

# THE LONDON MATHEMATICAL SOCIETY NEWSLETTER

No. 242

October 1996

## FORTHCOMING SOCIETY MEETINGS

*Friday 18 October 1996, Linnean Society, London*

Cayley-Sylvester Centenary Meeting on Invariant Theory

W.P. Barth, C. de Concini, R.E. Howe, F.C. Kirwan

*Friday 15 November 1996, Linnean Society, London*

Annual General Meeting

E. Witten, N.J. Hitchin (Presidential Address)

*Friday-Saturday 21-22 February 1997, Oxford*

Group Theory

*Friday-Saturday 23-24 May 1997, Liverpool*

*Friday 20 June 1997, Linnean Society, London*

## ANNUAL GENERAL MEETING

The Annual General Meeting of the London Mathematical Society will be held on Friday 15 November 1996 at 3.15 pm in the Linnean Society Lecture Room, Burlington House, Piccadilly, London W1.

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-Laws I of the By-Laws of the Society.

A Ballot Paper is enclosed which contains a list of those persons nominated for election to Council either by Members of the Society in accordance with By-Law I.5 or by the present Council in accordance with By-Laws I.3 and I.6.

THE ELECTION for Members-at-Large with two-year terms IS CONTESTED: there are only 6 vacancies for such Council members, and 7 candidates. All the other elections (for the Officers, including

for 2 Vice-Presidents, and for 4 Members-at-Large with one-year terms) are uncontested.

It should be noted that the following two Members-at-Large of Council elected for two-year terms at the last AGM have one remaining year to serve: K.A. Brown, P.T. Saunders.

A Member of the Society is entitled to vote in the election by striking out on the ballot paper those names for which he/she does not vote. The Member should then place the completed ballot paper inside the voting envelope, seal the envelope, and then validate the envelope with her/his signature and legibly written name on the back.

Voting envelopes, duly sealed and validated, should either be brought to the AGM or sent to "The Scrutineers, London Mathematical Society, Burlington House, Piccadilly, London W1V 0NL", to arrive at least 36 hours before the time of the AGM.

R.Y. Sharp  
Council and General Secretary



## ASSOCIATE MEMBERSHIP

Council has agreed to propose the reintroduction of Associate Membership. If this is approved at the General Meeting on 18 October 1996 Associate Membership will be available for those who have not reached the age of twenty-eight by October the thirty-first. Just as for Ordinary Membership, candidates for Associate Membership will be required to be proposed and recommended by not less than two members; an Associate Member will be able to transfer to Ordinary Membership on the thirty-first day of October next following his or her twenty-eighth birthday, without having to seek re-election.

It was announced in the September 1996 Newsletter that a new By-Law II,1 will be proposed at a General Meeting of the Society on Friday 18 October 1996, which includes the sentence 'The annual subscription to the Society of Associate Members for the 1996-97 session shall be £5.00.'. If this By-Law is passed, Ordinary Members who have not reached the age of twenty-eight by 31 October 1996 will have the opportunity of transferring to Associate Membership, without the need for a fresh application for election, on condition that they provide their dates of birth.

If you wish to transfer to Associate Membership, would you please write to Harvinder Lotay, Assistant Administrator, London Mathematical Society, Burlington House, Piccadilly, London W1V 0NL, providing her with your date of birth.

## LMS ANNUAL SUBSCRIPTION

The annual subscription, including publications, for the session November 1996 - October 1997 is due on 1 November 1996. Together with this Newsletter is a renewal form to be completed and returned with your remittance in the enclosed envelope.

No action is required if you are already paying by Direct Debit, and do not wish

to change your choice of publications. Fully complete and return the form if you are paying by Direct Debit but wish to change your choice of publications or add/delete a subscription to the European Mathematical Society. Bank accounts of members paying by Direct Debit will be debited with the appropriate amount on 15 January 1997. Other members should either enclose a cheque (£ sterling or US\$) with their form or, if they have a UK bank account and wish to take advantage of this convenient form of payment, request a Direct Debit mandate.

If the renewal form is missing from this Newsletter, write to Harvinder Lotay, Assistant Administrator, London Mathematical Society, Burlington House, Piccadilly, London W1V 0NL (e-mail: [lms@lms.ac.uk](mailto:lms@lms.ac.uk)).

## PUBLICATIONS PRICING POLICY

The London Mathematical Society has a pricing structure for its journals which allows individual members to purchase them at a substantial discount. These discounted prices are intended for personal use only and the journals should be kept among your personal belongings and not deposited, even temporarily, in a library, common room or other public area. Issues of the journals should be accessible to other mathematicians or students only with your permission, given individually in each instance.

## ANNUAL DINNER

The 1996 Annual Dinner will be held after the Annual General Meeting on Friday 15 November at 6.30 pm for 7.00 pm at the Royal Air Force Club, 128 Piccadilly, London W1. The cost is £25.20 per person and members may book places for guests. The booking form enclosed with this Newsletter, should be returned together with payment to the London Mathematical Society office by **Friday 8 November**.

