THE LONDON MATHEMATICAL SOCIETY

NEWSLETTER

No. 368 March 2008

## Society Meetings and Events

### 2008

**Monday 31 March**
Northern Regional Meeting, Manchester [*page* 3]

**Friday 25 April**
Women in Mathematics Day London [*page* 7]

**Monday 9 June**
Midlands Regional Meeting, Birmingham

**Friday 4 July**
Hardy Lecture London

**Monday 15 September**
SW & South Wales Regional Meeting Swansea

**Monday 15 September**
Computer Science Day London

**Friday 21 November**
AGM, London

**12–13 December**
Joint Meeting with the Edinburgh Mathematical Society Edinburgh

# COUNCIL DIARY

## 25 January 2008

This was the first Council meeting of the year, and the first with the new boss in charge (our new President, Professor Brian Davies). An innovation at this Council meeting was that several meatier topics were on the menu as '7. Discussion Items', reserved as a treat for after lunch.

Brian began by welcoming the new Council members, Ari Laptev (Imperial College), Burt Totaro (Cambridge) and June Barrow-Green (Open University), and thanking June for taking on the job of LMS Librarian. These new members bring a wide range of experience to Council; perhaps particularly notable is that Ari is currently President of the European Mathematical Society.

Our first substantive item was President's Business. Brian noted that his first, and (he suggested) his most important job, was to choose his successor. The Council approved the appointment of Charles Goldie and Peter Giblin to work with Brian on this task (see page 4).

We had an interesting discussion about the revised budget for 2007/08. The issue was that, having allowed a contingency of £50K at the beginning of the year, and as a result of revised mid-year budget projections, a £46K surplus was predicted for the end of the year. Council took the view that we should aim to spend this money, and F&GPC had suggested sensible options which found favour with Council, ranging from spending money to attract more members to supporting needed web development for the publications pages.

Kenneth Falconer, the LMS Publications Secretary, and Susan Hezlet, the Publisher, reported the successful launch of the new *Journal of Topology*, and a lively launch party in San Diego, of which more later in this *Newsletter*.

The next item struck a more downbeat note, with a report from a meeting of the Council for the Mathematical Sciences (CMS, comprising its chair Sir David Wallace and the presidents and other representatives of the LMS, IMA, RSS, EMS and ORS) with David Delpy, the newish EPSRC Chief Executive, and David Harman, Head of the EPSRC Mathematical Sciences Programme, to push the case for the mathematical sciences. Brian Davies reported the disappointing news that the annual Mathematical Sciences Programme budget was falling. Other Council members pointed out that the budget that pays for doctoral training in Mathematics had also failed to increase which, put together with higher stipends, implies an overall fall in PhD starts funded through the

Mathematical Sciences Programme. Of course, the LMS will continue to lobby at all levels to press the Maths case, and some of us will benefit from increased EPSRC funding to other programmes and themes, but concern was expressed about the impact this could have, especially on the research activities of smaller departments.

Our first significant item in the after-lunch discussion provided ideas to our representatives on a CMS working party preparing feedback on the HEFCE consultation on the future of the RAE (www.hefce.ac.uk/pubs/hefce/2007/07_34). Another huge issue this year is that negotiations with the IMA regarding a possible merger will come to a head. The LMS–IMA Joint Planning Group will report to both Councils in time for our next, March, meeting, and we plan a longer 2-day Council retreat on 6–7 June to consider these plans in detail. Thereafter, if the Councils decide to go ahead, expect a programme of meetings around the country to discuss the pros and cons of a merger, and to encourage everyone to vote in a referendum on our future.

Simon Chandler-Wilde

## GIFTS AND LEGACIES

The Society has been fortunate, over its history, to receive several significant donations and legacies – among which are those from Rayleigh, Larmor and Hardy. They have been enormously valuable in enabling the Society to extend its support for mathematics and mathematicians. Legacies and donations are a tax-efficient way of giving to the Society. If you are contemplating making a donation or remembering the Society in your Will, please contact either the Treasurer, Professor Nick Woodhouse (nwoodh@maths.ox.ac.uk), or the Executive Secretary, Peter Cooper (peter.cooper@lms.ac.uk, 020 7291 9970). There is more information at www.lms.ac.uk/contact/subscriptions.html.

## LMS Newsletter

General Editor: Dr D.R.J. Chillingworth (D.R.J.Chillingworth@maths.soton.ac.uk)

Reports Editor: Dr S.A. Huggett (s.huggett@plymouth.ac.uk)

Reviews Editor: Mr A.J.S. Mann (a.mann@gre.ac.uk)

Administrative Editor: Miss S.M. Oakes (susan.oakes@lms.ac.uk)

Editorial office address: London Mathematical Society, De Morgan House, 57–58 Russell Square, London WC1B 4HS (t: 020 7637 3686; f: 020 7323 3655; e: susan.oakes@lms.ac.uk, w: www.lms.ac.uk)

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Charity registration number: 252660.



# LONDON MATHEMATICAL SOCIETY

## NORTHERN REGIONAL MEETING

**Room G.107, Alan Turing Building**
**University of Manchester**

### Monday 31 March 2008

**2.30** **Opening of the meeting**

**Michael Field** (University of Houston)
*Rates of mixing for flows*

**3.45** **Tea**

**4.30** **Ursula Hamenstädt** (Universität Bonn)
*Bowen's construction for the Teichmüller flow*

**6.30** **Dinner** at the Tai Pan Restaurant

For further details or to reserve a place at the dinner, which costs £25, including drinks, email Richard Sharp (sharp@maths.man.ac.uk).

The meeting will be followed by a workshop from 1 to 4 April on *Ergodic Theory and Geometry*. For further detail visit the website www.maths.man.ac.uk/~sharp/etg.html or email Richard Sharp (sharp@maths.man.ac.uk) or Mark Pollicott (m.pollicott@warwick.ac.uk).

There are funds available to contribute in part to the expenses of members of the Society or research students to attend the meeting and workshop. Requests for support, including an estimate of expenses, may be addressed to Richard Sharp (email above).

## FRIEDRICH WILHELM BESSEL RESEARCH AWARD

Professor Ulrike Tillmann (Oxford) has been elected the recipient of a Friedrich Wilhelm Bessel Research Award. This award is conferred in recognition of lifetime achievements in research. In addition, the awardee is invited to carry out research projects of her own choice in cooperation with specialist colleagues in Germany. For more information about the award visit the website: www.humboldt-foundation.de/en/programme/preise/index.htm.

## PRESIDENCY OF THE SOCIETY

Presidents of the Society serve for two years and it is customary that almost the first task of a new President is to identify his or her successor. Last year the Officers and Council, with the then incoming President, Brian Davies, discussed the process for that, with the aim of ensuring that the Presidential search was undertaken as broadly and as transparently as possible, while recognising the essential delicacies and sensitivities involved.

