

THE LONDON MATHEMATICAL SOCIETY NEWSLETTER

No. 288

December 2000

FORTHCOMING SOCIETY MEETINGS

10 February 2001 - Oxford

Mary Cartwright Lecture

K.W. Morton, C.S. Morawetz

Wednesday 28 February 2001 - Birmingham

Inaugural LMS Regional Meeting (Midlands)

COUNCIL DIARY 20 October 2000

The first meeting of the academic year had a full agenda to be covered in a limited time, because of the Society meeting directly following Council. Many items were deferred until the November meeting. One thing we did consider was a plan for the next Council Retreat, to be held in the spring of 2001. This has become a biennial feature of the Society's calendar, giving two days to discuss major policy issues for which there is not enough time at regular meetings.

On the political front, the Council for Mathematical Sciences (representing the learned societies in mathematical sciences) and the Joint Mathematical Council have for some time been trying to set up an advisory committee on mathematics education. Progress has been painfully slow. Some encouragement was received last year but now the DFEE is showing a lack of enthusiasm for the idea.

The initiatives of the QAA have been the source of many hours of Council discussion. At this meeting we noted with anxiety the move to 'harmonize' the nomenclature of degree courses, in the form of a National Qualifications Framework which, if adopted unchanged, would mean that 4-year undergraduate mathematics degrees could no longer be designated MMath or MSci. The LMS

played a major part in the introduction of 4-year degrees through the Neumann report, and has responded, drawing attention to major flaws in the Framework.

The Society's year ends on 31 August, and we received the draft of the Annual Report of the Trustees, to be presented at the Annual General Meeting in November. (This will then be archived in the LMS website's section.) Although somewhat dry, the Annual Reports are well worth reading, and give a good summary description of the breadth of the Society's activities. They also contain details of all aspects of the Society's finances, and we noted that the amount spent on support of conferences, research and other mathematical activity (through grants administered by Council and its committees) has increased from £232k to £345k this year.

The Society's publications are an essential part of its activities, furthering the Society's aims both directly, by disseminating mathematical knowledge, and indirectly, and generating income which is used for the support of other mathematical activities. We approved a new staff appointment (a Production Controller) to manage part of the administration of the LMS journals. This will help remove some pressure from the

Honorary Editors of the Society's journals. We also had a long discussion about other possible LMS publication initiatives, although this is looking some way into the future.

The Meetings and Membership Secretary, Nick Woodhouse, reported on three international cooperative schemes which Council agreed to support. Discussions during the Barcelona European Congress with the President of the African Mathematical Union have led to changes to the International Short Visits scheme ('scheme 5') which will particularly enable UK mathematicians to visit Africa, and to a pilot 'short course' for African research students. A new scheme, to be administered jointly with the Moscow Mathematical Society, will bring young Russian mathematicians to the UK for short visits (2 or 3 weeks) to give a series of lectures on their work. Lastly, we approved a scheme to facilitate exchanges with the Morningside Mathematical Center, allowing Chinese mathematicians to visit the UK, and supporting British mathematicians attending the Center's programmes in Beijing.

Tony Scholl

YOUNG RUSSIAN MATHEMATICIANS

Following discussions with representatives of the Moscow Mathematical Society and the Russian Academy of Sciences, Council has agreed to establish a new scheme to help young Russian mathematicians to visit the UK and to provide some financial support.

Visitors will be chosen by Programme Committee from nominations made by the Council of the Moscow Mathematical Society, the Mathematical Department of the Russian Academy of Sciences, or by the head of the host department in the UK. Individuals may also apply personally. They will each come to the UK for a period of between two and three weeks and will give a series of about eight lectures on the work of their groups in Russia as well as their own contributions

to it. They will be expected to write up these lectures for publication in a series of occasional volumes in the Lecture Notes series, and they will receive an advance on royalties of £1000 on receipt of the manuscript in publishable form. The Society will pay actual travel, accommodation, and subsistence costs up to a maximum of £1500.

Nominations or applications under this scheme should be sent to the Meetings and Membership Secretary, London Mathematical Society, De Morgan House, 57-58 Russell Square, London WC1B 4HS, in the form of a brief letter. Before a nomination or application is sent, preliminary discussion should be held between the potential host department in the UK and the potential visitor. The nomination or application should include the following information:

- 1) The name and brief CV of the proposed visitor
- 2) An invitation from the host department in the UK. This should include the name of a person in the department who will act as personal host to the visitor
- 3) The dates of the visit and approximate cost
- 4) Brief synopses of the proposed lectures
- 5) In the case of individual applications, the name of a referee; in the case of nominations, a statement of the academic standing of the nominee
- 6) The name of a person in the UK who will read the manuscript and help to bring it into publishable form.

SYLVESTER MEDAL

The Council of the Royal Society has awarded the Sylvester Medal to Professor Nigel Hitchin, FRS, in recognition of his important contribution to many parts of differential geometry combining this with complex geometry, integrable systems and mathematical physics, interweaving the most modern ideas with the classical literature.

THE 2001 HARDY FELLOW

PROFESSOR PERSI DIACONIS, of Stanford University, has accepted the Society's invitation to be the Hardy Fellow for 2001.

Professor Diaconis will visit the UK for about two months between May and August 2001, and will hold his Fellowship at Queen Mary and Westfield College, where his host will be Professor Rosemary Bailey. During the tenure of his Fellowship, he will visit other institutions, and will give some seven or eight lectures, including the 2001 Hardy Lecture to the Society on Friday 22 June 2001. He has suggested the following lectures (the first two of which are of a more elementary nature):

On Coincidences: Coincidences amaze us; they can affect where we work and what we do. I will review work of Jung and Freud. Sometimes, a bit of quantitative thinking can show it's not so surprising after all.

The Search for Randomness: I will examine some of our most primitive images of random phenomena: Tossing a coin, shuffling cards and rolling a roulette ball. Physics and probability arguments combine to explain why things are often not so random.

An Introduction to Random Matrix Theory: Random matrix theory uses the eigenvalues of typical large matrices to model natural phenomena. These include particle scattering, telephone encryption, and the zeros of Riemann's Zeta function. Analysis leads to new probability and statistics problems and an amazing match of theory to data.

The Mathematics of Shuffling Cards: I will argue that it takes seven ordinary rifle shuffles to mix up 52 cards. The argument involves refined properties of permutation statistics (the descent algebra) and extends to give properties of random polynomials, random walk on buildings and beyond.

What do We Know About the Metropolis Algorithm?: The metropolis algorithm is one of the "top 10" of 20th century scientific computing. I will explain the algorithm and give applications in cryptography, chemistry and biology. Finally, I will show how careful analysis leads to challenging mathematical problems.

On Szego's Theorem: Szego's Theorem gives the asymptotic distribution of the eigenvalues of "striped" matrices. I will describe applications, new proofs and extensions based on symmetric functions.

deFinetti's Theorem and the Markov Moment Problem: deFinetti's theorem is a central result of the mathematics of Bayesian statistics. The Markov Moment problem characterizes probability measures with bounded densities by their moments; both theorems are related to a wealth of developments and of course to each other.

A Bayesian Peek into Elementary Probability: Basic results of elementary probability (birthday, matching, coupon collectors problem) all assume the underlying mechanism as "known". Owing up to the fact they are unknown changes some results and doesn't matter in others. This is joint work with Susan Holmes.

Institutions that wish to invite Professor Diaconis to give a lecture should write to the Executive Secretary, Dr D.J.H. Garling, at De Morgan House (e-mail: garling@lms.ac.uk) by **31 January 2001**. It is expected 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 Diaconis, Professor Bailey and with the host institutions.

MORNINGSIDE-LMS EXCHANGE PROGRAMME (MLEP)

Council has agreed to establish an exchange programme with the Morningside Center in Beijing, an institute of the Chinese Academy of Sciences. The programme has two parts.

1. **Visits to the UK.** Each year, about three talented young Chinese mathematicians who are proficient in English will visit universities in the United Kingdom for periods of between one and three months (the norm being two months). The visitors will be identified in the first instance by the Morningside Center and the host department in the UK, with the initiative coming from the Morningside Center; an application will then be made by the host department to Programme Committee. The Society will pay accommodation and subsistence costs within the UK from an annual budget of £6000, while the Morningside Center will pay travel costs.

2. **Visits to Beijing.** The Morningside Center runs a series of workshops in particular areas of mathematics. The exchange scheme will allow two or three mathematicians each year to participate by travelling to Beijing for periods of between one week and one month between April and October (the norm being two weeks); it may also be possible to arrange visits which are not specific to one of the programmes. The visitors will be nominated by Programme Committee, with the final choice being made by the Morningside Center. Visitors' local expenses will be met by the Morningside Center, while the Society will meet travel costs (including the cost of visa, insurance, and so on).

Those interested in participating should contact the Morningside Center by writing to the Secretary of the Morningside Center, Mr Xiaolin Li (xnli@math08.math.ac.cn). The Center may also contact individuals in the UK directly.

The programme for 2001 is as follows:

Topics in Lie theory (April-September)

The programme will concentrate on algebraic groups, infinite dimensional Lie algebras, quantum groups and their representations.

