

# THE LONDON MATHEMATICAL SOCIETY NEWSLETTER

No. 186

September 1991

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## FORTHCOMING SOCIETY MEETINGS

- Friday 18 October 1991, Burlington House  
Meeting on Group Theory  
Friday 15 November 1991, Burlington House  
Friday 17 January 1992, Burlington House  
Friday 21 February 1992, Bristol  
Friday 20 March 1992, Burlington House  
Friday 15 May 1992, Burlington House  
Friday 19 June 1992, Burlington House  
Monday 29 June - Wednesday 1 July 1992  
Joint meeting of AMS and LMS, Cambridge  
Friday 16 October, 1992, Burlington House  
Friday 20 November 1992, Burlington House
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## COLLINGWOOD MEMORIAL PRIZE

This prize was established by the London Mathematical Society in memory of Sir Edward Collingwood, and is awarded annually to a student of the University of Durham obtaining First Class

Honours in Mathematics and entering a course of postgraduate study. The 1991 prize is awarded to Mr N.J. Myers of Grey College who will be a research student at the University of Durham.

## EXHIBITION OF THE DOMESDAY BOOK

In 1986, when the Domesday Book was being re-bound by the Public Records Office, a limited facsimile edition was produced. One copy of this so-called "Penny Edition" of the Domesday Book was presented to the London Mathematical Society by Mr V. Naylor. This important and fascinating document, together with associated

maps and explanatory material, is to be put on display in the Flaxman Gallery of the Library of University College, London. The exhibition will be open from Monday, 16th September to Friday 25th October.

J.A. Erdos  
Librarian

## VISIT OF PROFESSOR R. HAGGKVIST

Professor R. Haggkvist from the University of Umea, Sweden will visit the UK in October. He will give the following talks: Lancaster: Friday 11th, 2.00 pm, S.C.R., Mathematics Department; Cambridge: Thursday 17th, 2.30 pm, Seminar Room 2, D.P.M.M.S.; Goldsmiths' College: Tuesday 22nd, 4.00 pm, Room 9, Mathematics Department.

Professor Haggkvist's visit is partially supported by a Scheme 2 grant from the London Mathematical Society. For further information contact Dr A.G. Chetwynd, Department of Mathematics, University of Lancaster, Lancaster LA1 4YF.

## CONGRATULATIONS

Congratulations to Christopher Zeeman, Principal of Hertford College, Oxford, and Gresham

Professor of Geometry on receiving a Knighthood in the Queen's Birthday Honours.

## JOHN UPTON

Dr C. John F. Upton who was elected a member of the London Mathematical Society on 17th May 1962 died on 31st January 1991. He was a Senior Lecturer at the University of Melbourne, a member

of the Australian Mathematical Society since its foundation in 1956, and Secretary of its Society from 1963 to 1967.

## VISIT OF V. BUCHSTABER

Professor Victor Buchstaber, of Moscow, will visit Britain between 16th September and 5th October 1991, with the help of a grant from the London Mathematical Society. Professor Buchstaber is an expert in the field of formal groups and applications to algebraic topology, a subject on which he was invited to address the ICM at Vancouver in 1974. He will lecture at Manchester University during the week 16th to

20th September, and at the Universities of Aberdeen and Edinburgh during the week of 23rd to 27th September. He will spend the final week of his stay in Manchester.

Any persons interested in further details should contact Nigel Ray, Department of Mathematics, Manchester University, Manchester, M13 9PL; tel: 061 275 5848, fax: 061 275 5819, email mbbgsnr@uk.ac.mcc.cms.

## VISIT OF PROFESSOR V.A. GALAKTIONOV

Professor V.A. Galaktionov of the Keldysh Institute of Applied Mathematics, Moscow, will be visiting Bristol University for the period September to December 1991. Professor Galaktionov is a world expert on the theory of nonlinear parabolic equations and has made important contributions to the study of systems which blow up in a finite time. He will be giving seminars at Bristol, Bath, Exeter and Heriot-Watt Universities on the theory of parabolic differential equations.

If anyone is interested in meeting Professor Galaktionov they should contact Chris Budd, telephone 0272 303317, e-mail macjb@bristol.npla or Bill Dold at the School of Mathematics, University Walk, Bristol S8 1TW.

We are grateful to the London Mathematical Society, the Royal Society and the EEC Initiative on Nonlinear Diffusion for supporting the visit of Professor Galaktionov to the UK.

# LONDON MATHEMATICAL SOCIETY

## Notice of General Meeting

There will be a General Meeting of the Society on Friday, 18th October 1991 at 5.00 p.m. in the Meeting Room of the Geological Society, Burlington House, Piccadilly, London W1, to consider a proposal by the Council of the Society to delete the existing By-Law II,3 and to substitute that printed below.

The new By-Law II,3, if accepted, would increase the annual subscription of Corporation and Institutional members for 1991-92 to £395 from the 1990-91 level of £350.

## Text of the Proposed By-Law II,3

The annual subscription to the Society of Corporation and Institutional Members for the 1991-92 session shall be £395, inclusive of one volume of the **Bulletin** and two volumes of the **Journal** and of the **Proceedings**, except that those Corporation and Institutional members who have more than one Representative shall pay an additional subscription of £12 for each Representative in excess of one.

