Contents

<table>
<thead>
<tr>
<th>Analysis and Probability</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundations and Discrete Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>Geometry and Topology</td>
<td>5</td>
</tr>
<tr>
<td>Algebra and Number Theory</td>
<td>7</td>
</tr>
<tr>
<td>Computational Science, Mechanics and Modelling</td>
<td>10</td>
</tr>
<tr>
<td>Dynamical Systems, Numerics and Differential Equations</td>
<td>12</td>
</tr>
<tr>
<td>Mathematical Physics and Biology</td>
<td>14</td>
</tr>
<tr>
<td>Statistics, Probability and Finance</td>
<td>18</td>
</tr>
<tr>
<td>Computer Science</td>
<td>20</td>
</tr>
<tr>
<td>General and Recreational Maths</td>
<td>21</td>
</tr>
<tr>
<td>Journals</td>
<td>23</td>
</tr>
<tr>
<td>Author and Title Index</td>
<td>26</td>
</tr>
</tbody>
</table>

Useful contacts

Book proposals: David Tranah (dtranah@cambridge.org)
For further information about mathematics titles: Graham Robertson (grobertson@cambridge.org)
All other enquiries, phone +44 (0) 1223 312393 or email information@cambridge.org

Prices and Payment

Prices and publication dates are correct at the time of going to press but are subject to alteration without notice.

Highlights

➤ See page 1

A First Course in Mathematical Analysis

➤ See page 10

Classical Mechanics

➤ See page 5

Geometry and Topology

This catalogue contains a selection of our most recent publishing in this area. Please visit our website for a full and searchable listing of all our titles in print and also an extensive range of news, features and resources. Our online ordering service is secure and easy to use.

A message from the Cambridge Mathematics editors

Welcome to the 2006 Mathematics catalogue from Cambridge University Press, featuring the latest and the best in mathematics publishing.

This catalogue features information on our many new titles as well as a selection of classic Cambridge texts, and is not intended to be a comprehensive listing of all our publishing. However, every single one of our books can be found on our website at: www.cambridge.org/mathematics where you can buy, request inspection copies of textbooks, or simply find out more about any of our titles.

With the International Congress of Mathematicians in Madrid this summer, 2006 is set to be an important year, and Cambridge is delighted to be attending the meeting where we will have the full range of our latest titles along with much of our prestigious backlist.

Of course, all of our relevant new titles are always on display at the conferences we attend (assuming we haven’t sold out!) so if you see our stand at a meeting, we’d be delighted for you to come and browse the books and ask us any questions you might have about our publishing programme.

Hope to see you in Madrid!

David Tranah, (dtranah@cambridge.org)
Roger Astley, (rastley@cambridge.org)
Diana Gillooly, (dgillooly@cambridge.org)
Peter Thompson, (pthompson@cambridge.org)
Lauren Cowles, (lcowles@cambridge.org)

www.cambridge.org/mathematics

Many of our journal titles are now available online. Each journal entry in this catalogue indicates where the price includes, or will include, access to the electronic version of the journal during 2005. Full text is available FREE to all individuals within the registered domain address of full rate subscribers. In addition, the service provides all users with FREE access to tables of contents and abstracts, and a FREE email alerting service.

Cambridge University Press is the printing and publishing house of the University of Cambridge, and is the oldest press in the world. It is a charitable enterprise required by University Statute to devote itself to printing and publishing in the furtherance of the acquisition, advancement, conservation, and dissemination of knowledge in all subjects; to the advancement of education, religion, learning, and research; and to the advancement of literature and good letters.
Analysis and Probability

FEATURE TITLE

A First Course in Mathematical Analysis

David Brannan
The Open University, Milton Keynes

Mathematical Analysis (often called Advanced Calculus) is generally found by students to be one of their hardest courses in Mathematics. This text uses the so-called sequential approach to continuity, differentiability and integration to make it easier to understand the subject.

The text has a large number of diagrams and helpful margin notes; and uses many graded examples and exercises, often with complete solutions, to guide students through the tricky points. It is suitable for self-study or use in parallel with a standard University course on the subject.

- A sequential approach to continuity, differentiability and integration to make it easier to understand the subject
- Many graded examples and exercises, with large numbers of complete solutions, to guide students through the tricky points
- Suitable for self-study or use in parallel with a standard University course; unlike other textbooks in the subject, should be intelligible to students on their own, offering considerable study help

Contents:

- 2006 252 x 225 mm c. 670pp 700 line diagrams
- 2005 247 x 174 mm c. 584pp 550 exercises 15 figures

Visit our website at www.cambridge.org


- 2005 247 x 174 mm c. 532pp 15 line diagrams 55 graphs 500 exercises 15 figures
- 2005 247 x 174 mm c. 532pp 15 line diagrams 55 graphs 500 exercises 15 figures

Visit our website at www.cambridge.org
Analytic Tomography
Andrew Markoe
Rider University, New Jersey
This comprehensive study of the analytic aspects of mathematical tomography contains elementary and graphical introductions to the Radon transform, tomography and CT scanners, to the development of the basic properties of the Radon transform, to Grassmann manifolds, and to the study of k-plane transform, plus coverage of more advanced topics.
Encyclopedia of Mathematics and its Applications, 106
— 2006 234 x 156 mm 400pp
— 978 0 521 79347 6 (0 521 79347 5)
Hardback £60.00
— Publication March 2006

Recent Bestsellers

TEXTBOOK
Calculus: Concepts and Methods
Ken Binmore
University College London
and Joan Davies
London School of Economics and Political Science
A gentle, thorough and beautifully illustrated introduction to calculus for students from a range of disciplines.
— 2002 246 x 189 mm 568pp
649 line diagrams 345 exercises
— 978 0 521 77541 0 (0 521 77541 8)
Paperback £29.99

TEXTBOOK
Exercises in Probability
A Guided Tour from Measure Theory to Random Processes, via Conditioning
L. Chaumont
Université de Paris VI (Pierre et Marie Curie)
and M. Yor
Université de Paris VI (Pierre et Marie Curie)
Exercises in advanced probability with solutions, references and contextual notes. Fully class tested in Paris.
Cambridge Series in Statistical and Probabilistic Mathematics, 13
— 2004 254 x 178 mm 252pp
— 978 0 521 82585 6 (0 521 82585 7)
Hardback £35.00

TEXTBOOK
Complex Variables
Introduction and Applications
Second edition
Mark J. Ablowitz
University of Colorado, Boulder
and Athanassios S. Fokas
University of Cambridge
‘… an excellent text, and one of the most complete and well-written books on complex variables I have seen … I highly recommend it to anyone interested in the subject…’
Optics and Photonics News
Ideal for use in undergraduate and introductory graduate level courses in complex variables.
Cambridge Texts in Applied Mathematics, 35
— 2003 228 x 152 mm 660pp
160 line diagrams 350 exercises
— 978 0 521 53428 4 (0 521 53428 3)
Paperback £29.99

Irresistible Integrals
Symbolics, Analysis and Experiments in the Evaluation of Integrals
George Boros
Xavier University of Louisiana
and Victor Moll
Tulane University, Louisiana
Uses the problem of exact evaluation of definite integrals as a starting point for exploring many areas of mathematics.
— 2004 228 x 152 mm 320pp
— 978 0 521 79186 1 (0 521 79186 3)
Hardback £45.00
— 978 0 521 79636 1 (0 521 79636 9)
Paperback £17.99

Harmonic Measure
John B. Garnett
University of California, Los Angeles
and Donald E. Marshall
University of Washington
This book provides an introduction to harmonic measure on plane domains and carefully discusses the work of Makarov, Carleson, Jones, Wolff, Bertilsson, Pommerenke and others.
New Mathematical Monographs, 2
— 2005 228 x 152 mm 588pp
126 line diagrams 1 table 190 exercises
— 978 0 521 47018 6 (0 521 47018 8)
Hardback £60.00

TEXTBOOK
Elementary Probability
Second edition
David Stirzaker
University of Oxford
‘… this book is a superb resource of theory and application, which should be on every lecturer’s shelves, and those of many students. You may never need to buy another book on probability.’
Keith Hirst, The Mathematical Gazette
Fully revised version of a popular undergraduate textbook on elementary probability theory.
— 2003 536pp
— 978 0 521 83344 8 (0 521 83344 2)
Hardback £70.00
— 978 0 521 53428 4 (0 521 53428 3)
Paperback £29.99

For regular email alerts visit www.cambridge.org/alerts
Foundations and Discrete Mathematics

How to Prove It
A Structured Approach
Second edition
Daniel J. Velleman
Amherst College, Massachusetts

Dan Velleman’s lively text prepares students to make the transition from solving problems to proving theorems by teaching them the techniques needed to read and write proofs. This new edition contains over 200 new exercises, selected solutions, and an introduction to Proof Designer software.

Contents:
1. Sentential logic;
2. Quantificational logic;
3. Proofs;
4. Relations;
5. Functions;
6. Mathematical induction
7. Infinite sets.

— 2006 10 tables 536 exercises
— 978 0 521 86124 3 (0 521 86124 1) Hardback £45.00
— 978 0 521 67599 4 (0 521 67599 5) Paperback £17.99
— Publication March 2006

Additive Combinatorics
T. Tao
University of California, Los Angeles
and V. Vu
University of California, San Diego

Additive combinatorics lies at the intersection of combinatorics and additive number theory. While this theory has been developing for many decades the field has seen exciting developments and dramatic changes in direction in recent years. This graduate level textbook will quickly allow students and researchers easy entry into this fascinating field. Here, for the first time, the authors bring together in a self-contained and systematic manner the many different tools from different fields that are used in additive combinatorics.

New Mathematical Monographs, 6

— 2006 228 x 152 mm 600pp
— 978 0 521 85386 6 (0 521 85386 9) Hardback c. £75.00
— Publication July 2006

Complexity and Cryptography
An Introduction
John Talbot
University College London
and Dominic Welsh
University of Oxford

Cryptography plays a crucial role in many aspects of today's world. This book comes with plenty of examples and exercises (many with hints and solutions), and is based on a highly successful course developed and taught over many years to undergraduate and graduate students in mathematics and computer science.

Contents:
1. Basics of cryptography;
2. Complexity theory;
3. Non-deterministic computation;
4. Probabilistic computation;
5. Symmetric cryptosystems;
6. One-way functions;
7. Public key cryptography;
8. Digital signatures;
9. Key establishment protocols;
10. Secure encryption;
11. Identification schemes;
Appendix 1;
Appendix 2;
Appendix 3;
Appendix 4;
Appendix 5;
Appendix 6;
Bibliography; Index.

— 2006 228 x 152 mm 336pp 172 exercises
— 978 0 521 85231 9 (0 521 85231 5) Hardback £55.00
— 978 0 521 61771 0 (0 521 61771 5) Paperback £23.99

Recent Bestsellers

A Course in Combinatorics
Second edition
J. H. van Lint
Technische Universität Eindhoven, Holland
and R. M. Wilson
California Institute of Technology

Second edition of a popular text which covers the whole field of combinatorics.

