## THE LONDON MATHEMATICAL SOCIETY NEWSLETTER

No. 236

March 1996

#### FORTHCOMING SOCIETY MEETINGS

Friday-Saturday 10-11 May 1996, University of Glasgow Joint Meeting with the Edinburgh Mathematical Society Algebra

K. Goodearl, G. Levitt, A. Lubotsky, C. Maclachlan, J. Rickard Friday 21 June 1996, Linnean Society, London C.J. Bushnell, R. Taylor

Friday 18 October 1996, Linnean Society, London Cayley-Sylvester Centenary Meeting on Invariant Theory Friday 15 November 1996, Linnean Society, London Annual General Meeting E. Witten, N.J. Hitchin (Presidential Address)

#### LMS COUNCIL DIARY

The first business of the Council meeting held on 19 January was to elect a new "diarist". This is a member of Council who writes a short note for Newsletter readers on the exciting events that happen at each Council meeting. Sitting here at my computer faced with diarist's block, my admiration for Wilfrid Hodges, who has been doing the job until now, grows. After many of my colleagues on the Council have seen, criticised and edited the text, this is my first attempt - however all the errors are mine.

One issue which we discussed was the impact of the report "Tackling the Mathematics Problem" and, more importantly, how we can follow up the impression that had been made. This issue has now entered the political arena. The President reported on a number of letters that he had received from various bodies - Learned Societies, Vice-Chancellors, the Headmasters' Conference, as well as individual teachers. Most of them were very supportive. An interim answer to some of our concerns was provided by a letter to the President from Gillian Shephard (which has been made public). In this the Secretary of State has asked all sorts of people to report to her. We were also shown a page from Hansard where the concerns expressed in the report were raised in Parliament. One minor worry of Council was whether the actions proposed in the Secretary of State's letter were going to be used to delay further discussion. The Education Committee also reported on its meetings with SCAA (School Curriculum and Assessment Authority) on this subject which were none too promising. However, Sir Ron Dearing has finally agreed to meet with representatives of the Society.

Away from politics, we heard on the international front how subscriptions for our Russian translations, Izvestiya and Sbornik, were building up and we agreed to proceed with a reciprocity agreement with the Mathematical Society of Japan.

Alan Camina

#### **RECIPROCITY AGREEMENT** Mathematical Society of Japan

A reciprocity agreement has been concluded between the London Mathematical Society and the Mathematical Society of Japan. Under the agreement, members of the London Mathematical Society who are not resident in Japan may join the Mathematical Society of Japan as reciprocal members in Category I or Category II. Reciprocal members enjoy practically all the privileges of ordinary members, except the right to vote. Those in Category I pay 50% of the dues (9000 yen), and receive the Journal of the Mathematical Society of Japan (in English); those in Category II pay 60% of the dues (10800 yen), and receive the Journal of the Mathematical Society of Japan (in English) and Sugaku (in Japanese).

Members of the London Mathematical Society who wish to become reciprocal members of the Mathematical Society of Japan should inform the Administrator, Susan Oakes, by **Friday 22 March**. If they pay Society subscriptions by direct debit, she can arrange for their reciprocity subscriptions to be debited; otherwise, please send a cheque, made payable to the London Mathematical Society for £60.00 for Category I or £72.00 for Category II.

#### LAST NEWSLETTER

Members who have not yet paid their subscriptions are reminded that the subscription for the 1995-96 session was due on 1 November 1995. The Society has the right to discontinue the supply of periodicals and Newsletters to members whose subscription remained unpaid on 31 January 1996. With regret, this sanction must now be applied so members who have not yet paid their 1995-96 subscription will receive no further publications, and, in particular, this is the last issue of the Newsletter that they will receive. Enquiries about payment of the 1995-96 subscription should be addressed to the Assistant Administrator, Harvinder Lotay, at the LMS office, tel: 0171 437 5377, fax: 0171 439 4629, e-mail: lms@kcl.ac.uk.

#### UNIVERSITY OF LEICESTER DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

Applications are invited for a Lectureship (Grade A) in Computer Science. This post is tenable from 1 October 1996 or as soon as possible thereafter.

The Computer Science Group in the Department has recently appointed three new lecturers, and will consist of nine members of staff when Iain A. Stewart takes up his appointment as Professor of Computer Science in March 1996. The Department is firmly research oriented with a wide variety of interests. The successful applicant will be ambitious, able to develop their own research within a multi-faceted environment, and have a strong research record and potential. There is no restriction regarding the area of research, and applicants with expertise in any area of Computer Science are welcomed. There will be ample scope for a person of energy, drive, and ambition to assume a rewarding role in a young and dynamic department.

Informal enquiries may be made to Professor I.A. Stewart (tel: 01792 295397, e-mail: i.a.stewart@swansea.ac.uk) or Dr R.M. Thomas (tel: 0116 252 3411, e-mail: rmt@mcs.le.ac.uk); information is also available on the WWW (http://www.mcs.le.ac.uk). Further particulars and an application form are available from the Personnel and Planning Office (Academic Appointments), University of Leicester, University Road, Leicester LE1 7RH, tel: 0116 252 2758. The closing date for applications is **29 March 1996.** Please quote ref A5058.

