THE LONDON MATHEMATICAL SOCIETY

Forthcoming Society Meetings

COUNCIL DIARY
5 May 2006

May Council saw a new format of meeting, with the agenda 'issue based' rather than 'committee based' with the more important items rising to the top of the agenda. Thus on this occasion, strategic and planning matters dominated the meeting.

Following the decision in March to prepare a sufficiently detailed plan on which to base a decision on the possible unification of the Society and the Institute of Mathematics and its Applications, Council agreed that a Joint Planning Group would commence work on 1 June 2006. It was envisaged that this 'Next Steps Initiative' would take between one and two years to draw up a plan for consideration by the two Councils. As has been emphasised before, any final decision will be taken by the memberships of the two societies in accordance with their charters.

The Society's Strategic Plan was further refined, and in particular a set of five objectives against which activities would be judged were discussed. Council received financial data in a new format that showed expenditure broken down into direct, indirect, staff and office costs for the Society's different activities such as grant support and Society meetings, and this will provide a major input into adjusting the balance of activities in the future. During the discussion, it was emphasised that the exceptional value of the goodwill and voluntary efforts of many members are a crucial part of this equation.

Council also agreed principles for increased delegation of tasks, decisions and expenditure to subcommittees and officers, to make more effective use of resources and officers' time. Terms of reference will now be drawn up to delineate responsibilities of committees, with the requirement that Council still retains ultimate responsibility for anything done in the Society's name.

As was reported in May *Newsletter* (page 5) the President, along with the other CMS Presidents, met Ruth Kelly, Secretary of State for Education and Skills, at the end of March to discuss matters relating to mathematics. Council considered a very recent follow-up letter from her which confirmed a

number of the positive aspects from the meeting. However, while Council was in session the news of the Cabinet reshuffle came through, so hopefully the new Secretary of State, Alan Johnson, will take on board the matters raised with his predecessor.

Following an approach from the Women in Mathematics Committee, a letter had been received from EPSRC stating that it would be revising its practice so that women on Advanced Research Fellowships who took maternity leave or a part-time period of working would now have their fellowships extended to compensate fully for their leave. The Committee was commended on this very satisfactory outcome.

One of the most pleasurable parts of the meeting was the approval of the list of Society prize-winners for 2006, which once again had attracted an extremely high standard of nominee. The winners will be announced at the Society's June meeting.

Kenneth Falconer

REVIEWS EDITOR

After several years of lively service as Reviews Editor for the *Newsletter*, Marcus du Sautoy has had to step down through pressure of other media commitments. We are most grateful to Marcus for all that he has contributed and commissioned in terms of reviews, articles and ideas, and wish him well in his many and varied efforts to make the Riemann Hypothesis accessible to the general public.

We are delighted to welcome Tony Mann as our new Reviews Editor. Tony is at the University of Greenwich and has already contributed reviews in the past: we look forward to working with him and with his contacts in the History of Mathematics and related fields.

Remember, though, that the Newsletter does not function without input from LMS members in all areas. Please keep us informed of general-interest mathematics related events, exhibitions, books, plays and other cultural happenings that come to your notice – and if you are willing to review them (or know whom to persuade) then please drop Tony a line (a.mann@gre.ac.uk).

David Chillingworth

LONDON MATHEMATICAL SOCIETY

Friday 16 June 2006

Chemistry Auditorium, Christopher Ingold Building, University College London

3.30 – 3.45	**LMS business** (see page 4)
3.45 – 4.45	**A.C. Rice (Randolph-Macon College)** *The Life and Legacy of Augustus De Morgan (1806-1871)*
4.45 – 5.15	**Tea**
5.15 – 6.15	**Yu. Manin (Northwestern University, Evanston)** will give the Hardy Lecture on *Continued fractions, non-commutative boundaries and Einstein equations*

There are funds available to contribute in part to the expenses of members of the Society or research students to attend the meeting. Requests for support, including an estimate of expenses, may be addressed to the Programme Secretary at the Society (web: www.lms.ac.uk; email: grants@lms.ac.uk).

A dinner will be held at De Morgan House at 7.30 pm. The cost will be £32.00 per person, inclusive of wine and a reception beforehand. Those wishing to attend should inform Susan Oakes, the Administrator at the Society, enclosing a cheque payable to the 'London Mathematical Society' to arrive no later than Friday 9 June. For further information contact Susan Oakes (oakes@lms.ac.uk).

PLUS NEW WRITERS AWARD
Bring Maths to Life

This year marks the 100th anniversary of the birth of Kurt Gödel – mathematician and one of the last century's most influential thinkers – yet very few of the public have even heard of him. His work established the limits of mathematical logic and laid the foundations of modern computer science, yet his centenary has hardly made it into the mainstream media.

Public awareness of mathematics is low, although it lies at the heart of science and technology and is of ever increasing importance in modern society. Of course no-one can be expected to start perusing mathematical journals with their morning coffee – we need good science writers to bring mathematics to life.

Plus magazine is launching the '*Plus* new writers award' in May to find the people who can bring mathematics to life. Published online and free of charge, *Plus* is an award-winning magazine about mathematics which is aimed at the general public. Its articles by top mathematicians and science writers provide a window into the world of mathematics with all its beauty and applications, and cover fields as diverse as art, medicine, cosmology and sport.

