

THE LONDON MATHEMATICAL SOCIETY NEWSLETTER

No. 257

February 1998

FORTHCOMING SOCIETY MEETINGS

Friday-Saturday 20-21 February 1998 - University of Southampton

Hyperbolic Geometry

Friday-Saturday 22-23 May 1998 - London

Joint meeting with the Irish Mathematical Society

Complex Analysis and Dynamical Systems

Friday 19 June 1998 - London

C. Soulé, J.H. Coates

Friday-Saturday 16-17 October 1998 - London

Harmonic Analysis

PROMISES PREMISES

At an informal Special Meeting of the Council of the Society held in April to consider the future of the Society it was agreed that the time had come for the Society to purchase a building which would be at least large enough to cater for the Society's foreseeable needs. It was estimated that the overall cost of purchasing a suitable property in London, including refurbishment, would be around £1.5m. (A full report of that meeting appeared in the June Newsletter, No.250). In the following Council meeting in May, a sub-committee of Council was set up to look for suitable premises. Members will have read about progress in the monthly LMS Council Diary. By the October Council meeting, the subcommittee reported that a suitable building had been found, namely 57/58 Russell Square, which they could recommend as fulfilling the Society's requirements.

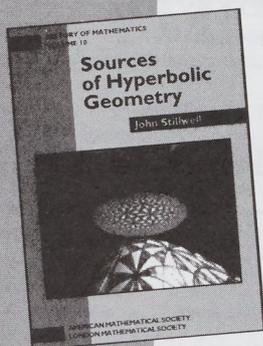
Serious negotiations have proceeded since that time and I am now pleased to announce that in a Special Meeting of the Council held on 18th December,

the Council unanimously agreed that the Society should purchase the 112 year lease on 57/58 Russell Square for the sum of £1.8m. Contracts were exchanged on 16th January 1998 and it is expected that completion would be within three weeks of that date.

The premises are a Grade II listed building which have been refurbished to a very high standard. The Survey Reports confirmed that the property was of very good order both internally and externally. A presentation suite added in 1990 should not only serve as a Council chamber but as a venue for small meetings. The building is twice the size of that originally envisaged thus approximately half of it will be sublet. It is possible that a suitable tenant has been found already.

Members will be informed about the date when the Society's office will move and, of course, will be very welcome to visit our new premises.

Alun O Morris
Treasurer



Sources of Hyperbolic Geometry

John Stillwell, *Monash University,
Clayton, Victoria, Australia*

This book presents, for the first time in English, the papers of Beltrami, Klein, and Poincaré that brought hyperbolic geometry into the mainstream of mathematics. A recognition of Beltrami

comparable to that given the pioneering works of Bolyai and Lobachevsky seems long overdue—not only because Beltrami rescued hyperbolic geometry from oblivion by proving it to be logically consistent, but because he gave it a concrete meaning (a model) that made hyperbolic geometry part of ordinary mathematics.

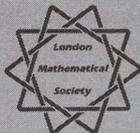
The models subsequently discovered by Klein and Poincaré brought hyperbolic geometry even further down to earth and paved the way for the current explosion of activity in low-dimensional geometry and topology.

By placing the works of these three mathematicians side by side and providing commentaries, this book gives the student, historian, or professional geometer a bird's-eye view of one of the great episodes in mathematics. The unified setting and historical context reveal the insights of Beltrami, Klein, and Poincaré in their full brilliance.

Cover picture reproduced with permission of Dr. Konrad Polthier.

Co-published with the London Mathematical Society. Members of the LMS may order directly from the AMS at the AMS member price. The LMS is registered with the Charity Commissioners.

History of Mathematics, Volume 10; 1996; 153 pages; Hardcover; ISBN 0-8218-0529-0; List \$39; All AMS members \$31; Order code HMATH/10LMS



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LONDON MATHEMATICAL SOCIETY

TWO-DAY MEETING

FRIDAY 20th & SATURDAY 21st FEBRUARY 1998

UNIVERSITY OF SOUTHAMPTON

Hyperbolic Geometry

Friday

1.45-2.45 Alex Lubotzky (Hebrew University, Jerusalem)
*A non-arithmetic super-rigid group; a contra
example to Platonov's conjecture*

2.45-3.15 Tea

3.15-4.15 Yair Minsky (SUNY)
Kleinian length functions and the complex of curves

4.30-5.30 Werner Ballmann (Bonn)
Groups acting isometrically on Hadamard spaces

8.00 Dinner

Saturday

9.00-10.00 Brian Bowditch (Southampton)
Boundaries of hyperbolic groups

10.00-10.30 Coffee

10.30-11.30 Caroline Series (Warwick)
*How to draw quasi-fuchsian space for once
punctured tori*

12.00-13.00 Misha Kapovich (Utah)
Hyperbolic groups with one-dimensional boundaries

All lectures will be in Law Lecture Theatre A,
Nuffield Theatre Complex, Highfield Campus

There will be a dinner on the Friday evening: further details will be available on the web page (<http://www.maths.soton.ac.uk/pure/LMSFeb.html>) or may be obtained from Dr G.A. Niblo, Faculty of Mathematical Studies, University of Southampton, Highfield, Southampton SO17 1BJ (e-mail: gan@maths.soton.ac.uk).

ICTP 1998

The Abdus Salam International Centre for Theoretical Physics, Trieste, has scheduled the following mathematical activities for 1998.

- 31 August - 18 September: Workshop on Dynamical Systems; Directors: J. Palis (IMPA, Rio de Janeiro, Brazil), Y. Sinai (Princeton University, USA and Landau Institute, Moscow, Russia), J.-C. Yoccoz (Collège de France, Paris, France); deadline for requesting participation: 28 February 1998.
- 31 August - 25 September: School on the Mathematics of Economics, a Primer in Economics for Physicists and Mathematicians; Directors: M. Boldrin (Universidad Carlos III, Madrid, Spain), A. Mas-Colell (Universitat Pompeu Fabra, Barcelona, Spain), J. Scheinkman (University of Chicago, Illinois, USA); deadline for requesting participation: 30 April 1998.
- 12 - 30 October: Third School on Non-linear Functional Analysis and Applications to Differential Equations; Directors: A. Ambrosetti (Scuola Normale Superiore, Pisa, Italy), K.-C. Chang (Peking University, Beijing, P.R. China), I. Ekeland (Université de Paris IX, France); deadline for requesting participation: 31 March 1998.