Promoting Excellence in University Teaching and Research

#### LONDON MATHEMATICAL SOCIETY INVITED LECTURE SERIES 1996 Frederick Almgren, Princeton University Geometric Measure Theory and the Calculus of Variations

A series of 10 lectures on the application of methods from geometric measure theory to the calculus of variations will be given by Frederick Almgren during the week 15 - 19 April 1996 at the Department of Mathematics, University College London.

It will begin with coffee at 10.00 on Monday 15 April in Room 606 on the sixth floor of the Mathematics Department/Student Union Building at 25 Gordon Street (on the corner of Gower Place and Gordon Street). The morning lecture will begin at 11:00 and the afternoon lecture at 2:00. A similar schedule is planned for the whole week, although some adjustments may be necessary.

The series will present an introduction to new techniques that have recently been developed to answer important questions in the theory of minimal surfaces. The lectures will none-the-less be accessible to research students in nearby fields; preliminary reading on the level of, e.g., F. Morgan's Geometric Measure Theory (Academic Press, Boston, MA, 1988) is highly recommended.

#### Tentative programme

- The shape of soap bubbles and crystals: Having fun with the calculus of variations and some important problems.
- Basics of geometric measure theory: Hausdorff and integral geometric measure, rectifiable sets, area and co-area formulas, structure theorem for sets of finite Hausdorff measure.
- Existence of energy minimizing surfaces: Currents, the deformation theorem and isoperimetric inequalities, multi-functions and approximation, the compactness theorem, parametric integrals and energy minimizing surfaces.
- Regularity theorems: (F,e,d) minimal sets, Dirichlet energy minimizing multifunctions, mass minimizing integral currents.
- Curvature driven evolutions and dendritic crystal growth the variational approach.
- Calculus of variations in the large: homotopy groups of the integral cycle groups, integral varifolds and the existence of minimal surfaces on manifolds.
- Calibrations and calculations of minimal surfaces: Holomorphic varieties as mass minimizing integral currents, max flow/min cut algorithms for computing area minimizing surfaces.

**Accommodation** Accommodation, under £20 (single) room/night, is reserved in Carr Saunders Hall from 14 till 19 April 1966. If you wish to use this accommodation, please let the organizers know as soon as possible. Close to the College there is a large number of (more expensive) bed and breakfast hotels where one should be able to find accommodation even on the day of arrival.

**Registration** Participants who have not yet registered are requested to do so (preferably by e-mail) as soon as possible. There is no registration fee.

**Contact address** David Preiss, Department of Mathematics, University College London, Gower Street, London WC1E 6BT; e-mail: dp@math.ucl.ac.uk

## AUTHORS' LICENSING & COLLECTING SOCIETY

The Authors' Licensing & Collecting Society was set up in 1977 by writers to act for the benefit of writers to collect and distribute royalties, particularly those generated from the photocopying of books in educational establishments. If you have written any books or even just one (either in print or out of print) ALCS may be holding monies on your behalf and they would like to hear from you. For further details, contact Jason Doggett or Janine Molloy (tel: 0171 255 2034, email: alcs@alcs.demon.co.uk) or write to: ALCS, Isis House, 74 New Oxford Street, London WC1A 1EF.

#### ALI FRÖHLICH'S 80TH BIRTHDAY

A celebratory lunch and lectures will be held at Robinson College, Cambridge, on Saturday 22 June 1996. The event will be supported by the London Mathematical Society. There will be three morning lectures: "Galois structure in algebraic number theory" by Professor M.J. Taylor; "p-adic groups, local constants, and the Langlands correspondence" by Professor C.J. Bushnell; "Galois groups and finite projective planes" by Professor J. Thompson, FRS. Those interested in participating can obtain further details from M.J. Taylor at Department of Mathematics, UMIST, PO Box 88, Manchester M60 1QD; e-mail: martin.taylor@umist.ac.uk; fax: 0161 200-3669; tel: 0161 200-3640.

#### **IOPP INITIATIVE**

Institute of Physics Publishing has announced that it will be making all its research journals available on the Internet to scientists whose institutions subscribe to the paper versions of the journals. Articles will be available electronically up to three weeks before they appear in print and researchers will also be able to access them via the World Wide Web. Institute of Physics Publishing now has 14 of its 31 journals, including Nonlinearity (published jointly with the London Mathematical Society), available on the Web and the remainder will follow in the near future. Further information and demonstration material is available at http://www.iop.org.

