THE LONDON MATHEMATICAL SOCIETY

NEWSLETTER

No. 381 May 2009

Society Meetings and Events

2009

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Cambridge [*page* 23]

Friday 29 May
Special General Meeting, London

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Popular Lectures
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London

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Southampton [*page* 9]

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Friday 20 November
AGM
Presidential Address
London

4–6 December
Joint meeting with the Belgian Mathematical Society, Leuven

COUNCIL DIARY

27 March 2009

These are momentous days in the life of the LMS. Our first large agenda item was headed 'New Unified Mathematical Society'. This item was concerned with considering the implications of the recent referendum of LMS members on whether to go ahead and form a new society with the IMA. The actual results of the referendum had arrived in the email in-boxes of Council members the previous evening.

Of course, this agenda item heading is hardly new for Council meetings; discussions under this or a similar heading have featured in many Council meetings for nearly a decade. Indeed it was at the Council meeting last July that Council decided by a large majority to commend the unification proposals to members, this setting in train the process leading to this referendum. As was reported on the LMS website on the afternoon of the Council meeting, the result was in favour of a merger, though not by a huge majority, about 55% in favour with about 48% of the members voting. Of course, this is not the end of the story. The Statutes of the LMS have a specific procedure to wind up the society; required is a majority of those voting at two consecutive Special General Meetings convened for the specific purpose of voting on a wind-up motion. The referendum that Council had commissioned was to provide information about the views of members to enable it to make a decision on whether or not to proceed and hold SGMs for this purpose.

Members will not be surprised to hear that views were argued strongly on both sides. A few Council members are decidedly against the merger and, of course, wished to stop the process at this point. Moreover, these and other Council members questioned whether this referendum was enough of a mandate from the membership to proceed to the SGM stage. The majority view was that the turn out in the referendum was an impressive proportion of the membership (indeed it is more than four times the number voting in usual LMS elections), and that, while the vote was hardly overwhelmingly in favour, it represented a substantial majority in favour, and that it was appropriate to respect this majority and move on to the next stage of voting. Council voted by 9 to 5 with one abstention to proceed and give the membership the chance to vote for or against formal proposals to wind up the society and form a new, unified mathematical society, at SGMs on 21 April and 29 May.

The above discussions occupied significant time, of course appropriately, but the agenda was not short of other items, so the meeting finished in the early evening – I'm grateful to Burt Totaro who took notes for me after I had to bid my farewell. An interesting item

was a report from Nick Manton, Chair of the LMS Research Meetings Committee, on the work they do, particularly in deciding on bids to run LMS–EPSRC Short Courses and in deciding on LMS Durham Symposia. In my opinion, both these schemes are fantastic contributions to the mathematics research environment in the UK, across pure and applied mathematics. One welcome development is that EPSRC has devolved to the committee complete decision-making for Durham Symposia, including decisions on the awarding of funding, which will make the application process less onerous and quicker. Another large item concerned recent EPSRC initiatives, including a verbal report from Penny Davies on the most recent Council for the Mathematical Sciences meeting with EPSRC. We continue to exert pressure through the CMS on EPSRC regarding the Leadership Fellowship and Career Acceleration Fellowship schemes, to convince EPSRC to include expert peer review at the outline stage. Penny urged us to welcome changes to the standard EPSRC application procedure and to view the impact statement which is now required as an opportunity to argue the general importance of mathematics for education and the economy.

Simon Chandler-Wilde

ANNUAL ELECTIONS TO LMS COUNCIL

The normal way in which nominations to Council are made is via the Nominating Committee, but there is also provision for all members of the Society to make nominations directly. Anyone who wishes to propose someone for a position as an Officer of the Society or as a member of Council is invited to inform P.J. Giblin, who is the current chair of the Nominating Committee (pjgiblin@liv.ac.uk), or one of the other members of the Committee (M.R. Bridson, C.A. Hobbs, P.H. Kropholler, M. Reid, C.M. Series, A. Truman, A.J. Wilkie) by **31 May 2009**.

Nominating Committee seeks to maintain a balance in gender, subject area and geographical location when drawing up its lists of prospective nominees, and LMS members should bear in mind that it is to the benefit of Council if a wide spread of subjects is represented, including applied mathematics, statistics, operational research and computer science.

Peter Cooper
Executive Secretary

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PROPOSAL TO CREATE A NEW UNIFIED MATHEMATICAL SOCIETY

At the time of preparing this *Newsletter*, the LMS Council has reviewed the outcome of the members' Referendum and confirmed its decision to take the proposal to the two Special General Meetings required by the Society's Charter. Details of Council's decision, the Scrutineers' report on the Referendum Voting and a message from the President are on the LMS website at www.lms.ac.uk/lms_ima_future.html.

The first SGM will have taken place on 21 April; the second is planned for 29 May. Members will have received in January papers announcing the two SGMs, the motion to be voted on and the means of registering a proxy vote. They should also have received subsequent communications (by email, where the Society holds a valid email address for you) to confirm the arrangements for the SGMs. This information is repeated on the LMS website at www.lms.ac.uk/SGMs.html.

If you have not recorded a proxy vote for the May meeting (using the same yellow form as your proxy vote for the April meeting) then please do so now. If you have not received, or have mislaid, your proxy voting papers please contact the Executive Secretary (peter.cooper@lms.ac.uk, tel: 020 7297 9970) immediately.

As previously announced, if the votes at the LMS SGMs (and the corresponding IMA Extraordinary General Meeting required by its Charter) pass the motion, then the members of the two societies, who will form the membership of the new unified society, will be invited to vote on their preference for the name of the new body.

Peter Cooper
Executive Secretary

GENERAL MEETING

There will be a General Meeting of the Society at 3.30 pm on Friday 3 July, to be held at University College, London. The business shall be:

(i) the appointment of Scrutineers;
(ii) announcement of Council's recommendation for Honorary Membership;
(iii) announcement of Prize winners for 2009.

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

Peter Cooper
Executive Secretary

LMS' ROLE IN EPSRC FUNDING

The Society is pleased that it has agreed two mechanisms with the EPSRC to enable it to direct funding to the support of mathematics.

First, in the case of the Durham Symposia, the EPSRC has awarded a major grant to Durham University to finance the Symposia for four years, starting in 2010. In the past, an application for funding each Symposium was made to EPSRC on an individual basis and was assessed by the EPSRC Panel. Future assessments and decisions whether a Durham Symposium proposal should be funded from the Durham grant will be made by the LMS Research Meetings Committee. This change will cut down the number of stages involved, reduce the load on organisers and Durham University, and lead to speedier decisions. Proposals for Durham Symposia should be made in the usual way, to Professor N.S. Manton (see pp. 16–17).

Second, for the 2009 British Mathematical Colloquium held in Galway, Republic of Ireland, the Society acted as recipient of an EPSRC grant used by the BMC organisers to support UK-based postgraduate research students who attended the BMC. Limitations on EPSRC meant that it was unable to make a direct grant to the organisers and the LMS was glad to be able to assist to ensure participation in the BMC by young mathematicians.

Peter Cooper
Executive Secretary

MATHEMATICS POLICY ROUND-UP

The role of mathematics in the City came under the spotlight in March with the publication of the *Turner Review: A regulatory response to the global banking crisis*. The report, written by Lord Turner, chairman of the UK Financial Services Authority, laid some of the blame for banks' excessive risk-taking on "misplaced reliance on sophisticated maths". He wrote, "The very complexity of the mathematics used to measure and manage risk, moreover, made it increasingly difficult for top management and boards to assess and exercise judgement over the risks being taken." However, an editorial in the *Financial Times* was quick to point out that "the problem was not the maths itself but the way the banks used it. Contrary to Lord Turner's assertion, the banks' sums were not sophisticated enough."

To see Lord Turner's report, visit www.fsa.gov.uk/pubs/other/turner_review.pdf. To see the *FT*'s comments, visit www.ft.com and enter 'Maths and Markets' in the search field near the top of the webpage.

Members of the Houses of Commons and Lords enjoyed a morning of mathematics on 10 March organised by the University of East Anglia. The MPs and peers heard presentations from UEA academics on the use of statistics, the use of mathematics to model transport, how mathematics can enhance sports and on the logics required for computers that have not yet been built. There was much lively discussion, on issues including the inaccurate use of statistics in political discussion, poor road planning which increases travel times, using sport to interest children in mathematics and the

UEA academics (left to right) Prof. Tom Ward, Dr Mirna Džamonja, Dr Paul Hammerton and Dr Shaun Stevens, with Dr Ian Gibson MP (second from right).

future of research funding for fundamental research, in particular pure mathematics. The event, held in the Houses of Parliament, was put together by Dr Mirna Džamonja, a set theorist at UEA, who had built up close links with Dr Ian Gibson MP, who is a former chair of the Commons Science select committee and a staunch supporter of science and mathematics in Parliament. Attendees included shadow science minister Adam Afriyie MP and Phil Willis MP, chair of the Commons *Innovation, Universities, Science and Skills* select committee. Dr Gibson expressed the hope that further mathematics events could be held in Parliament. The event was supported by the LMS and the IMA through the MPU. The MPU gained some useful contacts through the event and was able to update the Parliamentarians on the current funding situation for the mathematical sciences.

In late March, over 80 delegates attended a workshop intended to help researchers in the mathematical sciences to find opportunities for collaborative work and hence funding through multi-disciplinary research themes. Organised by the Council for the Mathematical Sciences and the Engineering and Physical Sciences Research Council, the workshop looked at two of the EPSRC's research themes, *Energy* and *The Digital Economy*. The delegates saw examples of how cutting-edge mathematical sciences research can be funded through these themes, demonstrating to EPSRC that mathematics has an important role to play in these areas. EPSRC theme leaders were available to engage in discussion, and speakers provided examples of how they have been able to fund their research in this way. Breakout groups explored opportunities in more detail. Presentations from the event are now available at http://www.cms.ac.uk/workshop.html.

Caroline Davis
Mathematics Policy and Promotion Officer

DAVID KIRBY

Dr David Kirby, who was elected a member of the London Mathematical Society on 16 June 1960, died on 29 March 2009, aged 76. He joined the University of Southampton in 1962 as lecturer in Pure Mathematics and retired from the post of Reader in Pure Mathematics in 1992. David's research was in the area of algebraic geometry and commutative algebra and he published a number of highly cited papers on the topic of Artinian modules and on Koszul complexes. He was particularly pleased to bring to fruition in the 1990s significant joint work with David Rees (Exeter) on multiplicities in graded rings. He was a keen swimmer and (above all) walker: there could hardly have been a footpath in Hampshire that he did not know. He is survived by his wife Glenys and two sons.

DOUGLAS MUNN

Following the notice in the April Newsletter, Bob Churchhouse has sent the following article.