The competition is open to new writers of any age and from any background who can explain a mathematical topic or application

they think the public needs to know about. The winning entries will be read by an international audience of over a hundred thousand in the December issue of *Plus*, and the prize pool includes an iPod. The closing date is **30 September 2006**, and more information on the competition can be found on the *Plus* site, http://plus.maths.org/competition.

"It was people telling the big mathematical stories that made me realise at school that there was much more to maths than simple long division," says Professor Marcus du Sautoy, author of the best-selling book *The Music of the Primes* and one of the judges of the *Plus* new writers award. "Reading these stories inspired me to want to make my own mathematical breakthroughs. The future of mathematics depends on capturing the imaginations of those who will become the next generation of mathematicians."

Gödel's centenary highlights the need for writers who can share their passion for mathematics with the general public. With the 2006 new writers award, *Plus* hopes to celebrate these writers and encourage those of the future.

GENERAL MEETING

There will be a General Meeting of the Society at 3.30 on Friday 16 June 2006 (see page 3), to be held at the Chemistry Auditorium, University College London. The business shall be:
(i) the appointment of Scrutineers;
(ii) the appointment of Auditors;
(iii) presentation of the 2005 Honorary Membership certificate to Jean-Pierre Bourguignon;
(iv) announcement of Council's recommendation for Honorary Membership;
(v) announcement of Prize winners for 2006.

I hope that as many members as possible will be able to attend.

Peter Cooper
Executive Secretary

PROFESSOR J.P. LEVINE
(1937-2006)

The distinguished American topologist Jerry Levine died on 8 April 2006. He was a student of Norman Steenrod at Princeton University, receiving his PhD in 1961. Following appointments at MIT and Berkeley, from 1966 on he was at Brandeis University. In the 1960s and 1970s he was one of the pioneers of the surgery method of the classification of high-dimensional manifolds, their automorphisms and their embeddings, particularly of spheres and projective spaces. The classification of highly-connected high-dimensional codimension 2 knots and the computation of the cobor-dism groups of high-dimensional codimension 2 knots were particular highlights; he spoke at the 1970 Nice ICM on *The role of the Seifert matrix in knot theory*. More recently, he made important contributions to the algebraic and geometric topology of low-dimensional knots and links. Professor Levine was a frequent visitor to the United Kingdom, spending the academic year 1963-64 in Cambridge, and 1972-73 in Oxford. He had been invited to visit Durham, Edinburgh and Warwick in the current academic year on an LMS Scheme 2 grant, but his terminal illness prevented him from taking up the invitation.

A. Ranicki
University of Edinburgh

LONDON MATHEMATICAL SOCIETY

HARDY LECTURER 2006

The 2006 Hardy Lecturer is Professor Yu. Manin (Northwestern University). During his visit to the UK in June he will give lectures at the following places:

- **Friday 16 June** – The Hardy Lecture, LMS Meeting, University College London
  Continued fractions, non-commutative boundaries and Einstein equations
  contact Susan Oakes (oakes@lms.ac.uk)
- **Monday 19 June** – Edinburgh University
  Iterated integrals of modular forms and non-commutative modular symbols
  contact Tom Lenagan (tom@maths.ed.ac.uk)
- **Tuesday 27 June** – Bristol University
  Iterated integrals of modular forms and non-commutative modular symbols
  contact S. Wiggins (S.Wiggins@bristol.ac.uk)

During Professor Manin's stay in the UK he will be based at Imperial College London. Contact Richard Thomas (richard.thomas@imperial.ac.uk) for further information.

The names given are the local organisers, from whom further information can be obtained. For general enquiries contact Stephen Huggett, LMS Programme Secretary.

LMS MEETING & RECEPTION AT THE ICM 2006

The London Mathematical Society will be holding a Meeting and Reception on Friday 25 August, during the ICM 2006 in Madrid.

The Meeting is part of the Special Lectures series and is jointly held with the Real Sociedad Matemática Española, from 18:00 to 20:00. The speakers are Robert Bryant (Duke University) and Godfried Tousssaint (McGill University). An ordinary meeting of the LMS will be held just before these lectures, during which members will be able to sign the membership book.

The meeting will then be followed by an LMS reception, for its members and guests, from 20:00-21:00. Members who wish to attend the reception should apply for their free ticket from the Society's Administrator, Susan Oakes (oakes@lms.ac.uk) no later than **28 July**. The Society hopes to entertain as many as possible of its members who are attending the Congress, but numbers are limited by the capacity of the room.

VISIT OF PROFESSOR G. HAVAS

Professor George Havas (University of Queensland) will be visiting the Universities of St Andrews (week 9-15 July), Newcastle (week 16-23 July) and Warwick (week 24-30 July). His visit is supported by an LMS Scheme 2 grant. He will give seminars in each of the three places; details will be posted on the relevant web pages, http://maths.warwick.ac.uk/maths/seminars, www.mas.ncl.ac.uk/math/research/seminars and www-maths.mcs.st-and.ac.uk/seminars.shtml (the St Andrews seminar is scheduled for Thursday 13 July). He will speak at the *North Eastern Geometric Group* Theory seminar (which is supported by an LMS scheme 3 grant) in Newcastle on 19 July. Further information can be obtained from Sarah Rees (Sarah.Rees@ncl.ac.uk).

VISIT OF PROFESSOR YA. B. PESIN

Professor Yakov Pesin (Pennsylvania State University) will visit the UK from 17 June – 1 July. Professor Pesin is well known for his work in Dynamical Systems. During his visit he will be based at Imperial College (16-22 June), Manchester (22-23 June) and Warwick (23-30 June), where he will give talks. His visit is supported by an LMS Scheme 2 grant. For more information contact Mark Pollicott (mpollic@maths.warwick.ac.uk).

