

# THE LONDON MATHEMATICAL SOCIETY NEWSLETTER

No. 179

January 1991

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## FORTHCOMING SOCIETY MEETINGS

**Friday 18 January 1991, Burlington House**  
**K.J. Falconer, T.J. Ransford**

Friday 15 February 1991, Lancaster  
A.G. O'Farrell, P.J. Rippon

Friday 15 March 1991, Burlington House  
P.B. Kronheimer, G.B. Segal

Friday, Saturday 17 - 18 May 1991, Oxford

Thursday 13 June 1991, Burlington House

Friday 18 October 1991, Burlington House

Friday 15 November 1991, Burlington House

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## REPORT OF THE TREASURER TO THE ANNUAL GENERAL MEETING 1990

The publishing of periodicals is one of the Society's most important activities both mathematically and financially. From its very first issue, "Nonlinearity" has been an academic success. It is now a financial success which has moved into profitability more quickly than anticipated. Unfortunately, production difficulties with the Journal of the Society resulted in an overall reduction of £12K in our net income from publications.

The International Centre for the Mathematical Sciences, to be sited in Edinburgh, is an exciting project for which the Society has promised £40K in support. Of this sum, £15K is for start-up costs and the remainder would be used over a five year period to assist U.K. mathematicians from outside

Edinburgh to participate in the work of the new Centre.

The Society has not escaped unscathed from the upheaval in the world's stockmarkets. The market value of our stockmarket investments has declined by 7%. However, an investment policy of high liquidity combined with high interest rates has protected our capital base. This, together with careful control of administrative expenditure, has resulted in the Society's General Fund being increased by 15.7% which, allowing for inflation at approximately 10%, represents an increase in real terms of over 5%.

J.D.M. Wright  
Honorary Treasurer

## 1991 LIST OF MEMBERS

### Reminder

A new edition of the Society's List of Members is being prepared to appear in May 1991. Members' entries will be as in the current (1989) List of Members unless I am advised of any necessary changes. Members who wish to change their entry or do not have an entry in the 1989 List should obtain the appropriate form from the Ad-

ministrator, London Mathematical Society, Burlington House, Piccadilly, London W1V 0NL, for completion in full and return to arrive, not later than Friday 1st March 1991.

S.M. Oakes  
Administrator

## 1990/91 LONDON MATHEMATICAL SOCIETY SUBSCRIPTIONS

The Society is appreciative of those members who have paid their 1990/91 subscriptions. May we remind those who have not yet paid, that subscriptions were due on 1st November 1990 and that the Society reserves the right to discontinue the supply of periodicals and Newsletters to mem-

bers whose subscriptions remain unpaid by 31st January 1991. If you have misplaced your renewal of subscription form, contact the Administrator, Susan Oakes at the LMS office. Telephone 071-437 5377 or e-mail [lms@uk.ac.kcl.cc.oak](mailto:lms@uk.ac.kcl.cc.oak).

# LONDON MATHEMATICAL SOCIETY

## COUNCIL, COMMITTEES AND REPRESENTATIVES, 1991

**PRESIDENT:** J.F.C. Kingman.

**VICE-PRESIDENTS:** J.M. Howie, P.M. Neumann.

**TREASURER:** J.D.M. Wright.

**COUNCIL AND GENERAL SECRETARY:** R.Y. Sharp.

**MEETINGS AND MEMBERSHIP SECRETARY:** A.R. Pears.

**PUBLICATIONS SECRETARY:** D.A. Brannan.

**LIBRARIAN:** J.A. Erdos.

**MEMBERS-AT-LARGE OF COUNCIL:** D.G. Crighton, S.K. Donaldson, W.D. Evans, W.A. Hodges, E.C. Lance, H.R. Morton, C.J. Mulvey, R.L.E. Schwarzenberger, C.M. Series, M.J. Taylor, P. Vámos, N.J. Young.

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**GENERAL PURPOSES COMMITTEE:** President (Chairman), Council and General Secretary (Secretary), Treasurer, Meetings and Membership Secretary, Publications Secretary.

**FINANCE COMMITTEE:** Treasurer (Convenor), President, Publications Secretary, P.M. Neumann (coopted Vice-President), R.L.E. Schwarzenberger, R.Y. Sharp.

**PROGRAMME COMMITTEE:** P.M. Neumann (Chairman), President, Meetings and Membership Secretary (Secretary), D.G. Crighton, H.R. Morton, J.D.M. Wright, N.J. Young.

**1991 PRIZES COMMITTEE:** J.F.C. Kingman (Convenor), S.K. Donaldson, E.C. Lance, R. Penrose, M.J. Taylor.

**PUBLICATIONS COMMITTEE:** Publications Secretary (Convenor), Joint Editors of Bulletin, Journal, and Proceedings, LMS-nominated Editor of Nonlinearity, Book Reviews Editor, H.G. Dales (Books), E.C. Lance (Council).

**DURHAM SYMPOSIA COMMITTEE:** P.M. Neumann (Chairman) (90-94), A.J. Scholl (Secretary, *ex-officio*), N.J. Young (Council), E.L. Albasiny (87-91), N.J. Hitchin (91-95), C.J. Isham (88-92), N. Riley (89-93)

**EDUCATION COMMITTEE:** R.L.E. Schwarzenberger (Chairman) (90-94), J.M. Howie (Council), S.J. Burns (90-93), A.R. Camina (90-94), P. Holgate (90-91), I.R. Porteous (90-91), T. Porter (90-91), J.C. Robson (90-95).