— 2001 247 x 174 mm 616pp
66 line diagrams
— 978 0 521 80340 3 (0 521 80340 3) Hardback £65.00
— 978 0 521 00601 9 (0 521 00601 5) Paperback £29.99
The long-awaited successor to image and signal compression. They will have application for economics, science, medical imaging and films; they may lead to insights in methods currently used in games and conventional computer graphics in terms of texture and variety over SuperFractals enable a vast improvement applications are explored: for example, a profusion of full-colour images. Potential applications are explored: for example, SuperFractals enable a vast improvement in terms of texture and variety over conventional computer graphics methods currently used in games and films; they may lead to insights in economics, science, medical imaging and biology; they will have application for image and signal compression.

- The long-awaited successor to Fractals Everywhere, with breathtaking, full-colour graphics throughout
- New mathematics throughout, with key ideas explained intuitively and rigorously, making the text available to a wide range of readers
- SuperFractals opens up many new avenues for research, suggesting novel applications in bioinformatics, image recognition, geometric modelling and content creation

Contents:

Introduction to Circle Packing
The Theory of Discrete Analytic Functions
Kenneth Stephenson
University of Tennessee

This book introduces a new mathematical topic known as ‘circle packing’, taking the reader from first definitions to late-breaking results. It can be enjoyed for visual appeal, the elegance of circle geometry, the clean theory, classical connections, or applications. There are intriguing, often very accessible, open problems throughout the book and seven Appendices on subtopics of independent interest.

Contents:

Conics
Keith Kendig
Cleveland State University

Conics is written in an easy, conversational style. This book is ideal for anyone having a little exposure to linear algebra and complex numbers.

Dolciani Mathematical Expositions, 29

- 2005 253 x 177 mm 368pp
- 978 0 883 85335 1 (0 883 85335 3)

Hardback £35.00

superfractals
Global Analysis on Foliated Spaces
Second edition
Calvin C. Moore
University of California, Berkeley
and Claude L. Schochet
Wayne State University, Detroit

Presents a complete proof of Connes’ Index Theorem generalized to foliated spaces, alongside the necessary background from analysis, geometry, and topology. It thus provides a natural introduction to the basic ideas of noncommutative topology. This edition has improved exposition, an updated bibliography, an index, and covers new developments and applications.

Mathematical Sciences Research Institute Publications, 9
— 2006 234 x 156 mm 296 pp
— 978 0 521 61305 7 (0 521 61305 1)
Paperback £24.99

Recent Bestsellers

Algebraic Topology
Allen Hatcher
Cornell University, New York

‘… the truly unusual abundance of instructive examples and complementing exercises is absolutely unique … the distinctly circumspect, methodologically inductive, intuitive, descriptively elucidating and very detailed style of writing give evidence to the fact that the author’s first priorities are exactly what students need when working with such a textbook, namely clarity, readability, steady motivation, guided inspiration, increasing demand, and as much self-containedness of the exposition as possible. No doubt, a very devoted and experienced teacher has been at work here, very much so to the benefit of beginners in the field of algebraic topology, instructors, and interested readers in general.’
Zentralblatt MATH

An introductory textbook suitable for use in a course or for self-study, featuring broad coverage of the subject and a readable exposition, with many examples and exercises.
— 2002 253 x 177 mm 556 pp
— 978 0 521 79540 1 (0 521 79540 0)
Paperback £20.99

Algebra and Number Theory

TEXTBOOK

Elementary Number Theory in Nine Chapters
Second edition
James J. Tattersall
Providence College, Rhode Island

This textbook is intended to serve as a one-semester introductory course in number theory and in this second edition it has been revised throughout and many new exercises have been added. Historical perspective is included and emphasis is given to some of the subject’s applied aspects; in particular the field of cryptography is highlighted. At the heart of the book are the major number theoretic accomplishments of Euclid, Fermat, Gauss, Legendre, and Euler, and to fully illustrate the properties of numbers and concepts developed in the text, a wealth of exercises have been included. It is assumed that the reader will have ‘pencil in hand’ and ready access to a calculator or computer. For students new to number theory, whatever their background, this is a stimulating and entertaining introduction to the subject.

Contents:
1. The intriguing natural numbers;
2. Divisibility; 3. Prime numbers;
4. Perfect and amicable numbers;
5. Modular arithmetic;
6. Congruences of higher degree;
7. Cryptography;
8. Representations;
9. Partitions;
10. Answers to selected exercises; Bibliography.
— 2005 228 x 152 mm 442 pp 20 tables 200 exercises
— 978 0 521 85014 8 (0 521 85014 2)
Hardback £55.00
— 978 0 521 61524 2 (0 521 61524 0)
Paperback £19.99

Multiplicative Number Theory I
Classical Theory
Hugh L. Montgomery
University of Michigan, Ann Arbor
and R.C. Vaughan
Pennsylvania State University

Prime numbers are the multiplicative building blocks of natural numbers. Understanding their overall influence and especially their distribution gives rise to central questions in mathematics and physics. The authors bring their extensive and distinguished research expertise to prepare the student for intelligent reading of the more advanced research literature.

Contents:
Preface; Notation; 1. Dirichlet series-I;
2. The elementary theory of arithmetic functions;
3. Principles and first examples of sieve methods;
4. Primes in arithmetic progressions-I;
5. Dirichlet series-II;
6. The prime number theorem;
7. Applications of the prime number theorem;
8. Further discussion of the prime number theorem;
9. Primitive characters and Gauss sums;
10. Analytic properties of the zeta function and L-functions;
11. Primes in arithmetic progressions-II;
12. Explicit formulae;
13. Conditional estimates;
14. Zeros;
15. Oscillations of error terms; Appendix A. The Riemann-Stieltjes integral; Appendix B. Bernoulli numbers and the Euler-MacLaurin summation formula; Appendix C. The gamma function; Appendix D. Topics in harmonic analysis.

Cambridge Studies in Advanced Mathematics, 97
— 2006 228 x 152 mm 650 pp 510 exercises 7 figures
— 978 0 521 84903 6 (0 521 84903 9)
Hardback c. £45.00
— Publication April 2006

Recent Perspectives in Random Matrix Theory and Number Theory
Edited by F. Mezzadri
University of Bristol
and N. C. Snaith
University of Bristol

In recent years the application of random matrix techniques to analytic number theory has been responsible for major advances in this area of mathematics. The aim of this book is to provide the necessary grounding as well as to inform the reader of recent progress.

London Mathematical Society Lecture Note Series, 322
— 2005 228 x 152 mm 528 pp
— 978 0 521 62058 1 (0 521 62058 9)
Paperback £38.00

For regular email alerts visit www.cambridge.org/alerts
**An Introduction to Sieve Methods and Their Applications**
Alina Carmen Cojocaru  
Princeton University, New Jersey  
and M. Ram Murty  
Queen’s University, Ontario

This book provides a motivated introduction to sieve theory. Rather than focus on technical details which obscure the beauty of the theory, the authors focus on examples and applications, developing the theory in parallel. Suitable for a senior level undergraduate course or an introductory graduate course in analytic number theory. *London Mathematical Society Student Texts, 66*

- 2005 228 x 152 mm 280pp 275 exercises  
- 978 0 521 84816 9 (0 521 84816 4)  
  Hardcover £50.00  
- 978 0 521 61275 3 (0 521 61275 6)  
  Paperback £22.99

---

**Automorphic Forms and L-functions for the Group GL(n,R)**
Dorian Goldfeld  
Columbia University, New York

L-functions associated to automorphic forms encode all classical number theoretic information. They are akin to elementary particles in physics. This book provides an entirely self-contained introduction to the theory of L-functions in a style accessible to graduate students with basic knowledge of classical analysis, complex variable theory, and algebra. *Cambridge Studies in Advanced Mathematics, 99*

- 2006 228 x 152 mm 430pp  
- 978 0 521 83771 2 (0 521 83771 5)  
  Hardcover c. £48.00  
- Publication June 2006

---

**Hilbert’s Tenth Problem**
Diophantine Classes and Extensions to Global Fields  
Alexandra Shlapentokh  
East Carolina University

Hilbert’s Tenth Problem – to find an algorithm to determine whether a polynomial equation in several variables with integer coefficients has integer solutions – was shown to be unsolvable in the late sixties. This book presents an account of results extending Hilbert’s Tenth Problem to integrally closed subrings of global fields. *New Mathematical Monographs, 7*

- 2006 228 x 152 mm 370pp  
- 978 0 521 83771 2 (0 521 83771 5)  
  Hardcover c. £55.00  
- Publication June 2006

---

**Irrational Numbers**
Ivan Niven  
University of Chicago

Ivan Niven provides a masterful exposition of some central results on irrational, transcendental, and normal numbers. He gives a complete treatment by elementary methods of the irrationality of the exponential, logarithmic, and trigonometric functions with rational arguments. *Carus Mathematical Monographs, 11*

- 2005 228 x 152 mm 228pp  
- 978 0 883 85038 1 (0 883 85038 9)  
  Paperback £26.00

---

**Algorithmic Number Theory**
Edited by J. P. Buhler  
Reed College, Oregon  
and P. Stevenhagen  
Universität Leiden

This comprehensive introduction for beginning graduate students contains articles by the leading experts in the field. It covers basic topics such as algorithmic aspects of number fields, elliptic curves, and lattice basis reduction and advanced topics including cryptography, computational class field theory, zeta functions and L-series, and quantum computing. *Mathematical Sciences Research Institute Publications, 44*

- 2006 234 x 156 mm 320pp  
- 978 0 521 80854 5 (0 521 80854 5)  
  Hardcover c. £40.00  
- Publication September 2006

---

**Classical and Quantum Orthogonal Polynomials in One Variable**
Mourad E. H. Ismail  
University of South Florida

This is the first modern account of the subject, written by one of world’s leading researchers in the area. Much material appears here for the first time in book form. The comprehensive bibliography, and collection of open research problems and exercises will make this an invaluable reference and graduate text. *Encyclopedia of Mathematics and its Applications, 98*

- 2005 236 x 154 mm 688pp  
- 978 0 521 78201 2 (0 521 78201 5)  
  Hardcover £80.00

---

**Noncommutative Rings**
I. N. Herstein  
University of Chicago

A classic advanced textbook, containing a cross-section of ideas, techniques and results that give the reader an unparalleled introductory overview of the subject. The author gives an integrated presentation of overall theory and its applications in, for example, the study of groups of matrices, and group representations. *Carus Mathematical Monographs, 15*

- 2005 228 x 152 mm 228pp  
- 978 0 883 85039 8 (0 883 85039 7)  
  Paperback £26.00
Lie Algebras of Finite and Affine Type
Roger Carter
University of Warwick

Lie algebras have many varied applications, both in mathematics and mathematical physics. This book provides a thorough but relaxed mathematical treatment of the subject. Proofs are given in detail and the only prerequisite is a sound knowledge of linear algebra. A detailed Appendix is included.

