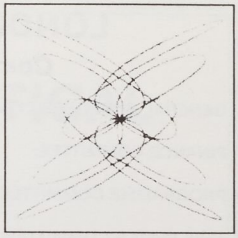
THE LONDON MATHEMATICAL SOCIETY NEWSLETTER



No. 126 **February 1986**

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The *Newsletter* is published monthly, except in August and September. Items for inclusion (with the exception of advertising material) should be sent to the Editor, to arrive before the tenth day of the month prior to publication. Advertisements, and general enquiries about the Society, should be addressed to Susan Oakes at the LMS Office.

Forthcoming Meetings

Friday 21 February 1986, Burlington House
(S. K. Donaldson, G. Wilson)

21-22 March 1986, Two day meeting at Trinity College, Dublin
Friday 16 May 1986, Burlington House
Friday 20 June 1986, Burlington House
Friday 17 October 1986, Burlington House
Friday 21 November 1986, Royal Society

INTERNATIONAL CONGRESS OF MATHEMATICS

Limited funds are being made available by the Royal Society and the London Mathematical Society to assist with the travelling/subsistence expenses of scientists hoping to attend the 10th International Congress of Mathematicians. Non-government scientists of Ph.D status, ordinarily resident in the UK, will be eligible for consideration, and application forms can be obtained from: Miss B. M. de Vere, The Royal Society, 6 Carlton House Terrace, London, S.W.17 5AC. Tel: 01-839: 5561, ext. 222/273.

The closing date for submission of application forms is FRIDAY, 7 MARCH, 1986. Persons who have already notified the Society of their wish to obtain funds are not required to respond to this notice, as forms will automatically be sent to them.

Potential applicants should note that demand for grants will be considerable in relation to the funds available for allocation, and that every effort should be made to seek additional funds from other sources.

LONDON MATHEMATICAL SOCIETY

Committees and Representatives, 1986

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JOURNAL:	N. G. Lloyd, A. O. Morris (Joint Editors) (83-88).
NEWSLETTER:	C. Kosniowski (84-88).
MONOGRAPHS:	B. E. Johnson (83-87), P. H. Cohn (80-89).
LECTURE NOTES:	J. W. S. Cassels (83-87).
STUDENT MATHEMATICAL TEXTS:	E. B. Davies (83-87).
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OBITUARIES EDITOR:	J. V. Armitage (73-).
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BRITISH NATIONAL COMMITTEE FOR THEORETICAL AND APPLIED MECHANICS:	E. C. Zeeman (85-90).
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ROYAL SOCIETY/IMA ICMI SUBCOMMITTEE:	N. L. Biggs (85-88).
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WARWICK MATHEMATICS RESEARCH CENTRE, ADVISORY BOARD:	P. M. Cohn (1st October 84 - 30th September 87).
COLLINGWOOD PRIZE COMMITTEE:	P. J. Higgins.

LONDON MATHEMATICAL SOCIETY

G. Wilson (London)

INTEGRABLE NONLINEAR PDEs AND THE SCHOTTKY PROBLEM (AFTER T. SHIOTA)

S. K. Donaldson (Oxford)

HOMOLOGY AND MODULI SPACES

FRIDAY, 21 February, 1985, at 3.30 p.m.

**Geological Society's Meeting Room,
Burlington House,
Piccadilly, London W1**

All interested are very welcome

Tea will be served at 4.30 p.m.

1987 HARDY LECTURER

In spring 1986 the Council proposes to appoint the 1987 Hardy Lecturer. The Lectureship is awarded to a distinguished overseas mathematician. who then comes to the United Kingdom and Ireland for from four to six weeks, visits a number of universities and addresses the June meeting of the Society, giving in all some twelve lectures during this stay. The visit usually takes place during the months of May and June.

