

THE LONDON MATHEMATICAL SOCIETY NEWSLETTER

No. 259

April 1998

FORTHCOMING SOCIETY MEETINGS

Friday-Saturday 22-23 May 1998 - London

Joint meeting with the Irish Mathematical Society

Complex Analysis and Dynamical Systems

Friday 19 June 1998 - London

C. Soulé, J.H. Coates

Friday-Saturday 16-17 October 1998 - London

Harmonic Analysis

NAYLOR PRIZE AND LECTURESHIP IN APPLIED MATHEMATICS

In connection with the award of the 1999 Naylor Prize and Lectureship in Applied Mathematics, the Council of the Society has appointed J.M. Ball, C.J. Isham, F.P. Kelly, A.C. Newell and A. Spence to a Naylor Prize Committee.

The Council invites members of the Society to submit their views on possible candidates for the award of the Naylor Prize confidentially in writing to any member of the Naylor Prize Committee by 1 June 1998. Nominations should contain explicit reference to the grounds on which the nomination is based, and should be accompanied by a brief *curriculum vitae*, a list of publications, and a brief supporting case. Council reserves the right not to make an award in the event that no candidate of sufficient merit is recommended by the Naylor Prize Committee.

The Naylor Prize and Lectureship is awarded in recognition of work in, and influence on, and contributions to ap-

plied mathematics and/or the applications of mathematics, and lecturing gifts; the regulations require that it shall be awarded to a mathematician who on 1 January 1999 is normally resident in the United Kingdom of Great Britain and Northern Ireland.

No person may be awarded the Naylor Prize within twelve months of being awarded the De Morgan Medal, the Polya Prize, the Senior Berwick Prize or the Senior Whitehead Prize. No person may be awarded the Naylor Prize more than once, and the President of the Society and the members of the present Naylor Prize Committee are ineligible for the award of the 1999 Naylor Prize. The detailed regulations and procedure for the award of the Naylor Prize can be obtained from the Administrator, London Mathematical Society, 57-58 Russell Square, London WC1B 4HP (e-mail: lms@lms.ac.uk).

J.S. Pym

Council and General Secretary

PROFESSOR P.J.C. LAMONT

Professor P.J.C. Lamont, who was elected a member of the London Mathematical Society on 18 February 1965, died in December 1997.

SAMUEL EILENBERG

Professor S. Eilenberg, who was elected an Honorary Member of the London Mathematical Society on 11 February 1972, died on 30 January 1998 aged 84.

GRANTS FOR ATTENDING ICM98

Mathematicians from the UK who attended International Congresses have in the past often obtained grants through the Royal Society. The LMS used to supplement the Royal Society's funds to enable more grants to be made, but a new system is now in operation and that is no longer possible. Instead, Council has set aside a sum of money to be used in making grants. These will be awarded on the criteria used by the Royal Society.

Applications for LMS grants may be made by three categories of people.

- Those who applied for Royal Society grants but were unsuccessful may simply submit copies of their Royal Society applications.
- Anyone who obtained a Royal Society grant but considers it very inadequate may submit a copy of the original application together with a case for the LMS supplementing it (but applicants should realise that neither the Royal Society nor the LMS grants are likely to cover the whole cost of attending the ICM).
- Those who were ineligible for Royal Society grants may apply on forms obtainable from the address below.

Applications should be sent to The Administrator, The London Mathematical Society, 57-58 Russell Square, London WC1B 4HP to arrive before **11 May**. They will be considered by a Council Subcommittee and results should be known by 14 June.

J.S. Pym

Council and General Secretary

MEETING OF THE SOCIETY

A meeting was held on Friday 20 February and Saturday 21 February 1998 at the University of Southampton, Professor J.M. Ball, FRS, President, in the Chair. There were present about 50 members and visitors for all or part of the meeting.

Fifteen people were elected to Ordinary Membership: P. Aston, P.N. Balister, R.E. Borcherds, A.C.C. Coolen,

C.M. Deas, G.M. Green, J.J. Green, A.A. Ivanov, J.R. King, G.H. Norton, A. Premet, E.P. Ryan, A. Ryley, B.O. Stratmann, D.F. Wilkinson; five people were elected to Associate Membership: S. Blake-Wilson, A. Gerber, M.E. Orzechowski, C.J.E. Pinnock, C.P. Simmons; and six people were elected to Reciprocity Membership: A.K. Azad (AMS), C.M. Byrne (SMF), C. Deninger (DMV), A. Latif (AMS), S.S. Pandey (IMS), W.T.R. Yu (SMF). Five members signed the book and were admitted to the Society. The President presented a Certificate to Dr B.H. Bowditch, winner of a 1997 Junior Whitehead Prize.

A lecture was given by A. Lubotzky, 'A non-arithmetic super-rigid group; a contra example to Platonov's conjecture'. After tea, the Chair was taken by Dr G.A. Niblo. The following lectures were given: Y. Minsky, 'Kleinian length functions and the complex of curves'; W. Ballmann, 'Groups acting isometrically on Hadamard spaces'. The meeting then adjourned.

On Saturday morning, the Chair was taken by Dr G.A. Niblo, and the following lectures were given: B. Bowditch, 'Boundaries of hyperbolic groups'; C. Series, 'How to draw quasi-fuchsian space for once punctured tori'; M. Kapovich, 'Hyperbolic groups with one-dimensional boundaries'. On behalf of the Society, Professor D.B.A. Epstein thanked Dr Niblo and the other local organisers for planning and organising the meeting, and closed the meeting.

JOB ADVERTS ONLINE

Members are reminded that the Society's web pages now include a list of positions currently available in Mathematics and related areas (<http://www.lms.ac.uk/jobs/>). This has a link to a similar list at a European level maintained at <http://www.maths.lth.se/nordic/Euro-Math-Job.html> on behalf of the European Mathematical Society. A national listing of jobs in all academic subjects is now available at <http://www.jobs.ac.uk/>.

**IRISH MATHEMATICAL SOCIETY
LONDON MATHEMATICAL SOCIETY**

JOINT TWO-DAY MEETING
Friday-Saturday 22-23 May 1998
London

Complex Analysis and Dynamical Systems

There will be six lectures, three on Friday afternoon 22nd May and three on Saturday morning 23rd May. A conference dinner is being planned for Friday evening. The following have agreed to speak.

Linda Keen (CUNY) *Deformations of Kleinian groups*

Anthony G. O'Farrell (National University of Ireland, Maynooth) *Some approximation problems and theorems*

Bodil Branner (Technical University of Denmark)
Surgery in holomorphic dynamics

Ricardo Perez-Marco (Orsay, Paris)

Shaun Bullett (Queen Mary & Westfield College, London) *Dynamics of holomorphic correspondences*

Jean-Christophe Yoccoz (Orsay, Paris)

Enquiries should be addressed to
Shaun Bullett (s.r.bullett@qmw.ac.uk)

or

Richard M. Timoney (richardt@maths.tcd.ie).

UNIVERSITY OF CAMBRIDGE
DEPARTMENT OF PURE MATHEMATICS
AND MATHEMATICAL STATISTICS

University Lecturer or Assistant Lecturer
in Pure Mathematics

Applications are invited for this post in any field of Pure Mathematics to take up appointment from 1 October 1998.

Further particulars may be obtained from the Head of Department, DPMMS, 16 Mill Lane, Cambridge CB2 1SB (telephone (01223) 337996, fax (01223) 337920, e-mail S.Lowe@dpmms.cam.ac.uk, or from the Department's website at <http://www.dpmms.cam.ac.uk>).

Applications should be sent to the Head of Department and should include a *curriculum vitae* and e-mail address, list of publications, and the names, postal and e-mail addresses of 3 referees. Candidates must ask their referees to send their reports direct to the Head of Department, to reach him by the closing date.

The closing date for applications is 24 April 1998.

The University follows an equal opportunities policy and has a policy on arrangements for part-time work.