Cambridge Studies in Advanced Mathematics, 96
— 2005 228 x 152 mm 540pp
10 line diagrams
— 978 0 521 85138 1 (0 521 85138 6)
Hardback £45.00
— Publication June 2006

Central Simple Algebras and Galois Cohomology
Philippe Gille
Centre National de la Recherche Scientifique (CNRS), Paris
and Tamás Szamuely
Alfréd Rényi Institute of Mathematics, Hungarian Academy of Sciences, Budapest

The first comprehensive, modern introduction to the theory of central simple algebras over arbitrary fields. Assuming only a solid background in algebra, it reaches such advanced results as the Merkurjev-Suslin theorem. It is a graduate textbook and a reference for researchers working in algebra, algebraic geometry or K-theory.

Cambridge Studies in Advanced Mathematics, 101
— 2006 228 x 152 mm 356pp 80 exercises
— 978 0 521 86103 8 (0 521 86103 9)
Hardback £55.00
— 978 0 521 58631 3 (0 521 58631 3)
Paperback £26.00
— Publication April 2006

Elements of the Representation Theory of Associative Algebras
I. Assem
Université de Sherbrooke, Canada
A. Skowronski
University of Miyazaki, Japan
and D. Simson
Uniwersytet Mikolaja Kopernika, Poland

The aim of this book is to provide an elementary but up-to-date introduction to the representation theory of algebras. Representation-finite and representation-infinite cases are both covered in detail with many concrete examples to illustrate the theory. The treatment is accessible to beginning graduate students and researchers in related areas.

London Mathematical Society Student Texts, 65
— 2006 228 x 152 mm 472pp
— 978 0 521 58423 4 (0 521 58423 X)
Hardback £55.00
— 978 0 521 58631 3 (0 521 58631 3)
Paperback £26.00
— Publication April 2006

Free Ideal Rings and Localization in General Rings
Paul Cohn
University College London

This book presents the theory of free ideal rings (firs) in detail. Particular emphasis is placed on rings with a weak algorithm, exemplified by free associative algebras, and there is also a full account of localization. Each chapter has a number of exercises plus open problems and historical notes.

New Mathematical Monographs, 3
— 2006 228 x 152 mm 704pp
38 line diagrams 864 exercises 19 figures
— 978 0 521 85337 8 (0 521 85337 0)
Hardback £75.00
— Publication April 2006

Handbook of Tilting Theory
Edited by Henning Krause
Universität-Gesamthochschule Paderborn, Germany
Dieter Happel
Technische Universität Chemnitz-Zwickau, Germany
and Lidia Angeleri Huegel
Università degli Studi dell’Insubria, Italy

Tilting theory originates in the representation theory of finite dimensional algebras. Today the subject of this book is of much interest in various areas of mathematics, like finite and algebraic group theory, commutative and non-commutative algebraic geometry, and algebraic topology. The aim of this book is to present the basic concepts of tilting theory as well as the variety of applications. It contains a collection of key articles, which together form a handbook of the subject, and provide an both an introduction and reference for newcomers and experts alike.

London Mathematical Society Lecture Note Series, 332
— 2006 228 x 152 mm c. 400pp
— 978 0 521 68045 5 (0 521 68045 X)
Paperback c. £29.99
— Publication March 2006
Theory of Finite Simple Groups
Gerhard Michler
Universität Duisburg, Essen
This book provides the first representation theoretic and algorithmic approach to the theory of abstract finite simple groups. Concrete applications are demonstrated in the construction of the simple satellites of the known simple groups which are not uniquely determined by a given centralizer.

New Mathematical Monographs, 8
— 2006 228 x 152 mm c. 680pp 200 tables
— 978 0 521 86625 5 (0 521 86625 1)
Hardback c. £85.00
— Publication October 2006

Integral Closure of Ideals, Rings, and Modules
Craig Huneke
University of Kansas
and Irena Swanson
Reed College, Portland
Integral closure is a topic with applications within Commutative Algebra, Number Theory, Algebraic Geometry and Computational Algebra. The authors provide a resource for both experts and graduate students giving material from basic notions to the forefront of the topic. The well structured text is accompanied by many examples and exercises.

London Mathematical Society Lecture Note Series, 336
— 2006 228 x 152 mm c. 350pp
— 978 0 521 68860 4 (0 521 68860 4)
Paperback c. £35.00
— Publication October 2006

Combinatorial Matrix Classes
Richard A. Brualdi
University of Wisconsin, Madison
The first book devoted exclusively to existence questions, constructive algorithms, enumeration questions, and other properties concerning classes of matrices of combinatorial significance. Combinatorial Matrix Classes is a natural sequel to the author’s previous book Combinatorial Matrix Theory written with H.J. Ryser, and is likely to achieve similar classic status.

Encyclopedia of Mathematics and its Applications, 108
— 2006 228 x 152 mm c. 560pp 4 tables
— 978 0 521 86565 4 (0 521 86565 4)
Hardback c. £60.00
— Publication September 2006

Recent Bestsellers

TEXTBOOK
A Computational Introduction to Number Theory and Algebra
Victor Shoup
New York University
This introductory book emphasises algorithms and applications, such as cryptography and error correcting codes.

— 2005 247 x 174 mm 534pp 456 exercises
— 978 0 521 85154 1 (0 521 85154 8)
Hardback £30.00

Algebra and Geometry
Alan F. Beardon
University of Cambridge
Unified introduction to algebra and geometry, emphasising links between the topics. Ideal for self-study.

— 2005 228 x 152 mm 338pp
— 978 0 521 81362 4 (0 521 81362 X)
Hardback £50.00
— 978 0 521 89049 6 (0 521 89049 7)
Paperback £22.99

Concrete Abstract Algebra
From Numbers to Gröbner Bases
NIELS LAURITZEN
Aarhus Universitet, Denmark
Abstract algebra based on concrete examples and applications. All the traditional material with exciting new directions.

— 2003 228 x 152 mm 254pp
— 978 0 521 82678 5 (0 521 82678 0)
Hardback c. £60.00
— 978 0 521 82679 2 (0 521 82679 9)
Paperback £22.99

Computational Science, Mechanics and Modelling

TEXTBOOK
Classical Mechanics: An Undergraduate Text
R. Douglas Gregory
University of Manchester
Gregory’s Classical Mechanics is a thorough, self-contained and highly readable account of a subject many students find difficult. The author’s clear and systematic style promotes a good understanding of the subject: each concept is motivated and illustrated by worked examples, while problem sets provide plenty of practice for understanding and technique.

• Suitable for a wide range of undergraduate mechanics courses
• Profusely illustrated and thoroughly class-tested, with a clear direct style
• Model solutions for problems available to teachers from www.cambridge.org/gregory


— 2006 247 x 174 mm 450pp
— 193 line diagrams 3 tables 348 exercises
— 978 0 521 82678 5 (0 521 82678 0)
Hardback c. £60.00
— 978 0 521 82679 2 (0 521 82679 9)
Paperback £22.99
— Publication March 2006
**A Guide to MATLAB**
For Beginners and Experienced Users
Second edition
Brian R. Hunt
University of Maryland, College Park
Ronald L. Lipsman
University of Maryland, College Park
Jonathan M. Rosenberg
University of Maryland, College Park
Kevin R. Coombes
University of Texas
John E. Osborn
University of Maryland
and Garrett J. Stuck
University of Maryland, College Park

This is a short, focused introduction to MATLAB, a comprehensive software system for mathematical and technical computing. It contains concise explanations of essential MATLAB commands, as well as easily understood instructions for using MATLAB’s programming features, graphical capabilities, simulation models, and rich desktop interface. For the beginner it explains everything needed to start using MATLAB, while experienced users making the switch to MATLAB 7 from an earlier version will also find much useful information here.

**Contents:**

- 2006 247 x 174 mm 377pp
- 145 line diagrams
- 39 exercises
- 978 0 521 81750 9 (0 521 81750 1)
- Hardcover £45.00
- Publication June 2006

**Extending Mechanics to Minds**
The Mechanical Foundations of Psychology and Economics
Jon Doyle
North Carolina State University

This book deploys the mathematical axioms of modern rational mechanics to understand minds as mechanical systems that exhibit forces, inertia, and motion. Using precise mental models developed in artificial intelligence, the author analyzes motivation, attention, reasoning, learning, and communication in these mechanical terms.

**Contents:**

- 2007 228 x 152 mm c. 480pp
- 978 0 521 86197 7 (0 521 86197 7)
- Hardcover c. £50.00
- Publication June 2007

**Pattern Formation**
An Introduction to Methods
Rebecca Hoyle
University of Surrey

Beautiful and intricate patterns arise everywhere in nature. This book provides an introduction to the range of mathematical theory and methods used to analyse and explain their development and formation. Suitable as an upper-undergraduate textbook for mathematics students or as a fascinating resource for readers in physics and biology.

**Contents:**

- 2006 247 x 174 mm 422pp
- 100 line diagrams
- 30 half-tones
- 8 colour plates
- 9 tables
- 50 exercises
- 978 0 521 81750 9 (0 521 81750 1)
- Hardcover £45.00
- Publication April 2006

**For regular email alerts visit www.cambridge.org/alerts**
The Mathematical Foundations of Mixing

The Linked Twist Map as a Paradigm in Applications: Micro to Macro, Fluids to Solids

Rob Sturman
University of Bristol

Julio Ottino
Northwestern University

and Stephen Wiggins
University of Bristol

Linked Twist Maps can provide a unifying framework for understanding many types of fluid mixing, ranging from the very small to the very large, from fluid to solids. The authors discuss the definition and construction of LTMs, provide examples of specific mixers, and present a number of open problems.

Dynamical Systems, Numerics and Differential Equations

Dynamical Systems

Edited by Albert Fathi
Ecole Normale Supérieure, Lyon

and J.-C. Yoccoz
Collège de France, Paris

Michael Robert Herman had a profound impact on the theory of dynamical systems over the last 30 years. His seminar at the École Polytechnique had major worldwide influence and was the main vector in the development of the theory of dynamical systems in France. His interests covered most aspects of the subject though closest to his heart were the so-called small divisors problems, in particular those related to the stability of quasiperiodic motions. This volume aims to reflect the depth and variety of these interests and the frontier of present research; a frontier shaped decisively by Michael Herman's contributions.

Spectral Approximation of Partial Differential Equations

An Introduction to Reaction-Diffusion Theory

Practical Applied Mathematics

Modelling, Analysis, Approximation

Sam Howison
University of Oxford

Used either by upper-undergraduate students, or as extra reading for any applied mathematician, this book illustrates how the reader's knowledge can be used to describe the world around them. Topics include distributions, asymptotic methods and the basics of modelling. Applications range from piano tuning to egg incubation and traffic flow.

Textbook

Dynamical Systems, Numerics and Differential Equations

Analytical Mechanics

Louis N. Hand
Cornell University, New York

and Janet D. Finch
Cornell University, New York

An advanced undergraduate-level textbook introducing the key analytical techniques of classical mechanics.

— 1999 253 x 177 mm 592pp
219 line diagrams 26 tables 250 exercises
— 978 0 521 57327 6 (0 521 57327 0)
Hardback £95.00
— 978 0 521 57572 0 (0 521 57572 9)
Paperback £43.00

Spectral methods are useful techniques for solving integral and partial differential equations, many of which appear in fluid mechanics and engineering problems. Based on a graduate course, these popular and efficient techniques are presented with both rigorous analysis and extensive coverage of their wide range of applications.

