THE LONDON MATHEMATICAL SOCIETY NEWSLETTER

FORTHCOMING SOCIETY MEETINGS

Friday 17 January 1992, Burlington House
J.R. Blake, S.J. Hogan
Friday 21 February 1992, Bristol
R.E. Borcherds, S. Donkin
Friday 20 March 1992, Burlington House
R.A. Bailey, L.C.G. Rogers
Friday 15 May 1992, Burlington House
A.J. Scholl, M.J. Taylor
Friday 19 June 1992, Burlington House
W.B.R. Lickorish, V.G. Turaev
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

REPORT OF THE TREASURER TO THE ANNUAL GENERAL MEETING 1991

The publication of periodicals is of major importance to the Society both mathematically and financially. Last year, production difficulties with the Journal caused a drop in revenue from periodicals. Now, as a result of strenuous efforts by the Honorary Editors and the Executive Editor, the Journal is almost back on schedule.

The general fund has increased in the past year from below £2.5 million (£2,494,926) to over £3 million (£3,012,496), which is good news. Unfortunately, investment prospects for the year ahead look bleak. The current recession is likely to continue for several months and then be followed by rising inflation.

During the last year the Society spent over £99K in grants to support mathematics. The Programme Committee allocated £32K of this sum. The remainder, which includes the costs of the Hardy and Forder Lectureships, was distributed by direct decisions of the Council. In particular, £15K was given to the International Centre for Mathematical Sciences in Edinburgh as a contribution towards its initial costs. Also, as part of a five year programme of support, the Isaac Newton Institute received £10K to help British based mathematicians from outside Cambridge to visit the Institute and participate in its work.

The Society now has over 2,000 members whose subscriptions totalled £17,778. (Overseas reciprocity members pay a reduced subscription and certain categories of long serving members are not required to pay any subscription.)

The Society could not function successfully without the hard work and enthusiasm of many people, in particular, its editors and editorial advisors, its Publications Secretary, Council and General Secretary and Meetings and Membership Secretary. I would like to record my personal thanks to the Administrator, Susan Oakes, for her energy, efficiency and unfailing support.

J.D.M. Wright,
Honorary Treasurer

LONDON MATHEMATICAL SOCIETY
COUNCIL, COMMITTEES AND REPRESENTATIVES, 1992

LONDON MATHEMATICAL SOCIETY

Meeting on Industrial Mathematics

FRIDAY 17 JANUARY 1992

S.J. HOGAN (Oxford)
will speak at 3.30 on

The Dynamics of Rigid Block Motion under Harmonic Forcing

J.R. BLAKE (Birmingham)
will speak at 5.00 on

Mathematical Modelling in the Steel Industry

Tea will be served at 4.30

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

All interested are very welcome

MATHEMATICS AND COMPUTING

This month's column is devoted to a review of the book "A Guide to Computer Algebra Systems" by D. Harper, C. Wooff and D. Hodgkinson, published by Wiley (148 pages, £14.95). Before turning to that, I wish to mention two comments I have had relating to the group theory package CAYLEY, which was mentioned in this column in the April Newsletter. Bob Sandling has informed me that it is freely available to virtually all UK academics on the Manchester CMS service. John Cannon considered that my comment that CAYLEY costs about $2000 is highly misleading, and I apologise to him for this. This figure represents the cost for use on a network containing an unlimited number of machines. The cost for use on a single machine would be at most half of this figure, and this would be halved again for users in Third World countries.

I enjoyed reading the book by Harper et. al. on computer algebra systems. I found it concise, but full of useful information. It is easy to read it through quickly to get an overall idea of what is possible and what is available, and I expect it to be useful in the future as a reference. After a brief introduction, the bulk of the text is devoted to a comparative review on the performance in a variety of areas of mathematics of the five systems REDUCE, MACSYMA, Maple, Mathematica and Derive. Of course, all of these systems are under continuing development, and so features that are currently not available may soon become so. Indeed, the book points out a number of examples of problems that cannot be solved at present on any of the systems, and this should in itself provide some impetus for further research in these directions.

