

Yurinsha Book News

Oeuvres scientifiques de

Laurent Schwartz

455-037

Vol. I, II & III 3 Vols. Set

Trois volumes reliés publiés par la collection

Documents Mathématiques

Les trois volumes rassemblent une sélection d'oeuvres mathématiques de Laurent Schwartz et couvrent l'essentiel de ses travaux.

Chaque volume se termine par la liste complète de ses publications scientifiques.

Un DVD produit par les Editions de l'Ecole polytechnique est offert avec cet ensemble et contient notamment ses oeuvres mathématiques complètes à l'exception de ses monographies.

La numérisation des articles a été assurée pour l'essentiel par l'UMS CNRS MathDoc.

Volume I: Preface de Claude Viterbo suivie de quelques photos

Notice sur les travaux scientifiques, par Laurent Schwartz

Partie I : Travaux en Analyse et EDP Quelques documents (lettres, notes de cours)

La théorie des distributions, par Bernard Malgrange

Sélection d'articles (1944-1954)

Volume II: Laurent Schwartz et les séminaires, par Alain Guichardet

Partie I (suite): Travaux en Analyse et EDP Sélection d'articles (1954-1966)

Volume III: Partie II : Travaux sur les espaces de Banach

L'influence de L. Schwartz en théorie des espaces de Banach, par Gilles Godefroy

Sélection d'articles (1970-1996) Partie III : Travaux en Calcul des probabilités

Laurent Schwartz probabiliste, par Michel Emery Sélection d'articles (1968-1987)

Partie IV : Travaux historiques et divers Sélection d'articles (1955-1994)

Nov. 2011

4000 pp.

9781000022506

39,330.

Société Mathématique de France

<http://www.yurinsha.com>

ホームページは毎月25日更新予定です

No. 455

May 2011

数理科学 **友 隣 社** 洋書専門

*Student Mathematical Library,***Vol. 60: Schwartz, R.:**

455-038

Mostly Surfaces

This book presents a number of topics related to surfaces, such as Euclidean, spherical and hyperbolic geometry, the fundamental group, universal covering surfaces, Riemannian manifolds, the Gauss-Bonnet Theorem, and the Riemann mapping theorem. The main idea is to get to some interesting mathematics without too much formality.

The book also includes some material only tangentially related to surfaces, such as the Cauchy Rigidity Theorem, the Dehn Dissection Theorem, and the Banach-Tarski Theorem.

The goal of the book is to present a tapestry of ideas from various areas of mathematics in a clear and rigorous yet informal and friendly way.

Aug. 2011 312 pp.
9780821853689 5,830.

Clay Mathematics Proceedings,

**Vol. 13: Arthur, J. /Cogdell, J. /Gelbart, S. /Goldberg, D. /
Ramakrishnan, D. /Yu, J.-K. (eds.):**

455-065

On Certain L-Functions

This volume constitutes the proceedings of a conference, "On Certain L-functions", held 2007 at Purdue University, West Lafayette, Indiana. The conference was organized in honor of the 60th birthday of Freydoon Shahidi, widely recognized as having made groundbreaking contributions to the Langlands program.

The articles in this volume represent a snapshot of the state of the field from several viewpoints.

Topics discussed in the articles include Langlands functoriality, the Rankin-Selberg method, the Langlands-Shahidi method, motivic Galois groups, Shimura varieties, orbital integrals, representations of p-adic groups, Plancherel formula and its consequences, the Gross-Prasad conjecture, and more.

June 2011 647 pp.
9780821852040 16,000.

*Mathematical Surveys and Monographs,***Vol. 174: Levy, L. /Robson, C.:**

455-092

**Hereditary Noetherian Prime Rings and
Idealizers**

This book surveys material previously available only in the research literature. It provides a re-worked and simplified account, with improved clarity, fresh insights and many original results about finite length modules, injective modules and projective modules.