**COMPUTER SCIENCE COMMITTEE:** W.A. Hodges (Chairman) (90-94), P. Vámos (Council), S. Abramsky (87-91), D.J. Cooke (89-93), J.M.E. Hyland (89-93), U. Martin (91-95), N.M. Stephens (90-95), L.A. Wallen (91-95).

**MATHEMATICS FUNDING COMMITTEE:** J.M. Howie (Chairman) (90-94), J.B. Copas (90-94), H.G. Dales (90-94), M.J. Sewell (90-94), B.D. Sleeman (90-94), P. Vámos (90-94).

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**LIBRARY COMMITTEE:** Librarian, R.K. Tavakol (90-93)

**EUROPEAN MATHEMATICAL SOCIETY COUNCIL:** E.C. Lance, C.J. Mulvey, J.D.M. Wright.

**EUROMATH COORDINATING COMMITTEE:** A.R. Pears (87-91).

**BRITISH MATHEMATICAL COLLOQUIUM COMMITTEE:** President, Meetings and Membership Secretary.

**JOINT MATHEMATICAL COUNCIL:** J.C. Robson (91-95).

**ROYAL SOCIETY MATHEMATICS CURRICULUM SUBCOMMITTEE:** E.C. Lance (89-91), R.L.E. Schwarzenberger (89-91).

**ROYAL SOCIETY MATHEMATICS INSTRUCTION SUBCOMMITTEE:** N.L. Biggs (89-92).

**ISAAC NEWTON INSTITUTE MANAGEMENT COMMITTEE:** J.D.M. Wright (91-94).

**ISAAC NEWTON INSTITUTE SCIENTIFIC COMMITTEE:** J.M. Ball (91-94), C.T.C. Wall (91-94).

**EDINBURGH INTERNATIONAL CENTRE FOR MATH, SCIENCES STEERING COMMITTEE:** J.F.C. Kingman.

**BRITISH ASS. FOR THE ADVANCEMENT OF SCIENCE, MATH. COMMITTEE:** N.H. Bingham (86-91)

**NOTTINGHAM CONFERENCES ORGANIZING COMMITTEE:** J.M. Howie (83-92).

**SAVE BRITISH SCIENCE EXECUTIVE COMMITTEE:** W.A. Hodges (90-31.10.91), P.T. Saunders (01.11.91-95).

**COMMITTEE OF HUDOMS:** D.J.H. Garling

**COMMITTEE ON RESEARCH AND EDUCATION IN THE APPLICATIONS OF MATHEMATICS:** D.J.H. Garling (90-94), B.D. Sleeman (90-94), A.B. Taylor (90-94).

**SCIENCE MUSEUM MATHEMATICS ADVISORY PANEL:** N.L. Biggs (88-92), J.J. Gray (88-92), P. Holgate (88-92), J.M. Jagger (88-92), I.R. Porteous (88-92).

**TRUSTEE, APPLIED PROBABILITY TRUST:** R.A. Bailey (88-92)

**WARWICK MATHEMATICS RESEARCH CENTRE, ADVISORY BOARD:** E.C. Lance (01.10.90.-30.09.93).

**COLLINGWOOD PRIZE COMMITTEE:** A.J. Scholl.

R.Y. Sharp,  
Council and General Secretary

# **LONDON MATHEMATICAL SOCIETY**

**FRIDAY 18 JANUARY 1991**

**K.J. Falconer (Bristol)**  
will speak at 3.30 on

**Hausdorff Dimension and the  
Classification of Fractals**

**T.J. Ransford (Cambridge)**  
will speak at 5.00 on

**Analytic Multifunctions in Spectral  
Theory, Polynomial Convexity and  
Rational Dynamics**

The meeting is at the Geological Society  
Burlington House, Piccadilly, London W1

All interested are very welcome  
Tea will be served at 4.30

## PROGRAMME AND CONFERENCE FUND

The Society's Programme and Conference Fund is used to give financial support to various mathematical activities in the UK. This fund is administered by the Society's Programme Committee. Grants are made under three main headings.

### 1. Scheme 1 Visitors

Under this scheme, a speaker from abroad is invited to spend about two weeks in the U.K., to address a Society Meeting and to give lectures in three or four separate institutions. The Society pays the cost of the visitor's travel to and from the U.K. and living expenses in London, and the host institutions are expected to share the cost of travel within the U.K. and local accommodation. LMS Council is anxious that greater use should be made of this scheme to enhance, by such visits, the benefit of LMS membership to those who are not easily able to attend London meetings. In planning the Society's future meetings, Programme Committee will have this scheme in mind, and suggestions from U.K. institutions for visitors they would like to receive but whose expenses they could not normally afford are strongly encouraged. Programme Committee tries to plan Society Meetings at least six months in advance. Thus a suggestion for a visitor under this scheme should best be made about one year before the proposed visit.

### 2. Scheme 2 Visitors

Under this scheme, some financial support is provided for visitors to the U.K. who do not address a Society Meeting but will give lectures in at least three separate institutions. Exceptionally, support under this scheme might be provided for a speaker addressing just one meeting which is regional in scope. The LMS contribution under this scheme would be for the visitor's travelling expenses to and from the U.K. Host institutions are expected to share the cost of travel within the U.K. and local accommodation. All arrangements for a visit supported under this scheme are the responsibility of the member who makes the application. An application, in the form of a letter to the Meetings and Membership Secretary (address below) can be submitted at any time, but should normally be made at least three months before the starting date of the proposed visit, so that the lectures to be given can be publicized in the Society's Newsletter. Grants under this scheme do not normally exceed £250. In the past six months, grants have been made under Scheme 2 to support the following visits: Dr A. Martin (A.K. Common), Professor S.W. Margolis (J.B. Fountain), Dr J. McDermott (P.M. Neumann), Professor P. Mattila

(D. Preiss), Dr B. Jöricke (J.M. Anderson).