In 1955 I shared an office at GCHQ with Douglas. We were both doing our National Service, programming one of the earliest computers which had to be done in absolute code since no assemblers/compilers or higher-level languages were as yet available. Douglas was a master of the art; for example, he wrote a program to invert a 32×32 matrix on a machine with less than 1,000 words of memory, no division instruction and, of course, no floating-point arithmetic. One day I saw an advertisement for an Assistant Lecturer at Glasgow (Douglas's *alma mater*) and pointed it out to him. This caused him a great deal of anguish. He was very happy at GCHQ but a post at Glasgow was something he found hard to resist. He applied and received an encouraging reply from Robert Rankin. The rest is history. It was a great pleasure to have known and worked with him.

MENTORING AFRICAN RESEARCH IN MATHEMATICS

Third call for prospective mentors

The Nuffield Foundation and Leverhulme Trust have awarded grants for pilot projects to support mathematics and its teaching in sub-Saharan Africa. These grants have been awarded jointly to the London Mathematical Society (www.lms.ac.uk), the International Centre for Mathematical Sciences, Edinburgh (www.icms.org.uk), the International Mathematical Union (www.mathunion.org) and the African Mathematics Millennium Science Initiative (www.ammsi.org). AMMSI focuses on building infrastructure and networking in mathematics in sub-Saharan Africa. It offers postgraduate scholarships, visiting lectureships and conference support for the benefit of advanced students and young researchers in the mathematical sciences.

This project is designed to counter the mathematics 'brain-drain' by supporting qualified mathematics professionals *in situ*. Continuing professional links to a centre in the developed world, professional mentoring, and the opportunity for periodic research travel will contribute to the possibility and relative attractiveness of contributing one's mathematical expertise at home rather than moving permanently to the developed world.

The project proposes to pilot a mentoring relationship between mathematicians in countries with a strong mathematical infrastructure and their African colleagues, together with their students. Its sharpest focus is on cultivating longer-term mentoring relations between individual mathematicians and students. Nine mentoring partnerships have already been set up, in Cameroon, Ethiopia, Ghana, Ivory Coast, Kenya, Nigeria, Rwanda and Uganda, and this is the third call for prospective mentors.

We are looking for mathematicians interested in being part of these mentoring collaborations. We welcome applications from those with no prior experience of collaborating with research workers in Africa, as well as from those with existing links with African research. Prospective mentors are asked to indicate any particular institutions (or countries) with which they would like to collaborate, although we naturally cannot make any guarantees. Alternatively, applicants may wish to make a strong case for support for an existing link. We will expect a willingness to make at least one short visit to Africa and to host a short visit from Africa, as well as a commitment to a continuing mentoring responsibility.

The success of the collaborations will be evaluated by asking the following questions. Has the research collaboration (a) resulted in a mathematical publication in a research mathematics journal of international standing? (b) produced an MSc or PhD thesis? or (c) formed the basis of an on-going research group?

The deadline for the receipt of applications is **15 May 2009**. Forms can be downloaded from the LMS website, and they should be sent to Dr Dave Johnson, The London Mathematical Society, De Morgan House, 57–58 Russell Square, London WC1B 4HS, UK, to whom queries may also be addressed (dave.johnson@nottingham.ac.uk).

EPSRC

The London Mathematical Society

QUANTUM CHAOS

LMS–EPSRC Short Course

CORRECTION

In issues 379 (March) and 380 (April), the advert for the LMS–EPSRC Short Course on *Quantum Chaos* failed to mention one of the organisers, Dr Gregor Tanner, who is co-organising the course with Dr Sven Gnutzmann. We apologise for the mistake.

ABEL PRIZE 2009

The Norwegian Academy of Science and Letters has decided to award the Abel Prize for 2009 to Mikhail Leonidovich Gromov (Institut des Hautes Études Scientifiques, Bures-sur-Yvette, France) "for his revolutionary contributions to geometry".

The President of the Norwegian Academy of Science and Letters, Øyvind Østerud, announced the winner of the Abel Prize at the Academy in Oslo on 26 March. Mikhail L. Gromov will receive the Abel Prize from His Majesty King Harald at an award ceremony in Oslo on 19 May. The Abel Prize recognizes contributions of extraordinary depth and influence to the mathematical sciences and has been awarded annually since 2003. It carries a cash award of NOK 6,000,000 (close to € 700,000, US$ 950,000).

For more information about the laureate, his achievements and the Abel Prize, visit the Abel Prize website www.abelprisen.no/en.

CRM–FIELDS–PIMS PRIZE 2009

Martin Barlow FRS (University of British Columbia) has been awarded the 2009 CRM–Fields–PIMS Prize. Martin, a member of the London Mathematical Society, was awarded the Junior Whitehead Prize in 1990.

The CRM–Fields–PIMS prize is intended to be the premier mathematics prize in Canada. The prize recognizes exceptional achievement in the mathematical sciences. The prize was established by the Centre de Recherches Mathématiques and the Fields Institute as the CRM–Fields prize in 1994. In 2005, Pacific Institute for the Mathematical Sciences (PIMS) became an equal partner. The name changed to the CRM–Fields–PIMS prize, the award level increased, and the terms of reference were revised. The winner is selected by a committee appointed by the three institutes. The winner receives a monetary award and an invitation to present a lecture at each institute during the semester when the award is announced. Further details of the prize can be found at www.fields.utoronto.ca/programs/scientific/crm-fields-pims.

ISAAC NEWTON INSTITUTE

The Isaac Newton Institute for Mathematical Sciences is a national research institute in Cambridge. It aims to bring together mathematical scientists from UK universities and leading experts from overseas for concentrated research on specialised topics in all branches of the mathematical sciences, from pure mathematics, applied mathematics and statistics, to theoretical aspects of any discipline.

At any time there are two visitor programmes in progress, each with about twenty scientists in residence. Included within these programmes are periods of particularly intense activity including instructional courses and workshops. Seventy-nine programmes have now been completed, the most recent being *Mathematics and Physics of Anderson Localization: 50 Years After* and *The Nature of High Reynolds Number Turbulence*. The programmes currently taking place are *Algebraic Lie Theory* and *Discrete Integrable Systems*. The Institute also holds short follow-up events some years after a programme.

Call for Proposals

The Institute invites proposals for research programmes in any branch of mathematics or the mathematical sciences. The Scientific Steering Committee usually meets twice each year to consider proposals for programmes (of 4-week, 4-month or 6-month duration) to run two or three years later. Proposals to be considered at these meetings should be submitted by **31 January** or **31 July** respectively. Information is available at www.newton.cam.ac.uk/callprop. html.

LONDON MATHEMATICAL SOCIETY

SOUTH WEST & SOUTH WALES REGIONAL MEETING

Lecture Theatre C, Avenue Campus, University of Southampton

Wednesday 15 July 2009

Speakers:

Zlil Sela (Hebrew University, Jerusalem)

Jim Howie (Heriot-Watt University)

Cornelia Drutu (Oxford University)

Times and titles to be confirmed.

There will be a dinner afterwards. For registration, further details and to reserve a place at the dinner see the webpage www.maths.soton.ac.uk/~bean/Limitgroups09/ or contact the organisers (details below).

The meeting will be followed by a workshop from 16 to17 July on *Limit groups and their generalisations.* The following people have agreed to speak at the workshop:

- Martin Bridson (Oxford)
- Francois Dahmani (Toulouse)
- Vincent Guiradel (Toulouse)
- Dessislava Kochloukova (Campinas)
- Gilbert Levitt (Caen)
- Ashot Minasyan (Southampton)
- Tim Riley (Bristol)

There are limited funds available to support graduate students attending the meeting and/or workshop, and for LMS members attending the meeting. All requests for support should be sent to the organisers (details below).

For information on scientific questions or for information on organisational matters contact the organisers Graham Niblo and Brita Nucinkis (limitgps@soton.ac.uk).

ROLLO DAVIDSON TRUST 2009

The Trustees of the Rollo Davidson Trust award an annual prize for young probabilists. The prize winner for the year 2009 is Gregory Miermont (DMA, École Normale Supérieure, Paris) for original contributions to the understanding of random trees and large random planar maps.

The Trust was founded in 1975 in memory of Rollo Davidson, an accomplished mathematician of remarkable potential, and Fellow-elect of Churchill College, Cambridge, who died on the Piz Bernina in 1970. Initial funding for the Trust came from the royalties of two collections of papers published in 1973–74 by friends and colleagues of Rollo. The Trust has benefited from the continuing association with the Davidson family. Further details of the Rollo Davidson Trust can be found at www.statslab.cam.ac.uk/Rollo/index.html.

TOPICS IN ALGEBRA

On the occasion of the 70th birthday of Alexandre E. Zalesskii, a meeting on *Topics in Algebra* will take place from 13 to 15 May 2009 at the Department of Mathematics and Applications of the University of Milano – Bicocca. The invited speakers are:

- R. Guralnick (Los Angeles)
- G. Hiss (Aachen)
- O.H. Kegel (Freiburg)
- A. Kleshchev (Eugene)
- G. Malle (Kaiserlautern)
- D. Passman (Madison)
- A. Premet (Manchester)
- J. Siemons (Norwich)
- I. Suprunenko (Minsk)
- M.C. Tamburini (Brescia)
- P.H. Tiep (Gainesville)
- N. Vavilov (St Petersburg)
- E. Zelmanov (San Diego)

For further information visit the website at www.matapp.unimib.it/~topicsinalgebra.

VISIT OF PROFESSOR A. DRANISHNIKOV

Professor Alexander Dranishnikov (University of Florida, Gainesville) will be visiting Durham, Newcastle and Edinburgh from 25 June to 5 July 2009. He will give the following talks:

- *Lusternik–Schnirelmann category and the fundamental group* (Durham)
- *Asymptotic dimension of groups* (Newcastle)
- *Scalar curvature and macroscopic dimension* (Edinburgh)

For more information contact Michael Farber (michael.farber@durham.ac.uk), Alina Vdovina (Alina.Vdovina@newcastle.ac.uk) or Andrew Ranicki (a.ranicki@ed.ac.uk). The visit is supported by an LMS Scheme 2 grant.

VISIT OF PROFESSOR K. PARSHALL

Professor Karen Parshall (University of Virginia) will be visiting the UK from 31 May to 7 June 2009. Professor Parshall is a distinguished historian of mathematics, particularly the Victorian era, and has written a biography of J.J. Sylvester. During her visit she will give three talks:

- University of Greenwich, 2 June at 14.00 *Algebra: Creating new mathematical entities in Victorian Britain* (followed by a lecture by Donald Knuth: *History of computer science v. history of mathematics*)
- University of Leeds, 3 June at 17.30 *James Joseph Sylvester: Jewish mathematician in a Victorian world* (Brodetsky Lecture)
- Open University, Milton Keynes, 4 June at 14.00 *The Internationalization of mathematics in a world of nations: 1800–1960* (followed by a lecture by Bill Dunham)

For further details contact Tony Mann (a.mann@gre.ac.uk), David Salinger (d.l.salinger@leeds.ac.uk) or Jeremy Gray (J.J.Gray@open.ac.uk). The visit is supported by an LMS Scheme 2 grant.

