and generalized Hecke algebras which govern the representation theory of finite reductive groups.

It is now also broadly agreed upon that many of the known properties of Weyl groups can be generalized to complex reflection groups.

The purpose of this work is to present a fairly extensive treatment of many basic properties of complex reflection groups including the basic findings of Springer theory on eigenspaces.

Feb. 2010

132 pp.

9783642111747

7,090.

*Springer Monographs in Mathematics***Barbu, V.:**

438-107

**Nonlinear Differential Equations of Monotone Types in Banach Spaces**

This book is concerned with basic results on Cauchy problems associated with nonlinear monotone operators in Banach spaces with applications to partial differential equations of evolutive type.

This is a monograph about the most significant results obtained in this area in last decades but is also written as a graduate textbook on modern methods in partial differential equations with main emphasis on applications to fundamental mathematical models of mathematical physics, fluid dynamics and mechanics.

This book is selfcontained while the prerequisites in functional analysis are necessary to understand as it is being presented in a preliminary chapter.

Feb. 2010

280 pp.

9781441955418

16,230.

**Springer**

Koekoek, R. /Lesky, P. /Swarttouw, R.: 438-130

**Hypergeometric Orthogonal Polynomials  
and their q-analogues**

The very classical orthogonal polynomials named after Hermite, Laguerre and Jacobi, satisfy many common properties.

For instance, they satisfy a second-order differential equation with polynomial coefficients and they can be expressed in terms of a hypergeometric function.

Replacing the differential equation by a second-order difference equation results in (discrete) orthogonal polynomial solutions with similar properties.

Generalizations of these difference equations, in terms of Hahn's q-difference operator, lead to both continuous and discrete orthogonal polynomials with similar properties.

For instance, they can be expressed in terms of (basic) hypergeometric functions. Based on Favard's theorem, the authors first classify all families of orthogonal polynomials satisfying a second-order differential or difference equation with polynomial coefficients.

Together with the concept of duality this leads to the families of hypergeometric orthogonal polynomials belonging to the Askey scheme.

For each family they list the most important properties and they indicate the (limit) relations.

9783642050138

Mar. 2010

20,290.  
570 pp.*Lecture Notes in Physics,*

Vol. 798: Kopietz, P. /Bartosch, L. /Schutz, F.: 438-081

**Introduction to  
the Functional Renormalization Group**

(Original Portuguese edition published by grávida publicacoes lda., Lisboa, 2008.)

In Part I the reader is introduced to the basic concepts of the renormalization group idea, requiring only basic knowledge of equilibrium statistical mechanics. More advanced methods, such as diagrammatic perturbation theory, are introduced step by step.

Part II then gives a self-contained introduction to the functional renormalization group.

After a careful definition of various types of generating functionals, the renormalization group flow equations for these functionals are derived.

Jan. 2010

380 pp.

9783642050930

14,200.

Paar, C. /Pelzl, J.:

**Understanding Cryptography:** 438-278**A Textbook for Students and Practitioners**

Today's designers need a comprehensive understanding of applied cryptography. After an introduction to cryptography and data security, the authors explain the main techniques in modern cryptography, with chapters addressing stream ciphers, the Data Encryption Standard (DES) and 3DES, the Advanced Encryption Standard (AES), block ciphers, the RSA cryptosystem, public-key cryptosystems based on the discrete logarithm problem, elliptic-curve cryptography (ECC), digital signatures, hash functions, Message Authentication Codes (MACs), and methods for key establishment, including certificates and public-key infrastructure (PKI).

Nov. 2009

290 pp.

9783642041006

11,150.

**Springer**

**Arai, T. /Brendle, J. /Kikyo, H. /Chong, C. /Downey, R. /  
Feng, Q. /Ono, H.:** 438-039  
**Proceedings of the 10th Asian Logic Conference:  
Kobe, Japan, September 2008**

The 10th Asian Logic Conference is part of the series of logic conferences inaugurated in Singapore in 1981.

This meeting is held every three years and rotates among countries in the Asia-Pacific region, with interests in the broad area of logic, including theoretical computer science.

It is now considered a major conference in this field and is regularly sponsored by the Association of Symbolic Logic.

This volume contains papers from the 10th meeting held in Kobe, Japan.

Nov. 2009

360 pp.

9789814293013

14,180.

**Bultheel, A. /Cools, R. (eds.):** 438-241  
**The Birth of Numerical Analysis**

The 1947 paper by John von Neumann and Herman Goldstine, "Numerical Inverting of Matrices of High Order" (Bulletin of the AMS, Nov. 1947), is considered as the birth certificate of numerical analysis. Since its publication, the evolution of this domain has been enormous.