A grant from the European Commission, within the framework of its "Training and Mobility of Researchers" Programme (Euroconferences), will make it possible to provide financial support for young researchers (not older than 35 years) who are nationals of a Member or Associated State of the European Union to participate in the first or third of the conferences listed above. Those interested in applying for such support should obtain and complete a Request for Participation form from the ICTP and return it by the dates for requesting participation specified above.

For further information, please contact Ms Sharon Laurent, Mathematics Section, The Abdus Salam Centre for Theoretical Physics, PO Box 586, I-34100 Trieste, Italy

(tel: +39-(0)40-2240272; fax: +39-(0)40-2240490).

JHC60

A conference to mark the 60th birthday of John Conway will be held at the Newton Institute, Cambridge, on 16th and 17th April 1998. The event will be supported by the London Mathematical Society. There will be about eight lectures, in areas of particular interest to John Conway. The lecturers will include E.R. Berlekamp, R.E. Borcherds, J.W.S. Cassels, B. Fischer, L. Kauffman, N.J.A. Sloane and J.H. Conway. The first lecture will start at 11.15 on the 16th; there will be coffee available from 10.30.

Accommodation for the night of the 16th has been arranged at Selwyn College, at £26.10 bed and breakfast. There will be a special dinner on the 16th at Gonville and Caius College; the cost will be in the region of £35. Those interested in attending the conference should contact Mrs Hughes at the Newton Institute (h.hughes@newton.cam.ac.uk), indicating whether they wish to stay at Selwyn and whether they intend to attend the special dinner. The registration fee will be £15. This will not be charged to research students; there is a limited amount of further support available for research students, and those interested should indicate how much they need in their message to Mrs Hughes. For further information concerning the meeting, contact saxl@pmms.cam.ac.uk or r.t.curtis@bham.ac.uk.

LORD KINGS NORTON

Lord Kings Norton, who was elected a member of the London Mathematical Society on 16 December 1943, died on 21 December 1997, aged 95.

SIR ALEXANDER OPPENHEIM

Sir Alexander Oppenheim, who was elected a member of the London Mathematical Society on 24 April 1924, died on 13 December 1997, aged 94.

LONDON MATHEMATICAL SOCIETY

INVITED LECTURE SERIES 1998

Professor Don Zagier
Max Planck Institute, Bonn

Aspects of $SL(2, \mathbb{Z})$: binary quadratic forms and modular forms

A series of ten lectures on the modular group and related topics will be given by Professor Don Zagier of the Max Planck Institute during the week 20-24 April 1998 in the Department of Mathematics, University of Exeter.

The lectures will be addressed to a wide audience of experts and non-experts, and should be accessible to research students in most areas of Pure Mathematics.

Accommodation Some university accommodation, costing £20.21 per night for bed and breakfast, has been reserved from 19 to 24 April 1998. A smaller number of better rooms with ensuite facilities are also available at £31.06 per night. Lunch (Monday-Friday) and dinner (Sunday-Thursday) are also available at £6.21 and £8.47 respectively. Some financial assistance will be available for postgraduate students at universities in the UK. Prospective participants should register their interest as soon as possible.

Registration Prospective participants are encouraged to register by e-mail or letter to the address below. Early registration would be greatly appreciated by the organizer, and is more likely to secure university accommodation, but later registration is also possible.

Contact address For further details, including financial support, registration and arrangement of accommodation, please contact the organizer Dr J. E. Cremona, preferably by using the online registration form at the web site <http://www.maths.ex.ac.uk/~cremona/lms/>, or by e-mail to cremona@maths.ex.ac.uk, or by writing to him at the Department of Mathematics, University of Exeter, Laver Building, North Park Road, Exeter EX4 4QE. Further information is available from the web site.

ICMP 2000

The International Congress of Mathematical Physics (ICMP) is a prestigious triennial major scientific event. Its participants include world famous scientists, Fields Medalists and Nobel Prize winners. The next ICMP will be organised at Imperial College from 17 to 22 July 2000. Taking into consideration the success of the previous congresses and the fact that the next congress will take place during the millennium year, it is expected that the Congress 2000 will become an event of extraordinary scientific significance. In particular it will provide the opportunity to summarise the major achievements in Mathematics and Physics in the twentieth century and to suggest directions for the forthcoming one.

In addition to the usual programme consisting of plenary and session lectures, there will also be a number of satellite meetings. They include meetings:

- PDEs and Schrodinger Operators (Bristol)
- Statistical Mechanics and related problems of Probability Theory (Cambridge)
- Dynamical Systems (Edinburgh)
- Noncommutative Analysis and related topics (Nottingham)
- Disordered Systems (King's College)
- Integrable Models and Quantum Groups (King's College)
- String Theory and Gravity (QMW College)

Furthermore, recognising the important role played by mathematical physics to the solution of problems of biological and medical significance a special session of the Congress will be devoted to these subjects. Also for the first time there will be special sessions where postgraduate students will have the opportunity to meet directly distinguished scientists. We hope that these meetings will have important inspirational value for the future development of these students. The Congress will be accompanied by an extensive public programme with a number of lectures and meetings organised for the

general public.

The decision to have the Congress in London with the intention of organising it at Imperial College was made by the International Association of Mathematical Physics following a successful proposal submitted by A Grigoryan, C Isham, T W Kibble and Z Zegarlinski (Imperial College), G L Sewell (QMW) and R F Streater (King's College). T W Kibble (Theoretical Physics, IC) and B Zegarlinski (Mathematics, IC) are the Chairmen of the local scientific and of the local organising committee respectively. The local organising committee are grateful to J Ball (President, LMS) for his support. For further information please see: <http://icmp2000.ma.ic.ac.uk/>.