### 3. Financial Support for Conferences

Grants are made from the Conference Fund to the organizers of conferences to be held in the United Kingdom. Programme Committee tends to give priority to the support of small meetings where an LMS grant can be expected to make a significant contribution to the viability and success of the meeting. Support of larger meetings of high quality is not ruled out but for such meetings an LMS grant would normally cover only part of the total cost. An Application Form, obtainable from the Meetings and Membership Secretary (address below), sets out conditions under which grants are normally made and requests the information Programme Committee usually requires when considering an application.

The following grants for support of conferences have been made within the past six months: £148 to R.J. Wilson for 'Mathematics and Astronomy in the 19th Century' held at Oxford in November 1990; £750 to W.J. Harvey for 'Discrete Groups and Geometry' to be held at Birmingham in January 1991; £800 to E.G. Rees for the 'Edinburgh Symposium on Geometry and Physics' to be held at Newbattle Abbey College, Dalkeith in March 1991; £1000 to T.W. Körner for the 'Colloquium in Honour of Dame Mary Cartwright's 90th Birthday' to be held at Cambridge in March 1991; £1000 to T.B. Benjamin for the 'British Applied Mathematics Colloquium' to be held at Oxford in April 1991; £1000 to P.G. Drazin for 'The Interpretation of Time Series from Nonlinear Mechanical Systems' to be held at Warwick in August 1991; £936 to R.W. Bray for 'Renaissance Mathematics' to be held at Cambridge in September 1991; £2000 to N. Stephens for 'Symposia on Arithmetic' to be held at Oxford in September 1991; £3000 to J.D.S. Jones for continuation in 1990-1 of the 'British Visitors Fund' at the Mathematics Research Centre, University of Warwick.

Further information about these functions of Programme Committee can be obtained from the Meetings and Membership Secretary, A.R. Pears, Department of Mathematics, King's College London, Strand, London WC2R 2LS, telephone 071-873-2852, who will be pleased to discuss proposals informally with potential applicants and to give advice on submission of an application to the Society. The next meeting of Programme Committee will be held in January and it would be a great help if suggestions and applications to be considered at that meeting could be submitted not later than 31st January 1991.

# LAUREATE

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## A SOCIETY LOGO?

### Reminder

Council launched last month a competition, open to all readers of the Newsletter, for the design of a Society logo. Guidelines appeared in the December 1990 Newsletter. Entries should be

submitted to the Administrator, London Mathematical Society, Burlington House, Piccadilly, London W1V 0NL, to arrive no later than 31st January 1991.

## SÉMINAIRE DE MATHÉMATIQUES SUPÉRIEURES - NATO ADVANCED STUDY INSTITUTE

A Seminar on "Algebras and Orders" will be held at the Université de Montréal from July 29th - August 9th 1991. The Seminar is held with the support of NATO, the Ministry of Education of Québec, the Natural Sciences and Engineering Research Council of Canada, and the Université de Montréal.

The principal speakers are H.-J. Bandelt (Hamburg), P. Burmeister (T.H. Darmstadt), B. Davey (La Trobe), M. Ern  (Hannover), R. Freese (Hawaii), B. J nsson (Vanderbilt), A.F. Pixley (Harvey Mudd Coll.), M. Pouzet (Claude-Bernard), I. Rival (Ot-

tawa), I.G. Rosenberg (Montr al), D. Schweigert (Kaiserslautern), W. Taylor (Colorado).

Partial financial assistance will be available for a certain number of participants. Priority will be given to graduate students. Requests for participation or financial assistance must be received before 15th March 1991. Further information is available from G. David, Secretary, Department of Mathematics and Statistics, Universit  de Montr al, C.P. 6128-A, Montr al, Qu bec, Canada H3C 3J7.

## INTERNATIONAL CATEGORY THEORY MEETING

An International Category Theory Meeting will be held from 23rd to 30th June 1991 at McGill University, Montreal, Quebec, Canada. The following speakers have accepted to speak: S. Abramsky, A. Carboni, J. Isbell, J. Jardine, F. Lamarche, G. Meloni, E. Moggi, J. Pelletier, A. Pitts, R. Street, V. Trnkova, R. Wood.

Deadline for abstracts is 15th March 1991. For further information write to: Category Theory 1991, Department of Mathematics, McGill University, 805 Sherbrooke St., Montreal, Quebec, Canada H3A 2K6. E-mail mt16@musica.mcgill.ca

## LIBRARY NEWS

**Acquisitions** Under the recently signed agreement, in order to regain sole ownership of jointly owned material, the sum of £5,000 was transferred from the London Mathematical Society to University College. The transfer was on condition that the funds should be used to extend the mathematical collection of University College Library. Part of these funds will be used to complete, as far as possible, the holdings of the Springer Lecture Notes. Would members please send further suggestions to the Society's Librarian, Dr J.A. Erdos, Department of Mathematics, King's College, Strand, London, WC2R 2LS, e-mail: j.erdos@uk.ac.kcl.cc.oak. Both specific titles and advice of areas of weakness in the Library are encouraged.

Members are reminded that gifts of books

suitable for the Library are always welcome. Currently we would be very grateful for any gifts of Springer Lecture Notes published in the last five years or so as this would free funds for other purchases.