This book is a unique collection of contributions by researchers who have lived through this evolution, testifying about their personal experiences and sketching the evolution of their respective subdomains since the early years.

Oct. 2009

250 pp.

9789812836250

10,960.

**Darst, R. /Palagaloo, J. /Price, T.:** 438-117  
**Curious Curves**

Curves can often provide a better representation of natural phenomena than do the figures of classical geometry.

Thus the content - presented with an emphasis on the geometric intuition characteristic of the study of curves - is highly relevant not only for people working in mathematics, but also those in other sciences.

The explanations are detailed and illustrative to capture the interest of the reader, as well as complete to provide the necessary background information needed to go further into the subject.

Oct. 2009

200 pp.

9789814291286

7,950.

***Statistics Science and Interdisciplinary Research,***

**Vol. 9: Ghosh, S. /Kar, G. (ed.):** 438-302  
**Recent Developments in Theoretic Physics**

This volume covers recent developments in the major areas of theoretical physics.

The scope of the book ranges from small length scale (High Energy Physics, Neutrinos ...) through medium scale (Nuclear Physics) to large length scale (Condensed Matter Physics) up to classical and quantum Black Hole Physics.

It also deals with topics in nonlinear physics, econophysics, new ideas in quantum mechanics, quantum information and quantum computation.

Contents: Relativity, Gravitation and Astro-Particle Physics

High Energy Physics, Nuclear Physics and Quantum Mechanics

Condensed Matter Phenomena Nonlinear Dynamics Quantum Information

Oct. 2009

436 pp.

9789814287326

13,010.

**World Sci. Pub.**

**RMS Lecture Notes Series in Mathematics,**

The Ramanujan Mathematical Society (RMS) is bringing out RMS Lecture Notes Series in Mathematics. This Series will publish monographs and proceedings of conferences which report on important developments in Mathematics. The Monographs/ Proceedings submitted for possible publication in this series must be of high quality in mathematical content. It is expected that this series will provide an outlet for publication of vast amount of important material that is generated from conferences, seminars and courses held in different parts of the world.

**Vol. 1: Adhikari, S. D. /**

438-051

**Balasubramanian, R. /Srinivas, K. (eds.):****Number Theory:****Proceedings of the Int'l Conference held in  
The Institute of Mathematical Sciences, Chennai, 2002**

**Table of Contents:** Preface Foreword Matrix Theoretic Interpretations of Four Analytic Identities A.K.Agarwal Taylor-Wiles Systems Eknath Ghatge The Mellin Transform of the Fourth Power of Riemann's Zeta-Function Matti Jutila On Dirichlet L-Function Values at Rational Arguments S.Kanemitsu, Y.Tanigawa and M.Yoshimoto Some Results and Problems on Arithmetical Functions I. Katai Some Results in Number Theory, II V.Kumar Murty A New Theorem on Partitions Padmavathamma, M.Ruby Salestina & S.R.Sudarshan etc.

2005

161 pp.

9788190254519

4,790.

**Vol. 2: Balasubramanian, R. /Srinivas, K. (eds.):**

438-105

**The Riemann Zeta Function and Related Themes:****Proceedings of the Int'l Conference held at  
National Institute of Advanced Studies, Bangalore, 2003:  
Papers in Honour of Prof. K. Ramachandra**

**Table of contents:** Foreword Preface Felicitation Messages Zero-sum problems in combinatorial number theory Sukumar Das Adhikari and Purusottam Rath A generalization of Agarwal's theorem. C.Adiga, N.Anitha and J.H.Han Probabilistic number theory and random permutations: Functional limit theory Gutti Jogesh Babu Contributions to the theory of the Lerch zeta-function R.Balasubramanian, S.Kanemitsu and H.Tsukada Irreducible polynomials over number fields Jasbir S.Chahal and M.Ram Murty On a conjecture of Andrews - III Chandrashekhara B.M., Padmavathamma and Raghavendra, R. etc.

2006

191 pp.

9788190254526

4,790.