It was agreed that the new President should be assisted by two advisors, one nominated by the Nominating Committee bringing in that committee's knowledge and experience of candidates for Council, and one nominated by the Finance & General Purposes Committee bringing experience of the role of the President within the Council and governance of the Society.

Council in January confirmed that the President would be assisted by Professor Peter Giblin, chairman of Nominating Committee, and Charles Goldie, General Secretary, in identifying a President to be proposed to take up office in November 2009.

Peter Cooper
Executive Secretary

## HARDY LECTURER 2010

As members will have read in the February *Newsletter*, the 2008 Hardy Lecturer will be Professor Shmuel Weinberger (University of Chicago and Hebrew University). **Nominations are sought for a Hardy Lecturer in 2010.**

The Hardy Lecturer will visit the UK for a period of about two weeks, and give the Hardy Lecture at a Society meeting, normally held in London in July. The Lecturer will also give at least two other lectures, on different topics, at other venues in the UK. The schedule is decided by the Programme Secretary in consultation with the President and the Lecturer, and will be designed to allow as many UK mathematicians as possible to benefit from the Lecturer's presence in the UK.

The Lecturer shall be a mathematician who has not been normally resident in the United Kingdom of Great Britain and Northern Ireland for a period of at least five years, at the time of the award. Grounds for the award of the Lectureship include:

- the achievements of the Lecturer, including work in, influence on, and general service to mathematics; lecturing gifts; and breadth of mathematical interests;
- the overall benefit the UK mathematical community might derive from the visit;
- the possibility of bringing to the UK a mathematician who might otherwise visit rarely or never.

The Lectureship is not restricted to mathematicians working in any specific area of mathematics.

No person shall be awarded the Lectureship more than once.

The LMS will pay travel expenses for the Hardy Lecturer, together with initial and final travel expenses for a spouse or established partner. The host department(s) will be expected to provide office accommodation and the academic support normally offered to a distinguished visitor.

Nominations must have the support of the host department(s), and should be sent by the head of department to the Society's Executive Secretary, at the London Mathematical Society, De Morgan House, 57–58 Russell Square, London WC1B 4HS. In order to give time for a proper consideration of nominees, proposals should arrive by **Wednesday 16 April 2008**. The nominations will be considered by the 2008 Prizes Committee, who will bring a recommendation to Council in July 2008.

For information on Professor Weinberger's tour please see page 19.





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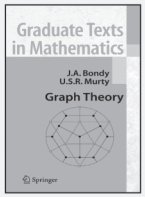
# Springer for Mathematics




### Graph Theory

**A. Bondy**, Université Claude-Bernard, Lyon, France;
**U. Murty**, University of Waterloo, ON, Canada

The primary aim of this book is to present a coherent introduction to graph theory, suitable as a textbook for advanced undergraduate and beginning graduate students in mathematics and computer science. It provides a systematic treatment of the theory of graphs without sacrificing its intuitive and aesthetic appeal. Commonly used proof techniques are described and illustrated.

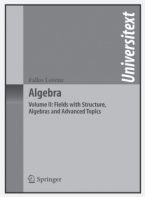
2008. XII, 652 p. 235 illus. (Graduate Texts in Mathematics, Volume 244) Hardcover
ISBN 978-1-84628-969-9 ► **€ 54,95 | £46,00**

### Topological Methods in Group Theory

**R. Geoghegan**, Binghamton University (SUNY), Binghamton, NY, USA

This book is about the interplay between algebraic topology and the theory of infinite discrete groups. It is a hugely important contribution to the field of topological and geometric group theory, and is bound to become a standard reference in the field.

2008. XVI, 473 p. 41 illus. (Graduate Texts in Mathematics, Volume 243) Hardcover
ISBN 978-0-387-74611-1 ► **€ 46,95 | £36,00**




### Algebra

**Volume II: Fields with Structure, Algebras and Advanced Topics**

**F. Lorenz**, University Münster, Germany

This is Volume II of a two-volume introductory text in classical algebra. The text moves methodically with numerous examples and details so that readers with some basic knowledge of algebra can read it without difficulty.

2008. X, 340 p. (Universitext) Softcover
ISBN 978-0-387-72487-4 ► **€ 39,95 | £30,50**

### Complex Analysis

**In the Spirit of Lipman Bers**

**J. P. Gilman**, Rutgers University, Newark, NJ, USA;
**I. Kra**, Math for America, New York, NY, USA;
**R. E. Rodriguez**, Pontificia Università Catolica de Chile, Santiago, Chile

This book organizes the basic material of complex analysis in a unique and elegant manner. It is a comprehensive work that covers the vast majority of the material needed for a beginning graduate level course on complex analysis.

2007. XIV, 220 p. 20 illus. (Graduate Texts in Mathematics, Volume 245) Hardcover
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## IMO: IS IT REAL MATHEMATICS?

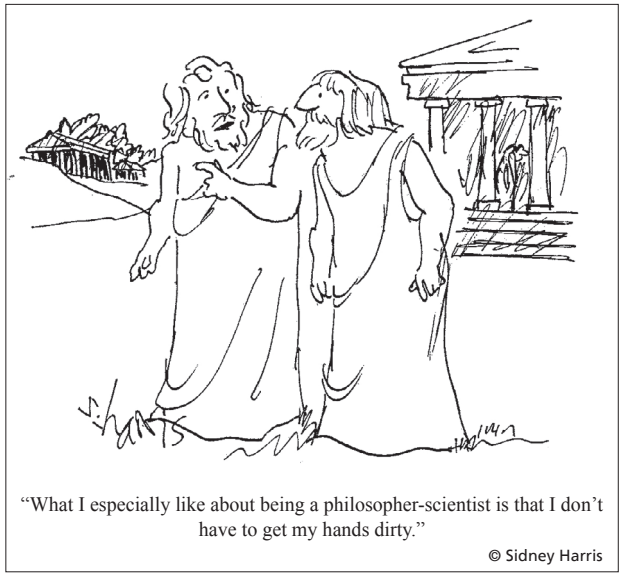
Following David Singerman's review of the BBC programme *Beautiful Young Minds* in the January *Newsletter* and Tony Gardiner's letter below, readers might be interested in the website www.imo-register.org.uk which keeps track of the mathematical careers of IMO winners; thanks to Joseph Myers (IMO Gold Medal 1994 and 1995) and David Singerman for this. In particular, there are currently nearly 40 former UK competitors who have active mathematical careers (this includes two Fields Medallists and eight Fellows of the Royal Society) and there are another dozen or so who work in related disciplines.

**Dear Sir,**

I am sure many mathematicians would echo the concerns expressed in your review of "Beautiful young minds" (January 2008). As someone who has been privileged to work with able youngsters for a number of years, and whose comments were selectively edited into the programme, I wonder if I might be permitted to add some more general comments.

