

# THE LONDON MATHEMATICAL SOCIETY NEWSLETTER

No. 286

October 2000

## FORTHCOMING SOCIETY MEETINGS

*Friday 20 October 2000 - London*

G.W. Gibbons, S.W. Hawking

*Friday 24 November 2000 - London*

Annual General Meeting

T.C. Chinburg, M.J. Taylor (Presidential Address)

*10 February 2001 - Oxford*

Mary Cartwright Lecture

C.S. Morawetz

*Wednesday 28 February 2001 - Birmingham*

Inaugural LMS Regional Meeting (Midlands)

## ANNUAL GENERAL MEETING

The Annual General Meeting of the London Mathematical Society will be held on Friday 24 November 2000 at 3.15 pm in the Darwin Lecture Theatre, University College London, Gower Street, London WC1. At the Meeting the report of the Treasurer will be read, the Council and Officers of the Society for the coming year will be elected, and Auditors appointed. The election of Council and Officers is governed by Article 9 of the Charter of the Society, by Articles 18, 24 and 31 of the Statutes of the Society, and by By-Law III of the By-Laws of the Society.

As last year, the ballot will be held under the Single Transferable Vote system, and nominations for vacancies on Council will arise from the Nominating Committee rather than from Council itself. There will be a special mailing of ballot papers in October; this will include details of the voting procedure and information about the candidates.

J.S. Pym  
Council and General Secretary

## ANNUAL DINNER

The Annual Dinner will be held after the Annual General Meeting on Friday 24 November at 7.15 pm at The Montague Hotel, 15 Montague Street, London WC1. The cost is £30.00 per person and members may book places for guests. The booking form, enclosed with this *Newsletter*, should be returned together with payment to the London Mathematical Society office by **Monday 20 November**.

## ANNUAL SUBSCRIPTION

The LMS annual subscription, including publications, for the session November 2000 - October 2001 is due on 1 November 2000. Together with this *Newsletter* is a renewal form to be completed and returned with your remittance in the enclosed envelope.

No action is required if you are already paying by direct debit, and do not wish to change your choice of publications. Fully complete and return the form if you are paying by direct debit but wish to change



your choice of publications or add/delete a subscription to the European Mathematical Society. Bank accounts of members paying by direct debit will be debited with the appropriate amount on 15 January 2001. Other members should either enclose a cheque (£ sterling or US\$) with their form or, if they have a UK bank account and wish to take advantage of this convenient form of payment, request a direct debit mandate. Although the facility to pay by credit card is open to all members of the Society, it is our preference that members continue to pay by direct debit.

If the renewal form is missing from this *Newsletter*, contact the Society's Office (De Morgan House, 57-58 Russell Square, London WC1B 4HS, tel: 020 7637 3686, fax: 0171 323 3655, e-mail: membership@lms.ac.uk).

### **PUBLICATIONS PRICING POLICY**

The London Mathematical Society has a pricing structure for its journals, which allows individual members to purchase them at a substantial discount. These discounted prices are intended for personal use only and the journals should be kept among your personal belongings and not deposited, even temporarily, in a library, common room or other public area. Issues of the journals should be accessible to other mathematicians or students only with your permission, given individually in each instance.

### **GLASGOW MATHEMATICAL JOURNAL**

#### **Special Issue on Integrable Systems**

The Glasgow Mathematical Journal Trust and its publishers, CUP, are issuing a special issue, 43A, as part of volume 43 in 2001. The issue comprises papers on Integrable Systems selected from presentations at the conference, ISLAND 1, held on the Isle of Ilay in July 1999. The Trust is subsidising part of the cost of the extra issue but still finds it necessary to

increase the subscription rate (by £8) for this year only. Separate copies of the special issue will be available on application to the Trust or CUP. ISLAND 1 was supported financially by the London and Edinburgh Mathematical Societies, the Royal Society of Edinburgh and Glasgow University.

Chris Athorne  
Secretary to the Trust

### **ANDREAS TAMANAS**

Dr Andreas Tamanas, who was elected a member of the London Mathematical Society on 12 May 1995, died on 15 August 2000, aged 53.

### **BENCHMARKING**

The QAA has now established its panel to prepare benchmarks in the subject area 'Mathematics, Statistics and Operational Research'. Its members are Professor Chris Robson (Leeds), Professor Rob Archbold (Aberdeen), Professor Russell Cheng (Southampton), Professor Neville Davies (Nottingham Trent), Dr John Erdos (King's College London), Dr Judy Goldfinch (Napier University), Mr Gerald Goodall (Royal Statistical Society), Mr Tony Palmer (De Montfort University), Dr Stephen Ryrie (University of West of England), Professor Peter Saunders (King's College London), Dr Stephen Siklos (Cambridge), Professor Joan Walsh (Manchester).

Further information about the panel's activities will be given in the November *Newsletter*.

### **DEPARTMENTAL NEWS**

**Southampton University** The following promotions have been announced in the Faculty of Mathematical Studies. Dr B.H. Bowditch, Dr A.D. Fitt, Dr G.A. Jones, Dr C.P. Please, Dr C.N. Potts, and Dr D. Singerman have been promoted to Professor. Dr J.W. Anderson and Dr G.A. Niblo have been promoted to Senior Lecturer.



# LONDON MATHEMATICAL SOCIETY

Friday 20 October 2000

Darwin Lecture Theatre,  
University College London,  
Gower Street, London WC1

3.30 pm      Professor G.W. GIBBONS, FRS (Cambridge)  
*The Neumann and Dirichlet problems  
for the Einstein equations*

4.30 pm      Tea (South Cloisters)

5.00 pm      Professor S.W. HAWKING, FRS (Cambridge)  
(1999 Naylor Prize Lecture)  
*Euclidean quantum gravity*

**Admission will be by ticket only.**

Preference will be given to members, who may each bring a guest.  
Apply by e-mail (taylor@lms.ac.uk), fax or letter by **Friday 13 October**.

A reception and dinner will be held at the Bonnington Hotel, 92 Southampton Row, London WC1 at 7.00 pm. The cost will be £26.00 per person, inclusive of wine. Members wishing to attend should send a cheque to Miss Susan M. Oakes, London Mathematical Society, payable to 'The London Mathematical Society' to arrive no later than **Tuesday 17 October**.

Some funds are available to contribute in part to the expenses of members of the Society or research students who wish to attend the meeting. Requests for support should be addressed to the Meetings and Membership Secretary, London Mathematical Society, including an estimate of expenses and a very brief *curriculum vitae*; research students should include brief letters of endorsement from their supervisors).

London Mathematical Society, De Morgan House, 57-58 Russell Square,  
London WC1B 4HS (tel: 020 7637 3686, fax: 020 7323 3655,  
e-mail: lms@lms.ac.uk).



## THE EUROPEAN MATHEMATICAL SOCIETY

The European Mathematical Society was founded in 1990 and exists in order to encourage mathematical activity throughout Europe. Here "Europe" is to be taken in the widest possible sense, certainly not limited to member states of the European Union. The Society supports mathematics in Eastern Europe by sponsoring events, such as the second European Congress of Mathematics in Budapest (1996) and the forthcoming summer school in St. Petersburg (Asymptotic Combinatorics with Applications to Mathematical Physics, 9-22 July 2001).

The presidents of the society so far have been Fritz Hirzebruch, Jean-Pierre Bourguignon and Rolf Jeltsch; all three were at the London Mathematical Society reception in Barcelona during the third European Congress. Also present was Sir Michael Atiyah, who presided over the council, which founded the Society. The Society's work is done by its committees, guided enthusiastically by the Executive Committee, which meets at least twice a year. (The London Mathematical Society is hosting the next meeting, in November.)

The Society promotes Summer Schools (for research students), the European Congresses, and the Diderot Mathematical Forums. These last comprise a series of conferences, each of which takes place simultaneously in three locations, with video links for some of the events. The most recent had as its theme Mathematics and Music and was held in Vienna, Lisbon and Paris.

The Society also oversees the European Mathematics Prizes and the Felix Klein Prize, all awarded at the European Mathematical Congresses.

The Society lobbies the European Union on behalf of us all, helping to ensure that mathematics has a significant place in the EU's research programmes. This has paid off in getting support for Zentralblatt, with which the Society now has a close relationship, and in modifying

the rules for European networks to make them more useful for mathematicians. We have been ably served in this regard by the expertise of Luc Lemaire and Jean-Pierre Bourguignon.

The Society has both institutional and individual members. The institutional members are the mathematical societies of Europe. Most individual members join through their national societies: of the 15 euros subscription, a very small sum goes to the Society's coffers, but most pays for the Newsletter, which comes to you every three months. This is now a lively magazine, edited by Robin Wilson, containing news of the Society, articles, interviews, book reviews, and a calendar of mathematical events in Europe.