The systems under consideration here are all general purpose, in that their use is not restricted to any particular area of mathematics. The areas chosen for consideration include basic algebra, calculus, solving algebraic equations, matrix and vector algebra, and input-output facilities, and each of these systems performs creditably in each of these areas. Thus they can all perform arithmetic on arbitrarily large numbers and to arbitrarily high precision (subject, of course, to enough space being available), they can all factorize polynomials, manipulate and simplify expressions, evaluate the standard Mathematical functions, differentiate, integrate, and perform matrix manipulations. There are, of course, some differences; some are much more adept than others at solving differential equations, for example. Of course, if your problem involves large amounts of numerical computation on a vast amount of data, then a special-purpose routine written in a standard computer language like FORTRAN or C will ultimately prove more efficient, but a great deal of effort has gone into making these systems as efficient as possible, using the best available algorithms, and so it is always worthwhile trying them out on your problem first.

Suppose, then, that you are in the fortunate position of being able to make your own choice as to which system to use. The price may well be an important consideration and, perhaps unfortunately, this book does not comment on their relative costs. If your are only interested in a specific range of applications, then you should of course look to see which system performs best in that area. Otherwise, the input-output facilities and the documentation provided should be important considerations. Most of them are capable of outputting a TEX file for printing a finished product. The graphics facilities are particularly good in Mathematica and Maple, both of which can also produce postscript files of graphics output.

Personally, I use computer algebra systems relatively infrequently, except on a few occasions when I am doing some intensive computations. However, I occasionally want to use one of them, perhaps to check some solutions on a problem sheet, when I might wish to invert a matrix, or solve an easy differential equation. It is therefore important that I should be able to find out how to do these things as rapidly as possible, without having to plough through pages of literature about far more difficult and general problems. Most of the systems have online help facilities, which make this task easier. Thus, I was quite impressed the first time I used Maple, when I wanted to find the eigenvalues of a matrix, knowing nothing at all about the system. I started by typing "help(matrix);" more or less at random, and I had the answer to my problem within a few minutes.

To sum up, then, if you are interested in having a concise and reasonably priced guide to the principal capabilities and performances of the leading computer algebra systems, then this book would be a good buy. For those interested in a more detailed discussion of some of the limitations and possible pitfalls of these systems, the articles by David Stoutemyer and Charles Livingston in the 'Mathematics and Computing' column of the September 1991 edition of the AMS Notices might be worth reading.

Derek Holt (dfh@uk.ac.warwick.maths)

MEETING ON INDUSTRIAL MATHEMATICS

The Society Meeting to be held at the Geological Society, Burlington House, London on Friday 17 January 1992 will be devoted to Industrial Mathematics. Programme Committee feels that members might be interested to see abstracts of the two lectures to be given at the meeting and these follow.

The Dynamics of Rigid Block Motion under Harmonic Forcing
S.J. Hogan
University of Oxford Centre for Industrial and Applied Mathematics

In many industrial locations, equipment is not held down but rests untethered on a base. Fuel rods in some nuclear reactors are stacked one on top of another as are concrete radiation shields. When an earthquake strikes, these items can rock with potentially disastrous results. In Japan, where tombstones consist of a simple rectangular block placed on a solid base, the toppling of the headstone is used to provide a rough estimate of the strength of an earthquake. In this talk the simplest and most widely used model of a rigid block undergoing harmonic forcing is analysed in detail. It is shown that
(i) all types of subharmonic response are possible,
(ii) several types of response can occur at one point in parameter space,
(iii) exact expressions are available for stability boundaries in parameter space,
(iv) asymmetric solutions exist just outside the upper boundaries of symmetric solutions,
(v) period- and impact-doubling cascades occur as parameter values are varied even further outside the boundaries,
(vi) aperiodic (or chaotic) responses are possible,
(vii) periodic responses can occur which appear to violate West's formula and
(viii) steady state responses of the forced system can be so large as to produce toppling of the block if the system were unforced.
Quantitative agreement is found between this theoretical work and experimental work of Tso and Wong. The effect of damping on the response is also considered. It is shown that regions of parameter space where harmonic responses are expected are hardly affected at all. Nevertheless damping is effective in reducing the amplitude and impact velocity of the response. It is hoped to present results from recent work on one-sided rocking. The safety implications of these results will be briefly outlined.