I admire the International Mathematical Olympiad (IMO), and am convinced that it can be used as a force for good. But when I developed the national pyramid of mathematics competitions, I worked hard to avoid the whole show being driven 'top-down'. Mathematical ability cannot be predicted on the basis of adolescent performance, nor is the national mathematical community best served by focusing attention on intensive training of those who mature unusually early. However, in the current climate, where school mathematics is generally weak and poorly focused, those who have an appetite for mathematics in their teens need sufficient, and sufficiently varied, stimuli to persuade them to pursue their interest at university. We need to consider carefully what kind of provision helps and what kind of provision hinders this goal.

Mathematics is more like music than sport: mathematical ability needs a degree of encouragement, and benefits from opportunities to express itself; but it usually develops best 'out of the limelight'. The (cumulative, long-term) values inherent in mathematics are seriously at odds with the (headline-grabbing, short-term) values embraced by the popular media. Hence, despite the adage that all publicity is good publicity, we need to think twice before submitting anyone to cameras and microphones – and especially those who have not yet attained stable maturity.



"What I especially like about being a philosopher-scientist is that I don't have to get my hands dirty."

© Sidney Harris

Yours,

Tony Gardiner
University of Birmingham



## WOMEN IN MATHEMATICS DAY 2008

The next Women in Mathematics Day will be held on **Friday 25 April** at De Morgan House. Sessions will include talks by practising women mathematicians in a variety of appointments and at different career stages.

The organisers would be very grateful if all members could encourage women mathematicians, particularly students (including final year undergraduates) and those at an early stage in their career, to attend this meeting. It is hoped that an opportunity to see women who are active and successful in mathematics, and to meet them informally, will be beneficial. Feedback from previous meetings has shown that participants find this useful. While this is an occasion particularly for women active in mathematics to get together, men are certainly not excluded.

### Programme

| | |
|---|---|
| **10.30-11.00** | **Registration and coffee** |
| **11.00-13.00** | **Morning Session** |
| 11.00-11.40 | Hilary Ockendon (Oxford)<br>*Spinning and weaving through Industrial Mathematics* |
| 11.40-12.20 | Alicia Kim (Bath)<br>*To optimise or not to optimise: An engineer's perspective* |
| 12.20-13.00 | Gianne Derks (Surrey)<br>*Stability of localised waves and fronts* |
| **13.00-14.20** | **Lunch and Poster Session (starting 13.30)** |
| **14.20-16.00** | **Afternoon Session**<br>Postgraduate/Postdoc speakers |
| **16.00-16.30** | **Tea and end of Poster Session** |

Followed by a meal for those able to stay.

**New this year: to encourage high quality posters, a £50 book token will be awarded for the poster that is judged to be the WiM Day Best Poster 2008.**

Limited funds are available to help with the travel costs of students attending the event. Further details are available from Isabelle Robinson at the Society (contact details below).

To register please contact Isabelle Robinson, Administrative Officer (email: isabelle.robinson@lms.ac.uk).
The day is free for students and £5 for all others – payable on the day.

## LMS AND IMA DISCUSSIONS

### Comments sought

The LMS and IMA joint planning group is developing a model that if implemented would lead to the replacement of both the Institute of Mathematics and its Applications and the London Mathematical Society by a new society.

As this work progresses, members are invited to send views directly to the group and can be assured that all comments received will be brought to the attention of the group at its next meeting. Although the planning group does not guarantee to reply to all messages it may on occasion choose to do so. The email address to use is nsicontact@btinternet.com.

## VOICE OF THE FUTURE

The Royal Society of Chemistry organises this annual event aiming to strengthen links between the scientific community, Parliament and Government. It is free and open to anyone under the age of 35. The day will provide the opportunity to discuss concerns and issues facing us today. Phil Willis MP, who chairs the House of Commons Select Committee on Innovation, Universities and Skills, will chair a special Science Question Time.

Tuesday 11 March 2008, Portcullis House, Westminster. For more details please see www.rsc.org/ScienceAndTechnology/Parliament/Events/VOF2008.asp

## MATHEMATICS POLICY ROUND-UP

The Council for the Mathematical Sciences has submitted a response to a consultation by the Higher Education Funding Council for England (HEFCE) entitled *Research Excellence Framework: Consultation on the assessment and funding of higher education research post-2008.* The proposed Research Excellence Framework (REF) will replace the Research Assessment Exercise (RAE) and will make greater use of quantitative information or 'metrics'. The CMS response emphasised that for assessment purposes, the mathematical sciences should be subject to a 'light-touch' peer review process informed (but not driven) by metrics. With lower numbers of citations and longer timescales for these to emerge, the CMS reinforced the view that mathematics has more in common with the arts and humanities for the purposes of bibliometric-based assessment. HEFCE has proposed a formulaic metrics-driven approach for science subjects, but has recognised that the same process would currently be unsuitable for arts, humanities, mathematics and statistics, and that a peer review process should be retained in these areas. The CMS is keen to work closely with HEFCE to ensure that the 'light touch' peer review process for the 'non-sciences' is tuned to take account of the inclusion of mathematics and statistics in this grouping. The full text of the response can be viewed at www.cms.ac.uk.

Makhan Singh, the new *more maths grads* project manager, ran a team-building and project-development away day for project staff to communicate his vision. Project officers from Leeds, Coventry and East London came together to discuss the progress of the project, which aims to increase the number of students studying the mathematical sciences. The project has been asked by its funder HEFCE to contribute plans towards a national roll-out of the project. This is likely to be part of a joint Widening Participation project for physics, chemistry, engineering and the mathematical sciences.

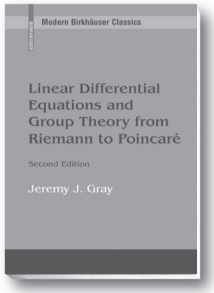
The Advisory Committee on Mathematics Education issued a statement warning that the Government risks missing a key opportunity to raise young people's mathematical skills with the introduction of new diplomas. Diplomas are intended to be an alternative to GCSEs and A-levels, and 14 diplomas with a strong vocational element, such as *construction and the built environment*, *hospitality and catering* and *engineering*, are in development. The first of these courses will be piloted from 2008 with the others being rolled out over the next two years. In addition, in October 2007 the Government announced three 'subject-based' diplomas in science, languages and humanities which are planned to start in 2011. ACME called for all the recently announced subject-based diplomas in science, humanities and languages, along with those work-related diplomas requiring strong numerate skills, to ensure that any student with an interest could go on to study to the level of at least A-level Maths and AS level in Further Mathematics. It said diplomas could lead to a future shortage of mathematicians and statisticians, as there is a danger that diplomas will not contain sufficient mathematics for a future mathematics specialist. They could also jeopardise the skills of the next generation of students and employees.