Individual members elect representatives to the Council of the EMS and thereby can influence the policy of the Society. The Society would like to have more individual members: the present figure of around 2000 is just about all right for a young organisation, but is far short of what is needed to fully represent all European mathematicians.

At the same time as you pay your London and European Mathematical Society subscriptions, you can subscribe to the (quarterly) *Journal of the European Mathematical Society*†, which first appeared in 1999. It takes articles from all branches of mathematics, with a premium on quality. The Society has ambitious plans to provide a publishing service, which will, *inter alia*, help preserve several European learned society journals at prices that libraries can afford.

You can find out more—there is a lot more—about the Society from the EMS website, [www.emis.de](http://www.emis.de), or by emailing me ([d.l.salinger@leeds.ac.uk](mailto:d.l.salinger@leeds.ac.uk)).

David Salinger  
EMS Publicity Officer

† cf David Brannan's article in the February LMS Newsletter (No. 279, page 15). You can only subscribe to the Journal if you are a member of the European Mathematical Society.



## DAAPHNE JACKSON FELLOWSHIP FOR RETURNING MATHEMATICIANS

Mathematicians taking a career break now have a chance to return to an appropriate career through a Daphne Jackson Fellowship sponsored by the London Mathematical Society.

Daphne Jackson Fellowships are awarded to well-qualified and highly motivated women or men who have had to take a substantial career break because of family commitments. A Fellow carries out a two-year programme of retraining in the context of a guided research or development project, at a nearby university or research centre. Fellowships are flexible and part-time, to allow a Fellow to meet ongoing family commitments.

All Fellowships are held in science or engineering, including mathematics and information sciences. The LMS-sponsored Special Fellowship will be held in Mathematics.

A number of Daphne Jackson Fellows have already been closely involved with mathematics. Among recent holders are Orsola Spivack and Alice Miller. Dr Orsola Spivack held her Fellowship in DAMTP, Cambridge, working on atomic collisions, and is now a Research Fellow and Tutor in Applied Mathematics at Lucy Cavendish College, Cambridge, while Dr Alice Miller is working in Computer Science at Glasgow on modelling and analysing telecommunications software, sponsored by the EPSRC.

The Daphne Jackson Trust operates a rolling programme of awards, without specific deadlines: if you wish to apply, the sooner, the better! Further information about Daphne Jackson Fellowships can be found at <http://www.DaphneJackson.org>. If you are interested in applying, contact Mrs Jennifer Woolley, Trust Manager, The Daphne Jackson Trust, Department of Physics, University of Surrey, Guildford GU2 7XH (tel: 01483 879166, fax: 01485 876781, e-mail: [DJMFT@surrey.ac.uk](mailto:DJMFT@surrey.ac.uk)).



### VISIT OF PROFESSOR J. BRÜDERN

Professor Jörg Brüdern, of the University of Stuttgart, will be visiting the UK from 1 - 5 October, supported by an LMS Scheme 2 grant. It is anticipated that he will give talks at the University of Sheffield (2nd), University of Liverpool (4th), University of Wales, Cardiff (10th), RHBNC London (11th), University of Oxford (13th). This is a provisional programme, so please check with the local venue before travelling. Further details are available from Professor Roger Cook (roger.cook@sheffield.ac.uk).

### VISIT OF PROFESSOR P. KOMJATH

Professor Peter Komjath, of Eötvös University, Budapest, will visit the UK for twelve days during the second half of October 2000, supported by an LMS Scheme 2 grant. Professor Komjath is an internationally acknowledged expert in combinatorial set theory, infinitary combinatorics, and mathematical logic. He is going to give talks at University College London, the London School of Economics, Cambridge, and possibly Norwich. For further information contact Professor I. Barany (barany@math.ucl.ac.uk).

### VISIT OF DR A. RYBKO

Dr Alexandre Rybko, from the Institute of Information Transmission Problems, Russian Academy of Science, Moscow, will visit University of Cambridge, University of Wales, Swansea and Queen Mary and Westfield College, London, from 31 January to 17 March 2001, under the LMS International Short Visits scheme. For further details contact Dr Y.M. Suhov, Statistical Laboratory, DPMMS, Centre for Mathematical Sciences, University of Cambridge, Wilberforce Road, Cambridge CB2 0WB (e-mail: yms@statslab.cam.ac.uk, tel: 01223 337958, 01223 337949, fax: 01223 337956).

### VISIT OF DR A. DUBICKAS

Dr A. Dubickas of Vilnius University is visiting the University of Edinburgh from 11 October to 10 November 2000. He is interested in analytic and algebraic number theory. His visit is supported by an LMS grant under its International Short Visits scheme. For further information contact Dr. C. Smyth (chris@maths.ed.ac.uk).

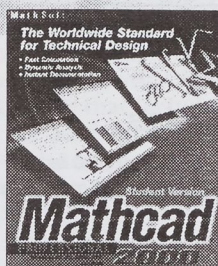
### VISIT OF PROFESSOR A.Y. HELEMSKII

Professor A.Y. Helemskii (Moscow State University) is visiting the UK from 11 September to 15 October 2000. He is supported under the LMS scheme for International Short Visits. Professor Helemskii is based at Leeds (contact H.G. Dales: pmt6hgd@leeds.ac.uk). During October he will give lectures as follows.

- *Recent news about amenability and harmonic analysis*  
General Mathematical Colloquium, University of Reading, Room 314, Mathematics Department, Wednesday 4 October at 2.30 pm; contact Professor J.D.M. Wright (j.d.m.wright@reading.ac.uk);
- *Recent news about amenability and harmonic analysis*  
Functional Analysis Seminar, University of Oxford, Mathematical Institute, Tuesday 10 October at 5.00 pm; contact Dr G. Vincent-Smith (graham.vincent-smith@oriel.oxford.ac.uk).
- *Amenability and flatness: an up-to-date survey*  
Functional Analysis Seminar, University of Cambridge, Centre for Mathematical Sciences (next to the Isaac Newton Institute) Wednesday 11 October at 2.15 pm; contact Dr G.R. Allan (G.R.Allan@dpmms.cam.ac.uk).



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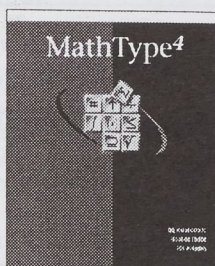
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**System requirements:** PC with Pentium processor 90 or higher; Windows 95, 98, or NT 4.0 or higher; 32 MB RAM minimum, 48 MB or higher recommended; CD-ROM drive; SVGA or higher graphics card and monitor; at least 160 MB disk space, 290 MB for full installation; Mouse or compatible pointing device.



Design Science Inc. (Ed.)

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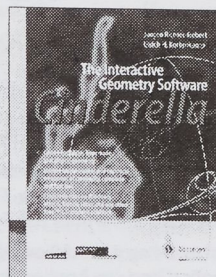
*Maths&Stats Newsletter,  
August 1999*

For further information please visit:  
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2000. CD-ROM, user manual with III, 119 pp.

\* DM 348,- (incl. 16% VAT)  
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Lit. 340.890 (plus local VAT)  
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**System requirements:** Windows 95, 98 or (4.0 or later); hard disk drive with at least 10 MB of free space. MathType does not require a great deal of memory (RAM) or processor power. If you can run Windows, you can run MathType. A CD-ROM drive for installation



J. Richter-Gebert,  
U.H. Kortenkamp

## The Interactive Geometry Software Cinderella

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\* DM 98,60 (incl. 16% VAT)  
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Also available as netlicence Edition

**System requirements:** Java 1.1 compatible platform; 800x600 True Colour Graphics; 32 MB RAM or more; 133 MHz CPU or higher; CD-ROM drive. Java Runtime environment for Windows 95/98/NT, MacOS 7.6.1 or later, Solaris (SPARC) and Linux included.

J. Richter-Gebert,  
U.H. Kortenkamp

## User Manual for the Interactive Geometry Software Cinderella

2000. X, 143 pp. 126 figs. Softcover  
\* DM 39,-; FF 147,-; £ 13,50; Lit. 43.070;  
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Springer





## UNIVERSITY OF OXFORD

in association with University College  
Mathematical Institute  
**Faculty Lectureship in Mathematics**

Applications are invited for the above post, tenable from 1 October 2001 or such later date as may be arranged, in conjunction with a Tutorial Fellowship at University College, Joint Stipend according to age on the scale £20,014 to £39,564 per annum.

