

# Geometry and Topology 2010

∴ Textbook

Imperial College Press Optimization Series – Vol. 1

## MOMENTS, POSITIVE POLYNOMIALS AND THEIR APPLICATIONS

by **Jean Bernard Lasserre** (LAAS-CNRS and Institute of Mathematics, University of Toulouse, France)

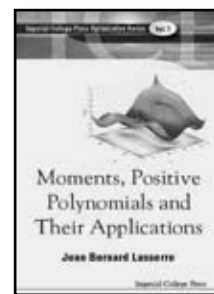
Winner of the 2009 Lagrange Prize in Continuous Optimization.

### Key Features

- The first book ever written that provides timely update on the recent advances in polynomial optimization from the modern perspective of mathematical programming
- Illustrates the use of the *Generalized Moment Problem (GMP)* in various and diverse applications
- The Matlab-based software GloptiPoly to solve the GMP is also described in this book

**Contents: Moments and Positive Polynomials:** The Generalized Moment Problem; Positive Polynomials; Moments; Algorithms for Moment Problems; **Applications:** Global Optimization over Polynomials; Systems of Polynomial Equations; Applications to Probability and Markov Chains; Application in Mathematical Finance; Application in Control; Convex Envelope and Representation of Convex Sets; Multivariate Integration; Min-Max Problems and Nash Equilibria; Bounds on Linear PDE.

**Readership:** Postgraduates, academics and researchers in mathematical programming, control and optimization.



300pp (approx.)

Oct 2009

978-1-84816-445-1

US\$75

£56

Series on Knots and Everything – Vol. 23

## DIAMOND

### A Paradox Logic (2nd Edition)

by **N S Hellerstein** (City College of San Francisco, USA)

### Review of the First Edition

"This book should be interesting for everyone, and especially for logicians."

### Mathematical Reviews

This book is about "diamond", a logic of paradox. In diamond, a statement can be true yet false; an "imaginary" state, midway between being and non-being. Diamond's imaginary values solve many logical paradoxes unsolvable in two-valued boolean logic. In this volume, paradoxes by Russell, Cantor, Berry and Zeno are all resolved. This book has three sections: Paradox Logic, which covers the classic paradoxes of mathematical logic, shows how they can be resolved in this new system; The Second Paradox, which relates diamond to Boolean logic and the Spencer-Brown "modulator"; and Metamathematical Dilemma, which relates diamond to Gödelian meta-mathematics and dilemma games.

300pp (approx.)

Dec 2009

978-981-4287-13-5

US\$85

£64

## HIGHLIGHTS

### A MATHEMATICAL BRIDGE

An Intuitive Journey In Higher Mathematics

(2nd Edition)

by **Stephen Hewson**

(Cambridge University, UK)

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### AFFINE BERNSTEIN PROBLEMS AND MONGE-AMPERE EQUATIONS

by **An-Min Li, Fang Jia** (Sichuan University, China) &  
**Udo Simon** (Technische Universität Berlin, Germany)

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### THE ANALYSIS OF HARMONIC MAPS AND THEIR HEAT FLOWS

by **Fanghua Lin** (New York University, USA)  
& **Changyou Wang**

(University of Kentucky, USA)

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∴ Textbook

## CLASSICAL COMPLEX ANALYSIS

A Geometric Approach  
(Volume 2)

by **I-Hsiung Lin** (*National Taiwan Normal University, Taiwan*)

*Classical Complex Analysis*, available in two volumes, provides a clear, broad and solid introduction to one of the remarkable branches of exact science, with an emphasis on the geometric aspects of analytic functions. Volume 2 begins with analytic continuation. The Riemann mapping theorem is proved and used in solving Dirichlet's problem for an open disk and, hence, a class of general domains via Perron's method. Finally, proof of the uniformization theorem of Riemann surfaces is given.