It culminates in the authors' surprisingly complete structure theorem for projective modules which involves two independent additive invariants: genus and Steinitz class. Several applications demonstrate its utility.

The theory, extending the well-known module theory of commutative Dedekind domains and of hereditary orders, develops via a detailed study of simple modules.

This relies upon the substantial account of idealizer subrings which forms the first part of the book and provides a useful general construction tool for interesting examples.

May 2011 228 pp.
9780821853504 10,420.

A. M. S.

Memoirs of the American Mathematical Society,

No. 999: Casals-Ruiz, M. / Kazachkov, I.: 455-073

**On Systems of Equations
Over Free Partially Commutative Groups.**

Using an analogue of Makanin-Razborov diagrams, the authors give an effective description of the solution set of systems of equations over a partially commutative group (right-angled Artin group) \mathbb{G} . Equivalently, they give a parametrisation of $\mathrm{Hom}(G, \mathbb{G})$, where G is a finitely generated group.

June 2011

153 pp.

9780821852583

9,550.

No. 998: Duval, G.: 455-080

Valuations and Differential Galois Groups

In this paper, valuation theory is used to analyse infinitesimal behaviour of solutions of linear differential equations. For any Picard-Vessiot extension $(F/K, \partial)$ with differential Galois group G , the author looks at the valuations of F which are left invariant by G .

The main reason for this is the following: If a given invariant valuation ν measures infinitesimal behaviour of functions belonging to F , then two conjugate elements of F will share the same infinitesimal behaviour with respect to ν .

June 2011

68 pp.

9780821849064

7,440.

No. 997: Kosaki Hideki : 455-132

**Positive Definiteness of Functions
with Applications to Operator Norm Inequalities**

Positive definiteness is determined for a wide class of functions relevant in the study of operator means and their norm comparisons.

Then, this information is used to obtain an abundance of new sharp (unitarily) norm inequalities comparing various operator means and sometimes other related operators.

Table of Contents: *Introduction *Preliminaries *Fourier transforms and positive definiteness *A certain Heinz-type inequality and related commutator estimates *Norm comparison for various operator means *Norm inequalities for $H^{\frac{1}{2}+\beta} X K^{\frac{1}{2}-\beta} + H^{\frac{1}{2}-\beta} X K^{\frac{1}{2}+\beta}$ *Norm comparison of Heron-type means and related topics

*Operator Lehmer means and their properties

June 2011

80 pp.

9780821853078

8,180.

No. 996: Positselski, L.: 455-059
**Two Kinds of Derived Categories, Koszul Duality,
and Comodule-Contramodule Correspondence**

The author considers the derived categories of DG-modules, DG-comodules, and DG-contramodules, the coderived and contraderived categories of CDG-modules, the coderived category of CDG-comodules, and the contraderived category of CDG-contramodules. The equivalence between the latter two categories (the comodule-contramodule correspondence) is established.

Nonhomogeneous Koszul duality or "trialequivalence" (an equivalence between exotic derived categories corresponding to Koszul dual (C)DG-algebra and CDG-coalgebra) is obtained in the conilpotent and nonconilpotent versions. Various A -infinity structures are considered, and a number of model category structures are described.

June 2011

133 pp.

9780821852965

8,800.

A. M. S.

*Contemporary Mathematics,**Vol. 545: Houdre, C. /Ledoux, M. /* 455-129

Milman, E. /Milman, M. (eds.):

Concentration, Functional Inequalities and Isoperimetry

The volume contains the proceedings of the international workshop on Concentration, Functional Inequalities and Isoperimetry, held at Florida Atlantic University in Boca Raton, Florida, 2009.

The interactions between concentration, isoperimetry and functional inequalities have led to many significant advances in functional analysis and probability theory.

Important progress has also taken place in combinatorics, geometry, harmonic analysis and mathematical physics, to name but a few fields, with recent new applications in random matrices and information theory.

July 2011

211 pp.

9780821849712

9,800.