### Information Sheet and Photocopy Declaration

**Form** An information sheet on the use of the library is enclosed with this Newsletter. Also enclosed is a declaration form for requesting photocopies. It is suggested that members use a photocopy of this form for ordering and retain the original for further orders. The wording of the declaration and the prohibition of despatch without possession of a signature are forced by current copyright laws.

J.A. Erdos  
Librarian

## STOLEN BOOKS

In February 1990, thirty two antiquarian mathematical books were stolen from the Department of Mathematics, University of Dundee. The books have a printed label 'University College, Pure and Applied Mathematics' inside the front cover. Tayside Police have asked that members should

be alerted by a Newsletter notice, with a request that any information should be sent to Tayside Police, P.O. Box 59, 4 West Bell Street, Dundee DD1 9JU, from which address a list of titles of the stolen books can be obtained.

## LONDON SCHOOL OF ECONOMICS

### LECTURER IN COMBINATORIAL OPTIMIZATION

Applications are invited for appointment to the above post from 1st October 1991. Candidates should have research interests in some aspect of Mathematics or Operational Research related to Combinatorial Optimization. Applications from those with experience of the practical use of Combinatorial Optimization would be welcome.

Appointment will be at an appropriate point of the Grade A or Grade B salary scale for lecturers £12,086 to £16,755 or £17,455 to £22,311 plus £1,767 London Allowance a year. In assessing the starting salary consideration will be given to qualifications, age and experience.

Application forms and further particulars are available from the Staffing Office, Room H515, London School of Economics, Houghton Street, London WC2A 2AE. Closing date for applications: **8th February 1991.**

Candidates wishing to discuss the post informally should contact Professor N.L. Biggs (telephone 071-955 7640) or Professor J. Rosenhead (telephone 071-955 7637).

## CHRIST CHURCH

### Oxford

#### OFFICIAL STUDENTSHIP IN APPLIED MATHEMATICS

The college proposes to elect, with effect from 1st October, 1991, an Official Student (i.e. Tutorial Fellow) in Applied Mathematics. The Studentship is tenable in conjunction with a University Lecturership (C.U.F.).

Further particulars may be obtained from the Dean's Secretary, Christ Church, Oxford OX1 1DP and application must be sent to the Very Revd. the Dean of Christ Church by **19th January, 1991.**



THE AUSTRALIAN NATIONAL UNIVERSITY

*School of Mathematical Sciences*

## Postdoctoral Fellow Research Fellow Senior Research Fellow

Applications are invited from suitably qualified people for appointment to a full-time research position as Postdoctoral Fellow, Research Fellow or Senior Research Fellow in Pure Mathematics within the research sections of the Institute of Advanced Studies component of the School of Mathematical Sciences. The principal research groups are in algebra, functional analysis and geometry and the senior researchers are: G. Huisken, L.G. Kovács, M.F. Newman, R.W. Richardson and D.W. Robinson. Other sections of the School and the University are also active in research in related areas. No teaching is required, but some participation in advanced undergraduate courses may be available. It may also be possible to combine a part-time research position of this kind with a part-time teaching position in the Department of Mathematics of the Faculty of Science. Applications from those able to take leave of absence from their own institutions will be welcomed.

Enquiries may be addressed to Dr M.F. Newman (Telephone 61 6 249 2955; Facsimile 61 6 249 0759; e-mail address Newman@pell.anu.edu.au).

Closing date: 31 January 1991.

Ref: SMS 26.11.2

<b>SALARY:</b> Senior Research Fellow;	\$A45,729–\$A54,255 p.a.
Research Fellow;	\$A33,163–\$A43,096 p.a.
Postdoctoral Fellow Grade 1 (fixed point);	\$A28,792–\$A32,762 p.a.

**Appointment:** Senior Research Fellow/Research Fellow up to three years, possibility of extension to five years; Postdoctoral Fellow normally two years, possibility of extension to three years.

**Applications** should be submitted in duplicate to: **The Registrar, The Australian National University, GPO Box 4, Canberra ACT 2601 Australia**, quoting reference number and including curriculum vitae. The University reserves the right not to make an appointment or to appoint by invitation at any time. Further information is available from the Registrar.



THE AUSTRALIAN NATIONAL UNIVERSITY

*School of Mathematical Sciences*

## Postdoctoral Fellow Research Fellow Senior Research Fellow

Applications are invited from suitably qualified people for appointment to a full-time research position as Postdoctoral Fellow, Research Fellow or Senior Research Fellow in Statistical Mechanics to work with Professor R.J. Baxter FAA, FRS. Other sections of the School and the University are also active in research in related areas. The appointee will hold a joint position within the Mathematics Research Section of the School of Mathematical Sciences and the Department of Theoretical Physics of the Research School of Physical Sciences. No teaching is required, but some participation in advanced undergraduate courses may be available. Applications from those able to take leave of absence from their own institutions will be welcomed.

Enquiries may be addressed to Dr M.F. Newman (Telephone 61 6 249 2955; Facsimile 61 6 249 0759; e-mail address Newman@pell.anu.edu.au).

Closing date: 31 January 1991.

Ref: SMS 26.11.1

**SALARY:** Senior Research Fellow; \$A45,729–\$A54,255 p.a.  
Research Fellow; \$A33,163–\$A43,096 p.a.  
Postdoctoral Fellow Grade 1  
(fixed point); \$A28,792–\$A32,762 p.a.