<b>900pp (approx.)</b>	<b>Sep 2010</b>	
<b>978-981-4271-28-8</b>	<b>US\$128</b>	<b>£96</b>
<b>978-981-4271-29-5 (pbk)</b>	<b>US\$85</b>	<b>£64</b>

∴ Textbook

Advanced Series in Nonlinear Dynamics

## GEOMETRICAL THEORY OF DYNAMICAL SYSTEMS AND FLUID FLOWS

Revised Edition

by **Tsutomu Kambe** (*Institute of Dynamical Systems, Japan*)

This is an introductory textbook on the geometrical theory of dynamical systems, fluid flows and certain integrable systems. The topics are interdisciplinary and extend from mathematics, mechanics and physics to mechanical engineering, and the approach is very fundamental. The main theme of this book is a unified formulation to understand *dynamical evolutions* of physical systems within mathematical ideas of Riemannian geometry and Lie groups by using well-known examples. In the latest edition, a new formulation of fluid flows is also presented in a unified fashion on the basis of the gauge principle of theoretical physics and principle of least action along with new type of Lagrangians. A great deal of effort has been directed toward making the description elementary, clear and concise, to provide beginners easy access to the topics.

<b>500pp (approx.)</b>	<b>Dec 2009</b>	
<b>978-981-4282-24-6</b>	<b>US\$88</b>	<b>£66</b>

∴ Textbook

## NULL CURVES AND HYPERSURFACES OF SEMI-RIEMANNIAN MANIFOLDS

by **Krishan L Duggal** (*University of Windsor, Canada*) & **Dae Ho Jin** (*Dongguk University, Korea*)

"I strongly recommend this work as a reference book for people interested in learning, from a mathematical viewpoint, the geometry either of lightlike curves or of lightlike geodesics in semi-Riemannian space forms."

### Mathematical Reviews

**Contents:** The Concept of Null Curves; Null Curves in Lorentzian Manifolds; Null Curves in Semi-Riemannian Manifolds; Geometry of Null Cartan Curves (Unique Existence Theorems); Applications: Null Soliton Solutions in 3D and 4D; Mechanical Systems and 3D Null Curves; Lightlike Hypersurfaces; Geometry and Physics of Null Geodesics.

**Readership:** Graduate students, academics in differential geometry and mathematical physics.

<b>304pp</b>	<b>Sept 2007</b>	
<b>978-981-270-647-8</b>	<b>US\$69</b>	<b>£40</b>



Lecture Notes Series, Institute for Mathematical Sciences, National University of Singapore – Vol. 19

## BRAIDS

Introductory Lectures on Braids, Configurations and Their Applications

edited by **A Jon Berrick** (*National University of Singapore, Singapore*), **Frederick R Cohen** (*University of Rochester, USA*), **Elizabeth Hanbury** (*National University of Singapore, Singapore and Durham University, UK*), **Yan-Loi Wong** & **Jie Wu** (*National University of Singapore, Singapore*)

This book is an indispensable guide for anyone seeking to familiarize themselves with research in braid groups, configuration spaces and their applications. Starting at the beginning, and assuming only basic topology and group theory, the volume's noted expositors take the reader through the fundamental theory and on to current research and applications in fields as varied as astrophysics, cryptography and robotics.



<b>420pp (approx.)</b>	<b>Dec 2009</b>	
<b>978-981-4291-40-8</b>	<b>US\$98</b>	<b>£74</b>

Series on Knots and Everything – Vol. 44

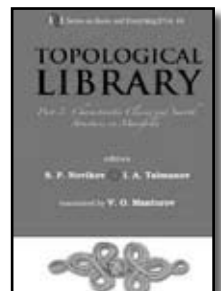
## TOPOLOGICAL LIBRARY

Part 2: Characteristic Classes and Smooth Structures on Manifolds

edited by **S P Novikov** (*Landau Institute for Theoretical Physics, Russia & University of Maryland, USA*) & **I A Taimanov** (*Sobolev Institute of Mathematics, Russia*)

translated by **V O Manturov** (*Moscow State Regional University, Russia*)

This is the second of a three-volume set collecting the original and now-classic works in topology written during the 1950s–1960s. The original methods and constructions from these works are properly documented for the first time in this book. No existing book covers the beautiful ensemble of methods created in topology starting from approximately 1950, that is, from Serre's celebrated "singular homologies of fiber spaces."



<b>300pp (approx.)</b>	<b>Oct 2009</b>	
<b>978-981-283-686-1</b>	<b>US\$118</b>	<b>£89</b>

∴ Bestseller

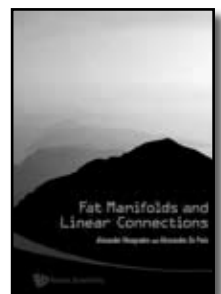
## FAT MANIFOLDS AND LINEAR CONNECTIONS

by **Alessandro De Paris** (*University of Naples Federico II, Italy*) & **Alexandre M Vinogradov** (*University of Salerno, Italy*)

"I found this nice and elegant volume very stimulating."