Vol. 544: Boyallian, C. /Galina, E. /Saal, L. (eds.): 455-069

New Developments in

Lie Theory and Its Applications

This volume contains the proceedings of the Seventh Workshop in Lie Theory and Its Applications, which was held 2009 at the Universidad Nacional de Cordoba, in Cordoba, Argentina.

The workshop was preceded by a special event, "Encuentro de teoria de Lie", held November 23-26, 2009, in honor of the sixtieth birthday of Jorge A.

Vargas, who greatly contributed to the development of Lie theory in Cordoba.

This volume focuses on representation theory, harmonic analysis in Lie groups, and mathematical physics related to Lie theory.

The papers give a broad overview of these subjects and also of the recent developments of the authors' research.

June 2011

159 pp.

9780821852590

7,320.

A. M. S.*Progress in Mathematics, Vol. 295**Vol. 295: Mazzucchelli, M.:* 455-137**Critical Point Theory for Lagrangian Systems**

Lagrangian systems constitute a very important and old class in dynamics.

Their origin dates back to the end of the eighteenth century, with

Joseph-Louis Lagrange's reformulation of classical mechanics.

The main feature of Lagrangian dynamics is its variational flavor:

orbits are extremal points of an action functional.

The development of critical point theory in the twentieth century

provided a powerful machinery to investigate existence and multiplicity

questions for orbits of Lagrangian systems.

This monograph gives a modern account of the application of critical point

theory, and more specifically Morse theory, to Lagrangian dynamics,

with particular emphasis toward existence and multiplicity of periodic orbits

of non-autonomous and time-periodic systems.

Table of contents: 1 Lagrangian and Hamiltonian systems.- 2 Functional setting for

the Lagrangian action.- 3 Discretizations.- 4 Local homology and Hilbert subspaces.

- 5 Periodic orbits of Tonelli Lagrangian systems.- A An overview of Morse theory.

Aug. 2011

180 pp.

9783034801621

13,910.

Birkhauser

*Lecture Notes in Logic,***Vol. 39: Casanovas, E.:** 455-047**Simple theories and Hyperimaginaries**

In the 1990s Kim and Pillay generalized stability, a major model theoretic idea developed by Shelah twenty-five years earlier, to the study of simple theories. This book is an up-to-date introduction to simple theories and hyperimaginaries, with special attention to Lascar strong types and elimination of hyperimaginary problems.

Assuming only knowledge of general model theory, the foundations of forking, stability, and simplicity are presented in full detail.

June 2011 192 pp.
9780521119559 8,400.

Vol. 38: Goldblatt, R.: 455-053**Quantifiers, Propositions and Identity**

Many systems of quantified modal logic cannot be characterised by Kripke's well-known possible worlds semantic analysis.

This book shows how they can be characterised by a more general 'admissible semantics', using models in which there is a restriction on which sets of worlds count as propositions.

This requires a new interpretation of quantifiers that takes into account the admissibility of propositions.

The author sheds new light on the celebrated Barcan Formula, whose role becomes that of legitimising the Kripkean interpretation of quantification. The theory is worked out for systems with quantifiers ranging over actual objects, and over all possibilities, and for logics with existence and identity predicates and definite descriptions.

July 2011 282 pp.
9781107010529 8,400.

Vol. 36: Kennedy, J. /Kossak, R.: 455-055

**Set Theory, Arithmetic, and
Foundations of Mathematics:
Theorems, Philosophies**

Nov. 2011 250 pp. 9781107008045 7,620.

*Cambridge Tracts in Mathematics,***Vol. 189: Lemmens, B. /Nussbaum, R.:** 455-056**Nonlinear Perron-Frobenius Theory**

In the past several decades the classical Perron-Frobenius theory for nonnegative matrices has been extended to obtain remarkably precise and beautiful results for classes of nonlinear maps.

This nonlinear Perron-Frobenius theory has found significant uses in computer science, mathematical biology, game theory and the study of dynamical systems.