R.Y. Sharp  
Council and General Secretary

# **ROYAL STATISTICAL SOCIETY AND LONDON MATHEMATICAL SOCIETY**

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## **Joint Discussion Meeting**

### **THE FUTURE FOR HONOURS DEGREE COURSES IN MATHEMATICS AND STATISTICS**

**Dr Peter Neumann (Queen's College, Oxford)  
Professor Henry Wynn (City University, London)**

This meeting will take place at 5.00 pm on Wednesday 30th October 1991  
Darwin Lecture Theatre, University College, Gower Street, London

**Please Note:**

1. Contributions to the discussion are invited. These are limited to 5 minutes oral presentation at the meeting, and 400 words to be published in the Journal of the Royal Statistical Society, Series A. Please contact Mr. Derek Harding at the address below if you would like to contribute to the discussion. Contributions on the night are welcome if time permits, but priority is given to those who have given their names before the meeting.
  2. Discussion documents will be available before the meeting. Contact Mr Harding if you would like to receive a copy of these.
  3. Tea will be served at 4.30 pm in the Old Refectory.
  4. The meeting is expected to finish at about 7.00 pm, and will be followed by an informal buffet dinner open to all. The cost of the dinner will be £15.00 per person. Those wishing to attend should inform Mr Harding, enclosing a cheque payable to the 'Royal Statistical Society', to arrive by 21st October.
- Enquiries may be addressed to Mr D. Harding, Royal Statistical Society,  
25 Enford Street, London W1H 2BH. Telephone: 071 723 5882.

# Cambridge Mathematics

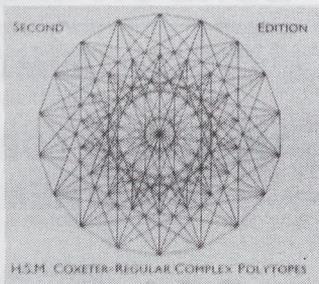
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For further information write to Susan Chadwick at the address below

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## HIMED-92

The British Society for The History of Mathematics is organising a further international conference on the *The Uses of History in Mathematics Education* (HIMED-92) following the success of HIMED-90. The conference will be held at Nottingham University during the period 10th-12th April 1992. There will be talks and interactive workshops given by speakers from Denmark, France, The Netherlands and UK, including Marjolein Kool and Jan van Maanen (Netherlands), Anne Michel Pajus and Evelyne

Barbin (France), Torkil Heiede (Denmark) and Nick Mackinnon, Peter Ransom, Jan Dangerfield and George Joseph (UK). The conference is scheduled for the weekend before the 1992 joint conference of The Mathematical Association and The Association of Teachers of Mathematics which will be held at the same site on 12th - 15th April 1992.

For further information please contact Neil Bibby, School of Education, University of Exeter, Exeter EX1 2LU, Tel 0392 264753.

## BICENTENARY OF N.I. LOBACHEVSKY

In order to commemorate the bicentenary of an outstanding Russian mathematician Nikolai Lobachevsky an international conference "Lobachevsky and Modern Geometry" will be held at Kazan State University, USSR, in August 1992. There will be three sections: Geometry and

Topology, Theory of Relativity and Gravitation and History of Mathematics.

Further information may be obtained from Professor V.V. Vishnevsky, Faculty of Mechanics and Mathematics, Kazan State University, 18, Lenina, Kazan, 420008 USSR.

## LMS GRANT TO THE MATHEMATICS RESEARCH CENTRE UNIVERSITY OF WARWICK BRITISH VISITORS FUND

The London Mathematical Society has given the Warwick MRC a grant of £4,000 for the year 1991/2 to help support British visitors who want to take part in the various mathematical activities which take place in Warwick. These funds are specifically for British Visitors who would not get support from the SERC or their own university, for this particular visit to Warwick. We can offer support to people who fall into one of the following categories:

- (1) Mathematicians whose principal research area is not necessarily the main subject of the symposium or workshop but who would clearly benefit from taking part.
- (2) Young mathematicians who are developing their research interests but who have not yet really established themselves.
- (3) British graduate students.

In addition these funds can be used to help British mathematicians take part in two-day meetings, special lectures, and one-off events which occur from time to time.

Applications for these funds should be sent to the organiser of the event at Warwick. Expenditure must be approved by the Director of the MRC and the representative of the LMS on the Advisory Board of the MRC.

### Programme of Activities at Warwick 1991/2

Title	Dates	Organisers
Symposium: Gauge Theory, Geometry, & Topology	September 1991 - July 1992	N.J. Hitchin, J.D.S. Jones J.H. Rawnsley, D.A. Salamon
Workshop: Surfaces & 3-folds	2-7 September	M. Reid
Symposium Introductory Workshop I	9-13 September	Hitchin, et al
Symposium Workshop II	6-10 April	Hitchin, et al
Workshop: Renormalisation	April	D.A. Rand, R.S. MacKay
Symposium Workshop III	13-25 July	Hitchin, et al
Workshop: Bifurcation theory and its applications	dates to be finalised	M. Roberts, I.N. Stewart

**THE UNIVERSITY OF WAIKATO  
HAMILTON NEW ZEALAND  
Lecturer in Mathematics**

The University of Waikato invites applications for a Lectureship in Mathematics within the Department of Mathematics and Statistics. This Department, together with the Department of Computer Science and the Waikato Centre for Applied Statistics, forms the School of Computing and Mathematical Sciences. The Department of Mathematics and Statistics has 16.5 full-time equivalent staff, and approximately 2500 course enrolments across all Schools of Study in the University. Teaching and research supervision is done at undergraduate, Masters, and Doctoral levels.