Zentralblatt MATH

In this unique book, written in a reasonably self-contained manner, the theory of linear connections is systematically presented as a natural part of differential calculus over commutative algebras. This not only makes easy and natural numerous generalizations of the classical theory and reveals various new aspects of it, but also shows in a clear and transparent manner the intrinsic structure of the associated differential calculus. One of the authors of this book, Professor A M Vinogradov, is the founder of the modern geometrical theory of nonlinear PDEs, based on secondary calculus which is invented by him



<b>312pp</b>	<b>Dec 2008</b>	
<b>978-981-281-904-8</b>	<b>US\$81</b>	<b>£47</b>

:: Textbook

## CURIOUS CURVES

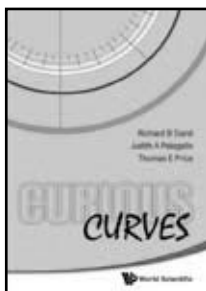
by **Richard B Darst** (*Colorado State University, USA*), **Judith A Palagallo** & **Thomas E Price** (*The University of Akron, USA*)

### Key Features

- Accessible to undergraduates with minimal background, the main prerequisite is a strong calculus course with some experience in reading and writing proofs
- Many examples and computer-generated illustrative figures accompany the discussion of curves
- Abundant exercises enhance the presented material and are a vital component of the book

**Readership:** Advanced undergraduates in mathematics or in other sciences.

**200pp (approx.)**      **Oct 2009**  
**978-981-4291-28-6**      **US\$58**      **£44**



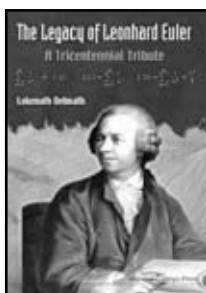
:: Textbook

## THE LEGACY OF LEONHARD EULER

A Tricentennial Tribute

by **Lokenath Debnath** (*The University of Texas-Pan American, USA*)

This book primarily serves as a historical research monograph on the biographical sketch and career of Leonhard Euler and his major contributions to numerous areas in the mathematical and physical sciences. It contains fourteen chapters describing Euler's works on number theory, algebra, geometry, trigonometry, differential and integral calculus, analysis, infinite series and infinite products, ordinary and elliptic integrals and special functions, ordinary and partial differential equations, calculus of variations, graph theory and topology, mechanics and ballistic research, elasticity and fluid mechanics, physics and astronomy, probability and statistics.



**420pp (approx.)**      **Oct 2009**  
**978-1-84816-525-0**      **US\$121**      **£91**

:: Textbook

Atlantis Studies in Mathematics – Vol. 2

## SELECTED TOPICS IN MEASURE THEORY

The Measure Extension Problem and Related Questions

by **Alexander Kharazishvili** (*Razmadze Mathematical Institute, Republic of Georgia*)

### Key Features

- An original treatment of the measure extension problem
- Highlights deep connections with set theory, general topology and group theory
- Some new approaches in the study of invariant and quasi-invariant measures
- Underlines the role of some pathological functions in various constructions of real analysis and measure theory
- A self-contained book that can be used as a textbook for set theory, real analysis, measure theory and general topology

**420pp (approx.)**      **Oct 2009**  
**978-90-78677-20-8**      **US\$125**      **£94**

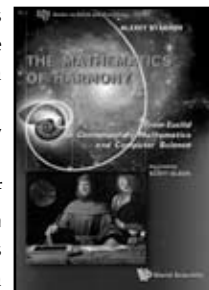
Series on Knots and Everything – Vol. 22

## THE MATHEMATICS OF HARMONY

From Euclid to Contemporary Mathematics and Computer Science

by **Alexey Stakhov** (*International Club of the Golden Section, Canada*) assisted by **Scott Olsen** (*Central Florida Community College, USA*)

This volume is a result of the author's four decades of research in the field of Fibonacci numbers and the Golden Section and their applications. It provides a broad introduction to the fascinating and beautiful subject of the "Mathematics of Harmony," a new interdisciplinary direction of modern science. This direction has its origins in "The Elements" of Euclid and has many unexpected applications in contemporary mathematics, theoretical physics and computer science. The book is intended for a wide audience including mathematics teachers of high schools, students of colleges and universities and scientists in the field of mathematics, theoretical physics and computer science. The book may be used as an advanced textbook by graduate students and even ambitious undergraduates in mathematics and computer science.