VISIT OF DR J. ATHREYA

Dr Jayadev Athreya (Yale University) will be visiting the UK from 26 May to 10 June 2009. Dr Athreya is a specialist in geometry and dynamical systems. During his visit he will give three talks:

- Bristol University, 28 May *Logarithm laws, Diophantine approximation, and the geometry of numbers*
- Warwick University, 1 June *Lattice point counting and volume growth in Teichmüller space*
- University of East Anglia, 8 June *Logarithm laws, Diophantine approximation, and the geometry of numbers*

For more information contact Anish Ghosh (a.ghosh@uea.ac.uk). The visit is supported by an LMS Scheme 2 grant.

VISIT OF PROFESSOR S. MOLCHANOV

Professor Stanislav Molchanov (University of North Carolina at Charlotte, USA) will be visiting the University of Leeds from 20 June to 4 July 2009. An internationally renowned expert in probability theory and mathematical physics, Professor Molchanov has made fundamental contributions in numerous areas including the theory of Markov processes, random walks and diffusion on groups and Riemannian manifolds, statistical mechanics, localisation theory for the Anderson operator, random media theory, percolation theory, random walks in random environments, spectral theory of differential operators, and applications in astrophysics, oceanography, chemical physics, quantum computing and random number generation. During his visit he will give the following talks:

- Queen Mary, University of London, 25 June (contact I. Goldsheid, i.goldsheid@qmul.ac.uk)
  Recent generalisations of the Cwikel–Lieb–Rozenblum inequalities
- University of Leeds, 1 July (contact L. Bogachev, L.V.Bogachev@leeds.ac.uk)
  Reaction-diffusion equations for growth processes and applications to spatial dynamics of biological populations
- University of Durham, 3 July (contact M. Menshikov, mikhail.menshikov@durham.ac.uk)
  Random walks in an attractive potential and phase transitions for homopolymers

Professor Molchanov will also take part in the ICMS Workshop *Stochastic Population Dynamics and Applications in Spatial Ecology* (Edinburgh, 15–20 June 2009, http://icms.org.uk/workshops/spatialecology), where he will give a mini-series of lectures entitled *Ideas of random media theory and mathematical models of the population structure dynamics.* For further details and updates contact Dr Leonid Bogachev (L.V.Bogachev@leeds.ac.uk) at the Department of Statistics, University of Leeds. The visit is partially supported by an LMS Scheme 2 grant.

VISIT OF PROFESSOR A. DAVYDOV

Professor Alexey Davydov (Vladimir University, Russia) will be visiting the University of Liverpool from 8 May to 7 June 2009. Professor Davydov is a specialist in singularity theory and applications, in particular to differential geometry, differential equations and control systems. During the visit he will give talks at:

- Leeds University, 13 May at 3 pm (Geometry seminar)
- Liverpool University, 15 May at 4 pm (Pure Mathematics colloquium)
- Durham University, 18 May at 4.15 pm (Pure Mathematics colloquium)

For more information contact Victor Goryunov (Victor.Goryunov@liverpool.ac.uk). The visit is supported by an LMS Scheme 2 grant.

VISIT OF PROFESSOR T. BANDYOPADHYAY

Professor Bandyopadhyay will be visiting the UK from 1 to 28 May 2009. Professor Bandyopadhyay is a renowned statistician from the Indian Institute of Management, Ahmadabad, India. His research interest areas include categorical data analysis, measurement error models, inference on survey data, statistical genetics and reliability analysis. During his visit he will give the following talks:

- University of Warwick, Department of Statistics, 7 May at 4 pm
  Testing equality of means from paired data when the labels are missing
- University of Birmingham, School of Mathematics, 12 May at 2.30 pm
  Optimal designs for cDNA microarray experiment
- Lancaster University, Department of Mathematics and Statistics, 22 May 2009 at 2.30 pm
  Inference on finite population categorical response: regression-based predictive approach

For further details and updates contact Dr Apratim Guha (A.Guha@bham.ac.uk), School of Mathematics, University of Birmingham. The visit is partially supported by an LMS Scheme 2 grant.

VISIT OF PROFESSOR M. FIELD

Professor Mike Field (University of Houston) will be visiting the UK from 11 to 28 July 2009. He will give a lecture on *Dynamical equivalence of coupled dynamical systems* at

- University of Exeter on 14 July (contact Peter Ashwin)
- University of Manchester on 21 July (contact David Broomhead)
- University of Warwick on 22 July (contact Ian Stewart)

Professor Field will describe recent work on the dynamical equivalence of coupled dynamical systems with different network architectures. He will be talking about criteria for dynamical equivalence that applies to networks of coupled ordinary differential equations, irrespective of phase space, as well as an algorithm that allows explicit construction of the differential equations or maps with a given network architecture, in terms of the differential equations or maps from equivalent systems with different network architectures.

For more information contact Peter Ashwin (P.Ashwin@exeter.ac.uk). The visit is supported by an LMS Scheme 2 grant.

VISIT OF PROFESSOR G. DE COOMAN

Professor Gert de Cooman (Ghent University, Belgium) will be visiting Durham University from 18 May to 12 June 2009. He is an expert in imprecise probability theory and applications, and during his visit he will give three talks:

- Bristol University, 18 May (contact Jonathan Lawry: j.lawry@bristol.ac.uk)
  Credal networks under epistemic irrelevance: the case of Markov trees
- Durham University, 26 May (contact Matthias Troffaes: matthias.troffaes@durham.ac.uk)
  An efficient algorithm for performing inferences in hidden Markov models with imprecise probabilities
- Newcastle University, 29 May (contact Malcolm Farrow: malcolm.farrow@ncl.ac.uk)
  Stochastic processes with imprecise probabilities: a case study involving Markov chains

For further details contact Frank Coolen (frank.coolen@durham.ac.uk). The visit is supported in part by an LMS Scheme 2 grant.

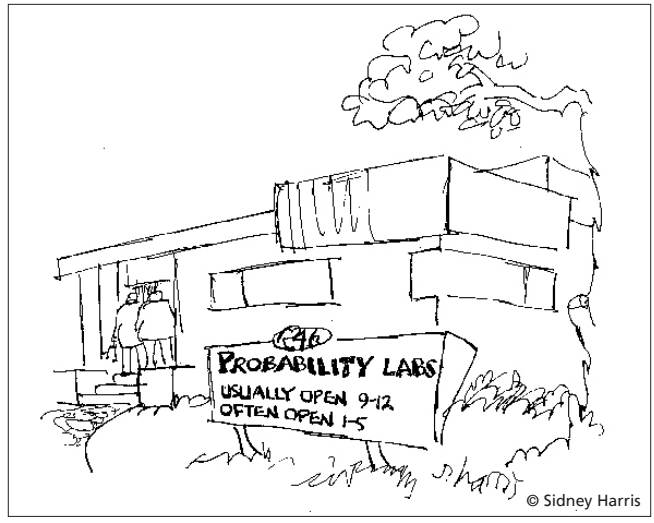
IMPRECISE PROBABILITY: THEORIES AND APPLICATIONS

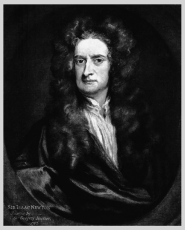
The *International Symposium on Imprecise Probability: Theories and Applications* (ISIPTA'09) will take place at the University of Durham from 14 to 18 July 2009, the sixth in a series of biennial international conferences bringing together researchers in the field of generalized probability theory and its applications. Quantifying uncertainty via lower and upper probabilities, instead of classical (single-valued) probabilities, has received increasing attention during the last two decades, and the state of the art has advanced already to the point that exciting applications are being reported. The ability, offered by such theories and methods, to quantify more accurately different kinds of uncertainty (e.g. randomness and lack of knowledge) is appreciated, and explicitly looked for, by many practitioners, and applications have been developed and reported in e.g. risk assessments, finance, insurance and a variety of statistical problems.

The conference is the leading international meeting in this field, and its programme consists of five days of presentations (there are no parallel sessions, and all contributed papers undergo a serious reviewing and selection process) and poster sessions, the latter also intended for people who have not been directly involved in research in this area but have interesting problems. Research students are very welcome, and their status is taken into account in the selection process for presentations; they can also opt to present only a poster. The conference organizers have received financial support from the LMS and from EPSRC enabling reduced participation costs for PhD students and for overseas participants from LMS Scheme 5 countries (i.e. countries in Africa or countries in which mathematics is in a similar position) or former Soviet Union countries.

The conference programme will include ample time for discussions. Past conferences have led to many new collaborations and we expect that this will be achieved again in Durham this summer. In particular, the organizers welcome practitioners, researchers and students who are new to this exciting topic area and want to explore its opportunities for research and applications.

Detailed information is available from the conference webpage at www.sipta.org/isipta09. In case of any queries contact Frank Coolen (frank.coolen@durham.ac.uk) or Matthias Troffaes (matthias.troffaes@durham.ac.uk). The Society for Imprecise Probability: Theories and Applications (www.sipta.org) and the Department of Mathematical Sciences at Durham University are the organizers of ISIPTA'09.