The Department wishes to appoint someone with teaching interests and a strong research record in numerical analysis and computational mathematics. It especially welcomes applications from mathematicians who combine a firm grasp of classical numerical analysis with experience of its application to problems in science or industry.

The salary range for Lecturers is currently \$NZ37,440 - \$NZ49,088 per annum.

Enquiries of an academic nature should be made to Professor D.S. Bridges, telephone (64) 71 562889 or E-mail: [d.bridges@waikato.ac.nz](mailto:d.bridges@waikato.ac.nz) (via Internet). Information on the method of application and conditions of appointment can be obtained from the Academic Staff Unit, University of Waikato, Private Bag 3105, Hamilton, New Zealand, telephone (64) 71 562889. Fax (64) 71 560135. Applications quoting reference number A91/41 should reach the Academic Staff Unit by **30th September 1991**.

Places for appointees' children may be available in the creche run by the Campus Creche Society (Inc). The University welcomes applications from suitable people regardless of race, creed, marital status, or disability.

**VICTORIA UNIVERSITY OF WELLINGTON  
NEW ZEALAND  
Lectureships In Mathematics**

Applications are invited from suitably qualified persons in all areas of pure mathematics for two posts available from 1st February 1992. Candidates are expected to have a proven record of achievement in research and be committed to excellence in teaching.

Enquiries about academic aspects of the positions may be directed to Professor Rob Goldblatt, Department of Mathematics, e-mail (Internet): [rob@kauri.vuw.ac.nz](mailto:rob@kauri.vuw.ac.nz), fax (64) 4 712070.

Salary scale for Lecturers is NZ\$37,440 - NZ\$49,088 per annum. Conditions of appointment and method of application available from the Appointments Administrator, Victoria University of Wellington, P O Box 600, Wellington, New Zealand (fax (64) 4 711700) with whom applications close on **1st October 1991**.

The University is an equal opportunity employer.

## COMMISSION ON DEVELOPMENT AND EXCHANGE

Depending on the funds available, the Commission on Development and Exchanges of the International Mathematical Union (CDE-IMU) will continue to provide Support to Conferences in Third World Countries and Travel Grants and Fellowships to individual mathematicians.

The program Support to Conferences in Third World Countries applies to conferences organized by Third World Countries in a Third World Country. The funds made available by the CDE must be used to cover Academic Expenses. The organizers are to apply to the CDE c/o The Secretary at least 9 months in advance (the application should include: a detailed scientific program, a list of invited speakers, a list of supporting organizations, a statement on intended use of CDE-support. In case support is granted, a scientific and financial report will have to be sent to CDE after the conference is held).

The program Travel Grants and Fellowships applies to individual mathematicians who make an extended research visit to a host institution which bears the living expenses. It applies both to mathematicians from Developing Countries who visit a research centre (for at least one month) and

Dr D. Gurevich of the USSR Academy of Sciences, Moscow, will visit Britain during October to December 1991 with the help of a Royal Society Fellowship Visit grant. Dr Gurevich has worked on Yang-Baxter categories, quantum groups and non-commutative geometry.

### VISITING MATHEMATICIANS PROGRAM

to mathematicians from Developing Countries who visit a research center in a Developing Country (for an extended period of time). Individuals should apply at least 4 months in advance to CDE c/o The Secretary, (the application should include bio-data, a research program and an invitation letter from the host institution). This program includes the IMU-UNESCO visiting program (see below).

Due to the limited funds presently at its disposal, the CDE cannot give financial support for attending conferences. The CDE is not in a position to suggest institutions to visit for mathematicians from Developing Countries. We are however willing to respond to requests from Developing Countries to invite mathematicians from Developed Countries or to induce some mathematicians of given specialty to visit them (NB: the expression "Developing Country" does not apply to any European Country).

Applications to CDE programs are to be sent to : CDE c/o The Secretary, Professor Pierre Bérard, Institut Fourier, Université Grenoble 1, B.P. 74, F-38402 St Martin d'Hères Cedex, France.

Any persons interested in further details are asked to contact Dr Shahn Majid, Department Applied of Mathematics and Theoretical Physics, University of Cambridge, Cambridge CB3 9EW. Telephone (0223) 337882.

### VISIT OF DR D. GUREVICH

Besides its own programme, and thanks to special UNESCO support, IMU-CDE can provide a limited number of grants whose purpose is to partially cover travel expenses of mathematicians wishing to visit academic institutions abroad.

They may either come from developing countries to spend a research period in well qualified mathematical centres, or come from developed countries, to spend reasonably long teaching periods in universities or research

centres in developing countries.

Applications containing a curriculum vitae and detailed information on the applicant's scientific achievements and interests as well as a description of the program related to the request should be sent to: Secretariat de la CDE, c/o Professor Pierre Bérard, Université Grenoble I, Institut Fourier, B.P. 74, 38402 St Martin D'Heres Cedex, France.