TACKLING INNUMERACY

The Association of Teachers of Mathematics is organising a series of meetings on "Tackling Innumeracy" on Saturdays, 10 am to 5 pm, including lunch at Durham University on 25 April 1998, at Roehampton Institute, London, on 2 May 1998 and at Birmingham University on 9 May 1998. There will be a keynote address by Peter Lacey (Mathematics Adviser, NE Lincolnshire, formerly SCAA and NCC) and three workshops from: The Use of Calculators; The Use of Graphic Calculators; Mental Mathematics; The Role of Language; The Soroban (Japanese abacus); Understanding Data. The cost will be £20 for ATM members, £30 for non-members and £10 for students. For further information or to make a booking (by 9 April) contact ATM, 7 Shaftesbury Street, Derby DE23 8YB (tel: 01332 346599; fax: 01332 20453).

VISIT OF PROFESSOR N. HIGSON

Professor N. Higson (Penn State University) will be touring the UK in May on a visit under Scheme 2 of the London Mathematical Society. He will talk on K-theory of group C^* -algebras, at the following places and times. The names in brackets are those of the local organizers, who should be consulted for further details. Exeter: "Deformations of Lie groups and C^* -algebra K-theory", Thursday, 14th May 3.30 pm, Room A72, Laver Building, Department of Mathematics, University of Exeter (Dr J. Brodzki, brodzki@maths.ex.ac.uk); Oxford: "Bivariant C^* -algebra K-theory and the Novikov conjecture", Monday 25th May, 5 pm, Higman Room, Mathematical Institute, Oxford University (Dr J. Roe, roe@jesus.ox.ac.uk); Edinburgh: "Bott periodicity for infinite dimensional Euclidean spaces", Tuesday 26th May, 2 pm, Room B, David Hume Tower, George Square, University of Edinburgh (Professor A. Ranicki, aar@maths.ed.ac.uk).

LMS SEMINAR ROOM

Among the facilities of 57-58 Russell Square, there is a Council Room, which will be furnished so that it can also be used as a seminar room for small mathematical meetings. It will seat 24 in comfort, and up to 40 quite adequately. Members of the Society are invited to suggest particular uses for this room, and to make proposals for its use. Please send suggestions and proposals to the Meetings and Membership Secretary, D.J.H. Garling, Department of Pure Mathematics and Mathematical Statistics, 16 Mill Lane, Cambridge CB2 1SB (e-mail: d.j.h.garling@pmms.cam.ac.uk).

OBERWOLFACH PRIZE FOR YOUNG EUROPEAN SCIENTISTS

Verein zur Förderung des Mathematischen Forschungsinstituts Oberwolfach (Friends of Oberwolfach) and Gesellschaft für Mathematisches Forschung award a prize for excellent achievements in Stochastics. The prize amounts to DM 10.000. Candidates are mathematicians under 35 from Europe. They have to be nominated. We ask all European senior scientists in Stochastics to make proposals by 31st May 1998 to: Matthias Kreck, Mathematisches Forschungsinstitut Oberwolfach, Schwarzwaldstr.9-11, 77709 Oberwolfach.

VISIT OF PROFESSOR K.R. GOODEARL

Professor K.R. Goodearl (Santa Barbara) will be visiting Scotland and England, from mid-April to mid-May 1998, supported by an LMS Scheme 2 grant. He will visit the Universities of Sheffield, Leeds, Edinburgh, Glasgow and Exeter, and will give lectures in Leeds, Edinburgh and Exeter. For further details, contact any of the following: tom@maths.ed.ac.uk, kab@maths.gla.ac.uk, d.a.jordan@sheffield.ac.uk, pmt6jcm@leeds.ac.uk, vamos.p@exeter.ac.uk.

CONWAY FEST - JHC60

A conference to mark the 60th birthday of John Conway will be held at the Newton Institute, Cambridge, on 16th and 17th April 1998. The event will be partially supported by the London Mathematical Society. Programme of the meeting:

Thursday 16 April

- 10.15 Registration, coffee
11.15 N.J.A. Sloane (AT&T)
Labs-Research) Recent results on packing spheres in n -dimensional space

Lunch

- 14.00 D. Zagier (Bonn) The Dedekind eta-function, a mysterious identity, and knot invariants
15.00 E. Berlekamp (Berkeley) Sums of $N \times 2$ Amazons positions

Tea

- 17.00 S. Kochen (Princeton) Geometry, logic and quantum theory
19.30 Special dinner at Gonville and Caius College

Friday 17 April

- 9.15 B. Fischer (Bielefeld) Remarks on sporadic simple groups

Coffee

- 10.45 R.E. Borcherds (Cambridge)
Hyperbolic reflection groups (after Conway and Allcock)

- 11.50 TBA

Lunch

- 14.00 L. Kauffman (UIC) Conway's knots and their ramifications
15.00 J.H. Conway (Princeton) The Fifteen theorem for quadratic forms

Tea

Accommodation for the night of the 16th has been arranged at Selwyn College, at £26.10, bed and breakfast. There will be a special dinner on the 16th at Gonville and Caius College; the cost will be in the region of £35.

Those interested in attending the conference should contact Mrs Hughes at the Newton Institute (h.hughes@newton.cam.ac.uk), indicating whether they wish to stay at Selwyn and whether they intend to attend the

special dinner. The registration fee will be £15. This will not be charged to research students; there is a limited amount of further support available for research students, and those interested should indicate how much they need in their message to Mrs Hughes. For further information concerning the meeting, contact saxl@pmms.cam.ac.uk or r.t.curtis@bham.ac.uk.

COMPUTATION AND GEOMETRIC ASPECTS OF MODERN ALGEBRA

This conference will take place at Heriot-Watt University under the auspices of the International Centre for Mathematical Sciences, Edinburgh, 23-31 July 1998. The conference is financially supported by the LMS and by EPSRC. For further details and a registration form, contact: Nick Gilbert, CGAMA 98, Department of Mathematics, Heriot-Watt University, Riccarton, Edinburgh EH14 4AS (n.d.gilbert@hw.ac.uk) or visit the website (<http://www.ma.hw.ac.uk/~nick/cgama.html>)

VISIT OF PROFESSOR J. RICHTER-GEBERT

Professor J. Richter-Gebert (ETH Zürich) will be touring the United Kingdom in April, supported by an LMS Scheme 2 grant. He will give talks at the following places and times. The names in brackets are those of the local organizers, who should be consulted for further details. Oxford: Tuesday 21 April, 3.00 pm, Mathematical Institute, University of Oxford (Professor D.J.A. Welsh); London: Wednesday 22 April, 2.30 pm, Department of Mathematics, Room 500, University College London (Professor P. McMullen); Cambridge: Thursday 23 April, 4.00 pm, DPMMS, University of Cambridge (Dr A.G. Thomason). The talk in Oxford will be on "Zonotopes, tilings, oriented matroids (the topology of spaces of combinatorial objects)". The talks in London and Cambridge will be on "Universality theorems in combinatorial geometry".

New Series:

Springer Monographs in Mathematics

This series publishes advanced monographs giving well-written presentations of the "state-of-the-art" in fields of mathematical research that have acquired the maturity needed for such a treatment. They are sufficiently self-contained to be accessible to more than just the intimate specialists of the subject, and sufficiently comprehensive to remain valuable references for many years. Besides the current state of knowledge in its field, an SMM volume should also describe its relevance to and interaction with neighbouring fields of mathematics, and give pointers to future directions of research.



J. Elstrodt, F. Grunewald,
J. Mennicke

Groups Acting on Hyperbolic Space

Harmonic Analysis and
Number Theory
1998. XV, 524 pp
Hardcover £ 57.50
ISBN 3-540-62745-6

This book deals with a broad range of topics from the theory of automorphic functions on three-dimensional hyperbolic space and its arithmetic group theoretic and geometric ramifications. Starting off with several models of hyperbolic space and its group of motions the authors discuss the spectral theory of the Laplacian and Selberg's theory for cofinite groups.

Yu.B. Rudyak
**On Thom Spectra,
Orientability and
Cobordism**

1998. XII, 583 pp.
Hardcover £ 76
ISBN 3-540-62043-5

S.S. Abhyankar
**Resolution of
Singularities of
Embedded
Algebraic Surfaces**

2nd ed. 1998. X, 307 pp.
Hardcover £ 49
ISBN 3-540-63719-2

Come and visit
our booth
at the ICM
in Berlin

Please order from
Springer-Verlag London Ltd.
Fax: + 44 / 14 83 / 41 51 51
e-mail: sarah@svl.co.uk
or through your bookseller

Errors and omissions excepted.
Prices subject to change without notice.
In EU countries the local VAT is effective.