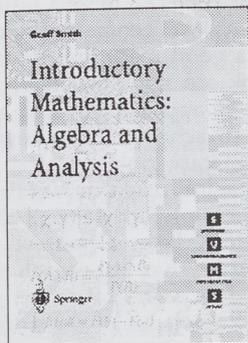
VIDEOMATH FESTIVAL

The International Congress of Mathematicians 1998 (ICM'98) will host "VideoMath", a festival of the most outstanding mathematical videos, to be publicly shown in a full sized theatre at ICM'98 in August 1998 in Berlin. VideoMath is part of the "cultural programme" at ICM'98, and will attract a broad audience: ICM attendees, students, teachers, and the proverbial man-in-the-street with an inclination towards mathematics. Performances are open to the public and will take place during the period of the conference.

Entries for VideoMath are solicited from all areas of mathematical visualization and computer graphics. Submissions should meet the highest standards of mathematical content, visualization techniques, artistic design, and technical quality. An international programme committee will select the best contributions for inclusion in the festival show. A PRIZE of DM 5000 will be awarded to recognize the most outstanding contribution. The deadline for submissions is **3 April 1998**. Detailed information about the festival and the submission process is available at: <http://www-sfb288.math.tu-berlin.de/VideoMath/> or e-mail (video-math@zib.de).

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BOOK REVIEW

Polyhedra by Peter Cromwell. Cambridge University Press, 1997, ISBN 0 521 55432 2, pp 451, £30.00, US\$44.95

Why study polyhedra? This question is the title of one of the chapters of the book *Shaping Space: a Polyhedral Approach*, edited by Marjorie Senechal and George Fleck'. Some of the answers given are that polyhedra are 'incredibly rich in mathematical content', they 'provide introductions to and links among several branches of mathematics', and studying them is interesting and fun. In that case, why do universities not routinely have a mathematics course devoted to polyhedra? Perhaps it is because *polyhedra are difficult*. In fact *anything in three dimensions is difficult* - this is hardly surprising when even two dimensional geometry is unfashionable. Polyhedra are regarded as somehow not quite *de rigeur*.

Peter Cromwell's objective in writing this book was not to devise a university course in polyhedra. He noticed, as I imagine many others have, that information on polyhedra is widely scattered in the literature, and that textbooks either treat the subject superficially as part of a general review of geometry, or rather quickly as a special case of polytopes. Unlike every other person who has noticed this, he decided to fill the gap - not the proverbial much-needed gap, but on the contrary a surprising and rather regrettable one.

So what does he include? The author is careful to point out in his preface that there is nothing here which is really graph theory in disguise - no Hamilton circuits on the dodecahedron, for example, nor Steinitz's theorem on the realisability of a planar, 3-connected graph as the 1-skeleton of a polyhedron. In fact the combinatorial theory of polyhedra is deliberately omitted: the author's motivation is always 'geometric' in the visual sense of describing something concrete in the three-dimensional world. There are some general hints on making polyhedra but this is not a pop-up book nor a 'How to make it' book. There are already

several of those, notably M.J. Wenninger's *Polyhedron Models*'. There are coloured plates of 17 of the author's beautiful models, as well as hundreds of remarkably clear line drawings illustrating polyhedra, and many figures drawn from historical sources.

There is plenty of material to include, and Peter Cromwell has made a really interesting selection. Of course he has done more than merely select; by a great deal of hard work he has made the material accessible to a wide audience. There are parts of the book that will prove invaluable for courses in the history of mathematics (no longer regarded as a second-class subject), or as a resource for group theory or geometry courses, or simply as a good read. Substantial parts of the book are not particularly technical, and will appeal to bright students at school, to schoolteachers and to the general numerate public (rather few of whom, I imagine, read this *Newsletter*).

Let me mention just a few of the many delights which Peter Cromwell offers - adding, hastily, that I approach the book as more or less a general reader with no specialised knowledge of the subject: this is not a review written from an Olympian height by someone who conveys the impression he could have done a better job himself.

The only patent this century for innovation in map making was awarded to Buckminster Fuller who drew the continents on a subdivision of an icosahedron, which was then opened out to a flat map. It is not useful for navigation, since the oceans are largely absent, but countries do have their correct relative sizes.

The ancient Chinese used formulae for the volumes of such figures as truncated pyramids, deriving the formulae only in special cases by dissecting solid figures into small numbers of standard shaped pieces. Eudoxus's method of exhaustion for formal proof of volumes uses dissection into arbitrarily small pieces. This leads into Hilbert's third problem (solved by Max Dehn in 1900) which was to find two polyhedra of equal volume which

are not decomposable into finitely many pairwise congruent pieces. There is a good discussion of the 2-dimensional case where the decomposition *is* possible, and some intriguing Tangram-type illustrations of ingenious decompositions of pairs of regular polygons.

There is a whole chapter on polyhedra in art, containing a brief, but very informative, history of the development of perspective, and another on the extraordinary Kepler, who seemed to believe seriously that the arrangement of the planets in the sky was connected with the existence of five regular 'Platonic' solids, but who also produced (besides his laws of planetary motion) a great deal of good work on polyhedra, such as the star polyhedra where faces do not have to be simple polygons. But his work remained largely unknown for centuries afterwards. Kepler includes in his accounts 'the motivation, the assaults he has tried, the failures and dead-ends, the moment of inspiration, his feelings when success comes, as well as his solution to the problem at hand'. Great material for a television documentary but we may be thankful most scientists spare us these details.

Euler's formula receives a long and detailed treatment - an excellent chapter for a student to read who is preparing a project on this topic. This contains, at about the midway point of the book, a section on the *definition* of a polyhedron. There is also a very interesting discussion of flexibility of polyhedra, going up to the 1995 work of Maksimov showing that all polyhedral spheres with triangular faces and fewer than nine vertices are rigid. Cauchy proved a rigidity theorem in 1813 for convex polyhedra but more than a century later, in the 1930s, Steinitz actually found a defect in the argument, which he filled with a long argument later shortened by others.