# LONDON MATHEMATICAL SOCIETY

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## CAYLEY-SYLVESTER CENTENARY MEETING ON INVARIANT THEORY

Friday 18 October 1996

- 2.00-2.45 F.C. Kirwan (Oxford)  
*Geometric invariant theory, and moduli spaces  
in algebraic geometry*
- 2.55-3.40 W.P. Barth (Erlangen)  
*On Cayley's explicit solution of Poncelet's porism*
- 3.50-4.35 R.E. Howe (Yale)  
*Reciprocity laws in invariant theory, and some  
contemporary applications of  $SL_2$*
- 4.35-5.00 Tea
- 5.00-5.15 Society business
- 5.15-6.00 C. de Concini (Pisa)  
*Invariant theory in arbitrary characteristic:  
an overview*
- 

The meeting will be held at the Linnean Society,  
Burlington House, Piccadilly, London W1.



## THE 1997 HARDY LECTURER

Professor Peter May, of the University of Chicago, has accepted the Society's invitation to be the Hardy Lecturer for 1997. Professor May graduated from Swarthmore College in 1960, and received his PhD in 1964 from Princeton University. After three years at Yale University, he moved to the University of Chicago, where he is now Professor and has served for six years as Chairman of the Department of Mathematics and for five years as Chairman of the University's Council on Teaching. Professor May has frequently visited Britain; members may recall that he gave the Memorial Address for Frank Adams in the chapel of Trinity College, Cambridge.

Professor May will visit the UK for about a month, beginning around the middle of May, 1997. He will give about a dozen lectures, including the 1997 Hardy Lecture to the Society on Friday, 20 June 1997. A list of the topics which he has offered is given below. Institutions that wish to invite Professor May to give a lecture should write to the Meetings and Membership Secretary, Dr D.J.H. Garling, Department of Pure Mathematics and Mathematical Statistics, 16 Mill Lane, Cambridge CB2 1SB (e-mail: d.j.h.garling@pmms.cam.ac.uk) by 30 November 1996, giving a first, second and third choice of lecture topics. It is likely that more invitations will be received than can be accepted, and neighbouring institutions are therefore encouraged to submit joint invitations. The itinerary and lecture title at each venue will be decided by the Society's Programme Committee, in consultation with Professor May and with the host institutions.

Lecture topics:

1. Brave new algebra in stable homotopy theory
2. Derived categories in algebra and topology
3. Operads in algebra, topology, and physics

4. Some equivariant algebraic topology and nonequivariant applications
5. The algebraization of p-adic homotopy theory
6. An approach to mixed Tate motives
7. Topological Hochschild and cyclic homology and algebraic K-theory

## 1999 HARDY LECTURER

In Spring 1997 the Society's Council proposes to appoint the 1999 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 about 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 or by e-mail to Professor J.S. Pym, the Council and General Secretary Elect (at Pure Mathematics Section, University of Sheffield, Hicks Building, Sheffield S3 7RH or j.pym@sheffield.ac.uk) or to any member of the 1997 General Purposes Committee of the Society (which will comprise J.M. Ball, A.O. Morris, J.S. Pym, D.J.H. Garling, E.C. Lance) by 30 November 1996.

R.Y. Sharp  
Council and General Secretary

## OBITUARY INFORMATION

Professor Walter Ledermann has kindly agreed to write the Society's Obituary Notice of Bernard Scott. Professor Ledermann would be grateful for any information, especially regarding Bernard Scott's work, activities and achievements in Cambridge, Aberdeen and London before his move to Sussex in 1962.



## BOOK REVIEWS

From time-to-time in future, the *Newsletter* will contain reviews of books that are thought to be of high quality and general interest but which will not be reviewed in the Society's *Bulletin*. The first of these reviews follows.

**Polyominoes** (revised and expanded second edition), by Solomon W. Golomb. Princeton Science Library, 1994.

A set of  $n$  cells which forms a connected subset of the plane square lattice is an  $n$ -omino. So we have dominoes, trominoes, ..., and, generally, polyominoes. If  $p(n)$  is the number of distinct  $n$ -ominoes (with respect to the obvious symmetries), what can be said about  $p(n)$ ? The fact that we cannot give a completely satisfactory answer to this question, and other related ones, may help to explain why the study of polyominoes has endured. Thirty years ago Klarner proved that the limit  $K$  of the  $n$ th root of  $p(n)$  exists. Since then much work has gone into estimating  $K$ , but the best results so far say that  $K$  is greater than 3.9 and less than 4.65, which is quite a gap. It is certainly not true that  $p(n+1) = 4p(n)$ , but it may yet turn out that  $K = 4$ , which would be truly amazing.

Golomb coined the word 'polyomino' in 1953, and the first edition of his book was published in 1965. Of course, some of the basic questions had been studied well before that. But it was his book that sparked an explosion of interest, which still continues. One indication that there is serious mathematics here lies in the frequency with which one encounters the names of eminent mathematicians. For example, there is Gomory's converse to the simple dominoes-on-a-chessboard theorem: if any two squares of opposite colour are removed then the rest can be covered with dominoes. Another example is what I call de Bruijn's vindication of the Hopeless Student (HS). The HS believes that if  $n$  divides  $ab$  then  $n$  divides  $a$  or  $n$  divides  $b$ . The de Bruijn theorem is that if the  $a \times b$  board can be covered with  $n \times 1$  tiles, then the HS is right:  $n$  divides  $a$  or  $n$  divides  $b$ .