Further volumes in preparation

R. Griess
**Twelve Sporadic
Groups**

1998. Approx. 200 pp. 47 tabs.
Hardcover £ 49
ISBN 3-540-62778-2

V. Ivrii
**Microlocal Analysis
and Precise Spectral
Asymptotics**

1998. Approx. 720 pp.
Hardcover £ 68.50
ISBN 3-540-62780-4

D. Jungnickel
**Graphs, Networks
and Algorithms**

1998. Approx. 600 pp. 200 figs.
Softcover approx. £ 42.50
ISBN 3-540-63760-5

A. Ranicki
**High-Dimensional
Knot Theory**

1998. Approx. 410 pp.
Hardcover approx. £ 55.50
ISBN 3-540-63389-8



Springer

LONDON MATHEMATICAL SOCIETY BOOK SERIES REPORTS

Lecture Notes

The LMS Lecture Notes are published jointly by the Society and Cambridge University Press. Most volumes are short monographs giving an authoritative account of the present state of knowledge on a topic of general interest. The Series also accepts conference proceedings and other collective works with similar aims, though the inclusion of survey material is encouraged in such volumes. In general the Series is relaxed and informal, but places importance on the quality of exposition. To date nearly 250 volumes have appeared.

The current editor is Professor Nigel Hitchin. He is assisted by Dr Graham Allan, Professor Paul Cohn, Dr Martin Hyland and Dr Charles Thomas. Intending authors should contact Professor N.J. Hitchin, Mathematical Institute, 24-29 St Giles, Oxford OX1 3LB (hitchin@maths.ox.ac.uk) or Mr Roger Astley at Cambridge University Press (rastley@cup.cam.ac.uk).

Nigel Hitchin
Oxford University

Student Texts

The LMS Student Texts Series, established in 1983, complements the LMS Lecture Notes Series by publishing textbooks of an expository nature aimed at advanced undergraduates and beginning graduate students. The number of volumes in the series is now about 40. The series aims to offer introductions to areas in which there is an absence of well-established and standardised exposition, providing students with access to new and exciting ideas as they emerge. Ideally, a Student Text should be accessible to a first year research student reading alone. Texts are frequently based on graduate courses given by the authors; translations of successful books at the right level and proceedings of suitable instructional conferences are also con-

sidered. Printing is usually done from camera ready copy or Tex files produced by the author, providing a rapid and relatively informal and low cost mode of publication. Volumes appear in hardback and paperback and should be between 150 and 400 pages in length.

The editorial advisors are P. Diaconis (Harvard), E.G. Rees (Edinburgh), S. van Strien and D.M. Testerman (Warwick). Manuscripts or proposals for consideration are always welcome and should be sent either to one of the editors or to R. Astley at Cambridge University Press (rastley@cup.cam.ac.uk), any of whom will also be happy to answer enquiries about the series. As ever, I look forward to receiving more likely manuscripts and proposals from Newsletter readers.

Caroline Series
University of Warwick

Monographs

The London Mathematical Society Monographs form a series of hardback books published for the Society by Oxford University Press. The editors are H.G. Dales (Leeds) and P.M. Neumann (Oxford). The continuing advisers are J.H. Coates (Cambridge), S.K. Donaldson (Oxford) and A. Macintyre (Edinburgh); we welcome as a new adviser W.S. Kendall (Warwick).

The Series contains authoritative accounts of current research in mathematics and high-quality expository works bringing the reader to the frontiers of research. The volumes are produced in an attractive hardback format; considerable care is taken to ensure that the volumes are produced to a high standard.

In 1997, just one volume appeared; this was Volume 17, Interpolation, identification, and sampling by Jonathan R Partington. We anticipate that three or four volumes will be published in 1998. We welcome proposals and suggestions for future monographs; please contact one of the editors for a copy of a manifesto giving full details of the Series and how to make a proposal.

H. Garth Dales
University of Leeds

History of Mathematics

The American Mathematical Society and the LMS jointly publish a series of books in the history of mathematics. The most recent volumes to appear are: Volume 10 Sources of Hyperbolic Geometry, edited by John Stillwell, Volume 11, Poincaré and the Three Body Problem, by June Barrow-Green, and Volume 12, The Way I Remember It, by Walter Rudin. Very recently Volume 13, Swedish Mathematics, by Lars Garding has come out and we expect publication of Volume 14, T. Shaposhnikova and V. Maz'ya's book on the life and work of Hadamard very shortly.

A number of other titles are under active discussion, and there is a proposal for a sub-series of sources, devoted to the publication of original works by mathematicians that deserve a new audience. The series consists of scholarly books in the history of mathematics, particularly modern mathematics, which will be of interest to mathematicians and historians of mathematics. The editors (David Fowler, Warwick; Jeremy Gray, Open University; Tom Körner, Cambridge) would like to hear from any one with a manuscript or project they would like to have considered.

Jeremy Gray
Open University

READING ONE-DAY COMBINATORICS COLLOQUIUM

There will be a One-Day Combinatorics Colloquium at Reading University Mathematics Department on Wednesday 20th May 1998, starting at 10.15 am approximately and finishing at 5.30 pm approximately. There will be nine 40-minute lectures on combinatorial themes. Everyone is welcome to attend.

The following people have so far accepted the invitation to speak: I. Anderson (Glasgow) "Some connections between orthogonal latin squares and tournament designs"; L.A. Goldberg (Warwick) "Algorithms for randomly sampling combinatorial structures"; M.

Grannell (Open) "Generalized chromatic indices for Steiner triple systems"; H. Gropp (Heidelberg) "Configurations and related structures"; A.V. Kostochka (Novosibirsk, visiting Nottingham) "On oriented and edge-coloured homomorphisms of graphs"; I. Stewart (Leicester) "Graph theory within parallel computation"; M. Walters (Cambridge) "A combinatorial proof of the polynomial Van der Waerden theorem".

Note that there will be a One-Day meeting at the Open University, Milton Keynes, the following day, Thursday 21st October. Support is gratefully acknowledged from the British Combinatorics Committee and from the London Mathematical Society.

ASYMPTOTIC AND NUMERICAL METHODS IN WAVE PROPAGATION WITH APPLICATIONS

A workshop will be held from 5-6 April at the Department of Mathematics, Brunel University, immediately preceding the 1998 BAMC. The intention is to bring together researchers in wave propagation and to promote interactive discussion in an informal setting, hopefully leading to longer-term collaborative work. The programme will be left as open as possible to accommodate a variety of possible themes for discussion, though there will be a number of presentations throughout the meeting which are designed to act as a focus. Speakers include some leading national and international authorities, and it is anticipated that there will be some discussions on problems of topical industrial importance.

Postgraduate students and young postdoctoral researchers working in appropriate fields are particularly encouraged to attend. Further details are available from Dr R.H. Tew, Department of Theoretical Mechanics, University of Nottingham, University Park, Nottingham NG7 2RD (e-mail: richard.tew@nottingham.ac.uk, tel: 0115 9513855).

Extending the Boundaries of Mathematics



Green's Functions and Boundary Value Problems

Second Edition

IVAR STAKGOLD, University of Delaware, USA

A revised edition of an established classic, this book takes a down-to-earth approach to the use of differential and integral equations in problems in the applied sciences.

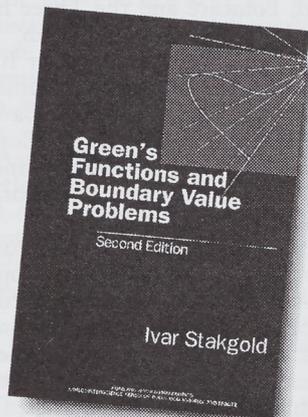
- Unique blend of topics
- Balanced discussion of theory and applications
- 44 illustrations and numerous practical examples to supplement the text
- Chapter introductions and clear explanations of basic concepts
- Plentiful exercises

Praise for the first edition:

"This is an excellent book, well produced, with a good index and list of references, which should attract a wide range of readers"

THE BULLETIN OF THE LONDON MATHEMATICAL SOCIETY

0471 610224 1998 710 pp £70.00



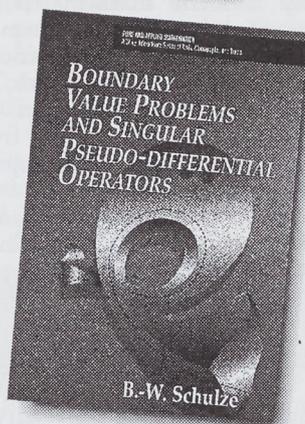
Boundary Value Problems and Singular Pseudo-Differential Operators

BERT-WOLFGANG SCHULZE, University of Potsdam,
Germany

Enriches the general theory of partial differential equations by studying the analysis of pseudo-differential operators on manifolds with conical points and edges.