VISIT OF DR M. YUE AND PROFESSOR A. ITS

Professor Alexander Its (Indiana University-Purdue University Indianapolis) and Dr Mo Man Yue (CRM Montreal) will be visiting the School of Mathematics, University of Bristol, from 12-25 June, in order to collaborate with Professor Keating and Dr Mezzadri. During their stay Professor Its will give a Departmental Colloquium on Tuesday 20 June at 3.00 pm and Dr Yue will give mathematical physics seminar on Friday 16 June at 1.00 pm. For further information contact Dr Mezzadri (f.mezzadri@bristol.ac.uk). This collaboration is supported by an LMS Scheme 4 grant.
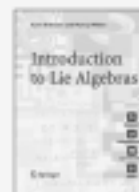
PURE MATHEMATICS CONFERENCE

The 7th International Pure Mathematics Conference 2006 (7th IPMC 2006) will be held in Islamabad from 5-7 August. It is a thematic conference on Algebra, Geometry, Analysis held under the auspices of the Pakistan Mathematical Society. For further information visit the website: www.pmc.org.pk. The conference is convened by Qaiser Mushtaq in collaboration with Mathematics Division, Institute of Basic Research (Florida, USA), Higher Education Commission, Pakistan Telecommunication Ltd, and Quaid-i-Azam University, Islamabad.

SEQUENTIAL MONTE CARLO METHODS WORKSHOP

A meeting dedicated to sequential Monte Carlo methods (filtering and other applications) will be held at St Anne's College, Oxford, from 3-5 July. The following is the list of speakers:

- Christophe Andrieu (Bristol)
- Nicolas Chopin (Bristol)
- Martin Clark (Imperial)
- Olivier Cappe (ENST, Paris)
- Peter Clifford (Oxford)
- Dan Crisan (Imperial)
- Pierre Del Moral (Nice)
- Arnaud Doucet (UBC)
- Andreas Eberle (Bonn)
- Nando de Freitas (UBC)
- Francois LeGland (INRIA/IRISA, Rennes)
- Saadia Ghazali (Imperial)
- Fredrik Gustafsson (Linköping)
- Arnaud Guyader (IRISA, Rennes)
- Simon Godsill (Cambridge)
- Kari Heine (Tampere)
- Terry Lyons (Oxford)
- Eric Moulines (ENST, Paris)
- Anastasia Papavasiliou (Warwick)
- Michael Pitt (Warwick)
- Mathias Rousset (Nice)
- Tobias Ryden (Lund)
- David Salmond (Qinetiq)
- Jie Xiong (Tennessee)

The workshop is organised by Christophe Andrieu (Bristol) and Dan Crisan (Imperial). The local organiser is Terry Lyons (Oxford). The scientific committee also comprises Pierre Del Moral (Nice) and Arnaud Doucet (UBC). The meeting has been awarded the status of Satellite Activity of the International Congress of Mathematicians, Madrid 2006 (see www.icm2006.org/satelliteactivities/listofsatellites/). The meeting is partially supported by the LMS. Further details (registration, programme, etc) will be posted on the meeting website www.maths.bris.ac.uk/~maxca/smc2006/.

GROUPS AND COMPUTATION 2006
A Leedham-Green Fest

There will be a one-day conference to celebrate Charles Leedham-Green's contributions to mathematics on the occasion of his retirement on 10 July, starting at 10:30 am, in the School of Mathematical Sciences, Queen Mary, University of London. The main speakers are Bettina Eick, Eamonn O'Brien and Aner Shalev.

There is a registration fee of £10. There will be a dinner in the evening at *L'Oasis* restaurant; the cost is £20. Places are limited, so please book early. Send a cheque or postal order in sterling to Groups and Computation 2006, School of Mathematical Sciences, Queen Mary, University of London, London E1 4NS.

Accommodation can be booked online at www.qmulholidays.co.uk. Applications from students are especially welcome, and some financial support is available. Contact Susan McKay (S.McKay@qmul.ac.uk) for further information. The conference is supported financially by the LMS.

THE BRIDGES CONFERENCE

Bridges: Mathematical Connections in Art, Music, and Science is being held at the Institute of Education in London, from 4-8 August in collaboration with the London Knowledge Lab and the University of London Institute of Education. The conference has over 100 mathematicians, artists, musicians, architects and others presenting papers. As well as the conference, there is an art exhibition, and a Music and Mathematics evening (open free to the public).

Following the conference on Wednesday 9 August, *Bridges* is holding a Family Event Day (also open free to the public) in conjunction with the Royal Institution. Full details and contacts are available at www.lkl.ac.uk.

QPIC-SYMPOSIUM

Quantum Probability, Information and Control Symposium (QPIC-Symposium), consisting of two overlapping conferences on *Quantum Statistics, Filtering and Control, and on Quantum Probability, Noncommutative Analysis and Applications*, will be held in Nottingham from 14-21 July. The symposium will start from a short instructional course on Quantum Stochastic Calculus and Applications for PhD students and young researchers. The support of the LMS to invite lecturers and PhD students is acknowledged. More details can be found on the conference website at: www.maths.nott.ac.uk/QPIC/index.html.

ICIAM 2007

The Sixth International Congress on Industrial and Applied Mathematics, ICIAM 2007, will be held in Zurich, Switzerland from 16-20 July 2007.