This revised and expanded edition contains most of the original book, with comments on the current status of problems. There are two new chapters, and four appendices, as well as a comprehensive bibliography. Some of the problems may seem a little contrived, but there is much to interest the professional, and the book will surely find a place on the shelves of many mathematicians, professionals and amateurs alike.

N.L. Biggs

## WORKSHOP ON MODELS AND ALGORITHMS FOR PLANNING AND SCHEDULING PROBLEMS

This third workshop is to be held from 7-11 April 1997 at Queen's College, Cambridge. The workshop aims to provide a forum for scientific exchange and co-operation in the fields of planning, scheduling and related areas. To maintain the informality of the previous workshops and to encourage discussion and co-operation there will be limit of 80 participants and a single stream of presentations. Contributions of any aspect of scheduling are welcome. The invited speakers will particularly emphasise the topics of: analysis of approximation algorithms; local search; scheduling of modern manufacturing systems; stochastic scheduling. Authors presenting papers at the workshop are invited to submit their manuscripts for possible publication in a special issue of *Annals of Operations Research*. The invited speakers are: Y.J. Crama (Liege), K. Glazebrook (Newcastle upon Tyne), D.S. Johnson (AT&T Bell Laboratories), J.K. Lenstra (Eindhoven), D.B. Shmoys (Cornell). For further information use the World Wide Web (<http://www.statslab.cam.ac.uk/Workshop>).

## CONGRATULATIONS

Professor M.J.D. Powell has been awarded the 1996 Gold Medal of the Institute of Mathematics and its Applications.



## ELECTRONIC PUBLISHING OF MATHEMATICS JOURNALS

Newsletter readers may be interested in the following [approximate] summary of my comments at the Round Table on Electronic Literature at the recent European Congress of Mathematicians [ECM2 - 1996] in Budapest; they relate principally to electronic journals rather than to books. I must make it very clear though that the comments represent a personal view, and do not represent an "LMS view"; indeed no explicit LMS view exists.

There are real costs involved in producing a quality mathematics research journal, whether paper or electronic. There are several myths around that support the flawed view that journals should be free or priced at minimal cost.

1. All authors write clearly in good grammatical English with proper spelling and punctuation so that even readers new to the field or readers whose native language is not English can read and understand the mathematics without difficulty or ambiguity arising.

Not true! High quality journals have to return something like 50% of papers to authors for them to improve the exposition and language. Even then many authors cannot achieve a satisfactory standard. A high quality journal thus has to **PAY** for a Technical Editor to go through every paper to "debug" the exposition.

2. Authors will do the TeX typesetting work for a journal, so the journal typesetting costs will be nil or negligible.

Not true! Even with TeX there are so many dialects that journals often have to spend large amounts of time modifying formats to standard formats. Too many authors insist on embedding in their own personal macros or using special fonts [often proprietary fonts, that cannot be used in an electronically-available version of the journal without a licence]. Quite often authors use TeX badly - for example, their files cannot be read. Many good authors do not use TeX anyway, and many journals do not wish to exclude those authors. Thus a high quality journal has to pay for a Technical Typesetter to

go through every paper to TeX it, to debug an existing TeX file, or to re-TeX it if the author's file is unusable. Such typesetting is an expensive skill, that journals have to **PAY** for.

3. Individual journals will be available on the Editor's server or his University server and can be accessed at any time.

Not true! Editors move from university to university; servers get replaced every few years; universities have financial crises; technology moves on and files can no longer be read or printed easily; networks suffer e-congestion; working mathematicians get baffled as to where to find journals if there are too many possible locations; etc. Also it is unrealistic to imagine that individuals' [or perhaps even universities'] servers can act as the "archive of record" for mathematical material. Mathematicians are sufficiently vain [not necessarily unrealistically] to imagine that their published work will be of interest to someone in 50 - 1000 years; and indeed some of what is published at present will be - the problem is that we cannot easily identify which papers these are! Mathematics is a subject that develops like a pyramid (recall that Newton said that he "stood on the shoulders of giants"); therefore it is our duty for posterity to ensure that published work continues to be available indefinitely. This is something that publishers accept responsibility for, and so **PAY** for.

4. Editors do their work at zero cost, as their universities absorb the cost.

Not true! Editors run up quite large bills for postage (especially air mail postage), photocopying, and secretarial assistance; especially if they insist on papers being modified to be clearly written. Many Editors proofread, as they believe that their reputations require this guarantee of accuracy. Increasingly universities are unwilling to allow academics to run up real costs (eg. postage, secretarial time) without recompense; some ask for partial replacement for teaching too. The journal has to **PAY** for these costs.



Therefore quality costs money:

- To prepare the electronic files, whether for paper, server, or both;
- To create accessibility of the material - that is, its distribution in the short term;
- To maintain its accessibility in the long term.

If publishers have nF

- Papers will be less well prepared and less easy to understand;
- In the long term, papers will simply "disappear".

This is not satisfactory; therefore I believe that publishers (whether commercial, learned societies or universities) will continue to have to charge for mathematics journals.