**Appointment:** Senior Research Fellow/Research Fellow up to three years, possibility of extension to five years; Postdoctoral Fellow normally two years, possibility of extension to three years.

**Applications** should be submitted in duplicate to: **The Registrar, The Australian National University, GPO Box 4, Canberra ACT 2601 Australia**, quoting reference number and including curriculum vitae. The University reserves the right not to make an appointment or to appoint by invitation at any time. Further information is available from the Registrar.

## THE FIRST DECADE

In December 1980 the London Mathematical Society was interviewing for a new Administrative Assistant for the LMS office. They forgot to ask the prospective candidate whether or not they would be prepared to climb Mount Everest as part of their duties. Since January 1981 it is estimated that the number of times I have climbed the elegant staircase of 71 steps to the LMS office in Burlington House equals at least ten trips up Mount Everest.

Many a President too has also since climbed those stairs to visit me: Johnson, Cohn, James, Zeeman, Coates and Kingman. Visiting Officers over the past ten years who have attempted to equal this feat include, Robertson, Pym and Brannan (Publications Secretaries), Bailey and Pears (Meetings & Membership Secretaries), Goodey, Mulvey and Sharp (Council & General Secretaries), Schwarzenberger and Wright (Treasurers), Larman, Kestelman, Johnson, Samet and Erdos (Librarians). I leave it to you to guess who is nearest the summit.

The past decade has seen technology change most of our lives, and the office and Officers of the LMS have not escaped untouched. Since 1982 the membership records have been computerised; this enabled direct debiting to be introduced, and the production of a bi-annual List of Members to name but a few initiatives. A fax machine and electronic mail are also now part of every day life in the LMS office.

Ten years ago the membership was 1,600. One of my main goals has been to see it reach 2,000

and this has now been achieved. However, even with numerous reminder letters the computer and I have sent, there are always some of you who are not keen to pay your subscriptions, so the membership slips slowly back again.

1982 saw the initiation of the Popular Lectures which has provided me and many others not of a mathematical background with an insight into the role of mathematics in every day life. The office also doubles up as a video shop, stocked with videos of the Popular Lectures.

In 1988 the office moved... to the room next door. Instead of sharing a large office with the British Astronomical Association, the London Mathematical Society moved to the small room next door and could finally claim to have an office of its own.

In recent years I have welcomed more applied mathematicians into membership of the Society. With Christopher Zeeman's enthusiasm the journal *Nonlinearity* was launched in 1989.

New bridges have been built with the American Mathematical Society and in 1990 the LMS went to the AMS's annual summer meeting where Alan Pears and I manned the first ever LMS stand at an AMS meeting. The ground was also prepared for a joint meeting in the U.K. in 1992.

Ah, but that is into the next decade and who knows how many members we will have, and where the office will be located, and how many more times I will have climbed Mount Everest by 2001.

S.M. Oakes  
Administrator

## 1991 NAYLOR PRIZE AND LECTURESHIP

The London Mathematical Society's 1991 Naylor Prize and Lectureship in Applied Mathematics is awarded to Roger Penrose, Rouse Ball Professor of Mathematics at the University of Oxford, for his lasting contributions to various fields of mathematics and mathematical physics, especially

general relativity, the application of global differential geometry to relativity theory, and twistor theory.

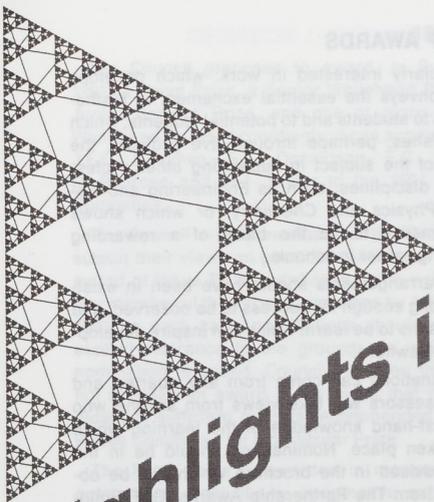
R.Y. Sharp  
Council and General Secretary

## MINIMAL MODELS, LIE GROUPS AND DIFFERENTIAL GEOMETRY

A summer school on Minimal models, Lie groups and differential geometry will be held from 16th to 20th September, 1991 at the Universidad de Santiago de Compostela, Spain. The invited speakers are: L. Cordero-Rego, Y. Felix, S. Halperin, D. Tanre and J.C. Thomas.

The number of participants is limited, preference will be given to younger mathe-

maticians, including graduate students. Deadline for applications is 1st May 1991. For further information write to Antonio Gomez Tato, Departamento de Xeometria e Topoloxia, Facultad de Matematicas, Universidad de Santiago de Compostela, 15707 Santiago de Compostela, Spain. E-mail: xtzzl001@seinl.lugo.usc.es.



# Highlights in Mathematics

G. A. Edgar, The Ohio State University, Columbus, OH

## **Measure, Topology, and Fractal Geometry**

1990. XIII, 230 pp. 96 figs., 16 color plates. (Undergraduate Texts in Mathematics)  
Hardcover DM 58,- ISBN 3-540-97272-2

**Contents:** Preface. - Contents. - Fractal Examples. - Metric Topology. - Topological Dimension. - Self-Similarity. - Measure Theory. - Hausdorff Dimension. - Additional Topics. - Appendix: Terms. Notation. Examples. Reading. References. - Index.

M. Struwe, ETH Zürich

## **Variational Methods**

**Applications to Nonlinear Partial Differential Equations and Hamiltonian Systems**

1990. XIV, 244 pp. 16 figs. Hardcover DM 78,- ISBN 3-540-52022-8

**Contents:** The Direct Methods in the Calculus of Variations. - Minimax Methods. - Limit Cases of the Palais-Smale Condition. - Appendices A-C. - References. - Index.