The Council invites members of the Society to submit their views on possible candidates for the award of this Lectureship, together with reasons for their choice, confidentially in writing to any member of the General Purposes Committee of the Soceity (I. M. James, R. L. E. Schwarzanberger, C. J. Mulvey, A. R. Pears, J. S. Pym) by 1 March, 1986.

C. J. Mulvey,
Council and General Secretary.

VISITORS TO PAKISTAN

The Department of Mathematics at the Quaid-i-Azam University, Islamabad, Pakistan, organizes seminar series each semester, from January to April and from September to December. Those who will be passing through Pakistan and might be interested in becoming a possible seminar speaker in any of the areas listed on the cover of Mathematical Reviews, please contact Dr. Qaiser Mushtaq, Department of Mathematics, Quaid-i-Azam University, Islamabad, Pakistan.

THE NATURE OF MATHEMATICS

The 1986 Wolfson College Lectures will be held on Tuesdays at 5 pm at Wolfson College, Oxford. Details are as follows:

21 January Robin Gandy, Oxford University, *What is Mathematics?*

28 January John Conway, Cambridge University, *Groups and Symmetry*

4 February Roger Penrose, Oxford University, *Geometrical thinking in Mathematics*

11 February Christopher Zeeman, Warwick University, *Continuity, Discontinuity and Catastophes*

18 February Michael Atiyah, Oxford University, *Mathematics and the Physical World*

25 February Bryan Birch, Oxford University, *Number Theory Experiment, Conjecture and Proof*

4 March Wolfgang Haken, University of Illinois, Urbana, USA, *Computers in Pure Mathematics*

11 March René Thom, Institute des Hautes Études Scientifiques, France, *Mathematics, Experience and Experimentation*

BIBOS IV

BiBoS stands for a fairly large reserarch project stretching over a number of years involving the universities of Bochum and Bielefeld. The 'S' stands for stochastics, especially stochastics in physics. One of the manifestations of BiBoS is a series of twice yearly conferences at ZiF in Bielefeld. The one which concerns us here in BiBoS IV, scheduled to take place from 21-25 April, 1986.

A premilinary meeting to organize this and pinpoint the precise philosophy for this particular meeting was held last November 18. This reminder is addressed to all participants of that particular meeting and also, most emphatically, to all other interested persons.

Stochastics in physics has a strong intuitive background. Also to deal with stochastic problems which arise in physics an enormous amount of technique and expertise has been developed. Likely much of all this could also be profitably used in the kind of problems met in engineering and industrial mathematics, chemistry and physics, as well as in economics, planning and management. The inverse is also likely true. For instance the engineering community has much more of a habit in thinking about problems involving exterior forces (often called inputs or controls in certain settings). Thus the basic philospohy of BiBoS IV is a meeting ground and forum where engineers, planners, analysts, physicists and mathematicians meet and describe, discuss and try to solve each others problems, and solutions and techniques.

Out of the November meeting there came a number of suggestions as to themes and possible invited speakers, often a bit fragmentary. Anyone wishing to submit comments or request details please contact Professor L. Streit, Fakultät für Physik/BiBoS, Universität Bielefeld, D-4800 Bielefeld 1.

LONDON MATHEMATICAL SOCIETY
Notice of General Meeting

There will be a General Meeting of the Society on Friday 21 February 1986 at 3.30 p.m. in the Meeting Room of the Geological Society, Burlington House, Piccadilly, London, W.1., to consider a proposal by the Council of the Society to delete the existing By-Laws I,5 and II,1 and to substitute those printed below.

The new Bye-Law I,5, if accepted, would require nominations of members of the Society for election to an Office or the membership of Council to be seconded by a Member of the Society and signed by the Member nominated, and the new By-Law II,1, if accepted, would keep the 1986-87 annual subscription of individual members at the 1985-86 level, would leave unchanged the prices of the Journal and the Proceedings to individual members, and would reduce the price of the Bulletin to individual members by £1.00.