#### WORKSHOP ON SEMIGROUP THEORY

A workshop on Semigroup Theory will take place in Lisbon (Portugal) from 22 to 24 May 1996. The invited speakers are: J. Almeida (Porto), T. Blyth (St. Andrews), J. Fountain (York), V. Gould (York), P. Higgins (Essex), J. Howie (St. Andrews), D. Munn (Glasgow), J.E. Pin (Paris VI), J. Renshaw (Southampton), N. Ruskuc (St. Andrews). The organizers are: G.M.S. Gomes (CAUL), E. Giraldes (UNL), H. Sezinando (CAUL), V.H. Fernandes (UNL). Further information can be obtained from Centro de Algebra, Av. Prof. Gama Pinto 2, 1699 Lisboa Codex, Portugal or by e-mail (ggomes@alf1.cii. fc.ul.pt; or mhelena@ptmat.lmc.fc.ul.pt).



4

## LONDON MATHEMATICAL SOCIETY MONOGRAPHS SERIES

### 25% DISCOUNT TO LMS MEMBERS

#### **Super-real Fields**

Totally Ordered Fields with Additional Structure H. G. Dales and W. H. Woodin

This advanced text expounds the established theory of ordered fields, and continues to develop a theory of super-real fields. This theory has important applications in analysis and logic.

LMS Monograph Series No. 14 0-19-853991-6, February 1996 <del>£55.00</del> £41.25

## Spectral Decompositions and Analytic Sheaves

J. Eschmeier and M. Putinar

This book uses the language of homological algebra and sheaf theory to describe both classical results and recent developments in the spectral theory of linear operators.

LMS Monograph No. 10 0-19-853667-4, February 1996 <del>£75.00</del> £56.25

## Fundamentals of Semigroup Theory John M. Howie

This is a clear and readable introduction to the subject, with emphasis on various classes of regular semigroups.

LMS Monograph Series No. 12 0-19-851194-9, October 1995 <del>£45.00</del> £33.75

#### Area, Lattice Points, and Exponential Sums

M. N. Huxley

This volume is concerned with the application of exponential sum techniques to a variety of problems in number theory, in particular the Riemann Zeta Function and the problem of estimating the number of lattice points in regions.

LMS Monograph Series No. 13 0-19-853466-3, February 1996 £85.00 £63.75

#### An Atlas of Brauer Characters

C. Jansen, K. Lux, R. Parker, and R. Wilson

This book is a sequel to the Atlas of Finite Groups by J. Conway, R. Curtis, S. Norton, R. Parker, and R. Wilson (OUP 1985) and consists mainly of the modular character tables of many of the groups in the original Atlas.

LMS Monograph Series No. 11 0-19-851481-6, August 1995 £49.50 £37.12

#### The Geometry of Topological Stability Andrew du Plessis and Terry Wall

Written by internationally renowned authors, the book describes original research, virtually none of which has appeared before in either articles or in book form. The methods developed will stimulate future progress from their application, especially with regard to singularity theory.

LMS Monograph Series No. 9 0-19-853588-0, December 1995 <del>£75.00</del> £56.25

## Integrability, self-duality, and twistor theory

L. J. Mason and N. M. J. Woodhouse

This book explores in detail the connections between self-duality and integrability, and also the application of twistor techniques to integrable systems.

LMS Monograph Series No.15 0-19-853498-1, April 1996 £45.00- £33.75

#### Series Editors

H. G. Dales University of Leeds

Peter M. Neumann University of Oxford



For further information please contact Elaine Stewart : stewarte@oup.co.uk Please call 01536 454534 to order any Oxford book on your credit card. To obtain the 25% discount offer please quote reference ESLMS196

## **OXFORD UNIVERSITY PRESS**

#### EPSRC APPLIED NONLINEAR MATHEMATICS PROGRAMME

**Introduction** The ANM Programme provides support for genuinely interdisciplinary and collaborative research, encouraging the two-way transfer of knowledge between applied mathematicians and scientists and engineers and the take up of developments in nonlinear mathematics in other fields.

Assessment Criteria The ANM Programme aims to facilitate and stimulate the use of innovative applied nonlinear mathematics in problems of demonstrable, practical relevance. The Programme will seek to support projects of high scientific quality in a field of to EPSRC, involving the interest application of nonlinear mathematics to the study of the behaviour of some system arising in the engineering, physical or biological sciences, or industry or commerce. Successful projects will normally involve the use of novel rather than standard techniques, an analytic rather than purely computational approach, have some element of generality and show potential for further development. Priority will be given to applications which involve a genuine collaboration between a mathematician and a scientist from either academia or industry.

All applications will be examined for their relevance to the Programme. Principal criteria for assessment will be:

- Quality and timeliness of the proposed research;
- Abilities of the proposed research team and, where appropriate, their track record;
- Current relevance of the research to industry, commerce, government and other research workers together with the extent and quality of collaboration with such users;
- Potential for commercial applications of the results within the UK, both by the applicants and others.

The Programme will be open to researchers from universities.