- Self-contained presentation of the cone pseudo-differential calculus
- General method for pseudo-differential analysis on manifolds with edges
- Presentation of algebra of boundary value problems with transmission property
- New exposition of pseudo-differential calculus with operator-valued symbols

0471 975575 1998 356 pp £65.00



UK Freefone 0800 243407
Overseas +44 1243 843294
e-mail: cs-books@wiley.co.uk

Post: Customer Services,
John Wiley & Sons Ltd,
1 Oldlands Way, Bognor Regis,
West Sussex,
England, PO22 9SA

Or contact you local bookseller
All prices are subject to change
without prior notice

MEETING TO MARK THE RETIREMENT OF GEOFFREY HORROCKS

The meeting will be held in Newcastle on 10-11 September 1998. It will consist of an afternoon session on Thursday 10 September of talks accessible to a wide mathematical audience on areas related to those in which Geoffrey has worked, a dinner on 10 September at which Professor and Mrs Horrocks will be the guests and four or five more specialists talks in the morning and early afternoon of Friday 11 September. The general talks will be given by M.F. Atiyah (Edinburgh), W. Barth (Erlangen), K. Hulek (Hanover) and D. Mumford (Brown). On 11 September speakers will include G. Ellingsrud (Bergen), F.C. Kirwan (Oxford) and V.P. Snaitch (McMaster/ Southampton).

The meeting is receiving financial support from the London Mathematical Society and the University of Newcastle upon Tyne. The organisers are B.E. Johnson (Newcastle), P.E. Newstead (Liverpool) and W.M. Oxbury (Durham). Further details are available at <http://fourier.dur.ac.uk:8000/~dma0wmo/ghconf.html> or can be obtained from B.E. Johnson, Department of Mathematics, University of Newcastle, Newcastle upon Tyne NE1 7RU (tel: 0191 222 7314, e-mail: b.e.johnson@ncl.ac.uk). It will be possible to book accommodation in a university hall of residence. Bookings for rooms and for the dinner must be made **by Monday 27 July 1998**.



ISAAC NEWTON INSTITUTE FOR MATHEMATICAL SCIENCES

Director: Professor H K Moffatt FRS

20 Clarkson Road, Cambridge, CB3 0EH

Tel: (1223) 335999 Fax: (1223) 330508

E-mail: info@newton.cam.ac.uk

INSTITUTE SEMINARS

5.00 pm Monday, Seminar Room 1

A Series of Seminars aimed at a General Scientific Audience

- 20 April Vladimir Arnold (Steklov Mathematical Institute & Paris Dauphine)
Polymathematics: symplectization, complexification, mathematical trinities and all that: is mathematics one science or several arts?
- 11 May Tim Gowers (DPMMS, Cambridge)
Arithmetic progressions of length four

To receive regular announcements for the Monday Seminars, send the message: <subscribe monday-seminars> to <majordomo@newton.cam.ac.uk>. Details are also available at <http://www.newton.cam.ac.uk/instsem.html>.

25% off LMS books to LMS members

Elliptic Curves

Function Theory, Geometry, Arithmetic

Henry McKean and Victor Moll

This book presents the subject of elliptic curves in the style of the original discoverers, with references to and comments about more modern developments. It is an ideal introduction to the subject for students of mathematics and physics.

£40.00 HB 0 521 58228 8 296 pp. 1997

Geometry, Combinatorial Designs and Related Structures**Edited by J. W. P. Hirschfeld, S. S. Magliveras and M. J. de Resmini**

Examines finite geometries and designs, a key area in modern applicable mathematics. It includes state-of-the-art surveys from leading international mathematicians in their fields, and will be a useful reference for researchers in many aspects of combinatorics.

£27.95 PB 0 521 59538 X 266 pp. 1997

London Mathematical Society Lecture Note Series 245

Principia Mathematica to *56**Alfred North Whitehead and Bertrand Russell**

This abridged text of the great three-volume *Principia Mathematica* contains the material that is most relevant to an introductory study of logic and the philosophy of mathematics.

£32.50 PB 0 521 62606 4 456 pp. 1997

Cambridge Mathematical Library

Algorithmic Algebraic Number Theory**M. Pohst and H. Zassenhaus**

Classic book, addressed to all lovers of number theory. A comprehensive introduction to constructive algebraic number theory and suitable as a textbook on this subject.

£24.95 PB 0 521 59669 6 480 pp. 1997

Encyclopedia of Mathematics and its Applications 30

Now in
Paperback

Analytic Number Theory**Edited by Y. Motohashi**

Contains up-to-date contributions to the theory of automorphic forms.

£27.95 PB 0 521 59538 X

London Mathematical Society Lecture Note Series 245

Representation Theory**Maurice Auslander, Robert B. Warfield Jr.**

This book is an introduction to the theory of Artin algebras.

The book is a suitable reference for researchers in their fields.

This book will be the first choice for the material it covers.

£22.95 PB 0 521 59538 X

Cambridge Studies in Advanced Mathematics 15

Hausdorff Measures**C. A. Rogers****Foreword by K. Falconer**

This new edition has revised chapters on measure theory and fractals.

£17.95 PB 0 521 59538 X

Cambridge Mathematical Library

Theories of Computation**Nicholas Pippenger**

A mathematically sophisticated treatment of automata, and formal languages developed to a point which is not covered by other books.

£30.00 HB 0 521 59538 X

Cambridge books are available from good bookshops, alternatively phone UK + 44 (0)1223 325152 or fax UK +44 (0)1223 325152. For further information, please email Giulia Williams giulia.williams@cup.cam.ac.uk or the Worldwide Web server <http://www.cup.cam.ac.uk>



CAM
UNIVERSITY

The Edinburgh Building

BRIDGE

theory

contributions from leading international figures in analytic
discussed include the theory of zeta functions, spectral
forms, and Diophantine approximations and equations.

0 52512 2 392 pp. 1997
Lecture Note Series 247

theory of Artin Algebras

Reiten and Sverre O. Smalø

contribution to the contemporary representation
theory by three very distinguished practitioners in the field.
Introduction for any mathematician to this field.

near source for students studying in this field, and a reference
Peter Webb, *Bulletin of the London Mathematical Society*

0 519923 7 440 pp. 1997
Advanced Mathematics 36

Now in
Paperback

resses

as foreword by Kenneth Falconer outlining the developments
in this book first appeared.

0 52491 6 200 pp. 1998
Library

computability

an accessible introduction to Turing's theory, Boolean functions,
and languages. Each topic is taken from the beginning and
at which the most recent results can be appreciated.

0 515380 6 288 pp. 1997

0 515380 6 288 pp. 1997
23 588 to order direct using your credit card,
science@cup.cam.ac.uk or browse our

ORDER FORM

To order please send this form to Richard Knott at the address
below, phone 01223 325916 or fax 01223 315052.