Text of he Proposed By-Law I,5

Any Member of the Society may nominate to the Council a Member of the Society for election as an Officer or member of the Council. Any such nomination shall state the Office or the period of membership of Council to which nomination is made, shall bear the signature of the Nominator, of a Seconder who is a Member of the Society, and of the Member nominated, and shall be received by the Council Secretary before noon on 1st September.

Text of the Proposed by-Law II,1

The annual subscription to the Society of Ordinary Members for the 1986-87 session shall be £6. The prices of the Society's periodicals to Ordinary Members shall be: *Proceedings* £7 per volume, *Journal* £7 per volume, *Bulletin* £7 per volume.

C. J. Mulvey,
Council and General Secretary

UNIVERSITY OF EDINBURGH

Department of Mathematics
Research Fellow
Algebriac Coding Applied to Radar

Applications are invited for a postdoctoral research fellowship sponsored by the SERC on an inter disciplinary project involving the Departments of Mathematics and Electrical Engineering. The aim of the project is to apply algebraic and combinatorial techniques of coding to radar waveforms.

Preference will be given to applicants with interests or background in one or more of the following areas: abstract algebra, combinatorics, transform theory, computer-based simulation, radar signal design.

The appointment will start as soon as possible, and is tenable for a period of 3 years with salary on the Range 1A scale (£7,746 - £10,640).

Applications by letter, including curriculum vitae and the names of two referees, should be sent to Dr. L. O'Carroll, Department of Mathematics, University of Edinburgh, The King's Buildings, Edinburgh EH9 3JZ, from whom further particulars may be obtained. The closing date for applications is 28 February, 1986.

We wish to purchase runs and odds of: Sphinx (Revue Mensuelle des Questions Recreatives), Journal of Recreational Mathematics, Journal of Number Theory, Mathematical Tables and Other Aids to Computation (issued later as Mathematics of Computation). Also books in all fields of mathematics including some school text-books, also biographies of mathematicians. Any date any language. We will buy a single book or a whole library. A list of books that we are interested in purchasing will be sent on request. We also specialise in selling books in this field and will be pleased to receive your list of books wanted and to send you our current catalogue on request.

F. E. Whitehart,
Antiquarian Bookseller,

40 Priestfield Road,
Forest Hill,
LONDON SE23 2RS.

Recent publications from John Wiley in Pure Mathematics . . .

FINITE GROUPS OF LIE TYPE:
Conjugacy Classes and Complex Characters

Roger W. Carter,
Mathematics Institute, Warwick University

The author's intention here is to make theories of finite groups of Lie type accessible to a wider circle of mathematicians. He introduces the subject clearly, especially with regard to the main concepts of the theory and the techniques of proof used, and gives a detailed exposition of complex representation theory. There is a considerable amount of preparatory material on conjugacy classes, and much detailed specific information about the groups of Lie type relating to conjugacy classes and degrees of irreducible representations.

This book is in the Wiley Series in Pure and Applied Mathematics.

ISBN: 0471 90554 2 Pages: 556 Published: 1985 Price: £42.50/ $67.80

WEIGHTED SOBOLEV SPACES

Alois Kufner,
Czechoslovak Academy of Sciences, Prague

This book deals with some of the properties and applications of Sobolev spaces with weights, and is divided into four parts. The introductory part starts with the fundamental definitions and some motivating examples and proceeds by going through the auxiliary results: weight functions, definition domains, and Hardy inequality. Part One is devoted to the study of properties of Sobolev spaces with power-type weights; here the relation to the classical Sobolev, conditions guaranteeing the density of smooth functions, imbedding theorems and some other problems are dealt with. Part Two studies analogous problems for weights of a more general type, while the brief concluding Part Three discusses applications of weighted spaces to the solution of the Dirichlet problem for an elliptic linear differential operator.