The Congress is held under the auspices of the International Council for Industrial and Applied Mathematics. Previous Congresses in the series were held at Paris (1987), Washington (1991), Hamburg (1995), Edinburgh (1999), and Sydney (2003). It will take place at the two adjacent central campuses of ETH Zurich and the University of Zurich. The Congress will feature:
• 27 invited ICIAM speakers
• an Euler Lecture
• the GAMM Prandtl Lecture
• an American/European Women in Mathematics Lecture
• a Public Lecture
• hundreds of minisymposia
• contributed papers, poster sessions
• ceremonies for five ICIAM prizes and three other prizes
• several industry days
• an exhibition
• four embedded meetings:

- Annual GAMM Meeting 2007 (with another set of invited speakers)
- meeting of the China Society for Industrial and Applied Mathematics
- meeting of the Unión Matemática de America Latina y el Caribe
- meeting of the European Society for Mathematical and Theoretical Biology

Preregistration, minisymposia proposal submission, and abstract submission will open at the end of May (www.iciam07.ch/registration). Deadlines are summarized under www.iciam07.ch/deadlines. The most important ones are:
• **31 August 2006** – deadline for minisymposia proposals
• **12 November 2006** – deadline for abstract submission
• **15 January 2007** – deadline for early-bird registration

The 25 members of the Scientific Program Committee chaired by Gerhard Wanner (University of Geneva) are listed under www.iciam07.ch/committees.

The official carrier is Swiss International Airlines. Information on booking reduced tickets is given under www.iciam07.ch/general-info/SWISS. Responsible for the exhibition, hotel reservations, social events, and excursions is the professional conference organizer Spectrum Events AG. Potential exhibitors please contact them at iciam07@spectrum-ch.com.

A list of satellite conferences (held shortly before or after ICIAM07) is compiled under www.iciam07.ch/satellite-conferences.

For further information keep visiting www.iciam07.ch. ICIAM 2007 is being organized by a joint committee of ETH Zurich and the University of Zurich:
• Rolf Jeltsch (Congress Director, ETH Zurich)
• Walter Gander/Martin Gutknecht/Petros Koumoutsakos (ETH Zurich)
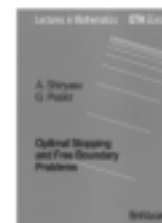• Erwin Bolthausen/Michel Chipot/Stefan Sauter (University Zurich)

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WOMEN IN MATHEMATICS DAY 2006

I have to admit that as the alarm buzzed at 3 am Friday 28 April, all I wanted to do was roll over and say to pot with Women in Mathematics Day. At that time of the morning (or still night as I maintain) it was hard to understand what a one-day conference hosted by the London Mathematical Society could really teach me. However, I made it over and I will start by saying that it was a very enjoyable day and many thanks to those who organised it.

The talks throughout the day were inspirational – both in content and the speakers themselves. To mention a few: Susan Pitts describing the application of applied probability models in insurance, Natalia Kaur Virdee presenting the Thistlethwaite and Seifert graphs and Rosemary Dyson speaking about the stability of multilayer film falling under gravity. It was fascinating to listen to such a wide range of topics covering the pure, applied and statistical areas of mathematics. It really reminded me just how vast the subject of mathematics is, something which is easily forgotten when simply concentrating on one's own research.

The under-representation of women in mathematics is striking. At every level and in many countries mathematics has the notorious edge of primarily being male territory. Even at a micro level within our own mathematics department the number of males far outweighs the females, which I am sure is typical of the majority of universities.

As mentioned in a previous article, one of the problems is the number of women dropping out of mathematics at each step of the academic path. Fewer and fewer carry on as far as they would be capable of. As a first year PhD student I can say that it really was a

motivation for me to hear these women who have held onto their mathematical talent and made successful careers from it. This is why I think days like this are so vitally important. Being surrounded by real-life examples of women who have achieved so much within mathematics can only help convince us to stick at it. The enthusiasm of the speakers was contagious and I really felt that if it was something I too was a part of.

I also think that the major success of the day was quite simply how it drew such a large group of like-minded women together. Women from many different universities gathered, all with different stories to tell. For example, Carole Becker, who up until eight years ago had a career path in music before converting to mathematics. Susan Pitts explained how she spent an enjoyable 10 years teaching before starting her PhD research. Everyone had come down such different career paths but had ended up in the same place: De Morgan House celebrating the influence of women in mathematics.

I often think at conferences postgraduate students (especially we first years) can feel like children, so unwise and unsure of their own ability. However, at the Women in Mathematics Day conference, I can truly say that all I felt was encouragement and inspiration, and the determination to make use of my ability, both as a mathematician and as a female.

Louise Burns
Queen's University Belfast

YEA WHY TRY HER RAW WET HAT? MUSIC AND MATHEMATICS

The connections between music and mathematics are many and various, and some of them were illuminated by Robin Wilson and the Choir of the City of London School in this entertaining Gresham College lecture, held at City of London School on 2 May. The talk opened by considering the mathematics of rhythm, with the audience performing a clapping piece by Steve Reich, and the choir performing Ernst Toch's remarkable spoken *Geographical Fugue*. It moved on to a discussion of tuning, the Pythagorean harmonies that arise from simple numerical relationships between pitch, the sad mathematical fact that constructing scales based on perfect fifths means that you end up out of tune, because no power of two is also a power of three, and the (partial) solution of the invention of equal temperament. An extract from Britten's *Serenade for tenor, horn and strings* showed how effectively composers can take advantage of the imperfections of temperament.