This post is being filled following the appointment last year of S.J Chapman to the new Chair of Mathematics and its Applications. Applications are welcome from candidates with research interests in any area of physical applied mathematics. The appointee will be expected to join one of the groups working in the Oxford Centre for Industrial and Applied Mathematics where current research interests include mathematical modelling, continuum mechanics, mathematical medicine, and asymptotic analysis.

Further particulars, containing details of the duties and the full range of emoluments and allowances attaching to both the university and college posts may be obtained from the Administrator, Mathematical Institute, 24 - 29 St. Giles' Oxford OX1 3LB. The closing date for applications is 16 October 2000.

**The University is an Equal Opportunities Employer.**

## UNIVERSITY of GLASGOW

### Department of Mathematics

### SIMSON CHAIR IN MATHEMATICS

The University intends to make an appointment to the Simson Chair in Mathematics with effect from 1 January 2001, or as soon as possible thereafter.

Applicants should have a well established record of academic achievement and an excellent publication record in an area of Applied Mathematics. Preference may be given to candidates who would strengthen and broaden existing areas of research in Elasticity, Fluid Dynamics, MHD, or Biological Mathematics.

Potential candidates are encouraged to make informal enquiries to Prof. David Fearn (tel. 0141 330 5417, email D.Fearn@maths.gla.ac.uk).

For an application pack please see our website at  
**[www.gla.ac.uk](http://www.gla.ac.uk)** or write quoting Ref: 529/00CJ/TG to

Mrs Julie Duguid, Personnel Services, University of Glasgow, Glasgow  
G12 8QQ. Closing date: 31 October 2000.

*The University is committed to equality of opportunity in employment  
The University of Glasgow is an exempt charity dedicated to teaching and research.*



## BRITISH CONGRESS OF MATHEMATICS EDUCATION

The British Congress of Mathematics Education (BCME) is organised under the auspices of the Joint Mathematical Council of the UK (JMC). The JMC aims to promote the advancement of mathematics and the improvement of the teaching of mathematics in the UK with a membership that includes representatives of all the academic and professional societies with an interest in the field, including of course the LMS.

BCME is a bi-annual conference linked to ICME (the International Congress of Mathematics Education). It provides a unique forum to bring together people from all the participant societies of JMC and others who care about the teaching and learning of mathematics in order to exchange ideas from their different perspectives. It represents a rare opportunity to engage together in constructive and informative debate.

BCME began in 1991 as a British version of ICME under the sponsorship of JMC which had been involved with the Royal Society in working on ICME. The late Professor David Crighton was one of the key movers behind the creation of BCME. Like ICME, BCME was seen as a joint mathematics/mathematics education venture (ICME was created out of and is sponsored by the IMU). The intention was initially to promote the then developing research profile of mathematics education and to bring together mathematicians and the mathematics education community represented at that time by the Mathematical Association, the Association of Teachers of Mathematics and the National Association of Teachers in Further and Higher Education Mathematics Education Section (which represented teacher educators). The conference was placed before and after ICME in the hope of encouraging an enhanced British presentation at the international event as well as providing an opportunity to feed back ICME outcomes to the UK mathematics community more generally.

The first BCME was held at

Loughborough in 1991 and attracted around 260 people. The second conference, two years later was in Leeds, where again there was a major effort to create a strong mathematics/mathematics education dialogue. The third at Manchester demonstrated an increasingly strong mathematics education research focus, and the fourth at Northampton in 1999 had become more centred on major professional concerns.

The next conference BCME-5 seeks to return to a broader appeal and to maximise participation from all the various communities involved in the JMC, namely teachers of mathematics from pre-school to university, academic mathematicians, teacher educators, advisers and inspectors, researchers and policy makers. Our aim is to focus the conference activities on dialogue between (rather than within) these communities. In particular, we want to use BCME-5 as an opportunity to foster debate between mathematicians and those whose primary role is mathematics education whether as a teacher, teacher educator or mathematics education researcher, with a view to promoting collaborative action. We intend that BCME-5 will capitalise on all the energy and excitement for mathematics engendered by Mathematics Year 2000 and find ways to sustain these efforts and look beyond them.

To achieve these aims, we have chosen the theme for BCME-5 to be Removing Boundaries:

- removing boundaries between communities interested in mathematics education;
- removing boundaries that prevent access to mathematics for certain groups and individuals;
- removing boundaries imposed by curriculum or by limited knowledge.

To set the scene the conference will be opened by Professor Hyman Bass who is of course wellknown as an eminent math-



ematician. Professor Bass is the current President of ICME, and is Professor of Mathematics Education and Roger Lyndon Collegiate Professor of Mathematics at the University of Michigan. He is now active in mathematics education as well as in mathematics. Appropriately for our conference theme, Professor Bass will give his address jointly with Professor Deborah Ball. Professor Ball is Arthur F. Thurnau Professor at the University of Michigan and an internationally known researcher in elementary mathematics education. Their joint presentation will discuss approaches to effective collaboration between mathematics departments and departments of education, drawing on examples from the United States.

We hope that there will be a strong representation from the mathematics community at BCME-5, in leading discussion, contributing to interest groups and generally helping to frame the conference agenda so that it appeals to mathematicians whose central concern may not be education but who inevitably are affected by issues related to mathematics learning and the curriculum.

The first announcement of BCME-5 will be available shortly and will be distributed with next month's newsletter. We look forward to welcoming you to BCME-5. The meeting will take place 5-7 July 2001 at Keele University (information at [www.bcme.org.uk](http://www.bcme.org.uk)).

Professor Celia Hoyles

Chair of the Joint Mathematical Council  
of the UK

## HONORARY DEGREES

Professor K.R. Parthasarathy, 1995 LMS Hardy Lecturer, has been awarded an honorary degree from Nottingham Trent University.

Professor Richard Borchers, a member of the London Mathematical Society, has been awarded an honorary degree from the University of Birmingham.

Professor H. Ockendon has been awarded an honorary degree from the University of Southampton.

## GRESHAM COLLEGE GEOMETRY

During the Autumn Semester four Public Lectures in Geometry will be given by Professor Sir Roger Penrose (Gresham Professor of Geometry).

- Wednesday 18 October at 6.00 pm  
The Gresham Professors of Geometry
- Tuesday 21 November at 5.30 pm  
Games and Numbers
- Wednesday 22 November at 1.00 pm  
Mathematical Ideas in the Art of M.C. Escher
- Wednesday 29 November at 1.00 pm  
Hyperbolic Geometry, Patterns and Riemann Surfaces

All the lectures will be delivered at Gresham College, Barnard's Inn Hall, Holborn, London EC1N 2HH except for the second one (21 November) which will be given at St Paul's Girls School, Brook Green, London W6. The first lecture is organised jointly with the British Society for the History of Mathematics, by Dr Robin Wilson. Admission to the lectures is free and without tickets. Further details can be obtained from Gresham College (tel: 020 7831 0575; fax: 020 7831 5208; e-mail: [enquiries@gresham.ac.uk](mailto:enquiries@gresham.ac.uk); web site: <http://www.gresham.ac.uk>).

## NORTH BRITISH FUNCTIONAL ANALYSIS SEMINAR

A meeting of the North British Functional Analysis Seminar will be held at the Department of Mathematics, University of Glasgow, from 2.30 pm on Friday 3 November until 12.00 am on Saturday 4 November 2000. The speakers will be Professor Siegfried Echterhoff (Mathematisches Institut, Munster) and Professor Laurent Baratchart (INRIA, Sophia Antipolis). The meeting has financial support from the London Mathematical Society. For further information, please contact Dr Zinaida Lykova, Newcastle University ([Z.A.Lykova@ncl.ac.uk](mailto:Z.A.Lykova@ncl.ac.uk)).



# WAVE MOTION

LMS/EPSRC Short Course

Birmingham, 8 - 12 January 2001

Organisers: J. Billingham, A.C. King

Wave phenomena occur in many important physical and chemical systems. We shall begin by describing the simplifications available for small-amplitude linear water waves, and how dispersion affects their propagation. We shall also study linear shallow water waves, and, in the final part of the course, consider how basic linear shallow water waves are modified by the introduction of weak non-linearity. This leads to the Kortweg-de Vries equation, which we shall learn how to solve using the inverse scattering transform, introducing the concept of a soliton solution along the way.

The remainder of the course is concerned with nonlinear gas dynamics, waves of chemical reaction and diffraction. We shall study nonlinear gas dynamics as an example of a system in which wave steepening causes shock waves to form. In contrast, chemical waves form through a balance between chemical reaction and molecular diffusion. In studying diffraction, we shall see how the Wiener-Hopf technique can be used to analyse how light and sound interact with sharp edges. We conclude the course by studying nonlinear water waves, concentrating on some simple instability mechanisms.

The meeting is aimed at research students working in the areas of continuum mechanics and/or mathematical modelling.