An Introduction to Reaction-Diffusion Theory

David Needham
University of Reading

Rapidly developing research areas such as mathematical biology, ecology, demography and chemistry often depend on underlying theory from reaction and diffusion. Aimed at upper-undergraduate and MSc students, this book provides a solid grounding in the mathematical ideas involved, supplementing these with numerous examples to illustrate their application.
Geophysical fluid dynamics illustrates the rich interplay between mathematical analysis, nonlinear dynamics, statistical theories, qualitative models and numerical simulations. This self-contained introduction will suit a multi-disciplinary audience ranging from beginning graduate students to senior researchers. It is the first book following this approach and contains many recent ideas and results.

- 2006 247 x 174 mm 600pp
- 150 line diagrams 10 tables
- 978 0 521 85637 9 (0 521 85637 X)
- Publication July 2006

**The Equations of Oceanic Motions**

Peter Müller

University of Hawaii, Manoa

This comprehensive textbook derives and classifies the most common dynamic equations used in physical oceanography, emphasizing the assumptions made and the physical processes eliminated. Providing a clear exposition of the concepts for graduate students and researchers of physical oceanography, all of the necessary mathematical tools are covered in appendices.

- 2006 247 x 174 mm 380pp
- 24 line diagrams
- 978 0 521 85513 6 (0 521 85513 6)
- Hardback c. £45.00
- Publication July 2006

**Predictability of Weather and Climate**

Edited by Tim N. Palmer

European Centre for Medium-Range Weather Forecasts

and Renate Hagedorn

European Centre for Medium-Range Weather Forecasts

With contributions by leading experts, including an unpublished paper by Ed Lorenz, this book covers many topics in weather and climate predictability. It will interest those in the fields of environmental science and weather and climate forecasting, from graduate students to researchers, by examining theoretical and practical aspects of predictability.

- 2006 247 x 174 mm 700pp
- 230 line diagrams
- 100 half-tones 14 colour plates
- 978 0 521 84882 4 (0 521 84882 2)
- Hardback c. £85.00
- Publication July 2006

**Dynamic Data Assimilation**

A Least Squares Approach

John Lewis

Desert Research Institute, Reno, Nevada

S. Lakshmivarahan

University of Oklahoma

and Sudarshan Dhall

University of Oklahoma

A basic one-stop reference for graduate students and researchers. Based on graduate courses taught over a decade to mathematicians, scientists, and engineers, and its modular structure accommodates the various audience requirements. Chapters end with a section that provides pointers to the literature, and a set of exercises with instructive hints.

- 2006 234 x 156 mm 700pp
- 29 tables
- 208 exercises 110 figures
- 978 0 521 85155 8 (0 521 85155 6)
- Hardback c. £80.00
- Publication May 2006

**Geometry and Topology for Mesh Generation**

Herbert Edelsbrunner

Duke University, North Carolina

Mesh generation combines different approaches to problem solving from mathematics, computer science, and engineering. This book emphasizes topics that are elementary, attractive, useful, interesting, and lend themselves to teaching, making it an ideal graduate text for courses on mesh generation.

‘The book is an ideal graduate text for courses on mesh generation. The topics of the book are elementary, attractive, useful, interesting, and one section deals with open question in this area.’

Mathematical Reviews

‘… well organised … We recommend the book to graduate students and researchers in computational geometry.’


Cambridge Monographs on Applied and Computational Mathematics, 7

- 2006 228 x 152 mm c. 192pp
- 978 0 521 68207 7 (0 521 68207 X)
- Paperback £17.99
- Publication March 2006
Recent Bestsellers

**TEXTBOOK**

**An Introduction to Partial Differential Equations**
Yehuda Pinchover
Technion – Israel Institute of Technology, Haifa
and Jacob Rubinstein
Indiana University

A complete introduction to partial differential equations.
- 2005  247 x 174 mm  384pp
- 35 line diagrams  200 exercises 35 figures
- 978 0 521 84886 2 (0 521 84886 5)
  Hardback £65.00
- 978 0 521 61323 1 (0 521 61323 X)
  Paperback £27.99

**TEXTBOOK**

**An Introduction to Ordinary Differential Equations**
James C. Robinson
University of Warwick

A first course in ordinary differential equations.
- 2004  247 x 174 mm  414pp
- 140 line diagrams  7 half-tones 120 exercises
- 978 0 521 82650 1 (0 521 82650 0)
  Hardback £60.00
- 978 0 521 53391 1 (0 521 53391 0)
  Paperback £27.99

**INTERACTIVE CD-ROM**

**Multimedia Fluid Mechanics – Multilingual Version**
G. M. Homsy
University of California, Santa Barbara
H. Aref
Virginia Polytechnic Institute and State University
K. S. Breuer
Brown University, Rhode Island
S. Hochgreb
Sandia National Laboratories, Peru
J. R. Koseff
Stanford University, California
and B. R. Munson
Iowa State University
K. G. Powell
Michigan State University
C. R. Robertson
Stanford University, California
S.T. Thordalsen
University of Illinois, Urbana Champaign
- 2004
- 978 0 521 60476 5 (0 521 60476 1)
  CD-ROM £15.99 +VAT

**TEXTBOOK**

**An Introduction to Numerical Analysis**
Endre Süli
University of Oxford
and David F. Mayers
University of Oxford

Introduction to numerical analysis combining rigour with practical applications. Numerous exercises plus solutions.
- 2003  228 x 152 mm  444pp
- 100 line diagrams 3 colour plates
- 978 0 521 81026 5 (0 521 81026 4)
  Hardback £60.00
- 978 0 521 00794 8 (0 521 00794 1)
  Paperback £27.99

**TEXTBOOK**

**A Gallery of Fluid Motion**
M. Samimy
Ohio State University
K. S. Breuer
Brown University, Rhode Island
L. G. Leal
University of California, Santa Barbara
and P. H. Steen
Cornell University, New York

Images of fluid flow, all in full colour, all winners of the annual DFD/APS competition.
- 2004  294 x 210 mm  128pp
- 41 half-tones  63 colour plates
- 978 0 521 82773 7 (0 521 82773 6)
  Hardback £50.00
- 978 0 521 53500 7 (0 521 53500 X)
  Paperback £22.99

**TEXTBOOK**

**An Introduction to Fluid Dynamics**
G. K. Batchelor
University of Cambridge

A re-issue of Professor Batchelor’s classic text on fluid dynamics, first published in 1967.
*Cambridge Mathematical Library*
- 2000  228 x 152 mm  635pp
- 172 line diagrams
- 978 0 521 66396 0 (0 521 66396 2)
  Paperback £27.99

**TEXTBOOK**

**Differential Equations Linear, Nonlinear, Ordinary, Partial**
A. C. King
University of Birmingham
J. Billingham
University of Birmingham
and S. R. Otto
University of Birmingham

For students taking second courses; subject is central and required at second year and above.
- 2003  247 x 174 mm  554pp
- 169 line diagrams  173 exercises
- 978 0 521 81658 8 (0 521 81658 0)
  Hardback £60.00
- 978 0 521 01687 2 (0 521 01687 8)
  Paperback £27.99

Mathematical Physics and Biology

**FEATURE TITLE**

**The New Physics For the Twenty-First Century**
Edited by Gordon Fraser

Fifteen years on from the highly praised The New Physics, new scientific advances have led to a dramatic reappraisal of our understanding of the world around us, and made a significant impact on our lifestyle. Underpinning all other branches of science, physics affects the way we live our lives and ultimately how life itself functions. This book covers the key frontiers in modern-day physics, exploring our universe – from the particles inside an atom to the stars that make up a galaxy, from brain research to the latest advances in computing.
- Lively and accessible account of the hottest topics in physics
- Written by leading international experts including Nobel prize winners
- Builds on the highly successful New Physics with a completely new range of subjects

**Contents:**
Introduction Gordon Fraser; Part I. Matter and the Universe:
1. Cosmology Wendy Freedman and Rocky Kolb; 2. Gravity Ronald Adler;
3. Astrophysics Arnon Dar; 4. Particles and the standard model Chris Quigg;
5. Superstrings Michael Green; Part II. Quantum Matter; 6. Atoms and photons Claude Cohen-Tannoudji and Jean Dalibard; 7. The quantum world of ultra-cold atoms

— 2006 247 x 174 mm 1368pp
235 line diagrams 46 half-tones
— 978 0 521 86153 3 (0 521 86153 5)
Hardback  c. £75.00
— 978 0 521 67971 8 (0 521 67973 7)
Paperback  c. £35.00
— Publication March 2006

Differential Geometry and Lie Groups for Physicists
Márián Fecko
Comenius University, Bratislava
Covering subjects including manifolds, tensor fields, spinors, and differential forms, this textbook introduces geometrical topics useful in modern theoretical physics and mathematics. It develops understanding through over 1000 short exercises, and is suitable for advanced undergraduate or graduate courses in physics, mathematics and engineering.

— 2006 247 x 174 mm 600pp
95 line diagrams 1100 exercises
— 978 0 521 84507 6 (0 521 84507 6)
Hardback  c. £60.00
— Publication October 2006

Moonshine Beyond the Monster
The Bridge Connecting Algebra, Modular Forms and Physics
Terry Gannon
University of Alberta
This book describes the general theory of Moonshine and its underlying concepts, emphasising the fundamental ideas and examples behind some of the most fascinating topics in mathematics and physics. For graduates and researchers working in areas such as algebra, number theory, geometry, analysis, quantum field theory and conformal field theory.

— 2006 247 x 174 mm 558pp
82 line diagrams 9 tables 187 exercises
— 978 0 521 83531 2 (0 521 83531 3)
Hardback  c. £75.00
— Publication September 2006
The Three-Body Problem
Mauri Valtonen
University of Turku, Finland
and Hannu Karttunen
University of Turku, Finland

The book surveys statistical and
perturbation methods for the solution of
the general three body problem,
providing solutions based on combining
orbit calculations with semi-analytic
methods for the first time. This book is
essential reading for students in this
rapidly expanding field.

— 2006 247 x 174 mm 368pp
85 line diagrams 96 exercises 85 figures
978 0 521 85224 1 (0 521 85224 2)
Hardback £45.00
— Publication March 2006

Geometry of Quantum
States
An Introduction to Quantum
Entanglement
Ingemar Bengtsson
Stockholms Universitet
and Karol Zyczkowski
Stockholms Universitet

An introduction to the key concepts of
quantum information processing. The
authors cover basic quantum theory, the
geometry of quantum state spaces and
quantum entanglement, which has
become a key resource for quantum
computation. This richly-illustrated book is
useful to graduates and researchers
interested in quantum information theory.

— 2006 247 x 174 mm 440pp
100 line diagrams 15 half-tones 18 tables 84 exercises
978 0 521 81451 5 (0 521 81451 0)
Hardback c. £50.00
— Publication May 2006

Elements of Statistical
Mechanics
With an Introduction to
Quantum Field Theory and
Numerical Simulation
Ivo Sachs
Ludwig-Maximilians-Universität Munchen
Siddartha Sen
Trinity College, Dublin
and James Sexton
Trinity College, Dublin

A concise introduction to key concepts
and tools of modern statistical
mechanics. Self-contained, it combines
analytical and numerical techniques, and
presents a diverse range of applications.
Built on many years’ teaching experience,
this textbook is ideal for advanced
students across the physical sciences.