Stellations of polyhedra (first studied by Kepler) receive a chapter to themselves and the rest of the book is concerned in one way or another with symmetry, including crystallography and colouring of polyhedra.

Peter Cromwell has done us a great service by writing this handsome, scholarly and beautifully illustrated book.

There is a web page (<http://www.liv.ac.uk/~spmr02/book/>) for this book which contains an errata list including a few replacement pages that can be printed out.

Peter Giblin

Brown University

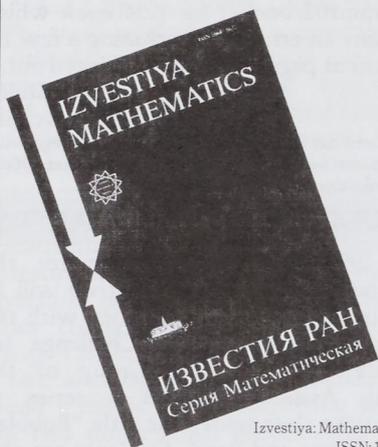
1. Proceedings of a conference at Smith College, Massachusetts in 1984, published by Birkhäuser, 1988.
2. Cambridge University Press, 1971.

STUDENT SCIENCE SPEAKERS

The 1998 British Association for the Advancement of Science Festival will be held in Cardiff, 6-11 September, with the general theme of "The Challenge for Science". The Student Group of the British Association runs a series of lunchtime slots under the title "Bubbles, Boomerangs and Beer". Students are able to speak to a general public audience for 15 minutes (including questions) on a topic of their choice. Students who have never had the opportunity to speak to the general public before are particularly welcome. If you know students who might like to give such a talk, please encourage them to contact Gareth Leyshon (g.leyshon@astro.cf.ac.uk; tel: 01222 874000 x 5107) as soon as possible.

1998 BCAT

The Barcelona Conferences on Algebraic Topology (BCAT) series started in 1982, organized by the Centre de Recerca Matemàtica (CRM). The 1998 BCAT will be a Euroconference on Advances in Homotopy Theory to be held in the Faculty of Science of the Universitat Autònoma de Barcelona, 4-10 June 1998. The conference, as a Euroconference, is supported by the European Community. A number of grants can be offered to EC citizens aged 35 or less. The support may contribute towards registration fees, subsistence expenses and travel. Applications should be made to the CRM before 15 March 1998. Further information and an application form can be obtained from the BCAT web site (<http://mat.uab.es/bcat98>).



Izvestiya: Mathematics Vol 62
ISSN: 1064-5632

Izvestiya: Mathematics

Izvestiya: Mathematics is the English edition of the Russian bi-monthly journal **Izvestiya Rossiiskoi Akademii Nauk, Seriya Matematicheskaya**, founded in 1937.

Since the beginning of 1995

Izvestiya: Mathematics has been published in London jointly by the London Mathematical Society, Turpion Ltd, and the Russian Academy of Sciences.

The journal publishes only original research papers containing the final results of the author in his/her direction of study.

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WORKSHOP ON RANDOM SETS AND THEIR APPLICATIONS

30th March - 4th April 1998

ICMS, 14 India Street, Edinburgh EH3 6EZ

Scientific Committee: I. Molchanov, D. Stoyan, D.M. Titterton

The workshop will bring together mathematicians and statisticians from diverse areas that are related to the theory of random sets and their applications, in particular to image analysis. The general objectives of the workshop are:

- To discuss problems of statistical and mathematical interest within the scope of research on random sets.
- To develop interdisciplinary links and establish new connections between different areas that use concepts of random set theory.
- To enhance collaborative research by bringing together participants from different areas of mathematics, statistics and image analysis.

Main Speakers

Z. Artstein, A. J. Baddeley, E. Dougherty, K. Falconer, Ch. Hess, D. Jeulin, W. S. Kendall, I. Molchanov, H.T. Nguyen, T. Norberg, J. Rataj, D. Stoyan, W. Weil

Information and Registration

For any further information on the workshop or registration, please contact: I. Molchanov, University of Glasgow, Department of Statistics, Glasgow G12 8QW; e-mail: ilya@stats.gla.ac.uk; tel: + 44 141 330 5141; fax: + 44 141 330 4814; <http://www.stats.gla.ac.uk/ilya/>



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Academic enquiries only may be made to Dr Irene Hudson (fax: [64 3] 364 2587; email: statsjob@math.canterbury.ac.nz). Further details will be airmailed on request to email: acad.appts@regy.canterbury.ac.nz. Information about the University may be accessed at <http://www.canterbury.ac.nz>.

The salary for Senior Lecturers is on a scale from NZ\$58,000 to NZ\$66,000 (bar), and NZ\$69,000 to NZ\$73,000, and for Lecturer is on a scale from NZ\$45,000 to NZ\$55,000 per annum.

Further particulars may be obtained from the Association of Commonwealth Universities (46331), 36 Gordon Square, London WC1H 0PF (tel. 0171 387 8572 ext. 206; fax: 0171 383 0368; email: appts@acu.ac.uk). Applications, quoting **Position No. MT76**, close on **27 February 1998**, and must be airmailed to:

**The Registrar, Attention: Staffing Section, University of Canterbury,
Private Bag 4800, Christchurch, New Zealand.**

The University has a policy of equality of opportunity in employment.

CONFERENCE ON TEACHING

An International Conference on the Teaching of Mathematics will be held on 3-6 July 1998 at the Village of Pythagorean, Samos, Greece, hosted and sponsored by the Department of Mathematics, University of the Aegean. The objective of the conference is to examine new ways of teaching undergraduate mathematics. The themes of the conference will be

- Educational Research
- Technology
- Innovative Teaching Formats
- Distance Learning
- Reform on Specific Courses
- Connections with Other Disciplines

The invited speakers are Andrew Gleason (Harvard University), Colette Laborde (Université Joseph Fourier), Stelios Negrepontis (University of Athens), Jan Persens (University of the Western Cape), David Tall (Warwick University), Jerry Uhl (University of Illinois), Bert Waits (Ohio State University), Erich Wittmann (Universität Dortmund). For more information, contact Jane Baldwin, Department of Mathematics & Computer Science, Capital University, Columbus, OH 43209, USA (e-mail: jrbaldwin@capital.edu).

