The London Mathematical Society Newsletter

No. 173

June 1990

FORTHCOMING SOCIETY MEETINGS

Friday 15 June 1990, Burlington House L.E. Fraenkel, H.K. Moffatt

Friday 19 October 1990, Burlington House Integrable Nonlinear Systems Friday 16 November 1990, Burlington House

LMS 1990 HONORARY MEMBER

At the Society Meeting on 16th March 1990, Professor René Thom was elected an Honorary Member of the London Mathematical Society in recognition of his many distinguished contributions to topology, global analysis, singularity theory and catastrophe theory.

VISIT OF PROFESSOR T. LEVASSEUR

Professor T. Levasseur of the University of Brest will be visiting Scotland and England from 9th June to 23rd June. It is expected that he will lecture in Edinburgh on 15th June (contact T.H. Lenagan), in Leeds on 18th June (contact J.C. McConnell) and in Sheffield on 21st June (contact M.P. Holland). In Edinburgh and Sheffield Professor Levasseur will speak on "Differential operators on orbit spaces: a survey" and in Leeds he will speak on "The Gorenstein property for Sklyanin algebras".

Professor Levasseur's visit has been made possible by a Scheme 2 travel grant from the London Mathematical Society.

VISIT OF PROFESSOR R. GURALNICK

Professor R. Guralnick will lecture at King's College London on 31st May, 4:45 - 5:45, Room 423 (contact C.J. Bushnell), in Cambridge on 4th June (contact C. Brookes) and Oxford on 5th June (contact M.J. Collins). Professor Guralnick's visit has been made possible by a travel grant from the London Mathematical Society.

VISIT OF PROFESSOR C. McMULLEN

Professor Curt McMullen (Princeton) will be in Liverpool, June 18th to 19th and in Warwick, June 20th to 22nd. He will be giving talks in both places. Some London Mathematical Society funds will be available towards expenses of British

At its meeting on 24th April the Education Committee made grants of £500 per year for two years for continuation of the **University of Leeds** mathematics masterclasses; £500 per year for two years for continuation of the **Doncaster Local Education Authority/University of Sheffield** mathematics masterclasses. mathematicians coming to Warwick for this occasion. For further details contact M. Rees (Liverpool) or D. Epstein and C. Series (Warwick: cms@uk.ac.warwick.maths).

EDUCATION COMMITTEE GRANTS

Applications for grants to support joint activities between mathematics departments of higher education institutions and schools should be sent to the Secretary of the Education Committee, Dr T. Porter, School of Mathematics, University College of North Wales, Dean Street, Bangor, Gwynedd LL57 1UT.

PREPARATION OF A DATA BASE ON EUROPEAN MATHEMATICS COURSES

It is planned to set up a database that will give details of the contents of European Mathematics degree courses. The reasons for doing this are clear when one considers the level of exchange of students between EC countries under the ERAS-MUS scheme. It is not however a good idea to limit this initiative to EC countries as exchanges outside that grouping are likely as well.

The database would also serve to inform mathematicians in each country about the methods used for example to handle large classes, to present difficult material, to examine at various levels. Innovation in the teaching of mathematics is needed and is more likely to happen successfully if there is adequate exchange of information about the "solutions" that have been tried to the pro-

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blems of teaching that seem to be common to many different parts of the European mathematics system.

The Education Committee is at present trying to outline the structure of such a database at its initial simplest level. What information should go into it? How could/should it be organised? What information would be useful?

Tim Porter at Bangor has agreed to coordinate any information/opinions you may wish to send in. Ideas and comments etc. can be sent to him at: School of Mathematics, Dean Street, Bangor LL57 1UT, Gwynedd, UK. or by E-mail to maso13@uk.ac.bangor.vaxa.

Ideas and comments would be especially welcome from members living outside the UK and within Europe.

Alan Camina Tim Porter

ROLLO DAVIDSON TRUST

The Trustees of the Rollo Davidson Trust have awarded a Rollo Davidson Prize for 1990 to Steven N. Evans (Berkeley, U.S.A.) for his work on (i) Gaussian measures over a local field and (ii) Levy processes on a totally disconnected group.