Where publishers differ is the amount that they need to charge subscribers to cover their costs. Mathematics research journal publishing is changing, and although the change (driven by factors such as personal computers, TeX and the Internet) has been mooted for a decade or so, right now we are just entering the main period of very rapid change. In the next decade the Mathematics community world-wide will be in a position to reach a new consensus with mathematics journal publishers over the vexed question: what are mathematicians prepared (or able) to pay for journals *versus* what can publishers afford (or are willing) to consider as a reasonable price for journals? It is fair to say that at this point nobody really foresees the formats in which electronic journals will be available in twenty five years [to select a carefully-considered horizon], nor the precise charging mechanisms.

Finally, some personal opinions. We owe it to ourselves, and to our successors, to agree a "system" that will make mathematics research literature available now and into the indefinite future. Twenty five years ago TeX did not exist; but unless the great research libraries are sent up in flames, like the Library of Alexandria, the mathematics research literature prior to TeX will continue to be available via print. There will be a market for both paper and electronic versions of

journals for years to come, as each format has its own role; and I suspect that paper (backed up, admittedly, by secondary, regularly-refreshed electronic files) will continue to be the principal archiving format for some centuries yet. Neither I nor my initial readers can know whether I am right!

David A Brannan

*Editors' note:* comments from members on this thought-provoking article will be welcome, and will be published in a subsequent issue of the *Newsletter*.

### 49th BRITISH MATHEMATICAL COLLOQUIUM Royal Holloway, April 1997

The Colloquium will meet from Monday 14 April to Thursday 17 April 1997. The first plenary session (with one of the main speakers) will be held at 8 pm on Monday. On Tuesday there will be four general lectures (in two parallel venues) between 9 and 11 am; at 11.30 am, the first Special Session (Low Dimensional Topology) lecture will be given in parallel with a further general lecture; in the afternoon, splinter groups will meet in parallel with three further Special Session lectures, followed by a plenary session at 5 pm; between 7.30 and 9.30 pm, the BMC Annual General Meeting will be held and there will be a discussion forum. The pattern will be repeated on Wednesday with Special Session lectures on Partial Differential Equations (and some other activity replacing the AGM). There will be five general lectures on Thursday morning, followed by lunch.

The main speakers will be W. Fulton (Berkeley), A. Lubotsky (Jerusalem) and P. Lions (Paris). The Special Session on Low Dimensional Topology will be organized by R. Fenn (Sussex) and that on Partial Differential Equations by E.B. Davies (KCL). The Colloquium will be preceded by a satellite conference on Low Dimensional Topology organized by R. Fenn at the University of Sussex Conference Centre from 11 to 14 April.

The BMC is supported financially by the London and Edinburgh Mathematical Societies.



## CONFERENCE ON BOUNDARY INTEGRAL METHODS

The first UK conference on Boundary Integral Methods will be held at the University of Leeds from 30 June - 1 July 1997. The main aim of the Conference is for all researchers in the UK (both senior academics and research staff), and elsewhere, who are working on the Boundary Integral Method, to meet in an informal way to present their current research work. Papers to be presented at the conference will deal with the technique itself, with its applications and future developments. The aim is that the Conference Proceedings will be published and distributed at the Conference. It is intended that the cost of academic participation will be limited to just travel and subsistence. It is hoped that very reasonably priced university accommodation will be available.

Deadlines: 1 November - submission of a one page abstract; 15 November - notification of acceptance of abstract; 13 January - submission of full paper; 24 February - notification of acceptance of paper. For further information contact: Professor B. Ingram, or

Dr D. Lesnic, Department of Applied Mathematics, University of Leeds, Leeds LS2 9JT; tel: 0113 2335113 or 0113 2335181; fax: 0113 2429925; e-mail: amt7bdi@amsta.leeds.ac.uk or amt5ld@amsta.leeds.ac.uk.

## GRESHAM COLLEGE GEOMETRY

During the 1996 Autumn semester three Public Lectures in Geometry will be given by Professor Ian Stewart (Gresham Professor of Geometry) 'The Practical Fractal', Wednesday 2 October at 1.00 pm, Gresham College, 'Games, Graphics and Gaskets', Wednesday 9 October at 5.30 pm, City of London School for Girls, Barbican and 'Chaos and the Quantum', Wednesday 4 December at 1.00 pm, Gresham College. Admission is free and without tickets. Further details of the lectures are available from Gresham College, Barnard's Inn Hall, Holborn, London EC1N 2HH, telephone 0171-831 0575.

## WOMEN MATHEMATICIANS

The European Mathematical Society is repeating the investigation it first undertook in 1991 regarding the percentage of women mathematicians in universities in Europe. Below is the UK data they required obtained from HESA for 1994-95 and for reference the data I collected in 1990-91. It should be noted that the 1994-95 data includes all the universities in the UK whereas the 1990-91 data did not include the polytechnics.