- **Introduction to Linear Waves**  
Professor Jean-Marc Vanden-Broeck (East Anglia)
- **Refraction and Diffraction**  
Professor Andrew King (Birmingham)
- **Introduction to Nonlinear Waves**  
Professor David Needham (Reading)
- **Solitons and the Inverse Scattering Transform**  
Dr John Billingham (Birmingham)
- **Nonlinear Water Waves**  
Dr Stephen Decent (Birmingham)

The registration fee is £70. Participants will receive a free copy of a key textbook in this area. UK-based research students can expect to receive an EPSRC grant to cover the cost of course accommodation and meals. Participants must pay their own travel costs. EPSRC-supported students can expect that their registration fees and travel costs will be met from the EPSRC Research Training and Support Grant that is paid to universities with each studentship award.

Application forms may be obtained from: Helen Woodward, London Mathematical Society, De Morgan House, 57-58 Russell Square, London WC1B 4HS (e-mail: [woodward@lms.ac.uk](mailto:woodward@lms.ac.uk)) or from the LMS website ([http://www.lms.ac.uk/activities/research\\_meet\\_com/short\\_course/06.app.html](http://www.lms.ac.uk/activities/research_meet_com/short_course/06.app.html)).

Numbers will be limited and those interested are advised to make an early application. The closing date for applications will be **27 October 2000**.



# LONDON MATHEMATICAL SOCIETY

## INVITED LECTURE SERIES

18-23 June 2001

Professor T. GOODWILLIE (Brown University, USA)

### CALCULUS OF FUNCTORS

Professor Goodwillie is a leading expert on the interplay between the topology of high dimensional manifolds and the algebra associated with theories such as algebraic K-theory and cyclic homology. While thinking of the relationship between the geometry and the algebra, he conceived his celebrated theory known as "Calculus of functors". In a nutshell, the theory says that one may study functors that arise in topology in a way analogous to the way functions are studied in ordinary differential calculus. This theory, both very general and remarkably powerful, has already had a profound impact on several areas of topology. Aside from applications to algebraic K-theory, it had rather spectacular applications in mainstream homotopy theory and in the study of fundamental spaces of geometric topology.

Professor Goodwillie will deliver two lectures each morning. An associated afternoon programme will be arranged by Drs G. Arone and M. Weiss.

Participants should arrive in Aberdeen on Monday 18 June. The lectures will begin on Tuesday 19 June and end at 12 noon on Saturday 23 June.

Accommodation will be available for the nights of Monday 18 June to Friday 22 June (and Saturday 23 June if requested) in Crombie Hall, King's College, Aberdeen University, Old Aberdeen. The costs are not finalised but in 2000 they would have been: Bed and Breakfast £12.76 per night, Dinner, bed and breakfast £20.85 per night. There will be a registration fee of £30 to cover other costs.

Some financial support is available for those who have difficulty in meeting the expenses, particularly for PhD students and young mathematicians based in the UK. Those requesting this support should tell the organizers as soon as possible and provide an estimate of the amount to be requested.

Those wishing to be put on the mailing list for information, should tell The Organizers, LMS Invited Lectures, Department of Mathematical Sciences, King's College, Aberdeen University, Aberdeen AB24 3UE ([lms.lectures@maths.abdn.ac.uk](mailto:lms.lectures@maths.abdn.ac.uk)).

Further details will be provided later, and will be posted at  
<http://www.maths.abdn.ac.uk/~lmslec/index.html>



## BRITISH TOPOLOGY MEETING

The 16th British Topology Meeting will be held in Edinburgh from Saturday 7 to Monday 9 April 2001 hosted by Edinburgh and Heriot-Watt Universities in association with the ICMS. Talks will start on Sunday morning and finish at lunchtime on Monday. Invited talks will be given by Cameron Gordon (Austin Texas) and Jack Morava (Johns Hopkins). In addition there will be eight to ten 30-40 minute talks. Up to date details of the meeting may be obtained from the BTM homepage (<http://www.ma.hw.ac.uk/icms/current/britopol>).

## GEOMETRIC ANALYSIS AND INDEX THEORY

This conference is organized by the European Research Training Network "Geometric Analysis" in collaboration with the International Centre for Theoretical Physics in Trieste, the Università di Ancona and the Institut de Mathématiques de Luminy. The event will take place at the Abdul Salam International Centre for Theoretical Physics Trieste, Italy from 18 - 24 March 2001.

Scientific and Advisory Committee: A. Connes (IHES), N. Teleman (Ancona), J.-M. Bismut (Orsay), J. Bruening (Berlin), B.-W. Schulze (Potsdam), C. Baer (Hamburg), J. Bellissard (Toulouse), A. Legrand (Toulouse), J.-P. Brasselet (Marseille), P. Almeida (Lisbon), R. Nest (Copenhagen), A. Valette (Neuchatel), T. Kappeller (Zürich), B. Bojarski (Warsaw), D. Andrica (Cluj-Napoca), G. Landi (Trieste).

The conference will be followed by a related workshop on "Quantum Field Theory, Noncommutative Geometry and Quantum Probability" ICTP, Trieste, 25 to 30 March 2001; see below.

The Centre is located within the Miramare Castle Natural Park, in a pinewood on the seaside at about 8 km from the centre of Trieste. Participants will be housed in the Adriatico Guest House of the International Centre for Theoretical Physics or in hotels in Trieste.

Given the limited number of available rooms in ICTP, interested participants should register before **15 October 2000**, possibly by e-mail. Information about the Conference and Workshop is available from the web (<http://www.sissa.it/~bruzzo/ncg2001/ncg2001.html>).

## QUANTUM FIELD THEORY, NONCOMMUTATIVE GEOMETRY AND QUANTUM PROBABILITY

This workshop will take place at the International School for Advanced Studies Trieste, Italy (in collaboration with the International Centre for Theoretical Physics) from 26 - 29 March 2001. Participants are expected to arrive on March 25 and depart on March 30. The workshop will follow a related Conference on 'Geometric Analysis and Index Theory' (see above).

Each of the following will deliver two lectures:

- L. Accardi (Università Roma Tor Vergata and Centro Vito Volterra)
- A. Connes (IHES Paris)
- B. Dubrovin (SISSA Trieste)
- D. Kreimer (IHES Paris)
- S.L. Woronowicz (Warsaw University)

Some 12 additional one-hour lectures will also be delivered.

Participants will be housed in the Adriatico Guest House of the International Centre for Theoretical Physics or in hotels in Trieste. The minimum cost of accommodation and meals for a 5-day stay will be about 350,000 lire (180 Euros). Financial support will be available to cover the living expenses of some 30 participants.

Interested participants should register before **15 October 2000**, possibly by e-mail. An acknowledgement will be sent within a few days. Prospective participants will be informed about the acceptance of their application or otherwise by 15 November 2000. Information about the Workshop is available from the web (<http://www.sissa.it/~bruzzo/ncg2001/ncg2001.html>).



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This volume provides a systematic exposition of current knowledge about the Mandelbrot set and presents important results in complex dynamics hitherto unpublished or difficult to find in the literature.

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## NUMERICAL METHODS FOR FLUID DYNAMICS

A conference on "Numerical Methods for Fluid Dynamics" will take place at the University of Oxford from 26 - 29 March 2001. The three main areas are Adaptivity, Biomedical Modelling and Innovative Methods in Computational Fluid Dynamics (CFD). The organising committee are M.J. Baines (Reading), M.B. Giles (Oxford), M.T. Arthur (DERA, Farnborough), M.J.P. Cullen (ECMWF) and M. Rabbitt (British Energy).

Invited Speakers include:

- M.J. Baines (Reading)
- T.J. Barth (NASA Ames)
- J-D. Benamou (INRIA-Rocquencourt)
- F. Brezzi (Pavia)
- S.M. Deshpande (IISC-Bangalore)
- C. Farmer (Geoquest)
- D. Kroner (Freiburg)

- R. LeVeque (Washington)
- R. Rannacher (Heidelberg)
- P.L. Roe (Michigan)
- S.J. Sherwin (Imperial-London)
- E. Suli (Oxford)
- N.P. Weatherill (Swansea)

A feature of the meeting will be the third award of "The Bill Morton Prize" for a paper on CFD by a young research worker under the age of 31 on 29 March 2001. Enquiries regarding the conference should be addressed to Mrs B. Byrne, Oxford University Computing Laboratory, Wolfson Building, Parks Road, Oxford OX1 3QD (tel: 01865-273883; fax: 01865-273839; e-mail: [bette@comlab.ox.ac.uk](mailto:bette@comlab.ox.ac.uk); web: <http://web.comlab.ox.ac.uk/oucl/work/bette.byrne/1annb.html>).