**748pp**      **Sept 2009**  
**978-981-277-582-5**      **US\$114**      **£86**

:: Bestseller Textbook

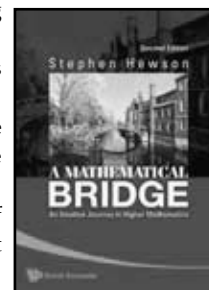
## A MATHEMATICAL BRIDGE

An Intuitive Journey in Higher Mathematics (Second Edition)

by **Stephen Hewson**

### Key Features

- Inclusion of a new introductory chapter covering material on the foundations of mathematics, mathematical thought processes, thinking styles and problem solving skills
- Extension of the chapter on Probability to include material on financial mathematics and the Black-Scholes equation
- Incorporation of new material on the history of mathematics and the achievements of the greatest mathematicians



**672pp**      **Jan 2009**  
**978-981-283-407-2**      **US\$104**      **£61**  
**978-981-283-408-9 (pbk)**      **US\$61**      **£36**

## TITLES OF YOUR INTEREST

**GEOMETRY AND PHASE TRANSITIONS IN COLLOIDS AND POLYMERS**  
by **William Kung** (*Northwestern University, USA*)  
- 9789812834966

**DIFFERENTIAL GEOMETRY: THEORY AND APPLICATIONS**  
edited by **Philippe G Ciarlet** (*City University of Hong Kong, China*) et al.  
- 9789812771469

**SELF-EVOLVING COSMOS, THE: A PHENOMENOLOGICAL APPROACH TO NATURE'S UNITY-IN-DIVERSITY**  
by **Steven M Rosen** (*City University of New York, USA*)  
- 9789812771735 (hbk) / 9789812835819 (pbk)

**AN INVITATION TO NONCOMMUTATIVE GEOMETRY**  
edited by **Masoud Khalkhali** (*University of Western Ontario, Canada*) et al.  
- 9789812706164 (hbk) / 9789812707796 (pbk)

**ANALYTIC HYPERBOLIC GEOMETRY AND ALBERT EINSTEIN'S SPECIAL THEORY OF RELATIVITY**  
by **Abraham Albert Ungar** (*North Dakota State University, USA*)  
- 9789812772299

## AFFINE BERNSTEIN PROBLEMS AND MONGE-AMPERE EQUATIONS

by **An-Min Li, Fang Jia** (*Sichuan University, China*) & **Udo Simon** (*Technische Universität Berlin, Germany*)

In this monograph, the interplay between geometry and partial differential equations (PDEs) is of particular interest. It is well-known that many geometric problems in analytic formulation lead to important classes of PDEs. The focus of this monograph is on variational problems and higher order PDEs for affine hypersurfaces.

**Contents:** Local Equiaffine Hypersurface Theory; Pogorelov's Theorem; Affine Maximal Hypersurfaces.

200pp (approx.)      Mar 2010  
978-981-281-416-6      US\$65      £35

∴ Textbook

## CLASSICAL COMPLEX ANALYSIS

A Geometric Approach  
(Volume 1)

by **I-Hsiung Lin** (*National Taiwan Normal University, Taiwan*)

*Classical Complex Analysis*, available in two volumes, provides a clear, broad and solid introduction to one of the remarkable branches of exact science, with an emphasis on the geometric aspects of analytic functions. Volume 1 begins with a geometric description of what a complex number is, followed by a detailed account of algebraic, analytic and geometric properties of standard complex-valued functions. Geometric properties of analytic functions are then developed and described in detail, and various applications of residues are included; analytic continuation is also introduced. The book is rich in contents, figures, examples and exercises. It is self-contained and is designed for a variety of usages and motivations concerning advanced studies. It can be used both as a textbook for undergraduate and graduate students, and as a reference book in general.