This is the first comprehensive and unified introduction to nonlinear Perron-Frobenius theory suitable for graduate students and researchers entering the field for the first time.

It acquaints the reader with recent developments and provides a guide to challenging open problems.

To enhance accessibility, the focus is on finite dimensional nonlinear Perron-Frobenius theory, but pointers are provided to infinite dimensional results. Prerequisites are little more than basic real analysis and topology.

Nov. 2011 250 pp.
9780521898812 7,840.

Cambridge

London Mathematical Society Lecture Note Series,

Vol. 392: Chapman, R. (ed.): 455-049
Surveys in Combinatorics 2011

This volume contains nine survey articles based on the invited lectures given at the 23rd British Combinatorial Conference, held at Exeter in July 2011.

This biennial conference is a well-established international event, with speakers from all over the world.

By its nature, this volume provides an up-to-date overview of current research activity in several areas of combinatorics, including extremal graph theory, the cyclic sieving phenomenon and transversals in Latin squares.

Each article is clearly written and assumes little prior knowledge on the part of the reader.

The authors are some of the world's foremost researchers in their fields, and here they summarise existing results and give a unique preview of the most recent developments.

July 2011 456 pp.
 9781107601093 8,960.

Vol. 391: Aschbacher, M. /Kessar, R. /Oliver, B.: 455-066
Fusion Systems in Algebra and Topology

A fusion system over a p -group S is a category whose objects form the set of all subgroups of S , whose morphisms are certain injective group homomorphisms, and which satisfies axioms first formulated by Puig that are modelled on conjugacy relations in finite groups.

The definition was originally motivated by representation theory, but fusion systems also have applications to local group theory and to homotopy theory.

The connection with homotopy theory arises through classifying spaces which can be associated to fusion systems and which have many of the nice properties of p -completed classifying spaces of finite groups.

Beginning with a detailed exposition of the foundational material, the authors then proceed to discuss the role of fusion systems in local finite group theory, homotopy theory and modular representation theory.

Aug. 2011 330 pp.
 9781107601000 7,840.

Vol. 390: Pelinovsky, D.: 455-140
Localization in Periodic Potentials:
From Schrodinger Operators to
the Gross-Pitaevskii Equation

This book provides a comprehensive treatment of the Gross-Pitaevskii equation with a periodic potential; in particular, the localized modes supported by the periodic potential.

It takes the mean-field model of the Bose-Einstein condensation as the starting point of analysis and addresses the existence and stability of localized modes.

The mean-field model is simplified further to the coupled nonlinear Schrodinger equations, the nonlinear Dirac equations, and the discrete nonlinear Schrodinger equations.

One of the important features of such systems is the existence of band gaps in the wave transmission spectra, which support stationary localized modes known as the gap solitons.

These localized modes realise a balance between periodicity, dispersion and nonlinearity of the physical system.

Written for researchers in applied mathematics, this book mainly focuses on the mathematical properties of the Gross-Pitaevskii equation.

Oct. 2011 410 pp.
 9781107621541 8,960.

Cambridge

EMS Series of Congress Report

Faber, C. /van der Geer, G. /Looijenga, E. (eds.): 455-083
Classification of Algebraic Varieties

Fascinating and surprising developments are taking place in the classification of algebraic varieties.

Work of Hacon and McKernan and many others is causing a wave of breakthroughs in the Minimal Model Program: we now know that for a smooth projective variety the canonical ring is finitely generated.

These new results and methods are reshaping the field.

Inspired by this exciting progress, the editors organized a meeting at Schiermonnikoog and invited leading experts to write papers about the recent developments. The result is the present volume, a lively testimony of the sudden advances that originate from these new ideas.

This volume will be of interest to a wide range of pure mathematicians, but will appeal especially to algebraic and analytic geometers.

Jan. 2011

346 pp.

9783037190074 1

7,050.