Multigrid methods and electromagnetic modeling (May-August)

The programme will explore high performance, high accuracy numerical methods for solving Maxwell's equations, and their applications to real problems. The focus will be on the multigrid methods.

Third annual workshop on mathematical physics (July 15 - August 15)

The programme will consist of two intensive workshops, one on 'Dirac operators and elliptic genus', the other on 'Mirror symmetry and related complex geometry', with participation by string theorists and complex geometers. These will be followed by a conference on mathematical physics at Henan University.

Arithmetic geometry (April-September)

The focus will be on automorphic forms and Shimura varieties.

Geometry and analysis (July-August)

The topics will include curvature flows in geometry and their applications to topology, Einstein's equations on manifolds, and the regularity theory of certain geometric PDE, such as Yang-Mills equations and harmonic maps. It is expected that there will be about 15 regular participants from within China and from abroad. There will be a working seminar together with lectures by leading experts in the field.

N.M.J. Woodhouse

The Morningside Center

J.F. Toland visited the Center during the summer and completed discussions about the exchange scheme on Council's behalf.

He reports as follows:

The Morningside Center of Mathematical Sciences is an institute of the Chinese Academy of Sciences which occupies purpose-built premises in the Academy precinct in the North-West suburb of Beijing. It is about forty minutes by taxi, costing about £2 in the year 2000, to the city centre at Tiananmen Square. (The Chinese Academy of Sciences precinct is not easily accessible by public transport and the inexpensive taxis, which are easily available and display prices on their windows, are the only sensible means of transport for foreigners.) Peking University (the university retains the original name of the city) is nearby and there is a lively interchange of seminars and speakers between the mathematics department there and Morningside. It is worth taking a stroll in the grounds of Peking University, with its famous "lake with no name" and with old imperial buildings mixed in with the very modern, after a seminar. Visitors to Morningside are given offices, or a shared office, and registered on the computer network. There is good access to telnet, ftp and the web, all of which are fast, at least at certain times of the day.

Visitors are accommodated in western style accommodation. In fact the city is architecturally quite western in appearance, although the streets teem with bicycles of all sorts, four and five abreast sometimes, including bicycle rickshaws carrying passengers or produce. (There are no man-powered rickshaws any more in Beijing.) There is a large hotel complex, The Friendship Hotel, about 10 minutes away by taxi, and an excellent official guest house at the beautiful campus of Peking University. The staff at Morningside, and the people of Beijing generally, are very welcoming to foreign visitors, and especially helpful with travel arrangements, accommodation and everyday living; be prepared for the fact that many restaurants do not have a word of English on their menus.

There were about three separate programmes going on simultaneously in

August 2000 and many visitors from USA and Europe were continually passing through. There was a distinctly enthusiastic atmosphere.

Beijing is a splendid place to visit, though the summer can be very hot. The Great Wall is less than 2 hours away by road and on the way you can visit the Ming Tombs; the extravagant Summer Palace is in the North-West not far from Morningside; Mao's Mausoleum and the fabulous Forbidden City are in the centre at Tiananmen, which is an huge public square full of families, tourists, costermongers, bands and kite-flyers.

IAN N. SNEDDON

Professor Ian N. Sneddon, FRS, FRSE, who was elected a member of the London Mathematical Society on 14 December 1950, died on 4 November 2000, aged 80.

TERENCE E. STANLEY

Dr Terence E. Stanley, who was elected a member of the London Mathematical Society on 16 April 1970, died on 15 October 2000, aged 57.

BANACH ALGEBRAS AND COHOMOLOGY CONFERENCE

An International Conference on Banach Algebras and Cohomology will be held to mark the outstanding scientific contributions and the retirement of Barry Johnson at Newcastle University from 25-28 June 2001. The conference is supported by the London Mathematical Society. Research students studying at UK universities are encouraged to apply for a contribution towards their expenses. If you are interested in attending the conference, please register your interest by e-mail to ICBACN@ncl.ac.uk or by hardmail to ICBACN, Department of Mathematics, University of Newcastle, Newcastle upon Tyne NE1 7RU. Full details can be found on the web (<http://www.ncl.ac.uk/icbacn/>).

EPSRC DOCTORAL TRAINING ACCOUNTS

Many UK-based members will already know that moves are under way for the EPSRC to change the mechanism by which it finances PhD training, starting from October 2001. I was a member of an EPSRC panel which met in August to discuss whether, and how, the proposed new scheme of Doctoral Training Accounts (DTAs) should operate in the Mathematics Programme. The report of this panel is on the web (http://www.epsrc.ac.uk/documents/programmes/education_training/math/dtarpt.htm).

However, LMS Council at its October meeting felt that members might welcome a summary of and commentary on its contents.

The panel quickly agreed that the Mathematics Programme couldn't opt out of the new scheme if the rest of EPSRC went ahead with it (as seemed almost certain); so most of our discussions focussed on the details of how Doctoral Training Accounts should work as part of the Mathematics Programme. The DTA scheme will involve departments being paid a sum of money, which the department will then use, as it sees fit but within constraints, to finance PhD training. The "constraints" have not yet been determined by EPSRC, but are likely to involve such matters as the maximum and minimum values of a studentship, the number of years for which a studentship can be held, and so on.

The panel spent most time on the question: How will EPSRC decide which departments receive a DTA, and how much will that DTA be? (In other subject areas, the algorithm used will be driven by the total value of EPSRC grants held by the department in the previous n years, with n being somewhere around 5; but the panel and the EPSRC Mathematics Office both agreed that this would be highly unsatisfactory for mathematics.) Instead,

the recommendation of the panel is that:

- (A) in 2001-2002, DTAs should be paid in proportion to the average number of "pool" studentships held in the department over the years 1996-2000;
- (B) from 2003 onwards, DTA allocations to departments will be peer reviewed annually, with the review taking into account (i) student and supervisor quality, (ii) use of DTAs to lever support from other sources of funding, and (iii) EPSRC volume of research activity data;
- (C) some funds (approximately 4 studentships/year) should be kept aside to be bid for annually by departments not currently holding a DTA.

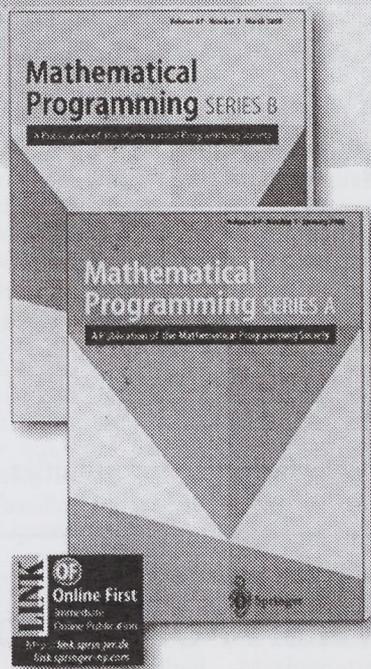
Clearly, the DTA share-out cannot simply be frozen in its initial position - (B) (iii) and (C) represent an initial attempt, which will doubtless need refining, to build change into the structure. Let me add some detail about B (iii). Stripped of the jargon, this means that the panel will take some account of the level of research activity in a department, as indicated by the number of EPSRC Mathematics Programme Research Grants held, compared to the number of research active staff in the department. ("Number of grants" rather than "value of grants", to avoid the swamping effects of single large grants. "EPSRC grants" rather than "all grants", or whatever, because EPSRC needs to use data which it can easily verify.)

The panel's understanding is that, initially, factor (B)(iii) will play a relatively small role. Nevertheless, I think it's important that the community should be aware that this is the direction in which things are moving.

Ken Brown

Mathematical Programming

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Springer

Mary Ewart Junior Research Fellowship in Mathematics and/or Computation

Somerville College invites applications for this fellowship, tenable for three years from October 2001, in the field of Mathematics and/or Computation.

The annual stipend is currently £12,250 (subject to annual review) with free board and residence in college. The holder will also be eligible to join the University's Superannuation Scheme.

Candidates must be graduates in at least their second year of research.

Further particulars may be obtained from the College Secretary, Somerville College, Oxford OX2 6HD (tel: 01865 270619, e-mail: secretariat@somerville.ox.ac.uk).

The closing date for applications is **2 January 2001**.

Somerville College is committed to achieving equal opportunities.

BIRKBECK COLLEGE, UNIVERSITY OF LONDON

CHAIR AVAILABLE

The School of Economics, Mathematics & Statistics wishes to appoint a professor to lead the Mathematics and Statistics group. Candidates should have an established record of research, be willing to develop collaborative work with the Economics group and be able to make a significant contribution to the development and delivery of the mathematics and statistics curriculum. The preferred areas of interest for collaborative work are mathematical finance, game theory and mathematical economics.

Although we prefer to make an appointment at professorial level, a more junior position may be considered. All applicants for such a position should have a PhD in Mathematics or Statistics.

Closing date: **15 January 2001**

For further details contact: Dr Suzanne Evans, School of Economics, Mathematics and Statistics, Birkbeck College, 7-15 Gresse Street, London W1P 2LL, (e-mail: s.evans@bbk.ac.uk, tel: 020 7631 6441).