The work of the International Mathematical Union was highlighted at a conference in Norway in February. Funded by The Niels Henrik Abel Memorial Fund and The Oslo Center for Peace and Human Rights, the conference focused on the importance of building institutions for higher education and research in developing countries. Sir John Ball, of the Oxford Mathematical Institute and a former president of the LMS (1996–98), was amongst the speakers.

The government has announced a £140 million package over the next three years to improve mathematics and science teaching in schools. The package included £18 million for the regional Science Learning Centres "plus continued funding for the National Centre for Excellence in the Teaching of Mathematics". The government hopes the money will enable projects such as £9,000 training bursaries and £5,000 'golden hellos' for mathematics and science teachers to continue, and work on CPD, recruitment and retention amongst teachers. The money will also help to attract more students to these subject areas. The NCETM was launched with £15 million over three years in 2006.

Caroline Davis
Mathematics Policy and Promotion Officer

The New Year Drinks Reception hosted jointly by the Mathematics Promotion Unit and the *more maths grads* project at De Morgan House in January




**Linear Differential Equations and Group Theory from Riemann to Poincare**

**Gray, J.J.**, The Open University, Milton Keynes, UK

This book is a study of how a particular vision of the unity of mathematics, often called geometric function theory, was created in the 19th century. The central focus is on the convergence of three mathematical topics: the hypergeometric and related linear differential equations, group theory, and on-Euclidean geometry.

The text for this second edition has been greatly expanded and revised, and the existing appendices enriched with historical accounts of the Riemann–Hilbert problem, the uniformization theorem, Picard–Vessiot theory, and the hypergeometric equation in higher dimensions. The exercises have been retained, making it possible to use the book as a companion to mathematics courses at the graduate level.

2nd ed. 2000. 2nd printing 2008. Approx. 360 p. 30 illus. Softcover
EUR 34.90 / GBP 27.00
ISBN 978-0-8176-4772-8
Modern Birkhäuser Classics

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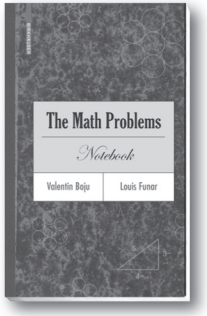



**The Math Problems Notebook**

**Boju, V.**, MontrealTech, Institute de Technologie de Montreal, QC, Canada / **Funar, L.**, CNRS, Université de Grenoble I, France

The Math Problems Notebook is a collection of nontrivial, unconventional problems requiring deep insight and imagination reminiscent of those discussed at Sunday Math Circles. These circles have become a place for disseminating beautiful mathematics at an elementary level for college students who have a common passion for mathematics.

The problems cover many topics, including number theory, algebra, combinatorics, geometry and analysis, of varying levels of difficulty. The presentation of each topic begins with simple exercises and follows with more difficult problems, challenging enough even for the experienced problem solver. The easier problems focus on basic methods and tools, while the more advanced problems develop problem-solving techniques, intuition and promote further research. Undergraduates and teachers of advanced mathematics, as well as the casual mathematician will mutually enjoy The Math Problems Notebook.

2007. XII, 236 p. 21 illus. Softcover
EUR 34.90 / GBP 27.00
ISBN 978-0-8176-4546-5

*All prices are net prices subject to local VAT, recommended and subject to change without notice.*

**www.birkhauser.ch**



# NEWS FROM IMU

Colombia is a new member of the International Mathematical Union, as of 1 January 2008.

The IMU Executive Committee will have its annual meeting on 20 and 21 April 2008 in Budapest (Hungary).

**ICM 2010 Website**
The ICM 2010 website has been started. It will be constantly updated giving relevant information as and when it becomes available. The web address is www.icm2010.org.in.

**ICMI News**
ICMI (International Commission on Mathematical Instruction), an official commission of the IMU, launched last December the first issue of its bimonthly email newsletter with the name *ICMI News*. This newsletter aims at improving communication between ICMI and the worldwide community interested in mathematics education, informing about actions and recommendations of ICMI, highlighting issues that are under discussion, and reporting about ongoing activities. In addition, *ICMI News* will report on major activities by the ICMI Affiliated Study Groups (HPM, PME, IOWME, WFNMC and ICTMA), on major international events related to mathematics education and on other topics of general interest to the community of educational researchers, curriculum designers, educational policy makers, teachers of mathematics, mathematicians, mathematics educators, and others interested in mathematical education around the world.

The first issue of *ICMI News* included, among other items, updated information about the *11th International Congress on Mathematical Education* (ICME 11) and about ICMI Study 18 – 'Statistics Education in School Mathematics: Challenges for Teaching and Teacher Education'. *ICMI News* reported on the first meeting of the current Executive Committee of ICMI, included a calendar of events of interest to the ICMI community, and featured a historical vignette about the Swiss mathematician Henri Fehr (1870–1954), the first secretary general of ICMI, who played a very important role in the international cooperation in mathematics education for more than 50 years. If you are interested in subscribing to *ICMI News*, there are two ways to do it:

1. Go to www.mathunion.org/ICMI/Mailinglist with a web browser and click on the "Subscribe" button to subscribe to *ICMI News* online.

2. Send an email to icmi-news-request@mathunion.org with the subject-line Subject: subscribe

The above items are taken from the 27th issue of the IMU electronic newsletter *IMU Net* (see www.mathunion.org/Publications/Newsletter)

# EUROPEAN CONGRESS OF MATHEMATICS

## Travel grants

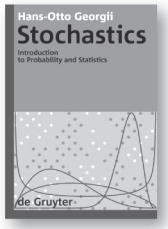
Council has set aside a sum of money to be used for making grants to mathematicians based in the UK who wish to attend the Fifth European Congress of Mathematics, Amsterdam, 14–18 July 2008 (www.5ecm.nl). The Society would particularly like to support those mathematicians at an early stage in their career.

People who are eligible are expected to make an application to the Royal Society: Royal Society grants are made to applicants presenting their own paper or poster or chairing a session. The deadline for applications to the Royal Society is **5 March 2008**. Information and application forms can be found on the website www.royalsociety.org.

People who are not eligible for a Royal Society grant may apply to the London Mathematical Society for a grant, on forms obtainable from the LMS website (www.lms.ac.uk). Applications should be sent to Susan Oakes, The Administrator, London Mathematical Society, to arrive before **Wednesday 12 March 2008**. They will be considered by a Council Committee and the outcome will be made known to the applicant before the end of March.