Applications should be made on the EPS(RP) form available from university registrars or research grant offices. Applications should be clearly marked ANM (MATHEMATICS PROGRAMME) and should be received no later than 4 April 1996. The accompanying case for support should conform to the guidelines set out in the notes for guidance, including a clear statement of objectives and milestones for the research programme and the relevance of the proposed research to the ANM Programme. It is envisaged that decisions will be made by the end of June 1996. Advice on the preparation of research proposals can be obtained from Dr Philippa Hemmings at EPSRC (e-mail: Philippa.Hemmings@epsrc.ac.uk) or the Coordinator, Dr Tony Green (e-mail: W.A.Green@uk.ac.lut).

#### DRINFELD MODULES, MODULAR SCHEMES AND APPLICATIONS

The main aim of this instructional meeting is to bring together research students and specialists for lectures and discussions on aspects of the theory of Drinfeld modules. The preliminary scheme for the programme is: (1) Drinfeld modular schemes: construction; algebraization; compactification; (2) Applications: modular forms; arithmetic of global function fields and of division algebras over global function fields; elliptic curves over function fields. The meeting will take place in the conference centre of the Flemish community, Alden Biesen, Bilzen-Rijkhoven, Belgium, from 9 - 14 September 1996.

Persons interested in attending this meeting organised by Ernst Gekeler, Marc Reversat, Marius vander Put, Jan Van Geel should contact: Jan Van Geel, University of Gent, Department of Pure Mathematics and Computer Algebra, Galglaan 2, B-9000 Gent, Belgium; tel: 32-9-264.48.98; fax: 32-9-264.49.93; e-mail: jvg@cage.rug.ac.be. Announcements concerning the meeting can also be found on internet: http://cage.rug.ac.be/~jvg/workshop.html.

# You don't need a degree in maths to calculate these savings

Already a regular occurrence in the USA, Springer-Verlag is now holding its first worldwide\* Yellow Sale.

#### And this is how it works:

For two months only, from the end of March to May 31st, '96, we are making mathematicians all around the globe an offer they cannot refuse.

**Firstly,** we have put together a special selection of some 130 tried-and-tested titles across the whole spectrum of mathematics – from algebra to Zeeman's theorem.

**Secondly,** we have reduced the price of every single one of the books by



The complete Yellow Sale catalogue will be available in participating bookshops from March 31st, 1996 onwards, complete with details of how to order ...

30 - 50%

... or may be ordered from Springer-Verlag London Ltd. Sweetapple House Catteshall Road Godalming, Surrey GU7 3DJ Tel. (01483) 418800 Fax: (01483) 415144 e-mail: postmaster@svl.co.uk ... or may be downloaded by ftp.springer.de directory: /pub/yellowsale

The modern-day mathematician, the curious or the just plain impatient can get details of the Springer Yellow Sale in Mathematics on the World Wide Web. Simply access our special site: http://www.springer.de/whatsnew/ yellowsale.html

\* Please note that this unique offer is not available through booksellers in Germany, Austria, Switzerland or North and South America. Springer

#### ICMS EDINBURGH

1996 Scientific Programme: Interplays between Geometry and Topology, 1-30 June, Mann (e-mail: contact Β. mann@maths.ed.ac.uk); Grid Adaption in Computational PDEs, 1-5 July, WWW page URL consult http://www.ma.hw.ac.uk/icms/apde/ or contact D.B. Duncan (e-mail: dugald@ma.hw.ac.uk); Nonstandard Analysis and its Applications, 1 July - 17 August, contact N.J. Cutland (e-mail: n.i.cutland@maths.hull.ac.uk); Vapnik-Chervonenkis Dimension, 9-13 September, organizers: M. Jerrum (Edinburgh), A. Macintyre (Oxford), J. Shawe-Taylor (Royal Holloway, London); Probabilistic in Polymer Physics, 16-27 Methods organizers: T. September, Chan (Heriot-Watt), K.M. Jansons (UCL).

1997 Scientific Programme: Stochastic Partial Differential Equations, 1-11 April, Scientific Committee: A. Etheridge (Edinburgh), N. Krylov (Minnesota), E. Pardoux (Marseille), J. Walsh (UBC); Mathematical Modelling of Systems Involving Phase Changes: Dynamics of Mixed Phase Regions, 2-20 June, Scientific Committee: M.E. Glicksman (RPI, New York), R.N. Hills (Heriot-Watt), H.E. Huppert (Cambridge), C. Jaupart (IPG Paris), De L. Oper (Florida State); Complex Methods in Differential Geometry, 1 July -31 August, Organizing Committee: R.L. Bryant (Duke), M.G. Eastwood (Adelaide), C.R. LeBrun (Stony Brook), T.N. Bailey (Edinburgh), M.A. Singer (Edinburgh).