DEPARTMENTAL NEWS

Heriot-Watt University The following are recent additions to staff: Dr Francis Clarysse, Research Associate (Wetting and interfaces, equilibrium statistical mechanics); Dr Simon Malham, Lecturer (Navier-Stokes analysis and reaction diffusion equations); Dr Kevin Painter, Lecturer (Mathematical modelling in biological and medical systems; pattern formation); Dr Przemyslaw Repetowicz, EC Research Associate (Spin models, quasi-crystals); Dr Marco Rossi, Research Associate (Integrable systems); Dr Bernd Schroers, Lecturer, EPSRC Advanced Fellow (Gauge theory, topological solitons, quantum groups); Dr Armen Shirikyan, Research Associate (Partial differential equations); Dr Richard Szabo, Lecturer, PPARC Advanced Fellow (string theory, noncommutative geometry, K-theory, quantum field theory); Dr Simon Willerton, Research Associate (Quantum and Vassiliev invariants of knots; topological quantum field theories).

2001 BRITISH APPLIED MATHEMATICS COLLOQUIUM

The British Applied Mathematics Colloquium will be held at the University of Reading from 2-5 April 2001. The organising committee are D.J. Needham (Chairman), P. Glaister (Treasurer), P.K. Sweby (IT Coordinator), J.A. Leach and P.G. Chamberlain (Secretaries). The colloquium aims to give a broad coverage of topics in Applied Mathematics, and participants from industry, as well as academic institutions, are welcome.

Invited speakers are:

- D.V. Evans (Bristol, IMA Lighthill Lecture)
- B.J. Hoskins (Reading, Stewartson Lecture)
- R.D. James (Minnesota)
- A.M. Stuart (Warwick)
- A.A. Wheeler (Southampton)

In addition, Minisymposia have been

arranged in the following topics:

- Mathematical Modelling in Meteorology (I. Roulstone, Meteorology Office)
- Adjoint Methods and Data Assimilation (N.K. Nichols, Reading)
- Algorithms for Advection and Shock Problems (M.I. Hubbard, Leeds)
- Surface Tension Effects in Fluid Flows (A.C. King and J. Billingham, Birmingham)
- Spatio-Temporal Dynamics of Reacting and Diffusing Systems (J.H. Merkin, Leeds)
- Elastic Wave Propagation (N.H. Scott, UEA)

Enquiries regarding the Colloquium should be addressed to Mrs B. Calderon, Department of Mathematics, University of Reading, Whiteknights, PO Box 220, Reading RG6 6AX.

SPECIAL ACTIVITY IN ANALYTIC NUMBER THEORY

A Special Activity in Analytic Number Theory will be held at the Max Plank Institute for Mathematics, Bonn from January to June 2002. The activity will focus on the theory of zeta-functions, prime number theory, the circle method, and the distribution of rational points on algebraic varieties. Methods from analytic number theory have brought about dramatic progress in recent years in all these areas, and inter-relationships between them are growing. It is hoped that the session will bring together researchers in these fields so as to foster such work.

The session will culminate in a week long workshop, to be held 24 - 28 June 2002. Those who have already indicated that they expect to attend include Professors Brudern, Friedlander, Granville, Iwaniec, Sarnak, Soundararajan and Wooley. Enquiries may be addressed to the organizers: D.R. Heath-Brown (rhb@maths.ox.ac.uk) or B.Z. Moroz (moroz@mpim-bonn.mpg.de).

EPSRC MATHEMATICS PROGRAMME

INVITATION TO AN OPEN MEETING

on

Wednesday 10 January 2001

at

University College London

2.00 - 4.00 pm

The EPSRC Mathematics Programme is hosting the meeting. The purpose is to:

- Inform the research community of current and future developments in the EPSRC Mathematics Programme, including funding opportunities;
- Seek views and comments on the future direction and shape of the EPSRC Mathematics Programme.

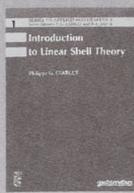
All researchers, especially younger colleagues, with an interest in the EPSRC Mathematics Programme are cordially invited to attend, but numbers are limited and places will be allocated on a first-come-first-served basis. There is no charge and a buffet lunch will be provided from 1pm. EPSRC is prepared to meet the travel costs of one departmental representative. At the close, there will be an opportunity to raise any specific queries with EPSRC staff.

Issues will include: Funding opportunities offered by the Mathematics Programme. Feedback from the annual EPSRC evaluation and review of the Mathematics Programme. Improving collaborative connections with other disciplines and with industry/commerce. Increasing the Programme's portfolio that is interdisciplinary, adventurous or engages commercial/industrial collaborative sponsorship. Improving the attraction and retention of high quality graduates in academe. Suggestions for other issues should be made to the registration contact.

Registration contact: Mrs Barbara Flanagan, EPSRC (tel: 01793-444514; e-mail: Barbara.Flanagan@epsrc.ac.uk) before **18 December 2000**.

SERIES IN APPLIED MATHEMATICS

Series Editors: P. G. Ciarlet and P.-L. Lions

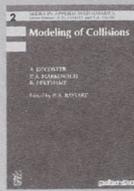


Introduction to Linear Shell Theory

Author: **Philippe G. Ciarlet**

This monograph is a thorough introduction to recent advances in the mathematical theory of linearly elastic shells. First, it provides a complete analysis of the existence and uniqueness of solutions to the two-dimensional linear membrane, flexural, and Koiter's shell equations. Second, it shows how the method of formal asymptotic expansions, with the thickness as the "small" parameter, provides a very effective strategy for justifying the two fundamental classes of membrane and flexural equations of a linearly elastic shell. The treatment is essentially self-contained. In particular, all the needed preliminaries from differential geometry, including a direct proof of the three-dimensional Korn inequality in curvilinear coordinates, are expounded at length.

192 p. - 1998 / ISSN: 1288-3867
 ISBN: paperback 2-84299-059-5/ EU: FF 190 - € 28.97/ ROW: FF 240
 € 36.59/ Americas: US \$ 46
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 € 51.83/ Americas: US \$ 65



Modeling of Collisions

Authors: **Alain Decoster, Peter Markowich, Benoît Perthame**
 Coordinated by: **Pierre-Arnaud Raviart**

The first part of this book, by A. Decoster, recalls how the fluid equations of a collisional plasma are deduced from the Fokker-Planck description of a kinetic plasma. The calculation is extended here to the case of several ionic species, including the different charge states of a single atomic species. The second part, by B. Perthame, introduces the mathematical theory of Boltzmann's equation. The third part, by P. Markowich, studies the quantum hydrodynamic model considered recently in semi-conductor simulation and presents the main mathematical features of this model.

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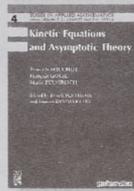


Spectral Methods for Axisymmetric Domains

Authors: **Christine Bernardi, Monique Dauge, Yvon Maday**

This book is devoted to the mathematical and numerical analysis of partial differential equations set in a three-dimensional axisymmetric domain which boundary value problem can be reduced to a countable family of two-dimensional equations, by expanding the data and unknowns in Fourier series, and an infinite-order approximation is obtained by truncating the Fourier series. Due to a specificity of the geometry, an accurate discretization of a three-dimensional equation is obtained by solving a small number of two-dimensional systems, which is very efficient for many real-life problems and should be of great help for engineers.

360 p. - 1998 / ISSN: 1288-3867
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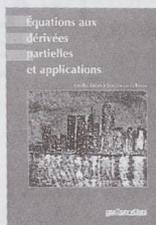


Kinetic Equations and Asymptotic Theory

Authors: **François Bouchut, François Golse, Mario Pulvirenti**
 Editors: **Laurent Desvillettes, Benoît Perthame**

This book reports a series of courses given by F. Bouchut, F. Golse and M. Pulvirenti in a session of the well established "états de la recherche" held by SMF. The goal is to cover the recent mathematical developments of kinetic equations. It contains: (1) the derivation of kinetic equations from systems of interacting particles and from quantum-mechanics, (2) the mathematical existence theory, including averaging, lemmas and regularity proofs, (3) the derivation of various macroscopic limits and fluid equations (Euler, Navier-Stokes, incompressible, acoustic).

176 p. - 2000 / ISSN: 1288-3867
 ISBN: paperback 2-84299-110-9/ EU: FF 190 - € 28.97/ ROW: FF 240
 € 36.59/ Americas: US \$ 41



Partial Differential Equations and Applications (articles dedicated to Jacques-Louis Lions)

This volume is a collection of original research papers at an international level in applied mathematics focused on partial differential equations. It contains papers in many areas of this field of research: existence of solutions, regularity and stability of non-linear, partial differential equations, explosion in finite time, formation of singularities, optimal control and optimization, shape control, sentinels, control theory, interpolation, complexity, mechanics of solids, elasticity, vibration and acoustic problems, homogenization, mechanics of fluids, Euler's equation, Navier-Stokes equations, problems in meteorology, climatology, oceanography, data assimilation, numerical analysis, finite elements, bounds on errors, etc...