### ROYAL SOCIETY NEWS

The Sylvester Medal of the Royal Society has been awarded to Professor K.F. Roth, FRS, Emeritus Professor of Pure Mathematics in the University of London, in recognition of his many contributions to Number Theory and in particular his solution of the famous problem concerning approximating algebraic numbers by rationals.

A Royal Medal has been awarded to Sir John Mason, C.B., FRS, formerly Director-General of the Meteorological Office, in recognition of his distinguished research on cloud physics and, as Director-General of the Meteorological Office, his broadening and strengthening of research in meteorology in the UK.

Professor J.W. Tukey, Associate Executive of Research Bell Telephone Laboratories, Princeton, USA has been elected to Foreign Membership of the Royal Society.

Professor R.J. Baxter, FRS, currently Professor in the Schools of Mathematical and Physical Sciences, Australian National University, Canberra has been appointed to a Royal Society Research Professorship on a part-time basis during 1992 and 1993 and on a full-time basis from July 1994 at the Isaac Newton Institute for Mathematical Sciences and the Department of Applied Mathematics and Theoretical Physics at the University of Cambridge.

**SYMPOSIUM ON ARITHMETIC**  
**in honour of Bryan Birch**  
**Friday/Saturday 27th/28th September 1991**  
**St Catherine's College, Oxford, England.**

This Symposium is to celebrate the 60th birthday of Professor Bryan J. Birch FRS and brings together leading experts on elliptic curves, modular forms and related arithmetic topics. It has been generously supported by the London Mathematical Society.

**Provisional schedule**

**Friday 27th September**

- 2.30 J. Coates *The arithmetic of elliptic curves with complex multiplication*  
3.45 Tea  
4.15 A.J. Scholl *Eisenstein series and non-congruence subgroups*  
5.30 J-P. Serre *Asymptotic properties of eigenvalues of graphs and Hecke operators*  
7.15 for 7.45 Banquet at St Catherine's College

**Saturday 28th September**

- 9.30 B.H. Gross *The Lubin-Tate moduli space and projective space*  
10.45 Coffee  
11.15 K. Rubin *p-adic L-functions and rational points on elliptic curves with complex multiplication*  
12.45 Lunch  
2.00 H.P.F. Swinnerton-Dyer *Rational points on a pencil of conics*

The organisers are A.J. Scholl and N.M. Stephens. Further information and registration forms are obtainable from : Nelson Stephens, Department of Computing Mathematics, University of Wales College of Cardiff, Cardiff CF 2 4YN, UK e-mail: sympo@cm.cf.ac.uk (sympo@uk.ac.cf.cm from janet). Tel: code for UK + 222 874855. Fax: code for UK + 222 666182.



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## THE PENROSE TRANSFORM AND ANALYTIC COHOMOLOGY IN REPRESENTATION THEORY

A conference in the AMS-IMS-SIAM Summer Research Conference Series, entitled "The Penrose Transform and Analytic Cohomology in Representation Theory" will be held on 27th June to Friday 3rd July 1992 at Mount Holyoake College, Massachusetts, U.S.A.

The use of cohomology in the representation theory of a semisimple Lie group has a long and distinguished history, beginning with Bott's version of the Borel-Weil theorem and continuing with Schmid's formulation and proof of the Kostant-Langlands conjecture. These realize important classes of representations as Dolbeault cohomology of sheaves on homogeneous spaces. To avoid substantial analytic difficulties, Zuckerman and Vogan introduced an algebraic analogue of cohomology, known now as cohomological parabolic induction, which has proved invaluable in classifying admissible and unitary representations.

Despite much effort, the relationship between analytic and algebraic cohomology and the structure of the analytic representations themselves is still poorly understood.

The 'Penrose transform' is the name given to a certain construction in complex integral geometry. It may be regarded as a complex version of the Radon transform and provides intertwining

operators between various geometric representations of semisimple Lie groups. This leads one to the construction of some unitary representations directly on Dolbeault cohomology avoiding the usual analytic difficulties.

As shown by Barchini, Knapp, and Zierau, it may also be used in special circumstances directly to compare the analytic and algebraic cohomology. A direct geometric interpretation of Zuckerman's construction has also been given by Schmid and Wolf. The main aim of the conference will be to consider these various advances and suggest future avenues for research.

A second aim of the conference will be to investigate recent interactions between representation theory and differential geometry. An example of this is Guillemin's use of principal series in studying Zoll manifolds. Another example is the use of Verma modules and parabolic invariant theory in the study of invariant differential operators.

Members of the Organizing Committee: Victor Guillemin (Massachusetts Institute of Technology), Joseph Wolf (University of California, Berkeley), Roger Zierau (Oklahoma State University).

For further information write to Dr R.J. Baston, Mathematical Institute, 24-29 St Giles, Oxford OX1 3LB.

## THE INTERNATIONAL LINEAR ALGEBRA SOCIETY First Announcement

The Second Meeting of The International Linear Algebra Society (ILAS) will be held at the University of Lisbon, Portugal, on 3rd to 7th August, 1992.

There will be about twelve one-hour invited talks and twenty eight half-hour invited talks. Also encouraged are contributed 15-20 minute talks, subject to the unavoidable limitations of space and time. If you are interested in giving a contributed talk at the conference, send a title and an abstract, to be received by us no later than May 1992. The title and the abstract should be sent to Professor J.A. Dias Da Silva, at the address given below.