**Call for Proposals** The ICMS Programme Committee will next meet in June 1996. Proposals are invited for research programmes, workshops and courses on any topic in the mathematical sciences. Proposals of an inter-disciplinary nature are particularly welcome. The Scientific Director welcomes opportunities to discuss ideas and proposals for ICMS activities. Proposals should be no longer than two sides of A4 paper, and when accepted they will form the starting point for the preparation of more detailed plans. Proposals may be received at any time but to ensure full discussion at the 1996 meeting of the Programme Committee they should be received by 31 March 1996. They should be sent to Professor A.J. Macintyre FRS, Scientific Director, ICMS (Proposals), 14 India Street, Edinburgh EH3 6EZ, e-mail: icms@maths.ed.ac.uk.

#### FINITE MODEL THEORY Problems, Methods and Applications - A Tutorial

Finite model theory has emerged in recent years as a very active area of research, on the frontier of logic, combinatorics and computer science. The two-day tutorial, to be held at the University of Wales, Swansea from 8-9 July 1996, will present an in-depth introduction to the field aimed at postgraduate students and postdoctoral researchers (though open to all). Confirmed speakers include: Professor Clemens Lautemann (Mainz), Professor Colin Stirling (Edinburgh), Dr Ian Hodkinson (Imperial College), Dr Iain Stewart (Swansea) and Dr Anuj Dawar (Swansea). Topics covered will include the central problems and methods of finite model theory, as well as applications in complexity theory, databases and computer aided verification.

The meeting is supported by a grant from the London Mathematical Society through the MathFit programme. Grants are available to support attendance of postgraduate students at the meeting. For further information contact Anuj Dawar, a.dawar@swansea.ac.uk (tel: 01792 205678 ext.4805, fax: 01792 295708).

#### MINI-CONFERENCE ON HOMOTOPY THEORY

The lectures will be held at the Mathematical Institute, Oxford, in the afternoon of 26 June, all day 27 June, and the morning of 28 June 1996. Accommodation can be provided, for a limited number of participants, in New College for the nights of 26 and 27 June. Further particulars are now available from Ioan James.

## MATHEMATICS AND COMPUTING



#### MATHFIT INITIATIVE WORKSHOPS

MathFit: mathematics for information technology, is an initiative which aims to develop the links between information technology and mathematics.

The interplay between mathematics and information technology has traditionally centred around areas in logic, category theory and discrete mathematics. In recent years new connections between mathematics and computer science have emerged from such unexpected quarters as algebraic topology, differential geometry, dynamical systems and operator algebras. These new developments hold the promise of bringing new insights and powerful mathematical tools to bear on problems in computing. At the same time, such problems have opened new avenues of exploration for the mathematician.

EPSRC is proposing MathFit as a new initiative jointly managed by EPSRC's Mathematics Programme and Information Technology and Computer Science Programme. Those wishing to be involved in the consultation process should contact EPSRC officials Anne Farrow: sakf0@ib.rl.ac.uk (Maths) or Dominic Semple: dps1@wpo.epsrc.ac.uk (IT).

Five MathFit instructional workshops will take place this year, with a par-

ticular emphasis on postgraduate participation: some support for postgraduate students is available. For further details please contact the organisers below, or see the world wide web page at: http://www.qmw.ac.uk/~lms/comscicomhtml.

#### WORKSHOPS

**Recursions, proofs and datatypes** 16-17 March 1996, Professor Stan Wainer, University of Leeds, pmt6ssw@sun.leeds.ac.uk

**Computer algebra** 15-16 April 1996, Dr Brid Ńifhlathúin, University of Bath, nf@maths.bath.ac.uk

Genetic algorithms and neural computing June 1996, Professor Edmund Robinson, QMW London University, E.P.Robinson@dcs.qmw.ac.uk

Finite model theory 8-9 July 1996, Dr Anuj Dawar, University College Swansea, A.Dawar@swansea.ac.uk

Mathematical models of concurrency, communication and distribution 19-21 July 1996, Dr John Derrick, University of Kent, J.Derrick@ukc.ac.uk.http://www. ukc.ac.uk/computer\_science/Mathfit/index.html

> Ursula Martin um@dcs.st-and.ac.uk University of St Andrews

This occasional column is for the discussion of topics on the boundary between mathematics and computer science, thus covering both applications of mathematics in computer science and uses of computers in mathematics. Relevant material such as opinions, notices about Maths & CS meetings and reviews of research, teaching and support software is solicited. Contributions should be sent to the editors of the column: W.Hodges@qmw.ac.uk (Wilfrid Hodges, Queen Mary & Westfield College) dfh@maths.warwick.ac.uk (Derek Holt, University of Warwick).

#### HISTORY IN MATHEMATICS EDUCATION

A residential conference on the value and use of history in mathematics education will be held at St. Martin's College, Lancaster, from 12 to 14 April 1996. This is the fourth in a series of residential and international conferences organised by the British Society for the History of Mathematics to bring together researchers and teachers at all levels of education, to promote the use and awareness of historical sources in mathematics education and to explore in an exciting way issues around the educational use of the history of mathematics. Past meetings in this series have established a fruitful inter-action between those interested in the history of mathematics from a wide range of perspectives, including the research historian and the classroom teacher. Speakers will include: Sue Burns (London), John Fauvel (Open University), J.V. Field (London), Torkil Heiede (Denmark), Victor Katz (U.S.A.), Marjolein Kool (Netherlands), Jan van Maanen (Netherlands), Steve Russ (Warwick), Johnny Ball and David Singmaster (London). For further details, please contact: John Earle, The Maynard School, Denmark Road, Exeter EX1 1SJ; e-mail: c.j.earle@exeter.ac.uk; fax: 01392 496199.