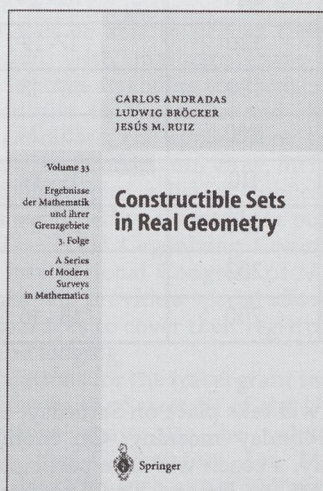
### UK Mathematicians in Universities

Position	1990-91 % of women	1994-95 % of women
Professors	1%	3%
Lecturers, Senior Lecturers	8%	13%
PhD's awarded	17%	18%
Undergraduates	31%	37%

Amanda Chetwynd  
Lancaster University



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## JOURNAL BACKLOG 1996

	No. of Issues	No. of Pages	Backlog	Estimate (months)
Math.Proc.Camb.	6	1200	380	18 - 24
Edin. Math.Society	3	530	200	16 - 24
Glasg. Math. Journ.	3	384	120	17- 19
LMS Bulletin	6	768	180	16 - 18
LMS Journal	6	1248	800	15 - 24
LMS Proceedings	6	1440	110	11 - 19
Mathematika	2	440	150	15 - 27
Oxford Q J M	4	512	252	18
R S Edin. Proc. A.	6	1376	700	13 - 16

### LOW DIMENSIONAL TOPOLOGY CONFERENCE April 1997

The theme of the Conference will be knots, 3-manifolds and other low dimensional topology phenomena; tentative list of speakers: M. Boileau (Toulouse), G. Burde (Frankfurt), C. Gordon (Austin), J. Hoste (Pitzer), J. Howie (Heriot-Watt), Y. Mathieu (Provence), J. Montesinos (Madrid), D. Rolfsen (UBC), C. Rourke (Warwick), J. Simon (Iowa), D. Sumners (Florida).

The Conference will be in two parts: Friday 11 April to Monday 14 April 1997 at the University of Sussex Conference Centre, Chelwood Gate, near Haywards Heath; Monday 14 April to Thursday 17 April 1997 at Royal Holloway College, Egham, as a Special Session at the British Mathematical Colloquium. Participants may take part in both or either but non-speakers who wish only to participate in the second part must organize their attendance through the BMC.

A coach will take participants from the University of Sussex to the Conference Centre on Friday evening, where a meal will be available. Alternatively participants can arrive at the Conference Centre independently if they wish. Lec-

tures will take place on Saturday, Sunday and Monday morning. On Monday at midday, a coach will take participants to the BMC at Egham. The Tuesday afternoon session at the BMC will be used as a showpiece of low dimensional topology for the benefit of British mathematicians.

Those who are interested in this conference should let Roger Fenn know by e-mail ([rogerf@solx1.sussex.ac.uk](mailto:rogerf@solx1.sussex.ac.uk)). Information will appear on his WWW home page (<http://www.sussex.ac.uk/SMS/GRC/PhD/Algebra/RAF.html>) and will be periodically updated.

### TRAVEL GRANTS FOR YOUNG MATHEMATICIANS TO ATTEND ICM98

The International Mathematical Union will award travel grants to young mathematicians to help them attend the ICM98 in Berlin, Germany, 18-27 August 1998. The grants are intended primarily for young mathematicians from developing countries (not necessarily members of IMU). Please note that mathematicians from other countries with strict monetary regulations are not part of this programme, but shall also be considered



directly by the Local Organizing Committee. An announcement in this respect will follow soon.

The age-limit for the grantees is 35 years at the occasion of the Congress. The candidates should present evidence of research work on post-doctoral level, and they should be able to benefit from the interaction with mathematicians from other countries attending the Congress.

In addition to the name and address of the candidate, the applications should contain a brief curriculum vitae, including date of birth, plus a list of publications (papers published or accepted for publication). The Local Organizing Committee of the International Congress of Mathematicians will provide a special allowance to the grantees to cover their registration, board and lodging.

Applications for the travel grant may be sent direct to the Secretary of the Union. Applications may also be submitted through the Committees for Mathematics, which in such a case will send all the relevant information about the candidates to the Secretary. All applications should reach the Secretary by 1 **January 1998**. IMU Secretariat: International Mathematical Union, Professor Jacob Palis, Secretary, Estrada Dona Castorina, 110, Jardim Botânico, 22.460-320 - Rio de Janeiro, RJ Brazil; fax (55) (21) 512 4112; e-mail: imu@impa.br.

### **INTERNATIONAL CONGRESS OF MATHEMATICIANS 1998 Nominations for the Fields Medals and the Rolf Nevanlinna Prize**

Here is some information about the Fields Medals and the Rolf Nevanlinna Prize to be presented at the Opening Ceremony of ICM98 on 18 August 1998. The IMU Executive Committee has appointed a Fields Medals and a Nevanlinna Prize Committee to select the awardees. The members of the committees will not be announced publicly. An individual can contribute to the selection process by contacting the Committee of Mathematics of his or her country. (You can

find your National Mathematical Committee by looking up the list of IMU member countries in the IMU-server (<http://elib.zib-berlin.de/IMU>) and clicking on your own country.)

The National Committees can, if they wish, suggest candidates for the Fields Medal and Rolf Nevanlinna Prizes to be awarded at the Opening Ceremony of the Congress. The names should be sent to the Secretary of IMU: International Mathematical Union, Professor Jacob Palis, Secretary, Estrada Dona Castorina, 110, Jardim Botânico, 22.460-320 - Rio de Janeiro, RJ, Brazil; fax: (55) (21) 512 4112; e-mail: imu@impa.br. The nominations must be accompanied by a brief justification, and must reach J. Palis not after 31 March 1997. They will be forwarded to the chairman of the appropriate Committee.