These papers, dedicated to Jacques-Louis Lions, Professor at Le Collège de France, are written by his students and close collaborators.

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 Americas: US \$ 141

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Authors: **Rémi Abgrall, Hervé Guillard**

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 ROW: FF 250 - € 38.11/ Americas: US \$ 43

Numerical Methods in Sensitivity Analysis and Shape Optimization

Authors: **Patrick Le Tallec, Emmanuel Laporte**
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LEARNING AND TEACHING SUPPORT NETWORK

Maths, Stats & OR Network Projects in Mathematics

LTSN Maths, Stats & OR Network offers funding for a limited number of projects investigating learning and teaching in mathematics to commence in February 2001. The Network particularly encourages proposals addressing one of the following topics:

Where are we now? - work with the network in producing an analysis of all relevant QAA reports to identify good practice which is capable of dissemination.

Learning through workshops - investigate how higher education mathematics may make best use of workshops, group based learning and similar approaches.

After the Diagnostic Test - what next? - investigate effective and efficient remedial strategies and how they might be integrated with existing diagnostic techniques.

Other well-argued proposals will be considered, but preference will be given to applications that address the topics listed above. Project descriptions will be expected to:

- summarise the aims, timescale and expected outcomes of the project,
- have relevance to a wide cross-section of practitioners in the discipline
- include plans for collaboration with the Network in the dissemination of the results of the project.

A maximum of £5000 is available for any one project. Successful applicants will be notified in January 2001. Applications, on no more than four sides of A4 should be sent to Dr J. Kyle, LTSN Maths, Stats & OR Network, University of Birmingham, Edgbaston, Birmingham B15 2TT (tel: 0121 414 6604, e-mail j.kyle@bham.ac.uk).

THE LTSN MATHS, STATS & OR NETWORK

As part of the Learning and Teaching Support Network (LTSN), established by the UK higher education funding bodies, the new Maths, Stats & OR Network came into existence earlier this year with a brief to serve the learning and teaching of these disciplines and to support the sharing of innovation and good practices in learning and teaching including the use, where appropriate, of technology.

The mathematics base of the Network is located at the University of Birmingham under the direction of Professor J.R. Blake. Pam Bishop, formerly of CTI Mathematics, is the full-time Assistant Director. The Mathematics Coordinator is Dr J. Kyle who is supported by a recently appointed research fellow Chris Sangwin. The work of the Network is overseen by an Advisory Committee on which the major constituencies, including the London Mathematical Society, are represented.

The Network aims to provide an environment for academic staff which will:

- support and enhance academic practice in teaching MSOR
- coordinate networks of MSOR academics
- disseminate innovation and good practice in learning, teaching and assessment

- create a forum for the exchange of information, ideas, philosophies and research findings
- exploit and harness change associated with new technology, integrating this into pedagogic developments

A network of institutional contacts is almost complete and is already providing valuable suggestions for the future work. Two consultants have been appointed to advise on Assessment (Cliff Beevers, Heriot-Watt) and Mathematics Education (Adrian Simpson, Warwick). Three newsletters are published each year and the (evolving) web-site may be found at <http://ltsn.mathstore.ac.uk>. There will be regular regional workshops and it is hoped that activities undertaken under the aegis of the Network will receive formal recognition as appropriate staff development events.

A more formal description of the Network is contained in the "bidding document" which may be found at the address given above. Questions and comments may be sent to j.kyle@bham.ac.uk. In the accompanying advertisement the Network invites proposals for projects in three specific areas which have been suggested from practitioners in the discipline.

WOMEN IN MATHEMATICS COMMITTEE

The LMS Women in Mathematics Committee has been collecting data on the number of women and men attending LMS sponsored conferences for the two years 1998-1999 and 1999-2000.

Year	Number of participants	Percentage female
98/99	602	14%
99/00	1070	15%

The usual female percentage for an individual conference was between 6% and 19%. Two exceptional conferences were Mathematical Modelling in Biology and Medicine with 32% women and The Research Students' Conference in Probability and Statistics with 38% women. The full report has been forwarded to LMS Programme Committee.

ACCELERATION

In March 1999 the DfEE published its report "Excellence in Cities" (EiC), which announced a raft of measures designed to help raise the performance of children in inner city schools. As part of this package, they also listed ideas, which they claimed would improve provision for "the top 10%". This renewed concern for able pupils was welcome. But by August 1999 it became clear that the ideas listed in EiC have a marked impact on the way schools treated those who showed ability in mathematics, and that they had been dreamed up without any piloting, and without discussing them with those who had been working in this area for many years.

Those who then tried to work with the DfEE soon discovered that constructive criticism was constantly rebuffed; instead everything was directed towards spending the available funds (£50 million over 3 years) on unproven (and usually unmonitored) schemes which could be claimed to be "implementing current policy".

By March 2000 it was clear that many of the schemes being pursued (e.g. the requirement that every secondary school should "formally identify" 5-10% of each cohort as "gifted and talented"; the requirement that every participating LEA should accept and achieve targets for "early GCSE entry"; funding for regional centres to prepare 10 and 11 year olds to take GCSE at the end of primary school; so-called "world class" tests to be taken on demand around the ages of 9 and 13; etc.) were likely to undermine rather than enhance the teaching of able young mathematicians. Moreover, the DfEE refused to review its approach.

I therefore sought the support of the LMS and The Royal Society to convene a day-long seminar at the Royal Society in May to check whether there was in fact agreement among the most experienced individuals I could identify from the many groups with an interest in the

question of "serving the needs of the top 10% in school mathematics" (professional associations, mathematicians, mathematics educators, educational psychologists, specialists in working with able children, LEA administrators, Oxbridge admissions tutors, as well as HMIs, QCA and the DfEE).

The result was summarised in the report "Acceleration or enrichment? Serving the needs of the top 10% in school mathematics", copies of which were sent to every mathematics department in the country in early September, and to 500 individuals who were identified as having a significant interest in the issue. The seminar revealed a degree of unanimity which was unprecedented in school mathematics in England. It has met with massive support from all sections of the mathematics education community, and has provided a focus for misgivings in many areas of government.

However, after an initial flurry of apparent concern, the DfEE has apparently reiterated its previous policy - in which "acceleration" (and the associated ill-considered schemes) remains the dominant way of "improving" provision for able youngsters. Those responsible refuse to accept that, though mathematics is a "young man's game", and though pupils are often capable of taking GCSE and A level very early, experience suggests that in most cases there is no long-term advantage in so doing (and that, in the absence of a clear and appropriate programme which answers the question "What next?", there are often positive disadvantages).

We are continuing our attempts to question the current approach, since we judge that it could have a highly negative effect on the next generation of young mathematicians. Members who have not seen the report, or who have relevant comments are encouraged to get in touch with me (A.D.Gardiner@bham.ac.uk).

Tony Gardiner

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London Mathematical Society Lecture Note Series, 275

RECORDS OF PROCEEDINGS AT MEETINGS

ORDINARY MEETING

held on Friday 20 October 2000 at the Cruciform Building, Lecture Theatre 1, University College London. About 84 members and visitors were present for all or part of the meeting.

The meeting began at 3:30 pm, with Professor M.J. TAYLOR, FRS, in the Chair. Twenty people were elected to Ordinary Membership: N.K.R. Al-Jubouri, K.S. Aujla, A.H.J. Deitmar, H.R. Dullin, M. Forester, G.J. Fratus, J. Jedwab, B. Krauskopf, M.K. Mukherjee, M.J. Pelling, K. Rietsch, J.A. Roberts, M. Ruzhansky, C.F. Shoostarian, J.M. Speight, G.M. Stallard, R.P.W. Thomas, G. Weiss, R.A. Weston, E.G. White; four people were elected to Associate Membership: M.R. Dennis, M.D.R. Grasselli, J.H. Hollingworth, C.J. Malcolmson; and seven people were elected to Reciprocity Membership: B. Cain, F. Ghahramani, E.E. Granirer, N.G. Karydas (all of the Amer. Math. Soc.), B.F. Gramsch (Deutsche Math.-Verein.) M. de Gosson, C.P.Y.E. Leruste (both of the Soc. Math. de France).

The following lecture was given: S.W. Hawking, FRS 'Euclidean quantum gravity'.

After tea, three people signed the book and were admitted to the Society.

G.W. Gibbons, FRS, gave a lecture on 'The Neumann and Dirichlet problems for the Einstein equations'.

SOUTH WEST PROBABILITY AND ANALYSIS SEMINAR

The South West Probability and Analysis Seminar will be held at the School of Mathematics, University of Bristol on Tuesday 19 December at 4.00 pm. The speaker will be Professor F. den Hollander (Eurandom, Eindhoven) "Homogeneous nucleation for Kawasaki dynamics". The meeting has financial support from the London Mathematical Society and BRIMS Hewlett-Packard. Further details and abstracts can be found on the web (<http://www.maths.bris.ac.uk/~pure/s-wprob>).

WINTER COMBINATORICS MEETING

A one-day Open University Winter Combinatorics Meeting will be held at the Open University on Wednesday 24 January 2001.