A special issue of *Linear Algebra and its Applications* will be devoted to the meeting. This issue will contain only papers that meet the publication standards of the journal, and that are approved by normal refereeing procedures. The issue will also contain synopses of the talks of those invited speakers who do not submit a paper

to the proceedings. Special editors of this issue are Professors J.A. Dias Da Silva, Chi-Kwong Li and G.N. de Oliveira. Further information about the conference (when available) will be sent upon request.

The organizing Committee of the meeting consists of: Chairman: Professor J.A. Dias Da Silva, Universidade de Lisboa (Portugal) e-mail: mperdiga@ptearn.bitnet. Members: Professor D.H. Carlson, San Diego State University (U.S.A.) e-mail: sdsu!carlson@sdcsvax.ucsd.edu; Professor D. Hershkowitz, Technion - Israel Institute of Technology (Israel) e-mail: mar23aa@technion.bitnet; Professor T.J. Laffey, University College (Ireland) e-mail: tlaffey@irlearn.bitnet; Professor G.N. de Oliveira, Universidade de Coimbra (Portugal); Professor H. Schneider, University of Wisconsin - Madison (U.S.A.) e-mail: hans@math.wisc.edu.

## SUN ANNUAL LECTURE

Professor David Harel of the Weizmann Institute will give this year's Sun Annual Lecture in Computer Science at the University of Manchester on 25th and 26th September. His topic will be "Systems Design: theory and practice". The registration fee is £75.00, which includes lunch

and supporting materials. For further information, contact Mrs J. Fleet, Annual Lecture, Department of Computer Science, The University, Oxford Road, Manchester M13 9PL. E-mail: Janet.annual-lecture@uk.ac.man.cs, arpa/bitnet:annual-lecture@cs.man.ac.uk.

Mathematics graduate required to join Springer-Verlag's mathematics editorial in Heidelberg, from Autumn, 1991.

Applicants should be under 30 years of age, native English-speaking with a good mastery of German and a working-knowledge of Russian. An ability and interest in working with new media, such as CD-ROMS, and TEX is also desirable. Some prior experience related to publishing would be useful but not essential. Applications including c.v. should be addressed to:

**Ms Crista Voss  
Personnel Dept.  
Springer-Verlag  
Tiergartenstr. 17  
6900 Heidelberg  
Germany**



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## **CHAIR IN PURE MATHEMATICS**

Applications are invited for a Chair of Pure Mathematics in the Department of Mathematics.

The vacancy arises through the impending retirement of Professor H. Brian Griffiths who has held the Chair since 1964. Professor Griffiths will retire in September 1992 and it is hoped that the successful candidate for the Chair will take up the post on 1st September 1992 or as soon as possible thereafter.

Further particulars may be obtained from the Director of Personnel Services, University of Southampton, Highfield, Southampton, England, SO9 5NH, telephone (0703) 593353 to whom applications (10 copies from UK applicants, 1 from overseas applicants) including a full curriculum vitae and details of three referees should be sent by 31st October 1991. Please quote reference P/386/LMSN.



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## THE FUTURE OF AS/A LEVEL EXAMINATIONS

The response by the Education Committee on behalf of the London Mathematical Society to the consultation document, issued by the Schools Examinations and Assessment Council, was summarised in the December 1990 Newsletter. On 18th December 1990 revised principles for AS/A level examinations were submitted to the Secretary of State; the revisions show that some notice was taken of the views which we and other respondents expressed. A very detailed report on the consultation has been published by the Schools Examinations and Assessment Council. There was strong support for the principles that AS/A level syllabuses should employ a variety of approaches to assessment, and that the assessment must enable candidates to demonstrate worthwhile achievement at interim stages, and substantial opposition to the principle that AS level and A level should be at the same standard even though the former will occupy only half the teaching and learning time of the latter.

On 20th May 1991 the Secretary of State announced his intention to adopt a shorter set of principles which will govern AS/A syllabuses from September 1994 and examinations from the summer of 1996. Key points are:

1. The principles are intended to provide a framework for the continuing development of a system of A and AS examinations that fully maintains the standards currently associated with A levels.
2. A and AS syllabuses should (a) ensure that students experience the disciplined study of a subject in adequate breadth, balance and depth, and (b) each require learning to the same standard, but with AS syllabuses occupying half the study time of A level syllabuses.

3. A and AS assessment should be predominantly by means of terminal examinations, externally assessed, with any school or college assessed coursework being externally moderated and accounting for a maximum of 20% of the work in most subjects.

The Secretary of State agreed that, for some subjects, there should be a single 'subject core', to be embodied in both the AS and the A syllabus with a given title (and so necessarily less than 50% of the A syllabus). He asked for advice by October 1991 on the priority subjects for which such subject cores should be developed, on what should be the shape of the common cores in those subjects, and on how they would relate to the full A and AS syllabuses concerned. Work on the Mathematics subject core is currently going on in Schools Examinations and Assessment Council committees.

There is increasing concern over whether there will be sufficient consultation on the Mathematics subject core, over whether final decisions will be made in time for new syllabuses to be in place by 1994, over the position of new AS/A syllabuses which currently have interim approval but may need drastic modification, and over whether AS/A Mathematics courses can be made accessible to pupils who have achieved only level 7 or 8 of the national curriculum at GCSE.