50th BRITISH MATHEMATICAL COLLOQUIUM University of Manchester 6-9 April 1998

Members will have received application forms for this meeting along with the November issue of the Newsletter, which also contains some details of the main programme. The speakers in the Special Session on Mathematical Logic (Tuesday 7 April) are A J Macintyre (Oxford), A Kechris (Caltech), M Boffa (Mons) and D Macpherson (Leeds). The speakers in the Special Session on Dynamical Systems (Wednesday 8 April) are J-C Yoccoz (Paris), S J van Strien (Warwick) and Lai Sang Young (UCLA). The AGM will be held at 7.30 pm on Tuesday 7 April, and will be followed by a discussion forum on

'Electronic Publishing' led by C P Rourke (Warwick). On the evening of Wednesday 8 April, Professor H K Moffatt will give a short presentation on the work of the Newton Institute.

The BMC is supported financially by the London and Edinburgh Mathematical Societies. Research students receive a subsidy as described on the application form. The BMC's www page (<http://www.ma.man.ac.uk/~grant/bmc.html>) can be accessed via the Diary page on the LMS website.

Grant Walker
Secretary

VECTOR BUNDLES AND PRINCIPALLY POLARISED ABELIAN VARIETIES

A workshop will be held at the University of Durham, 30 March - 4 April 1998, on vector bundles over algebraic curves, in particular on the projective geometry of their moduli spaces, and their interplay with the geometry of classical theta functions and principally polarised abelian varieties. Speakers will include B. van Geemen, E. Izadi, H. Lange, S. Ramanan, E. Sernesi, A. Verra. The workshop will be funded by the EU as a TMR Euroconference, and has partial support from the London Mathematical Society. In particular, some financial support will be available for young researchers.

Further information and registration forms are available at: <http://fourier.dur.ac.uk:8000/dma0wmo/vbac/durham98.html> or contact: W.M. Oxbury, Department of Mathematical Sciences, Science Laboratories, University of Durham, South Road, Durham DH1 3LE, e-mail: w.m.oxbury@durham.ac.uk.

1998 BRITISH APPLIED MATHEMATICS COLLOQUIUM

The colloquium, which is also the 40th British Theoretical Mechanics Colloquium, will take place at Brunel University from Monday 6 April until Thursday 9 April. The six invited lecturers and their talks are: Sir James

Lighthill (UCL) A century of shock-wave dynamics, I D Abrahams (Manchester) Fluid-structural interactions in acoustics, R H J Grimshaw (Monash) Interaction of solitary waves in coupled Koreweg-de Vries systems, J R King (Nottingham) Optimal truncation and asymptotics beyond all orders, A N Norris (Rutgers) Surface instabilities in rods and plates under the combined effects of elastic stress, N Riley (UEA) Theoretical mechanics and the Czochralski crystal growth system (Keith Stewartson Memorial Lecture). Besides the contributed lectures, which will run in five parallel sessions, minisymposia will take place within the colloquium on Computational solid mechanics (J R Willis and J Whiteman), Industrial Applied Mathematics (C Robbins and S McKee), Inverse Problems (P Martin and S Chandler-Wilde) and Quantum Chaos (J Marklof). Before the colloquium there will be an ancillary meeting of the UK scattering

theory group (R Tew). A special session will be held on Computer-aided learning (CAL) in applied mathematics (M Greenhow and P Bishop). The IMA will also host a discussion on the future of applied mathematics in the light of the Dearing report and the SARTOR proposals.

The Colloquium and its minisymposia are supported financially by the London Mathematical Society, The Quarterly Journal of Mechanics and Applied Mathematics, The Stewartson Memorial Fund, The Society for Industrial and Applied Mathematics, The Institute of Mathematics and its Applications, Basic Research Institute in the Mathematical Sciences (Hewlett-Packard), The Midland Bank. Further details, including registration forms and instructions for submission of abstracts, may be accessed at: <http://www.brunel.ac.uk/depts/ma/bamc/>. Enquiries can be addressed to: bamc@brunel.ac.uk.



NATIONAL UNIVERSITY OF SINGAPORE

Postdoctoral Research Fellowship in Algebraic Topology and K -Theory

Applications are invited for the above position, tenable for ten months commencing autumn 1998.

The appointee will work with a team (Professor A.J. Berrick - Principal Investigator, Associate Professor Judith Packer and Drs Lee Soo-Teck and Kai Xu) to study problems involving the interaction of algebraic topology, K -theory of rings and group representation theory. The large, active Mathematics Department of NUS offers good opportunity for research.

For further details, please see:

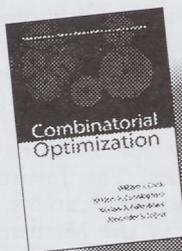
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Review of applications begins on **15 March 1998** and continues until the post is filled.

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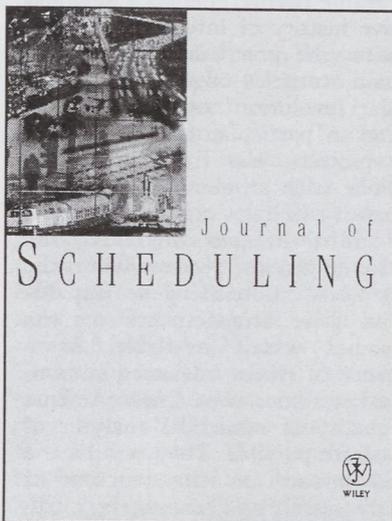
Journal of Scheduling

Editor-in-Chief, **EDMUND BURKE**, University of Nottingham, UK, Editors, **DAVID CORNE**, University of Reading, UK, **MICHAEL PINEDO**, New York University, USA, **STEEF van de VELDE**, Erasmus University, The Netherlands

Publishing in the Summer of 1998, this newly commissioned journal will provide a recognised global forum for the publication of all forms of scheduling-oriented research. The papers will cover the latest advances in scheduling research, such as the latest techniques and approaches, novel approaches to problems, theoretical issues, etc. The journal will publish the highest quality theoretical, experimental, and (predominantly) applied research papers on scheduling problems and their solutions via operational research based, artificial intelligence based, logic based, metaheuristic, or other techniques.