Wilson moved on to discuss mathematical structures and symmetry in music. Translation symmetry gives us the canon: the choir performed Tallis's *Canon*, the remarkable medieval round *Sumer is icumen in*, a 3-part *Agnus Dei* in the form of a canon by Josquin, and Purcell's *Two in one upon a ground* (played by Robin and Joy Wilson on recorders with keyboard accompaniment). Sadly we did not hear the unperformable-sounding piece by Nancarrow which we were told about, with four voices at different speeds in the ratios 17:18:19:20! Musical palindromes and reflections were represented by pieces by Crumb, Haydn, Hindemith, Bartok and Bach, and the deep mathematical structure

of 12-tone music was illustrated by an extract from Schoenberg's *Piano Suite*. The talk finished with an extract from Carlton Gamer's remarkable *Fanovar*, whose structure draws in various ways on the 7-point projective plane to which the title of the lecture alluded.

The large audience thoroughly enjoyed the talk and the musical examples. The presentation was fast-moving and there was little time to reflect on what one had heard, and I, one of the less musical listeners, was not always able fully to follow the mathematical patterns of the scores during the performances: I shall have to listen again to recordings! A friend who attended commented 'I'm not a mathematician but I find music more rewarding to listen to since I understood things like counterpoint and canon', so this kind of talk is of interest not only to mathematicians.

As the lecturer commented, he was able only to scratch the surface of the huge range of uses to which composers have put mathematics. More can be found in the recent book *Music and Mathematics: From Pythagoras to Fractals* which Wilson edited with John Fauvel and Raymond Flood, but even that is far from comprehensive.

The evening left me wondering how far a composer expects the listener to be aware of the mathematical structures they are using. The reflections in the piece we heard from Bartok's *Mikrokosmos* are obvious; but will an unforewarned audience notice the palindromic structures of Haydn or Hindemith, or count the notes in a piece of Renaissance polyphony and appreciate the religious symbolism? Why do composers use mathematics? Is it to please themselves? Their audiences? Or for God? Ultimately, why are composers drawn to this kind of mathematical basis for their music?

Tony Mann

HEILBRONN INSTITUTE

The Heilbronn Institute for Mathematical Research will hold its Annual Conference in the University of Bristol on 29 and 30 September. The lectures, which will be of general interest, will be given by

- Maria Chudnovsky (Princeton)
- Lex Schrijver (Amsterdam)
- Nina Snaith (Bristol)
- Christophe Soule (IHES)
- Berndt Sturmfels (Berkeley)
- Burt Totaro (Cambridge)
- Akshay Venkatesh (Courant Institute)

Further details about attendance can be obtained by contacting Cathy.Badley@bristol.ac.uk.

LMS SOUTH WEST AND SOUTH WALES REGIONAL MEETING

Analysis and Stochastics of Growth Processes

University of Bath
Monday 11 September 2006

Pierre-Louis Lions (Paris)

Timo Seppalainen (Madison)

For further details, see the website www.bath.ac.uk/math-sci/lms-bath or contact Susan Oakes (oakes@lms.ac.uk).

LONDON MATHEMATICAL SOCIETY

POPULAR LECTURES 2006

Institute of Education, London University – Wednesday 12 July
Birmingham University – Wednesday 27 September

Dr Emma McCoy

From Magic Squares to Sudoku

'This talk will look at the properties of Magic Squares, Latin Squares and Sudoku, showing that they are more than just a recreational pastime!'

16	3	2	13
5	10	11	8
9	6	7	12
4	15	14	1
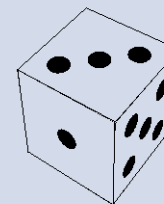
Dr John Haigh

How likely is that?

'Answers to questions about probability are often surprising, and may even seem paradoxical. But a logical approach shows why these answers arise.'

The lectures are intended to be suitable for a general audience and no specific mathematical knowledge will be assumed. Although the talks are not primarily intended for professional mathematicians, everyone is welcome and some members may wish to apply for tickets for friends and relatives.

LONDON Commences at 7.00 pm, refreshments at 8.00 pm, ends at 9.30 pm. Admission is free, with ticket. Apply by **4 July** to Lee-Anne Parker, London Mathematical Society, De Morgan House, 57-58 Russell Square, London WC1B 4HS (email: parker@lms.ac.uk). A stamped addressed envelope would be appreciated.

BIRMINGHAM Commences at 6.30 pm, refreshments at 7.30 pm, ends at 9.00 pm. Admission is free. Enquiries to Dr Chris Sangwin, School of Mathematics, University of Birmingham, Birmingham B15 2TT (tel: 0121 414 6197, email: C.J.Sangwin@bham.ac.uk).

RELATIONS AND KLEENE ALGEBRA IN COMPUTER SCIENCE

The 9th International Conference on *Relational Methods in Computer Science* and the *4th International Workshop on Applications of Kleene Algebra (RelMiCS/AKA 2006)* will take place in Manchester from 29 August to 2 September, hosted by the School of Computer Science of the University of Manchester. As in previous years, the two events are co-organised; they have a joint programme committee and a joint Springer proceedings. The joint conference is intended for pure and applied mathematicians, theoretical and applied computer scientists, software engineers and researchers from neighbouring disciplines. The main programme of invited and contributed presentations will start on the morning of 30 August and end in the afternoon of 2 September. The invited plenary speakers are:
• Roger D. Maddux (Iowa State University, USA)
• Ernie Cohen (Microsoft, USA)
• Jeff Sanders (Oxford, UK)
   There will be a PhD programme comprising a student session and two tutorials on 29 August. Invited PhD tutorial speakers are:
• Peter Jipsen (Chapman University, USA)
   Foundations of relation algebra and Kleene algebra
• John Derrick (Sheffield University, UK)
   Relational methods for program refinement
   It is a pleasure to acknowledge the support by the LMS, the EPSRC and the University of Manchester. More information about *RelMiCS/AKA 2006*, the PhD Programme and financial support can be obtained at the conference website: www.cs.man.ac.uk/relmics06/.