Geometry; L. Washington (Maryland) Number

For further information write to Professor Yoon

Yong Oh, Director, Mathematics Research Centre,

Korea Institute of Technology, Taejon 305-701,

Korea. Tel: 42-861-1236; Fax: 42-861-5636.

ALGEBRA AND TOPOLOGY

Theory.

The fifth Korea Institute of Technology Mathematics Workshop in Algebra and Topology will be held from 8th to 11th August 1990. The workshop will consist of a series of lectures by invited speakers, and some one-hour talks. The invited speakers are D. Gabai (Caltech) *Topology* of 3-manifolds; C. McA. Gordon (Texas at Austin) Knot Theory; S. Shatz (Pennsylvania) Algebraic

YORKSHIRE PURE MATHEMATICS COLLOQUIUM

The next meeting of the Yorkshire Pure Mathematics Colloquium will be held at the University of York on Wednesday 6th June 1990. The Lectures will be held in V/045, Vanburgh College. The programme is as follows: 12:30 Buffet Lunch, Wentworth College; 2:15 Professor Roger Carter (Warwick) "Kac-Moody Algebras and Applications"; 3:30 Afternoon tea, Vanburgh Senior Common Room; 4:00 Professor Heini Halberstam (Illinois) "Sifting for Primes"; 7:00 Dinner Wentworth College.

All interested are very welcome. Lunch will cost about £4.50 and dinner (which includes wine) about £10. Those wishing to have lunch or dinner should inform the Departmental Secretary, Nadine Cleaver, telephone 0904-4330371 or Maurice Dodson, telephone 0904-433098, e-mail mmd1@uk.ac.york.vaxa.

The Yorkshire Pure Mathematics Colloquium is grateful to the London Mathematical Society for financial assistance.

1990 POPULAR LECTURES

The 1990 Popular Lectures will be given by Professor R.A. Bailey on "Designing experiments with allowance for interfering neighbours" and Dr P.J. Giblin on "Geometry and Computers". They will be held on Friday 22nd June in Lecture Theatre 1, Medical School, Royal Hallamshire Hospital, Sheffield 10 at 7:00 pm and repeated on Friday 29th June in the Great Hall, Sherfield Building, Imperial College, Exhibition Road, London SW7 at 7:30 pm.

The Lectures are intended to be suitable for a general audience and no specific mathematical

knowledge will be assumed. Although the talks are not primarily intended for professional mathematicians, everyone is welcome and some members may wish to apply for tickets for friends and relatives.

For the lectures at Imperial College admission is free, by ticket obtainable in advance. Write to Miss S.M. Oakes, London Mathematical Society, Burlington House, Piccadilly, London W1V ONL. A stamped-addressed envelope would be much appreciated. Admission is free, without ticket, to the lectures held at Sheffield.

LONDON MATHEMATICAL SOCIETY

H.K. Moffat (Cambridge)

Variational Problems under Topological Constraints

L.E. Fraenkel (Bath) (1989 Senior Whitehead Prize winner)

Vortex Rings, A Hilbert Space and Three Pieces of Luck

> Friday 15th June 1990 at 3.30pm

The meeting is at the Geological Society Burlington House, Piccadilly, London W.1

> All interested are very welcome. Tea will be served at 4.30 pm

F. Verhulst, University of Utrecht

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Nonlinear Differential Equations and Dynamical Systems

1990. IX, 277 pp. 107 figs. 2 tabs. (Universitext) Softcover £13.50 ISBN 3-540-50628-4

One of the purposes of this book is to bridge the gap between elementary courses and the research literature in the field of nonlinear differential equations and dynamical systems. We discuss equilibrium and periodic solutions, invariant manifolds, bifurcation theory both from the qualitative and quantitative point of view. There are many examples to illustrate the theory and the reader should be able to start doing research after studying this book.