7th ISAAC Congress

Imperial College London
July 13-18, 2009

International Society for Analysis, its Applications and Computation

International Math. Union

European Math. Society

London Math. Society

Oxford Centre for Nonlinear PDE

OCCAM
OXFORD CENTRE FOR COLLABORATIVE APPLIED MATHEMATICS

Confirmed Plenary Speakers

Sir John Ball (Oxford)
Louis Boutet de Monvel (Paris)
Brian Davies (London)
Simon Donaldson (London)
Carlos Kenig (Chicago)
Vakhtang Kokilashvili (Tbilisi)
Nicolas Lerner (Paris)
Paul Malliavin (Paris)
Bert-Wolfgang Schulze (Potsdam)
Gunther Uhlmann (Seattle)
Masahiro Yamamoto (Tokyo)

Public Lecture on Nonlinear PDEs (Monday 13 July)

Pierre-Louis Lions (Paris)

Sessions

I.1. Complex variables and potential theory
I.2. Differential equations: complex methods, applications
I.3. Complex-analytical methods in applied sciences
I.4. Value distributions of functions
II.1. Clifford and quaternion analysis
II.2. Methods in Clifford- and Cayley-Dickson algebras
III.1. Toeplitz operators and applications
III.2. Reproducing kernels
III.3. Integral transforms
III.4. Spaces of differentiable functions
III.5. Analytic function spaces
III.6. Spectral theory
IV.1. Pseudo-differential operators
IV.2. Dispersive equations
IV.3. Control and optimisation of evolutionary systems
IV.4. Nonlinear PDE
V.1. Inverse problems
V.2. Stochastic analysis
V.3. Coercivity and functional inequalities
V.4. Dynamical systems
V.5. Functional differential equations
VI. Others

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Contact and Further Information

Michael Ruzhansky, Department of Mathematics, Imperial College London,
180 Queen's Gate, London SW7 2AZ, UK
http://www.isaac2009.org
info@isaac2009.org

Imperial College London

The London Mathematical Society

THE INSTITUTE OF MATHEMATICS AND ITS APPLICATIONS

The Inaugural Christopher Zeeman Medal Lecture

Professor Ian Stewart, FRS

Tuesday 9 June 2009 at 6:30 pm followed by a reception at the Science Museum, Exhibition Road, London SW7 2DD

The Curious Case of the Courant-Robbins Train

In their classic 1941 work "What is Mathematics?" Richard Courant and Herbert Robbins describe an apparently complex problem in mechanics. It concerns a train and how its motion, and the influence of gravity, would affect a rod pivoted on the floor. They ask if it is possible to place the rod in such a position that, if it is released when the train starts, it will not fall to the floor during the entire journey. Avoiding the complexities of mechanics, they assert that the answer is 'yes', using a simple application of the concept of continuity. Courant and Robbins answer is certainly correct if the continuity assumption is justified. But is it? This is not obvious. In particular, does the shape of the floor make any difference to the answer?

Before the lecture, Professor Ian Stewart will be presented with the 2008 Christopher Zeeman award. This new medal will be awarded triennially to recognise and reward the contributions of mathematicians involved in promoting mathematics to the public, and to encourage others to work in this area by demonstrating that such activities are valued and are a part of a mathematician's roles and responsibilities. It is jointly awarded by the London Mathematical Society and the Institute of Mathematics and its Applications.

Admission to the lecture is by ticket only. For tickets, please contact Antony Bastiani at the LMS (antony.bastiani@lms.ac.uk or De Morgan House, 57-58 Russell Square, London WC1B 4HS) by Monday 25 May. Tickets are free of charge and will be allocated on a first come, first served basis.

science museum

With grateful thanks to the Science Museum for co-sponsoring this event

LMS DURHAM RESEARCH SYMPOSIA

The LMS Research Meetings Committee is responsible for the planning of the LMS Durham Symposia, which have been running successfully each July and August since 1974, with 88 symposia to date, in a wide range of mathematical disciplines. In 2009 there will be two Durham Symposia, both supported by EPSRC:

- 6–16 July *Combinatorial and geometric structures in representation theory* (organisers: J. Brundan, J. Chuang, I. Gordon, B. Leclerc)
- 20–30 July *New directions in the model theory of fields* (organisers: D. Macpherson, A. Pillay, M. Prest, A. Wilkie)

More information on the first symposium may be obtained from Iain Gordon (i.gordon@ed.ac. uk) and on the second one from Alex Wilkie (awilkie@maths.manchester.ac.uk).

The symposia in 2008 and 2007 were as follows:

2008

- *Mathematical aspects of graphical models* (P. Dawid, S. Lauritzen),
- *Computational linear algebra for partial differential equations* (A. Ramage, D. Silvester, A. Wathen)

2007

- *Recent developments in random walks* (B. Hambly, L. Saloff-Coste, P. Tarrès),
- *Twistors, strings and scattering amplitudes* (P. Candelas, X. de la Ossa, L. Mason, Z. Bern)

The Durham website www.maths.dur.ac.uk/events/Meetings/LMS contains information on all previous and forthcoming symposia including, in many cases, a list of participants, abstracts of talks, a symposium photograph (the earliest surviving photograph is from 1976), lecture notes and, for more recent symposia, videos of the talks.

The LMS Research Meetings Committee (RMC) welcomes ideas for symposia for 2011 and later, from potential organisers and others, who should contact the Chairman of the Committee, Professor N.S. Manton (manton@lms.ac.uk). Outline proposals for 2011 should be submitted by **1 September 2009**. The EPSRC has recently agreed to fund the Durham Symposium programme until at least 2013, and the RMC is able to approve proposals (after an external refereeing process) and commit substantial funding, including full economic costs of the organisers, the subsistence costs of all invited participants, and some travel support. Considerable assistance is available in preparing the scientific and financial case for the proposals, and in the running of the symposium itself. More information concerning the Durham Symposia is available on the LMS website (www.lms.ac.uk/activities/rmc).

LMS Research Workshops

As well as the successful series of Durham Research Symposia, the Research Meetings Committee supports research workshops. These may be held anywhere in the UK, and are an opportunity for a small group of active researchers to work together for a concentrated period, on a specialised topic. Possible aims could include:

- to understand an important new piece of mathematics in an area where the participants hope to make further progress;
- to make progress on a particular problem;
- to combine expertise to shed new light on a specific area.

There is no prescribed format for an LMS research workshop, but it is expected that the number of participants will be usually no more than 40, and could be as low as 10, meeting for a period of a week or more. All participants should be actively involved in the programme, and should be identified in the proposal; the participation of appropriate postdocs and graduate students is encouraged. Applications to support development of research in an area not ready for a larger-scale application (either to LMS or EPSRC) are

welcomed. All proposals are refereed, and the Committee will offer support only if it believes that the benefits to UK mathematics are likely to be significant.

Requests for support (for travel and subsistence of participants, and reasonable associated costs) in the range £4k–£15k will be considered by the Committee. Applications for partial support for larger events will only exceptionally be supported. The primary purpose of the scheme is to support new research initiatives, and the Committee may take this into account in considering support for meetings which form part of an established series. Grant requests for conferences should be made to the Society's Programme Committee instead, which has funds for this purpose.

Applications should be sent by email to manton@lms.ac.uk; there is no application form. Proposals should contain a description of the research area, the aims and format of the workshop, a list of participants and a budget, as well as details of proposed location and timing. Applicants are advised to consult Nick Manton (manton@lms.ac.uk) informally about their proposed programme and timescale before making an application.

NONLINEAR PDE AND FREE BOUNDARY PROBLEMS

From 15 to 19 June 2009 there will be a series of minicourses and invited talks at the University of Warwick given by a wide spectrum of the most exciting experts in *Nonlinear Partial Differential Equations.* Minicourses will be given by:

- Tristan Rivière (ETH, Zürich)
- Igor Rodnianski (Princeton)
- Vladimir Sverak (Minnesota)

Invited speakers will be:

- James Colliander (Toronto)
- Camillo De Lellis (Universität Zürich)
- Alessio Figalli (École Polytechnique)
- Inwon Kim (UCLA)
- Herbert Koch (Bonn)
- Ovidiu Savin (Columbia)

More details can be found at: www2.warwick.ac.uk/fac/sci/maths/research/events/2008_2009/workshops/pde-courses. Applications will be considered from UK PhD students until **24 May 2009**, and financial support will be available. Registration is at: https://www.warwick.ac.uk/mrc/events.php.

The organizers are: Sir John Ball (Oxford), Jose Rodrigo (Warwick) and Peter Topping (Warwick). The event is supported by the London Mathematical Society–EPSRC Short Instructional Courses, The Oxford Centre for Nonlinear PDE, The University of Warwick and The Leverhulme Trust.

DE BRUN WORKSHOP ON COMPUTATIONAL ALGEBRA

The second *de Brun Workshop on Computational Algebra* will be held at the National University of Ireland, Galway, from 29 June to 10 July 2009. The organizers expect approximately 40 participants, and the workshop will consist of four morning lecture courses by:

- Gunnar Carlsson (Stanford) *Applied topology*
- Marian Mrozek (Jagiellonian University) *Computational homology*
- Eva Riccomagno (University of Genova) *Algebraic statistics*
- Henry Wynn (London School of Economics) *Algebraic statistics*

and a full programme of afternoon lectures on recent research in computational algebra. The organizers encourage workshop participants to submit abstracts for contributed talks.

For registration visit the website at http://hamilton.nuigalway.ie/DeBrunCentre or email graham.ellis@nuigalway.ie. The organizers are John Burns, Graham Ellis and Emil Sköldberg. The workshop is supported by Science Foundation Ireland and there is some funding available to assist graduate students and postdocs (and possibly others).

The London Mathematical Society

GRESHAM COLLEGE
Founded 1597

THE LONDON MATHEMATICAL SOCIETY
JOINTLY WITH GRESHAM COLLEGE

Tuesday 5 May 2009

1pm and 6pm at Barnard's Inn Hall, Holborn

(The same lecture will be delivered at 1pm and 6pm)

Mathematics and Smallpox

Professor Tom Körner
University of Cambridge

250 years ago Daniel Bernoulli used mathematics and statistics to try to weigh the risks and benefits of innoculation against smallpox. The arguments of Bernoulli and his critics remain relevant today.

ADMISSION FREE

NO RESERVATIONS REQUIRED – FIRST COME, FIRST SERVED

Gresham College, Barnard's Inn Hall, Holborn, London EC1N 2HH
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LONDON MATHEMATICAL SOCIETY

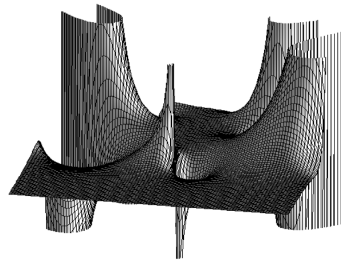
POPULAR LECTURES 2009

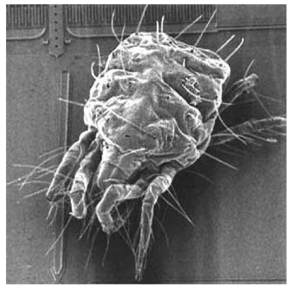
Institute of Education, London University – Monday 22 June
University of Birmingham – Tuesday 15 September

Dr Nina Snaith
University of Bristol

Hollywood's Hippest Mathematics: random matrices and Riemann zeros

Come and see how physicists helped answer a hundred year old question about prime numbers and how this features in a major Hollywood movie.





Dr Mark Miodownik
King's College London

The Scale of Things

Fleas can jump over 100 times their own height, flies can walk on water and a hamster can survive falling from aircraft without a parachute. Find out about the maths behind *The Scale of Things*.

LONDON Commences at 7.00 pm, refreshments at 8.00 pm, ends at 9.30 pm. Admission is free, with ticket. **Apply by 15 June.**
BIRMINGHAM Commences at 6.30 pm, refreshments at 7.30 pm, ends at 9.00 pm. Admission is free, with ticket. **Apply by 10 September.**

Tickets available from Lee-Anne Parker, London Mathematical Society, De Morgan House, 57-58 Russell Square, London, WC1B 4HS (email: leeanne.parker@lms.ac.uk). A stamped addressed envelope would be appreciated.