— 2006 247 x 174 mm 320pp 3 tables
84 exercises 72 figures
978 0 521 84198 6 (0 521 84198 4)
Hardback £35.00
— Publication April 2006

Physics of Solitons
Thierry Dauxois
Ecole Normale Supérieure, Lyon
and Michel Peyrard
Ecole Normale Supérieure, Lyon

Solitons are exceptionally stable
standing waves which appear in many
areas of physics. This textbook
introduces the basic properties of
solitons using examples from
macroscopic physics before presenting
the main theoretical methods. It gives
an instructive view of the physics of
solitons, and their applications, for
advanced students of physics.

— 2006 247 x 174 mm 432pp
124 line diagrams 25 half-tones
978 0 521 85421 4 (0 521 85421 0)
Hardback £40.00
— Publication March 2006

Introductory
Computational Physics
Andi Klein
Los Alamos National Laboratory
and Alexander Godunov
Old Dominion University, Virginia

This advanced textbook, updated and
revised for its second edition, provides
an introduction to the methods and
tools of computational physics, and
offers an overview of recent progress in
scientific computing. Important concepts
are illustrated with relevant step-by-step
examples, including program listings in
Java™ and exercises.

— 2006 246 x 189 mm 428pp
37 line diagrams 5 half-tones 3 tables
169 exercises
978 0 521 82569 6 (0 521 82569 5)
Hardback £35.00
— Publication March 2006

Mathematical Physics and Biology

Thermodynamics of
Natural Systems
Second edition
G. M. Anderson
University of Toronto

A new and greatly expanded edition of
an excellent textbook specifically
tailored for Earth scientists. Beginning
with fundamental concepts, it gradually
builds to an advanced treatment of
natural systems using mathematical
concepts in an intuitive way. Ideal for
advanced undergraduate and graduate
students in geology, geochemistry,
geophysics and environmental science.

— 2005 246 x 189 mm 664pp
197 line diagrams
978 0 521 84772 8 (0 521 84772 9)
Hardback c. £50.00

Systems Biology
Properties of Reconstructed
Networks
Bernhard O. Palsson
University of California, San Diego

This textbook, the first devoted to systems
biology, describes how to model
networks, how to determine their
properties, and how to relate these to
phenotypic functions. The links between
the mathematical ideas and biological
processes are made clear, and the book
reflects the irreversible trend of increasing
mathematical content in biology
education. Therefore to assist both
teacher and student, in an associated
web site Palsson provides problem sets.

Contents: Preface; 1. Introduction; 2. Basic
categories in systems biology; Part I.
Reconstruction of Biochemical Networks:
3. Metabolic networks; 4. Regulatory
networks; 5. Signalling networks;
Part II. Mathematical Representation
of Reconstructed Networks: 6. Basic
features of S; 7. Topological properties;
space of S; 10. The left null space of S;
11. The row and column spaces of S; Part III. Capabilities
of Reconstructed Networks: 12. Dual
causality; 13. Properties of solution spaces;
14. Sampling properties of solution spaces;
sensitivity; 17. Epilogue; Appendix A.
Nomenclature and abbreviations;
Appendix B. E. coli core metabolic network;
Bibliography; Index.

— 2006 253 x 177 mm 320pp
978 0 521 85963 5 (0 521 85963 4)
Hardback £35.00
— Publication March 2006

Elements of Statistical
Mechanics
With an Introduction to
Quantum Field Theory and
Numerical Simulation
Ivo Sachs
Ludwig-Maximilians-Universität Munchen
Siddartha Sen
Trinity College, Dublin
and James Sexton
Trinity College, Dublin

A concise introduction to key concepts
and tools of modern statistical
mechanics. Self-contained, it combines
analytical and numerical techniques, and
presents a diverse range of applications.
Built on many years’ teaching experience,
this textbook is ideal for advanced
students across the physical sciences.

— 2006 247 x 174 mm 320pp 3 tables
84 exercises 72 figures
978 0 521 84198 6 (0 521 84198 4)
Hardback £35.00
— Publication April 2006
Algebraic Statistics for Computational Biology
Edited by L. Pachter
University of California, Berkeley
and B. Sturmfels
University of California, Berkeley

This book explains how computational algebra provides tools for designing new algorithms for exact, accurate results in the quantitative analysis of biological sequence data. These are applied to biological problems such as aligning genomes, finding genes and constructing phylogenies. As the first book in the exciting and dynamic area, it will be welcomed as a text for self-study or for course use.


— 2005 253 x 177 mm 452pp 100 line diagrams 5 tables
— 978 0 521 85700 0 (0 521 85700 7) Hardback £35.00

Textbook
The Theoretical Biologist’s Toolbox
Quantitative Methods for Population Biology
Marc Mangel
University of California, Santa Cruz

Mathematical modelling is widely used in ecology and evolutionary biology and it is a topic that many biologists find difficult to grasp. In this new textbook Marc Mangel provides a no-nonsense introduction to the skills needed to understand the principles of theoretical and mathematical biology. Fundamental theories and applications are introduced using numerous examples from current biological research, complete with illustrations to highlight key points. Exercises are also included throughout the text to show how theory can be applied and to test knowledge gained so far. Suitable for advanced undergraduate courses in theoretical and mathematical biology, this book forms an essential resource for anyone wanting to gain an understanding of theoretical ecology and evolution.

• Grounded in real biological problems, this book helps readers see the immediate relevance of mathematics
• Written in a friendly style with exercises interspersed throughout the text
• Contains a mixture of deterministic and stochastic methods


— 2006 247 x 174 mm 392pp 57 line diagrams 29 half-tones
— 978 0 521 83045 4 (0 521 83045 1) Hardback £35.00
— 978 0 521 53748 3 (0 521 53748 7) Paperback £24.99
— Publication August 2006

Recent Bestsellers

Textbook
The Geometry of Physics
An Introduction
Second edition
Theodore Frankel
University of California, San Diego

Introduces, in a geometrical way, the mathematics needed for a deeper understanding of both classical and modern physics.

— 2004 720pp 120 line diagrams
— 978 0 521 83330 1 (0 521 83330 2) Hardback £85.00
— 978 0 521 53927 2 (0 521 53927 7) Paperback £35.00

Visit our website at www.cambridge.org
Statistics, Probability and Finance

Selected Statistical Papers of Sir David Cox

Sir David Cox is one of the seminal statistical thinkers of the twentieth and twenty-first centuries. In this selection of his work, Professor Cox reviews his most influential and interesting papers published before 1993. Each paper is the subject of a candid commentary written especially for this collection. He describes the context in which the papers arose and their subsequent influence. He also identifies avenues for future research. Together, the papers and commentaries provide excellent coverage of many of the most significant advances in statistics in recent times.

- Sir David Cox is one of the greatest scientists of the twentieth century
- Each paper the subject of a candid commentary by Professor Cox written especially for this collection
- Includes the most important and most interesting papers published by Professor Cox before 1993

Contents: Volume I: Foreword D. J. Hand and A. M. Herzberg; Preface David Cox; Part I. Design of Investigations: Design of experiments; Sampling; Part II. Statistical Methods: Point process data; Binary data; Survival data; Multivariate analysis; Miscellaneous. Part III. Applications.


Selected Statistical Papers of Sir David Cox

Volume 1: Design of Investigations, Statistical Methods and Applications

David Cox

Selected Statistical Papers

Hardback £100.00


David Cox

Selected Statistical Papers

Hardback £100.00

FORTHCOMING

Principles of Statistical Inference

D. R. Cox

Nuffield College, Oxford


Design of Comparative Experiments

R. A. Bailey

Queen Mary, University of London

This book teaches the basic theory of experimental design through real experimental examples, describing how the theory informs the choices that must be made. An ideal resource for every working statistician, it is also suitable for a one-term course at the advanced undergraduate or beginning graduate level.


Design for Real-Life Sample Surveys

Non-Simple-Random Samples and Weighted Data

Sergey Dorofeev

Roy Morgan International

and Peter Grant

Roy Morgan Research

Samples used in social and commercial surveys are usually less random than many people using them realise, or have been taught to analyse. This book, for practising researchers, introduces the challenges posed by less-than-perfect samples, giving background knowledge, practical guidance and, above all, realistic and implementable solutions.


Design of Comparative Experiments

R. A. Bailey

Queen Mary, University of London

This book teaches the basic theory of experimental design through real experimental examples, describing how the theory informs the choices that must be made. An ideal resource for every working statistician, it is also suitable for a one-term course at the advanced undergraduate or beginning graduate level.


Design for Real-Life Sample Surveys

Non-Simple-Random Samples and Weighted Data

Sergey Dorofeev

Roy Morgan International

and Peter Grant

Roy Morgan Research

Samples used in social and commercial surveys are usually less random than many people using them realise, or have been taught to analyse. This book, for practising researchers, introduces the challenges posed by less-than-perfect samples, giving background knowledge, practical guidance and, above all, realistic and implementable solutions.

The Calculus of Retirement Income
Financial Models for Pension Annuities and Life Insurance
Moshe A. Milevsky
York University, Toronto

'This very readable book is a landmark in the area of life insurance, pensions and long risk analysis. Integrating actuarial and financial approaches, the book provides an approach which is both theoretically elegant and practical in applications. It is highly recommended for both academics and those in industry.'
Michael Orszag, Watson Wyatt


— 2006 228 x 152 mm 352pp 93 tables
— 978 0 521 84258 7 (0 521 84258 1)
Hardback £25.00
— Publication May 2006

Matrix Algebra
Karim M. Abadir
Imperial College of Science, Technology and Medicine, London
and Jan R. Magnus
Universiteit van Tilburg


'These authors have achieved the remarkable feat of writing a textbook of matrix algebra cunningly concealed as a structured sequence of exercises and worked answers. The book should prove popular with students intent on teaching themselves and with instructors who wish to set challenging and educative exercises. Recommended unequivocally to all parties.'
Dr Stephen Pollock, Queen Mary College
Econometric Exercises, 1
— 2005 228 x 152 mm 488pp
9 line diagrams
— 978 0 521 82289 3 (0 521 82289 0)
Hardback £50.00
— 978 0 521 53746 9 (0 521 53746 0)
Paperback £22.99

C++ Design Patterns and Derivatives Pricing
Mark S. Joshi
Royal Bank of Scotland

Shows how to combine mathematical finance and object-oriented programming to practical effect.

'This is a short book, but an elegant one. It would serve as an excellent course text for a course on the practical aspects of mathematical finance.'

Short Book Reviews

Mathematics, Finance and Risk, 2
— 2004 247 x 174 mm 214pp 38 exercises
— 978 0 521 83235 7 (0 521 83235 7)
Hardback £35.00

An Elementary Introduction to Mathematical Finance Options and other Topics
Second edition
Sheldon M. Ross
University of California, Berkeley

Contains a new chapter on optimization methods in finance, a new section on Value at Risk and Conditional Value at Risk, plus much more.