Mathematical Modelling in the Steel Industry
J.R. Blake
School of Mathematics and Statistics, University of Birmingham

The production of steel is characterised by the enormous amount of energy required to produce it, from the accurate placement of explosives required to yield the raw materials, to the high temperatures, pressures and flow rates in a blast furnace, the annealing furnaces, the huge rolling machines that produce sheet steel. Even painting the sheet steel involves furnaces to dry the wet surfaces in a very short period of time. The working environment is often oppressive with dangerous materials, high temperatures and noise. Clearly there are many opportunities for a mathematician working alongside engineers, physicists, chemists and others to develop models to improve both the process and the safety of the working environment.

The lecture presentation will begin by identifying a range of topics with which the lecturer has been associated in the steel industry where mathematics has made a significant contribution to improving industrial performance. The latter part will concentrate on two topics: hot and cold rolling of sheet steel and jet-stripping; the rapid removal of excessive paint from sheet steel that is moving at high speed.

The high quality requirements of sheet metal and the use of computer control of sheet rolling have placed an emphasis on a thorough understanding of the physics of the rolling process. The thermal behaviour of the rolls and the rolled product is an important component in the study. The thermal process in the rolling stands affects the mechanical and metallurgical properties of the material, governs the roll cooling requirements, and influences the overall flatness of the rolled product. One method of galvanizing or painting sheet steel at high speed is to allow the material to be drawn vertically through a bath with the excess paint being removed by an air-knife jet. There are usually stringent requirements on the paint thickness so the presence of any liquid instability in the film will lead to the product being rejected on quality grounds. Mathematical models will be developed for both these processes and implications drawn with regard to implementation.

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 UK, 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 UK and living expenses in London, and the host institutions are expected to share the cost of travel within the UK 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 UK 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 UK 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 UK. Host institutions are expected to share the cost of travel within the UK 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 £300. In the past six months, grants have been made under Scheme 2 to support the following visits: Professor V. Galaktionov (C.J. Budd), Professor A. Kufner (D.E. Edmunds), Professor V. Buchstaber (N. Ray), Professor P. Dombrowski (A. West), Dr L. Pyber (P.M. Neumann), Professor Yu.E. Hohlov (S.D. Howison), Dr L. Rondoni (R.F. Streater).

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 tend 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: £146 to K.C.H. Mackenzie for the 'Yorkshire Pure Mathematics Colloquium' held at Sheffield in October 1991; £480 to R.J. Wilson and C.A. Rowley for 'Algebraic Combinatorics' held at the Open University in November 1991; £1200 to P.D. Welch for the 'Conference in Honour of John Shepherdson' to be held at Bristol in March 1992; £700 to R.W. Bray for 'The Uses of History in Mathematics Education' to be held at Nottingham in April 1992; £500 to A.P. Fordy and J.C. Wood for 'Harmonic Maps and Integrable Systems' to be held at Leeds in May 1992; £1000 to A. Carbery for the 'Workshop on Fourier Analysis' to be held at Sussex in June 1992; £450 to J.H. McCabe for the 'Fifth International Conference on Fibonacci Numbers' to be held at St Andrews in July 1992; £500 to J.M. Howie for the 'St Andrews Mathematical Colloquium' to be held at St Andrews in July 1992; £860 to D.B.A. Epstein and C.M. Series for 'Analytic and Geometric Aspects of Hyperbolic Space' to be held at Warwick in September 1992.

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 February and it would be a great help if suggestions and applications to be considered at that meeting could be submitted no later than 31st January 1992.

Cambridge Mathematics

New books at 25% discount!

LMS members are entitled to 25% off the retail prices shown below. To order, return this form to Cambridge University Press, Science Publicity Department, The Edinburgh Building, Cambridge CB2 2RU. **Please remember to enclose a sterling cheque payable to Cambridge University Press.** Alternatively, ring 0223 325970 or Fax 0223 315052 at any time to order on your credit card.

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INTERNATIONAL CENTRE FOR MATHEMATICAL SCIENCES
Call for Proposals

The ICMS Programme Committee will next meet in April 1992. Proposals are invited for research programmes, workshops and courses on any topic in the mathematical sciences, interpreted broadly; particularly welcome are proposals of an interdisciplinary nature. Major research programmes will last from 6 months to 1 year, while minor programmes or workshops will be of shorter duration. Advanced lecture courses will last for 1-3 weeks and could be related to the topic of a research programme.