900pp (approx.)      Feb 2010  
978-981-4261-22-7      US\$118      £89  
978-981-4261-23-4 (pbk)      US\$78      £59

## Series on Mathematical Economics and Game Theory – Vol. 5 FIXED POINTS AND ECONOMIC EQUILIBRIA

by **Ken Urai** (*Osaka University, Japan*)

### Key Features

- Offers many new fixed-point theorems together with mathematical structures that can be utilized to describe many general economic equilibrium settings and views of the world
- Treats methods for fixed-point and equilibrium arguments under the framework of "homology theory", so that the arguments based on the "convex approach" and "differentiable approach" are designed to be unified
- Uses fixed points and social equilibrium arguments as a method to grasp the world, giving a rigorous mathematical approach to the "methodology" and "philosophy" of social sciences

**Readership:** Graduate students and researchers in mathematical economics and game theory.

250pp (approx.)      Jan 2010  
978-981-283-718-9      US\$88      £66

## Interdisciplinary Mathematical Sciences PERSPECTIVES IN MATHEMATICAL SCIENCES

edited by **Yisong Yang** (*Polytechnic Institute of New York University, USA*), **Xinchu Fu** (*Shanghai University, China*) & **Jinqiao Duan** (*Illinois Institute of Technology, USA*)

This is a review volume on some timely and interesting topics in applied mathematical sciences. It reviews new developments and presents some future research directions in these topics. The chapters are written by reknowned experts in these fields. The volume is written with a wide audience in mind and hence will be accessible to graduate students, junior researchers and other professionals who are interested in these areas, will be celebrated. An entire chapter will be devoted to his achievements. The underlying theme that binds the various chapters seamlessly is a set of dedicated ideas and techniques from partial differential equations and dynamical systems.

400pp (approx.)      Jan 2010  
978-981-4289-30-6      US\$98      £74

## NORM DERIVATIVES AND CHARACTERIZATIONS OF INNER PRODUCT SPACES

by **Claudi Alsina** (*Universitat Politècnica de Catalunya, Spain*), **Justyna Sikorska** (*Silesian University, Poland*) & **M Santos Tomas** (*Universitat Politècnica de Catalunya, Spain*)

### Key Features

- An original book by three experts who have been actively involved in the field of functional equations and their applications
- A detailed presentation of many mathematical techniques for solving functional equations and inequalities in normed spaces
- A valuable resource for researchers who wish to deal with characterizations of inner products and new insights on geometry in normed spaces



190pp (approx.)      Dec 2009  
978-981-4287-26-5      US\$65      £49

∴ Bestseller Textbook

## ADVANCED CLASSICAL FIELD THEORY

by **Giovanni Giachetta, Luigi Mangiarotti** (*University of Camerino, Italy*) & **Gennadi Sardanashvily** (*Moscow State University, Russia*)

This book aims to provide a complete mathematical foundation of Lagrangian classical field theory and its BRST extension for the purpose of quantization. This book is designed for theoreticians and mathematical physicists specializing in field theory. The authors have tried throughout to provide the necessary mathematical background, thus making the exposition self-contained.

**Contents:** Differential Calculus on Fiber Bundles; Lagrangian Field Theory on Fiber Bundles; Grassmann-Graded Lagrangian Field Theory; Lagrangian BRST Theory; Gauge Theory on Principal Fiber Bundles; Gravitation Theory on Natural Bundles; Spinor Fields, Topological Field Theories.

392pp      May 2009  
978-981-283-895-7      US\$98      £74



∴ Textbook

Mathematical Olympiad Series – Vol. 1

**A FIRST STEP TO MATHEMATICAL OLYMPIAD PROBLEMS**

by **Derek Holton** (*University of Otago, New Zealand*)

The material contained in this book provides an introduction to the main mathematical topics covered in the IMO, which are: Combinatorics, Geometry and Number Theory. In addition, there is a special emphasis on how to approach unseen questions in Mathematics, and model the writing of proofs. Full answers are given to all questions. Though *A First Step to Mathematical Olympiad Problems* is written from the perspective of a mathematician, it is written in a way that makes it easily comprehensible to adolescents. This book is also a must-read for coaches and instructors of mathematical competitions.