— 2003 228 x 152 mm 270pp
19 line diagrams 9 tables 150 exercises
— 978 0 521 81429 4 (0 521 81429 4)
Hardback £30.00

For regular email alerts visit www.cambridge.org/alerts
Elements of Pattern Analysis
Nello Cristianini
University of California, Davis
Tijl De Bie
University of Southampton
and John Shawe-Taylor
University of Southampton

A new generation of students needs to learn about the interplay between computer science and statistics but do not wish to learn a heavy mathematical overhead. Elements of Pattern Analysis provides the textbook they need: applications and key topics such as visualization, hypothesis testing, patterns in strings, data mining, random graphs are all given crisp treatments. Appendices summarise background topics in optimization, statistics and formal language theory. Computer scientists, electrical engineers and computational biologists will love this book.

-- 2006 247 x 174 mm 200pp
10 line diagrams
-- 978 0 521 85988 2 (0 521 85988 3)
Hardback c. £35.00
-- Publication August 2006

The Text Mining Handbook
Advanced Approaches in Analyzing Unstructured Data
Ronen Feldman
Bar-Ilan University, Israel
and James Sanger
ABS Ventures, Boston, Massachusetts

Text mining is a new and exciting area of computer science that tries to solve the crisis of information overload by combining techniques from data mining, machine learning, natural language processing, information retrieval, and knowledge management. The Text Mining Handbook presents a comprehensive discussion of the state-of-the-art in text mining and link detection. In addition to providing an in-depth examination of core text mining and link detection algorithms and operations, the book examines advanced pre-processing techniques, knowledge representation considerations, and visualization approaches, ending with real-world applications.

-- 2006 253 x 177 mm 400pp
-- 978 0 521 83657 9 (0 521 83657 3)
Hardback c. £40.00
-- Publication June 2006
Signal Design for Good Correlation
For Wireless Communication, Cryptography, and Radar
Solomon W. Golomb
University of Southern California
and Guang Gong
University of Waterloo, Ontario

This comprehensive, up-to-date text and reference presents all the necessary mathematical background to explain how signals with favourable correlation properties are generated, and to show how they satisfy the appropriate correlation constraints. Applications such as CDMA telephony, coded radar, and stream cipher generation are treated in depth.

— 2005 228 x 152 mm 464pp
— 978 0 521 82104 9 (0 521 82104 5)
Hardback £45.00

General and Recreational Mathematics

Music: A Mathematical Offering
David J. Benson
University of Aberdeen

Since the time of the ancient Greeks, much has been speculated about the relation between mathematics and music: from harmony and number theory, to musical patterns and group theory. Benson provides a wealth of information here to enable the teacher, the student, or the interested amateur to understand, at varying levels of technicality, the real interplay between these two ancient disciplines. This is a must-have book if you want to know about the music of the spheres or digital music and many things in between.

• The only modern account that is comprehensive and thorough
• Lots of musical examples that make the mathematical ideas concrete; lots of illustrations
• Self-contained for the enthusiast but also usable as a course text in mathematics, physics and engineering departments

Contents: Preface; Introduction; Acknowledgements; 1. Waves and harmonics; 2. Fourier theory; 3. A mathematician’s guide to the orchestra; 4. Consonance and dissonance; 5. Scales and temperaments: the fivefold way; 6. More scales and temperaments; 7. Digital music; 8. Synthesis; 9. Symmetry in music; Appendix A. Bessel functions; Appendix B. Equal tempered scales; Appendix C. Frequency and MIDI chart; Appendix D. Intervals; Appendix E. Just, equal and meantone scales compared; Appendix F. Music theory; Appendix G. Spectrum

— 2006 228 x 152 mm c. 300pp
— 978 0 883 85554 6 (0 883 85554 2)
Paperback £24.99
— Publication March 2006

Mathematical Apocrypha Redux
More Stories and Anecdotes of Mathematicians and the Mathematical
Steven Krantz
Washington University, St Louis

A companion to Mathematical Apocrypha, this second volume of anecdotes, stories, quips, and ruminations about mathematics and mathematicians is sure to please. The purpose of this lively, engaging, and informative book is to explore and to celebrate the many facets of mathematical life, revealing mathematicians as intense, human, and sympathetic.

Spectrum

— 2006 228 x 152 mm c. 300pp
— 978 0 883 85554 6 (0 883 85554 2)
Paperback £24.99
— Publication March 2006

Maxima and Minima Without Calculus
Ivan Niven
University of Oregon

The purpose of this book is to put together in one place the basic elementary techniques for solving problems in maxima and minima other than the methods of calculus and linear programming. Each of the self-contained chapters cover methods that solve large classes of problems, and helpful exercises are provided.

Dolciani Mathematical Expositions, 6

— 2006 216 x 138 mm c. 320pp
85 line diagrams 194 exercises 85 figures
— 978 0 883 85306 1 (0 883 85306 X)
Hardback c. £30.00
— Publication April 2006
From Calculus to Computers
Using 200 years of Mathematics History in the Teaching of Mathematics
Edited by Amy Shell-Gellasch
Formerly of the United States Military Academy and Dick Jardine
Keene State College, New Hampshire
This volume on the integration of mathematics history into undergraduate teaching provides ideas and materials for immediate adoption in the classroom. Focusing on the developments of the nineteenth and twentieth century the text emphasizes recent history in the teaching of mathematics, computer science, and related disciplines. Mathematical Association of America Notes, 68
— 2006 276 x 219 mm c. 260pp
— 18 line diagrams 23 half-tones 7 tables
— 978 0 883 85178 4 (0 883 85178 4)
— Paperback c. £29.99
— Publication May 2006
Math Made Visual
Roger Nelsen
Lewis and Clark College, Portland
and Claudi Alsina
Universitat Politècnica de Catalunya, Barcelona
The object of this book is to show how visualization techniques may be employed to produce pictures that have both mathematical and pedagogical interest. The authors describe methods to visualize mathematical ideas, with applications to concrete cases, and practical approaches for making visualizations in the classroom. Classroom Resource Material
— 2006 253 x 177 mm c. 200pp
— 221 line diagrams 21 half-tones 5 tables 108 exercises
— 978 0 883 85746 5 (0 883 85746 4)
— Hardback c. £30.00
— Publication April 2006
How to Write and Publish a Scientific Paper
Sixth edition
Robert A. Day
University of Delaware
and Barbara Gastel
Texas A & M University
This is a practical guide on writing and publishing a scientific paper offering advice for scientists at all levels. New sections include approaching a writing project, the ethics of scientific publishing, and writing for non-native English speakers. Appendices list useful abbreviations, expressions to avoid, and corrections of common errors.
— 2006 228 x 152 mm 275pp 15 figures
— 978 0 521 67167 5 (0 521 67167 1)
— Paperback c. £15.99
— Publication August 2006
Mathematical Illustrations
A Manual of Geometry and PostScript
Bill Casselman
University of British Columbia, Vancouver
— 2005 234 x 156 mm 336pp 364 half-tones 50 exercises
— 978 0 521 83782 8 (0 521 83782 0)
— Hardback £50.00
— 978 0 521 54788 8 (0 521 54788 1)
— Paperback £22.99
Out of the Shadows
Contributions of Twentieth-Century Women to Physics
Edited by Nina Byers
University of California, Los Angeles
and Gary Williams
University of California, Los Angeles
An accurate and authoritative description of the women who made original and important contributions to physics, documenting their major discoveries and putting their work into its historical context. This book is an ideal reference for anyone with an interest in science and social history.
— 2006 228 x 152 mm 520pp 10 line diagrams 40 half-tones
— 978 0 521 82197 1 (0 521 82197 5)
— Hardback c. £30.00
— Publication June 2006
Linguistics and the Formal Sciences
The Origins of Generative Grammar
Marcus Tomalin
University of Cambridge
An insightful overview of how syntactic theory was influenced by developments in the formal sciences during the twentieth century. Discusses their implications for the work of linguists at that time, outlines their consequences for current syntactic theory, and provides a groundbreaking reassessment of Chomsky’s early work in Generative Grammar.
Cambridge Studies in Linguistics, 110
— 2006 228 x 152 mm 240pp
— 978 0 521 85481 8 (0 521 85481 4)
— Hardback £50.00
Phenomenology, Logic, and the Philosophy of Mathematics
Richard Tieszen
San José State University, California
Phenomenology, Logic, and the Philosophy of Mathematics is about logic, mathematical knowledge and mathematical objects. It is concerned with the role of reason and intuition in the exact sciences and it analyzes many of the central positions in the philosophy of logic and philosophy of mathematics: platonism, nominalism, intuitionism, formalism, pragmatism, and others.
— 2005 228 x 152 mm 368pp
— 11 line diagrams
— 978 0 521 83782 8 (0 521 83782 0)
— Hardback £45.00
Philosophical Perspectives on Infinity
Graham Oppy
Monash University, Victoria
Exploring philosophical questions about infinity, Graham Oppy examines how the infinite lurks everywhere, both in science and in our ordinary thoughts about the world. He also analyzes the many puzzles and paradoxes that follow in the train of the infinite.
— 2006 228 x 152 mm 368pp 1 table
— 978 0 521 86067 3 (0 521 86067 9)
— Hardback £45.00
— Publication May 2006
Compositio Mathematica is a prestigious, well-established journal publishing first-class research papers that traditionally focus on the mainstream of pure mathematics. Compositio Mathematica has a broad scope which includes the fields of algebra, number theory, topology, algebraic and analytic geometry and (geometric) analysis. Papers on other topics are welcome if they are of broad interest. All contributions are required to meet high standards of quality and originality. Publications in this journal benefit from the added value of careful reviewing and editing. The journal has an international editorial board naturally reflected across the whole range of pure mathematics, together with some more applied areas of analysis, theoretical computing and mathematical physics. The London Mathematical Society has adopted a trial open-access policy in which the most recent three issues will be freely available online as part of a one year experiment.

Journal of the London Mathematical Society
Editors: Francis E. Burstall
University of Bath
John F. Toland
University of Bath
Produced, marketed and distributed for the London Mathematical Society
Founded in 1926 and now in its Second Series, the Journal of the London Mathematical Society has a reputation for publishing some of the highest quality research on the whole spectrum of mathematics. The journal has a wide scope which ranges from number theory to functional analysis, from finite simple groups to the mathematical foundations of quantum theory and from logic and topos theory to the topology of Lie groups. Cambridge University Press are delighted to support the London Mathematical Society in the introduction of an open access policy, in which the most recent three issues will be freely available online as part of a one year experiment.