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The journal is essential reading and an invaluable resource for lecturers, researchers and research students involved in scheduling or technique-assessment based research problems, software consultancies and software engineers working with scheduling systems, and for researchers and professionals within large commercial and industrial organisations with scheduling needs.



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ISAAC NEWTON INSTITUTE FOR MATHEMATICAL SCIENCES

BIOMOLECULAR FUNCTION AND EVOLUTION IN THE CONTEXT OF THE GENOME PROJECT July to December 1998. Organizers: P Donnelly (Oxford), W Fitch (Irvine), N Goldman (Cambridge)

Programme theme There is a long and productive history of interplay between genetics on the one hand and mathematics and statistics on the other. The "molecular revolution" over the last 15 years, and in particular the impetus of genome projects, has transformed the field to one with an abundance of data and a paucity of relevant mathematical models and techniques. By 1998, the maturation of genome projects will make data on DNA, proteins, gene duplications and gene arrangements on the chromosomes widely available. As a consequence of recent advances in computational statistics, vast improvements in the quality of statistical analyses of these data are possible. They will have a profound impact on the practice of biological research, and, ultimately, medical diagnostics and preventive medicine. The driving force of the present programme is the opportunity offered by genome sequence research to understand biomolecular function and evolution at a much more complete level than hitherto possible and to sustain recent progress in a number of relevant mathematical areas. Problems in analysing the flood of molecular genetic sequences and structures raise a range of challenging biomathematical research topics. This inter-disciplinary programme will bring together mathematicians and computer scientists working on subjects such as probabilistic modelling, stochastic processes, geometry, statistical data analysis, computational complexity, neural networks, genetic algorithms and expert systems; and molecular biologists working in medical and biological fields.

Workshops

10 - 14 August

EC Summer School: Methods for Molecular Phylogenies

7 - 18 September

NATO ASI: Genes, Fossils and Behaviour: an integrated approach to Human Evolution

5 - 9 October

Viral Evolution

9 - 13 November

Introducing Mathematicians/Statisticians to current problems in Biomolecular Sequence Analysis

14 - 18 December

Genomic Sequence Analysis

In addition to the above workshops, there will be a number of 'theme weeks'. For details please see <http://ng-decl.gen.cam.ac.uk/newton/calendar.html>.

Participation The list of invited participants with their visit dates, updated daily, is available via WWW at <http://www.newton.cam.ac.uk/program/s/bfgtable.html>.

Applications are invited from the mathematical community to participate in the programme; please contact: Dr N Goldman, Department of Genetics, University of Cambridge, Downing Street, Cambridge CB2 3EH (n.goldman@gen.cam.ac.uk).

Further information To subscribe to the e-mail list for the programme, e-mail majordomo@newton.cam.ac.uk with the message 'subscribe bfg-list', leaving the subject field blank. Information about the programme and the Newton Institute is available via WWW at <http://www.newton.cam.ac.uk/programs/bfg.html>.

NONLINEAR AND NONSTATIONARY SIGNAL PROCESSING July to December 1998. Organizers: W J Fitzgerald (Cambridge), R L Smith (University of North Carolina), A Walden (Imperial College, London) and P C Young (Lancaster University)

Programme theme The classical theory of signal processing is based on models which are stationary, linear and in many cases also assume that signals have Gaussian amplitude distributions. In recent years there has been a rapid growth in the applications of signal processing in

many modern areas of engineering, communications and computing, as well as in financial time series, macro-economics, the environmental and biological sciences, physiology, etc; parallel advances in the theory have introduced many new models and methods. Among these are nonlinear autoregressive and state-space models; models with time-varying or state-dependent coefficients as representations of nonstationary and nonlinear series; adaptive methods of forecasting, interpolation and smoothing; linear non-Gaussian methods, and methods derived from the theory of dynamical systems. The purpose of this programme is to bring together statisticians, engineers and other researchers who use signal processing methodology to develop a general framework to unify existing methods, and to identify areas which may benefit from the application of methods developed for other purposes or where new methodology is required.

Workshops

20 - 31 July

Nonlinear and Nonstationary Signal Processing

17 - 22 August

Environmental Signal Processing

31 August - 4 Sept

IEEE Neural Networks and Signal Processing Workshop

21 - 25 September

Dynamics and Statistics

12 - 16 October

Financial Time Series Analysis

7 - 11 December

Data Analysis

Participation The list of invited participants with their visit dates, updated daily, is available via WWW at <http://www.newton.cam.ac.uk/programs/nsptable.html>.

Further information To subscribe to the e-mail list for the programme, e-mail majordomo@newton.cam.ac.uk with the message 'subscribe nsp-list', leaving the subject field blank. For scientific enquiries about the programme please contact: Dr W J Fitzgerald, Engineering Department, University of Cambridge, Trumpington Street, Cambridge CB2 1PZ

(wjf@eng.cam.ac.uk).

Information about the programme and the Newton Institute is available via WWW at <http://www.newton.cam.ac.uk/programs/nsp.html>.

DEPARTMENTAL NEWS

Essex University Dr P.M. Higgins was promoted to Senior Lecturer at the beginning of October.

