

# THE LONDON MATHEMATICAL SOCIETY NEWSLETTER

No.154

October 1988

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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.

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## FORTHCOMING SOCIETY MEETINGS

Friday 21 October 1988, Burlington House

Meeting on Differential Geometry

N.J. Hitchin, S.M. Salamon, M. Gromov

Friday 18 November 1988, Royal Society

Annual General Meeting

Friday 20 January 1989, Burlington House

Friday 17 February 1989, Warwick

Friday 17 March 1989, Scientific Societies Lecture Theatre

Thursday, Friday 18-19 May 1989, Liverpool

Representations of Algebras

Friday 16 June 1989, Burlington House

Friday 20 October 1989, Burlington House

Friday 17 November 1989, Royal Society

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## AWARD FOR THE JOURNAL

Members of the Society will be pleased to learn that Cambridge University Press has recently won the Compugraphic Award for its typesetting of the Journal. This is a prestigious trade award, and is a recognition of CUP's expertise in Mathematical typesetting. As editors we take this opportunity to

express our appreciation to all members of the publication team for their cooperation and the high standard of their work for the Journal.

N.G. Lloyd

A.O. Morris

## ANNUAL DINNER

The 1988 Annual Dinner will be held after the Annual General Meeting on Friday 18th November at 6.30 p.m. for 7 p.m. at The Royal Society, 6 Carlton House Terrace, London SW1. The cost is

£17.00 per person and members may book places for guests if they wish. The enclosed booking form should be returned, together with payment, to the LMS Office by Monday 7th November.

## SUBSCRIPTIONS

Subscriptions, including payments for periodicals for personal use, for the session November 1988 to October 1989 become due on 1st November 1988. The enclosed subscription form should be completed and returned with your payment to the Administrator.

If you are already paying by Direct Debit, and do

not wish to change your choice of publications, treat the subscription form as information only. If you are paying by Direct Debit but wish to change your choice of publications, please fully complete and return the form. Members paying by Direct Debit will be debited with the appropriate amount on 16th January 1989.

## ANNUAL GENERAL MEETING

The Annual General Meeting of the London Mathematical Society will be held on Friday 18th November 1988 at 3 p.m. in the Wellcome Lecture Hall of The Royal Society, 6 Carlton House Terrace, London SW1.

At the Annual General Meeting the report of the Treasurer will be read, the Council and Officers of the Society for the coming year will be elected, and Auditors appointed. The election of Council and Officers is governed by Article 9 of the Charter of the Society, by Articles 18, 24 and 31 of the Statutes of the Society and by By-Law I of the By-Laws of the Society.

A ballot paper is enclosed which contains a list of those names recommended by the present Council in accordance with By-Law I.6, for election as the Officers and Members-at-Large of the Council for the coming year, when taken together with those

Members-at-Large elected at the last AGM whose terms of office still have one year to run: namely, S.K. Donaldson, W.N. Everitt, B. Hartley, D. Strauss, P. Vamos.

A member of the Society is entitled to vote in the election by striking out on the ballot paper those names for which he does not vote. The member must then validate the ballot paper both by writing his name legibly upon it and by signing it.

The completed ballot paper should either be brought to the AGM or be received, duly validated and addressed to "The Scrutineers, London Mathematical Society, Burlington House, Piccadilly, London W1V 0NL", not less than 36 hours before the time of the meeting.

C.J. Mulvey  
Council and General Secretary

## CALL FOR PAPERS CATEGORY THEORY AND COMPUTER SCIENCE

The third of the biennial conferences on Category Theory and Computer Science is to be held at Manchester University from 6 to 8 September 1989. The purpose of the conference is to link research in category theory and computer science. It will be an opportunity for an exchange of ideas between computer science and mathematics. Topics of interest include, but are not limited to: Semantics of Programming Languages; Program Specification; Categorical Logic, Type Theory.

Authors should send 5 copies of a draft paper by 1 March 1989, to David Pitt, Department of Mathematics, University of Surrey, Guildford, Surrey GU2 5XH. It is intended to publish the proceedings as Springer Lecture Notes in Computer Science.

Further information can be obtained from David E. Rydeheard, Department of Computer Science, University of Manchester, Oxford Road, Manchester M13 9PL.

## DR Y. OHNITA

Dr Y. Ohnita of Tokyo Metropolitan University will be visiting Britain during the period 24–29 October with the support of an LMS grant under Scheme 2. He will be lecturing at a Leeds Differential Geometry Day on Monday 24 October (see below) and in the Mathematics Institute of the University of Warwick at 2 p.m. on Friday 28 October.