#### WORLD MATHEMATICAL YEAR 2000

At the General Assembly of the International Mathematical Union (IMU), held just before ICM94, the new Executive Committee was asked to proceed with planning of World Mathematical Year 2000 and to organize and coordinate activities such as:

a) inviting a select group of outstanding mathematicians to present their views on topics they expect to be central to mathematical activity in the next century;

b) selecting a number of symposia, some possibly organized together with other scientific bodies, dedicated to mathematics, its applications and its role in society;

c) events to be held under the auspices of the International Commission for Mathematical Instruction (ICMI), the Commission for Development and Exchange (CDE) and the International Commission for History of Mathematics (ICHM).

A WMY 2000 Newsletter has been established and issues 1, 2 and 3 are available on Internet from three servers: Mathematical Institute of Jussieu, Paris, http://www.mathp6.jussieu.fr; IMU, http://elib.zib-berlin.de; EMS, http://www.emis.de. All ideas and proposals connected with WMY 2000 should be sent to the Editorial Board by electronic mail through these servers.



10



AVAILABLE NOW

Introduction to

# Graph Theory

**ROBIN J. WILSON** 

Fourth edition

Ppr 0 582 24993 7 £14.99 net Februa

184pp February 1996

Robin Wilson's well-known book has been widely used as a text for undergraduate courses in mathematics, computer science and economics, and as a readable introduction to the subject for non-mathematicians. This classic text has been published in seven languages and has now been revised and updated in a fourth edition.

The opening chapters provide a basic foundation course, containing such topics as trees, algorithms, Eulerian and Hamiltonian graphs, planar graphs and colouring, with special reference to the fourcolour theorem. Following these, there are two chapters on directed graphs and transversal theory, relating these areas to such subjects as Markov chains and network flows. Finally, there is a chapter on matroid theory, which is used to consolidate some of the material from earlier chapters. The book incorporates a full range of NEW FOR THIS EDITION

the text has been completely revised and some terminology changed to fit in with current usage

key theorems are highlighted and full solutions are provided for many of the exercises

incorporates new material on algorithms, tree-searches, and graph-theoretical puzzles

exercises of varying difficulty to reinforce student comprehension.

Prices and details correct at time of going to press but may change without notice.

Addison

Longman

Wesley

#### MATHEMATICS SUBJECT CLASSIFICATION

The editors of *Mathematical Reviews* and *Zentralblatt für Mathematik* have initiated the process of revising the 1991 Mathematics Subject Classification, which is used by both journals as their classification system. The editors do not plan a radical revision of the present 1991 system, but it is clear that some changes will be needed in order to accommodate recent developments in mathematical research.

It will be necessary to have this revision completed by the end of 1998 so that it can begin to be used in Current Mathematical Publications in mid-1999 and in Mathematical Reviews and Zentralblatt für Mathematik beginning in 2000. Comments and suggestions from the mathematical community are solicited to be considered in this revision process. These should be submitted by June 1997. The preferred method of communication by e-mail: msc2000@ams.org is msc2000@zblmath.fiz-karlsruhe.de. or Comments and suggestions may also be sent to the editors of the journals at the addresses below. Additional information as well as copies of the 1991 Mathematics Subject Classification Scheme may be found at http://e-math.ams.org/ and http://www.emis.de/. Copies can also be found in the most recent index issues of Mathematical Reviews and Zentralblatt für Mathematik.

The address for Mathematical Reviews is 416 Fourth Street, PO Box 8604, Ann Arbor, MI 48107-8604, USA. The address for Zentralblatt is Fachinformationszentrum Karlsruhe, Franklinstr. 11, D-10587 Berlin, Germany.

#### BRITISH MATHEMATICS 1860-1940

A database on British Mathematics 1860-1940 has been deposited at the ESRC Data Archive at Essex University by Dr June Barrow-Green of the Open University. The database contains biographical details of mathematicians working in Britain between 1860 and 1940

(amateur as well as professional), details of mathematics departments and mathematics courses in universities and training colleges. The database also contains details of learned societies, mathematical journals and prizes over this period. This work is the result of a project at the Open University funded by the Leverhulme Trust. The database is publicly available and details concerning access can be obtained via e-mail from: archive@essex.uk or: j.e.barrowgreen@open.ac.uk.

#### NATO ASI ON ALGEBRAIC MODEL THEORY

A NATO Advanced Study Institute (ASI) "Algebraic Model Theory" will be held from 19-30 August 1996 at The Fields Institute in Toronto, Ontario, Canada. The aim of this conference is to expose current researchers in model theory to recent major advances including connections between model theory and diophantine and real analytic geometry, permutation groups and finite algebras. The conference is intended for researchers at the postdoctoral level and beyond, but will be accessible to good research students.