European Mathematical Society

O'meara, K. /Clark, J. /Vinsonhaler, C.: 455-096

**Advanced Topics in Linear Algebra:
Weaving Matrix Problems Through the Weyr Form**

Advanced Topics in Linear Algebra presents, in an engaging style, novel topics linked through the Weyr matrix canonical form, a largely unknown cousin of the Jordan canonical form discovered by Eduard Weyr in 1885.

The book also develops much linear algebra unconnected to canonical forms, that has not previously appeared in book form.

It presents common applications of Weyr form, including matrix commutativity problems, approximate simultaneous diagonalization, and algebraic geometry, with the latter two having topical connections to phylogenetic invariants in biomathematics and multivariate interpolation.

The Weyr form clearly outperforms the Jordan form in many situations, particularly where two or more commuting matrices are involved, due to the block upper triangular form a Weyr matrix forces on any commuting matrix.

Oct. 2011

424 pp.

9780199793730

9,300.

Oxford University Press /USA

Oxford Handbooks in Mathematics

Akemann, G. /Baik, J. /Di Francesco, P. (eds.): 455-001

The Oxford Handbook of Random Matrix Theory

In part one, all modern and classical techniques of solving random matrix models are explored, including orthogonal polynomials, exact replicas or supersymmetry. Further, all main extensions of the classical Gaussian ensembles of Wigner and Dyson are introduced including sparse, heavy tailed, non-Hermitian or multi-matrix models.

In the second and larger part, all major applications are covered, in disciplines ranging from physics and mathematics to biology and engineering.

This includes standard fields such as number theory, quantum chaos or quantum chromodynamics, as well as recent developments such as partitions, growth models, knot theory, wireless communication or bio-polymer folding.

July 2011

960 pp.

9780199574001

22,440.

Oxford University Press

Vol. 2026: Yves, L.: 455-235

**Markov Paths, Loops and Fields:
Ecole d'Ete de Probabilites de Saint-Flour**

The purpose of these notes is to explore some simple relations between Markovian path and loop measures, the Poissonian ensembles of loops they determine, their occupation fields, uniform spanning trees, determinants, and Gaussian Markov fields such as the free field.

These relations are first studied in complete generality for the finite discrete setting, then partly generalized to specific examples in infinite and continuous spaces.

July 2011 134 pp.
9783642212154 6,080.

Vol. 2025: Giacomini, G.: 455-205

**Disorder and Critical Phenomena
Through Basic Probability Models:
Ecole d'Ete de Probabilites de Saint-Flour XL -2010**

Understanding the effect of disorder on critical phenomena is a central issue in statistical mechanics. In probabilistic terms: what happens if we perturb a system exhibiting a phase transition by introducing a random environment? The physics community has approached this very broad question by aiming at general criteria that tell whether or not the addition of disorder changes the critical properties of a model: some of the predictions are truly striking and mathematically challenging.

July 2011 140 pp.
9783642211553 6,080.

Vol. 2024: Padula, M.: 455-139

Asymptotic stability of steady compressible fluids

This volume introduces a systematic approach to the solution of some mathematical problems that arise in the study of the hyperbolic-parabolic systems of equations that govern the motions of thermodynamic fluids. It is intended for a wide audience of theoretical and applied mathematicians with an interest in compressible flow, capillarity theory, and control theory. The focus is particularly on recent results concerning nonlinear asymptotic stability, which are independent of assumptions about the smallness of the initial data.

Of particular interest is the loss of control that sometimes results when steady flows of compressible fluids are upset by large disturbances.

July 2011 204 pp.
9783642211362 7,820.

Vol. 2022: Naselli, I.: 455-222

**Extinction and Quasi-Stationary in
the Stochastic Logistic SIS Model**

This volume presents explicit approximations of the quasi-stationary distribution and of the expected time to extinction from the state one and from quasi-stationarity for the stochastic logistic SIS model.