The Committee would be particularly interested in receiving proposals for research programmes or courses related to the following areas: Numerical analysis and scientific computation, Mathematics in medicine, Applied differential geometry, Applications of fluid mechanics to the environment (e.g. water pollution), Vibrations of complex systems (e.g. cars, aircraft), Mathematics in operations research, Modelling and inference in interactive systems, Nonlinear stochastic partial differential equations (with applications to biology, engineering etc.).

The following programmes and workshops will run in 1992-1993: Randomness and Computation, Algebraic Graph Theory, Geometric and Combinatorial Methods in Group Theory, Mathematical Problems in Petroleum Science.

Proposals should be no longer than 2 sides of A4, and should be sent to Professor J.M. Ball, Department of Mathematics, Heriot-Watt University, Edinburgh EH14 4AS. Telephone 031-451 3227 (sec. 031-451 3250), fax 031-451 3249, e-mail J.M.Ball@cara.ma.hw.ac.uk from whom advice on applications can be obtained, to arrive no later than 25 January 1992.

BIFURCATIONS AND PERIODIC ORBITS OF VECTOR FIELDS

A seminar on Bifurcations and Periodic Orbits of Vector Fields is being held in the Department of Mathematics, University of Montreal from 13th to 24th July 1992. Lectures will be given by C. Camacho (IMPA, Rio de Janeiro), F. Dumortier (Limburgs Universitair Centrum), R. Roussaire (Université de Bourgogne), J. Écalle (Université de Paris-Sud), J. Guckenheimer (Cornell University), P.J. Holmes (Cornell University), Y. Il'yashenko (Moscow State University), N.G. Lloyd (University College of Wales), R. Moussu (Univetsité de Bourgogne), J.-P. Ramis (Université Louis Pasteur, Strasbourg), C. Rousseau (Université de Montréal) and D. Schlomiuk (Université de Montréal).

It is being held with financial support from the North Atlantic Treaty Organization, the Natural Sciences and Engineering Research Council of Canada and the Université de Montréal. The number of participants is limited to 100. Participation of doctoral students and postdoctoral fellows is particularly encouraged. 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 6th March by writing to Ghislaine David, Secrétaire, Séminaire de Mathématiques Superiéures, Université de Montréal, Case postal 6128, succ "A", Montréal, Quebec, H3C 357 Canada. Telephone (514) 343 6710, fax (514) 343 5700.

PLURIPOTENTIAL THEORY

Pluripotential Theory by Maciej Klimek, University College Dublin. London Mathematical Society Monographs Series (New Series) No.6, ISBN 0-19-853568-6, 288 pages, December 1991, hardback £30.00, LMS members' price (25% discount) £22.50.

Pluripotential theory is a recently developed non-linear complex counterpart of classical potential theory. Its main area of application is multidimensional complex analysis. The central part of the pluripotential theory is occupied by maximal plurisubharmonic functions and the generalized complex Monge-Amphre operator. The interplay between these two notions provides the focal point of this monograph, which contains an up-to-date account of the developments from the large volume of recent work in this area. The substantial proportion of this monograph devoted to classical properties of subharmonic and plurisubharmonic functions makes the pluripotential theory available for the first time to a wide audience of analysts.

To order, send a cheque made payable to Oxford University Press (inclusive of postage at £1.75) or credit card details to The Oxford University Press Bookshop, 116 High Street, Oxford OX1 4BR.

1992 LMS PRIZES

The Council proposes to award, in Summer 1992, a De Morgan Medal, a Senior 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 1992 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 01 March 1992. 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 De Morgan Medal is awarded to a mathematician who is normally resident in the United Kingdom on 01 January 1992. The sole grounds for the award of the Medal is the candidate's contribution to mathematics.

The Senior Berwick Prize is awarded to a mathematician who is a member of the Society on 01 January 1992, in respect of a definite piece of mathematical research work actually published by the Society in any of its publications during the period from 01 January 1988 to 31 December 1991; it may not be awarded to any person who has previously received the De Morgan medal or the Polya Prize.