## LMS SPITALFIELDS DAY FOLLOW-UP

Friday 13 October 2000

Isaac Newton Institute, Seminar Room 2, 20 Clarkson Road, Cambridge

### IN SEARCH OF THE IDEAL KNOT

Organiser: Renzo L. Ricca (UCL)

09.30-10.30	Professor Rob Kusner (Amherst) <i>Can you tie a knot with 1ft of 1in (or 12cm of 1cm) rope?</i>
10.30-11.00	Coffee
11.00-12.0	Professor Louis H. Kauffman (Chicago) <i>Symbiologic, rational knots and DNA</i>
12.30-13.30	Lunch
14.00-15.00	Professor Jun O'Hara (Tokyo Metropolitan) <i>On energy of knots</i>
15.00-16.00	Dr Renzo L. Ricca (UCL) <i>A history of Kelvin's vortex knots</i>
16.00-16.30	Tea
16.30-17.30	Round table discussion

These lectures are linked to the Isaac Newton Institute Programme on "Geometry and Topology of Fluid Flows". Anyone interested is welcome to attend. Scientific enquiries may be addressed to Dr Renzo L. Ricca, Isaac Newton Institute, 20 Clarkson Road, Cambridge CB3 0EH ([r.ricca@newton.cam.ac.uk](mailto:r.ricca@newton.cam.ac.uk)).



# LONDON MATHEMATICAL SOCIETY

## Spitalfields Day

Thursday 12 October 2000

Isaac Newton Institute for Mathematical Sciences  
Seminar Room 1, 20 Clarkson Road, Cambridge

### IN SEARCH OF THE IDEAL KNOT

**Organiser:** Renzo L Ricca (UCL)

**Programme Theme:**

Six world specialists will present results and latest discoveries on mathematical and physical knots. From soliton knots to electromagnetic knots, from elastic knots to chemical and biological knots, we shall follow our experts in a fascinating search for the ideal knot.

09.30 - 10.00	Coffee & Registration
10.00 - 11.00	<b>Dr Andrzej Stasiak</b> (Lausanne) <i>Ideal knots and physical knots</i>
11.00 - 12.00	<b>Professor Antti Niemi</b> (Uppsala) <i>Field theory realizations of knots and links</i>
12.00 - 13.00	<b>Professor Art Winfree</b> (Arizona) <i>Knotted phase singularities in motionless media</i>
13.00 - 14.00	Lunch at the Institute
14.00 - 15.00	<b>Professor Antonio Fernandez-Ranada</b> (Complutense) <i>Electromagnetic knots</i>
15.00 - 16.00	<b>Professor John Maddocks</b> (EPFL) <i>Global curvature, thickness, ideal shapes and self-contact</i>
16.00 - 16.30	Tea
16.30 - 17.30	<b>Professor De Witt Sumners</b> (Florida State) <i>Knots in DNA</i>
17.30 - 18.00	Wine Reception

These lectures are linked to the Isaac Newton Institute Programme on  
*Geometry and Topology of Fluid Flows*

Anyone interested is welcome to attend. Lunch will be provided at a nominal charge; please let Tracey Andrew at the Institute know by **22 September 2000** if you intend to come, to help us plan for lunch: tel: (01223) 335984; fax: (01223) 330508; e-mail: t.andrew@newton.cam.ac.uk. There are limited funds available to assist research students to attend: please apply by **22 September 2000** to Tracey Andrew at the Institute. Scientific enquiries may be addressed to Dr Renzo L. Ricca, Isaac Newton Institute, 20 Clarkson Road, Cambridge CB3 0EH (e-mail: r.ricca@newton.cam.ac.uk).



## Discounts for LMS Members

### Against the Tide

#### An Autobiographical Account of a Professional Outsider

L C Woods, University of Oxford, UK

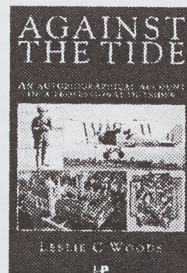
In this book Leslie Woods tells the fascinating story of his life from fisherman's son in New Zealand to head of the Mathematical Institute at Oxford University.

He escaped from a trade school by winning a scholarship to university, and then ran away from home to join the RNZAF, and later became a fighter pilot in the Pacific. After the War he won a Rhodes Scholarship to Merton College, Oxford, and following several years of research in aerodynamics, became professor of engineering at the University of New South Wales. In 1961 he was elected to a Fellowship of Balliol College, Oxford and undertook research into the theory of magnetically confined hot plasmas with a consultancy at Culham Laboratory. In 1970 he became a Professor of Plasma theory, but became disillusioned with the fusion energy project, which he believes survived on exaggerated claims of progress.

Woods explains why in his view magnetic fusion has failed to succeed and outlines the philosophy of science to which he subscribes. He writes frankly about both his successes and failures and finishes with an account of his taking up gliding at the age of 74.

March 2000 319 pages hbk 0 7503 0690 4 £26.00\*

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### The Pursuit of Perfect Packing

T Aste, Istituto Nazionale per la Fisica della Materia, Genoa, Italy and  
D Weaire, Trinity College, Dublin, Ireland

In 1998 Thomas Hales dramatically announced the solution of a problem which has long teased eminent mathematicians: what is the densest possible arrangement of identical spheres? In this book Denis Weaire and Tomaso Aste recount the story of this problem and many others which have to do with packing things together. The examples range through mathematics, physics, biology and engineering; they include the arrangement of soap bubbles in a foam, atoms in a crystal, the architecture of the bee's honeycomb, and the structure of the Giant's Causeway. It is an entertaining introduction to the field for both specialists and the more general public.

July 2000 136 pages hbk 0 7503 0647 5 £45.00\* pbk 0 7503 0648 3 £17.50\*

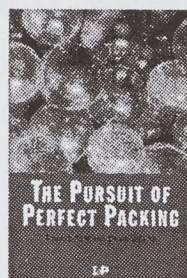
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# UNIVERSITÉ LAVAL

## POSTE EN ANALYSE

Le Département de mathématiques et de statistique sollicite des candidatures pour un poste de carrière en analyse. L'engagement se fera au rang d'adjoint et l'entrée en fonction est prévue le 1er juin 2001.

**FONCTIONS:** la personne retenue devra remplir les fonctions universitaires usuelles, soit l'enseignement des mathématiques aux trois cycles, y compris dans des cours autres que ceux des programmes de mathématiques; la recherche en analyse, y compris la direction de mémoires et de thèses de deuxième et de troisième cycle; la participation aux activités du groupe de chercheurs en analyse et la participation aux autres tâches universitaires.

**CRITÈRES DE SÉLECTION:** le candidat ou la candidate doit être titulaire d'un PhD en mathématiques ou d'un diplôme jugé équivalent; faire état d'un bon potentiel de recherche; posséder des aptitudes pour l'enseignement, y compris à de grands groupes, et pouvoir enseigner en français. La capacité à s'intégrer au groupe de chercheurs en place sera un atout majeur. Le salaire est déterminé par la convention collective suivant l'ancienneté accordée. Pour de l'information sur le département, on peut consulter la page Web à <http://www.mat.ulaval.ca>. Les personnes intéressées sont priées de faire parvenir à l'adresse ci-dessous, avant le **15 janvier 2001**, une copie de leur curriculum vitæ, incluant leurs expériences d'enseignement et une liste de leurs publications, ainsi qu'une description d'au plus deux pages de leur programme de recherche. Elles verront également à ce que trois lettres de recommandation confidentielles soient envoyées directement à la même adresse: Jean-Pierre Carmichael, directeur, Département de mathématiques et de statistique, Université Laval, Cité universitaire (Québec) Canada G1K 7P4. **En vertu de son Programme d'accès à l'égalité, l'Université Laval entend consacrer la moitié de ses postes vacants à l'engagement de femmes.** En accord avec les exigences du ministère de l'Immigration du Canada, cette offre est destinée en priorité aux citoyennes et citoyens canadiens et aux résidents et résidents permanents du Canada.





## UNIVERSITY OF CAMBRIDGE

### FACULTY OF MATHEMATICS

#### ADAMS PRIZE

The Chairman of the Adjudicators for the Adams Prize invites applications. The Prize will be awarded this year for research achievement in the general field of quantum information.

The prize is open to any person who, on 1 January 2001, will hold an appointment in the UK, either in a university or some other institution; and who is under 40 (in exceptional circumstances the Adjudicators may relax this age limit). The value of the prize is expected to be approximately £13,000; of which one third is awarded to the prize-winner on announcement of the prize, one third is provided to the prize-winner's institution (for research expenses of the prize-winner) and one third is awarded to the prize-winner on acceptance for publication in an internationally recognised journal of a substantial (normally at least 25 printed pages) original article, of which the prize-winner is an author, surveying the field of quantum information.