Heriot-Watt University, Department of Mathematics Robert Weston (Durham) joined the department on 1 January 1998 as a lecturer. John Tracey (Glasgow) started a Teaching Company Associateship to work with Edinburgh Petroleum Services on 1 December 1997. John Dallon (Warwick) joined the department as a Research Assistant on 1 January 1998 and Jose Luis Marin (Zaragoza) takes up a position on 1 March 1998 as an EC research fellow for 2 years.

Southampton University Professor Victor P. Snaith (McMaster University) has been appointed to the vacant Chair in Pure Mathematics. Dr Brian H. Bowditch has been promoted to a Readership.

VISIT OF PROFESSOR S.I. POHOZAEV

Professor S.I. Pohozaev, of the Steklov Mathematical Institute, Russian Academy of Sciences, has been awarded a London Mathematical Society fSU grant to visit the United Kingdom from 2 to 21 February 1998. He is an international expert in the theory of nonlinear evolution equations and in the theory of variational problems. He will be based at the University of Bath. Professor Pohozaev will give his lecture "Positive Solutions of Nonlinear Neumann Problems; Application of the Fiberning Method" at the Mathematical Institute, University of Oxford, 16th February at 5.00 pm. He will visit Heriot-Watt University and Strathclyde University. For further information please contact Professor V. Galaktionov (e-mail: vag@maths.bath.ac.uk) or Professor C. Budd (e-mail: cjb@maths.bath.ac.uk), Department of Mathematical Sciences, University of Bath, Bath BA2 7AY.

EUROPEAN WOMEN IN MATHEMATICS
Workshop on
MODULI SPACES IN MATHEMATICS
AND PHYSICS

Oxford, 2 - 3 July 1998
supported by the London Mathematical Society and
Algebraic Geometry in Europe

The purpose of this interdisciplinary workshop is to explain to non-specialists different uses of moduli spaces in various areas of mathematics and physics such as differential and algebraic geometry, dynamical systems, Yang-Mills theory and conformal field theory, and to facilitate the exchange of ideas between workers in these fields.

This workshop follows the very successful meeting on 'Renormalisation in Mathematics and Physics' organised jointly by EWM and *femmes et mathématiques* in Paris in June 1996. It is hoped that these two will be the start of a biennial series of interdisciplinary workshops.

The workshop will be a small scale two day meeting with about six talks and ample time for discussion. The following have provisionally agreed to speak: Lisa Jeffrey (McGill), Rosa Maria Miro-Roig (Barcelona), Ragni Piene (Oslo), Mary Rees (Liverpool), Claire Voisin (Paris XI) and Frances Kirwan and Tsou Sheung Tsun (Oxford).

Abstracts of the talks should be available at the meeting, and it is hoped that more detailed proceedings of the workshop will be available afterwards.

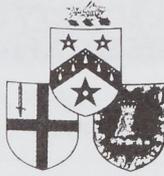
Location Mathematical Institute, Oxford. Accommodation will be organised nearby in Balliol College at a cost of around £20 per night.

A registration fee of £15 will be charged to cover tea, coffee and two sandwich lunches.

Organising committee Frances Kirwan (Oxford), Sylvie Paycha (Clermont-Ferrand), Tsou Sheung Tsun (Oxford).

Please let the organisers know by 1 June 1998 if you would like to take part in the workshop, and which nights you would like accommodation. Financial support will be available for a few participants; please let the organisers know by **1 May 1998** if you would like to be considered for financial support to attend the workshop.

For further information, contact Frances Kirwan (kirwan@maths.ox.ac.uk) or Tsou Sheung Tsun (tsou@maths.ox.ac.uk) Mathematical Institute, 24-29 St Giles, Oxford OX1 3LB.



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APPOINTMENT OF GRESHAM PROFESSOR OF GEOMETRY

The Council of Gresham College invites applications from women and men who wish to be considered for appointment as Gresham Professor in the above discipline, or nominations of candidates of appropriate standing who might be approached. The appointment, which is part-time, will take effect in September 1998.

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Candidates from any area within the mathematical sciences are invited to apply although the College would be especially interested in those involved in biomathematical and related fields. The appointment will be for three years.

The principal obligation for all Professorships is to offer six lectures each year. Opportunities exist for support to be given to research activities in which the Professor is involved. An annual fee of £3,750 (inc VAT) is payable.

Please send for further particulars to
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**Closing date for applications is
Friday 27 February 1998**