**292pp**                      **Jul 2009**  
**978-981-4273-87-9(pbk)**    **US\$35**                      **£26**

Statistical Science and Interdisciplinary Research – Vol. 8

**PERSPECTIVES IN MATHEMATICAL SCIENCES II**

Pure Mathematics

edited by **N S Narasimha Sastry, T S S R K Rao, Mohan Delampady & B Rajeev**

(*Indian Statistical Institute, India*)

This book presents a collection of invited articles by distinguished Mathematicians on the occasion of the Platinum Jubilee Celebrations of the Indian Statistical Institute, during the year 2007. These articles provide a current perspective of different areas of research, emphasizing the major challenging issues. Given the very significant record of the Institute in research in the areas of Statistics, Probability and Mathematics, distinguished authors have very admirably responded to the invitation. Some of the articles are written keeping students and potential new entrants to an area of mathematics in mind. This volume is thus very unique and gives a perspective of several important aspects of mathematics.



**280pp**                      **Jul 2009**  
**978-981-4273-64-0**    **US\$75**                      **£56**

Mathematical Society of Japan Memoirs – Vol. 20

**SCL**

by **Danny Calegari**

This book is a comprehensive introduction to the theory of stable commutator length, an important subfield of quantitative topology, with substantial connections to 2-manifolds, dynamics, geometric group theory, bounded cohomology, symplectic topology, and many other subjects. We give a self-contained presentation of several foundational results in the theory, including Bavard's Duality Theorem, the Spectral Gap Theorem, the Rationality Theorem, and the Central Limit Theorem. The contents should be accessible to any mathematician interested in these subjects, and are presented with a minimal number of prerequisites, but with a view to applications in many areas of mathematics.

Published by Mathematical Society of Japan and distributed by World Scientific Publishing Co. for all markets

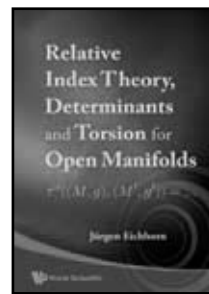
**222pp**                      **Jun 2009**  
**978-4-931469-53-2(pbk)**    **US\$31**                      **£23**

∴ Textbook

**RELATIVE INDEX THEORY, DETERMINANTS AND TORSION FOR OPEN MANIFOLDS**

by **Jürgen Eichhorn** (*Universität Greifswald, Germany*)

For closed manifolds, there is a highly elaborated theory of number-valued invariants, attached to the underlying manifold, structures and differential operators. On open manifolds, nearly all of this fails, with the exception of some special classes. The goal of this monograph is to establish for open manifolds, structures and differential operators an applicable theory of number-valued relative invariants.



**352pp**                      **May 2009**  
**978-981-277-144-5**    **US\$69**                      **£52**

Mathematical Society of Japan Memoirs – Vol. 18

**ON CONGRUENCE MONODROMY PROBLEMS**

by **Yasutaka Ihara** (*University of Tokyo, Japan*)

This book consists of two parts; a reproduction of the author's unpublished Lecture Notes (1968,69), and Author's Notes (2008). The former starts with explicit three main conjectural relationships for more general cases and gives various approaches towards their proofs. Though remained formally unpublished, these Lecture Notes had been widely circulated and have stimulated researches in various directions. The main conjectures themselves have also been proved since then. The Author's Notes (2008) gives detailed explanations of these developments, together with open problems.

**230pp**                      **Dec 2008**  
**978-4-931469-50-1(pbk)**    **US\$27**                      **£15**

∴ Textbook

Atlantis Studies in Mathematics – Vol. 1

**TOPOLOGICAL GROUPS AND RELATED STRUCTURES**

by **Alexander Arhangel'skii** (*Ohio University, USA*) & **Mikhail Tkachenko** (*Universidad Autónoma Metropolitana, Mexico*)

**Key Features**

- Provides an exceptionally wide coverage of material from Topology, Algebra, and Set Theory (including some parts of Functional Analysis)
- Contains an impressive list of exercises, problems, and open questions that permit the reader to verify her/his skills and can inspire research at the frontier of the knowledge
- Emphasizes the subtle interplay between the topological properties of groups and the continuity of operations, mainly outside of the locally compact case

**800pp**                      **May 2008**  
**978-90-78677-06-2**    **US\$183**                      **£99**

**TITLES OF YOUR INTEREST**

<p><b>LINKNOT: KNOT THEORY BY COMPUTER</b>                  by Slavik Jablan &amp; Radmila Sazdanovič (The Mathematical Institute, Belgrade, Serbia)                  - 9789812772237</p>
<p><b>SELECTED TOPICS IN GEOMETRY WITH CLASSICAL VS. COMPUTER PROVING</b>                  by Pavel Pech (University of South Bohemia, Czech Republic)                  - 9789812709424</p>
<p><b>LECTURES ON THE GEOMETRY OF MANIFOLDS (2ND EDITION)</b>                  by Liviu I Nicolaescu (University of Notre Dame, USA)                  - 9789812708533 (hbk) / 9789812778628 (pbk)</p>
<p><b>NULL CURVES AND HYPERSURFACES OF SEMI-RIEMANNIAN MANIFOLDS</b>                  by Krishan L Duggal (University of Windsor, Canada) et al.                  - 9789812706478</p>