Applications (six copies), comprising a CV, a publications list and the work or works (published or unpublished) to be considered, should be sent to:

**The Secretary of the Adams Prize Adjudicators,  
Faculty Office, Centre for Mathematical Sciences,  
Wilberforce Road, Cambridge, CB3 0WA**

*(enquiries may be emailed to: [aet20@damtp.cam.ac.uk](mailto:aet20@damtp.cam.ac.uk)).*

**The deadline for receipt of applications is 31 October 2000.**



# JOURNAL BACKLOG 1999-2000

Journal	Number of Issues per year	Number of pages per year	Back log pages	Av. time from submission to acceptance months	Av. time from acceptance to publication months	Library price year p = print version e = electronic version
Bulletin of the LMS	6	769	0	7.5	10	£184 (p + e) 2001
European Journal of Applied Mathematics	6	750	200	2 - 24	3 - 4	£178 (p + e) 2001
Glasgow Mathematical Journal	3	480	140	6	15	£112 (p + e) 2001
IMA Journal of Applied Mathematics	6	648	0	-	5	£330 (p + e) 2001
IMA Journal of Numerical Analysis	4	660	620	4 - 6	12	£215 (p) + 10% (e) 2000
Inverse Problems	6	1900	0	5	3.4 (p) 2.5 (e)	£747 (p + e) 2001
Journal of Fluid Mechanics	24	9000	750	10	5	£948 (p + e) £430 (p) 2000
Journal of the LMS	6	1728	100	6.5	10	£402 (p + e) 2001
Journal of Physics A	50	11000	20	2 - 4	1.5 (p) 1 (e)	£2902 (p + e) 2001
LMS Journal of Computation and Mathematics (e-journal)	1	350	0	7	1.1	£63 (e) 2001
Mathematical Proceedings of the Cambridge Philosophical Society	6	1200	2000	3 - 4	16 - 17	£298 (p + e) 2001
Mathematika	2	440	650	12 - 18	18	£55 (p) 2000
Nonlinearity	6	2200	0	10	3 (p) 1.6 (e)	£559 (p + e) 2001
Proceedings of the Edinburgh Mathematical Society	3	672	0	12	14	£130 (p + e) 2001
Proceedings of the LMS	6	1536	440	6.5	12	£438 (p + e) 2001
Proceedings of the Royal Society of Edinburgh A	6	1500	600	9	12	£240 (p + e) 2001
Proceedings (A) of the Royal Society	12	3000	0	10	5	£580 (p + e) 2001
Oxford Quarterly Journal of Mathematics	4	512	320	8	10	£145 (p + e) 2000
Oxford Quarterly Journal of Mechanics and Applied Mathematics	4	650	100	8	8	£205 (p + e) £185 (e) 2000
Geometry and Topology (e-journal)	1	500	0	9	0	£0 (e) 10c per page (p) 2001

## Journal Descriptions

The *Bulletin of the London Mathematical Society* publishes important short research articles, with coverage extending across the whole of pure mathematics, together with some more applied areas of analysis, theoretical computing and mathematical physics. It also publishes authoritative survey articles and advanced expositions, often of an extensive nature reviewing all major developments in an important area over many years. Occasional biographical articles are published on the lives and mathematical achievements of distinguished mathematicians. The Bulletin has a substantial book review section, including books in applied mathematics and statistics as well as pure mathematics.

The *European Journal of Applied Mathematics* aims to publish papers in all areas of applied mathematics with especial emphasis on the following. (i) The exposition of new mathematical ideas relevant to the modelling and analysis of modern technological processes. (ii) The development of interesting mathematical methods with broad areas of applicability.

The *Glasgow Mathematical Journal* publishes original research papers in any branch of Pure or Applied Mathematics. Its policy is to feature a wide variety of research areas and it welcomes the submission of papers from all parts of the world. Papers can be submitted in hard copy or by e-mail.

The *IMA Journal of Applied Mathematics* is a direct successor of the Journal of the IMA which was started in 1965 with the aim of publishing papers in all areas of the application of mathematics. Since the appearance of the IMA Journal of Numerical Analysis in 1981, analytic and numerical treatments of both physical and nonphysical applied mathematics problems, including those arising in industry, have formed the main part of the Journal's contents. The journal also seeks to publish papers on new developments of existing mathematical methods, especially those that have relevance to more than one field of application and also new mathematical methods suggest-

ed by particular applications. Longer papers which survey recent progress in topical fields of mathematics and its applications are also published.

The *IMA Journal of Numerical Analysis* publishes original contributions to all fields of numerical analysis, and submitted papers are judged on their merits as contributions to the subject. Articles will be considered which treat the theory, development or use of practical algorithms and interactions between these aspects.

*Inverse Problems* aims to combine theoretical and mathematical papers on inverse problems with numerical and practical approaches to their solution. The main audience is pure and applied mathematicians and physicists, but the journal will also have more specialized appeal to workers in geophysics, optics, radar, acoustics, communication theory, signal processing and medical imaging. All inverse problems, inverse methods and data inversion methods are within the scope of the journal, including applications to tomography, systems identification, nondestructive evaluation and nonlinear evolution equations. The emphasis is on publishing original contributions to methods of solving mathematical, physical and applied problems. Because of the broad scope of the journal, authors should provide sufficient introductory material to appeal to a wider readership.

The *Journal of Fluid Mechanics* publishes theoretical, numerical and experimental investigations into all aspects of the mechanics of fluids. In addition to publishing important new work on the fundamentals of fluid mechanics, it is also concerned with their applications to other fields.

The *Journal of the London Mathematical Society* publishes longer length papers (normally in the range of 9-17 pages each) from a broad spectrum within mathematics but with the main emphasis on pure mathematics. These range from number theory to functional analysis, from finite simple groups to the mathematical foundations of quantum theory, from logic



and topos theory to the topology of Lie groups.

Concerned with the fundamental mathematical and computational methods underpinning physics, the *Journal of Physics A* is particularly relevant to statistical physics, chaotic and complex systems, classical and quantum mechanics, classical and quantum integrable systems and classical and quantum field theory.

The *LMS Journal of Computation and Mathematics* is a purely electronic journal, retaining all the editorial features of a traditional journal including peer review and copy-editing to the same high standard as the other LMS journals. Papers in any or all of the following categories are invited: papers in mathematics that benefit from being electronic on grounds of their format; computational aspects of mathematics; mathematical aspects of computation.

The *Mathematical Proceedings of the Cambridge Philosophical Society* is one of the few journals publishing original research papers that cover the whole range of pure and applied mathematics, theoretical physics and statistics. All branches of pure mathematics are covered, in particular logic and foundations, number theory, algebra, algebraic geometry, algebraic and geometric topology, classical and functional analysis, differential equations probability and statistics.

*Mathematika* is a general mathematical journal publishing articles of a high standard in all areas of mathematics, pure and applied. For historical reasons it has attracted articles particularly in number theory and fluid dynamics but welcomes all submissions. The journal takes an active approach to editing, and authors frequently incorporate significant improvements to their articles along the lines suggested by referees.

Aimed primarily at mathematicians and physicists interested in research on non-linear phenomena, *Nonlinearity's* coverage ranges from proofs of important theorems to papers presenting ideas, conjectures and numerical or physical experiments of significant physical and mathe-

matical interest.

The Edinburgh Mathematical Society was founded in 1883 and over the years, has evolved into the principal society for the promotion of mathematics research in Scotland. The Society has published its *Proceedings of the Edinburgh Mathematical Society* since 1884. This contains research papers on topics in a broad range of pure and applied mathematics, together with a number of topical book reviews.

The *Proceedings of the London Mathematical Society* has been published since 1865, and today maintains its rank as one of the major international mathematical journals. The *Proceedings* publishes longer research papers, covering a wide range of mathematical topics, including real and complex analysis, differential equations and related areas, topology, geometry, logic, probability and statistics, algebra, number theory and combinatorics.

The *Proceedings of the Royal Society of Edinburgh A* publishes original research papers in any branch of Mathematics and its applications. A significant proportion of the papers are on topics related to partial differential equations with some emphasis on those that use modern analytic methods. The editors encourage papers in related areas such as global analysis including the applications of PDE to differential geometry.

The *Proceedings (A) of the Royal Society* publishes refereed research papers in the mathematical, physical and engineering sciences. The emphasis is on new, emerging areas of interdisciplinary and multidisciplinary research. The Editor will also consider short reviews, but only if they contain original and interesting new ideas. With its worldwide circulation and highly respected scholarly reputation, *Proceedings A* is essential reading for mathematicians, physicists, engineers and other physical scientists.