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.

ONE-DAY COLLOQUIA IN COMBINATORICS

Two linked one-day colloquia in *Combinatorics* will be taking place in London. The first day will be held at Queen Mary, University of London, on Wednesday 20 May and the second will take place at the London School of Economics and Political Science on Thursday 21 May. It is hoped that the talks will be of wide interest to all those working in combinatorics or related fields. The schedule is as follows.

Queen Mary, University of London (20 May)

- David Ellis (Cambridge) *Combinatorial problems on the symmetric group: some applications of non-Abelian Fourier analysis*
- Christian Elsholtz (Royal Holloway) *Problems in multidimensional additive combinatorics*
- Luke Kelly (Birmingham) *Arbitrary orientations of cycles in oriented graphs*
- Rob Morris (Cambridge) *Some recent developments in bootstrap percolation*
- Alex Scott (Oxford) *Triangles in random graphs*
- Mark Walters (Queen Mary) *Hamilton cycles in random geometric graphs*

London School of Economics (21 May)

- Stefanie Gerke (Royal Holloway) *Random intersection graphs*
- Leslie Goldberg (Liverpool) *A complexity dichotomy for hypergraph partition functions*
- Peter Keevash (Queen Mary) *The early evolution of the H-free process*
- Jaroslav Nešetřil (Prague) TBA
- Rahul Savani (Warwick) *Wiretapping: the nucleolus of connectivity*
- Angelika Steger (ETH Zürich) *Synchrony and asynchrony in neural networks*

Anyone interested is welcome to attend. Some funds are available to contribute to the expense of research students who wish to attend the meetings. Further details can be obtained from the web page www.cdam.lse.ac.uk/colloquia-in-combinatorics.html or from Graham Brightwell (g.r.brightwell@lse.ac.uk) and Robert Johnson (r.johnson@qmul.ac.uk). Support for this event by the London Mathematical Society and the British Combinatorial Committee is gratefully acknowledged by the organisers.

YORKSHIRE AND DURHAM GEOMETRY DAY

There will be a *Yorkshire and Durham Geometry Day* on Friday 15 May 2009 from 11:00 am to 5:15 pm in the Department of Mathematical Sciences, Durham University. Tea and coffee will be available from 10:30 am. The programme is as follows:

- Katrin Leschke (Leicester) *Willmore tori in the 4-sphere*
- Roger Moser (Bath) *Variational methods for biharmonic maps*
- Joey Oliver (Durham) *Characteristic curves at a cusp of Gauss on smooth surfaces in 3-space*
- Norbert Peyerimhoff (Durham) *Some global geometric and spectral aspects of non-positively curved planar graphs*
- James Thompson (Durham) *Complex hyperbolic triangle groups and lattices in* PU(2,1)

All interested are welcome to attend, although the organisers would appreciate your letting them know if you plan to come. For further information email John Bolton (john.bolton@durham.ac.uk) or Wilhelm Klingenberg (wilhelm.klingenberg@durham.ac.uk) or visit the website at www.maths.dur.ac.uk/_dma0jb/ydgd.html. The organisers of the Yorkshire and Durham Geometry Days are pleased to acknowledge the financial support of an LMS conference grant for this series of meetings.

WEAK SOLUTIONS OF THE 3D EULER EQUATIONS

A one-day meeting on *Weak Solutions of the 3D Euler Equations* will be held at the Mathematics Institute, University of Warwick, on Monday 8 June 2009. The meeting will focus on the development of weak solutions of the incompressible Euler equations, and will promote informal discussion of weak solutions, energy conservation and turbulence. The invited speakers are:

- Camillo De Lellis (Universität Zürich)
- Keith Moffatt (University of Cambridge)
- José Rodrigo (University of Warwick)
- Alexander Shnirelman (Concordia University)
- Roman Shvydkoy (University of Illinois–Chicago)

For further details visit www2.warwick.ac.uk/fac/sci/maths/research/miraw/days or contact Xinyu He (Xinyu.He@warwick.ac.uk). Limited funds may be available to cover the expenses of interested research students. The meeting is supported by Mathematical Interdisciplinary Research at Warwick ('MIR@W').

PANDA

A *Patterns, Nonlinear Dynamics and Applications* (PANDA) meeting, with review talks on Modelling in Biology, will be held on Tuesday 16 June 2009 (11:00–17:00 approximately) in the Department of Mathematics, University of Surrey. The meeting will include two pedagogical review talks before lunch:

- Sarah Waters (Oxford) *Mathematical models for tissue engineering applications*
- Andrzej Kierzek (Surrey) *Stochastic models in systems biology*

Shorter research talks will follow in the afternoon. Offers of contributed research talks are welcome, particularly from postdocs and PhD students, who are warmly encouraged to attend. Talks are invited on any topic within the PANDA remit, and need not have a biological theme. A limited amount of funding is available for the reimbursement of travel expenses.

Contact Rebecca Hoyle (r.hoyle@surrey.ac.uk) if you would like to speak. Further details will be posted at http://personal.maths.surrey.ac.uk/st/R.Hoyle/panda/. PANDA is organised by Rebecca Hoyle (Surrey), Jon Dawes (Bath), Paul Matthews (Nottingham) and Alastair Rucklidge (Leeds) with the financial support of an LMS Scheme 3 grant.

RANK GRADIENT OF GROUPS

A one-day meeting on *Rank Gradient of Groups* will be held on 12 June 2009 at Imperial College London. Prospective speakers are:

- Miklos Abert (Chicago)
- Marc Lackenby (Oxford)
- Nikolay Nikolov (Imperial)

The meeting is part of the *South England Profinite Groups Meetings* which are funded by an LMS Scheme 3 grant. Limited funds are available to reimburse travel expenses of UK-based students and young mathematicians. For more details see www.ma.rhul.ac.uk/profinite_groups/meetings.html or contact N. Nikolov at n.nikolov@imperial.ac.uk.

GREGYNOG MATHEMATICS COLLOQUIUM 2009

The 2009 *Gregynog Mathematics Colloquium* will take place at Gregynog, mid-Wales, from 18 to 20 May 2009. The guest speakers will be:

- Jeremy Levesley (Leicester) *Approximation using radial basis functions* (2 talks)
- Boris Khoruzhenko (Queen Mary) *Random matrices* (2 talks)

For further details, or to contribute a talk, contact Professor Russell Davies (DaviesR@cardiff.ac.uk). Talks from postgraduates are welcome. For details of the venue visit www.wales.ac.uk/gregynog. The Colloquium is supported by an LMS Conference grant,

LONDON MATHEMATICAL SOCIETY

SPITALFIELDS DAY

in association with the Isaac Newton Institute programme entitled
Algebraic Lie Theory

Automorphic Forms and the Langlands Programme

Wednesday 13 May 2009, Isaac Newton Institute

Organisers: Meinolf Geck, Alexander Kleshchev and Gerhard Röhrle

This Spitalfields Day is organised in connection with Professor Lafforgue's visit to the Newton Institute, as a Distinguished Rothschild Professor. The talks by internationally leading experts are centred around recent developments in the theory of automorphic forms, the Langlands Programme and related areas.

10:30 – 11:00	Welcome and coffee
11:00 – 12:00	**John Coates** (University of Cambridge) *L-functions and arithmetic*
12:00 – 13:45	Lunch
13:45 – 14:45	**Kevin Buzzard** (Imperial College, London) *What is an algebraic automorphic form?*
14:45 – 15:15	Tea
15:15 – 16:15	**Michael Rapoport** (Universität Bonn) *Arithmetic cycles on moduli spaces of abelian varieties*
16:30 – 17:30	**Gérard Laumon** (CNRS and Université Paris-Sud) *Fundamental lemma and Hitchin fibration*
17:30 – 18:30	Wine Reception

Anyone interested is welcome to attend; talks will be aimed at a general mathematical audience. Please let Tracey Andrew at the Institute know by **8 May 2009** if you intend to come: tel: (01223) 760992; fax: (01223) 330508; email: t.andrew@newton.cam.ac.uk.

There are limited funds available to assist research students to attend. Apply by **8 May 2009** to Tracey Andrew by email (t.andrew@newton.cam.ac.uk) or post at the Newton Institute, 20 Clarkson Road, Cambridge CB3 0EH.

ALGEBRAIC THEORY OF DIFFERENCE EQUATIONS

As part of the Isaac Newton Institute Programme on *Discrete Integrable Systems* (19 January – 3 July 2009) there will be a satellite workshop from 11 to 15 May 2009 on *Algebraic Theory of Difference Equations* to be held in Leeds. The workshop will be dedicated to diverse aspects of the algebraic theory of difference equations. We expect to represent topics such as:

- the Galois theory of difference and q-difference equations
- isomonodromic deformation problems and Painlevé difference equations
- integrability of analytic difference equations
- dynamics of rational maps
- connections with the model theory of difference fields

In addition to lectures on research developments, we expect to have a few introductory lectures on some of the topics mentioned above. Invited speakers include:

- G. Casale (Rennes)
- Z. Chatzidakis (Paris)
- M. Gekhtmann (Notre Dame)
- R. Halburd (University College London)
- Ch. Hardouin (Heidelberg)
- E. Hrushovski (Jerusalem)
- P. Kowalski (Wrocław)
- I. Krichever (Columbia)
- I. Laine (Joensuu)
- S.P. Novikov (Maryland)
- M. van der Put (Groningen)
- J-P. Ramis (Toulouse)
- J. Sauloy (Toulouse)
- Th. Scanlon (Berkeley)
- M. Singer (North Carolina State)
- V. Sokolov (Landau Institute, Moscow)
- I. Taimanov (Novosibirsk)
- H. Umemura (Chuo)
- L. di Vizio (Paris)

The organisers are Allan Fordy (Leeds), Alexander Mikhailov (Leeds), Frank Nijhoff (Leeds), Anand Pillay (Leeds) and Jean-Pierre Ramis (Toulouse). The workshop is supported by the EPSRC, an LMS Conference grant and by the School of Mathematics, University of Leeds. For further information visit the website at www.newton.ac.uk/programmes/DIS/disw03.

POSTGRADUATE COMBINATORIAL CONFERENCE

The 20th postgraduate research conference on *Combinatorics* (PCC 2009) will be held from 22 to 24 June 2009 at Royal Holloway, University of London. The conference is aimed at research students in all areas of combinatorics and discrete mathematics who are currently working on their PhD. It allows students to meet and talk about their research and related subjects. Most talks are contributed by the students themselves, apart from five talks by the invited speakers. The speakers will include:

- A.G. Thomason (Cambridge) *2-coloured graphs, multigraphs and hereditary properties*
- D.A. Cohen (Royal Holloway) *Arrow's theorem showing that there is no fair voting system*
- A. Yeo (Royal Holloway) *Transversals in hypergraphs, total domination in graphs and other related problems*
- D. Smith (Glamorgan) *Old and new problems in coding theory*
- A. Koller (JLT Reinsurance Brokers Ltd) *Graph theory in industry*

This meeting is supported by an LMS Postgraduate Research Conference grant which will include subsidies for the participants. The event is hosted by the Department of Computer Science, Royal Holloway, University of London. Contact Arezou Soleimanfallah (pcc2009@cs.rhul.ac.uk) for details. Further details will be published at www.cs.rhul.ac.uk/PCC2009.