Bulletin of the London Mathematical Society
Editors: James W. Anderson
University of Southampton
and Jacek Brodzki
University of Southampton
Produced, marketed and distributed for the London Mathematical Society
A well-established journal with over thirty five years’ coverage extending
LMS Journal of Computation and Mathematics
http://www.lms.ac.uk/jcm
J E Cremona
University of Nottingham
Published by the London Mathematical Society
The LMS Journal of Computation and Mathematics is an electronic-only resource that publishes papers on the computational aspects of mathematics, mathematical aspects of computation, and papers in mathematics which benefit from being published electronically. Rapid times to publication ensures that readers are kept abreast of ground-breaking developments fast and, while the main text of each paper is guaranteed to remain unaltered, the journal’s format enables users to add updates and discussions to papers encouraging more interactivity.
http://www.lms.ac.uk/jcm

Glasgow Mathematical Journal
Editor-in-Chief: I. G Gordon
University of Glasgow
Published for the Glasgow Mathematical Journal Trust
The Glasgow Mathematical Journal publishes original research papers in any branch of pure and applied mathematics. An international journal, its policy is to feature a wide variety of research areas, which in recent issues have included ring theory, group theory, functional analysis, combinatorics, differential equations, differential geometry, number theory, algebraic topology, and the application of such methods in applied mathematics.
http://www.lms.ac.uk/jcm
Subscriptions
— Volume 48 in 2006: January, May and September
Institutions print and electronic: £147/$254
Institutions electronic only: £122/$212
Special arrangements exist for members of Glasgow Mathematical Association, Glasgow Mathematical Journal Trust or relevant LMS members.
Print ISSN 0017-0079
Electronic ISSN 1469-509X

Proceedings of the Edinburgh Mathematical Society
Managing Editor: The Secretary
ICMS, Edinburgh
Published for the Edinburgh Mathematical Society
The Edinburgh Mathematical Society was founded in 1883 and over the years, has evolved into the principal society for the promotion of mathematics research in Scotland. The Society has published its Proceedings since 1884. This contains research papers on topics in a broad range of pure and applied mathematics, together with a number of topical book reviews.
Subscriptions
— Volumes 49 in 2006: February, June, October
Institutions print and electronic: £178/$303
Institutions electronic only: £150/$258
Institutions print only: £165/$282
Print ISSN 0013-0915
Electronic ISSN 1464-3839

Combinatorics, Probability and Computing
Editor-in-Chief: Béla Bollobás
University of Memphis
Published bimonthly, Combinatorics, Probability & Computing is devoted to the three areas of combinatorics, probability theory and theoretical computer science. The topics covered include: classical and algebraic graph theory, extremal set theory, matroid theory, probabilistic methods and random combinatorial structures; combinatorial probability and limit theorems for random combinatorial structures; the theory of algorithms, randomised algorithms, probabilistic analysis of algorithms, computational learning theory and optimisation.
http://journals.cambridge.org/jid_CPC
Subscriptions
— Volume 15 in 2006: January, March, May, July, September and November
Institutions print and electronic: £256/$418
Institutions electronic only: £212/$354
Print ISSN 0963-5483
Electronic ISSN 1469-2163

Journal of Fluid Mechanics
Editors: Stephen H. Davis
Northwestern University
and T. J. Pedley
University of Cambridge
Journal of Fluid Mechanics is the leading international journal in the field and is essential reading for all those concerned with developments in fluid mechanics. It publishes authoritative articles covering theoretical, computational and experimental investigations of all aspects of the mechanics of fluids. Each issue contains papers on both the fundamental aspects of fluid mechanics, and their applications to other fields such as aeronautics, astrophysics, physiology, chemical and mechanical engineering, hydraulics, meteorology, oceanography, geology, acoustics and combustion.
http://journals.cambridge.org/jid_FLM
Subscriptions
— Volumes 546–569 in 2006: twice monthly
Institutions print and electronic: £1598/$2664
Institutions electronic only: £1360/$2264
Institutions print plus electronic: £1820/$3004
Institutions print: £1658/$2744
Print ISSN 0305-0041
Electronic ISSN 1469-7645
Online digital archive available

Mathematical Proceedings of the Cambridge Philosophical Society
Editor: G. Paternain
University of Cambridge
Published for the Cambridge Philosophical Society
Mathematical Proceedings is one of the few high-quality journals publishing original research papers that cover the whole range of pure and applied mathematics, theoretical physics and statistics. All branches of pure mathematics are covered, in particular logic and foundations, number theory, algebra, geometry, algebraic and geometric topology, classical and functional analysis, differential equations, probability and statistics. On the applied side, mechanics, mathematical physics, relativity and cosmology are included.
http://journals.cambridge.org/jid_PSP
Subscriptions
— Volumes 140–141 in 2006: January, March, May, July, September and November
Institutions print and electronic: £446/$737
Institutions electronic only: £375/$630
Special arrangements exist for members of Cambridge Philosophical Society.
Print ISSN 0305-0041
Electronic ISSN 1469-8064
Acta Numerica
Editor: Arieh Iserles
University of Cambridge

This annual collection of review articles includes survey papers by leading researchers in numerical analysis and scientific computing. The papers present overviews of recent advances and provide state-of-the-art techniques and analysis. Covering the breadth of numerical analysis, articles are written in a style accessible to researchers at all levels and can serve as advanced teaching aids.

http://journals.cambridge.org/jid_ANU
Subscriptions
– Volume 15 in 2006: May
  Institutions print and electronic: £70/$110
  Institutions electronic only: £60/$95
  Individuals print plus electronic: £70/$110
  Individuals electronic only: £60/$95
  Member rates available – please enquire
  Print ISSN 0962-4929
  Electronic ISSN 1474-0508

European Journal of Applied Mathematics
Editors-in-Chief: S. D. Howison
University of Oxford
A. A. Lacey
Heriot-Watt University
and M. J. Ward
University of British Columbia
Surveys Editor: Heinz W. Engl
Johannes Kepler University/Austrian Academy of Sciences

Since 2005 EJAM has incorporated Surveys on Mathematics for Industry, and now publishes both research papers and survey papers. EJAM/SMI focuses on those areas of applied mathematics inspired by real-world applications, at the same time fostering the development of theoretical methods with broad range of applicability. Survey papers contain reviews of emerging areas of mathematics with a particular relevance to users in industry and other disciplines.

http://journals.cambridge.org/jid_EJM
Subscriptions
– Volume 17 in 2006: February, April, June, August, October and December
  Institutions print and electronic: £320/$534
  Institutions electronic only: £280/$455
  Member rates available – please enquire
  Print ISSN 0960-1295
  Electronic ISSN 1469-8072

Ergodic Theory and Dynamical Systems
Managing Editors: Mark Pollicott
University of Warwick
and S. van Strien
University of Warwick

Ergodic Theory and Dynamical Systems focuses on a rich variety of research areas which, although diverse, employ as common themes global dynamical methods. The journal provides a focus for this important and flourishing area of mathematics and brings together many major contributions in the field.

http://journals.cambridge.org/jid_ETS
Subscriptions
– Volume 26 in 2006: February, April, June, August, October and December
  Institutions print and electronic: £562/$934
  Institutions electronic only: £490/$810
  Member rates available – please enquire
  Print ISSN 0143-3857
  Electronic ISSN 1469-4417

Mathematical Structures in Computer Science
Editor: G. Longo
CNRS and Ecole Normale Supérieure, Paris

Mathematical Structures in Computer Science is a journal of theoretical computer science which focuses on the application of ideas from the structural side of mathematics and mathematical logic to computer science. The journal aims to bridge the gap between theoretical contributions and software design, publishing original papers of a high standard and broad surveys with original perspectives in all areas of computing, provided that ideas or results from logic, algebra, geometry, category theory or other areas of logic and mathematics form a basis for the work.

http://journals.cambridge.org/jid_MSC
Subscriptions
– Volume 16 in 2006: February, April, June, August, October and December
  Institutions print and electronic: £386/$629
  Institutions electronic only: £334/$535
  Individuals print plus electronic: £82/$132
  Print ISSN 0960-1295
  Electronic ISSN 1469-8072

Probability in the Engineering and Informational Sciences
Editor: Sheldon M. Ross
University of Southern California

The primary focus of the journal is on stochastic modelling in the physical and engineering sciences, with particular emphasis on queueing theory, reliability theory, inventory theory, simulation, mathematical finance and probabilistic networks and graphs. Papers on analytic properties and related disciplines are also considered, as well as more general papers on applied and computational probability, if appropriate. Readers include academics working in statistics, operations research, computer science, engineering, management science and physical sciences as well as industrial practitioners engaged in telecommunications, computer science, financial engineering, operations research and management science.

http://journals.cambridge.org/jid_PES
Subscriptions
– Volume 20 in 2006: January, April, July and October
  Institutions print and electronic: £386/$629
  Institutions electronic only: £334/$535
  Individuals print plus electronic: £82/$132
  Print ISSN 0269-9648
  Electronic ISSN 1469-8951

Visit our website at www.cambridge.org
Author and Title Index

A
Abadir, Karim M.................................19
Ablowitz, Mark J.................................3
Acta Numerica ....................................25
Additive Combinatorics .........................4
Algebra and Geometry .........................10
Algebraic Statistics for Computational Biology ......................17
Algebraic Topology ..............................7
Algorithmic Number Theory ....................8
Alina, Claudi ......................................22
Analytic Topography .............................3
Analytical Mechanics ............................12
Anderson, G. M. ................................16
Anderson, James ..................................4
Anderson, James W................................23
Angelini Huegel, Lidia ..........................9
Aref, H. .............................................14
Armitage, V .......................................18
Assem, I. ............................................9
Automata Theory with Modern Applications ....................4
Automorphic Forms and L-Functions for the Group GL(n,R) ...8

B
Bailey, R. A........................................18
Barnsley, Michael...............................5
Batchelor, G. K.................................14
Beardon, Alan F ................................10
Bence, S. J.........................................15
Bence, Stephen J................................15
Bengtsson, Ingemar ..............................16
Benson, David J..................................21
Bertojn, Jean ....................................2
Billingham, J.......................................14
Binmore, Ken .....................................3
Bobtovski, Adam................................2
Bobkowski, Juegen ...............................6
Bollobàs, Bèla ..................................24
Bomberi, Enrico ................................8
Bonar, Daniel D .................................11
Bors, George ....................................3
Bovier, Anton ....................................2
Brannan, David ..................................1
Breuer, K. S .....................................14
Brix, Anders ......................................19
Brodzki, Jacek ....................................23
Bruaildi, Richard A ..............................10
Buhler, J.P. ....................................... 8
Bulletin of the London Mathematical Society ....................23
Burstall, Francis E ................................23
Byers, Nina ......................................22

C
C++ Design Patterns and Derivatives Pricing .......................19
Calculus ........................................1
Calculus: Concepts and Methods ................3
Calculus of Retirement Income, The ................19
Canary, R. D ....................................3
Carter, Roger ....................................9
Casselman, Bill ..................................22
Central Simple Algebras and Galois Cohomology .................9
Chaotic Dynamics ................................11
Chapman, R. J ..................................23
Chapman, R. J ..................................24
Chauvet, L..........................................3
Chavel, Isaac .....................................6
Chirnburg, T. C..................................23
Classical and Quantum Orthogonal Polynomials in One Variable ....8
Classical Mechanics ............................10
Cohn, Paul ...................................... 9
Cojocaru, Alina Carmen ..........................8
Coldham, S. F. R ...............................23
Combinatorial Matrix Classes ....................10
Combinatorics of Symmetric Designs ....................4
Combinatorics, Probability and Computing .....................24
Complex Variables ................................3
Complexity and Cryptography ..................4
Compositio Mathematica ........................23
Computational Introduction to Number Theory and Algebra ...10
Computational Oriented Matroids ........................6
Concrete Abstract Algebra ......................10
Conics ...........................................5
Coombes, Kevin R ................................11
Cornuejols, Gerard ..............................19
Course in Combinatorics, A ........................4
Course in Financial Calculus ..................19
Cox, D. R.........................................18
Cox, David .......................................18
Cremona, J. E ...................................24
Cristianini, Nello ................................17,20
Cube-A Window to Convex and Discrete Geometry, The ....6
Cuoco, Al .......................................21