The Junior Whitehead Prizes are awarded to mathematicians who on 01 January 1992 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

BRITISH COLLOQUIUM FOR THEORETICAL COMPUTER SCIENCE

The Eighth British Colloquium for Theoretical Computer Science (BCTCS 8) will be held at the University of Newcastle upon Tyne, running from Tuesday 24th to Thursday 26th March 1992. The meeting is informal, and there are no refereed proceedings. A number of distinguished invited speakers (listed below) will provide survey talks covering a range of interests in theoretical computer science. These invited talks will be complemented by shorter contributed talks of a more specialist nature.

The following have agreed to speak at BCTCS 8: Jose Balcazar (Universidad Politecnica de Cataluna, Spain), Alan Gibbons (University of Warwick, UK), Yuri Gurevich (University of Michigan, USA), Wilfrid Hodges (QMW College, London, UK), Tom Maibaum (Imperial College, London, UK), John Savage (Brown University, USA), and Colin Stirling (University of Edinburgh, UK).

Anyone who wishes to be added to the BCTCS mailing list should contact the local organiser: Iain A. Stewart, Computing Laboratory, University of Newcastle upon Tyne, Claremont Road, Newcastle upon Tyne, NE1 7RU (Iain.Stewart@uk.ac.newcastle). The organising committee of BCTCS 8 is: Paul Dunne (Liverpool), Alan Gibbons (Warwick), Mark Jerrum (Edinburgh), David Rydeheard (Manchester), Iain Stewart (Newcastle), and John Tucker (Swansea).

TOPPING OUT

The topping out ceremony at the Isaac Newton Institute for Mathematical Sciences was held on Monday 11th November, marking another step nearer to the opening of this new Institute which is already attracting interest from scientists in many countries. The ceremony was performed by the Institute's Director, Sir Michael Atiyah.

The building should be completed by June 1992 and the first research programmes will begin in July 1992. One of the important features of the programmes is that they will encourage collaboration between those working in a range of disciplines.

1991/92 LONDON MATHEMATICAL SOCIETY SUBSCRIPTIONS

The Society is appreciative of those members who have paid their 1991/92 subscriptions. May we remind those who have not yet paid, that subscriptions were due on 1st November 1991 and that the Society reserves the right to discontinue the supply of periodicals and Newsletters to members whose subscriptions remain unpaid by 31st January 1992. If you have misplaced your renewal of subscription form, contact the Administrator, Susan Oakes at the London Mathematical Society office. Telephone 071-437 5377 or e-mail lms@uk.ac.kcl.cc.oak.

ROYAL SOCIETY UNIVERSITY RESEARCH FELLOWSHIPS

Applications are invited for about 20 Royal Society University Research Fellowships tenable in the first instance for five years from 1 October 1992 (or slightly later in the academic year 1992-93), with two possible further renewals for three and then two years. The Fellowships are available in any branch of science, including agriculture, medicine, mathematics, engineering and technology. The primary criterion for selection will be scientific merit based on record so far and on future potential. Some account will also be taken of the facilities and intellectual environment being offered by the prospective host department. Salaries will be on the non-clinical university scale, with London Allowance where appropriate. Annual research expenses (a sum of up to £10,000 may be sought in 1992-93) will be available, together with return travel and a contribution to baggage costs for successful applicants from overseas and their families.

Applicants must have a Ph.D. or equivalent research experience: they must be at least 26 but should not have passed their 33rd birthdays by 1 October 1992, although in exceptional cases applications from older candidates will be accepted. They must be British Citizens and propose to hold the fellowships in universities or polytechnics in the United Kingdom. Those who already have substantive posts in these places will not be considered. Previously unsuccessful applicants may apply again if still eligible, but should make fresh applications and arrange for updated referees' statements.

Application details are available (on written request only) from Mrs U.M.A. Tokle, The Royal Society, 6 Carlton House Terrace, London SW1Y 5AG (Fax: 071-930-2170). Closing date 14 February 1992. Application forms are not available after 31 January and applications arriving after 4p.m. on 14 February will not be considered.

SEX RATIOS IN UK UNIVERSITY MATHEMATICS DEPARTMENTS

I was recently asked to carry out a survey of sex ratios in UK mathematics departments. This forms part of a larger survey being carried out by the European Mathematical Society and to be presented at the first European Congress of Mathematics (Paris July 1992).