More recently the Education Committee has responded on behalf of the Society to two other consultation documents: a Schools Examinations and Assessment Council questionnaire on principles to ensure quality in GCSE, and a National Curriculum Council questionnaire on the proposed revision of the Mathematics attainment targets for the 5-16 national curriculum.

R.L.E. Schwarzenberger

## AUSTRALIAN APPLIED MATHEMATICS CONFERENCE

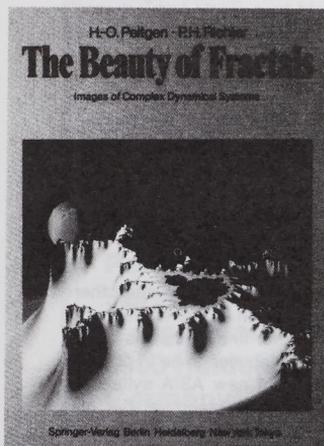
The Applied Mathematics Conference of the Division of Applied Mathematics, Australian Mathematical Society, is an established annual gathering of applied mathematicians, scientists and engineers with wide-ranging interests and problem solving skills. It provides an interactive forum for presentation of results and discussions on applied problems derived in many scientific fields and amenable to quantitative description and solution. Being the summer meeting of the Australian Mathematical Society, it has traditionally maintained an informal atmosphere. This tradition will be continued in 1992 at Batemans Bay, a coastal resort town of NSW.

The Organising Committee has arranged a balanced program of distinguished speakers from a variety of fields. The speakers are a mixture of experienced researchers and promising younger ones from Australia and overseas. The current list of invited speakers is: W.F. Ames (Georgia)

Nonlinear mechanics; P. Broadbridge (Wollongong) Solution of nonlinear boundary value problems; J.J. Finnigan (CSIRO Environmental Mechanics) Atmospheric boundary layer flows over topography and in plant canopies; J.D. Gray (AMP Quantitative Research, Sydney) Financial mathematics, M.H. Holmes (Rensselaer, NY) Hearing and mechanoreception, deformable porous media; R.G.J. Mills (University of South Australia) Nonlinear programming, inventory and scheduling; A. Newell (Arizona) Nonlinear waves.

A formal call for papers, involving details of titles and abstracts, will be made in the second (Registration) announcement, to be sent out in October. Papers from all areas of Applied Mathematics, in its broad sense, will be sought. To receive the second announcement write to: 28th AMC, Department of Mathematics, University College, UNSW, A.D.F.A., Canberra, ACT 2600, Australia.

# A Thing of Beauty is a Fractal Forever



H.-O. Peitgen, P. H. Richter

## *The Beauty of Fractals*

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6th printing 1991. XII, 199 pp. 184 figs. 88 in  
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H.-O. Peitgen, D. Saupe (Eds.)

## *The Science of Fractal Images*

4th printing 1990. XIV, 312 pp. 142 illustra-  
tions in 277 parts, including 39 color plates.  
Hardcover £23.00 ISBN 3-540-96608-0

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## *Fractals for the Classroom*

*Introduction to Fractals and Chaos*

1991. Approx. 455 pp. 141 figs. Hardcover  
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**Vol. 1.** 1991. £13.50 ISBN 3-540-97346-X

**Vol. 2.** 1991. £13.50 ISBN 3-540-97554-3

**Vol. 3.** In preparation

**Vol. 4.** In preparation



tm.30.221/E/1 £

## MATHEMATICAL CONFERENCES IN PERTH, WESTERN AUSTRALIA

Three conferences will be held at the University of Western Australia from 6th July to 10th July, 1992. This is a unique opportunity for mathematicians to meet with experts from the various branches of Mathematics. Although distinct programmes will be run it is expected that some speakers will give expositions at more than one of the three conferences. The University is centrally located, on the bank of the picturesque Swan river, with the city only 10 minutes away by bus. Comfortable accommodation is available from the residential colleges across the road from the University. King's Park, one of the largest and best known parks in W.A. is within walking distance of the University. Below is some information pertaining to each of the three conferences.

**The 36th Annual Meeting of the Australian Mathematical Society.** Conference Director: Assoc. Professor William S. Perriman, Curtin University. The following people are among those who have been approached and who have expressed interest in attending: Sun-ichi Amari (Tokyo), Petar Kenderov (Bulg. Acad. Sci., Sofia), Jerrold Marsden (Berkeley), Robert Phelps (Washington) and James Yorke (Maryland) together with some local notables. Accommodation has been booked at Kingswood College. It is likely that two mini-conferences will be held: (one on Banach Spaces before the Annual Meeting and another on computer algebra following it). For further information, please contact the conference secretary: Dr P.F. Siew, School of Mathematics and Statistics, Curtin University of Technology, Bentley 6102. [e-mail: tsiewpf@cc.curtin.edu.au.]

**11th Conference of the Australian Statistical Society.** Conference Director: Professor T. Brown, University Western Australia. Major sessions being planned include topics on accident and injury statistics, medical imaging, statistics involved in law and proof, chemometrics/process modelling in industries, applied chaos/non-linear time series, combinatorics and design and statistical consulting. Also under consideration are topics on causal models, natural resource management and longitudinal data analysis and smoothing. For further information please contact the conference secretary: Dr Russel John, School of Agriculture, University of Western Australia, Nedlands, WA 6009. [e-mail: aerdj@uniwa.uwa.oz.au.]