M. Kashiwara, Kyoto University; P. Schapira, University of Paris

## **Sheaves on Manifolds**

With a Short History „*Les débuts de la théorie des faisceaux*“ by C. Houzel

1990. X, 512 pp. (Grundlehren der mathematischen Wissenschaften, Bd. 292) Hardcover DM 168,- ISBN 3-540-51861-4

S. Wiggins, California Institute of Technology, Pasadena, CA

## **Introduction to Applied Nonlinear Dynamical Systems and Chaos**

1990. XIV, 672 pp. 291 figs. (Texts in Applied Mathematics, Vol. 2) Hardcover DM 98,- ISBN 3-540-97003-7

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 37-3, Hongo 3-chome, Bunkyo-ku, Tokyo 113, Japan  Citicorp Centre, Room 1603,  
18 Whitfield Road, Causeway Bay, Hong Kong  Avinguda Diagonal, 468-4°C, E-08006 Barcelona



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## THE 1991 PARTNERSHIP AWARDS

The British Nuclear Fuels Prize is awarded for development in teaching and learning mathematics. British Nuclear Fuels plc recruit some eighty graduates each year, including mathematicians. Mathematical skills are important in the Company, which uses increasing complex modelling techniques to help in solving problems in the design, building and operation of sophisticated plant and equipment. The development of teaching and learning in Mathematics is therefore of importance to the company.

The British Nuclear Fuels Prize is open to teachers and their work in single honours undergraduate courses in Mathematics and joint honours courses in which Mathematics is one of the named subjects.

The assessors will be glad to hear of any development in methods of teaching and learning which proposers regard as an interesting and possibly significant advance. While not seeking to limit the scope of nominations, they will be

particularly interested in work which develops and conveys the essential excitement in Mathematics to students and to potential students; which establishes, perhaps through live projects, the utility of the subject in supporting other professional disciplines, such as Engineering and Applied Physics and Chemistry; or which shows Mathematics to be the basis of a rewarding teaching career in schools.

The arrangements should have been in existence long enough for success to be observed, and for lessons to be learnt which can inspire development elsewhere.

Nominations can come from any quarter, and the Assessors will take views from anyone who has first-hand knowledge of the learning which has taken place. Nominations should be in the form advised in the brochure which can be obtained from The Partnership Awards, GLE Building, 63-67 Newington Causeway, London SE1 6BD, telephone 071-403 0300, fax 071 403 1742.

## STOCHASTIC ANALYSIS AND RELATED TOPICS

The 1991 Easter Meeting will take place at the University of Warwick from 8th to 12th April. Invited speakers will include M. Friedlin (Maryland) Nonlinear diffusion equations (3 hrs), D. Nualart (Barcelona) Anticipating stochastic calculus and its applications, Ph. Biane (Paris 7) Quantum random walks on the dual of a compact

group (2hrs), P. Imkeller (Munich) Occupation densities for Skorohod integral processes.

Further details from S. Jacka (Statistics) e-mail: s.d.jacka@uk.ac.warwick.ac.uk; D. Elworthy (Mathematics) e-mail: xm@uk.ac.warwick.maths Telephone 0203-523576.

## OXFORD CENTRE FOR INDUSTRIAL AND APPLIED MATHEMATICS

This Centre, as part of its programme for collaboration with industry in research and training in applications of mathematics, regularly organises workshops and seminars. Seminars on differential equations are given at 4.15pm on Thursdays and workshops on industrial problem areas take place on Fridays from 10.00am during term. In addition there are one-day workshop meetings in vacation and a one week Study Group meeting with industry twice a year. The pro-

gramme of activities will be circulated four times a year to British mathematicians who request it. Limited support is available from the London Mathematical Society to cover the costs of travel and subsistence incurred in attending these activities. For further details, and to be put on the mailing list, please contact, Dr A.B. Taylor, Mathematical Institute, 24-29 St Giles, Oxford OX1 3LB, Tel. (0865) 270506, Fax (0865)273583.

## VISIT OF YA.S. SOIBELMAN

Ya. S. Soibelman of the University of Rostov, U.S.S.R., will visit Britain between 4th January and 31st March 1991, with the help of an SERC Visiting Fellowship. Dr Soibelman has worked extensively on the quantized universal enveloping algebras of Drinfeld and Jimbo, their representation theory, flat varieties, Schubert cells, quantum

Weyl groups and quasi triangular structure.

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

## PROFESSOR ROBERT A. RANKIN

Professor Robert A. Rankin of the University of Glasgow has been elected to Honorary Membership of the Edinburgh Mathematical Society in

recognition of his outstanding services to mathematics in Scotland and his distinguished research in modular forms.

## 1991 LMS PRIZES

The Council proposes to award, in Summer 1991, a Polya Prize, a Senior Whitehead Prize, a Junior Berwick Prize, and one or more Junior Whitehead Prizes. Accordingly, it has appointed J.F.C. Kingman, S.K. Donaldson, E.C. Lance, R. Penrose and M.J. Taylor to the 1991 Prizes Committee.

The Council invites members of the Society to submit their views on possible candidates for the award of these Prizes confidentially in writing to any member of the Prizes Committee by 1st March 1991. In each case, nominations should contain explicit reference to the grounds on which the nomination is based. Council reserves the right not to make an award in the event that no candidate of sufficient merit is recommended by the Prizes Committee for a particular Prize.