:: Textbook

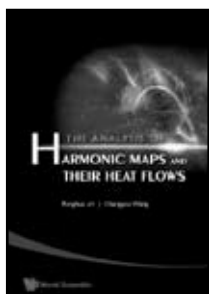
## THE ANALYSIS OF HARMONIC MAPS AND THEIR HEAT FLOWS

by **Fanghua Lin** (New York University, USA) & **Changyou Wang** (University of Kentucky, USA)

This book provides a broad yet comprehensive introduction to the analysis of harmonic maps and their heat flows. The book can be used as a textbook for the topic course of advanced graduate students and for researchers who are interested in geometric partial differential equations and geometric analysis.

**Contents:** Introduction to Harmonic Maps; Regularity of Minimizing Harmonic Maps; Regularity of Stationary Harmonic Maps; Blow up Analysis of Stationary Harmonic Maps; Heat Flows to Riemannian Manifolds of NPC; Bubbling Analysis in Dimension Two; Partially Smooth Heat Flows; Blow up Analysis on Heat Flow; Dynamics of Defect Measures in Heat Flows.

**280pp**                      **May 2008**  
**978-981-277-952-6**      **US\$73**                      **£43**



:: Textbook

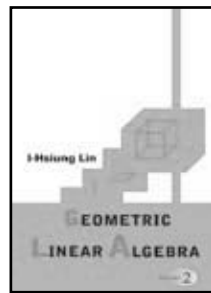
## GEOMETRIC LINEAR ALGEBRA

(Volume 2)

by **I-Hsiung Lin** (National Taiwan Normal University, Taiwan)

This accessible book for beginners uses intuitive geometric concepts to create abstract algebraic theory with a special emphasis on geometric characterizations. The book applies known results to describe various geometries and their invariants, and presents problems concerned with linear algebra, such as in real and complex analysis, differential equations, differentiable manifolds, differential geometry, Markov chains and transformation groups. The clear and inductive approach makes this book unique among existing books on linear algebra both in presentation and in content.

**832pp**                      **May 2008**  
**978-981-270-775-8(pbk)**      **US\$105**                      **£63**



## INVARIANT ALGEBRAS AND GEOMETRIC REASONING

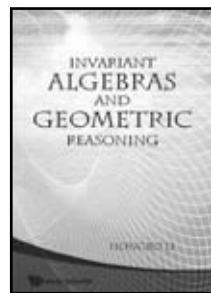
by **Hongbo Li** (Chinese Academy of Sciences, China)

*"This carefully written book is intended for both researchers in geometric algebra and graduate students in mathematics. The first several sections of all chapters can also be used as an undergraduate course on Clifford algebras."*

**Zentralblatt MATH**

**Readership:** Graduate students in discrete and computational geometry, and computer mathematics; mathematicians and computer scientists.

**532pp**                      **Mar 2008**  
**978-981-270-808-3**      **US\$125**                      **£71**



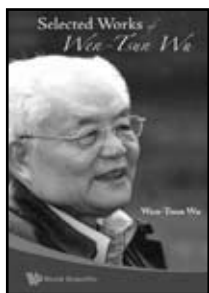
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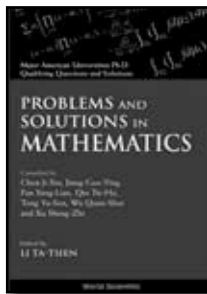
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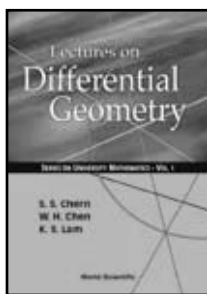
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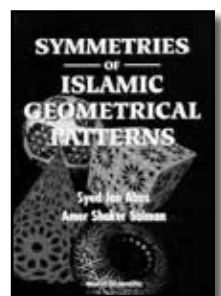
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