The approximations are derived separately in three different parameter regions, and then combined into a uniform approximation across all three regions.

Subsequently, the results are used to derive thresholds as functions of the population size N .

June 2011 196 pp.
9783642205293 7,820.

*Sources and Studies in
the History of Mathematics and Physical Sciences*

van Dalen, D.:

455-045

The Selected Correspondence of L.E.J. Brouwer

L.E.J. Brouwer (1881-1966) is best known for his revolutionary ideas on topology and foundations of mathematics (intuitionism).

The present collection contains a mixture of letters; university and faculty correspondence has been included, some of which shed light on the student years, and in particular on the exchange of letters with his PhD adviser, Korteweg.

Acting as the natural sequel to the publication of Brouwer's biography, this book provides instrumental reading for those wishing to gain a deeper understanding of Brouwer and his role in the twentieth century.

Striking a good balance of biographical and scientific information, the latter deals with innovations in topology (Cantor-Schoenflies style and the new topology) and foundations.

The topological period in his research is well represented in correspondence with Hilbert, Schoenflies, Poincare, Blumenthal, Lebesgue, Baire, Koebe, and foundational topics are discussed in letters exchanged with Weyl, Fraenkel, Heyting, van Dantzig and others.

Sep. 2011

526 pp.

9780857295279

22,610.

Developments in Mathematics,

Vol. 22: Tartakoff, D.:

455-041

**Non-Elliptic Partial Differential Equations:
Analytic Hypocoellipticity and
the Courage to Localize High Powers of T**

This book fills a real gap in the analytical literature.

After many years and many results of analytic regularity for partial differential equations, the only access to the technique known as $(T^p)_\phi$ has remained embedded in the research papers themselves, making it difficult for a graduate student or a mature mathematician in another discipline to master the technique and use it to advantage.

This monograph takes a particularly non-specialist approach, one might even say gentle, to smoothly bring the reader into the heart of the technique and its power, and ultimately to show many of the results it has been instrumental in proving.

July 2011

280 pp.

9781441998125

13,040.

Springer Undergraduate Mathematics

Camina, A. / Lewis, B.:

455-070

An Introduction to Enumeration

Two major themes run in parallel through the book, generating functions and group theory.

The former theme takes enumerative sequences and then uses analytic tools to discover how they are made up.

Group theory provides a concise introduction to groups and illustrates how the theory can be used to count the number of symmetries a particular object has.

These enrich and extend basic group ideas and techniques.

June 2011

233 pp.

9780857295996

6,950.

Springer

Holme, A.:

455-023

A Royal Road to Algebraic Geometry

The title *A Royal Road to Algebraic Geometry* is inspired by the famous anecdote about the king asking Euclid if there really existed no simpler way for learning geometry, than to read all of his work *Elements*. Euclid is said to have answered: "There is no royal road to geometry!" The book starts by explaining this enigmatic answer, the aim of the book being to argue that indeed, in some sense there is a royal road to algebraic geometry. From a point of departure in algebraic curves, the exposition moves on to the present shape of the field, culminating with Alexander Grothendieck's theory of schemes.

Sep. 2011 400 pp.
9783642192241 12,170.

Lehmann, E.:

455-028

Fisher, Neyman, and the Creation of Classical Statistics

This new book by E.L. Lehmann, himself a student of Neyman's, explores the relationship between Neyman and Fisher, as well as their interactions with other influential statisticians, and the statistical history they helped create together. Lehmann uses direct correspondence and original papers to recreate an historical account of the creation of the Neyman-Pearson Theory as well as Fisher's dissent, and other important statistical theories.

June 2011 150 pp.
9781441994998 4,510.

Graduate Texts in Mathematics,

Vol. 218: Lee, J.:

455-171

Introduction to Smooth Manifolds, 2nd ed.