EXACTLY SOLVABLE SYSTEMS IN QUANTUM FIELD THEORY

A meeting to celebrate the 60th birthday of Professor Ed Corrigan will be held on the 10 and 11 August at the University of York. The following have agreed to speak:
• Sir Michael Atiyah FRS (Edinburgh)
• Patrick Dorey (Durham)
• David Fairlie (Durham)
• Peter Goddard FRS (Princeton)
• Werner Nahm (Dublin)
• David Olive FRS (Swansea)
• Pierre Ramond (Florida)
• Ryu Sasaki (Kyoto)
• Evgueni Sklyanin (York)
• Anne Taormina (Durham)
   There will be a dinner on the evening of 10 August. Anyone interested in attending should contact Tony Sudbery (as2@york.ac.uk).
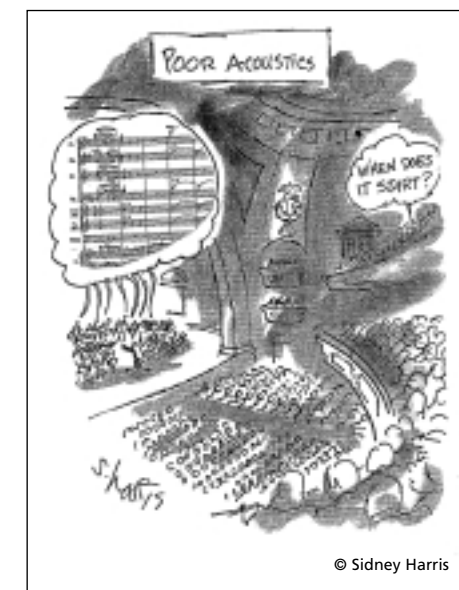
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LONDON MATHEMATICAL SOCIETY

NORTHERN REGIONAL MEETING

**Roger Stevens Lecture Theatre 18
University of Leeds**

Monday 3 July 2006

3:00   **Welcome by Professor Michael Arthur,
Vice-Chancellor of the University of Leeds**

3:15   **LMS business meeting**

3:30   **U. Haagerup (University of Southern Denmark, Odense)**
Random matrices and operator algebras

4:30   **Tea**

5:00   **N. J. Kalton (University of Missouri)**
*An application of classical Banach space theory
to partial differential equations*

7:00   **Dinner in the Great Woodhouse Room, University House**

For further details or to reserve a place at the dinner, which costs £25, including wine, email J.R.Partington@leeds.ac.uk.

There are limited funds available to contribute in part to the expenses of members of the Society or research students to attend the Society meeting on Monday 3 July. Requests for support, including an estimate of expenses, may be addressed to J.R. Partington (J.R.Partington@leeds.ac.uk).

The meeting will be followed by a workshop from 4-7 July on *Functional Analysis*. For further details, see the website www.maths.leeds.ac.uk/pure/analysis/lms/ or contact H.G. Dales (garth@maths.leeds.ac.uk).

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EPSRC Topics in Arithmetic Geometry
LMS/EPSRC Short Course

**King's College London, 28 August – 1 September 2006
Organisers: Professor David Burns**

This course provides an introduction to three topics that underlie much of modern arithmetic algebraic geometry. The course lecturers are:

- Professor David Burns (King's College London)
  Iwasawa Theory
- Professor Kevin Buzzard (Imperial College)
  Modular Forms
- Professor Fred Diamond (King's College London)
  Galois Representations

Lectures will be accompanied by daily examples classes led by Dr Manuel Breuning (King's College London), Dr Toby Gee (Imperial College) and Dr Payman Kassaei (King's College London).

The course is aimed primarily at postgraduate students in number theory/arithmetic geometry or any related fields but much of it should be accessible to anyone with a reasonable knowledge of basic concepts in algebraic number theory. Postdocs and young researchers are welcome to attend. For further details (including reading lists) see the course website at: www.mth.kcl.ac.uk/research/numbtheo/shortcourse/.

The registration fee to attend is £100. The accommodation costs for all UK-based research students are covered by EPSRC. Participants must pay their own travel costs. EPSRC-supported students can expect that their registration fees and travel costs will be met by their departments from the EPSRC Doctoral Training Account. Postdocs and non-UK students will be required to pay their own subsistence costs and the registration fee (approximately £365 in total).

Application forms may be obtained from Isabelle Robinson, Administrative Officer, London Mathematical Society (email: robinson@lms.ac.uk, tel: 020 7291 9979, fax: 020 7291 9978) or an on-line form is available on the LMS website: www.lms.ac.uk/activities/research_meet_com/short_course/31_poster.html.

Numbers will be limited and those interested are advised to make an early application. The closing date for applications is **Friday 14 July**. All applicants will be contacted by the London Mathematical Society approximately one week after this deadline; we will not be able to give information about individual applications before then. Please do not send any money until we ask.