**Fields Medals, A Short History:** At the 1924 International Congress of Mathematicians in Toronto, a resolution was adopted that at each ICM, two gold medals should be awarded to recognize outstanding mathematical achievement. Professor J. D. Fields, a Canadian mathematician who was secretary of the 1924 Congress, later donated funds establishing the medals which were named in his honour. Consistent with Fields's wish that the awards recognize both existing work and the promise of future achievement, it was agreed to restrict the medals to mathematicians not over forty at the year of the Congress. In 1966 it was agreed that, in light of the great expansion of mathematical research, up to four medals could be awarded at each Congress.

**Rolf Nevanlinna Prize, A Short History:** The University of Helsinki has granted funds to award the Rolf Nevanlinna Prize in the mathematical aspects of information science to a young mathematician, to be given at the International Congress of Mathematicians. The age limit is 40 at the year of the Congress. The Nevanlinna Prize was first awarded in 1982. Nevanlinna prizes awarded: Robert Tarjan (1982); Leslie Valiant (1986); A.A. Razborov (1990); Avi Wigderson (1994).

More information about ICM98 can



be found in the ICM98 WWW-server (<http://elib.zib-berlin.de/ICM98>). This WWW-server also offers an electronic preregistration form. If you do not have access to the World Wide Web

and would like to subscribe to the ICM98 circular letters, just send an e-mail to: [icm98@zib-berlin.de](mailto:icm98@zib-berlin.de), writing PRELIMINARY PREREGISTRATION into the SUBJECT line.

## UK - JAPAN JOINT RESEARCH PROJECT: INFINITE DIMENSIONAL ANALYSIS AND GEOMETRY Supported by the Royal Society and the Japan Society for the Promotion of Science

A co-operative research plan has been agreed between the Isaac Newton Institute for Mathematical Sciences, Cambridge University, UK and the Research Institute for Mathematical Sciences (RIMS), Kyoto University, Japan. The objective is to advance recent developments in analysis and geometry and their applications, with special emphasis on problems of infinite degrees of freedom.

Under this scheme, up to 10 UK-based mathematical scientists per calendar year are selected to visit Kyoto University or a similar institution for up to six months to take part in relevant research projects. Similarly at least 8 Japanese mathematical scientists will be selected to participate in the research programmes of the Newton Institute. Air fares (up to £1000 per person) for UK scientists visiting Japan will be funded from British sources, and subsistence from Japanese sources. Japanese scientists visiting the UK will have their air fares funded from Japanese sources and their subsistence from UK sources.

UK mathematical scientists visiting Japan in this co-operation will collaborate with Japanese mathematical scientists working on the following aspects of Infinite Analysis and Geometry, although applicants with research interests in other related fields will also be considered:

- Algebraic geometry and global complex analysis
- Low-dimensional topology by infinite dimensional method
- Operator algebras and their applications

- Integrable models in quantum field theory and statistical mechanics
- Algebraic analysis of singular perturbations

Applications are sought from UK based postdoctoral mathematical scientists to take part in this project. Any person selected will be expected to provide a brief report on their visit within one month of returning to the UK.

In the first instance, applicants should provide the following information:

- Name(s) of Professors or research scientists in Japan with whom they wish to collaborate, and name of institution if known. (If either of these are not known, arrangements may be made based on the applicant's research interests.)
- Area of research interest
- Representative list of applicant's published papers
- Approximate dates of proposed visits (the standard period is one month although some variation is allowed)
- Applicant's contact details, ideally a fax number or e-mail address to enable fast communication

To apply, please contact either: Anne Cartwright, The Administrator, Isaac Newton Institute for Mathematical Sciences, 20 Clarkson Road, Cambridge CB3 0EH; fax: (01223) 330508; e-mail: [a.cartwright@newton.cam.ac.uk](mailto:a.cartwright@newton.cam.ac.uk) or Professor Y. Miyoaka, Research Institute for Mathematical Sciences, Kyoto University, Sakyo-ku, Kyoto 606-01, Japan; fax: +81 75 753 7272; e-mail: [miyoaka@kurims.kyoto-u.ac.jp](mailto:miyoaka@kurims.kyoto-u.ac.jp).



## EUROMECH MEETINGS IN 1997

The EUROMECH Council has overall responsibility for EUROMECH Colloquia and EUROMECH Conferences.

**EUROMECH Colloquia** are informal meetings on specialized research topics. Participation is restricted to a small number of research workers actively engaged in the field of each Colloquium. The organization of each Colloquium, including the selection of participants for invitation, is entrusted to a Chairman. Proceedings are not normally published. Those who are interested in taking part in a Colloquium should write to the appropriate Chairman. Title, Chairman or Co-chairmen, dates and location for each Colloquium are given below.

*Material identification using mixed numerical/experimental methods:* Professor H. Sol, Vrije Universiteit Brussel, Engineering Faculty, Department of Structural Analysis, Pleinlaan, 2, B-1050 Brussel, Belgium, e-mail: hugos@vnet3.vub.ac.be, Dr C.W.J. Oomens, Eindhoven; 7-9 April; Kerkrade, The Netherlands.