The organizers are A. Lachlan (Simon Fraser University), Director, E. Bouscaren (Universite Paris 7), D. Marker (University of Illinois, Chicago), A. Pillay (University of Notre Dame), and M. Valeriote (McMaster University). The lecturers will include: E. Bouscaren, Z. Chatzidakis, G. Cherlin, D. Evans, B. Hart, A. Khovanskii, E. Kiss, A. Lachlan, M. Laskowski, D. MacPherson, D. Marker, A. Pillay, M. Valeriote, L. van den Dries, A. Wilkie, R. Willard, and M. Ziegler.

Financial support for suitable participants from NATO countries and NATO Cooperation Partner countries is available. (Apply by April 15 1996, to the address below.) Further information may be obtained from: NATO Conference, The Fields Institute, 222 College Street, Toronto, Ontario, Canada M5T 3J1; e-mail: nato@fields.utoronto.ca; fax: 416-348-9385; WWW:http: //icarus.math.mcmaster.ca/nato/

## MATHEMATICS TITLES FROM GORDON AND BREACH

#### STOCHASTICS AND STOCHASTICS REPORTS

Editor in Chief: Saul Jacka

Stochastic processes and their applications in the modelling, analysis and optimization of stochastic systems. Its objective is to promoting awareness of the latest theoretical developments on the one hand and of mathematical problems arising in applications on the other.

ISSN: 1045-1129

4 issues per volume • Current subscription: Volumes 56-60 (1996) Contact the publisher for a FREE sample copy

#### Stochastic Processes and Related Topics

#### Edited by Hans J. Engelbert, Hans Föllmer and Jerzy Zabczyk

#### Volume 10 in the Stochastics Monographs book series

Topics covered include recent developments in stochastic processes, especially in stochastic analysis, applications to finance mathematics, Markov processes and diffusion processes, stochastic differential equations and stochastic partial differential equations.

March 1996 • 171pp Cloth • ISBN: 2-88449-069-8

#### Regularity Theory and Stochastic Flows for Parabolic SPDEs

#### F. Flandoli

#### Volume 9 in the Stochastics Monographs book series

This text treats two topics in the theory of stochastic partial differential equations: space-regularity of solutions and existence of stochastic flows. It provides an account of regularity results that represent a useful reference for the researcher in stochastic partial differential equations.

1995 • 87 pp • Cloth • ISBN: 2-88449-045-0

Exercises in Algebra: A Collection of Exercises in Algebra, Linear Algebra and Geometry Edited by Alexei I. Kostrikin

#### Volume 6 in the Algebra, Logic and Applications book series

This book contains more than seven thousand exercises in algebra which are currently used in teaching a fundamental course in algebra at Moscow State University. The book covers three semesters of study and contains both standard and difficult exercises. At the end of the book results of calculations, a list of notations and basic definitions are given.

April 1996 • 464 pp • Cloth • ISBN: 2-88449-029-9 Paper • ISBN: 2-88449-030-2

#### CLASSICS OF SOVIET MATHEMATICS book series

Each title in this series contains the selected works of a renowned mathematician. Included in the series are N.N. Bogolubov, L.V. Kantorovich, A.D. Alexandrov and I.G. Petrowsky.

## Further information on any of these titles can be obtained from:

The Marketing Department, International Publishers Distributor, PO Box 90, Reading Berks, RG1 8JL, UK. Tel: +44 (0) 1734 560080 Fax: +44 (0) 1734 568211 or

The Marketing Department, c/o International Publishers Distributor, 280 Town Center Drive, Langhome, PA 19047, USA. Tel: +1 215 750 2642 Fax: +1 215 750 6343

e-mail: info@gbhap.com

Book Catalog on the Internet: http://www.titlenet.com/GB gopher://gb.titlenet.com.6500 gopher gb.titlenet.com 6500

#### JOBS FILE IN THE LMS ELECTRONIC ARCHIVE Reminder

Members are reminded that the LMS world wide web page (http://www.qmw.ac.uk/~lms/lms.html) contains a list of currently available positions in Mathematics in the UK.