DE GRUYTER

Just published



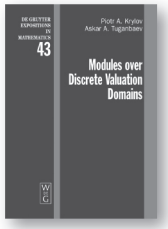

Hans-Otto Georgii

■ Stochastics

Introduction to Probability and Statistics

Transl. by Marcel Ortgiese / Ellen Baake / Hans-Otto Georgii

February 2008. Approx. IX, 370 pages. Paperback.
€ [D] 39.95 / sFr 64.00 / *US$ 49.00. ISBN 978-3-11-019145-5
Series: de Gruyter Textbook




P. A. Krylov / A. A. Tuganbaev

■ Modules over Discrete Valuation Domains

January 2008. Approx. IX, 357 pages. Hardcover.
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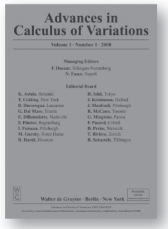


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## PHILIP LEVERHULME PRIZES 2008

The Leverhulme Trustees are offering up to 25 Philip Leverhulme Prizes for 2008. The prizes are for outstanding young scholars who have made a substantial and recognised contribution to their particular field of study and whose future contributions are held to be of correspondingly high promise. Prizes are available in the following disciplines: *Earth, Ocean and Atmospheric Sciences*, *History of Art*, *Mathematics and Statistics*, *Medieval, Early Modern and Modern History*, *Zoology*.

The value of each Prize will be £70,000, to be spent within two years. Awards will be made in recognition of the past research achievement of nominees but with the clear recognition that the achievement reflects outstanding promise for future work. Prizes can be used for any purpose to advance the prize holder's research, with the following exceptions: augmentation of the prize holder's salary, capital items and equipment, and institutional overheads.

Prize winners should be under age 36 on Friday 16 May 2008 and should hold a post (irrespective of the source of funding) in a UK institution of higher education or research.

Nominations are also accepted for those aged 36 to 39 inclusive if they have had a distinct career change or break. The disciplines selected are intentionally broad, and nominations will be considered regardless of a nominee's departmental affiliation.

A nomination for a Philip Leverhulme Prize must be endorsed by the head of the nominee's institution and must reach the Trust by 4.00 pm on **Friday 16 May 2008**. Decisions will be made by the end of November 2008, and the prizes may be taken up at any time before the end of November 2009. For nomination materials consult the Trust's web site www.leverhulme.ac.uk to download full nomination details.

## PAIRING 2008

The second international conference in pairing-based cryptography will be held at Royal Holloway University of London from 1 to 3 September. The invited speakers are Xavier Boyen (Voltage Security), Florian Hess (TU Berlin) and Nigel Smart (Bristol). For more details see the conference webpage www.pairing-conference.org.

## INTERNATIONAL CONGRESS ON MATHEMATICAL EDUCATION

### Bursaries

The *11th International Congress on Mathematical Education* (ICME 11) will be held from 6 to 13 July 2008 at Monterrey, Mexico.

The Joint Mathematical Council (JMC) is pleased to announce that through the generosity of sponsors they are able to offer bursaries to a maximum of £600 to support participation in ICME 11. They wish to award bursaries to teachers, researchers, consultants etc. working in all phases of education and from all territories of the UK. Application forms and further details may be downloaded from the special JMC web-site www.answers.me.uk/icme11. Applications should be submitted no later than **noon Monday 14 April 2008.** Applicants will be notified of the result of their application during May.

The JMC is organising a UK presentation at the Congress to highlight the many excellent aspects of mathematics education in England, Northern Ireland, Scotland and Wales. The sponsors are: Institute of Mathematics and Its Applications, London Mathematical Society, Merton College, Oxford, and Trinity College, Cambridge.

# RECORDS OF PROCEEDINGS AT MEETINGS

## ORDINARY MEETING

held on *Monday 7 January 2008* at the Joint Mathematics Meeting, San Diego, California, USA, in conjunction with a reception, hosted with Oxford University Press, to mark the launch of the *Journal of Topology*. At least 80 members and guests were present.

The meeting began at 6.30 pm, with Dr D. BUCK, a member of the London Mathematical Society Council, in the Chair. Dr Buck welcomed members and guests, in particular Professor P. Lax and Professor S. Smale, Honorary Members of the London Mathematical Society.

Regrettably security restrictions had prevented the Membership Book from being brought over; in its absence eight members signed a sheet which was to be taken back to the UK and incorporated into the Membership Book.

Professor J. Roe, a member of the Editorial Board, gave a brief account on the history of topology in Oxford and the new *Journal of Topology*, and Dr S. Hezlet spoke on the welcome support given to the new journal by the international community of topologists.

Dr Buck thanked everyone for coming, and OUP for hosting the reception, and declared the meeting closed.



## LMS MEETING

### 7 January 2008

A meeting of the LMS took place on 7 January 2008 during the *Joint Mathematics Meeting* held in San Diego, California. The meeting took the form of a reception to launch the *Journal of Topology*, which is published by the LMS in conjunction with Oxford University Press from January 2008. Dorothy Buck, representing Council, presided over the meeting. She gave the Welcome and then thanked Oxford University Press for helping financially.

Dorothy Buck

Amongst the people present at the meeting were Honorary LMS members Peter Lax and Steve Smale, who both signed the book; a representative from the Editorial Board of the *Journal of Topology* (John Roe), first-published authors (Ron Fintushel and Ron Stern, whose paper is the first one in volume 1 of the journal), as well as several referees. Further ,a Vice-President of the AMS, librarians and other publishers also attended.

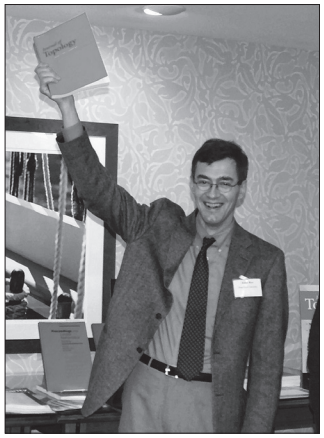
John Roe gave a lovely, very brief guide to the history of topology. Susan Hezlet, the LMS Publisher, followed up with thanks for the global support from the community and remarked that the only thing missing were the subscriptions!

The meeting in San Diego was the second Joint Mathematical Meeting that I have attended (the previous one being in Phoenix in 2004), and at both meetings the LMS has launched a journal (previously *Compositio Mathematica*, which

*continued on the next page*

has been published by the LMS since 2004) and persuaded a publisher to provide a reception. In contrast to most of the other receptions at these meetings, at the LMS receptions those present did not have to buy their own drinks, so the LMS Treasurer was no doubt grateful for the financial support of the publishers!

Peter A. Clarkson
University of Kent



John Roe



## PERTURBED PERIODIC PDEs

### 25–26 September 2007

A workshop on *Perturbed Periodic PDEs, Problems with Singular Boundaries and Their Numerical Aspects* was held at Cardiff School of Mathematics from 25 to 26 September 2007. It was supported by the London Mathematical Society and by the Cardiff School of Mathematics.