The book now introduces the two most important analytic tools (the rank theorem and the fundamental theorem on flows) much earlier, so that they can be used throughout the book. A few new topics have been added, notably Sard's theorem and transversality, a proof that infinitesimal Lie group actions generate global group actions, a more thorough study of first-order partial differential equations, and a brief treatment of degree theory for smooth maps between compact manifolds. The book is aimed at students who already have a solid acquaintance with general topology, the fundamental group, and covering spaces, as well as basic undergraduate linear algebra and real analysis.

Oct. 2012 730 pp.
9781441999818 11,650.

Springer Proceedings in Mathematics,

Vol. 8: Ebeling, W. /Hulek, K. /Smoczyk, K. (eds.): 455-117

Complex and Differential Geometry:

Conference held at Leibniz Universitat Hannover, 2009

It was the aim of this conference to bring specialists from differential geometry and algebraic geometry together and to discuss new developments in and the interaction between these fields.

Correspondingly, the articles in this book cover a wide area of topics, ranging from topics in algebraic geometry through complex geometry, including symplectic and poisson geometry, to differential geometry and topology.

May 2011 420 pp.
9783642202995 19,130.

Springer

Freitag, E.:

455-120

**Complex Analysis 2:
Riemann Surfaces, Several Complex Variables,
Abelian Functions, Higher Modular Functions**

The idea of this book is to give an extensive description of the classical complex analysis, here "classical" means roughly that sheaf theoretical and cohomological methods are omitted.

Numerous exercises including hints for solutions and many figures make this an attractive, indispensable book for students who would like to have a sound introduction to classical complex analysis.

Table of contents: Chapter I. Riemann Surfaces.- Chapter II. Harmonic Functions on Riemann Surfaces.- Chapter III. Uniformization.- Chapter IV. Compact Riemann Surfaces.- Appendices to Chapter IV.- Chapter V. Analytic Functions of Several Complex Variables.- Chapter V. Analytic Functions of Several Complex Variable.- Chapter VI. Abelian Functions.- Chapter VII. Modular Forms of Several Variables.- Chapter VIII. Appendix: Algebraic Tools.- References.- Index.

May 2011

523 pp.

9783642205538

8,370.

Pham, F.:

455-100

**Singularities of Integrals:
Homology, Hyperfunctions and Microlocal Analysis**

Translation from the French language edition:

'Integrales singulieres' by Frederic Pham Copyright 2005 EDP Sciences

Bringing together two fundamental texts from Frederic Pham's research on singular integrals, the first part of this book focuses on topological and geometrical aspects while the second explains the analytic approach.

Using notions developed by J. Leray in the calculus of residues in several variables and R.Thom's isotopy theorems, Frederic Pham's foundational study of the singularities of integrals lies at the interface between analysis and algebraic geometry, culminating in the Picard-Lefschetz formulae.

These mathematical structures, enriched by the work of Nilsson, are then approached using methods from the theory of differential equations and generalized from the point of view of hyperfunction theory and microlocal analysis.

Apr. 2011

216 pp.

9780857296023

8,690.

Springer Monographs in Mathematics

Ueberberg, J.:

455-179

**Foundations of Incidence Geometry:
Projective and Polar Spaces**

The main topics of incidence geometry are projective and affine geometry and, in more recent times, the theory of buildings and polar spaces.

Embedded into the modern view of diagram geometry, projective and affine geometry including the fundamental theorems, polar geometry including the Theorem of Buekenhout-Shult and the classification of quadratic sets are presented in this volume.

Incidence geometry is developed along the lines of the fascinating work of Jacques Tits and Francis Buekenhout.

The book is a clear and comprehensible introduction into a wonderful piece of mathematics.

June 2011

246 pp.

9783642209710

13,910.

Springer

New Series: SpringerBriefs in Mathematics,

Vol. 3: Burgin, M.:

455-112

Hypernumbers and Extrafunctions

In this book, we represent another rigorous mathematical approach to operation with infinite values. At first, the concepts of real and complex numbers are extended in such a way that the new universe of numbers called hypernumbers includes infinite quantities.