**The 18th Australasian Conference on Combinatorial Mathematics & Combinatorial Computing.** Joint Directors: Professor C.E. Praeger (UWA) and Associate Professor L. Caccetta (Curtin). The following people have expressed interest in attending the conference: R.A. Bailey (Goldsmiths College, London), B. Bollobas (Cambridge), P. Lorimer (Auckland), C.M. O'Keefe (Adelaide), S.B. Rao (ISI, Calcutta), D. Street (UNSW), J. Thas (Gent), and D. Younger (Waterloo). Accommodation has been booked at Currie Hall. For more information please contact the secretary of the organising committee: Dr K. Vijayan, Mathematics Department, University of Western Australia, Nedlands, WA 6009. [e-mail: vijayan@madvax.maths.uwa.oz.au.]

## RENAISSANCE MATHEMATICS

The British Society for the History of Mathematics will hold an international conference on Renaissance Mathematics at Pembroke College, Cambridge, September 12th - 14th 1991. The chief architect and President of the Society, Dr Eric Aiton, died earlier this year and the meeting is to continue as closely as possible to his plans and be dedicated to his memory. The speakers will discuss both the principal innovators and key themes of mathematics in the Renaissance, a period when new philosophical attitudes and techniques took

root which were to have far-reaching consequences in the seventeenth century and beyond. Contributors include Silvia Roero, Enrico Giusti and D. Napolitani (Italy), Jeanne Peiffer, Luce Giard and Jean Dombres (France), Fritz Nagel (Switzerland), Menso Folkerts (Germany), J.V. Field and Stephen Johnston (U.K.). Enquiries to Dr Roger W. Bray, Department of Mathematics, University of Essex, Wivenhoe Park, Colchester CO4 3SQ, U.K. Telephone 0206 873025/873040, Facsimile 0206 873598.

## EDINBURGH MATHEMATICAL SOCIETY

Meetings of the Edinburgh Mathematical Society for the 1991-92 session are: 18th October (Edinburgh) Annual General Meeting and Presidential Address, Professor E.G. Rees; 15th November (Glasgow) Professor D. Preiss; 6th December (Edinburgh) Professor R.W.K. Odoni; 17th January (joint meeting with ICMS, Edinburgh) Professor R.D. James, Professor A.R. Mitchell; 14th February (Edinburgh) Dr P. Kropholler; 13th March (Dundee) Dr A.A. Lacey; 1st May (Stirling)

Professor G.R. Grimmett; 29th May (Aberdeen) Professor M.V. Berry.

Further information may be obtained from C.J. Shaddock, Honorary Secretary, Edinburgh Mathematical Society, Department of Mathematics, University of Edinburgh, Mayfield Road, Edinburgh EH9 3JZ, telephone 031 650 5055, e-mail C. Shaddock@uk.ac.edin.

## INTERNATIONAL CENTRE FOR MATHEMATICAL SCIENCES, EDINBURGH

### Research programme for the year October 1991 - September 1992

#### Mathematical Problems In Materials Science

Modern methods for analyzing nonlinear problems, particularly those drawn from the theory of partial differential equations, dynamical systems and the calculus of variations, are now having a major impact on problems of materials science. These powerful techniques, and associated computational schemes, offer exciting possibilities for the prediction of material behaviour and the design of new materials. The research programme aims to exploit and develop these ideas by bringing together in Edinburgh leading mathematicians, materials scientists, and physicists.

The following activities have so far been arranged:

- **Continuum models for the microstructure of crystals.** (June 1992) A one-month period of concentration focused on an international conference during the week 8 - 13 June 1992.
- **Kinetics of phase transitions.** (August 1992) A one-month period of concentration focused on an international conference during the week 10 - 14 August 1992.
- Opening 1-day meeting (11 October 1991).
- A joint meeting with the Edinburgh Mathematical Society (17 January 1992, speakers R.D. James, A.R. Mitchell).
- A joint meeting of the ICMS and the Royal Society of Edinburgh (3 February 1992, speakers H.E. Huppert, A.P. Sutton).

Further meetings will cover topics such as

*fracture mechanics, ferromagnetic materials and magnetostriction, microscopic models of amorphous materials (including quasicrystals), models of superconductivity, and dislocation continua.* Proposals for additional meetings and activities are welcome, particularly from industry.

Participants in the periods of concentration will include: G. Arlt (Aachen), K. Bhattacharaya (Courant), K. Binder (Mainz), J.W. Cahn (NIST), M. Chipot (Metz), J.W. Christian (Oxford), C.M. Elliott (Sussex), P.C. Fife (Utah), N. Firoozee (Heriot-Watt/Minnesota), I. Fonseca (Carnegie-Mellon), J. Hyde (Oxford), R.D. James (Minnesota), W.C. Johnson (Carnegie-Mellon), A. Khachatryan (Rutgers), D. Kinderlehrer (Carnegie-Mellon), R.V. Kohn (Courant), J.L. Lebowitz (Rutgers), M. Luskin (Minnesota), T. Miyazaki (Nagoya), S. Müller (Bonn), G. Parry (Bath), R.L. Pego (Maryland), G.R. Purdy (McMaster), A.L. Roitburd (Maryland), N. Schryvers (Antwerp), J. Sethna (Cornell), V. Sverák (Heriot-Watt/Prague), P.J. Swart (Cornell).