R. Kress, University of Göttingen

Linear Integral Equations

1989. XI, 299 pp. 1 fig. (Applied Mathematical Sciences, Vol. 82) Hardcover £28.00 ISBN 3-540-50616-0

Contents: Normed Spaces. – Bounded and Compact Operators. – The Riesz Theory. – Dual Systems and Fredholm Theory. – Regularization in Dual Systems. – Potential Theory. – Singular Integral Equations. – Sobolev Spaces. – The Heat Equation. – Operator Approximations. – Degenerate Kernel Approximation. – Quadrature Methods. – Projection Methods. – Iterative Solution and Stability. – Equations of the First Kind. – Tikhonov Regularization. – Regularization by Discretization. – Inverse Scattering Theory. – Bibliography. – Index.

B. Øksendal, University of Oslo

Stochastic Differential Equations

An Introduction with Applications

2nd ed. 1989. XV, 186 pp. (Universitext) Softcover £17.00 ISBN 3-540-51740-5

From the reviews: "The book is well written, gives a lot of nice applications of stochastic differential equation theory, and presents theory and applications of stochastic differential equations in a way which makes the book useful for mathematical seminars at a low level. (...) The book (will) really motivate scientists form non-mathematical fields to try to understand the usefulness of stochastic differential equations in their fields." Metrica

M. Emery, University of Strasbourg

Stochastic Calculus in Manifolds

With an Appendix by P. A. Meyer 1989. X, 151 pp. 3 figs. (Universitext) Softcover £17.00 ISBN 3-540-51664-6

Addressed to both pure and applied probabilitists, including graduate students, this text is a pedagogically-oriented introduction to the Schwartz-Meyer second-order geometry and its use in stochastic calculus. P. A. Meyer has contributed an appendix: "A short presentation of stochastic calculus" presenting the basis of stochastic calculus and thus making the book better accessible to non-probabilitists also. No prior knowledge of differential geometry is assumed of the reader: this is covered within the text to the extent. The general theory is presented only towards the end of the book, after the reader has been exposed to two particular instances - martingales and Brownian motions in manifolds. The book also includes new material on non-confluence of martingales, s.d.e from one manifold to another, approximation results for martingales, solutions to Stratonovich differential equations.

Springer-Verlag Berlin Heidelberg New York London Paris Tokyo Hong Kong Springer House, 8 Alexandra Rd., London SW19 7JZ, England



ONE HUNDRED AND TWENTY FIVE YEARS

Council has decided to mark the 125th anniversary of the foundation of the London Mathematical Society by the provision of a buffet with wine at 6.15pm in the Geological Society's Library after the Society Meeting on Friday 15th June 1990. Items from the Society's photograph collection and material from the archives will be displayed. Members who wish to attend are asked to write by early June 1990 to the Administrator, London Mathematical Society, Burlington House, Piccadilly, London W1V 0NL, enclosing a cheque for 55.00 payable to the London Mathematical Society.

ONE-DAY FUNCTION THEORY CONFERENCE

The annual U.K. One-Day Function Theory Conference will be held in 1990 at The Open University, on Monday 24th September. The meeting is open to all interested mathematicians, and is being supported by a grant from the Society.

The meeting will start with coffee at 10:30, and the lectures and talks will be held between about 11:00 and 17:30. Offers to speak are very welcome. The main lecture will be by Professor John Rossi (Virginia Polytechnic Institute), at 11:45.

Correspondence and requests for further information should be sent to Professor D.A. Brannan at the Department of Pure Mathematics, The Open University, Walton Hall, Milton Keynes MK7 6AA. Tel: 0908-653689/653479; e-mail: da_brannan@uk.ac.open.acs.vax.

THE TEACHER OF MATHEMATICS IN THE CHANGING WORLD

The International Commission for the Study and Improvement of Mathematics Education will hold its 42nd International meeting in Bielsko Biala, Poland from 23rd to 30th July 1990. The theme of the meeting will be "The Teacher of Mathematics in the Changing World". One day of the meeting will be devoted to the work of Anna Zofia Krygowska in whose memory the meeting is dedicated.