*Mechanical behaviour of adhesive joints: analysis, testing and design:* Professor S. Aivazzadeh, Institut Supérieur de l'Automobile et des Transports, 49, rue Mademoiselle Bourgeois, BP 31, F-58027 Nevers Cedex, France, Professor R.D. Adams, Bristol, Professor A. H. Cardon, Brussel and Professor A. Rigolot, Paris; 3-5 September; Nevers, France.

*Stability and transition of boundary-layer flows:* Professor S. Wagner, Institut f. Aero- & Gasdynamik, Universität, Stuttgart, Pfaffenwaldring 21, D-70550 Stuttgart, Germany, e-mail: wagner@iag.uni-stuttgart.de, Professor L. Kleiser, Zurich; 10-13 March; Stuttgart, Germany.

*Mechanics of sandwich structures: modelling, numerical simulation and experimental identification:* Professor A. Vautrin, SMS/Department of Mechanical and Materials Engineering, Ecole des Mines de Saint-Etienne, 158, cours Fauriel, F-42023 Saint-Etienne Cedex 2, France, e-mail: vautrin@emse.fr, Professor A.T. Marques, Porto; 13-15 May; Saint-Etienne, France.

*Active control of turbulent shear flows:* Professor H.H. Fernholz, Hermann-Fottinger-Institut, Technische Universität, Berlin, Strasse des 17. Juni 135, D-10623 Berlin, Germany, e-mail: hfi@pi.tu-berlin.de, Professor H.E. Fiedler, Berlin; 17-19 March; Berlin, Germany.

*Structural damage and failure under intense loading:* Professor S.R. Reid, Department of Mechanical Engineering, UMIST, PO Box 88, Sackville Street, Manchester M60 1QD, UK, e-mail: steve.reid@umist.ac.uk, Professor S.T.S. Al-Hassani, Manchester; 21-24 April; Manchester, UK.

*Mechanics of laser ablation:* Dr N.M. Bulgakova, Institute of Thermophysics SB RAN, Prosp. Lavrentyev 1, 630090 Novosibirsk, Russia, e-mail: nbu@otani.thermo.nsk.su, Professor V.E. Nakoryakov, Novosibirsk, Dr W. Marine, Marseille and Dr M.R. Predtechensky, Novosibirsk; 23-26 June; Novosibirsk, Russia.

*Dynamics and statistics of concentrated vortices in turbulent flows:* Dr S. Le Dizès, IRPHE, 12 avenue General Leclerc, F-13003 Marseille, France, e-mail: ledizes@marius.univ-mrs.fr, Professor H.K. Moffatt, Cambridge; 24-27 June; Marseille, France.

*Structural damage assessment using advanced signal processing:* Dr K. Worden, Department of Mechanical Engineering, University of Sheffield, Mappin Street, Sheffield S1 3JD, UK, e-mail: keith@mrbump.shef.ac.uk, Professor F. Brancaloni, Pescara, 30 June - 2 July; Sheffield, UK.

*Porous media - theories and experiments:* Professor R. de Boer, Institute of Mechanics, FB 10, University of Essen, D-45117 Essen, Germany, e-mail: rb110@bauwesen.uni-essen.de, Professor K. Wilmanski, Essen and Professor S.J. Kowalski, Poznan; 23-27 June; Essen-Heidhausen, Germany.

*Fluid mechanics of coating processes:* Professor P. Bourgin, Institut de Mécanique des Fluides, Université Louis Pasteur, 2 rue Boussingault, F-67000 Strasbourg, France,



e-mail: bourgin@imf.u-strasbg.fr, Dr H.-G. Wagner, Ludwigshafen; 22-24 July; Strasbourg, France.

*Biomechanics of hearing:* Professor W. Schiehlen, Institute B of Mechanics, University of Stuttgart, D-70550 Stuttgart, Germany, e-mail: wos@mechb.uni-stuttgart.de, Dr A. Eiber, Stuttgart; 10-12 September; Stuttgart, Germany.

*Fluid-structure interaction in acoustics:* Dr A.H.P. van der Burgh, Faculty of Technical Mathematics and Informatics, University of Technology, PO Box 5031, 2600GA Delft, The Netherlands, e-mail: burgh@dv.twi.tudelft.nl, Dr P.J.T. Filippi, Marseille; 23-26 September; Delft, The Netherlands.

*Synthesis of mechatronic systems:* Professor M. Hiller, Fachgebiet Mechatronik, Gerhard-Mercator-Universität-GH Duisburg, Lotharstr. 1, D-47057 Duisburg, Germany, e-mail: hiller@mechatronik.uni-duisburg.de, Professor H. van Brussels, Leuven; 15-17 September; Duisburg, Germany.

*Efficient and reliable continuum finite elements for linear and nonlinear analyses:* Professor K. Schweizerhof, Institut für Mechanik, University Karlsruhe, Kaiserstr. 12, D-76128 Karlsruhe, Germany, e-mail: gs01@rz.uni-karlsruhe.de, Professor E. Ramm, Stuttgart and Professor P. Wriggers, Darmstadt; 17-19 September; Bad Herrenalb (near Karlsruhe), Germany.