D
Dauvouis, Thierry................................16
Davies, Joan .....................................3
Davies, Stephen H................................24
Day, Robert A.....................................22
De Bie, Tilt ......................................20
Deninger, C .......................................23
Design of Comparative Experiments .....................18
Dhill, Sudarshan .................................13
Differential Equations ............................14
Differential Geometry and Lie Groups for Physicists ..........15
Dorofeev, Sergey ................................18
Doye, Jon ........................................11
Dynamic Data Assimilation ......................13
Dynamical Systems ..............................12

E
Eccles, Peter J ....................................5
Edelsbrunner, Herbert ..........................13
Edixhoven, Bas ..................................23
Elementary Introduction to Mathematical Finance, An .......19
Elementary Number Theory in Nine Chapters ...................7
Elementary Probability ............................3
Elements of Pattern Analysis .....................20

G
Gallery of Fluid Motion, A........................14
Gannon, Terry ....................................15
Garnett, John B...................................3
Gastel, Barbara ..................................22
Geometric Partial Differential Equations and Image Analysis ....21
Geometry and Topology ..........................5
Geometry and Topology for Mesh Generation ...................13
Geometry of Physics, The ........................17
Geometry of Quantum States ....................16
Gille, Philippe ....................................9
Glasgow Mathematical Journal ...................24
Global Analysis on Foliated Spaces ....................7
Godunov, Alexander ............................16
Goldfeld, Dorian...................................8
Golumb, Solomon W............................21
Gong, Guang.....................................21
Gordon, I. G......................................24
Gottlieb, David ................................12
Gottlieb, Sigal ...................................12
Grant, Peter ......................................18
Gregory, R. Douglas ............................10
Gruz, Márton ....................................11
Gubler, Walter ....................................8
Guide to MATLAB, A............................11
Gutt, Simone .....................................6

Elements of Statistical Mechanics ..................16
Elements of the Representation Theory of Associative Algebras ....9
Elliptic Functions ..................................8
Engl, Heinz W....................................25
Epstein, D. B. A ..................................3
Equations of Oceanic Motions, The ..........................13
Ergodic Theory and Dynamical Systems .....................25
Etheridge, Alison ................................19
European Journal of Applied Mathematics .......................25
Exercises in Probability ..........................3
Extending Mechanics to Minds ........................11

F
Fathi, Albert ......................................12
Fedko, Marián ...................................15
Fredman, Ronen .................................20
Finch, Janet D....................................12
First Course in Mathematical Analysis, A ........................1
Fokas, Athanasios S..............................3
Foundations of Computational Mathematics, Santander 2005 ..11
Frankel, Theodore ................................17
Fraser, Gordon ...................................14
Free Ideal Rings and Localization in General Rings ................9
From Calculus to Computers ........................22
Functional Analysis for Probability and Stochastic Processes ...2
Fundamentals of Geophysical Fluid Dynamics ..................13
Fundamentals of Hyperbolic Fluid Manifolds.................3
Proceedings of the London Mathematical Society ..................23
Protecting Information ...........................................20

R
Random Fragmentation and Coagulation Processes ...........2
Ranicki, Andrew ...........................................6
Rawnsley, John .............................................6
Real Infinite Series ........................................2
Recent Perspectives in Random Matrix Theory and Number Theory ....7
Reid, Miles ...................................................5
Riemannian Geometry .......................................6
Riley, K. F. ..................................................15
Riley, Ken F. ..............................................15
Robertson, C. R. .........................................14
Rosen, Jay ..................................................2
Rosenberg, Jonathan M. ..................................11
Ross, Sheldon M. ............................19, 25
Rubinstein, Jacob .........................................14

S
Sachs, Ivo ..................................................16
Sakuma, Makoto ..........................................6
Sammy, M. ..................................................14
Sanger, James ..............................................20
Sapiro, Guillermo ........................................21
Schilling, René L. .........................................1
Schochet, Claude L .........................................7
Selected Statistical Papers of Sir David Cox .....................18
Sen, Siddartha ..............................................16
Series, Caroline .............................................6
Sexton, James .............................................16
Shawe-Taylor, John .......................................20
Shell-Gellasch, Amy ......................................22
Shlapentokh, Alexandra ....................................8
Shoup, Victor ..............................................10
Shrikhande, Mohan .......................................4
Signal Design for Good Correlation .........................21
Simson, D. ..................................................9
Skowronski, A .............................................9
Snaith, N. C. ...............................................7
Spaces of Kleinian Groups ..................................6
Spectral Approximation of Partial Differential Equations ........12
Speicher, Roland ..........................................2
Spivak, Michael ............................................1
Statistical Mechanics of Disordered Systems ....................2
Statistics for Real-Life Sample Surveys .......................18
Steen, P. H. ................................................14
Stephens, Kenneth ......................................15
Sternheimer, Daniel .....................................6
Stevenson, P ...............................................8
Stewart, David .............................................20
Stricker, David .............................................3
Struffi, Philipp .............................................6
Stuck, Garrett J. ..........................................11
Sturman, Rob ............................................12
Sturmfels, B .............................................17
Suli, Endre ...............................................11, 14
Superfractals ..................................................5
Surveys in Combinatorics 2005 ................................4
Swanson, Irena ............................................10
Synthetic Differential Geometry ................................6
Systems Biology .............................................16
Szymuł, Tamás .............................................9
Szendroi, Balazs .........................................5

T
Talbot, John ..................................................4
Tao, T .........................................................4
Tattersall, James J. .......................................7
Tel, Tamás ..................................................11
Teleman, Constantin .....................................23
Text Mining Handbook, The ................................20
Theoretical Biologist’s Toolbox, The .........................17
Theory of Finite Simple Groups ..........................10
Thermodynamics of Natural Systems.........................16
Thoroddsen, S. T. ........................................14
Three-Body Problem, The ................................16
Tieszen, Richard ..........................................22
Todd, Mike ...............................................11
Toland, John F. ..........................................23
Tomalin, Marcus ..........................................22
Topology Now! ..............................................6
Totaro, Burt ...............................................23
Tutuncu, Reha .............................................19

U
Upfal, Eli ..................................................21

V
Valtonen, Mauri ............................................16
van Lint, J. H. .............................................4
van Strien, S. ............................................25
Vaughan, R.C ...............................................7
Velleman, Daniel J. .......................................4
Vu, V .........................................................4
Walden, Andrew T. ....................................18
Wang, Xiaoming ..........................................13
Ward, M. J. ...............................................25
Wavelet Methods for Time Series Analysis .....................18
Weather Derivative Valuation ................................19
Webb, Bridget S ..........................................4
Welsh, Dominic ..........................................4
Wiggins, Stephen .........................................12
Williams, Gary ...........................................22
Wilson, R. M. .............................................4
Wooeters, William .......................................20
Writing Scientific Software ..................................20

Y
Yoccoz, J.-C. .............................................12
Yor, M .......................................................3
Customer Services

Booksellers
For order processing and customer service, please contact:

**UK and Europe**
Catherine Atkins  
Phone + 44 (0)1223 325566  
Fax + 44 (0)1223 325959  
Email ukcustserve@cambridge.org  
or westeurope@cambridge.org

**International**
Sophie Aliyati-Singleton  
Phone + 44 (0)1223 325577  
Fax + 44 (0)1223 325151  
Email intcustserve@cambridge.org

Your telephone call may be monitored for training purposes. 
Account-holding booksellers can order online at www.cambridge.org/booksellers or at www.PubEasy.com

Cambridge University Press Around the World

Cambridge University Press has offices, representatives and distributors in some 60 countries around the world; our publications are available through bookshops in virtually every country. For more information, contact:

**United Kingdom and Ireland**
Academic Sales Department  
Cambridge University Press  
The Edinburgh Building, Shaftesbury Road  
Cambridge CB2 2RU, UK  
Phone 01223 325983  
Fax 01223 325891  
Email uksales@cambridge.org  
Web www.uk.cambridge.org

**Continental Europe (excluding Iberia), Middle East, North Africa**
Academic Sales Department  
Cambridge University Press, The Edinburgh Building  
Shaftesbury Road, Cambridge CB2 2RU, UK  
Phone + 44 1223 325901  
Fax + 44 1223 325989  
Email informationsales@cambridge.org  
Web www.uk.cambridge.org

**Iberia**
Cambridge University Press Iberian Branch  
Ruiz de Alarcón 13, 28014 Madrid, Spain  
Phone + 34 91 360 4565  
Fax + 34 91 360 4570  
Email academicos@cup.es  
Web www.cambridge.org/iberia

**Asia**
Cambridge University Press Asian Branch  
43, Kreta Ayer Road, Singapore 089004  
Phone + 65 6323 2701  
Fax + 65 6323 2370  
Email singapore@cambridge.org  
Web www.cambridge.org/eastasia

**North and Central America**
Cambridge University Press North American Branch  
40 West 20th Street, New York, NY 10011-4211, USA  
Phone + 1 212 924 3900  
Fax + 1 212 691 3239  
Email information@cup.org  
Web www.us.cambridge.org

**South America and Hispanic Caribbean**
Cambridge University Press South American Branch  
Av Paulista, 807 Conj 1218, 01311-915 São Paulo - SP, Brazil  
Phone + 55 11 285 0455  
Fax + 55 11 285 0455  
Email saopaulo@cambridge.org  
Web www.cambridge.org/samerica

**Sub-Saharan Africa and English-speaking Caribbean**
Cambridge University Press African Branch  
Lower Ground Floor, Nautica Building  
The Water Club, Beach Road, Granger Bay – 8005  
CapeTown, South Africa  
Phone + 27 21 412 7800  
Fax + 27 21 419 0594  
Email capetown@cambridge.org  
Web www.cambridge.org/africa

**Australia and New Zealand**
Cambridge University Press Australian Branch  
477 Williamstown Road, Port Melbourne, VIC 3207, Australia  
Phone +61 3 8671 1411  
Fax +61 3 9676 9955  
Email info@cambridge.edu.au  
Web www.au.cambridge.org

**Elsewhere and general enquiries**
Cambridge University Press, The Edinburgh Building  
Shaftesbury Road, Cambridge CB2 2RU, UK  
Phone + 44 1223 312393  
Fax + 44 1223 315052  
Email information@cambridge.org  
Web www.cambridge.org/international

Front cover image taken from the new book ‘Mathematics of Digital Images’ by S. G. Hoggar. See page 20 for more information