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EPSRC

Stability, Coupling Methods and Rare Events
LMS/EPSRC Short Course

London Mathematical Society

Heriot-Watt University, Edinburgh, 4–9 September 2006
Organisers: Professor Serguei Foss and Dr Takis Konstantopoulos

This course provides an overview on three important topics in modern probability theory. The lectures will be supported by tutorial classes. The course lecturers are:

- S. Foss and T. Konstantopoulos (Heriot-Watt University)
  Elements of stochastic stability
- A. Puhalskii (University of Colorado at Denver) and S. Foss (Heriot-Watt University)
  Large deviations and rare events
- H. Thorisson (University of Iceland)
  Coupling methods

Two guest lectures will be given by:

- S. Asmussen (University of Aarhus)
  Tail asymptotics for sums of dependent heavy-tailed random variables
- I. Kontoyiannis (Athens University of Economics)
  Information-theoretic ideas in Poisson approximation and concentration

The course is aimed at mathematics and statistics postgraduate students and students from closely related fields (theoretical computer science, physics, etc) who are interested in any area that requires a knowledge of asymptotic and coupling methods of probability theory. Postdocs and young researchers are also welcome to attend.

It assumes familiarity with elements of probability theory, including basic limit theorems, Markov chains and elements of stochastic processes. For further information, see: www.ma.hw.ac.uk/~takis/probcourse06.

The registration fee to attend is £100. The accommodation costs for all UK-based research students are covered by EPSRC. Participants must pay their own travel costs. EPSRC-supported students can expect that their registration fees and travel costs will be met by their departments from the EPSRC Doctoral Training Account. Postdocs and non-UK students will be required to pay their own subsistence costs and the registration fee (£400 in total).

Application forms may be obtained from Isabelle Robinson, Administrative Officer, London Mathematical Society (email: robinson@lms.ac.uk, tel: 020 7291 9979, fax: 020 7291 9978) or an on-line form is available on the LMS website: www.lms.ac.uk/activities/research_meet_com/short_course/32_poster.html.

Numbers will be limited and those interested are advised to make an early application. The closing date for applications is **Friday 7 July**. All applicants will be contacted by the London Mathematical Society approximately one week after this deadline; we will not be able to give information about individual applications before then. Please do not send any money until we ask.

ISAAC NEWTON INSTITUTE FOR MATHEMATICAL SCIENCES
NONCOMMUTATIVE GEOMETRY AND PHYSICS: FUNDAMENTAL STRUCTURE OF SPACE AND TIME

4 – 8 September 2006

in association with the Newton Institute programme entitled
Noncommutative Geometry (24 July to 22 December 2006)

Workshop organisers: A. Connes (IHES), C. Hull (Imperial), S. Majid (Queen Mary) and A. Schwarz (UC Davis)

Workshop scientific advisory panel: J. Cuntz (Munster), G 't Hooft (Utrecht) and Yu. Manin (MPI Bonn)

To be sponsored by the John Templeton Foundation.

Theme of workshop: The workshop is expected to be a unique event that brings together mathematicians and physicists to consider the fundamental nature of space and time. Are space and time a continuum, discrete or something different from both of these at the tiniest scales? Is time intrinsically generated? What is the picture of spacetime arising from string theory and quantum gravity? Noncommutative geometry provides a radical proposal as to what 'geometry' might be from a pure mathematician's point of view. The workshop will bring this and other new conceptions of geometry in contact with physical and philosophical intuitions about the nature of gravity, quantum measurement, information, and the possibility of experimental test.

Invited speakers include (to be confirmed): A. Connes, D. Deutsch, R. Penrose and A. Schwarz.

Location and cost: The workshop will take place at the Newton Institute and accommodation for participants will be provided in single study bedrooms with shared bathroom at Wolfson Court. The workshop package, costing £480, includes accommodation, breakfast and dinner from dinner on Sunday 3 September 2006 to breakfast on Saturday 9 September 2006, and lunch and refreshments during the days that lectures take place. Participants who wish to attend but do not require the workshop package will be charged a registration fee of £40. Self-supporting participants are very welcome to apply.

Evening events will include a public panel discussion under the heading Space and Time: an Evening of Speculation, which workshop participants and their accompanying persons are welcome to attend.

Further information and application forms are available from the web at: www.newton.cam.ac.uk/programmes/NCG/ncgw02.html. Completed application forms should be sent to Tracey Andrew, Programme and Conference Secretary, Isaac Newton Institute, 20 Clarkson Road, Cambridge CB3 0EH or via email (t.andrew@newton.cam.ac.uk).

Closing date for the receipt of applications is **16 June 2006**.

ISAAC NEWTON INSTITUTE FOR MATHEMATICAL SCIENCES

TRENDS IN NONCOMMUTATIVE GEOMETRY

18 – 22 December 2006

in association with the Newton Institute programme entitled
Noncommutative Geometry (24 July to 22 December 2006)

Workshop organisers: A. Connes (IHES), M.A. Rieffel (Berkeley) and
S.P. Smith (Washington)

Workshop scientific advisory panel: M. Karoubi (Paris 7), Yu. Manin
(MPI, Bonn), M. Van den Bergh (Hasselt) and S.L. Woronowicz (Warsaw)

Theme of workshop: The workshop will aim to expose some of the most
exciting new developments relating noncommutative geometry to other
topics in pure and applied mathematics. Topics are expected to include
dynamical systems, the theory of foliations, fractal and infinite-dimensional
geometry, number theory, algebraic geometry, among others. The aim is to
highlight the potentially interdisciplinary implications of noncommutative
geometry and also to identify some of the most exciting trends for the
future. Coming at the end of the programme, the workshop invites
suggestions from any of the long term participants.