The areas covered by this meeting are adjacent to each other but the efforts on advancing the related mathematical techniques have been dispersed and lacking a unifying drive. We therefore focused on a number of speakers who could, while being representatives of their own area of study, provide a good coverage of the wider subject with overlaps between the areas in the title of the workshop. Our hope was that in this way, both an experienced researcher and somebody new to the analysis of PDES could get a convincing showcase of the inner strength of the subject and its potential for further exciting research.

The speakers at the workshop included: Gregoire Allaire (Paris), Denis Borisov (Ufa), Lyonell Boulton (Edinburgh), Viktor Burenkov (Cardiff), Brian Davies (London), Sebastien Guenneau (Liverpool), James Hinchcliffe (Cardiff), Ilia Kamotsky (Bath), Vladimir Mazya (Liverpool), Alexander Movchan (Liverpool), Valery Smyshlyaev (Bath). There were also 13 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. This aspect of the organisation seems to have worked successfully, with the majority of the participants suggesting they would pursue in their future research some of the issues touched upon.

It is our view that similar workshops, which fill the gaps in the analysis community and train new researchers working on the interface between different areas within analysis, must continue to be run in the future. In our opinion this is especially important in the UK, where the analysis research community is smaller than in other leading academic nations.

Kirill Cherednichenko
Marco Marletta



## VISIT OF NICO SPRONK

Professor Nico Spronk (University of Waterloo, Canada) will visit the University of Leeds from 25 March to 16 May. Professor Spronk will give the following lectures:

• *Convolutions on compact groups and Fourier algebras of coset spaces* Tuesday 22 April at the mini-conference on *Banach algebras and harmonic analysis* in Leeds. For details see the announcement below and at http://maths.leeds.ac.uk/pure/analysis/yfag.html.

• *Operator amenability of Fourier–Stieltjes algebras and amenability constants* Friday 25 April at 4 pm, Lecture Theatre 5, Management School, Lancaster University. For details contact N.J. Laustsen (n.laustsen@lancaster.ac.uk).

• *Operator amenability of Fourier–Stieltjes algebras and amenability constants* Monday 28 April at 4.00 pm, Room 214, Department of Mathematics, Glasgow University. For details contact S. White (s.white@maths.gla.ac.uk).

The visit is supported by an LMS Scheme 2 grant. For details contact M. Daws (matt.daws@cantab.net). All are welcome at the lectures.

## VISIT OF MONICA ILIE

Professor Monica Ilie (Lakehead University, Canada) will visit the University of Leeds from 18 April until 19 May. Professor Ilie will give the following lectures:

• *Extensions of Fourier algebra homomorphisms* Tuesday 22 April at the mini-conference on *Banach algebras and harmonic analysis* in Leeds. For details see the announcement below and at http://maths.leeds.ac.uk/pure/analysis/yfag.html

• *Piecewise affine maps in abstract harmonic analysis* Friday 2 May at 4 pm, Lecture Theatre 5, Management School, Lancaster University. For details contact N.J. Laustsen (n.laustsen@lancaster.ac.uk).

• *Weak-* continuous homomorphisms of Fourier–Stieltjes* Tuesday 6 May at 3 pm, Room 103, School of Mathematical Sciences, Queen Mary, University of London. For details contact C-H. Chu (c.chu@qmul.ac.uk)

This visit is supported by an LMS Scheme 2 grant. For details contact Andras Zsak zsak@maths.leeds.ac.uk). All are welcome at the lectures.

## BANACH ALGEBRAS AND HARMONIC ANALYSIS

There will be a two-day mini-meeting on this topic in the School of Mathematics at the University of Leeds from 22 to 23 April 2008. The lectures are as follows:

• Yemon Choi (University of Manitoba, Winnipeg, Canada) *The Fourier algebra of the free group is not approximately amenable*

• Matt Daws (University of Leeds) *Quantum compactifications of the Fourier algebra*

• Michael Cowling (University of Birmingham) *Multipliers of the Fourier algebra of simple Lie groups*

• Ian Doust (University of New South Wales, Sydney, Australia, and University of Lancaster) *Functional calculus for sums of operators and decompositions of (commutative and non-commutative)* $L^p$ *spaces*

• Monica Ilie (Lakehead University, Canada) *Extensions of Fourier algebra homomorphisms*

• Tom Körner (University of Cambridge) *Square roots of convolutions*

• Paul Ramsden (University of Leeds) *Homological properties of semigroup algebras*

• Nico Sponk (University of Waterloo, Canada) *Convolutions on compact groups and Fourier algebras of coset spaces*

• Dona Strauss (University of Leeds) *The second dual of the measure algebra*

• Michael White (University of Newcastle-upon-Tyne) *Cohomology of* $l^1$ *Cuntz type algebras*

All are welcome. For details please see http://maths.leeds.ac.uk/pure/analysis/yfag.html or contact H.G. Dales (garth@maths.leeds.ac.uk).

## ISAAC NEWTON INSTITUTE FOR MATHEMATICAL SCIENCES

## INERTIAL-RANGE DYNAMICS AND MIXING

**29 September – 3 October 2008**

in association with the Newton Institute programme entitled
*The Nature of High Reynolds Number Turbulence*
(26 August to 19 December 2008)

**Workshop Organisers:** Peter Davidson (Cambridge), Yukio Kaneda (Nagoya) and Katepalli Sreenivasan (ICTP).

**Theme of workshop:**

Despite the long history of turbulence research, there still remain many fundamental unanswered questions. Many of these relate to Inertial-Range Dynamics and Mixing in turbulence. The proposed five-day workshop will focus on the near-universal physics of such phenomena as observed in certain canonical turbulent flows at high Reynolds number. It will bring together researchers in the communities of theory, modelling, numerical simulations, laboratory experiments and field-observations, to discuss and exchange new ideas on various themes, including:

- Intermittency, Scaling and Universality
- Turbulent Diffusion (single- and two-particle) and Mixing
- Lagrangian Dynamics and Statistics
- Coarse Graining – Modelling
- Reynolds Number and Scale Dependence
- Anisotropy, Inhomogeneity and Nonstationarity
- Superfluid Turbulence, MHD, 2-D Turbulence
- Vortex Dynamics and Structure

**Further information and application forms** are available from the web at: www.newton.cam.ac.uk/programmes/HRT/hrtw02.html. Completed application forms should be sent to Tracey Andrew, Programme & Conference Secretary, Isaac Newton Institute, 20 Clarkson Road, Cambridge CB3 0EH or via email to: t.andrew@newton.cam.ac.uk.

Closing date for the receipt of applications is **30 June 2008**.