Members may be interested in the following summary of results. I should like to take this opportunity to thank everybody who provided information for the survey which did (eventually!) include a response from every university.

	women	men	% women
Students			
BSc, BA maths awarded in 1990	684	1488	31
PhD's awarded in 1990	46	220	17
Academics holding a permanent position in 1990-1991			
Lecturers / Readers Senior lecturers	94	1109	8
Professors	3	267	1

The questionnaire also asked if there were any special programmes to encourage women to study mathematics. One university runs a residential course for VI'th form women and another runs one day 'women in maths' meetings.

Amanda Chetwynd
Mathematics Department, Lancaster University

Forum Mathematicum

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ROYAL SOCIETY LEVERHULME TRUST SENIOR RESEARCH FELLOWSHIPS

For the third year of this three-year scheme, applications are invited for five Leverhulme Trust Senior Research Fellowships. Applicants must be aged between 35 and 55, hold a PhD or have equivalent research experience, and hold a substantive post in a British university or polytechnic. Employees of Research Councils, or those in Governmental or other research institutions, will not be eligible. The fellowships will normally, but need not necessarily, be held at any higher educational or research institution or industrial research organization in the UK approved by the Council of the Royal Society. The applicant's employing institution will be required to show that appropriate arrangements have been made to cover the applicant's teaching and administrative duties, although the fellow may continue with the supervision of postgraduate or postdoctoral research students.

Application details are available (on written request only) from Mrs U.M.A. Tokle, The Royal Society, 6 Carlton House Terrace, London SW1Y 5AG. Closing date 14 February 1992. Applications will not be available after 31 January and applications arriving after 4 p.m. on 14 February will not be considered.

Professor M.J. Taylor, in the Department of Mathematics, University of Manchester Institute of Mathematics was amongst the five fellowships recently awarded. The fellowship was awarded to work on the structure of arithmetic Galois modules.

ANALYSIS AND OPTIMIZATION OF SYSTEMS

On the occasion of the 10th Conference on Analysis and Optimization of Systems organized by the Institut National de Recherche en Informatique et en Automatique, it has been decided to change the form of the future Conferences: instead of covering a wide range of topics, each Conference will be devoted to a specific domain. This will allow deeper exchanges among specialists of each specific domain. The Conference will be held at Sophia-Antipolis, France from 9th to 12th June 1992.

This 10th Conference is aimed at engineers and mathematicians working in the field of infinite-dimensional linear systems. The precise theme is the confrontation of the following mathematical approaches: 1) the semi-group approach; 2) the partial differential equation approach and 3) the frequency domain approach. Since these three approaches use very different and sophisticated mathematical techniques, it is unusual for a scientist to be an expert in all three. Nevertheless, these different approaches all address the same control problems for the same classes of infinite-dimensional linear systems. Thus it seems interesting to alleviate the difficulty caused by lack of a common language. Therefore this Conference will include, as a central part, a series of introductory and survey talks of a tutorial nature which are aimed at engineers and scientists knowledgeable in some aspect of infinite-dimensional linear system theory.

For further information write to INRIA, Rocquencourt, Service des Relations Exterieures - Bureau Cours/Colloques, Domaine de Voluceau - BP 105, 78153 Le Chesnay Cedex, France.

PHYSICAL INTERPRETATIONS OF RELATIVITY THEORY

The British Society for the Philosophy of Science is sponsoring an international conference "Physical Interpretations of Relativity Theory", to review the development, status, and potential of the various physical interpretations of the Relativistic Formal Structure. It is planned to open on Monday 14th September, and to close on Friday 18th September 1992. The location will be Imperial College, London.

All enquiries should be sent to Conference Co-Ordinator, M.C. Duffy, School of Mechanical and Manufacturing Engineering, Sunderland Polytechnic, Chester Road, Sunderland SR1 3SD. Telephone (091) 515 2856, fax: (091) 515 2423.

CHANGE OF PERSONNEL IN THE LMS LIBRARY

The University College Library Assistant in charge of the London Mathematical Society Library is to be, until further notice, Mr Dilip Chatarji. His telephone number is (071) 387 7050 Extension 2628. E-mail address and all other details remain unchanged.

Mr Chatarji replaces Mrs Julia Munro who was in charge of Mathematics and the London Mathematical Society collection for the past seven years. On behalf of the Society, I would like to record my thanks to Mrs Munro for the excellent way she has managed the Society's collection and for the help she has given to members. We wish her well for her new responsibilities in the University College Library.