INTERNATIONAL MATHEMATICS COMPETITION*

Preliminary Announcement

The *16th IMC for university students* is being co-organized by University College London and hosted by the Eötvös Loránd University in Budapest, Hungary, from 25 to 30 July 2009. Every participating university is invited to send several students and one teacher. Individual students are welcome. The competition is planned for students completing their first, second, third or fourth year of university education and will consist of two sessions of 5 hours each. Problems will be from the fields of Algebra, Analysis (Real and Complex), Geometry and Combinatorics. The working language will be English. Over the previous fifteen competitions we have had participants from over 150 universities in 40 countries. The timetable is as follows

July 25 Arrival and registration
26 Opening ceremony, Additional registration, Meeting of the jury
27 First exam day
28 Second exam day
29 Meeting of the jury, Closing ceremony, Final dinner
30 Departure

Although this is an individual event, the Universities traditionally divide their participants into groups of four each. The number of students in the teams is, however, not fixed. The professor who accompanies the students is expected to be a member of the Jury.

The problems will be chosen at the Meeting of the Jury on 26 July from those received in advance by the President of the Jury, Professor John Jayne. The problems proposed should be precisely formulated and accompanied by a detailed solution. The problems should be in fields of *Algebra*, *Analysis* (*Real* and *Complex*), *Geometry* and *Combinatorics*. The problems given at the last fifteen Competitions can give a general idea of the level expected (see the *IMC* web site www.imc-math.org.uk). Additional topics may also be included. The students' work will be evaluated by Team Leaders and other professors and assistant professors using criteria provided by the Jury.

Participants are invited to confirm their intention to participate, either by on-line registration or by email, by the **end of May 2009**, providing the following information: University; City; Country; Leader of the team (name, email address); Students (number); Mailing address; Email address; Fax number.

The participants from some countries will need a visa to enter Hungary. Contact your travel agent or the Hungarian Consulate in your country for details. If necessary, the organizers will post formal invitations for participation in the Competition. The Competition Fee, which will include accommodation and meals from dinner on the 25th to breakfast on the 30th, have not yet been finalized.

Send all confirmations of participation and arrival details to John Jayne at the email address below. If you would like a copy of the competition poster, send your request with postal address to Professor John E. Jayne, IMC President, Department of Mathematics, University College London, Gower Street, London WC1E 6BT (tel: +44-20-7679 7322; fax: +44-20-7419 2812; email: j.jayne@ucl.ac.uk; web: www.imc-math.org.uk).

***Note.** The *IMC* is not to be confused with the *International Mathematical Olympiad* (*IMO*) *– Ed.*

THE ENIGMA OF ENCELADUS

An international workshop on *The Enigma of Enceladus: Observation and Modelling* will take place at the University of Leicester from 19 to 20 June 2009. The purpose of the workshop is to bring together leading experts to present and discuss recent results from observations and modelling efforts. Topics include Enceladus' history and evolution, surface properties and processes, heat sources, heat flow, internal structure, chances for liquid subsurface water, perspectives for formation of life, the gas and dust plume, as well as the interaction with the Saturnian environment. The special focus in the mathematical modelling will be on the multi-scale nature of the phenomenon, where one needs to describe simultaneously processes on the scale of microns, centimeters, tens of meters and hundreds of kilometers. It is expected that the workshop will bring together researchers who develop novel multi-scale numerical methods and those who apply such methods to the challenging practical problem.

A Public Lecture will be given by Larry Esposito (LASP, Boulder). The plenary speakers are:

- Larry Esposito (LASP, Boulder)
- Mat Hedmen (Cornell)
- Andy Ingersoll (CalTech)
- Sascha Kempf (MPI, Heidelberg)
- Frank Postberg (MPI, Heidelberg)
- Nick Schneider (LASP, Boulder)
- John Spencer (SWRI, Boulder)
- Gabriel Tobie (Nantes)
- Mikhail Zolotov (Arizona State)

Most of the talks will be plenary; however, a session with short 10-minute talks is also planned. To register, send a message to nb144@leicester.ac.uk (Nikolai Brilliantov) with a title and a brief abstract of your presentation. In case there is more than one author, indicate clearly who is going to present the work. The registration and abstract submission deadline is **1 May**, and the decision of acceptance will be made by 15 May.

There will be a small registration fee of £35 to be paid in cash upon arrival. However, in some cases, e.g. for PhD students, it may be waived. The organisers are Nikolai Brilliantov (Leicester, UK) and Jürgen Schmidt (Potsdam, Germany). The workshop is supported by an LMS Conference grant and the University of Leicester.

REFLECTIONS IN NONLINEAR MECHANICS

A meeting on *Reflections in Nonlinear Mechanics* will be held from 8 to 9 June 2009 in honour of the 65th birthday of Professor Giles Hunt of the Department of Mechanical Engineering, University of Bath, to mark his manifold and singular contributions to nonlinear mechanics over many years. The meeting will focus on future trends and include applications to buckling, delamination, folding and emergent phenomena across a wide range of scientific disciplines including geology, areospace, biology and electrical networks. Above all, the meeting will seek to promolgate Giles' sense of conviviality and his informal, geometric and collaborative approach to science. Speakers include:

- Chris Budd (Bath)
- Richard Butler (Bath)
- Alan Champneys (Bristol)
- David Chillingworth (Southampton)
- John Cosgrove (Imperial College London)
- Gábor Domokos (Budapest)
- Simon Guest (Cambridge)
- Giles Hunt (Bath)
- Rachel Kuske (UBC)
- Gabriel Lord (Heriot-Watt)
- Hans Muhlhaus (Queensland)
- Mark Peletier (Eindhoven)
- Mike Thompson (Cambridge)
- Antoinette Tordesillas (Melbourne)
- Lawrie Virgin (Duke)
- Ahmer Wadee (Imperial College London)
- Khurram Wadee (Exeter)

More details and registration information can be found at www.bath.ac.uk/math-sci/events/2009/reflections. This meeting is partially funded by the London Mathematical Society and EPSRC.

EPSRC

The London Mathematical Society

Probabilistic Combinatorics

LMS–EPSRC Short Course

University of Cambridge, 13–17 July 2009

Organiser: Professor Imre Leader

Course outline and prerequisites
The aim of this course is to introduce research students to modern methods in probabilistic combinatorics. The course is intended primarily for UK-based postgraduate students, particularly those interested in discrete mathematics (graph theory, combinatorics), theoretical computer science (algorithms, complexity) or statistical physics (percolation, scale-free processes). There will be few prerequisities.

The course is centred around three five-hour lecture courses:
- *Sharp thresholds* (Béla Bollobás, Cambridge and Memphis)
- *Quasirandomness* (Tim Gowers, Cambridge)
- *Recent applications of randomness in computer science* (Assaf Naor, Courant Institute)

There will be additional tutorial sessions. For more information on the course please see www.dpmms.cam.ac.uk/site2002/probcomb.pdf.

Application
Applications should be made using the registration form available on the Society's website at: www.lms.ac.uk/activities/rmc/sc/48poster.html.

The closing date for applications is **Friday 22 May 2009**. Numbers will be limited and those interested are advised to make an early application.

Fees
- All research students registered at a UK university will be charged a registration fee of £100 (in the case of EPSRC-funded research students, this fee should be paid by their departments from their Doctoral Training Account; for non-EPSRC research students, their department might be prepared to pay the fee). They will not be charged for subsistence costs.
- UK-based postdocs will be charged a registration fee of £100, plus half the subsistence costs (£132), making a total of £232.
- Others wishing to attend (overseas students and postdocs, those working in industry) will be charged a registration fee of £250 plus the full subsistence costs (£264), making a total of £514.

All participants must pay their own travel costs (for EPSRC-funded students, this should be covered by their DTA). Fees are not payable until a place on the course is offered.

In the event of over-subscription, preference will be given to UK-based research students.

LMS–EPSRC Short Courses aim to provide training for postgraduate students in core areas of mathematics. Part of their success is the opportunity for students to meet other students working in related areas as well as the chance to meet a number of leading experts in the topic.

EPSRC

The London Mathematical Society

Geometry, Field Theory & Solitons

LMS–EPSRC Short Course

University of Leeds, 26–31 July 2009

Organisers: Dr J.M. Speight, Professor R. Bielawski

Course outline and prerequisites

Topological solitons have important applications in many branches of physics, from high-energy and condensed-matter physics to astrophysics and cosmology. The study of their dynamics requires a fascinating fusion of differential geometry, classical field theory and integrable systems theory, collectively called moduli space methods. The underlying theme is that important information about soliton dynamics can be deduced from geometric properties of the moduli space of static soliton solutions. This course will introduce students to moduli space methods in a variety of important contexts, and is designed to be accessible to postgraduate students with a background in mathematics or theoretical physics. There will be three 5-hour lecture courses:

1. *The geometry of soliton moduli spaces*, Professor Nicholas Manton FRS (University of Cambridge)
2. *Supersymmetry and solitons*, Dr David Tong (University of Cambridge)
3. *ADHM, Nahm and Fourier–Mukai transforms*, Professor Jacques Hurtubise (McGill University, Montreal)

In addition there will be hour-long guest lectures by Professor Richard Ward FRS (University of Durham), Dr Jiannis Pachos (University of Leeds) and Dr Martin Speight (University of Leeds).

Further details can be found at the course website: www.maths.leeds.ac.uk/pure/geometry/solitons.

Application

Applications should be made using the registration form available on the Society's website at: www.lms.ac.uk/activities/rmc/sc/49poster.html.

The closing date for applications is **Friday 29 May 2009**. Numbers will be limited and those interested are advised to make an early application.

Fees

- All research students registered at a UK university will be charged a registration fee of £100 (in the case of EPSRC-funded research students, this fee should be paid by their departments from their Doctoral Training Account; for non-EPSRC research students, their department might be prepared to pay the fee). They will not be charged for subsistence costs.
- UK-based postdocs will be charged a registration fee of £100, plus half the subsistence costs (£150), making a total of £250.
- Others wishing to attend (overseas students and postdocs, those working in industry) will be charged a registration fee of £250 plus the full subsistence costs (£300), making a total of £550.

All participants must pay their own travel costs (for EPSRC-funded students, this should be covered by their DTA). Fees are not payable until a place on the course is offered.

In the event of over-subscription, preference will be given to UK-based research students.