Enquiries to Dr J.C. Wood, School of Mathematics, University of Leeds, Leeds LS2 9JT, phone 0532–335106, and for the Warwick talk Dr J.H. Rawnsley, Mathematics Institute, University of Warwick, Coventry CV4 7AL, phone 0203 523595.

## LEEDS DIFFERENTIAL GEOMETRY DAY

A Differential Geometry Day is planned for Monday 24 October in the School of Mathematics, University of Leeds. There will be four talks at 10.45 a.m., 11.50 p.m., 2.15 p.m., and 3.45 p.m., the last of these by Y. Ohnita (see above). Coffee will be available from 10.15 a.m. outside the Ma-

thematics Staff Common Room, Level 9, Mathematics.

Further details from Dr. J.C. Wood, School of Mathematics, University of Leeds, Leeds LS2 9JT, phone 0532–335106.

## THIRD ANNUAL MEETING OF EUROPEAN WOMEN IN MATHEMATICS.

This meeting will take place in the Mathematics Institute at Warwick University from 12.00 noon Saturday 10th December until 5.00 p.m. Monday 12th December. The programme will include expository lectures, a talk for local schoolgirls and discussion on the theme "*Family and career: is conflict inevitable?*" The expository talks will be held on Monday 12th December, and are open to the general mathematical public. The discussion

and business part of the meeting at the weekend is intended for women only. Some funds will be available to help non-British participants who cannot cover their own costs.

For more information please contact Dr Sarah Rees, Mathematics Institute, Warwick University, Coventry CV4 7AL, UK, (tel. 0203– 523523 ext. 2678) or via electronic mail at ser@maths.warwick.ac.uk.



# **LONDON MATHEMATICAL SOCIETY**

**FRIDAY 21 OCTOBER 1988**  
**Meeting on Differential Geometry**

**2.30 S.M. SALAMON (Oxford)**  
Metrics with Special Holonomy

**3.30 N.J. HITCHIN (Oxford)**  
Gauge Theories on Riemann Surfaces

**A General and Ordinary Meeting will  
commence at 5.00**

**M. GROMOV (I.H.E.S.)**  
Hyperbolic Groups

The meetings will be held at the  
Geological Society,  
Burlington House,  
Piccadilly,  
London W1

**All interested are very welcome**  
Tea will be served at 4.30 p.m.

## NONLINEARITY

I am pleased to report that our new journal *Nonlinearity* is flourishing, and attracting an increasing number of high calibre papers — see for example those listed as “coming soon” below. As a result it is planned to enlarge the journal by about 30% in 1989.

Many libraries throughout the world have already taken out subscriptions to *Nonlinearity*, and if the library in your own university or institution has not yet done so, please urge them to do so now. Libraries may find it convenient either to purchase it through IOPPL, using one of their several package arrangements with other IOPPL journals, or else through the LMS, as follows. The LMS scheme in 1989 (although it may be changed in 1990 to the subscriber's advantage) is that Corporate Members of the LMS can buy *Nonlinearity* at a 20% discount provided orders are

sent direct to the LMS office at Burlington House, and prepayment is received by 31 January 1989.

Besides libraries, many individual members of the Society have already taken out subscriptions. Indeed an increasing number of mathematicians, both pure and applied, are joining the Society specifically so that they can subscribe to *Nonlinearity* at the highly advantageous reduced rate, to which members are entitled provided that their copy is for their own personal use only. If you yourself are interested in any of the fields covered by *Nonlinearity*, and have not yet taken out a subscription, may I take this opportunity of encouraging you to do so now. Subscriptions can be taken out or renewed using the enclosed subscription form.

E.C. Zeeman

## COMING SOON...

Boundary value problems with nonlinear boundary conditions. *G. Anichini and G. Conti.*

Yang–Mills fields on quaternionic spaces. *M. Mamone Capria and S.M. Salamon.*

Bifurcation to rotating cantor sets in maps of the circle. *K. Hockett and P. Holmes.*

Space–time chaos in the coupled map lattices. *L.A. Bunimovich and Ya G. Sinai.*

Some cubic systems with several limit cycles. *N.G. Lloyd, T.R. Blows and M. C. Kalenge.*

Integrability of the chiral equations with torsion term. *R.S. Ward.*

On degenerate Hopf bifurcation with broken  $O(2)$  symmetry. *J.D. Crawford and E. Knobloch.*