Qty	Author	ISBN	Price

Postage and packing (standard charge) £2.50

Airmail (£2.50 extra per book)

*VAT charges for European
Community residents only

Total

*Value added Tax charge for European Community residents only

If you live in the European Community (excluding the UK,
Luxembourg or Ireland) and are not registered for VAT
(Value Added Tax) we are required to charge VAT at the rate
applicable in your country of residence. Please add VAT for the
full value of your order, including postage charges. If you are
registered for VAT please provide your registration number:

_____ and leave the VAT payment box blank.

I enclose a sterling cheque/eurocheque
(payable to Cambridge University Press)

Please debit my credit card (Access/Mastercard/VISA/
Amex)* **Please delete as applicable*

Card no. _____

Expiry Date _____

Signature _____

Name of cardholder _____

Address _____

Please return coupon to:
FREEPOST, The Edinburgh Building, Cambridge CB2 1BR
E-mail: science@cup.cam.ac.uk

BRIDGE
UNIVERSITY PRESS

Cambridge CB2 2RU

ISAAC NEWTON INSTITUTE FOR MATHEMATICAL SCIENCES

BIOMOLECULAR FUNCTION AND EVOLUTION IN THE CONTEXT OF THE GENOME PROJECT

The organisers of the Isaac Newton Institute for Mathematical Sciences programme on "Biomolecular Function and Evolution in the Context of the Genome Project" (July - December 1998) invite applications from mathematicians and statisticians who would like to participate in the programme. Information about the programme is available via the WWW, at <http://www.newton.cam.ac.uk/programs/bfg.html> and 'downstream' pages.

In particular, please note that a workshop entitled "Introducing Mathematicians/Statisticians to Current Problems in Biomolecular Sequence Analysis" is planned for the week commencing Monday 9 November 1998. The organisers' intention is that this workshop will consist of talks by molecular biologists attending the programme, describing research in the biological sciences and highlighting areas in which mathematical or statistical expertise is needed. Ample time will be allocated during the week for informal discussion and collaboration on the topics raised.

Speakers at the workshop will be drawn from the participants in the Newton Institute programme and from molecular biology institutions in the Cambridge area. It is expected that the speakers will include:

- David Balding (Applied Statistics, Reading)
- Peter Donnelly (Statistics, Oxford)
- Richard Durbin (Informatics, Sanger Centre, Hinxton, Cambridge)
- Walter Fitch (Ecology and Evolutionary Biology, UC Irvine)
- Nick Goldman (Genetics, Cambridge)
- Richard Goldstein (Chemistry, Michigan)
- Jotun Hein (Biological Sciences, Aarhus)
- Grainne McGuire (BioSS, Edinburgh)

- Willie Taylor (Mathematical Biology, MRC-National Institute for Medical Research, London)
- Jeff Thorne (Statistical Genetics, NCSU Raleigh)

The following week of the programme (commencing Monday 16 November) will also be available for a number of the mathematicians and statisticians attending the previous week's workshop to remain at the Newton Institute for extended discussions and collaboration. In addition, there is the possibility that some of those interested in attending these two weeks will be able to participate in the programme as long-term visitors.

If you are interested in attending the one-week workshop starting on 9 November 1998; in prolonging that visit to two weeks to participate in the following week's discussions/ collaborations; or in joining the programme for a more extended period, please contact Nick Goldman (n.goldman@gen.cam.ac.uk), Department of Genetics, Downing Street, Cambridge CB2 3EH, or any of the Organisers for further information. Priority may be given to applicants who are able to join the programme for longer periods.

Programme Organisers: Peter Donnelly, Statistics, Oxford (donnely@stats.ox.ac.uk), Walter Fitch, Ecology and Evolutionary Biology, UC, Irvine (wfitch@uci.edu) and Nick Goldman, Genetics, Cambridge (n.goldman@gen.cam.ac.uk).

MATHEMATICS AND APPLICATIONS OF FRACTALS

January to April 1999, Organisers: R.C. Ball (Cambridge), K.J. Falconer (St Andrews)

Programme theme Over the past twenty years there has been an explosion of activity in developing the mathematics of fractals and applying fractals across science. More recently there has been

increasing understanding of “multifractals”, where more than one scaling exponent is involved. Despite these advances, on the mathematical side activity has been concentrated where rigorous work is tractable, particularly on ‘static’ problems, and on the physical side much activity has been merely ‘fractal spotting’, leaving a gulf between the mathematics and physical applications. This programme is concerned with topical aspects of the mathematics and applications of fractals. Our major aims are to encourage interaction between mathematicians and scientists with different approaches and viewpoints, to increase the awareness of scientists of the mathematics that is already available, and to focus the attention of mathematicians on areas where further theoretical development is needed.

Workshops It is expected that the programme will include the following workshops:

- 4-8 January 1999 Multifractals and their Applications
- 12-13 February 1999 EU Fractals Network Meeting
- 5 March 1999 LMS Spitalfields Day on Geometric Measure Theory
- 22 March 1999 - 1 April 1999 Partial Differential Equations on Fractals

Participation The list of invited participants with their visit dates, updated daily, is available via WWW at <http://www.newton.cam.ac.uk/programs/apftable.html>. Seminars which take place during the programme are open to all and will be publicised via the Institute’s mailing lists and WWW. Registration or invitation is usually required for longer-term participation in the programme or workshops. We are particularly eager to encourage participation by young researchers in the UK.

Further information For programme-related enquiries please contact Professor K.J. Falconer, Mathematical Institute, University of St. Andrews, North Haugh, St Andrews KY16 9SS.

To subscribe to the e-mail list for the programme, e-mail <[majordomo@](mailto:majordomo@newton.cam.ac.uk)

newton.cam.ac.uk> with the message <subscribe apf-list>, leaving the subject field blank. Information about the programme, including workshop announcements, is available at <http://www.newton.cam.ac.uk/programs/bfg.html>

DISCRETE GROUPS AND CONFORMAL GEOMETRY

A conference on Discrete Groups and Conformal Geometry will be held at Malardalen University, Vasteras, Sweden, from 27-31 August 1998. A preliminary list of participants is J. Alonso, E. Bujalance, M. Conder, A. Costa, T. Ekedahl, G. Gromadzki, G. Jones, L. Keen, M.T. Lozano, M. Naeaeatanen, U. Persson, K.D. Semmler, R. Silhol, D. Singerman. The organisers are Milagros Isquierdo, Benjamin Baumslag and Goran Bergqvist. Information is available on <http://www.ima.mdh.se/geometry>. Click on research and then, under conferences, click on Discrete Groups and Conformal Geometry 1998. Enquiries to be sent to geometry@mdh.se.

COULD IT HAPPEN HERE?

In its *Notices*, the American Mathematical Society has reprinted the following item from *The New York Times*:

A television review on October 27 about that night’s *Nova* program titled “The Proof”, referred imprecisely to what was being proved. It was Fermat’s Last Theorem, not the Pythagorean Theorem. Fermat’s Last Theorem states that the equation $x^n + y^n = z^n$ has no solution when x , y , and z are positive whole numbers and n is a whole number greater than 2. When n equals 2, the equation has many solutions and is known as the Pythagorean Theorem: in a right-angle triangle the square of the hypotenuse is equal to the sum of the squares of the other two sides.



**THE UNIVERSITY
OF BIRMINGHAM**

SCHOOL OF MATHEMATICS AND STATISTICS

CHAIR OF PURE MATHEMATICS

Applications are invited for the above position. The successful candidate will have an outstanding research record in some branch of Pure Mathematics. Applications from any area of Pure Mathematics are welcome. The School's current major strength is in group theory, and candidates working in areas with a common border with group theory (such as algebraic number theory, representation theory, model theory, etc.) are particularly encouraged.

The Chair will be supported by a 3-year Research Fellowship, and additional resources will be provided.

The salary will be negotiable within the professorial range.

Further particulars are available from Mr P J F Scott, Director of Staffing Services, The University of Birmingham, Edgbaston, Birmingham B15 2TT. Tel: 0121 414 6478, Fax 0121 414 7043.

Informal enquiries may be addressed to:

Professor J S Wilson, Mason Professor of Mathematics
Email: J.S.Wilson@bham.ac.uk Fax: 0121 414 3389

or

Dr R T Curtis, Head of School of Mathematics and Statistics
Email: R.T.Curtis@bham.ac.uk Phone: 0121 414 6581

The closing date for applications is Thursday 9 April 1998

From Kant to Hilbert:

A Source Book in the Foundations of Mathematics, Two Volume Set

William Ewald

"... it is certainly well prepared and paves the way to a profound study of the concerned subject." *Zentralblatt für Mathematik*
Vol. I: 694 pp; Vol. II: 706 pp, 1996
0-19-853271-7 Hardback £195.00

 **SALE PRICE £110.00**

Geometric Stability Theory

Anand Pillay

"...a much needed and highly recommended textbook in a beautiful, deep, and actively developing field." *Zentralblatt für Mathematik*
Oxford Logic Guides No. 32
372 pp, 1996
0-19-853437-X £60.00 Hardback

 **SALE PRICE £30.00**

Area, Lattice Points, and Exponential Sums

M. N. Huxley

"This book [is] very detailed ... The book is very well written. It is an excellent and important work for all mathematicians who deal with exponential sums and lattice point theory. It is accessible to graduate students beginning research." *Zentralblatt für Mathematik*
London Mathematical Society Monographs No. 13
506 pp, 1996
0-19-853466-3 £85.00 Hardback

 **SALE PRICE £42.00**

Revolutions in Mathematics

Edited by Donald Gillies

Twelve leading experts in the history of mathematics describe major advances in mathematics, and examine, from a variety of theoretical perspectives, whether these should be considered to be revolutionary.