LMS–EPSRC Short Courses aim to provide training for postgraduate students in core areas of mathematics. Part of their success is the opportunity for students to meet other students working in related areas as well as the chance to meet a number of leading experts in the topic.

NON-CLASSICAL, BOUNDARY AND LOCALISATION PHENOMENA IN MATHEMATICAL HOMOGENISATION

Report

A two-day workshop on *Non-classical, boundary and localisation phenomena in mathematical homogenization* was held at Cardiff School of Mathematics from 26 to 27 August 2008. It was supported by the London Mathematical Society, via its conference grants scheme, and by the Wales Institute of Mathematical and Computational Sciences.

The meeting highlighted recent developments in a range of mathematical techniques situated at the junction between spectral analysis of partial differential equations, wave propagation and materials science. During the last decade several key observations have been made regarding the effect of certain features of the boundary of the physical domain or its material properties on the existence of wave modes that have some sort of localisation property. At the same time, the development of multiscale analysis has led to mathematical theories where such localisation effects can be elucidated more successfully. It was thought therefore that bringing together outstanding representatives in each of these subjects could create a critical mass capable of taking the related research to a new stage through synergy of ideas.

The speakers at the workshop included: Mohamed Camar-Eddine (Rennes), Gennady Mischuris (Aberystwyth), Maria Neuss-Radu (Heidelberg), Grigory Panasenko (Saint-Étienne), William Parnell (Manchester), Aleksey Pichugin (Brunel), Valery Smyshlyaev (Bath) and Enrique Zuazua (Madrid). There were also eight non-speaking participants. The talks were timed so as to allow the participants to exchange their views and increase the chance of follow-up research on the topics discussed. The feedback from the participants following the meeting indicated that it was a timely contribution towards strengthening the links within the applied analysis community, and that such events should continue to be encouraged in the future. The commitment by the LMS to helping to train new researchers in the field by providing them specific support to attend the meeting was given a special welcome.

Kirill Cherednichenko
School of Mathematics
Cardiff University

MARY CARTWRIGHT MEETING

Report

The Society's annual Mary Cartwright Meeting was held at Imperial College, London, on Friday 27 February. The meeting began with a brief business meeting of the Society, chaired by the President, Brian Davies, who then handed over to Dorothy Buck as the organizer for the scientific part of the meeting.

The Mary Cartwright Lecture series was set up by the LMS in 2000 to recognize extra-ordinary women mathematicians, and is organized annually by the Women in Mathematics committee. It is named after Dame Mary Lucy Cartwright who was the first female mathematician FRS, the first woman to receive the Sylvester medal, the first woman to receive the De Morgan prize and the first female President of the LMS. For an account of her mathematical work, see www-groups.dcs.st-and.ac.uk/~history/Biographies/Cartwright.html.

The Mary Cartwright Lecturer in 2009 was Dusa McDuff, FRS, with companion lecturer

Simon Donaldson, FRS. Professor McDuff is the Helen Lyttle Kimmel Chair at Barnard College, Columbia University. Despite meeting Mary Cartwright at a tea for prospective students at Girton College, Cambridge, she did her undergraduate degree in Edinburgh. After a PhD at Cambridge on von Neumann algebras she subsequently collaborated with Gelfand in Moscow and Graeme Segal in Oxford. She held positions at Warwick and Stony Brook before moving to Barnard in 2007. Her work in symplectic geometry and related fields has garnered her many awards: she is an FRS, Fellow of the American Academy of Arts and Sciences, and has given a BMC plenary lecture and invited address at the Kyoto ICM.

Simon Donaldson's talk was entitled *A spectator's commentary on symplectic topology.* Professor Donaldson's talk surveyed some of the developments of modern symplectic topology over the past 30 years, aimed at non-specialists. He discussed the developments of pseudoholomorphic curve techniques, Floer homology, connections with geometric topology in 3 and 4 dimensions and the theory of complex algebraic surfaces.

Dusa McDuff's talk was entitled *Symplectic embeddings of 4-dimensional ellipsoids.* Gromov's celebrated nonsqueezing theorem of 1985 says that it is impossible to embed symplectically a large ball into a thin cylinder. One of the foundational results of modern symplectic topology,this led to a more or less complete solution of the 4-dimensional symplectic packing problem (which asks when a given disjoint union of balls can be symplectically embedded into another ball). However, there are many other packing problems. Professor McDuff discussed recent joint work with Schlenk about the constraints on embedding a symplectic ellipsoid into a ball. This lead to some intriguing elementary questions in number theory and the appearance of the Fibonacci numbers. The result has applications to constructing 6-dimensional manifolds with symplectic circle actions.

The meeting was held in the Mathematics Department of Imperial College, London, and was followed by a lively dinner at Wodka, a nearby restaurant in South Kensington.

Dorothy Buck
Imperial College
London

Brian Davies, Gwyneth Stallard, Dusa McDuff and Dorothy Buck

REVIEWS

Origami Tessellations, Awe-Inspiring Geometric Designs by Eric Gjerde, A.K. Peters, 2009, 128 pp, £20.00, US$24.95, ISBN 978-1-56881-451-3; **Ornamental Origami, Exploring 3-D Geometric Designs** by Meenakshi Mukerji, A.K. Peters, 2009, 154 pp, £20.00, US$24.95, ISBN 978-1-56881-445-2.

This review is quite difficult to write because it is about two very visual books. It needs to be read in conjunction with looking at the websites I have given at the end. They cover mathematical origami and take it in new directions and deserve a wider audience than the origami community.

Meenakshi Mukerji's book is essentially a study of polyhedra but in a way that brings out the symmetry in subtle ways. Like most origami books it is very clearly laid out and the essence of communication is the diagram. It builds up very complicated results from simple modules so that even a beginner in origami can follow and learn about polyhedral symmetry by assembling them. It should definitely find a place in school teaching or mathematics clubs, but I feel could also be used at a higher level; I will develop this idea in a moment. It is not just a "how to make the models" book but deals with the mathematics of the symmetry behind the models, and also presents some interesting descriptions of the geometry of the modules. It is deceptive in the simplicity that leads to complicated polyhedra. At first I thought it was mainly about icosahedral/dodecahedral symmetrical models, but then I realised that there are simpler ones and ones which could be thought of as being derived from the Archimedean solids. The decoration is such that analysis of the symmetry is often quite hard. This is not a book about making polyhedra as such. These are objects with polyhedral symmetry and it is often difficult to see which type without some puzzling over them.

Eric Gjerde's book is in a different realm. Whereas I would not fault the Mukerji book on design, Gjerde's is as much an art book and is a

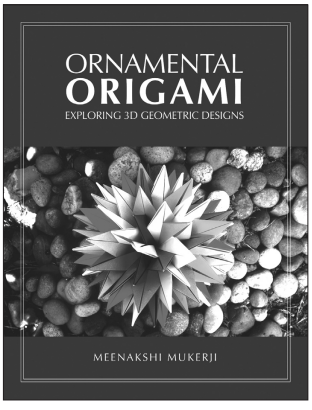
feast for the eyes on every page, which is why it so hard to write a review just in words. It is not standard origami, nor indeed standard tessellation. It takes tessellations into three dimensions and then back into two by a process of pleating: I will try to describe this soon, but you do need to look at the images to understand this fully. Most of the diagrams are not standard origami folding since they require three dimensional explanations and the methods are shown with photographs. The results are based on taking either a prefolded square grid or isometric triangular grid and then using parts of the grid with a process of folding and twisting and overlaying or stacking to form the tessellations. In some cases an element of three dimensions remains whereas in others, because of the transparency of the paper, there is a stained glass effect. The book has some Islamic tilings as illustrations in the explanation. There is not a great deal of basic mathematics as there is in the Mukerji book, but it is hard to see how there could be more, as the tessellations are not standard.

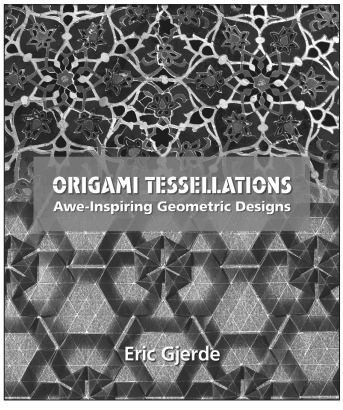
Both books can be seen as important mathematically, but in different ways. Geometry is not taught or researched in the way it was in the past. It is more important to engineers than pure mathematicians, and building physical models might be frowned upon if only because there is not recent history of doing so: it ceased with the death of Felix Klein a century or so ago. You may argue that computer modelling has replaced research or learning, but understanding three dimensions is not easy. Indeed, because students don't physically even need to draw graphs any more, they do not get the hand-eye practice they used to, so, for example, they do not always understand something as simple as curvature. I feel there is a place for building models and that exploring some of the ideas in both these books would help the understanding of space in a way that computing or a lecture could never do. Mukerji's book could supplement a course on group theory even from just an analytical point of view. I am sure it would tax those who deal with algebraic abstraction rather than physical objects.

Gjerde's book also has more to offer, apart from the wonder of how he (and others in the origami community) does it. All pieces are from a single piece of paper, prefolded into the grids. You would not think so when, for example, you have a result that looks like woven strips of tape or a triangular weaving reminiscent of M.C. Escher. I am sure there is scope for a mathematical research project into new ways of exploring tessellations here.

Even if you have no intention of making anything from either of these books, if you want to show someone the beauty of mathematics, these two books are an ideal way to do it. Look at the results on the following webpages, but look at the methods in the books too, since they are equally a part of the aesthetics. Eric Gjerde's website is www.origamitessellations.com and he has more work at www.flickr.com/photos/origami. Meenakshi Mukerji's website is www.origamee.net.

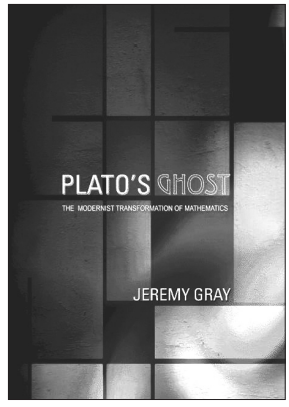
John Sharp
London Knowledge Lab





Plato's ghost. The modernist transformation of mathematics by J.J. Gray, Princeton University Press, 2008, 526 pp, £32.50, $45.00, ISBN 978-0-691-13610-3.

Gray argues that mathematical practice was transformed, especially in the period 1870–1910, by a conception of the subject that he calls 'modernism', which 'is an autonomous body of ideas, having little or no outward reference, placing considerable emphasis on formal aspects of the work and maintaining a complicated – indeed, anxious – rather than a naïve relationship with the day-to-day world, which is the *de facto* view of a coherent group of people, such as a professional or discipline-based group that has a high sense of the seriousness and value of what it is trying to achieve' (p.2). It covers both the state of a mathematical theory in *being* modern (or not) and the process of modernizing a theory (or not). Desiderata for rigorous theories included hopefully complete and consistent axiomatisations, carefully formed definitions, and detailed proofs; modernist mathematicians emphasized pure much more than applied mathematics, stressed the axiomatisation and structure of theories, and became concerned with language.