## LMS DURHAM RESEARCH SYMPOSIA

The LMS Research Meeting Committee is responsible for the planning of the LMS Durham Symposia, which have been running successfully each July and August since 1974, with 86 symposia to date, in a wide range of mathematical disciplines. In 2008 there will be two Durham Symposia, both supported by EPSRC:

- 30 June – 10 July: *Mathematical Aspects of Graphical Models* (organisers: A.P. Dawid, S.L. Lauritzen)
- 14–24 July: *Computational Linear Algebra for Partial Differential Equations* (organisers: A. Ramage, D.J. Silvester, A.J. Wathen)

More information on the first symposium may be obtained from Steffen Lauritzen (steffen@stats.ox.ac.uk), and on the second one from Alison Ramage (alison@maths.strath.ac.uk).

The symposia in 2006 and 2007 were as follows:

**2006**

- *Dynamical Systems and Statistical Mechanics* (C. Beck, C. Dettmann, M. Pollicott)
- *Methods of Integrable Systems in Geometry* (F. Burstall, S. Dorfmeister, M. Guest, F. Pedit)

**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.

## LMS HARDY LECTURER 2008

**Professor Shmuel Weinberger**

**(University of Chicago and Hebrew University)**

Professor Weinberger will give the following lectures:

- Edinburgh, June 23 *Playing the Novikov game*; contact Tom Lenagan (T.Lenagan@ed.ac.uk)
- Liverpool, June 25 *Applications of quantitative topology*; contact Peter Gibilin (pjgiblin@liverpool.ac.uk)
- Durham, June 30 *Topological methods for the analysis of large data sets*; contact Michael Farber (Michael.Farber@durham.ac.uk)
- London, July 4 *Complexity, entropy, and variational problems*; contact Susan Oakes (susan.oakes@lms.ac.uk)

The LMS Research Meetings Committee welcomes ideas for symposia for 2010 and later, from potential organisers and others, who should contact the Chairman of the Committee, Professor N.S. Manton (manton@lms.ac.uk). Detailed proposals are made at least two years ahead. For each symposium an application is made to EPSRC for a substantial research grant, including full economic costs of the organisers, the subsistence costs of all invited participants, and some travel. 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).

## INTERNATIONAL MATHEMATICS COMPETITION*

### Preliminary Announcement

The 15th *IMC for university students* is being co-organized by University College London and will be hosted by the American University in Bulgaria, Blagoevgrad, Bulgaria from 25 to 31 July. 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 five hours each. Problems will be from the fields of Algebra, Analysis (Real and Complex) and Combinatorics. The working language will be English. Over the previous thirteen competitions we have had participants from over one hundred and fifty universities in forty 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, Excursion
30 Closing ceremony, Final dinner
31 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 August 4 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 the fields of *Algebra*, *Analysis* (*Real and Complex*) and *Combinatorics*. The problems given at the last fourteen Competitions can give a general idea of the level expected (see the IMC website 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 e-mail, by the end of May 2008, 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 Bulgaria. Please contact your travel agent or the Bulgarian 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 31st, has 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 John Jayne, 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.*

## KARL GRUENBERG DAY

The School of Mathematical Sciences, Queen Mary, University of London, will hold a memorial meeting on Thursday 13 March 2008 in honour of Emeritus Professor Karl Gruenberg, who died on 10 October 2007. In the afternoon there will be three lectures in the Mathematics Building and these will be followed in the early evening in the Queens' Building by a celebration of Karl's life. The lecture programme is as follows:

12.30–1.30 Buffet lunch in the School Common Room
1.30–1.45 Welcome and introduction
1.45–2.45 B.A.F. Wehrfritz (Queen Mary, University of London)
2.45–3.45 P.H. Kropholler (University of Glasgow)
3.45–4.15 Tea in the School Common Room
4.15–5.15 A.R. Weiss (University of Edmonton)

The subsequent celebration will be held in the Octagon in the Queens' Building starting at 5.45 pm. For those not attending the mathematical lectures, tea will be served in the Octagon from 5.15 pm. Refreshments will be served in the Octagon ater the conclusion of the celebration at approximately 7.00 pm.

Further information is available at www.maths.qmul.ac.uk/~pjc/kwg. It would be helpful if those planning to attend the lectures and/or the celebration would notify Karen Zirngast (K.Zirngast@qmul.ac.uk) by **Thursday 6 March** which parts of the meeting they expect to attend.

## ALGEBRAIC STRUCTURE OF PROFINITE GROUPS

A two-day workshop on the *Algebraic Structure of Profinite Groups* will be held from 7 to 8 April at Royal Holloway, University of London. The focus of the workshop will be on the interplay between the algebraic and the topological properties of profinite groups. The speakers will include:

- G. Fernández-Alcober (Bilbao)
- T. Gelander (Jerusalem)
- A. Jaikin-Zapirain (Madrid)
- N. Nikolov (London)
- D. Segal (Oxford)
- A. Shalev (Jerusalem) – TBC

The workshop is funded by the EPSRC and forms part of the 'South England Profinite Groups Meetings' which are funded by an LMS Scheme 3 grant. Applications for financial support can be made on the registration form. For more details see www.ma.rhul.ac.uk/profinite_ groups or contact Dr Yiftach Barnea and Dr Benjamin Klopsch at profinitegroups@googlemail.com.

## INSTRUCTIONAL WORKSHOP ON SUBFACTORS AND PLANAR ALGEBRAS (SFPA2008)

Professor Dietmar Bisch (Vanderbilt University, Nashville, USA) will be the main speaker at this workshop, delivering six one-hour introductory lectures.

The study of subfactors emerged from Vaughan Jones's revolutionary work in the late 1980s and is one of the most exciting parts of the modern theory of von Neumann algebras. The so-called 'planar algebras' introduced by Jones and Bisch, which also play a role in Free Probability Theory, appear to be particularly useful constructs. This workshop aims to provide a forum for information on the latest developments in this highly specialised and vibrant area of Mathematics.

The workshop will be held from 26 to 28 August 2008 in the Department of Pure Mathematics of Queen's University Belfast and is organised by Dr Martin Mathieu (m.m@qub.ac.uk), to whom all enquiries should be directed. Apart from the main lectures there shall be time for informal discussions or shorter talks by either advanced PhD students or other researchers in the field of von Neumann algebras.

The organisers gratefully acknowledge the support of the London Mathematical Society (allowing PhD students in the UK or RoI to be supported), the Irish Mathematical Society and a special scheme of Queen's University Belfast which is celebrating its centenary this year.