The day will focus on Design Theory. The speakers will be:

- Lowell Beineke (Purdue University, USA - visiting Oxford) *Graph Decompositions with Design Connections*
- Jean Doyen (Université Libre de Bruxelles, Belgium) *Homogeneous and Ultrahomogeneous Combinatorial Structures*
- Donald Preece (Queen Mary and Westfield College, and University of Kent at Canterbury) *Balanced Graeco-Latin Row-Column Designs - An Update*
- Alex Rosa (McMaster University, Canada) *Specialized Colourings of Steiner Systems*
- Ian Wanless (Oxford University) *Cycles in Latin Squares*

The meeting is supported by the London Mathematical Society. Further details can be found on the web (<http://mcs.open.ac.uk/PureMaths/Combin>).



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DEPARTMENT OF MATHEMATICS

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Applicants are expected to have an outstanding research record in a broad area of pure mathematics with a proven grant history and track record in attracting PhD students. The successful candidate will:

- raise the international profile of the department in pure mathematics.
- attract PhD and honours students and external funding.
- provide strong leadership in teaching and research within the department and help set the vision for the pure mathematics program.
- support and stimulate interactions across a wide range of areas within mathematics and with other departments. The candidate is expected to have a strong background and experience in teaching.

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Further information may be obtained by contacting the Head, School of Physical Sciences, Professor John Eccleston, on telephone +61-7-3365-3460 or email j.eccleston@sps.uq.edu.au, or the Head, Department of Mathematics, Associate Professor Mark Gould, on telephone +61-7-3365-2424 or email mdg@maths.uq.edu.au. The selection criteria and duty statement are available by contacting Ms Cynthia Matuschka, Department of Mathematics, on telephone +61-7-3365-3277, fax +61-7-3365-1477 or email cbm@maths.uq.edu.au. Alternatively, see the University website <http://www.admin.uq.edu.au/community/vacancy.htm>.

Applications (an original plus four copies) quoting **Reference No. 65900** and including the names and contact details of three referees, should be forwarded to the Personnel Officer, Faculty of Engineering, Physical Sciences and Architecture, The University of Queensland, Brisbane Qld 4072 Australia.

Closing date for applications: 25 January 2001.

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ALGEBRA AND SET THEORY

There will be a one-day meeting on Games and Set Theory on Thursday 4 January at the London Mathematical Society, De Morgan House, 57-58 Russell Square, London WC1, as part of the series "Set Theory and its Neighbours".

The meeting will start at 11 am with the first talk at 11.30. The speakers are:

- Alex Andretta (Turin)
- David Evans (East Anglia)
- Moses Klein (Madison, Wisconsin)
- David Llewellyn-Jones (Birmingham)
- Sabine Koppelberg (FU-Berlin)
- Charles Morgan (East Anglia)

Further information is available on the web (<http://www.ucl.ac.uk/~ucahcjm/stn.html>) or from Charles Morgan (charles.morgan@ucl.ac.uk). It is hoped to keep the meeting fairly relaxed, allowing plenty of opportunity for informal discussion. The organisers are very grateful to the LMS for allowing the use of De Morgan House as a venue, and to the LMS for their financial support.

ICTP MATHEMATICS ACTIVITIES 2001

School on High-Dimensional Manifold Topology (21 May-8 June)

Directors: F.T. Farrell (State University of New York at Binghamton, USA), W. Lück (Westfälische Wilhelms-Universität, Münster, Germany). Deadline for requesting participation: 31 December 2000. Further details available by e-mail (smr1312@ictp.trieste.it).

School on Dynamical Systems (30 July-17 August)

Directors: J. Palis (IMPA, Rio de Janeiro, Brazil), Y. Sinai (Princeton University & Landau Institute, Russia), M. Viana (IMPA, Rio de Janeiro, Brazil), J.C. Yoccoz (Collège de France, Paris, France). Deadline for requesting participation: 28 February 2001. Further details available by e-mail (smr1321@ictp.trieste.it).

School on Control Theory (3-21 September)

Directors: A. Agrachev (SISSA, Trieste, & Steklov Mathematical Institute, Moscow, Russia), C. Lobry (CIMPA, Nice, France). Deadline for requesting participation: 31 March 2001. Further details available by e-mail (smr1327@ictp.trieste.it).

For further information contact Ms Sharon Laurenti, Mathematics Section, The Abdus Salam International Centre for Theoretical Physics, Strada Costiera 11, I-34014 Trieste, Italy (tel.: +39 - 040 - 2240272, fax.: +39 - 040 - 2240490, web: http://www.ictp.trieste.it/www_users/math/).

EDITORS' NOTE

This Newsletter contains an advertisement for a post at the King Fahd University of Petroleum and Minerals. The Dean of the Faculty has informed us that this University comprises male students only, and that the post is therefore only for men. There are other universities in Saudi Arabia employing women, and the Dean will be glad to refer enquiries from women to them.



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GREAT LAKES GEOMETRY CONFERENCE 2001

The Great Lakes Geometry Conference 2001 will take place at Northwestern University, Evanston, Illinois, USA from 28-29 April 2001. The speakers include: E. Witten (IAS and Caltech), M. Hopkins (MIT), M. Marino (Rutgers), Y. Oh (Madison), R. Thomas (Imperial College, London and Oxford) and G. Tian (MIT). For more information e-mail Ezra Getzler (getzler@math.Northwestern.edu) or Eric Zaslow (zaslow@math.Northwestern.edu) or visit the conference web site (<http://athos.math.nwu.edu/GL2K1>).

POSTGRADUATE GROUP THEORY CONFERENCE

The 3rd Postgraduate Group Theory Conference will be held at Imperial College from 18-20 April 2001. The conference is aimed at UK (and European) postgraduate students who are currently working towards obtaining a PhD in mathematics in an area that has some connection to group theory. It is meant to bring students together in a friendly atmosphere, and participants are encouraged to give a talk. The invited guest speakers are Professor Roger Carter (Warwick) and Professor Dan Segal (Oxford). For further information visit the homepage (<http://www.ma.ic.ac.uk/~jtf98/pggtc2001/>) or contact the organisers: Jason Fairley (jason.fairley@ic.ac.uk) and Alain Reuter (alain.reuter@ic.ac.uk).

MATHEMATICAL POPULATION DYNAMICS

The 6th International Conference on Mathematical Population Dynamics will take place in Marrakech on 3-8 June 2001. The purpose of the conference is to serve as an interdisciplinary meeting where biologists and mathematicians discuss issues of mutual interest. Research papers on different aspects of population dynamics are solicited from researchers in a very wide range of areas in biology and applied mathematics.

Examples of themes are Cell and Molecular Biology, Mathematical Ecology, Molecular Population Genetics, Epidemiology and Theory of Epidemics, Mathematical Methods of Population Dynamics, Control Theory, Public Health Issues, Urban Dynamics, Mathematical Demography, Stochastic Models, Biostatistics and Bioinformatics and Spatial Dynamics.

The organizing committee are: M. Alexandersson (Berkeley) O. Arino (Paris) E. Aitdads (Marrakech) H. Bouslous (Marrakech) R. Bravo de la Parra (Alcala) H. Hbid (Marrakech) M. Khaladi (Marrakech) B. Kimmel (Houston) U. Olofsson (Göteborg) Z. Taib (Göteborg) M. Yahiaoui (Rabat).

The deadline for pre-registration is 15 January and submission of abstracts is 30 January. More information on the conference can be found on the web (<http://www.math.chalmers.se/~ziad/popdyn/Mpd6/index.html>) or by contacting the scientific secretaries (mpd6@math.chalmers.se).

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The Newsletter appears at the beginning of each month (except August), and copy should reach the Administrator at De Morgan House, 57-58 Russell Square, London WC1B 4HP (e-mail: lms@lms.ac.uk) by the beginning of the month prior to publication. The advertisement will also appear in the LMS website.

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ASTÉRISQUE

* Séminaire Bourbaki, Volume 1998/99, exposés 850-864 (266)

* Métriques d'Einstein asymptotiquement symétriques, *O. Biquard* (265)

* Rings of Separated Power Series and Quasi-Affinoid Geometry, *L. Lipshitz, Z. Robinson* (264)

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* Propagation of singularities in three-body scattering, *A. Vasy* (262)

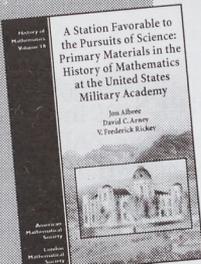
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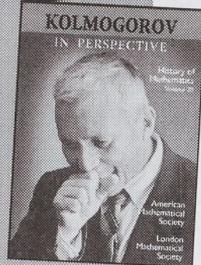
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Volume 18; 2000; 272 pages; Hardcover; ISBN 0-8218-2059-1; List \$59; Individual member \$35; Order code HMATH/18LMS

NEW!