J.A. Erdos
Librarian

CONFERENCE IN HONOUR OF JOHN SHEPHERDSON

A conference in honour of John Shepherdson will be held in Bristol on Saturday 21st to Sunday 22nd March 1992 at the Burwalls Conference Centre, the University of Bristol. The following have agreed to speak: G. Kreisel; M. Rabin; Y. Moschovakis; A. Wilkie.

Further details can be obtained from Philip Welch, School of Mathematics, University of Bristol, Bristol BS8 1TW or e-mail: p.welch@bristol.ac.uk. The conference is being supported by the London Mathematical Society.

NUMERICAL ANALYSIS DAY

The 3rd Annual Bath-Bristol Numerical Analysis Day will be held on 17th January at Bath University, Room 3E2.1. The speakers are: C.J. Budd, I.G. Graham, P.D. Loach, A.M. Stuart, A. Spence, J. Vervwer. For further information contact Andrew Stuart, e-mail: ams@uk.ac.bath.maths.

C. JOHN TRANTER

Professor Clement John Tranter who was elected a member of the London Mathematical Society on 25th January 1945 died on 27th October 1991 at the age of 82. He was educated at Queen's College, Oxford. From 1953 until his retirement in 1974 he was Head of the Department of Mathematics and Ballistics at the Royal Military College of Science, Shrivenham. He is remembered primarily for his work on integral transforms, and dual integrals and series.

SALEM PRIZE

The Salem Prize for 1991 was awarded to Dr Curt McMullen, from Berkeley University, for his work on iteration and algebraic numbers. The prize, established in 1968, is given every year to a young mathematician who is judged to have done outstanding work in the field of interest of Raphaël Salem, primarily on Fourier series and related topics. The recipient was Dr Nicholas Varopoulos in 1968, Dr Richard Hunt in 1969, Dr Yves Meyer in 1970, Dr Charles Fefferman in 1971, Dr Thomas Körner in 1972, Dr E.M. Nikišin in 1973, Dr Hugh Montgomery in 1974, Dr William Beckner in 1975, Dr M.R. Herman in 1976, Dr S.B. Bočkarë in 1977, Dr Björn E. Dahlberg in 1978, Dr Gilles Pisier in 1979, Dr Stylianos Pichorieds in 1980, Dr Peter Jones in 1981, Dr Alexei B. Aleksandrov in 1982, Dr Jean Bourgain in 1983, Dr Carlos Kenig in 1984, Dr Th. H. Wolff in 1985, Dr N.G. Makarov in 1986, Drs Guy David & Jean Lin Journé in 1987, Drs A.L. Vol'berg & J.C. Yoccoz in 1988 and Dr S.V. Konyagin in 1990. The jury consisted of Professor J. Bourgain, Professor V. Havin, Professor Y. Katznelson and Professor E.M. Stein.

CAMPAIGNS FOR HUMAN RIGHTS

Members of the Society might like to be informed that the latest in the series of Campaigns for Human Rights, directed by Professor Israel Halperin (Department of Mathematics, University of Toronto, Toronto, Ontario, Canada M5S 1A1) is an Anti-Apartheid Campaign, and that Professor Halperin, to whom requests for further information should be directed, would welcome expressions of support from individuals.

RECIPROCITY AGREEMENTS

The London Mathematical Society has reciprocity agreements with the following Societies and further details and application forms may be obtained from the addresses shown.

American Mathematical Society, P.O. Box 6248, Providence, RI 02940, U.S.A.

Australian Mathematical Society, Dr B.D. Jones, Department of Mathematics, University of Queensland, St Lucia, Qld 4067, Australia.

Societe Mathematique de Belgique, Campus Plaine, C.P.218/1, Boulevard du Triomphe, B-1050 Bruxelles, Belgium.

Canadian Mathematical Society, 577 King Edward, Suite 109, Ottawa, Ontario, Canada K1N 6N5.

Dansk Matematisk Forening, H.C. Orsted Institut, Universitetsparken 5, DK 2100 Kobenhavn O, Denmark.

Deutsche Mathematiker Vereinigung, J. Flum, Albertstrasse 24, 7800 Freiburg, Germany.

Societe Mathematique de France, E.N.S., L, 1 Rue Maurice Arnoux, 92120 Montrouge, France.