For further information write to Rijke Dekker, ISOR, University of Utrecht, PO Box 80140, 3508 TC Utrecht, The Netherlands.

University of Cambridge Department of Pure Mathematics & Mathematical Statistics

TEMPORARY LECTURESHIP OR TEMPORARY ASSISTANT LECTURESHIP IN PURE MATHEMATICS

The Department proposes to appoint a Temporary Lecturer or Temporary Assistant Lecturer in Pure Mathematics for one year from 1st October 1990. The vacancy arises because of Dr J.M.E. Hyland's leave of absence until 30th September 1991. The appointment is therefore not renewable and cannot be held beyond 30th September 1991.

Applications, together with a curriculum vitae, and any other supporting evidence that candidates wish to submit should be sent to the Head of Department, Department of Pure Mathematics and Mathematical Statistics, 16 Mill Lane, Cambridge, so as to reach him not later than 22nd June 1990. Applicants should further arrange for two or three referees (whose names should be sent to the Head of Department with the application) to write on their behalf, the references also to reach the Head of Department by 22nd June 1990 (Applicants may ask that earlier references are used.)

Further information can be obtained from the Head of Department (telephone 0223-337996).

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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. 1990 JUNE 2 Edinburgh Mathematical Society Meeting, St Andrews (165) 6 Yorkshire Pure Mathematics Colloquium, York (172) 6 - 9European Consortium for Mathematics in Industry, Finland (159) XIV Rolf Nevanlinna Colloquium, Finland (162) 11 - 1411 - 15Hyperbolic Problems, Sweden (166) 12 - 15Analysis and Optimization of Systems, France (161) 14 - 16Mathematical Education Conference, Brunei Darussalam (167) LMS Meeting, London 15 22 LMS Popular Lectures, Sheffield (172) Shape Optimization and Free Boundaries, Canada (167) 25-13 Jul 27 - 30Algebraic Hyperstructures and Applications, Greece (162) (170) LMS Popular Lectures, London (172) 29 JULY 1 - 8Dynamics and Complexity, Sweden (171) 1 - 15Adams Memorial Symposium, Manchester (163) (172) 2 - 6Australian Mathematical Society Annual Meeting, Australia (165) 3 - 6Ordinary and Partial Differential Equations, Dundee (164) 5 - 15Groups and Combinatorics, LMS Durham Symposia (167) Industrial and Applied Mathematics, U.S.A. (166) 8-12 New Trends in Systems Theory, Italy (162) 9-11 9-20 Geometry and Topology of Four-Manifolds, Canada (162) Stochastic Analysis, LMS Durham Symposia (167) 11 - 2112 - 13Operators and Systems, Lancaster (172) 15 - 21Finite Geometries and Designs, Sussex (170) 18-20 Water Waves, Warwick (170) 22-1 Aug Boolean Function Complexity, LMS Durham Symposia (167) 24-2 Aug Proof Theory, Leeds (170) 25-5 Aug Programming and Mathematical Method, West Germany (170) Fibonacci Numbers and their Applications, USA (169) 30-3 Aug 30-25 Aug Symplectic Geometry, Warwick (170) 31-2 Aug Dynamics of Numerics and Numerics of Dynamics, Bristol (167) AUGUST 20 - 25Numerical Methods, Hungary (169) 21 - 29International Congress of Mathematicians 1990, Japan (151) (165) (166) (168) 21-29 Logic Conference, Japan (160) SEPTEMBER Algebra and Number Theory, Turkey (172) 3 - 73-8 Physical Interpretations of Relativity Theory, London (168) 16-22 Deutsche Mathematiker Vereinigung 100th Anniversary, West Germany (170) 16 - 22Algebraic Methods in Computing Science, Swansea (171) Computer Algebra for Engineers and Scientists, Bath (172) 17 - 21

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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 WIV ONL, to arrive before the first day of the month prior to publication. Telephone 071-437 5377, Fax 071-439 4629, E-mail Ims@uk.ac.kcl.cc.oak.