Invited speakers include (to be confirmed): Y. Berest, P. Cartier, A. Connes,
I. Gordon, J. Hunton, Yu. Manin, J.T. Stafford, S.L. Woronowicz and B. Zilber.

Location and cost: The workshop will take place at the Newton Institute and
accommodation for participants will be provided in single study bedrooms
with shared bathroom at Wolfson Court. The workshop package, costing
£480, includes accommodation, breakfast and dinner from dinner on Sunday
17 December to breakfast on Saturday 23 December 2006, and lunch and
refreshments during the days that lectures take place. Participants who wish
to attend but do not require the workshop package will be charged a regis-
tration fee of £40. Self-supporting participants are very welcome to apply.

Further information and application forms are available from the web at:
www.newton.cam.ac.uk/programmes/NCG/ncgw03.html. Completed
application forms should be sent to Tracey Andrew, Programme and
Conference Secretary, Isaac Newton Institute, 20 Clarkson Road,
Cambridge CB3 0EH or via email (t.andrew@newton.cam.ac.uk).

Closing date for the receipt of applications is **31 August 2006**.

CALENDAR OF EVENTS

This calendar lists Society meetings and
other events publicised in the *Newsletter*.
Further information can be obtained from
the appropriate LMS *Newsletter* whose num-
ber is given in brackets. A fuller list of meet-
ings and events is given on the Society's web-
site (www.lms.ac.uk/meetings/calendar.html).

JUNE 2006
1-30 Jul Algorithmic Biology,
Singapore (344)
3-4 Mathematics in Victorian Britain,
Rewley House, Oxford (348)
6-30 First Passage & Extreme Value
Problems in Random Processes Conference,
INI, Cambridge (340)
7-11 Nonlinear PDEs and Applications
Conference, Toledo, Spain (346)
13-16 Mathematics of Finite Elements
& Applications Conference, Brunel (336)
14-15 Geometry and Mechanics
Conference, Surrey (347)
14-17 SING 2 & IMGTA, Foggia, Italy (342)
16 LMS Meeting, London (348)
19-23 Quantile Regression ICMS Workshop,
Edinburgh (342)
19-30 Combinatorial Optimization SMS
NATO Summer School, Canada (343)
25-2 Jul Junior Mathematical Congress
2006, Romania (340)
26-30 Applied Asymptotics & Modelling
ICMS Workshop, Edinburgh (342)
28 Automated Design and Optimisation
Techniques Using CFD, London (348)
30 Applications of Linear Wave Theory,
Bristol (348)
30-5 Jul Logical Approaches to
Computational Barriers, Swansea (343)

JULY 2006
**3 LMS Northern Regional Meeting,
Leeds (349)**
3-5 Surgery, Theory Past, Present and
Future Meeting, ICMS, Edinburgh (347)

3-5 Sequential Monte Carlo Methods,
St Anne's College, Oxford (349)
3-7 Randomness and Complexity
Workshop, Bristol (344)
3-7 Games and Verification Conference,
INI, Cambridge (347)
3-13 Dynamical Systems and Statistical
Mechanics LMS Durham Symposia,
Durham (345)
10 Groups and Computation:
A Leedham-Green Fest, Queen Mary,
University of London (349)
10-14 Methods of Non-equilibrium
Statistical Mechanics in Turbulence,
LMS/EPSRC Short Course, Warwick (348)
10-14 New Directions in Applied Probability
ICMS Workshop, Edinburgh (342)
10-14 Mathematics for Industry
Conference, Madrid (347)
12 LMS Popular Lectures, London (349)
12 Andrei Tyurin – A memorial celebration,
Warwick (348)
14-21 Quantum Probability, Information
and Control, Nottingham (349)
16-12 Aug Atlantic Association for
Research in Mathematical Sciences,
Nova Scotia, Canada (345)
17-21 Extremal Kähler Metrics and Stability
ICMS Workshop, Edinburgh (342)
20-26 International Mathematics
Competition, Odessa, Ukraine (345)
24-28 Spectral Theory and Its Applications
Workshop, INI, Cambridge (343)
31-4 Aug Noncommutative Geometry
and Cyclic Cohomology Conference, INI,
Cambridge
31-5 Aug Introduction in Galois Theory
of Differential and Difference Equations
LMS Invited Lectures, M.F. Singer, ICMS,
Edinburgh (348)

AUGUST 2006
1-30 Sep Dynamical Chaos and Non-equilib-
rium Statistical Mechanics, Singapore (348)
4-8 Bridges Conference, Institute of
Education, London (349)

WALTER KURT HAYMAN
DE MORGAN MEDALLIST
1995

Extract from the citation: Professor Hayman is awarded the De Morgan Medal for his contributions to complex analysis and potential theory. Following the tradition established by Hardy and Littlewood, he became the undisputed leading international authority in classical complex analysis, through work contained in more than one hundred research papers and several monographs. His natural creative talent for solving problems led in particular to very deep results in the theory of functions on the unit disc, integral and schlicht functions, and subharmonic functions in several variables. Few have been as dedicated to their chosen area of mathematics as Walter Hayman, or promoted it in the world in such a dedicated fashion.