The Polya Prize is awarded in recognition of outstanding creativity in, imaginative exposition of, and distinguished contribution to, mathematics within the United Kingdom; it may not be awarded to any person who has previously received the De Morgan Medal.

The Senior Whitehead Prize is awarded to a mathematician who is normally resident in the United Kingdom on 1st January 1991 in respect of work in, influence on or service to mathematics, or in recognition of lecturing gifts in the field of mathematics; it may not be awarded to any person who

has previously received the De Morgan Medal or the Senior Berwick Prize.

The Junior Berwick Prize is awarded to a mathematician who, on 1st January 1991, is a member of the Society, is under the age of forty years, and is not already a Fellow of the Royal Society, in respect of a definite piece of mathematical research work actually published by the Society in any of its publications during the period from 1st January 1987 to 31st December 1990.

The Junior Whitehead Prizes are awarded to mathematicians who on 1st January 1991 are normally resident in the United Kingdom or members of the Society mainly educated in the United Kingdom, who are under the age of forty years, and who are not already Fellows of the Royal Society. Grounds for the award may include work in and influence on mathematics.

No person may be awarded a given Prize more than once, and the President of the Society and the members of the Prizes Committee are ineligible for any of the awards. The detailed regulations and procedure for the award of each Prize can be obtained from Professor R.Y. Sharp, Department of Pure Mathematics, University of Sheffield, Hicks Building, Sheffield S3 7RH.

R.Y. Sharp  
Council and General Secretary

## UNIVERSITY OF CAMBRIDGE

### University Lectureship in Mathematics

#### Department of Applied Mathematics and Theoretical Physics

Applications are invited for this Lectureship, which has been established from 1st October 1991 as a result of the 1989 UGC Review of Meteorology. Applicants should work in the field of Geophysical Fluid Dynamics, and preference will be given to candidates working on the dynamics of the atmosphere. It is possible, in appropriate circumstances, that the successful candidate might be appointed as an Assistant Director of Research rather than a University Lecturer, with a reduction in the teaching duties of the appointment.

Salary will be on the scale for University Lecturers (£15,444 - £23,819 p.a.); or, if the appointment were to be made as Assistant Director of Research, on the scale £15,444 - £22,311 p.a.

#### Unestablished Temporary Lectureship in Applied Mathematics

#### Department of Applied Mathematics and Theoretical Physics

Applications are invited, without restriction as to specialism within the field of Applied Mathematics/Theoretical Physics, for a post to be held for three years from 1st October 1991, with a possibility of extension for a further two years.

Salary will be on the scale for University Lecturers (£15,444 - £23,819 p.a.)

Further particulars for both posts may be obtained from Dr V. Chamberlain, D.A.M.T.P., Silver Street, Cambridge CB3 9EW (telephone 0223-337863), to whom applications (including curriculum vitae, publications list and names of not more than three referees) should be sent to arrive no later than 31st January 1991.

The University follows an Equal Opportunities Policy.

## ISAAC NEWTON INSTITUTE FOR MATHEMATICAL SCIENCES

The Newton Institute formally came into existence at 4pm on Friday, 2nd November 1990, when Sir Michael Atiyah took office as Director. In anticipation of this the Scientific Steering Committee, which consists of leading mathematical scientists from universities all over the U.K. and from overseas, met on 15th October to consider the 23 proposals which had been received for scientific programmes in the Institute. A number of these are actively being considered further and two have been chosen as the Institute's first programmes; they will run simultaneously in 1991 from July until December. They are:

**Low-dimensional Topology and Quantum Field Theory** Organisers: E. Corrigan (Durham), M.B. Green (QMW, London), W.B.R. Lickorish (Cambridge). This programme will focus on the spectacular developments that have occurred in recent years as a result of the increasingly fruitful interactions between areas of theoretical physics and mathematics. For example, advances in knot theory have involved ideas from statistical mechanics; and important progress in four-dimensional geometry has been based on concepts from gauge theory, the field theory used to describe the interactions of fundamental particles. The programme will encourage further progress by bringing together mathematicians and physicists working in interrelated areas such as statistical physics, string theory, topology and geometry.

**Dynamo Theory** Organisers: U. Frisch (Nice), H.K. Moffatt (Cambridge), A.M. Soward (Newcastle). The programme will be concerned with the fundamental problem of the origin of magnetic

fields in cosmic bodies, particularly stars and planets. Electromagnetic induction in a conducting fluid in motion can give rise to spontaneous growth of magnetic field, a phenomenon whose basic character is now well understood. A self-consistent theory incorporating the relevant fluid dynamics and thermodynamics has not yet been constructed, and this remains the outstanding challenge. Similar processes occur in the mononuclear fusion containment devices (e.g. JET - the Joint European Torus, at Culham). An understanding of these magneto-fluid dynamic processes is thus of central importance if energy from fusion (rather than fission) is ever to become a reality.

The establishment of the Institute has been made possible through the generous financial support of St John's, Trinity, Gonville and Caius, and Emmanuel Colleges, the Science and Engineering Research Council, the University of Cambridge, the London Mathematical Society, NM Rothschild and Sons, the Nuffield Foundation, the Institute of Physics, the Applied Probability Trust and the Cambridge Philosophical Society. In addition, the London Mathematical Society, the Edinburgh Mathematical Society, the Institute of Physics, the Cambridge University Press, the Applied Probability Trust, the Royal Statistical Society and the Institute of Mathematics and its Applications have agreed to donate publications.