*Reliability in nonlinear structural mechanics:* Professor J.-C. Mitteau, Institut Français de Mécanique Avancée, BP 265, F-63175 Aubière Cédex, France, e-mail: mitteau@ifma.ifma.fr, Professor O. Ditlevsen, Lyngby; 21-24 October; Clermont-Ferrand, France.

**EUROMECH Conferences** are broad in scientific scope. They comprise the EUROMECH Solid Mechanics Conference, the EUROMECH Fluid Mechanics Conference, the EUROMECH Turbulence Conference, the EUROMECH Nonlinear Oscillations Conference and the EUROMECH Mechanics of Materials Conference. They are open to all those interested and are expected to have a number of participants between 150 and

600. The general purpose is to provide opportunities for scientists and engineers to meet and discuss current research. The responsibility for each series of Conferences is delegated to a Standing Conference Committee. The organizational work is carried out by Local Organizing Committees (LOC). Those who are interested in taking part in one of the Conferences should write to the Chairman or Secretary of the appropriate LOC. Information is given below.

*3rd EUROMECH Solid Mechanics Conference:* Professor B. Storakers (Chairman) and Dr P.-L. Larsson (Secretary), Department of Solid Mechanics, Royal Institute of Technology S-100 44 Stockholm, Sweden, e-mail: 3esmc@hallf.kth.se; 18-22 August; Stockholm, Sweden.

*3rd EUROMECH Fluid Mechanics Conference:* Professor G.E.A. Meier (Chairman), DLR-Institut für Strömungsmechanik, Bunsenstrasse 10, D-37073 Göttingen, Germany, e-mail: efmc97@msfd1.gwdg.de; 15-18 September; Göttingen, Germany.

### MATHEMATICS EDUCATION AND APPLICATIONS Second Announcement and Call for Papers

The first Mediterranean Conference for Mathematics Education and Applications (MC-MEA) will be held in Nicosia, Cyprus, from 2 to 5 January 1997. The conference's aims are the promotion of Mediterranean contacts and the exchange of scientific information in Mathematics Education and the Mathematics Applications. Papers on any topic of mathematics education or on the applications of mathematics in other disciplines and sciences are welcome. Presentation durations will be 30 minutes, including questions. There will be no registration fee for the conference. For further information contact: Gregyo Makrides, Cyprus Pedagogical Institute, PO Box 512, Nicosia, CY 1660, Cyprus; tel: 357-2-302735; fax: 357-5-387987; e-mail: medconf@cyearn.plac.cy.





**C. SEGRE**  
**Honorary Member 1913**



## DIARY

The diary lists Society meetings and other events publicized 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.

### OCTOBER 1996

- 6-10 Mathematics Applied to Biology and Medicine Conference, Heidelberg, Germany (237)  
12 History of Statistics Conference, Birkbeck College London (241)  
18 London Mathematical Society Meeting, Cayley-Sylvester Centenary Meeting on Invariant Theory, Linnean Society, London  
18 Edinburgh Mathematical Society Meeting, Edinburgh (241)

### NOVEMBER 1996

- 1-2 North British Functional Analysis Seminar, Glasgow (241)  
15 London Mathematical Society Annual General Meeting, Presidential Address, Linnean Society, London  
15 Edinburgh Mathematical Society Meeting, Strathclyde (241)  
15-18 Oscillatory Integrals and Curvature in Harmonic Analysis Workshop, ICMS, Edinburgh (241)

### DECEMBER 1996

- 6 Edinburgh Mathematical Society Meeting, Napier (241)  
9-13 Discrete Mathematics and Theoretical Computer Science Conference, Auckland, New Zealand (238)

### JANUARY 1997

- 17 Edinburgh Mathematical Society Meeting, Edinburgh (241)

### FEBRUARY 1997

- 14 Edinburgh Mathematical Society Meeting, Edinburgh (241)

- 21-22 Group Theory, Two-day London Mathematical Society Meeting, Oxford

### MARCH 1997

- 14 Edinburgh Mathematical Society Meeting, Stirling (241)

### APRIL 1997

- 8-11 Fractals in the Natural and Applied Sciences, Denver, Colorado, USA (233)  
14-17 British Mathematical Colloquium, Royal Holloway & Bedford New College  
14-18 LMS Invited Lectures, Birmingham University, Professor J.L. Alperin (238)

### MAY 1997

- 2 Edinburgh Mathematical Society Meeting, Aberdeen (241)  
23-24 Two-day London Mathematical Society Meeting, Liverpool

### JUNE 1997

- 6 Edinburgh Mathematical Society Meeting, St Andrews (241)  
20 London Mathematical Society Meeting, Linnean Society, London

### JULY 1997

- 7-11 British Combinatorial Conference, Queen Mary & Westfield College, London (230)

### APRIL 1998

- 6-9 British Mathematical Colloquium, Manchester University

### AUGUST 1998

- 18-28 International Congress of Mathematicians, Berlin, Germany (238)

The Newsletter is published monthly except in August. Items and advertisements for inclusion in the Newsletter should be sent to the Editor, Susan Oakes, by e-mail, fax or post to the LMS office (addresses below), to arrive before the first day of the month prior to publication.

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