The *Oxford Quarterly Journal of Mathematics* publishes original contributions to pure mathematics. Areas such as algebra, differential geometry, and global analysis receive particular emphasis.



However the journal avoids specialization.

The *Oxford Quarterly Journal of Mechanics and Applied Mathematics* publishes refereed papers describing original research in all areas of mechanics and applied mathematics, especially in theoretical mechanics (including, for example, fluids, solids, electromagnetism and wave phenomena). Papers describing the development of associated mathematical techniques and methods are also published.

*Geometry and Topology* is a fully refereed international journal dealing with all aspects of geometry and topology and their applications. *Geometry and Topology* is published in free electronic format. A printed version is published in partnership with International Press.

Susan Hezlet  
LMS Publications Manager

### THE GLASGOW MATHEMATICAL JOURNAL TRUST FUND

#### Grants in support of Scottish Mathematics

The fund aims to support mathematical projects which have demonstrable benefit to mathematics in Scotland. This includes conferences, workshops and summer schools in Scotland, lecture tours in Scottish universities and the publication of lecture notes or other monographs associated with such activities. Grants of up to £1,000 are available.

There will be two rounds of awards each year. Closing dates for application are the last days of October and January, starting in October 2000. It is hoped that confirmation of awards will be made within about three months from these dates.

Further information and application forms are available from Dr C. Athorne, Secretary G.M.J. Trust Fund, Department of Mathematics, University of Glasgow, University Gardens, Glasgow G12 8QW (tel: 0141 330 5176, e-mail: gmj@maths.gla.ac.uk, web: <http://www.maths.gla.ac.uk/>).

### STOCHASTIC FUNCTIONAL DIFFERENTIAL EQUATIONS

The Warwick Symposium on Stochastic Partial Differential Equations and Related Topics runs throughout the forthcoming academic year. There will be a series of mini-workshops of a mainly expository nature during the first half of this period. The first will be held at Warwick from mid-day Friday 9 November to evening Saturday 10 November and will be on stochastic functional differential equations with Salah Mohammed (Carbondale) and Bernt Oksendal (Oslo) as main speakers. There is EPSRC and LMS support for participants from UK and UK graduate students. Please contact Peta McAllister (peta@maths.warwick.ac.uk) if you wish to attend.

### VISIT OF PROFESSOR R. GEOGHEGAN

Professor Ross Geoghegan (State University of New York at Binghamton) will be visiting the UK during the last week of October, supported by an LMS Scheme 2 grant. Professor Geoghegan will deliver lectures on "SL(2) actions on the hyperbolic plane" at the following places and times:

- Southampton: 12.45 on Tuesday 24 October in Room 10C of the Mathematics Building of Southampton University (local organizer: Professor M.J. Dunwoody, e-mail: M.J.Dunwoody@maths.soton.ac.uk)
- London: 16.45 on Thursday 26 October at the Mathematics Research Centre, Queen Mary and Westfield College (local organizer: Dr P. Kropholler, e-mail: p.h.kropholler@qmw.ac.uk)
- Edinburgh: 14.30 on Friday 27 October in Room 4312 of the James Clerk Maxwell Building at Edinburgh University (local organizer: Professor A.A. Ranicki, e-mail: aar@maths.ed.ac.uk).



# Game Theory:

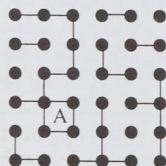
## Applied Mathematics = Pure Fun!

### The Dots-and-Boxes Game: Sophisticated Child's Play

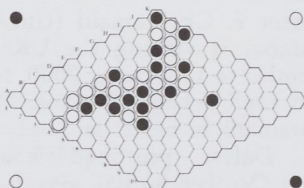
Elwyn Berlekamp

ISBN 1-56881-129-2

paperback, 144 pp., \$14.95, £9



This book is an essential guide to the game of Dots-and-Boxes and its surprising mathematical complexity. Chapters of strategy are interspersed with 100 sample problems and their solutions.



### Hex Strategy: Making the Right Connections

Cameron Browne

ISBN 1-56881-117-9

paperback, 384 pp., \$38.50, £27

*Hex Strategy* is the first book to offer a comprehensive look at the game of Hex. It focuses on strategy from the player's perspective, and covers all levels of the game's theory.

What people are saying about *Hex Strategy: Making the Right Connections*:

"It is quite the best single-game book I have seen. If you love abstract games it is essential reading.... Having read this book I have a new respect and appreciation for Hex. It is highly recommended."

—Kerry Handscomb, *Abstract Games* magazine

"This is the first book about games that I have read from cover to cover in many years where my interest never wavered. I tackled most of the problems and came away with a deep appreciation for the game and the difficulty of play. It is strongly recommended."

—Charles Ashbacher, *Journal of Recreational Mathematics*

"The book is a must for every recreational mathematician."

—Ian Stewart, *Scientific American*

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## ALGORITHMS FOR APPROXIMATION IV

### Announcement and Call for Papers

An international symposium on "Algorithms for Approximation IV" (A4A4) will take place at the University of Huddersfield from 15 - 20 July 2001. The aim of A4A4 is to provide an opportunity for the exchange of ideas about current research on the approximation of functions and data, including the design and analysis of algorithms and the application of approximation theory and methods to practical problem areas. There will be Special Sessions on key and novel aspects, including Splines, Wavelets, Orthogonal Polynomials and Padé Approximation, and also the Mathematics and Statistics of Metrology (ie measurement) which has strong links to approximation and opens up some interesting new problems - for example in the areas of novel metrics and evaluation of uncertainties.

Keynote speakers who have provisionally accepted invitations include:

- M.D. Buhmann (Giessen, Germany)
- M.G. Cox (NPL, UK)
- K.A. Driver (Witwatersrand, SA)
- M.S. Floater (SINTEF, Norway)
- T.N.T. Goodman (Dundee, UK)
- W.A. Light (Leicester, UK)
- C.A. Micchelli (Albany & IBM, USA)
- L. Nielsen (DIFM, Lyngby)
- G. Plonka (Duisburg, Germany)
- T. Poggio (MIT, USA)
- L.L. Schumaker (Vanderbilt, USA)
- G.A. Watson (Dundee, UK)

It is anticipated that about 50 contributed papers will be presented, 1-2 page abstracts should be submitted for consideration by 31 December 2000. The proceedings will be published after refereeing, provisionally as a Special Volume of "Numerical Algorithms", (Publisher: Kluwer; Managing Editor: Claude Brezinski). The meeting will start with Sunday supper and end with Friday lunch, and there will be a full-board charge (including conference dinner) of about £260 for this period and a conference fee of about £120. A 50% fee

reduction is offered to bona fide research students, and travel bursaries to a limited number of Eastern European delegates.

Symposium Committee: J.C. Mason, I.J. Anderson, D.A. Turner, M.G. Cox, A.B. Forbes, W.A. Light, J. Levesley, C. Brezinski, M.D. Buhmann, T.N.T. Goodman, T. Lyche, L. Schumaker, G.A. Watson.

For further information contact Ros Hawkins (e-mail: [a4a4@hud.ac.uk](mailto:a4a4@hud.ac.uk)) or visit the web site (<http://helios.hud.ac.uk/a4a4>). The sponsors are: the London Mathematical Society, US Air Force (European Office of Aerospace, Research & Development) and Software Support for Metrology (NPL/DTI).

### VISIT OF PROFESSOR F. GHAHRAMANI

Professor F. Ghahramani (University of Manitoba) is visiting the UK from 11 September to 15 October 2000, supported by an LMS Scheme 2 grant. Professor Ghahramani is based at Leeds (contact H.G. Dales: [pmt6hgd@leeds.ac.uk](mailto:pmt6hgd@leeds.ac.uk)). During October he will give lectures as follows.