Organizing committee: J.M. Ball (Heriot-Watt), J.W. Christian (Oxford), R. D. James (Minnesota), O. Penrose (Heriot-Watt).

Enquiries are invited from intending participants, and are particularly welcome from those from developing countries. Such enquiries, as well as proposals for meetings, should be sent to: International Centre for Mathematical Sciences, Heriot-Watt University, Riccarton, Edinburgh EH 14 4AS; telephone (031) 451 3227; FAX (031) 451 3249; e-mail [icms@cara.ma.hw.ac.uk](mailto:icms@cara.ma.hw.ac.uk).

### CLIFFORD'S GEOMETRIC ALGEBRA: RECENT DEVELOPMENTS AND APPLICATIONS IN MATHEMATICAL PHYSICS

A meeting on Clifford's Geometric Algebra: Recent Developments and Applications in Mathematical Physics is to be held at the University of Kent, Canterbury on 11th January 1992. This meeting is a sequel to the very successful Workshop on this subject which was held in 1985. It is in honour of Professor Chisholm on the occasion of his 65th birthday and is being supported by the London Mathematical Society. The meeting is to be chaired by Sir Sam Edwards (Cambridge) and the main speakers are

D. Olive (Imperial College) on the Geometric Approach to Physics, R. Delanghe (Ghent) on Recent Developments in Clifford Analysis, A. Morris (Aberystwyth) on Clifford Algebras and the Representation Theory of Groups and R. Farwell (Brighton) on Spin Gauge Theories.

Further details are available from Dr A.K. Common, Institute of Mathematics and Statistics, University of Kent, Canterbury, Kent CT2 7NF. Telephone 0227 764000.

### SECOND ANNUAL EUROPROJ MEETING

The Second Annual Europroj Meeting will be held at Villa Madruzzo near Trento, Italy from 16th to 20th September 1991. The scientific program is: Tuesday 17th, Moduli spaces of curves; Wednesday 18th, Abelian varieties; Thursday 19th, Vector bundles; Friday 20th, Projective embeddings with low codimension.

For further information contact the organizers: E. Ballico, G. Bolondi, Dipartimento di Matematica, Università di Trento, I-38050 Provo, Trento, Italy. Fax: 39 461 88 16 24. E-mail: [ballico@itncisca.bitnet](mailto:ballico@itncisca.bitnet) or [bolondi@itncisca.bitnet](mailto:bolondi@itncisca.bitnet).



Louis Joel Mordell (1888-1972) was born in Philadelphia and regarded himself as self-taught in mathematics until, after scraping together the travel fare, he sat and won a scholarship to Cambridge in 1907. Third Wrangler in 1909 and 2nd Smith's Prizeman in 1910, his interests turned to number theory, where he soon proved his half of the Mordell-Weil theorem (the group of rational points on a cubic curve is finitely generated). He was professor at Manchester from 1923-45, where he built up a strong department, before returning to Cambridge as Sadleirian professor from 1945-53. He took British citizenship in 1929. In 1924 he was elected an FRS and in 1949 awarded the Sylvester medal. The London Mathematical Society awarded him the De Morgan medal in 1941 and the Senior Berwick Prize in 1946. He was the Society's 40th President, from 1943-1945.

## DIARY

The diary lists Society meetings and other events publicised 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.

### 1991

#### SEPTEMBER

- 2-6 Algebraic Geometry Workshop, Warwick (185)  
9-13 Gauge Theory, Geometry and Topology Symposium, Warwick (185)  
16-20 Minimal Models, Lie Groups and Differential Geometry, Spain (179)  
23 Function Theory Meeting, Lancaster (182)  
25-26 British Topology Meeting, Aberdeen (184)  
25-27 Numerical Methods in Fluid Mechanics, Switzerland (174)  
27-28 Symposium on Arithmetic in Honour of Bryan Birch, Oxford (178)(183)

#### OCTOBER

- 16 Chaos Day, London (185)  
18 LMS Meeting, London

#### NOVEMBER

- 15 LMS Meeting, London

#### DECEMBER

- 9-13 European Women in Mathematics, France (180)

### 1992

#### MARCH

- 30-2 April 34th British Theoretical Mechanics Colloquium, Keele (185)

#### JUNE

- 29-1 July Joint AMS/LMS Meeting, Cambridge (155)

#### JULY

- 4-14 Evolutionary Problems, Durham (178)  
6-10 European Congress of Mathematics, France (180)  
11-18 St Andrews Colloquium, St Andrews (185)  
14-24 Non-commutative Rings, Durham (178)  
21-31 The Geometry of Operator Algebras and Banach Spaces, Durham (178)

#### AUGUST

- 16-23 International Congress on Mathematical Education, Canada (175)

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The Newsletter is published monthly except in August. Items and advertisements for inclusion in the Newsletter should be sent to the Editor, Susan Oakes, London Mathematical Society, Burlington House, Piccadilly, London W1V 0NL, to arrive before the first day of the month prior to publication. Telephone 071- 437 5377, Fax 071-439 4629, E-mail [lms@uk.ac.kcl.cc.oak](mailto:lms@uk.ac.kcl.cc.oak).

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