Kolmogorov in Perspective

The editorial board for the History of Mathematics series has selected for this volume a series of translations from two Russian publications, *Kolmogorov in Remembrance* and *Mathematics and its Historical Development*. This book, *Kolmogorov in Perspective*, includes articles written by Kolmogorov's students and colleagues and his personal accounts of shared experiences and lifelong mathematical friendships. Specifically, the article, "Andrei Nikolaevich Kolmogorov. A Biographical Sketch of His Life and Creative Paths" by A. N. Shiryaev, gives an excellent personal and scientific biography of Kolmogorov. The volume also includes the following articles: "On A. N. Kolmogorov" by V. I. Arnold, "In Memory of A. N. Kolmogorov" by S. M. Nikol'skii, "Remembrances of A. N. Kolmogorov" by Ya. G. Sinai, "The Influence of Andrei Nikolaevich Kolmogorov on My Life" by P. L. Ul'yanov, "A Few Words on A. N. Kolmogorov" by P. S. Aleksandrov, "Memories of P. S. Aleksandrov" by A. N. Kolmogorov, "Newton and Contemporary Mathematical Thought" by A. N. Kolmogorov, and an extensive bibliography with the complete list of Kolmogorov's works—including the articles written for encyclopedias and newspapers. The book is illustrated with photographs and includes quotations from Kolmogorov's letters and conversations, uniquely reflecting his mathematical tastes and opinions.

Volume 20; 2000; 230 pages; Hardcover; ISBN 0-8218-0872-9; List \$49; All AMS members \$39; Order code HMATH/20LMS

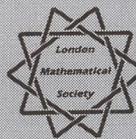
The [United States] Military Academy today contains an impressive collection of valuable resources for historians of mathematics. This book is a lovingly-prepared catalog of the materials at the USMA library that would be of interest to historians. This useful resource for historians would make a great addition to any mathematics library.

—MAA Online

This book reveals the rich collection of mathematical works located at the nation's first military school, the U.S. Military Academy at West Point. It outlines the relevant history of the Academy, discusses the mathematics department and curriculum, and describes the development of the library during the nineteenth century. A major part of this book is an annotated catalog of the more than 1300 works published between 1496 and 1915 found in the West Point library.

Mathematics and its instruction greatly influenced the development of the Academy, the technological growth of America's army, and the standards of the military profession. These events, in turn, were crucial to the overall development of mathematics, mechanics, and engineering during the nineteenth century in the United States. Three individuals played a prominent role in this chronicle: Sylvanus Thayer, Charles Davies, and Albert Church.

Listed are rare and historically valuable works in a broad range of mathematical subjects. The collection clearly shows the strong European influence on the early Academy. Also listed are numerous textbooks by West Point faculty and graduates; significant contributions were made by these



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AMS and LMS members may order through Oxford University Press and receive their member discounts off of the UK pound price; fax +44 (0) 1865 267782 or email at science.books@oup.co.uk. Or go to www.oup.co.uk/ for more information.

ICMS July 2001 Meetings

PROGRESS IN PARTIAL DIFFERENTIAL EQUATIONS Edinburgh, 9-13 July 2001

Scientific Committee:

J.M. Ball (Oxford), A. Grigoryan (Imperial College), S. Kuksin (Heriot-Watt)

Key speakers will include:

A. Bressan (Trieste), L. Caffarelli (Texas at Austin), J. Cheeger (Courant), Em. Grenier (Lyon), M. Gromov (IHES), C. Kenig (Chicago), V.A. Kondratiev (Moscow), N. Krylov (Minneapolis), A. Kupiainen (Helsinki), P.-L. Lions (Paris), S. Müller (Leipzig), N. Nadirashvili (Chicago), F. Otto (Bonn), V. Šverák (Minneapolis), N. Trudinger (Canberra), M.I. Vishik (Moscow), S.T. Yau (Harvard)

Further details, including an application form, can be found on the home pages:
<http://www.ma.hw.ac.uk/icms/current/progpde/index.html>

The meeting is supported by the EPSRC and The European Commission (Framework V)

2nd WORKSHOP IN ALGEBRAIC GRAPH THEORY Edinburgh, 9-13 July 2001

Scientific Committee: D. Cvetkovic (Belgrade), W. Haemers (Tilburg), P. Rowlinson (Stirling)

Key Speakers: N.L. Biggs (London School of Economics), P.J. Cameron (Queen Mary & Westfield College, London), D. Cvetkovic (Belgrade), P.W. Fowler (University of Exeter), M.A. Fiol (Barcelona), W. Haemers (Tilburg), P. Hansen (Montreal), B. Mohar (Ljubljana), B. Shader (Wyoming).

The general theme is the geometric representation of graphs and on this occasion the chosen area of application is discrete mathematical chemistry. The main topics are seen as the new fullerenes, eigenspace techniques, generalizations from distance-regular graphs, and topological considerations.

Further information, including an application form, can be found on the meeting web pages <http://www.ma.hw.ac.uk/icms/current/graph/index.html>

The meeting is supported by The European Commission (Framework V), the London Mathematical Society and the British Combinatorial Committee.

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MATHEMATICIANS VISITING THE UK IN 2000/2001

ABERDEEN UNIVERSITY

- Castellana, N. (Autonowa, Barcelona) Algebraic Topology, Jan '00 - Jan '01
Coley, A. (Halifax) Relativity, Spring '01
Deligiannis, A. (Louvain-la-Neuve) Algebraic Topology, Oct '00 - Sep '01
Iwase, N. (Kyushu) Algebraic Topology, Jul '01
Nishimura, O. (Kyoto University) Algebraic Topology, Aug '00 - Mar '01
Scott, J. (Toronto) Algebraic Topology, Sep '00 - Jul '02
Tsalidis, S. (Strasburg) Algebraic Topology, Sep '00 - Aug '02
Tsukuda, S. (Ryukus University, Okinawa) Algebraic Topology, Dec '00 - 3-6 months
Vaz, E. (Braga) Relativity, Spring '01

BIRMINGHAM UNIVERSITY

- Ashurov, R.R. (Tashkent State University, Uzbekistan) Ordinary & Partial Differential Equations, Differential Operators, Spectral Theory, 15 Nov - 15 Dec '00
Grigorchuk, R.I. (Steklov Institute, Moscow) Group Theory, Jan - Mar '01
Zeng, J. (Xiamen University, China) Group Representation Theory, Nov '00 - Oct '01

CAMBRIDGE UNIVERSITY (DAMTP)

- Gannon, T. (York University, Ontario, Canada) High Energy Particle Physics, 1 Jan - 31 March '01
Konno, H. (Japan) High Energy Particle Physics, 1 April '01 - 31 March '02

CAMBRIDGE UNIVERSITY(DPMMS)

- Gasparim, E. (Federal University of Pernambuco, Brazil) Algebraic Geometry, 15 May - 25 Jun '01
Greenberg, R. (University of Washington) Number Theory, 18 Aug '00 - 31 Jan '01
Haran, S. (Technion, Haifa) Number Theory, 15 Sep '00 - 31 Jan '01
Tropp, H. (Humbolt State University, CA) History of Computer Science, Oct - Dec '00
Wright, P.M. (Austin) Number Theory, 1 Sep '00 - 31 Aug '01
Zucconi, F. (University of Udine, Italy) Geometry, 1 Sep '00 - 30 Jun '01

EDINBURGH UNIVERSITY

- D'Aquino, P. (University of Naples) Mathematical Logic, 21 Aug - 22 Dec '00
Kaiser, B. (Gustavus Adelpi College, Minnesota, USA) Computational Analysis, 24 July '00 - 30 Jun '01
Kaplan, K. (Harvard, Boston, USA) Mathematics Author, 26 Jun '00 - 24 Sep '01
Knight, K. (Gustavus Adelpi College, Minnesota, USA) Computational Algebra, 24 Jul '00 - 30 Jun '01

ESSEX UNIVERSITY

- Tsuji, M. (Kansai University) Computational Statistics, Sep '00 - Aug '01

EXETER UNIVERSITY

- Hoffman, W. (Humboldt University, Berlin) Langlands Programme, 20 Feb - 20 Mar '01.