Metric properties of minimal solutions of discrete periodical variational problems. *M.L. Blank.*

Smooth conjugacy and renormalisation for diffeomorphisms of the circle. *J. Stark.*

Presentation functions and scaling function theory for circle maps. *M.J. Feigenbaum.*

Resonances for intermittent systems. *V. Baladi, J.-P. Eckmann and D. Ruelle.*

The box dimension of self-affine graphs and repellers. *T. Bedford.*

Doubling bifurcation for invariant curves:  $C^\infty$ -invariant curve on a  $C^k$ -cylinder. *J.E. Los.*

## MATHS AS A HUMAN ACTIVITY

I am interested in forming a group, or joining with anyone, to study the nature of mathematics, the focus being on its social practice. The purpose would be to situate philosophical and technical questions about foundations and to humanise our understanding and communication of the subject.

Please contact Allan Muir, Department of Mathematics, City University, London EC1V 0HB; telephone 01 253 4399 x 4117; JANET se391@city.

## EDINBURGH MATHEMATICAL SOCIETY

Meetings of the Edinburgh Mathematical Society for the 1988–89 session are: 14 October (Edinburgh) Annual General Meeting and Presidential Address, Dr R.M.F. Moss; 11 November (Strathclyde) Dr J.D. Gibbon; 9 December (Edinburgh) Professor R.W. Carter; 13th January (Heriot–Watt) Professor I.C. Percival; 10 February (Edinburgh) Professor A. Truman; 10 March (Stirling) Professor A.J.R.G. Milner; 5 May

(Aberdeen) Professor J. Coates; 3 June (St Andrews) Dr T.A. Gillespie.

Further information may be obtained from C.J. Shaddock, Honorary Secretary, Edinburgh Mathematical Society, Department of Mathematics, University of Edinburgh, Mayfield Road, Edinburgh EH9 3JZ.



## ROYAL SOCIETY/USSR ACADEMY EXCHANGES

The following is a slight paraphrase of an article contained in the March 1988 issue of Royal Society News (p.5):

"A major outcome of the visit to the UK in November 1987 by a delegation from the USSR Academy of Sciences led by President G.I. Marchuk was the signing of a new Protocol to modify the operation of the existing exchange arrangement.

1. "President Marchuk indicated that the Academy would welcome more long-term visits by UK scientists. It was particularly hoped that young scientists from both sides could be encouraged to make long-term 'fellowship' visits.

2. "It was agreed that funds be made available to increase the level of scientific exchange in all areas.

3. "It was agreed that 25% of the annual quota under the agreement should in future be allocated to visits nominated by the host side. In the past, the Society has commended visits by certain named Soviet scientists to the UK, at the request of a prospective UK host. Under the new agreement there is now a formal process and specific proposals will be welcomed by the Society.

4. "Facilities are now available to implement proposals for joint symposia and to give additional support for joint projects. The Society therefore now invites applications from British scientists wishing to visit the USSR, to establish joint projects or to organize joint symposia.

"It is expected that UK scientists will respond to these new opportunities for a much improved level of exchange with Soviet scientists. Further details and application forms can be obtained from Miss C.H. Burden at the Society."

Note that 3 and 4 are entirely new, and potentially of great significance. To this, I would like to add two remarks of a subjective nature:

(a) It seems to me that over the past twenty years, British mathematicians have had little success in getting Soviet visitors, in comparison both with other scientists in the UK, and with mathematical colleagues in Western Europe; things seem to be getting very much better, but we'll only get a fair share of the new cake if we ask for it.

(b) The government and the Academy of the USSR seem to attach a lot of importance to mathematics in its planning for the future of Soviet science: to give examples, President Marchuk of the Academy is a mathematician, and an international Mathematical Research Institute has recently been set up in Leningrad under Akademician L.D. Faddeev.

Thus over and above the general liberalisation of Soviet society, there are many reasons why I believe that this is an appropriate time for great efforts on the part of British mathematicians to make use of the improved facilities for collaboration with Soviet colleagues.

Miles Reid, August 1988

Math Inst., Univ. of Warwick, Coventry CV4 7AL.

## GEOMETRY OF BANACH SPACES

A conference on the Geometry of Banach Spaces will be held at Strobl on Wolfgangsee, Austria from 12 to 17 June 1989. For further information,

write to Institut für Mathematik, Banach Space Conference, Johannes Kepler Universität Linz, Altenbergerstrasse 69, A-4040 Linz, Austria.