Indian Mathematical Society, Professor M.K. Singal, General Secretary, Department of Mathematics, Meerut University, Meerut 250 005, India.

Unione Matematica Italiana, Professor G. Anichini, The Secretary, Dipartimento di Matematica, Universita, Piazza Porta S. Donata 5, 40127 Bologna, Italy.

New Zealand Mathematical Society, Dr J. Giffin, The Secretary, NZMS, Department of Mathematics, Massey University, Palmerston North, New Zealand.

Nigerian Mathematical Society, c/o Professor J.O.C. Ezeilo, Department of Mathematics, University of Nigeria, Nsukka, Nigeria.

Norsk Matematisk Forening, Matematisk Institutt, PO Box 1053, Blindern, N-0316 Oslo 3, Norway.

South East Asian Mathematical Society, Lim Chong Keang, President, SEAMS, Department of Mathematics, University of Malaya, Kuala Lumpur, Malaysia.

Svenska Mathematikersamfundet, Secretary, Department of Mathematics, Chalmers University of Technology, S-412 96 Goteborg, Sweden.

Wiskundig Genootschap, Secretary, Department of Technical Mathematics and Informatics, University of Technology, PO Box 356, 2600 AJ Delft, The Netherlands.

George Frederick James Temple (born 2nd December 1901) studied mathematics at Birkbeck College, London, and Trinity College, Cambridge, and took a variety of posts before becoming Professor of Mathematics at King's College, London. During the war he was seconded to RAE Farnborough, where his work was to earn him the CBE. In 1943 he was elected an FRS, and was awarded the Sylvester Medal in 1970. He wrote widely: on relativity theory, aerodynamics, quantum mechanics, the Lebesgue integral, and when 80 published his last book, on the history of mathematics. He then entered the Benedictine order as a monk, and lives presently at Quarr Abbey. He was the Society's 44th President, from 1951-53.

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.

1992

JANUARY
3-10	Analysis and Probability Symposium, Paris, France (189)
11	Clifford's Geometric Algebra Meeting, Canterbury (186)
17	LMS Meeting, London
17	Edinburgh Mathematical Society Meeting, Edinburgh (186)

FEBRUARY
2-6	Australian Applied Mathematics Conference, NSW, Australia (186)
14	Edinburgh Mathematical Society Meeting, Edinburgh (186)
21	LMS Meeting, Bristol

MARCH
13	Edinburgh Mathematical Society Meeting, Dundee (186)
20	LMS Meeting, London
30-2 April	34th British Theoretical Mechanics Colloquium, Keele (185)

APRIL
6-10	British Mathematical Colloquium, Strathclyde (188)
7-10	Annual Iranian Mathematics Conference, Bakhtaran, Iran (188)
10-12	The Uses of History in Mathematics Education Conference, Nottingham (186)
10-12	HIMED 92, Nottingham (189)
12-16	Diophantine Approximation and Abelian Varieties Conference, Soesterberg, Netherlands (187)
13-16	LMS Invited Lectures, Professor P.J. Olver, Bath University (187) (189)

MAY
1	Edinburgh Mathematical Society Meeting, Stirling (186)
15	LMS Meeting, London
18-22	Nascode VIII, Dublin, Ireland (188)
26-31	Engineering Mathematics and Applications Symposium, Shenzhen, China (188)
29	Edinburgh Mathematical Society Meeting, Aberdeen (186)

JUNE
19	LMS Meeting, London
22-26	Dundee Conference on Ordinary and Partial Differential Equations, Dundee (188)
22-27	Homotopy Theory Conference, Sorrento, Italy (189)
27-3 July	The Penrose Transform and Analytic Cohomology in Representation Theory Connference, Massachusetts, U.S.A. (186)
29-30	The Development of Mathematics from 1900 to 1950 Colloquium, Luxembourg (189)
29-1 July	Joint AMS/LMS Meeting, Cambridge (155)

JULY
4-14	Evolutionary Problems, LMS Durham Symposia, Durham (178) (189)
5-9	14th British Combinatorial Conference, Keele (188)
6-10	Mathematical Conferences in Perth, Australia (186)
6-10	European Congress of Mathematics, Paris, France (180) (188)
11-18	St Andrews Colloquium, St Andrews (185)