HERIOT-WATT UNIVERSITY

- Metaftsis, M. (University of the Aegean) Geometric Group Theory, 1 Jan - 28 Feb '01
Rougemont, J. (University of Geneva) Partial Differential Equations in Mathematical

Physics, 1 Sep '00 - 31 Aug '01

HULL UNIVERSITY

Tamaru, H. (Sophia University, Tokyo, Japan) Differential Geometry, Mar '00 - Feb '01

IMPERIAL COLLEGE, LONDON

Cohen, P. (University of Massachusetts, Amherst, USA) Statistics/Computer Science, 1 Apr '00 - 31 Mar '01

Lee, Y. (Seoul National University, Korea) Statistics, Sep - Dec '00

Oguri, A. (Osaka City University, Japan) Mathematical Physics, 1 Jul '00 - 15 Apr '01

Sugimoto, M. (Osaka University, Japan) Pure Mathematics, Mar - Nov '01

KEELE UNIVERSITY

Yiping, L. (Kunming University of Science & Technology) Nonlinear Systems, Jan - Dec '01

KINGS COLLEGE, LONDON

Nunes, A.E.R. (Universidad Simon Bolivar) Theoretical Physics, 1 Nov '00 - 31 Jul '01

Uezu, T. (Nara Women's University, Japan) Neural Nets, 1 Oct '00 - 31 May '01

KINGSTON UNIVERSITY

Shafer, D.S. (University of North Carolina at Charlotte, USA) Smooth Dynamical Systems, Sep '00 - Jun '01

LANCASTER UNIVERSITY

Cao, G. (Sichuan University), Operator Theory, 1 Nov '00 - 1 Feb '01

LEICESTER UNIVERSITY

Dogan, A. (Nigde University, Turkey) Partial Differential Equations, Dec '00 - Jun '01

Sanada, K. (Science University, Tokyo, Japan) Hochschild Cohomology, Sep '00 - Mar '01

LIVERPOOL UNIVERSITY

Beltrami, E. (University of Pisa) Knot Theory, Oct - 31 Dec '00

Kolmanovskii, V. (Moscow) Control Theory, Nov-Dec '00

Manchon, P.M.G. (Individual Marie Curie grant from EU) Knot Theory & Invariants of Manifolds, 1 Apr '00 - 31 Mar '01

Mercat, V. (Paris 7) Algebraic Geometry, 1 Dec '00 - 30 May '02

Pei, W-D. (Tian-jin, China) Parallel Computing, Jan - Dec '01

Russo, B. (Trento) Algebraic Geometry, Feb - Jul '01

LONDON SCHOOL OF ECONOMICS

Beck, A. (University of Wisconsin, USA) Search Games, Functional Analysis, Jan - May '01

Pastor, G. (ITAM, Mexico) Game Theory, Algebraic Topology, Sep '00 - Feb '01

MANCHESTER UNIVERSITY

Panov, T. (Moscow State University) Algebraic Topology & Combinatorics, Feb '01 - Jan '02

Rhian, F. (Egypt) Numerical Modelling, Oct '00

NEWCASTLE UPON TYNE UNIVERSITY

Ramollo, M.P. (National University of Lesotho) Propagation of Nonlinear Waves, 3 Oct '00 - 30 Sep '01

NOTTINGHAM UNIVERSITY

El-Sheikh, M.M.A. (Menoufia University) Differential Equations, Jul '00 - Jan '01

McKaay, M. (University of the Algarve) Quantum Topology, 1 Sep '00 - 31 Aug '02

Zhukov, I. (St Petersburg State University) Number Theory, Jan - Feb '01

OXFORD UNIVERSITY

Albrechtsen, B. (Umea, Sweden) Mathematical Ecology, 1 Oct '00 - 30 Jun '01

Beineke, L. (Indiana University) Combinatorial Theory, 1 Aug '00 - 1 Jul '01

Engl, H. (Austria) Inverse Problems, 1 Jan - 31 Jul '01

Farley, J. (Vanderbilt University) Algebra/Combinatorics, 1 Sep '01 - 31 Aug '02

Hille, L. (University of Hamburg) Representation Theory, 15 Sep - 15 Dec '00

Ito, M. (Kochi University, Japan) General Topology, 1 May '01 - 1 Mar '02

Kumagai, T. (Kyoto University) Probability Theory, 1 Aug '00 - 1 Mar '02

MacKay, M. (McGill University, Canada) Applied Mathematics, 1 Jan - 1 Jun '01

Penderson, H. (Odense University, Denmark) Geometry, 1 Aug '00 - 31 Jul '01

Roulson, M. (Pembroke JRF) Nonlinear Systems, 31 Jan '00 - 30 Sep '01

Ruffino, P.R. (Brazil) Stochastic Geometry, 1 Oct - 30 Dec '00

Smith, N. (University of Auckland) Mathematical Physiology, 1 Apr '00 - 1 Sep '01

QUEEN MARY & WESTFIELD COLLEGE, LONDON

Alejandro, P. (University of the Philippines) Pure Mathematics, 26 Aug '00 - 31 Aug '01

Brien, C.J. (University of South Australia) Statistics, 22 Jan - 9 Mar '01

Bueno-Filho, J.S.S. (Un. Federal de Lavras, Brazil) Statistics, 1 Jan - 31 Mar '01

Diaconis, P. (Stanford University) Group Theory, Combinatorics, Harmonic Analysis, Probability & Statistics, May - 31 Aug '01

Ellis, G. (University of Cape Town) Relativity & Cosmology, Sep '00 - Jul '01

Katori, M. (University of Japan) Applied Mathematics, Apr - 31 Aug '01

SOUTHAMPTON UNIVERSITY

Badescu, V. (Polytechnic University of Bucharest, Romania) Applied Mathematics, 1 Feb - 30 Mar '01

Braun, R. (University of Delaware, USA) Applied Mathematics, 1 Jul '01 - 30 Jun '02

Fuertes, Y. (Universidad Autonoma de Madrid, Spain) Pure Mathematics, 30 Sep '00 - 30 Sep '01

Karazhanov, S.Z.R. (Physical Technical Institute, Uzbekistan) Applied Mathematics, 1 Nov '00 - 28 Feb '01

McGuinness, M. (Victoria University, New Zealand) Applied Mathematics, 1 Jul - 31 Oct '01

Tang, L. (Northeastern University, China) Operational Research, 16 Oct '00 - 16 Sep '01

Vieira, I. (Federal University of Bahia, Brazil) Operational Research, 1 Oct '00 - 30 Sep '01

ST ANDREWS UNIVERSITY

Doostie, H. (University for Teacher Education, Tehran, Iran) Group Theory, Sep '00 - Feb '01

Hirata, K. (Doshisha University, Japan) Fluid Mechanics, 1 Aug '00 - 31 Jul '01

STRATHCLYDE UNIVERSITY

Wenshaw, D. (North West Normal University, Lanzhou, China) Fluid Mechanics, Solitons, 20 Jun '00 - 20 Jun '01

SUSSEX UNIVERSITY

Vignesvaran, R. (Eastern University, Sri Lanka) Numerical Analysis, Runge Kutta Methods, 1 Oct '00 - 31 Sep '01

UNIVERSITY COLLEGE LONDON

Amaya, E.M. (University of Cuernacava, Mexico) Convexity, 31 Dec '00 - 1 Jan '01
Farrow, D. (Murdoch University, Australia) Geophysical Fluid Dynamics, 30 Sep - 31 Dec '00

Norihide, T. (Ryukyu University, Okinawa) Combinatorics, 30 Sep - 30 Nov '00

UNIVERSITY OF WALES, SWANSEA

Freidlin, M. (University of Maryland, USA) Random Perturbations of Hamiltonian Dynamical Systems, Spring '01

Militaru, G. (University of Bucharest, Romania) Hopf Algebras, 20 Oct - 21 Dec '00

Nillsen, R. (University of Wollongong, Australia) Harmonic & Functional Analysis, 23 Nov '00 - 23 Jan '01



ROYAL COMMISSION FOR THE EXHIBITION OF 1851

RESEARCH FELLOWSHIPS IN SCIENCE, MATHEMATICS OR ENGINEERING

Fellowships are offered to post-Doctoral candidates in any of the physical or biological sciences, in mathematics, in applied science or in any branch of engineering.

Fellowship stipends are £18,000 in 2001, with £19,000 for a second year. There are other financial benefits.

Full details, including an application form which may be downloaded, are available at our website:

www.royalcommission1851.org.uk

The closing date for applications is **2 March 2001**.

LONDON MATHEMATICAL SOCIETY

INVITED LECTURE SERIES

18-23 June 2001

Professor T. GOODWILLIE (Brown University, USA)

CALCULUS OF FUNCTORS

Professor Goodwillie is a leading expert on the interplay between the topology of high dimensional manifolds and the algebra associated with theories such as algebraic K-theory and cyclic homology. While thinking of the relationship between the geometry and the algebra, he conceived his celebrated theory known as "Calculus of functors". In a nutshell, the theory says that one may study functors that arise in topology in a way analogous to the way functions are studied in ordinary differential calculus. This theory, both very general and remarkably powerful, has already had a profound impact on several areas of topology. Aside from applications to algebraic K-theory, it had rather spectacular applications in mainstream homotopy theory and in the study of fundamental spaces of geometric topology.

Professor Goodwillie will deliver two lectures each morning. An associated afternoon programme will be arranged by Drs G. Arone and M. Weiss.