We wish to purchase runs and odd Nos of: Sphinx, Revue Mensuelle des Questions Recreatives, Bruxelles, 1931-39 Journal of Recreational Mathematics, 1968-. Recreational Mathematics Magazine, 1961-64, Sphinx-Oedipe, Nancy, 1906-1932. Mathematical Pie, 1950-. All books published in the series "Librairie du Sphinx" Bruxelles, Rouse-Ball, W.W. "Mathematical Recreations and Essays" all editions from the first (1891) to 11th (1939). Also mathematical books of all kinds from very elementary to advanced texts. Also biographies of mathematicians and physicists.

We also sell books in this field, indeed, we specialise in mathematics and will be pleased to receive your list of books wanted and to send you our current catalogue sent post free on request.

F.E. Whitehart, Bookseller,  
40, Priestfield Road, Forest Hill,  
LONDON SE23 2RS  
Tel: 01-699-3225

# UNIVERSITY COLLEGE OF SWANSEA

## Lecturer in Mathematics

Applications are invited for a lecturer Grade A in the Department of Mathematics and Computer Science. Preference will be given to candidates working on Operator Algebras and Applications/Mathematical Physics. Strong candidates in all fields are, however, encouraged to apply.

The salary will be on the scale £9260 —£14500 per annum, together with USS/USDPS benefits, if required.

Further particulars and application forms (2 copies) may be obtained from the Personnel Office, University College of Swansea, Singleton Park, Swansea, SA3 8PP, to which office they should be returned by **November 30, 1988**.

### WHAT MATHEMATICS FOR COMPUTER SCIENTISTS?

A one-day meeting, to discuss those areas of mathematics most appropriate for a modern undergraduate curriculum in computer science, will be held in the Department of Computer Science, University of Manchester, on Friday 16 December 1988.

Programme (titles to be announced later - it is intended that the speakers should encourage discussion)

- 10.00 Coffee
- 10.30 W.M. Holcombe (Sheffield)
- 11.30 A. Ralston (SUNY at Buffalo)
- 12.30 Lunch
- 14.00 C.A.R. Hoare FRS (Oxford)
- 15.00 Tea
- 15.30 Panel Discussion: Chair D.J. Cooke (Loughborough)

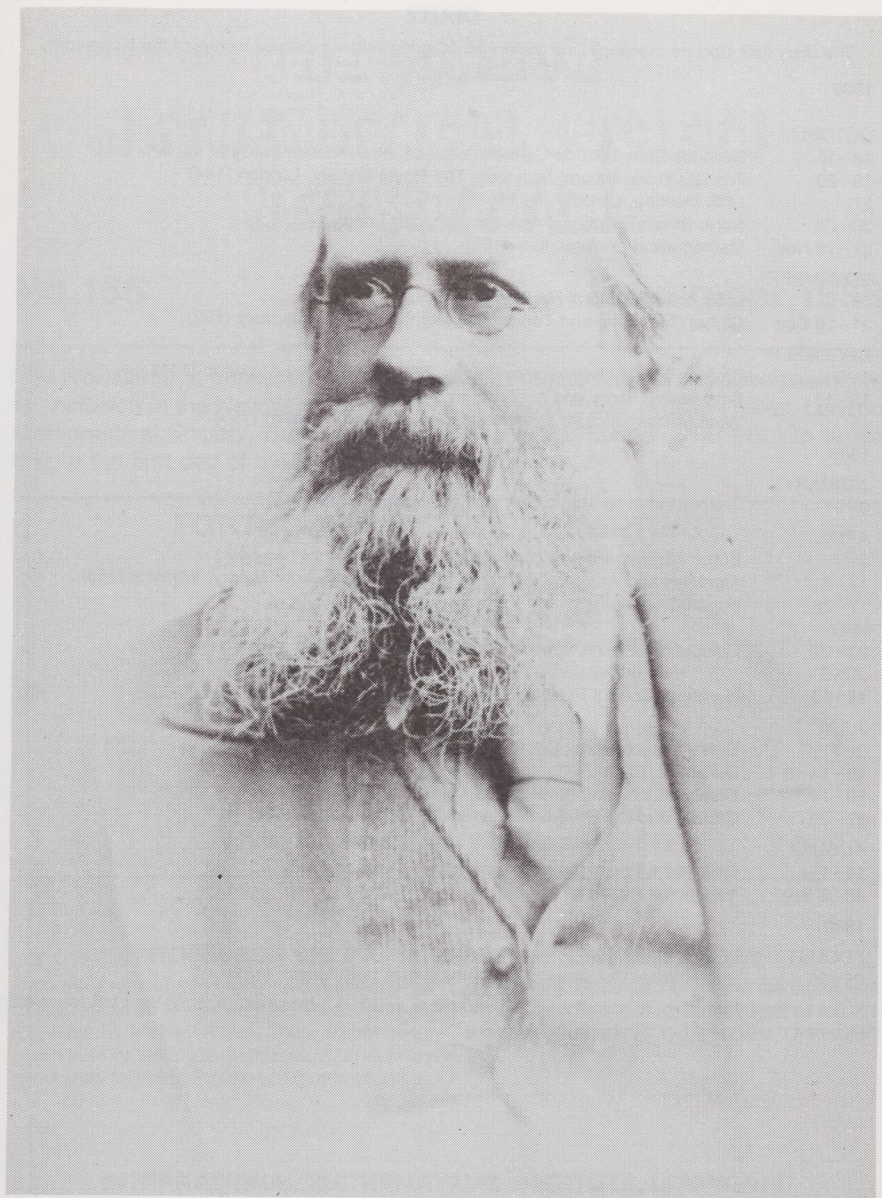
Those wishing to attend should write, preferably before 16 November, to Dr B. Banieqbal, Department of Computer Science, University of Manchester, Oxford Road, Manchester M13 9PL, enclosing a registration fee of £15 (cheques made payable to University of Manchester). This fee will cover lunch and refreshments.