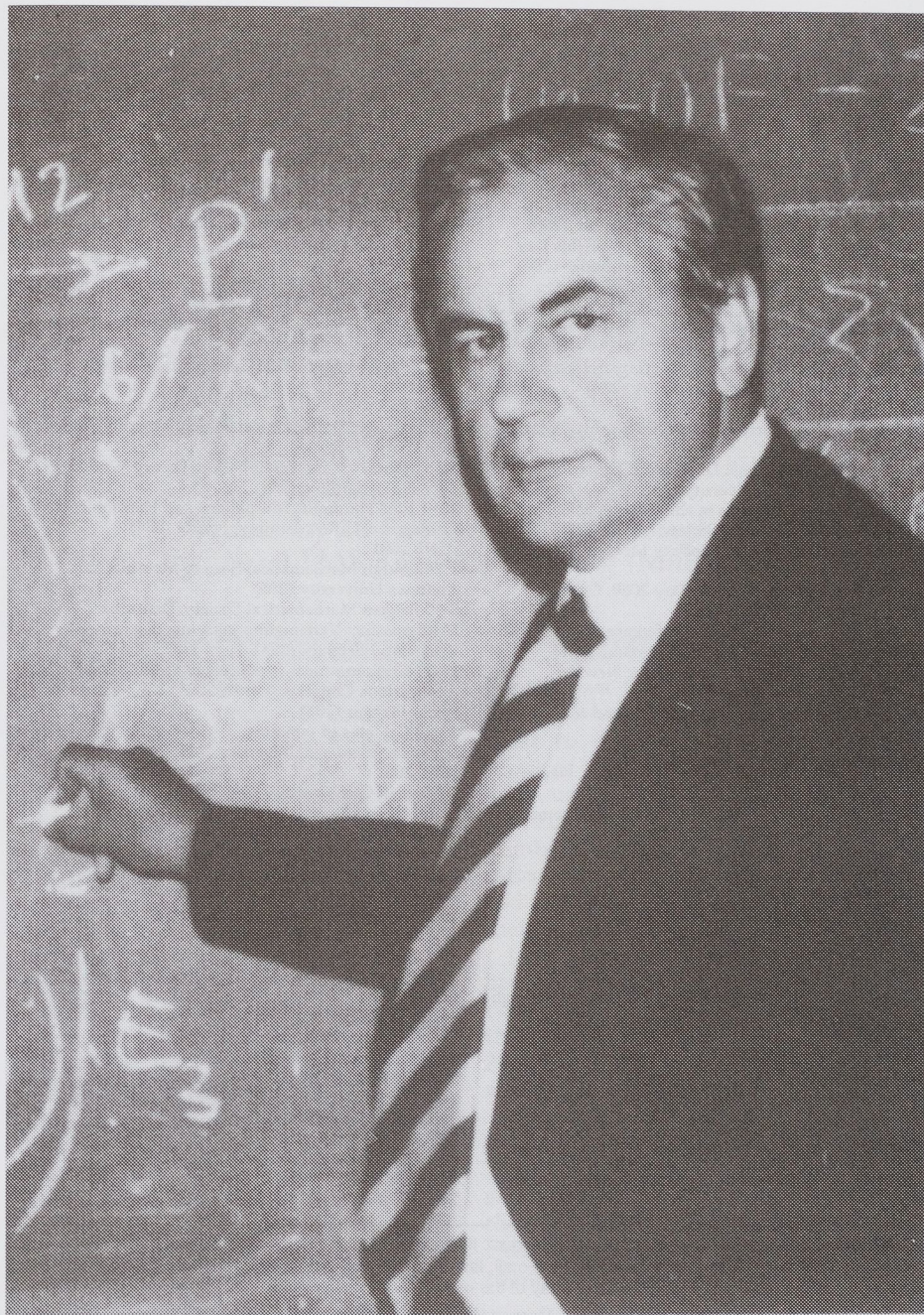
- *Amenability of the measure algebra of a locally compact group*  
Departmental Seminar, Queen's University, Belfast, Seminar Room 1015, David Bates Building, Friday 6 October at 2.00 pm; contact Dr M. Mathieu ([M.M@Queens-Belfast.ac.uk](mailto:M.M@Queens-Belfast.ac.uk)).
- *Approximately amenable Banach algebras*  
Functional Analysis Seminar, University of Newcastle, Merz Court, Tuesday 10 October at 3.00 pm; contact Dr M.A. Dritschel ([M.A.Dritschel@newcastle.ac.uk](mailto:M.A.Dritschel@newcastle.ac.uk)).

### LIST OF MEMBERS 2000

Dr B.P. Dodds wishes it to be known that under no circumstances should mail be directed to him via Heriot-Watt University: he left that institution in March 1999.

The London Mathematical Society does not have an address for him.





I.R. SAFAREVIC  
HONORARY MEMBER 1974



## DIARY

The diary lists Society meetings and other events publicized in the *Newsletter*. Further information can be obtained from the appropriate LMS Newsletter whose number is given in brackets. A fuller list of meetings and events is given in the Society's web site (<http://www.lms.ac.uk/meetings/diary.html>).

### OCTOBER 2000

- 3 Partial Differential Equations, Models and Simulations - P.-L. Lions (Claude Bernard Lecture) Royal Society London (285)
- 12 In Search of the Ideal Knot, LMS Spitalfields Day, Isaac Newton Institute, Cambridge (284)(285)(286)
- 13 In Search of the Ideal Knot, LMS Spitalfields Day Follow-Up, Isaac Newton Institute, Cambridge (286)
- 20 London Mathematical Society Meeting, London (286)

20 Edinburgh Mathematical Society Meeting, Edinburgh University (285)

20-23 Singularities in Classical, Quantum and Magnetic Fluids Workshop, Warwick University (284)

### NOVEMBER 2000

3-4 North British Functional Analysis Seminar, Glasgow University (286)

9-10 Stochastic Functional Differential Equations Mini Workshop, Warwick University (286)

15-16 Topological Methods in the Physical Sciences Discussion Meeting, Royal Society London (285)

17 Edinburgh Mathematical Society Meeting, Strathclyde University (285)

18 Belfast Functional Analysis Day 2000, Queen's University Belfast (285)

18-22 Mathematics for Living Conference, Jordan (280)

20 Differential Geometry in Fluid Dynamics and Dynamical Systems, BRIMS Day, Isaac Newton Institute, Cambridge (282) (285)

24 London Mathematical Society AGM and Meeting, London

### DECEMBER 2000

15 Edinburgh Mathematical Society Meeting, Napier University (285)

16-21 Applications of Singularity Theory to Geometry Conference, Liverpool University (283)

18-20 Mathematics in Signal Processing, Warwick University (279)

### JANUARY 2001

8-12 Wave Motion LMS/EPSC Short Course, Birmingham University (285)(286)

8-18 Nonlinear Partial Differential Equations ICMS Instructional Conference, ICMS Edinburgh (284)

12 Edinburgh Mathematical Society Meeting, Edinburgh University (285)

### FEBRUARY 2001

9 Edinburgh Mathematical Society Meeting, Edinburgh University (285)

10 Mary Cartwright Lecture, LMS Meeting, Oxford

28 Inaugural LMS Regional Meeting (Midlands), Birmingham

### MARCH 2001

9 Edinburgh Mathematical Society Meeting, Aberdeen University (285)

18-24 Geometric Analysis and Index Theory Conference, Trieste, Italy (286)

26-29 Quantum Field Theory, Noncommutative Geometry and Quantum Probability Workshop, Trieste, Italy (286)

26-29 Numerical Methods for Fluid Dynamics Conference, Oxford University (286)

### APRIL 2001

2-5 British Applied Mathematics Colloquium, Reading University

7-9 British Topology Meeting, Edinburgh University (286)

9-12 British Mathematical Colloquium, Glasgow University

### MAY 2001

4 Edinburgh Mathematical Society Meeting, Stirling University (285)

6-13 Symmetry and Perturbation Theory Workshop (SPT2001), Sardinia (284)

28 -1 June Harmonic Morphisms and Harmonic Maps Conference, CIRM, Luminy, France (284)

### JUNE 2001

1 Edinburgh Mathematical Society Meeting, St Andrews University (285)

8-10 Belgian Mathematical Society/Deutsche Mathematiker Vereinigung joint meeting, Liège University, Belgium (284)

19-22 Computational Intelligence: Methods and Applications Congress (CIMA 2001) University of Wales, Bangor (283)

19-23 Calculus of Functors, T. Goodwillie, LMS Invited Lectures, Aberdeen University (286)

### JULY 2001

1-6 British Combinatorial Conference, Sussex University (276)

5-7 British Congress of Mathematics Education, Keele University (286)

9-13 Stochastic Processes and their Applications Conference, Cambridge (275)

15-20 Algorithms for Approximation IV Symposium, Huddersfield University (286)

29-2 Aug Teaching of Mathematical Modelling and Applications (ICTMA 10), Tsinghua University, China (284)

### AUGUST 2001

12-19 Homological Conjectures for Finite-Dimensional Algebras Summer School, Nordfjordeid, Norway (275)

### NOVEMBER 2001

9-10 Stochastic Functional Differential Equations Symposium, Warwick University (286)

### APRIL 2002

7-12 Joint BMC/BAMC, Warwick University

### AUGUST 2002

20-28 ICM2002, Beijing, China (272)

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, De Morgan House, 57-58 Russell Square, London WC1B 4HS

Tel: 020 7291 9977 fax: 020 7323 3655, e-mail: [lms@lms.ac.uk](mailto:lms@lms.ac.uk)

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