For this service to be useful to members, it is important that Departments who are advertising positions should send the details (by e-mail) to Dr D. Holt (dfh@maths. warwick.ac.uk), who administers this list. Please use the format of the example below (which is not a genuine advertisement). A blank form can be downloaded from the archive.

| Broad field:          | Pure Mathematics                                       |
|-----------------------|--|
| Duration:             | Two Years  |
| Position:             | Lecturer   |
| Institution:          | Mathematics Department, University of Notown           |
| Starting date:        | 1.1.99 (or soon as possible thereafter)                |
| Area(s) preferred:    | Fawlty Logic   |
| Contact person(s):    | Professor M.A. Head (m.a.head@notown.ac.uk)            |
| Application deadline: | 31.8.98  |
| Other comments:       | Knowledge of Maple advantageous                        |
| Full details:         | Personnel Office, University of Notown, Notown NN1 0PC |
| Telephone:            | xxxx yyy zzzz  |
| Telephone:            | xxxx yyy zzzz  |
| E-mail:               | per.off@notown.ac.uk                                   |
| WWW:                  | http://www.notown.ac.uk/~per.off/mathsposts            |

#### UNUSUAL and not so unusual Mathematical and Scientific Subroutines Fortran / C + +

After obtaining a first class honours degree in mathematics and a PhD in elementary particle physics at the University of Cambridge, I spent nearly twenty years in operational research in the civil service and the financial sector. My thesis was notable for doing algebra on the computer. My career has kept my hand in with computing and has taught me the value of practical approximations but also the skills of responsible and reliable programming.

It is a long time since I read about number theory, Lie algebras and the like, but I can quickly absorb a mathematical brief. I can supply code for the rotations on a dodecahedron, and my interests include computer algorithms as well as oddities such as calendar calculations. I am also happy to keep body and soul together by writing a subroutine to solve an equation by interval halving.

My charges will be low on the basis that I retain the commercial rights to the subroutines provided.

Kenneth J Evans 22 St Leonards Road, Surbiton, Surrey, KT6 4DE Telephone: 0181-399-8684 Internet: kenneth@cosine.idiscover.co.uk

### G.W.HILL Honorary Member 1907

#### 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.

#### **MARCH 1996**

**4** North British Functional Analysis Seminar, Sheffield University (234)

8 Edinburgh Mathematical Society Meeting, Stirling (232)

**13** Ninth Schrödinger Lecture "Form, Colour and Depth: Perception and the Brain", D.H. Hubel, Imperial College, London (233)

15 Geometry and Physics Conference and Workshop, Open University (234)

**15** Science, Engineering and Technology Week (231)

**16-17** Recursions, Proofs and Data Types MathFit Workshop, Leeds University (235)

**24** Nonlinearity '96, Institute of Physics, London (235)

#### **APRIL 1996**

**9-12** British Mathematical Colloquium, UMIST (231, 233 & 234)

**15-19** LMS Invited Lectures - Professor F.J. Almgren, University College London (228)

**15-3** May School on Nonlinear Functional Analysis and Applications to Differential Equations, ICTP Trieste (230)

#### MAY 1996

**10-11** Algebra, Joint Two-Day London Mathematical Society Meeting with the Edinburgh Mathematical Society, Glasgow University

**31** Edinburgh Mathematical Society Meeting, Aberdeen (232)

#### JUNE 1996

15-19 Hyperbolic Problems, Theory, Numerics and Applications Conference, Hong Kong (233)21 London Mathematical Society Meeting, Linnean Society, London

**22** Ali Fröhlich's 80th Birthday Meeting, Robinson College, Cambridge (230)

24-4 July Partial Differential Equations and Spectral Theory, LMS Durham Symposium,

Durham University (232)

**25-28** Ordinary and Partial Differential Equations Conference, Dundee University (234)

**25-29** Geometric Issues in the Foundations of Science Symposium, St John's College, Oxford (234)

**25-29** European Consortium for Mathematics in Industry Conference, Denmark (235)

**26-28** Homotopy Theory Mini-Conference, Mathematical Institute, Oxford (230)

**30-6 July** Different Approaches to Population Dynamics Conference, Crete, Greece (235)

#### **JULY 1996**

**1-12** Graph Symmetry: Algebraic Methods and Applications, Université de Montréal, Québec, Canada (233)

1-13 NATO ASI, Edinburgh (233)

**8-19** Galois Representations in Arithmetic Algebraic Geometry, LMS Durham Symposium, Durham University (232)

**13-20** Edinburgh Mathematical Society's St Andrews Colloquium 1996, University of St Andrews (233)

**14-19** Computational Techniques in Spectral Theory and Related Topics Workshop, Gregynog Hall, University of Wales (230)

**18-20** Croatian Mathematical Congress, Zagreb, Croatia (233)

**18-20** Analytic and Elementary Number Theory Conference, Vienna, Austria (233)

**21-25** Affine Geometry of Convex Sets Conference, Dalhousie University, Canada (232)

**22-26** 2nd European Congress of Mathematics, Budapest, Hungary (235)

**21-1 Aug** Model Theory of Fields, LMS Durham Symposium, Durham University (232)

**28-3** Aug Brazilian Algebra Meeting, IMPA, Rio de Janeiro, Brazil (233)

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, Burlington House, Piccadilly, London WIV ONL Tel: 0171-437 5377, fax: 0171-439 4629, e-mail: Ims@kcl.ac.uk. World Wide Web: http://www.qmw.ac.uk/Ims.html

The London Mathematical Society is registered with the Charity Commissioners.

Printed by Boyatt Wood Press, Southampton (01703) 333132