A limited amount of University accommodation is available for those wishing to stay overnight on Thursday, 15 December. The cost will be £12 for bed and breakfast, and this should be paid at the time of application. It is expected that there will be a dinner on Thursday evening.

Organising Committee: R. Brown (Chairman), B. Banieqbal, S.S. Wainer.

The meeting is receiving financial support from the London Mathematical Society.





Samuel Roberts (1827–1913) was the Society's first amateur President. He never held paid office in any branch of mathematics or its applications, yet he wrote on many aspects of the subject, including plane and solid geometry, the elementary theory of numbers, the calculus of operations, and interpolation methods. A solitary figure until the Society was established, he joined when it was but five months old and became one of its stalwarts, known for his quiet, undemonstrative manner. He was treasurer for eight years, and twice Vice-President. He was the Society's ninth President, from 1880–1882.



## DIARY

The diary lists Society meetings and other events publicised in previous issues of the Newsletter.

### 1988

#### OCTOBER

- 12-15      Seconds Entretiens du Centre Jacques-Cartier, France (153)  
19-20      Fractals in the Natural Sciences, The Royal Society, London (144)  
21          LMS Meeting, London  
28-29      North British Functional Analysis Seminar, Leeds  
31-18 Nov   Mathematical Ecology, Italy (152)

#### NOVEMBER

- 18          LMS Annual General Meeting, London  
21-16 Dec   Global Geometric and Topological Methods in Analysis, Italy (152)

#### DECEMBER

- 8-9          Physics and Mathematics of Strings, The Royal Society, London (144)  
13-15      Singularity Theory and Applications, Warwick (153)  
16          What Mathematics for Computer Scientists?, Manchester (153)

### 1989

#### JANUARY

- 9-27        Theoretical Fluid Mechanics and Applications, Italy (152)

#### APRIL

- 3-7          British Mathematical Colloquium, Nottingham  
17-21      Algebraic and Analytic Geometry Aspects of Singularity Theory, Warwick (153)  
17-28      Hyperbolic Geometry and Ergodic Theory, Italy (152)

#### MAY

- 23-27      Computing and Information, Canada (153)

#### JUNE

- 14-16      Nonlinear Control Systems Design, Italy (150)

#### JULY

- 3-7          British Combinatorial Conference, East Anglia (146)  
10-14      Dynamics, Bifurcations and Singularity Theory, Warwick (153)  
10-14      Combinatorial Mathematics and Computing, Australia (152)  
27-29      Cauchy and the French Mathematical World, France (152)

#### AUGUST

- 13-19      Differential Equations and Applications, Bulgaria (148)  
28-8 Sept   Variational Problems in Analysis, Italy (152)

### 1990

#### AUGUST

- 21-29      International Congress of Mathematicians 1990, Japan (151)

For further information, refer to the figure in brackets, which is a cross reference to the LMS Newsletter Number.

### FAX NUMBER

The fax number of the London Mathematical Society office is:  
**01-439 4629**