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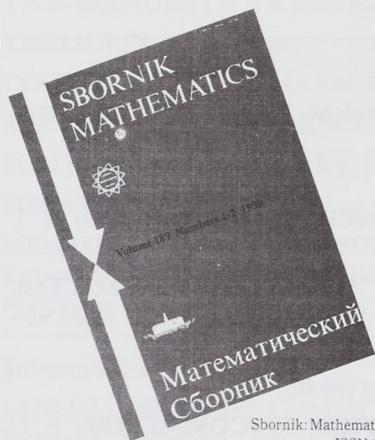
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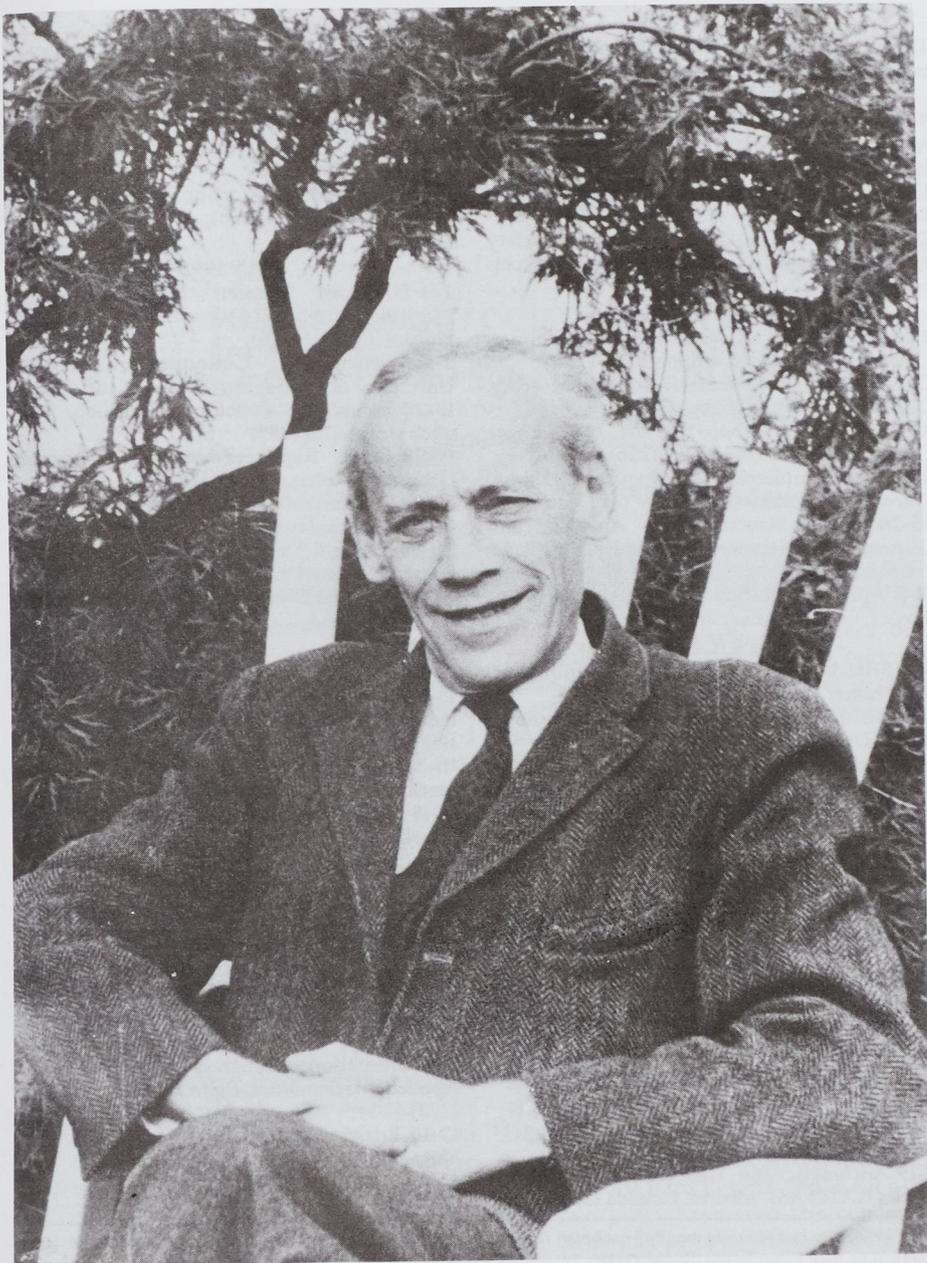
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DIARY

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.

FEBRUARY 1998

9-13 Hyperbolic Problems Theory, Numerics, Application Conference, ETH Zurich, Switzerland (246)

13 Edinburgh Mathematical Society Meeting, Edinburgh University (252)

20-21 Two-day London Mathematical Society Meeting, University of Southampton - Hyperbolic Geometry (254)

MARCH 1998

2 North British Functional Analysis Seminar, University of Newcastle upon Tyne (256)

13 Edinburgh Mathematical Society Meeting, Dundee University (252)

22-28 Fuchsian Groups EPSRC-LMS Short Course, Lancaster University (256)

23-3 Apr Symplectic Topology Workshop, Warwick University (255)

25-26 Jordan Structures in Analysis and Geometry Conference, Goldsmiths College, London (256)

31-3 Apr Computational Fluid Dynamics Conference, Oxford University (252)

APRIL 1998

6-9 British Mathematical Colloquium, Manchester University

6-9 British Applied Mathematics Colloquium, Brunel University (254)

14-16 British Topology Meeting, Aberdeen University (255)

16 British Women in Mathematics Day, Coventry University (256)

20-24 LMS Invited Lectures, Exeter University, Professor D. Zagier

20-24 Probability: Theory and Applications Workshop, Nottingham Trent University (252)

MAY 1998

8 Edinburgh Mathematical Society Meeting, Aberdeen University (252)

22-23 London Mathematical Society and Irish Mathematical Society Joint Meeting on Complex Analysis and Dynamical Systems, London

JUNE 1998

5 Edinburgh Mathematical Society Meeting, St Andrews University (252)

7-19 Arithmetic and Geometry of Algebraic Cycles NATO ASI, Alberta, Canada (255)

22-26 Groups of Finite Morley Rank Conference, Greece (255)

22-26 Positivity in Applications Meeting, Ankara, Turkey (256)

22-27 European Consortium for Mathematics in Industry (ECMI 98), Göteborg, Sweden (252)

JULY 1998

2-3 European Women in Mathematics Workshop on Moduli Spaces in Mathematics & Physics, Oxford (256)

5-9 Mathematics Colloquium, Victoria University of Wellington, New Zealand (254)

13-24 Symplectic Topology Workshop, Warwick University (255)

19-25 Galois Representations in Arithmetic Geometry Meeting, Crete (256)

20-24 Dimensions and Dynamics Conference, Miskolc, Hungary (254)

20-24 Domain Decomposition Methods Conference, Greenwich University (254)

27-7 Aug Nonlinear Analysis, Differential Equations and Control Seminar, Montreal, Canada (254)

AUGUST 1998

13-16 Commutative Algebra Conference in Honour of David Rees's 80th Birthday, University of Exeter (257)

18-28 International Congress of Mathematicians, Berlin, Germany (238) (242) (253)

30-5 Sep Algebraic Number Theory and Diophantine Analysis Conference, Graz, Austria (249)

OCTOBER 1998

16-17 Two-day London Mathematical Society Meeting - Harmonic Analysis

NOVEMBER 1998

20 London Mathematical Society Meeting - Annual General Meeting

JULY 1999

5-9 International Congress of Industrial and Applied Mathematics (ICIAM 99), Edinburgh (252)

12-16 British Combinatorial Conference, Kent University (254)

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