For further information contact P.V. Landshoff, DAMTP, University of Cambridge, Silver Street, Cambridge, CB3 9EW; tel. 0223 337880; e-mail pvl@luk.ac.rl.ib.

## SYMPOSIUM ON GEOMETRIC GROUP THEORY Second Announcement

The University of Sussex is organizing a 3-week symposium covering geometric methods in group theory between July 1st and July 19th 1991. It will consist of a 2-week workshop at the University of Sussex in Brighton from July 1st to 14th, followed by a conference at the nearby Isle of Thorns conference centre from July 14th to 19th.

Invited speakers are: M. Bestvina (Princeton), R. Bieri (Frankfurt), K. Brown (Ithaca), A. Casson (Berkeley), D. Epstein (Warwick), S. Gersten (Utah), M. Gromov (IHES), J. Howie (Heriot Watt), P. Kropholler (QMW), J. Morgan (Columbia), E. Rips (Jerusalem), P. Scott (Michigan), J. Stallings (Berkeley), and W. Thurston (Princeton).

The workshop will be informal allowing seminars, short reading courses and problem sessions on the areas of special interest to the participants. It will culminate in the Spitalfields Lecture Day on Friday 12th July.

Bed and Breakfast accommodation is available at the University of Sussex for £10 per day. We can also provide some information about accommodation in Brighton. Participants may use the University library and computing facilities, e.g. email.

The conference will be centered around a series of key note lectures given by invited speakers; participants will be free if time permits to give talks on their own particular developments.

There is a conference fee of £30 (non refundable), payable with the application. The subsistence costs (full board for five days) will be £120. Space at the Isle of Thorns is limited and those who register late may need to make their own arrangements for accommodation.

There will be access to computing facilities (VMS, Unix, Macintosh, PC etc.) at the University during the workshop, and a fleamarket for software related to geometry and group theory at the conference. Computer companies will be demonstrating their latest equipment.

This conference is supported by SERC. British participants may be eligible for extra assistance with costs. Closing date for applications is the 1st of February 1991.

Organizers: Dr G.A. Niblo, Dr M. Roller, School of Mathematical and Physical Sciences, University of Sussex, Brighton BN1 9QH, England, email: mmfe6@uk.ac.sussex.cluster, fax (0273)678097.



Sydney Chapman (1888-1970) studied engineering at Manchester University before reading mathematics at Trinity College, Cambridge. He graduated in 1910 and was recruited as Chief Assistant at the Greenwich Observatory, where he also worked during the First World War. From 1924 to 1946 he was professor at Imperial College, London. He had a life-long interest in the Earth's magnetic field, recognised by his election as an FRS in 1919, the awards of the Adams prize in 1929 and the Royal Society's Copley Medal in 1966, and his Presidency of the Special Commission of the International Geophysical Year (1957). He was the Society's 34th President, from 1929-1931.

## 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

#### JANUARY

- 10-11 Discrete Groups and Geometry Conference, Birmingham (177)  
 18 LMS Meeting, London  
 18 Edinburgh Mathematical Society Meeting, Heriot-Watt (176)  
 21-2 Feb Geometry Conference, Thailand (177)

#### FEBRUARY

- 15 LMS Meeting, Lancaster  
 15 Edinburgh Mathematical Society Meeting, Edinburgh (176)

#### MARCH

- 15 LMS Meeting, London  
 15 Edinburgh Mathematical Society Meeting, Dundee (176)  
 25-29 British Mathematical Colloquium, Bath (176)(177)(178)

#### APRIL

- 9-12 British Applied Mathematics Colloquium, Oxford (177)  
 15-19 J.E. Marsden, LMS Invited Lectures, Southampton (177)  
 23-26 Mathematical and Numerical Aspects of Wave Propagation Phenomena, France (172)

#### MAY

- 3 Edinburgh Mathematical Society Meeting, Stirling (176)  
 7-14 Number Theory Workshop, Singapore (177)  
 9 Schrodinger Lecture, London (178)  
 17-18 2-day LMS Meeting, Oxford  
 27-29 Computing and Information Conference, Canada (177)

#### JUNE

- 1 Edinburgh Mathematical Society Meeting, St Andrews (176)  
 9-14 Fixed Point Theory and Applications Conference, Canada (177)  
 13 LMS Meeting, London  
 17 London Mathematical Society Popular Lectures, Sheffield  
 28 London Mathematical Society Popular Lectures, Imperial College, London  
 29-8 Jul Probabilistic Methods in Combinatorics, Durham (178)

#### JULY

- 1-5 The Mathematics of Nonlinear Systems, Bath (168)(175)(177)  
 7-12 Gregynog Symposium on Differential Equations, Gregynog (176)  
 8-12 British Combinatorial Conference, Surrey (165)  
 8-12 Australian Mathematical Society Annual Conference, Australia (177)  
 8-14 Radicals, Hungary (172)  
 9-19 Conformal Field Theory, Durham (178)  
 13-16 British Congress of Mathematics Education, Loughborough (170)  
 20-30 Application of Categories in Computer Science, Durham (178)  
 22-26 Computational and Applied Mathematics Congress, Ireland (167)

#### AUGUST

- 18-24 Number Theory Association Conference, Canada (177)

#### SEPTEMBER

- 25-27 Numerical Methods in Fluid Mechanics, Switzerland (174)  
 27-28 Symposium on Arithmetic in Honour of Bryan Birch, Oxford (178)

#### OCTOBER

- 18 LMS Meeting, London

#### NOVEMBER

- 15 LMS Meeting, London

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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.

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