364 pp, 1995
0-19-851486-7 £26.00 Paperback

 **SALE PRICE £17.00**

Wavelets:

An Analysis Tool

M. Holschneider

"This book is a self-contained and original text on the theory of wavelets ... Graduate students of mathematics and physics will find it useful, as will interested readers from other fields." *Physics World*
Oxford Mathematical Monographs

436 pp, 1995
0-19-853481-7 £45.00 Hardback

 **SALE PRICE £27.00**

Prices and extents are subject to change.

OXFORD UNIVERSITY PRESS
& AMERICAN MATHEMATICAL SOCIETY

**COMBINED
MATHEMATICS
& STATISTICS
SALE**

1 APRIL - 31 MAY 1998

**HUGE DISCOUNTS
OF UP TO 2/3
OFF REGULAR
LIST PRICE**

Vertex Algebras for Beginners

Victor Kac

This is an introduction to algebraic aspects of conformal field theory, which in the past decade has revealed a variety of unusual mathematical notions. Vertex algebra theory provides an effective tool to study them in a unified way.

University Lecture Series No. 10
140 pp American Mathematical Society 1997
0-8218-0643-2 £18.50 Paperback

 **SALE PRICE £12.50**

Over 70 recently published mathematics titles at huge discounts available from good booksellers throughout Europe as well as directly from OUP.

For your complete sale catalogue

Tel: +44 (0) 1865 267426

Fax: +44 (0) 1865 267782 or

Email: heasmang@oup.co.uk

or visit our website:

<http://www.oup.co.uk/sale/math98>

Please note the LMS or AMS members discount does not apply to sale books

An Invitation to Arithmetic Geometry

Dino Lorenzini

Lorenzini presents in a unified manner the basic tools and concepts of number theory and algebraic geometry.

Graduate Studies in Mathematics No. 9
397 pp American Mathematical Society 1996
0-8218-0267-4 £40.00 Hardback

 **SALE PRICE £24.00**

Ramanujan:

Letters and Commentary

Edited by Bruce C. Berndt and Robert A. Rankin

Containing many letters that have never been published before, this book will appeal to those interested in Ramanujan's mathematics as well as those wanting to learn more about the personal side of his life.

History of Mathematics No. 9
347 pp American Mathematical Society 1995
0-8218-0267-4 £35.00 Hardback

 **SALE PRICE £20.00**

An Introduction to Gröbner Bases

William W. Adams and Philippe Loustaunau

This book provides a leisurely and fairly comprehensive introduction to Gröbner bases and their applications.

Graduate Studies in Mathematics No. 3
289 pp American Mathematical Society 1994
0-8218-3804-0 £25.00 Hardback

 **SALE PRICE £18.00**

Fixed Points

Yu A. Shashkin

This book presents a readable exposition of fixed point theory.

Mathematical World No. 2
86 pp American Mathematical Society 1991
0-8218-9000-X £11.95 Paperback

 **SALE PRICE £9.95**

Mathematical Impressions

Anatolii T. Fomenko

A Soviet mathematician with a talent for expressing abstract mathematical concepts through artwork, Fomenko's work can be interpreted and appreciated in various ways - mathematical, aesthetical, or emotional.

184 pp American Mathematical Society 1990
0-8218-0162-7 £14.99 Hardback

 **SALE PRICE £11.99**

OXFORD UNIVERSITY PRESS
Innovation • Excellence • Tradition

LMS498

MATHEMATICAL ILLITERACY IS MORE PERNICIOUS THAN THE FIRES OF THE INQUISITION

We live in a crazy world whose masters (I mean the governments of certain countries) behave like swine under an oak, destroying the source of all of their wealth. On the cessation (temporary?) of the military confrontation of the states, the financing of science in Russia was also stopped. Specialists claim that in 10 years it has shrunk seventeen fold to a quarter of the survival level, and expenditure on education was cut from 7% of the GDP in 1970 to 0.6% in 1997 (and further cuts are planned for 1998).

They are like madmen, sawing the branch on which they sit; any science funding that is provided by them is only for the 'applied' sciences, whose benefits are immediately obvious to them. As the president of the Russian Academy of Sciences (RAS) Yu.S. Osipov said, they think that it will be easier to collect apples if the apple tree is cut down.

Pasteur (who can hardly be accused of studies that were useless for mankind) said that there are no 'applied sciences', only *applications of sciences*. Experiments with amber and cat fur must have appeared useless to the rulers and military commanders of the 18th century. But it was these experiments that overturned our world after Faraday and Maxwell wrote down the equations of electromagnetic theory. These achievements paid off all expenses of mankind on fundamental science for hundreds of years ahead. The refusal of modern rulers to foot the bill is an amazingly short-sighted policy, for which those countries concerned will be punished by technological (and therefore also economic, as well as military) backwardness.

The harm inflicted on our country by the extermination of the fundamental sciences in Russia, which is happening before our eyes, is comparable with the harm inflicted on Spain and Western civilization by the fires of the Inquisition.

Those areas of science that for many years have been our pride, for example, mathematics, find themselves in a particularly tragic situation. According to the calculations of L.D. Faddeev, the academician-secretary of the mathematics division of the RAS, the expenses of the mathematics division of the RAS *used to be equal to the price of one combat tank a year, while nowadays the expenses of this division on mathematics are equal to one-tenth of the price of a tank*. On a state scale, a fundamental science like mathematics costs a brass farthing; in Russia the money is going elsewhere. According to a survey commissioned by the Central Bank of Russia and carried out by the Institute of Socio-Economic Problems of the RAS, the volume of savings of the population deposited in the territory of Russia was more than 140 billion (US) dollars in October 1996. This is about three times more than was predicted by the authorities. This means that about a hundred billion is of criminal origin. By comparison, the annual budget of the RAS is about half a billion dollars (and the budget of the mathematics division is a tiny fraction of it).

From a mathematical viewpoint, people fall into two categories: some prefer to subtract and divide, while others prefer to multiply and add. The researches of scientists add to the wealth of a country, and the attitude to them in other countries is not quite the same as in our country. The salary of a Principal Research Fellow in the Mathematics Steklov Institute of the RAS (and I am one of these) is less than a hundred dollars per month. *This is about one hundred times less than the salary of my American colleagues*. The Army Research Office and the Defence Advanced Research Project in the USA have requested an increase in their outlay for mathematics in 1998 (relative to 1997) of more than 12%. Possibly, one of their arguments in favour of this was the convincing victory of China and Iran at the last International Mathematical Olympiad for school children (these countries left both USA and Russia behind - apparently,

because of the need to train strong mathematicians for their nuclear and rocket projects). The fact that in Russia there are still mathematicians (and scientists of other schools that have strong traditions) left, who are stubborn in their refusal to emigrate and who continue to nurture new generations of talented students, is a testament to some sort of *heroism* (and from the viewpoint of our Western colleagues, a testament to foolishness) which is a tradition among the Russian intelligentsia. But this state of affairs cannot be maintained for much longer.

Astonishingly, both the RAS and Moscow University (and society as a whole) find resources to finance various kinds of antiscientific nonsense like parapsychology and to support publications by people of non-standard historical orientation with black-shirt inclinations, that seduce ignorant philistines by pearls like "Cancerous diseases, incurable psychic disorders and other chronic diseases of children and adults are caused by the location of their sleeping places at the nodes of intersection of pathogenic zones" of geological origin that allegedly cover the Earth with step-sizes of 2.5 m, 3.75 m, and 7.5 m (*Vestnik Ross. Akad. Nauk*, 1996, No. 6, 713-719). Is it for such nonsense that the mighty of this world find money? Not for nothing did Hitler encourage pseudo-sciences.