**Vol. 3: Krithivasan, K. /Rama, R. (eds.):**

438-019

**Formal Language Aspects of Natural Computing:****Research Level Group Discussion Meeting on  
Natural Computing held at I.I.T., Madras, Chennai, 2005**

**Table of contents:** Preface One Mathematician's Tour from Biology into Computing and Back to Life Tom Head An Overview of Computation in Cellular Automata Wim Hordijk On DNA Computing R.Rama On the Computational Aspects of Splicing Operation L.Jeganathan A Glimpse of Membrane Computing Kamala Krithivasan Peptide Computing: A Survey M.Sakthi Balan, Helmut Jurgensen and Kamala Krithivasan An Introduction to Evolutionary Computation Wim Hordijk From Molecular Computing to Modelling with Conformons and Computing by Observation Pierluigi Frisco An Overview of Recent Results in Contextual Grammars for MCS Formalisms K.Lakshmanan etc.

2006

191 pp.

9788190254533

4,790.

**Ramanujan Mathematical Society**

*RMS Lecture Notes Series in Mathematics,*

**Vol. 4: Gurjar, R. V. /Katre, S. / Rao, A. / Verma, J. (eds.):  
"Commutative Algebra and Combinatorics":**

Proceedings of the Int'l Conferences organized by  
Bhaskaracharya Pratishthana, Pune and Harish-Chandra  
Research Institute, Allahabad, 2003  
Part I - Authored by Diane Maclagan and Rekha R. Thomas  
Part 2 - Edited by Winfried Bruns

2007 180 pp. 438-078  
9788190254540 6,160.

**Vol. 5: Changat, M. /**

**Klavzar, S. / Mulder, H. /Vij ayakumar, A. (eds.)  
Convexity in Discrete Structures:**

Joint Proceedings of  
"Int'l Instructional Workshop on Convexity in  
Discrete Structures" held at Department of Future Studies,  
Thiruvananthapuram, 2006  
and the "International Workshop on  
Metric and Convex Graph Theory", Barcelona, 2006

2008 143 pp. 438-113  
9788190254557 4,100.

**Vol. 6: Balasubramanian, R. /**

**S. G. Dani, S. / Gruber, P. / Hans-Gill, R. (eds.):  
Number Theory and Discrete Geometry:  
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R. P. Bambah, 2005**

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*EMS Tracts in Mathematics,***Vol. 9: Bockel, G. /Pink, R.:**

438-060

**Cohomological Theory of  
Crystals Over Function Fields**

This book develops a new cohomological theory for schemes in positive characteristic  $p$  and it applies this theory to give a purely algebraic proof of a conjecture of Goss on the rationality of certain L-functions arising in the arithmetic of function fields.

These L-functions are power series over a certain ring  $A$ , associated to any family of Drinfeld  $A$ -modules or, more generally, of  $A$ -motives on a variety of finite type over the finite field  $\mathbb{F}_p$ .

By analogy to the Weil conjecture, Goss conjectured that these L-functions are in fact rational functions. In 1996 Taguchi and Wan gave a first proof of Goss's conjecture by analytic methods à la Dwork.

Oct. 2009

195 pp.

9783037190746

9,740.

*Heritage of European Mathematics***Springer, T. /van Dalen, D. (eds.):**

438-093

**Hans Freudenthal, Selecta**

The present Selecta are devoted to Freudenthal's mathematical oeuvre, they contain a selection of his major contributions.

Included are fundamental contributions to topology such as the foundation of the theory of ends (in the thesis of 1931), the introduction (in 1937) of the suspension and its use in stability results for homotopy groups of spheres. In group theory there is work on topological groups (of the 1930s) and on various aspects of the theory of Lie groups, such as a paper on automorphisms of 1941.

From the later work of the 1950s and 1960s, papers on geometric aspects of Lie theory (geometries associated to exceptional groups, space problems) have been included.

Freudenthal's versatility is further demonstrated by a choice from his foundational and historical work: papers on intuitionistic logic and topology, a paper on axiomatic geometry reappraising Hilbert's Grundlagen, and a paper summarizing his development of Lincos, a universal ("cosmic") language.

Oct. 2009

661 pp.

9783037190586

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*IRMA - Lecture Notes in Mathematics and Theoretical Physics,***Vol. 15: Connes, A. /Fauvet, F. /Ramis, J.-P. (eds.):****Renormalization and Galois Theories**

This volume is the outcome of a CIRM Workshop on Renormalization and Galois Theories held in Luminy, France, in March 2006.

The subject of this workshop was the interaction and relationship between four currently very active areas: renormalization in quantum field theory (QFT), differential Galois theory, noncommutative geometry, motives and Galois theory.

The last decade has seen a burst of new techniques to cope with the various mathematical questions involved in QFT, with notably the development of a Hopf-algebraic approach and insights into the classes of numbers and special functions that systematically appear in the calculations of perturbative QFT (pQFT).

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