It is necessary to remark that in contrast to nonstandard analysis, there are no infinitely small hypernumbers.

This is more relevant to the situation in physics, where infinitely big values emerge from theoretical structures but physicists have never encountered infinitely small values.

The next step of extending the classical calculus based on real and complex functions is introduction of extrafunctions, which generalize not only the concept of a conventional function but also the concept of a distribution. This made possible to solve previously "unsolvable" problems.

Aug. 2012

120 pp.

9781441998743

8,690.

Vol. 2: Anastassiou, G.:

455-108

Inequalities Based on Sobolev Representations

Inequalities based on Sobolev Representations deals exclusively with very general tight integral inequalities of Chebyshev-Gruss, Ostrowski types and of integral means, all of which depend upon the Sobolev integral representations of functions.

Applications illustrate inequalities that engage in ordinary and weak partial derivatives of the involved functions.

This book also derives important estimates for the averaged Taylor polynomials and remainders of Sobolev integral representations.

The results are examined in all directions and through both univariate and multivariate cases.

This book is suitable for researchers, graduate students, and seminars in subareas of mathematical analysis, inequalities, partial differential equations and information theory.

Sep. 2011

66 pp.

9781461402008

8,690.

Vol. 1: Rovenski, V. /Walczak, P.:

455-145

Topics in Extrinsic Geometry of Codimension-One Foliations

Extrinsic geometry describes properties of foliations on Riemannian manifolds which can be expressed in terms of the second fundamental form of the leaves. The authors of this book achieve a technical tour de force, which will lead to important geometric results.

The Integral Formulae, introduced in chapter 1, is a useful for problems such as: prescribing higher mean curvatures of foliations, minimizing volume and energy defined for vector or plane fields on manifolds, and existence of foliations whose leaves enjoy given geometric properties.

The Integral Formulae stems from a Reeb formula, for foliations on space forms which generalize the classical ones.

For a special auxiliary functions the formulae involve the Newton transformations of the Weingarten operator.

Aug. 2011

96 pp.

9781441999078

8,690.

Springer

継続購入のお取扱いを承ります ご検討下さい

Stahl, S.: Real Analysis: 455-152
A Historical Approach, 2nd ed.

Combining historical coverage with key introductory fundamentals, this book helps readers easily make the transition from concrete to abstract ideas when conducting analysis.

Based on reviewer and user feedback, this edition features a new chapter on the Riemann integral including the subject of uniform continuity, as well as a discussion of epsilon-delta convergence and a section that details the modern preference for convergence of sequences over convergence of series.

Aug. 2011 320 pp.
 9780470878903 11,880.

Pure and Applied Mathematics

Lui, S.-H.: Numerical Analysis of 455-135
Partial Differential Equations

This book provides a comprehensive and self-contained treatment of the numerical methods used to solve partial differential equations (PDEs), as well as both the error and efficiency of the presented methods.

Featuring a large selection of theoretical examples and exercises, the book presents the main discretization techniques for PDEs, introduces advanced solution techniques, and discusses important nonlinear problems in many fields of science and engineering.

Oct. 2011 480 pp.
 9780470647288 14,260.

Shiskowski, K. /Frinkle, K.: 455-102
Principles of Linear Algebra with Mathematica (R)

This book introduces algebra topics which can only be taught with the help of computer algebra systems, and the authors include all of the commands required to solve complex and computationally challenging linear algebra problems using MathematicaR.

Aug. 2011 608 pp.
 9780470637951 14,260.

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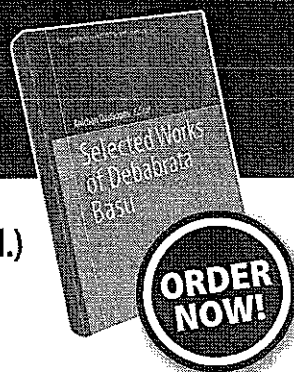
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