The traditionally high level of Russian mathematics has always been based on good school mathematical education 'in the Kiselev mould'. This could not be destroyed even by the attempt to introduce into schools the scholasticism nonsense at the end of the 1960s. Regrettably, the level of mathematical literacy of the country as a whole has begun to decline catastrophically. The 'humanization' and 'humanitarianization' of education planned by the Ministry of Education envisages a substantial reduction in the number of hours for mathematics, with the disengaged hours to be used for such subjects as macramé and horse breeding.

Apparently, this is the way in which they are trying to bring our (rather high)

level of mathematical education to the (traditionally low) American level, and this happens at the very time when the Americans themselves begin to copy our experience for a radical improvement of their mathematical education, which they have set themselves to make the best in the world. It is somewhat strange that one should have to prove that mathematical literacy is necessary for every cultured person: surely, the only people who do not understand this are barbarians who think that bread comes from heaven, that cars existed always, and planes bring only harm.

A mathematically educated person immediately understands the significance of the information that the life expectancy of men in Germany is over 80, while in Russia it is about 60 years. A decrease in the life expectancy by 10 years is equivalent (by the loss of person-years) on the scale of the USSR to the instant effect of the execution of 80 million citizens, and on the scale of Russia, of about 40 million.

A familiarity with mathematics (and this is much more important than the ability to add up fractions) teaches one to tell the difference between a correct argument and an incorrect one. And without such an ability human society turns into a herd easily manipulated by demagogues. This is what happened in Germany, where only a few would have believed at the beginning of the 1930s that anybody like Hitler could come to power.

To be fair, I have to say that mathematical education in itself is not a panacea, say, for political slovenliness and unscrupulousness, it is not a cure for the virus of reactionism. For example, two well-known members of the mathematics division of the RAS belong to the leadership of the antisemitic *Vremya*. In this publication, by the way, it is claimed that 21% of 173 equals 30.4 , while 17×2 is greater than 30.4 . Many other things published in this tabloid, which have no relevance to mathematics at all, are on the same intellectual level.

Shall we be ruled by the Mafia or by a charismatic leader of extreme nationalis-

tic persuasion (as is predicted by the Head of the Political Science Department of the Philosophical Faculty of Moscow University, who calls for a struggle with America, "for which we shall need a lot of courage and the ability to take risks", probably 'military-strategic' ones, see *Vestnik Ross. Akad. Nauk*, 1997, 1017), in any case, it is an absolute necessity to know fractions and percentages in the modern world. The future of Russia in which the study of fractions is replaced by macramé is a sad one.

Of course, the extermination of mathematical culture does not take immediate effect. But the example of Germany (which up to now has not been able to make up the lag created by the Nazis in this field) shows that the maintenance of a high scientific and educational level is a strategic task of urgent priority. If this problem is not solved in our country in the near future, then we shall for many decades (possibly, for ever) be thrown back to the position of a fourth-world country, and Russia will then be remembered in the same way that Alexander the Great's Macedonian Empire is now remembered. A way out of this situation, in my opinion, is a multiple increase in the state support for science. Side by side with this, we must also make investments in science attractive for the moneybags.

The article above, by Professor V.I. Arnol'd appeared in the Russian daily newspaper "Izvestiya" on 16 January 1998. The Editors are grateful to Dr G.G. Gould for providing the translation.

NORTH BRITISH FUNCTIONAL ANALYSIS SEMINAR

A meeting of the North British Functional Analysis Seminar will be held at George Square of the University of Edinburgh, from 2.30 pm on Monday 25th May until 12 noon on Tuesday 26th May 1998, the Late Spring Bank Holiday. The speakers will be Professors G. Pisier (Texas A.& M. and Paris 6), on Monday, and S.J. Szarek (Paris 6), on Tuesday. The meeting will be followed by seminar talks by Dr John Roe

(Oxford) and Professor N. Higson (Pennsylvania State), also at the David Hume Tower. For further information please contact Dr G. Blower, Lancaster University (e-mail: g.blower@lancaster.ac.uk).

NUMERICAL ANALYSIS AND COMPUTERS 50 YEARS OF PROGRESS

The conference will be held at the University of Manchester on 16-17 June 1998. It is being organized by Nick Higham and David Silvester of the Manchester Centre for Computational Mathematics (MCCM). It ties in with the celebrations in Manchester to mark the 50th Anniversary of the birth of "the Baby", the first stored-program electronic digital computer, which was born at the University of Manchester on 21st June 1948.

The meeting runs from 9 am on Tuesday 16th until 2 pm on Wednesday 17th June. The aim is to describe how numerical analysis has been influenced by the development of computers over the last fifty years. The meeting comprises invited talks covering key areas including numerical linear algebra, optimisation, ODEs, PDEs and computational fluid dynamics, and will contain historical remarks, perspectives and anecdotes. The influence of high-performance computing on the future of numerical analysis will also be assessed. A dinner will be held on the Tuesday evening.

The speakers include: Jack Dongarra (Knoxville), Brian Ford (NAG), Ian Gladwell (SMU, Dallas), Gene Golub (Stanford), Cleve Moler (The MathWorks), Bill Morton (Bath and Oxford), Mike Powell (Cambridge), Mark Sofroniou (Wolfram Research), Andrew Stuart (Stanford) Nick Trefethen (Oxford) and Joan Walsh (Manchester).

Further details and registration forms are available from <http://www.ma.man.ac.uk/NAC98>. There is no registration fee for graduate students. Note that accommodation can only be guaranteed for registration forms received by 13 April 1998. The meeting is sponsored by the London Mathematical Society, NAG Ltd and Wolfram Research.

Clear solutions to complex problems



Theory of Linear and Integer Programming

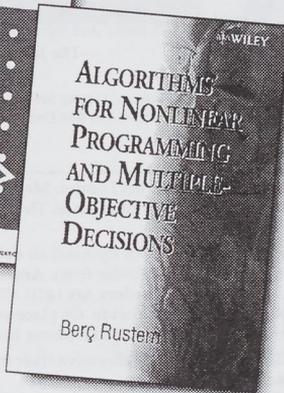
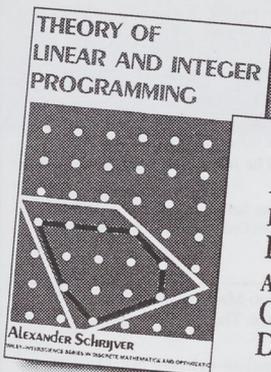
Professor A. SCHRIJVER, CWI, Amsterdam, The Netherlands

A paperback version of the definitive book on theoretical and polyhedral approaches to linear and integer programming. This text is universally acknowledged as a classic in the field, concentrating on the theory and surveying the algorithms for linear and integer programming, and focusing on complexity analysis. Complementing more practically oriented books it features applications to combinatorial optimization, extensive historical surveys and detailed bibliographies.

"An impressive, indeed astounding achievement of completeness, conciseness, clarity and depth, this book is a must-buy for any researcher interested in linear and integer programming."

— OPTIMA

0471 982326 1998 470 pp
paperback £24.95



Algorithms for Nonlinear Programming and Multiple Objective Decisions

Professor BERÇ RUSTEM, Department of Computing, Imperial College, London, UK

Studies a rapidly expanding topic and distills recent research in developing methodologies for solving optimal decision problems in economics, finance and engineering design.

- First book to cover algorithms for multiple decision problems
- Reflects current research in the area of multiple optimal decision problems
- Provides practical approaches which are theoretically sound
- Examples and exercises provided to consolidate understanding of the main concepts

The question of multiple objective decision making within a nonlinear static problem framework is considered using quadratic programming, nonlinear programming, nonlinear constrained min-max, mean-variance optimization and non-cooperative Nash games, to produce a truly unique book.