A major figure is the thoroughly modern David Hilbert. One obvious clarion call for modern mathematics is his famous speech of 1900 in Paris on mathematical problems to be tackled in the new century. The importance of his modernising axiomatics and meta-mathematics is well brought out.

Much of the author's account deals with the history of projective and non-Euclidean geometries and the relationship of all geometries to space and thereby to physics. The modernism arises especially in the separation of these categories. The influence of Kantian philosophy upon some modernists is well outlined; the author is a specialist on the history of geometries, and his book contains an able summary of those developments. However, the treatment of the history of mathematical analysis, set theory and symbolic logics is much more doubtful, partly over questions of historical detail but especially on the relationship between mathematics and logics.

Modernism manifested itself in various parts of research-level pure mathematics: in addition to arithmetic, analysis, set theory, logic and geometries, some evidence is also provided for parts of algebraic number theory and certain abstract algebras. The case can be extended to contexts not explored here, such as international collaborations, the growing professionalisation of mathematics, and mathematics education.

However, the case overall is problematic. Pure mathematics is extolled, yet several applications are treated. The requirement of the modernist mathematician to belong to a group need not be mandatory. The lack of time dependence in the specification of modernism is at least an oversight, and also raises the question of the applicability of the thesis to earlier periods. The claim to uncover rich connexions between foundations and research 'across *every* branch of mathematics' (p.3, italics inserted) is unproven. While not claiming any total victory for modernism, the author asserts that 'by far the major part of mathematics was transformed in a modernist way' (p.14); however, several major parts of mathematics do not seem to have been so affected. An indicative list should have been given of modernist, not modernist, and anti-modernist topics, in order to clarify the limitations as well as the scope of the thesis. These criticisms are elaborated in a survey of modernism as presented in this and other recent books, which will appear in *The Mathematical Intellegencer*.

I. Grattan-Guinness

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 number is given in brackets. A fuller list of meetings and events is given on the Society's website (www.lms.ac.uk/newsletter/calendar.html).

MAY 2009

1-2 Low-Dimensional Geometry and Topology Meetings, Warwick (380)
5 *Mathematics and Smallpox*, LMS–Gresham College joint lecture, London (381)
9-17 Variational Analysis and Applications Workshop, Sicily (378)
11-13 Mathematical Models of Collective Dynamics in Biology and Evolution Meeting, Leicester (377)
11-15 Algebraic Theory of Difference Equations Workshop, Leeds (381)
13 LMS Spitalfields Day: Automorphic Forms and the Langlands Programme, INI, Cambridge (381)
13-15 Topics in Algebra Meeting, Italy (381)
14-15 Women and Science and Beyond Conference, Prague (380)
14-15 Causal Inference LTCC Intensive Course, London (379)
14-16 Variational and Topological Methods and Water Waves Workshop, Bath (379)
15 Yorkshire and Durham Geometry Day, Durham (381)
18-19 *L* functions LTCC Intensive Course, London (379)
18-20 Gregynog Mathematics Colloquium, Gregynog (381)
20 Colloquia in Combinatorics, Queen Mary, University of London (381)
21 Colloquia in Combinatorics, London School of Economics, London (381)
21-22 Nonlinear Waves and Solitons LTCC Intensive Course, Kent (379)
25 North British Functional Analysis Seminar (NBFAS), Lancaster (379)
26 Graham Jameson Meeting, Lancaster (379)
28-29 From Quantum Algebras to Total Non-Negativity LTCC Intensive Course, Kent (379)

JUNE 2009

8 Weak Solutions of the 3D Euler Equations Meeting, Warwick (381)
8-9 Lattice-Boltzmann Methods LTCC Intensive Course, London (379)
8-9 Reflections in Nonlinear Mechanics Meeting, Bath (381)
8-11 British–Nordic Congress of Mathematicians, Oslo (380)
9 Inaugural Christopher Zeeman Medal Lecture, London (381)
9-12 Mathematics of Finite Elements and Applications Conference, Brunel University (378)
9-15 Algebraic Topology, Group Theory and Representation Theory Conference, Isle of Skye (376)
12 Rank Gradient of Groups Meeting, London (381)
15-19 Nonlinear PDE and Free Boundary Problems Minicourses, Warwick (381)
16 Patterns, Nonlinear Dynamics and Applications Meeting, Surrey (381)
19-20 The Enigma of Enceladus: Observation and Modelling Workshop, Leicester (381)
22 LMS Popular Lectures, London (381)
22-24 Postgraduate Combinatorial Conference, London (381)
22-26 Quantum Chaos LMS–EPSRC Short Course, Nottingham (380)
22-26 Representation Theory and Lie Theory Workshop, INI, Cambridge (376)
22-27 EWM Summer School for PhD Students, Turku, Finland (380)
29-3 July Discrete Systems and Special Functions Workshop, INI, Cambridge (375)
29-3 July Stochastic Analysis and Finance Workshop, City University of Hong Kong (379)
29-10 July de Brun Workshop on Computational Algebra, Galway, Ireland (381)

JULY 2009

1-3 Design Theory and Applications Conference, National University of Ireland, Galway (379)
1-3 Game Theory SING5, Amsterdam, The Netherlands (379)
1-3 Graph Theory Workshop, Bristol (380)
3 LMS Meeting, London
3-16 Proof Theory and Constructivism Symposium, Leeds (380)
4-5 Proofs and Computations Conference, Leeds (380)
5-8 Algebra and Analysis around the Stone–Čech Compactification Conference, Cambridge (380)
5-10 British Combinatorial Conference, St Andrews (378)
5-10 Set Theory Meeting, Będlewo, Poland (380)
6-10 PRIMA Congress, Sydney, Australia (380)
6-10 26th Journées Arithmétiques, Saint-Étienne, France (379)
6-16 Combinatorial and Geometric Structures in Representation Theory, LMS Durham Research Symposium, Durham (381)
13-17 Probabilistic Combinatorics LMS–EPSRC Short Course, Cambridge (381)
13-18 7th ISAAC Congress, London (381)
14-18 Imprecise Probability: Theories and Applications Symposium, Durham (381)
15 LMS SW & South Wales Regional Meeting, Southampton (381)
15-16 Sparse Matrices for Scientific Computation Meeting, Abingdon, Oxford (377)
20-24 The Cardiac Physiome Meeting, INI, Cambridge (378)
20-24 Probability at Warwick Young Researchers Workshop, Warwick (379)
20-30 New Directions in the Model Theory of Fields, LMS Durham Research Symposium, Durham (381)
25-30 International Mathematics Competition, Budapest, Hungary (381)
26-31 Geometry, Field Theory & Solitons, LMS–EPSRC Short Course, Leeds (381)
27-31 Stochastic Processes and their Applications Conference, Berlin, Germany (380)
27-31 Non-Abelian Fundamental Groups in Arithmetic Geometry Introductory Workshop, INI, Cambridge (379)

AUGUST 2009

1-15 Groups St Andrews 2009, Bath (372)
3-7 Logic and Mathematics 09, York (379)
3-8 Pan African Congress of Mathematicians, Ivory Coast (378)
3-8 ICMP09, Prague, Czech Republic (380)
9-14 Model Theory Meeting, Będlewo, Poland (380)
17-21 The Dynamics of Discs and Planets Conference, INI, Cambridge (378)
24-28 Anabelian Geometry Workshop, INI, Cambridge (379)
25-28 European Women in Mathematics General Meeting, Novi Sad (379)

SEPTEMBER 2009

3-5 Modern Mathematical Methods in Science and Technology Conference, Poros Island, Greece (380)
7-8 Opening Windows on Maths & Stats, Open University (380)
11-17 Models in Developing Mathematics Education, Dresden, Germany (380)
14-15 Topology Meeting, Leicester (381)
15 LMS Popular Lectures, Birmingham (381)
16 LMS Midlands Regional Meeting, Leicester
28-30 Planetesimal Formation Workshop, INI, Cambridge (379)

NOVEMBER 2009

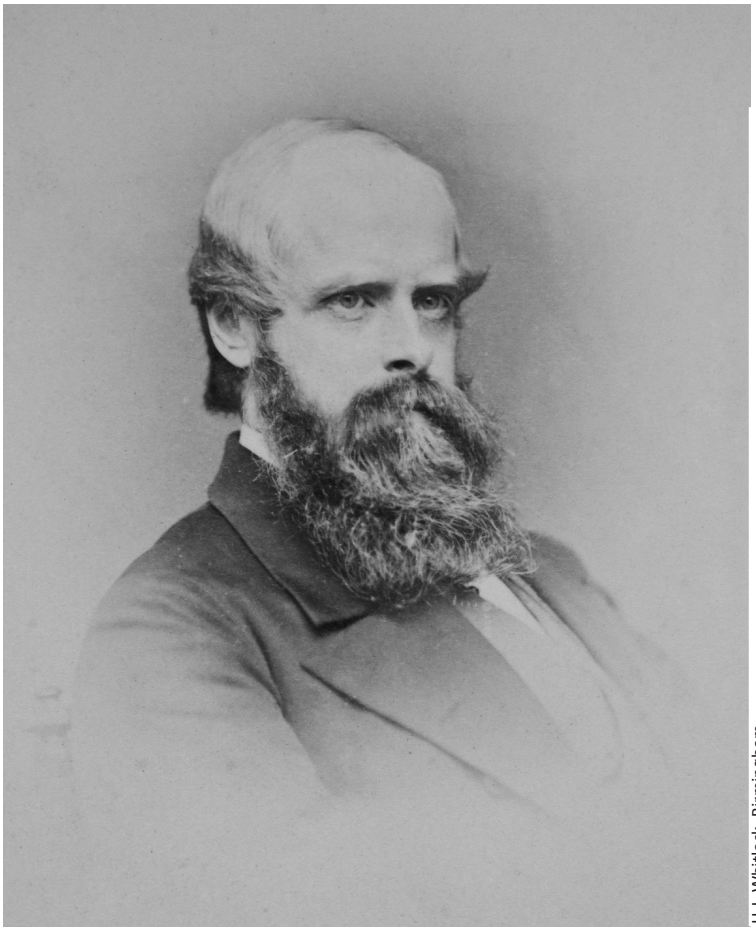
20 LMS AGM and Presidential Address, London

DECEMBER 2009

4-6 LMS–Belgian Mathematical Society joint meeting, Leuven

C.M. INGLEBY

LMS member 1865–1868



H.J. Whitlock, Birmingham

Clement Mansfield Ingleby, MA, LLD
Served on LMS Council 1866–67