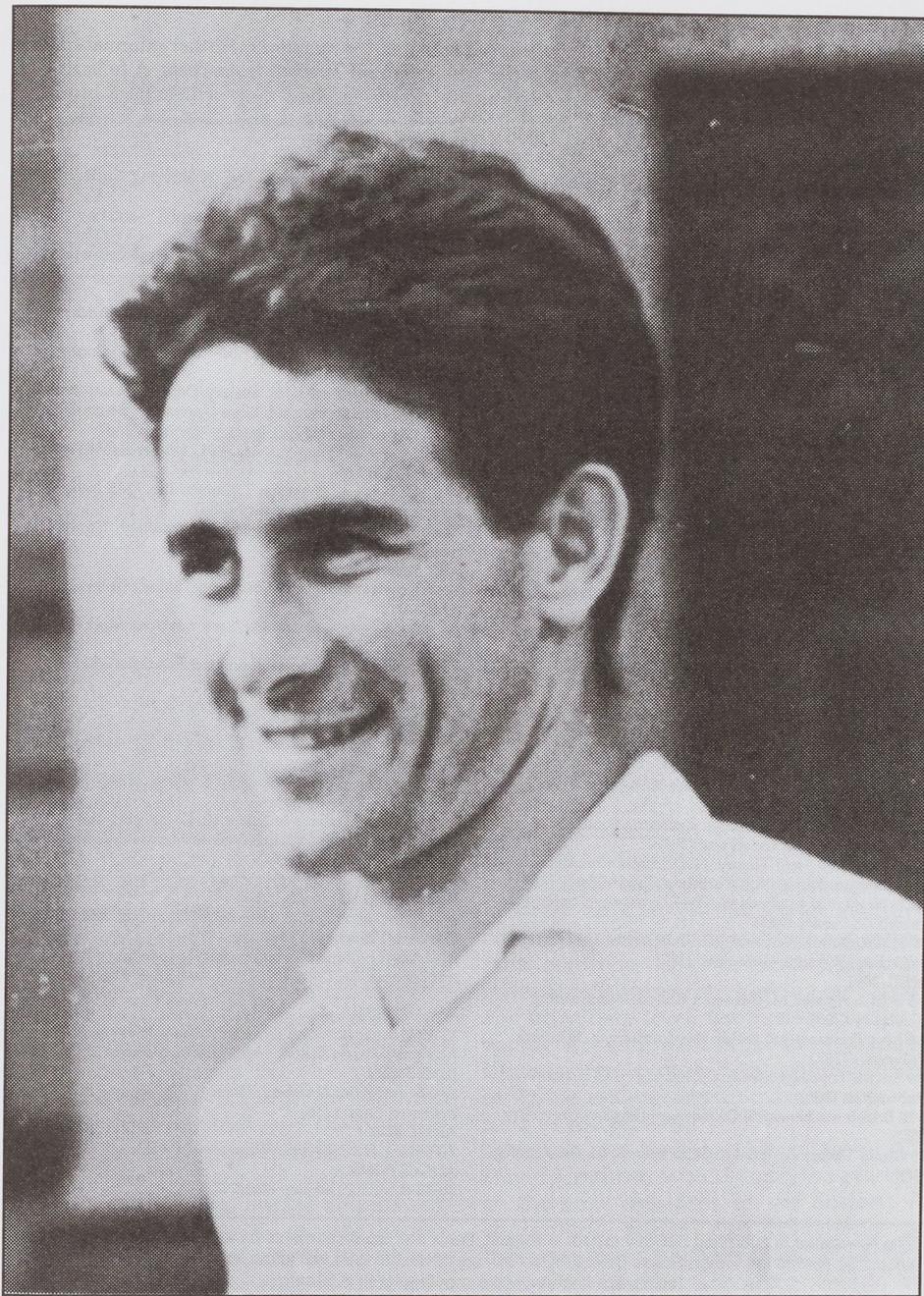
Participants should arrive in Aberdeen on Monday 18 June. The lectures will begin on Tuesday 19 June and end at 12 noon on Saturday 23 June.

Accommodation will be available for the nights of Monday 18 June to Friday 22 June (and Saturday 23 June if requested) in Crombie Hall, King's College, Aberdeen University, Old Aberdeen. The costs are not finalised but in 2000 they would have been: Bed and Breakfast £12.76 per night, Dinner, bed and breakfast £20.85 per night. There will be a registration fee of £30 to cover other costs.

Some financial support is available for those who have difficulty in meeting the expenses, particularly for PhD students and young mathematicians based in the UK. Those requesting this support should tell the organizers as soon as possible and provide an estimate of the amount to be requested.

Those wishing to be put on the mailing list for information, should tell The Organizers, LMS Invited Lectures, Department of Mathematical Sciences, King's College, Aberdeen University, Aberdeen AB24 3UE (lms.lectures@maths.abdn.ac.uk).

Further details will be provided later, and will be posted at
<http://www.maths.abdn.ac.uk/~lmslec/index.html>



V.I. ARNOLD
HONORARY MEMBER 1976

DIARY

The diary lists Society meetings and other events publicized in the *Newsletter*. Further information can be obtained from the appropriate LMS Newsletter whose number is given in brackets. A fuller list of meetings and events is given in the Society's web site (<http://www.lms.ac.uk/meetings/diary.html>).

DECEMBER 2000

- 15 Edinburgh Mathematical Society Meeting, Napier University (285)
- 16-21 Applications of Singularity Theory to Geometry Conference, Liverpool University (283)
- 18-20 Mathematics in Signal Processing, Warwick University (279)
- 18-20 Lie Groups Conference, Twente University, The Netherlands (287)
- 19 South West Probability and Analysis Seminar, Bristol University (288)
- 21 BSHM Christmas Meeting, University College London (287)

JANUARY 2001

- 4 Algebra and Set Theory Meeting, London (288)
- 8-12 Wave Motion LMS/EP SRC Short Course, Birmingham University (285)(286)
- 8-18 Nonlinear Partial Differential Equations ICMS Instructional Conference, ICMS Edinburgh (284)
- 10 British Women in Mathematics Meeting, London (287)
- 10 EP SRC Mathematics Programme - Open Meeting, University College London (288)
- 12 Edinburgh Mathematical Society Meeting, Edinburgh University (285)
- 24 Winter Combinatorics Meeting, Open University (288)

FEBRUARY 2001

- 9 Edinburgh Mathematical Society Meeting, Edinburgh University (285)
- 10 Mary Cartwright Lecture, LMS Meeting, Oxford (287)
- 28 Inaugural LMS Regional Meeting (Midlands), Birmingham

MARCH 2001

- 9 Edinburgh Mathematical Society Meeting, Aberdeen University (285)
- 18-24 Geometric Analysis and Index Theory Conference, Trieste, Italy (286)
- 19-24 Discrete and Continuous Stochastic Evolutions Workshop, Warwick University (287)
- 26-29 Quantum Field Theory, Noncommutative Geometry and Quantum Probability Workshop, Trieste, Italy (286)
- 26-29 Numerical Methods for Fluid Dynamics Conference, Oxford University (286)
- 26-31 Computational Stochastic Differential Equations Workshop, Warwick University (287)

APRIL 2001

- 2-5 British Applied Mathematics Colloquium, Reading University (288)
- 2-6 Lévy Processes and Stable Law Conference, Warwick University (287)
- 7-9 British Topology Meeting, Edinburgh and Heriot-Watt Universities (286)
- 9-12 British Mathematical Colloquium, Glasgow University (287)
- 20 Group Theory Postgraduate Conference, Imperial College (288)

- 28-29 Great Lakes Geometry Conference, Northwestern University, USA (288)

MAY 2001

- 4 Edinburgh Mathematical Society Meeting, Stirling University (285)
- 6-13 Symmetry and Perturbation Theory Workshop (SPT2001), Sardinia (284)
- 28-1 June Harmonic Morphisms and Harmonic Maps Conference, CIRM, Luminy, France (284)

JUNE 2001

- 1 Edinburgh Mathematical Society Meeting, St Andrews University (285)
- 3-8 Mathematical Population Dynamics Conference, Marrakech (288)
- 8-10 Belgian Mathematical Society/Deutsche Mathematiker Vereinigung joint meeting, Liège University, Belgium (284)
- 19-22 Computational Intelligence: Methods and Applications Congress (CIMA 2001) University of Wales, Bangor (283)
- 19-23 Calculus of Functors, T. Goodwillie, LMS Invited Lectures, Aberdeen University (286)
- 25-28 Banach Algebras and Cohomology Conference, Newcastle University (288)

JULY 2001

- 1-6 British Combinatorial Conference, Sussex University (276)
- 4-6 Uncertainty in Geometric Computations MathFIT Workshop, Sheffield University (287)
- 5-7 British Congress of Mathematics Education, Keele University (286)
- 9-13 Stochastic Processes and their Applications Conference, Cambridge (275)
- 9-13 Progress in Partial Differential Equations, ICMS Edinburgh (288)
- 9-13 Algebraic Graph Theory Workshop, ICMS Edinburgh (288)
- 9-20 Modern Methods in Scientific Computing and Applications Seminar, Université de Montréal, Canada (287)
- 15-20 Algorithms for Approximation IV Symposium, Huddersfield University (286)
- 16-27 Stochastic Partial Differential Equations Workshop, Warwick University (287)
- 29-2 Aug Teaching of Mathematical Modelling and Applications (ICTMA 10), Tsinghua University, China (284)

AUGUST 2001

- 12-19 Homological Conjectures for Finite-Dimensional Algebras Summer School, Nordfjordeid, Norway (275)

JUNE 2002

- 24-28 Analytic Number Theory Workshop, Max Plank Institute, Bonn (288)

APRIL 2002

- 7-12 Joint BMC/BAMC, Warwick University

AUGUST 2002

- 20-28 ICM2002, Beijing, China (272)

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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