0471 978507 1998 304 pp hardback
£60.00

UK Freefone 0800 243407
Overseas +44 1243 843294
e-mail: cs-books@wiley.co.uk
Post: Customer Services,
John Wiley & Sons Ltd,
1 Oldlands Way, Bognor Regis,
West Sussex,
England, PO22 9SA
Or contact you local bookseller
All prices are subject to change
without prior notice

History of Mathematics



The Emergence of the American Mathematical Research Community, 1876-1900: J. J. Sylvester, Felix Klein, and E. H. Moore

Karen Hunger Parshall, *University of Virginia, Charlottesville*, and David E. Rowe, *University Mainz, Germany*

Fine and extensive account of the growth of mathematics in the United States ... completed by a fine bibliography and index ... Professional research-level mathematics, in quantity, came late to the United States; however, once inaugurated ... it rose more like a liftoff than a takeoff. This book admirably records the countdown and launch.

—Isis

In an excellent way this book gives an incredible amount of details, never losing sight of the whole. There are included many photos, some of them being published for the first time. This book is a sound and high quality investigation.

—Zentralblatt für Mathematik

This fascinating book is a contribution to the history of American science ... For those of us who have made our careers in American mathematics and are interested in understanding our intellectual heritage, it is essential reading.

—Mathematical Reviews

One of the best books in the history of mathematics. Thoroughly referenced, it will satisfy your academic and historical urges.

—Journal of Recreational Mathematics

Volume 8; 1994; 500 pages; Hardcover; ISBN 0-8218-9004-2; List \$39; Order code HMATH/8LMS

Golden Years of Moscow Mathematics

Smilka Zdravkovska, *Mathematical Reviews, Ann Arbor, MI*, and Peter L. Duren, *University of Michigan, Ann Arbor*, Editors

The present collection of articles will do much to fill [the] gap in Western understanding of

Russia ... Sosinski provides a unique insight into this history from the point of view of a Western mathematician who went to live in the Soviet Union during the Khrushchev thaw in the 1950s ... thorough and well-edited.

—Mathematical Reviews

This collection contains good photographs of many mathematicians—and it really is a good account of the Golden Years of Soviet Mathematics itself.

—Zentralblatt für Mathematik

Volume 6; 1993; 271 pages; Hardcover; ISBN 0-8218-9003-4; List \$94; Individual member \$56; Order code HMATH/6LMS

The Scope and History of Commutative and Noncommutative Harmonic Analysis

G. W. Mackey, *Harvard University, Cambridge, MA*, Editor

Expanded versions of lectures given at various conferences ... constitute historic and expository material of the highest quality and importance.

—Mathematical Reviews

Each mathematician interested in the development of mathematical ideas should complement his information by reading [this book].

—Zentralblatt für Mathematik

Volume 5; 1992; 370 pages; Hardcover; ISBN 0-8218-9903-1; List \$52; Individual member \$31; Order code HMATH/5LMS

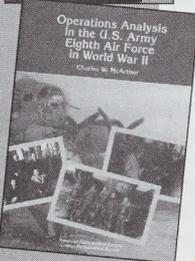
Operations Analysis in the United States Army Eighth Air Force in World War II

Charles W. McArthur, *Tallahassee, FL*

An interesting study on the advent of Operational Research in the U.S. Air Force ... A useful and informative book.

—The Journal of the United Service Institution of India

Volume 4; 1990; 349 pages; Hardcover; ISBN 0-8218-0158-9; List \$36; Order code HMATH/4LMS



Beginning with Volume 4, *History of Mathematics* is co-published with the London Mathematical Society. Members of the LMS may order directly from the AMS at the AMS member price. The LMS is registered with the Charity Commissioners.

All prices subject to change. Charges for delivery are \$3.00 per order. For optional air delivery outside of the continental U. S., please include \$6.50 per item. Prepayment required. Order from: **American Mathematical Society**, P. O. Box 5904, Boston, MA 02206-5904, USA. For credit card orders, fax (401) 455-4046 or call toll free 800-321-4AMS (4267) in the U. S. and Canada, (401) 455-4000 worldwide. Or place your order through the AMS bookstore at <http://www.ams.org/bookstore/>. Residents of Canada, please include 7% GST.

AMS and LMS members may order through Oxford University Press and receive their member discounts: fax +44 (0) 1865 267782 or email at science.books@oup.co.uk



L.S. PONTRJAGIN
Honorary Member 1952

DIARY

The diary lists Society meetings and other events publicized in previous issues of the Newsletter. For further information, refer to the figure in brackets, which is a cross reference to the LMS Newsletter number.

APRIL 1998

- 6-9 British Mathematical Colloquium, Manchester University (257)
6-9 British Applied Mathematics Colloquium, Brunel University (254)(257)
14-17 British Topology Meeting, Aberdeen University (255)
16 British Women in Mathematics Day, Coventry University (256)
16-17 JHC60, Newton Institute, Cambridge (257)
20-24 LMS Invited Lectures, Exeter University, Professor D. Zagier
20-24 Probability: Theory and Applications Workshop, Nottingham Trent University (252)

MAY 1998

- 8 Edinburgh Mathematical Society Meeting, Aberdeen University (252)
21-23 Groups in Galway '98, Galway (258)
22-23 London Mathematical Society and Irish Mathematical Society Joint Meeting on Complex Analysis and Dynamical Systems, London

JUNE 1998

- 4-10 Advances in Homotopy Theory Euroconference (BCAT), Barcelona, Spain (257)
5 Edinburgh Mathematical Society Meeting, St Andrews University (252)
7-19 Arithmetic and Geometry of Algebraic Cycles NATO ASI, Alberta, Canada (255)
21-27 Astrophysical Discs, EC Summer School, Isaac Newton Institute, Cambridge (258)
22-26 Groups of Finite Morley Rank Conference, Greece (255)
22-26 Positivity in Applications Meeting, Ankara, Turkey (256)
22-27 European Consortium for Mathematics in Industry (ECMI 98), Göteborg, Sweden (252)

JULY 1998

- 2-3 European Women in Mathematics Workshop on Moduli Spaces in Mathematics & Physics, Oxford (256)(257)
3-6 Teaching of Mathematics Conference, Samos, Greece (257)
5-9 Mathematics Colloquium, Victoria University of Wellington, New Zealand (254)
13-24 Symplectic Topology Workshop, Warwick University (255)

- 19-25 Galois Representations in Arithmetic Geometry Meeting, Crete (256)
20-24 Dimensions and Dynamics Conference, Miskolc, Hungary (254)
20-24 Domain Decomposition Methods Conference, Greenwich University (254)
23-31 Computation and Geometric Aspects of Modern Algebra, Heriot-Watt University (258)
27-7 Aug Nonlinear Analysis, Differential Equations and Control Seminar, Montreal, Canada (254)

AUGUST 1998

- 13-16 Commutative Algebra Conference in Honour of David Rees's 80th Birthday, University of Exeter (257)
18-28 International Congress of Mathematicians, Berlin, Germany (238) (242) (253)
30-5 Sept Algebraic Number Theory and Diophantine Analysis Conference, Graz, Austria (249)
31-5 Sept Representation Theory of Algebras, University of Bielefeld, Germany (258)

SEPTEMBER 1998

- 6-11 British Association for the Advancement of Science Festival, Cardiff (257)
7-11 Infinite Length Modules, University of Bielefeld, Germany (258)
14 Physical Interpretations of Relativity Theory, Imperial College London (258)

OCTOBER 1998

- 16-17 Two-day London Mathematical Society Meeting - Harmonic Analysis

NOVEMBER 1998

- 20 London Mathematical Society Meeting - Annual General Meeting

DECEMBER 1998

- 16-22 Symmetry and Perturbation Theory Workshop, Rome, Italy (258)

JULY 1999

- 5-9 International Congress of Industrial and Applied Mathematics (ICIAM 99), Edinburgh (252)
12-16 British Combinatorial Conference, Kent University (254)

JULY 2000

- 17-22 International Congress of Mathematical Physics, Imperial College, London (257)

The Newsletter is published monthly except in August. Items and advertisements for inclusion in the Newsletter should be sent to the Editor, Susan Oakes, by e-mail, fax or post to the LMS office (addresses below), to arrive before the first day of the month prior to publication.

The London Mathematical Society, 57-58 Russell Square, London WC1B 4HP

Tel: 0171-323 3686, fax: 0171-323 3655, e-mail: lms@lms.ac.uk

World Wide Web: <http://www.lms.ac.uk/>

The London Mathematical Society is registered with the Charity Commissioners.