ISBN: 0471 90367 1 Pages: 116 Published 1985 Price: £15.00/$23.95

John Wiley & Sons Limited
Baffins Lane · Chichester · Sussex PO19 1UD · England

TRASCENDENTAL NUMBER THEORY

The Durham Symposium on Transcendental Number Theory will take place from 12-22 July, 1986. Participants will be accommodated in Grey College. The cost of attending, which includes registration and full board, is expected to be around £190. Further details can be obtained from Dr. Mason, Gonville and Caius College, Cambridge.

BOURBAKI SEMINAR

The nest session of the Nicolas Bourbaki Seminar will be at the Institut Henri Poincaré, 11 rue P. et M. Curie, Paris 5e from 15-17 February 1986. The programme is as follows:-

Saturday 15 February, 2.30 p.m.
X. Fernique — *Fonctions aléatoires gaussiennes, les résultats récents de M. Talagrand.*
G. Gonzalez-Sprinberg — *Désingularisation des surfaces par des modifications de Nash normalisées (d'après Spivakovsky).*

Sunday 16 February, 2.30 p.m.
D. Bennequin — *Problèmes elliptiques, surfaces de Riemann et structures symplectiques (d'après M. Gromov).*
P. Cartier — *Détermination des caractères des groupes simples classiques: travaux de Lusztig.*

Monday 17 February, 2.00 p.m.
Y. Meyer — *Principe d'incertitude de Heisenberg, bases hilbertiennes et algèbres d'opérateurs.*
J. Dixmier — *Quelques résultats de finitude en théorie des invariants (D'après V. L. Popov).*

ALGEBRAIC COMBINATORICS

A one-day colloquium on Algebraic Combinatorics, supported by the British Combinatorial Committee, has been arranged for Friday, 7 February, 1986 at the University of Stirling. The following have agreed to speak: N. Biggs (Royal Holloway and Bedford New College), D. Cvetković (Belgrade), A. Gardiner (Birmingham) and A. R. Prince (Heriot-Watt). Lectures will begin at 11.40 a.m. and demonstrations of the computer-based system "Graph" will be available from 10.15 a.m. Further details may be obtained from Dr. P. Rowlinson, Department of Mathematics, University of Stirling, Scotland, FK9 4LA, telephone (0786) 73171, Ext. 2480.

MATHEMATICAL WHO'S WHERE 1986-87

The new edition of this biennial publication is now ready. Compared with the previous edition there are numerous changes both as regards individuals and as regards institutions, particularly in the London area. The index has been completely redone. The Republic of Ireland is no longer included since there is a separate directory for that country. As long as stocks last, copies of the booklet may be obtained directly from Oxford for £1 sterling or $2 U.S., post-free when payment with order is enclosed. Cheques etc. should be made out to "I.M. James" and sent to him at the Mathematical Institute, 24-29 St. Giles, Oxford OX1 3LB. The LMS Council has agreed to distribute a free copy to each LMS Member with an address in the area covered by the directory, as one of the privileges of membership, and it is enclosed with this mailing of the Newsletter.

PROFESSOR R. GÖBEL

Financial support from the London Mathematical Society has enabled a visit to the U.K. by Professor Rüdiger Göbel. He will be based in Oxford for two weeks from 22 February. The following lectures had been arranged.

1. Tuesday, 25 February at 3 pm, Mathematical Institute, Oxford: *Indecomposable modules and rigid fields, I.*
2. Thursday, 27 February at 3 pm, University of Exeter: *The concept of Ines as a link between modules and fields.*
3. Tuesday, 4 March at 3 pm, Mathematical Institute, Oxford: *Indecomposable modules and rigid fields, II.*
4. Thursday, 6 March at 4.45 pm, University College, London: *Applications of abelian groups to field theory.*

Anyone interested is warmly welcome to attend these lectures. Further details are available from: A. L. S. Corner, Peter M. Neumann or Daniel Segal.

Printed by Boyatt Wood Press, 481 Portswood Road, Southampton, Hants.