EPSRC

The London Mathematical Society

## Advanced Methods in Linear and Nonlinear Elasticity

### LMS–EPSRC Short Course

**University of Keele, 28 July – 1 August 2008**

**Organiser:** Professor Yibin Fu

The proposed course is aimed at research students in applied mathematics who may need to use elasticity theory, in one way or another, in their research. It is motivated by the fact that most new research students in applied mathematics in the UK do not even have a basic knowledge of the elasticity theory, let alone a good understanding of the more advanced methods that are usually only available in research papers or monographs. However, there is now an increasing demand for a good understanding of linear and nonlinear elasticity due to its applications in biomechanics, industrial mathematics, and material science. This course will seek to provide students with a unified derivation of nonlinear elasticity theory with the linear theory derived as a special case and to introduce, with minimal pre-requisites, a number of major methods and ideas that students may incorporate in their current or future research work. The attendees are expected to be familiar with the theory of partial differential equations, matrix algebra and tensor notation. Previous knowledge in elasticity and tensor algebra is useful but not essential.

The course is organised around the following three lecture courses, each course consisting of six lectures and two example classes:

1. *Introduction to nonlinear elasticity theory*
   (Professor R.W. Ogden FRS, Glasgow University)
2. *Asymptotic models of solids with cracks and small inclusions*
   (Professor A.B. Movchan, Liverpool University)
3. *Stroh/Hamiltonian formulation and its application to linear and nonlinear elasticity*
   (Professor Y.B. Fu, Keele University)

More details about this Short Course may be found at the website www.keele.ac.uk/depts/ma/LMS.

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 DTA; for non-EPSRC research students, their department might be prepared to pay the fee). Overseas students, Postdocs and those working in industry must pay the full subsistence costs of £358, plus a registration fee of £250, making a total of £608 for this course. All participants must pay their own travel costs (for EPSRC-funded students, this should be covered by their DTA).

Applications should be made using the registration form available on the Society's website at: www.lms.ac.uk/activities/rmc/sc/42poster.html.

Numbers will be limited and those interested are advised to make an early application. The closing date for applications is **Friday 30 May**. All applicants will be contacted by the London Mathematical Society approximately one week after this deadline; we will not be able to give information about individual applications before then.



## 19TH POSTGRADUATE COMBINATORIAL CONFERENCE

A postgraduate conference on *Combinatorics* will be held from 21 to 23 July at the University of Warwick. 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 three talks by invited speakers. The speakers will include:

- I. Stewart (Warwick)
- I. Leader (Cambridge)
- O. Hudry (École Nationale Supérieure des Télécommunications)

This meeting is supported by an an LMS Conference grant. Co-sponsors are the British Combinatorial Committee, DIMAP and the Open University. Contact Haris Aziz (pcc2008@dcs.warwick.ac.uk) for details. Further details will be published at http://go.warwick.ac.uk/pcc2008.

## LOST IN PHILATELONIA

### How L.E.J. Brouwer got his stamp

L.E.J. Brouwer, born in 1881, was one of the great Dutch scientists and mathematicians of the 20th century; he was a topologist, a geometer, and the founder of intuitionism; he locked horns with Hilbert, and was close to many of the great mathematicians of his era. For details of his colourful and influential life, see the two volumes of my biography, published by Oxford University Press in 1999 and 2005.

Surely such a towering figure merits some recognition from the Dutch nation, especially at the time of the 100th anniversary of his birth? The obvious gesture would be to issue a stamp in his honour. I decided to invite the postal service to do so in 1981. The request, backed by a powerful coalition of institutions and individuals with a warm heart for mathematics (including of course the minister of education) was rejected without further explanation.

The same fate befell a subsequent request to the postal service for a stamp in 2007 to commemorate the centenary of Brouwer's revolution in topology and the foundations of mathematics. In the autumn of 2006 a brief non-committal note landed on my desk, expressing the hope that I would sympathize with the negative decision. Although I am amply supplied with the milk of human kindness, I could not oblige. Thus I decided to lay siege to the fortress of TNT, the Dutch postal service. After a long telephonic campaign, I finally found a kind lady, who was at least willing to listen to me. I learned that a combination of privacy protection and secrecy made an appeal impossible; after lecturing to her on the phone for more than an hour on our national heritage and the obligations of society to mathematics, she finally caved in, and suggested that I should resubmit the request for 2008. So I did. (*continued overleaf*)

Unveiling of the Brouwer postage stamp

In July 2007 a miracle occurred; the same lady called again: 'TNT have found a free slot for a stamp in September, and would I provide all the material for the production within a week?' So photographic material and scans and suitable texts were bundled off to TNT.

Now the problem arose: how could we organize the presentation of the stamp and what would TNT decree – after all it was its stamp? Fortunately the Academy of Sciences offered the use of their facilities for the occasion, and TNT were happy with that proposal. The next serious problem was that the first stamp had to be issued on a specific day, a day that all the directors of TNT were officially engaged in The Hague, and no director could be spared to attend our presentation. This was highly irregular. A ludicrous proposal was that a group of actors, specializing in impersonations, would fill the gap. With considerable presence of mind I immediately countered: `Why not ask a Nobel prize winner to attend, and give a talk on an aspect of mathematics?' When this was approved and indeed a Nobel prize winner was willing to accept this role, things could go ahead. In the end one of the directors came after all to Amsterdam, and issued the first stamps in the impressive Old Meeting room, where Brouwer had so long and often addressed his fellow Academicians. In retrospect, TNT were extremely helpful. It had probably not occurred to them earlier that some scientists and subjects qualify for the issue of a commemorative stamp.

The final stamp, the first one in Holland for a pure mathematician, carries a fine portrait of Brouwer and the formula that symbolizes the fallibility of the principle of the excluded middle. Let us hope that this ray of publicity enhances the impact of our subject in Holland and elsewhere.

D. van Dalen
Department of Philosophy
Utrecht University



# REVIEWS

**Benjamin Franklin's Numbers; an Unsung Mathematical Odyssey** by Paul C. Pasles, Princeton University Press, Princeton and Oxford, hardback 254 pp, US$26.95, ISBN 978-0-691-12956-3.

This book centres on Benjamin Franklin's preoccupation with magic squares and magic circles. As only two of his squares and one of his circles were published in his lifetime, and Franklin nowhere explained his methods for constructing them, this might seem a very slender basis for a book. However, those who have already seen Paul Pasles's interesting article [1] will know that there is more evidence available and much to say about it.

The present book gives an expanded 'popular' account, aimed at a non-specialist (but numerate) audience. The long history of magic squares and related constructs is recounted from legendary origins in China around 2800 BCE to shuffleboards on the decks of modern cruise ships.

More is said about Franklin's work as a printer and publisher. His mathematical (or at least arithmetical) interests were reflected in the many problems and puzzles proposed in his *Poor Richard's Almanac*. And there is a fascinating suggestion that he may first have become interested in magic squares by studying the numbering scheme for large printed sheets prior to folding. The scheme for 32mo sheets, taken from an old printing manual, is reproduced on p. 221: it is not a magic square, but several of its 'bent rows' have the same sum – a distinctive property of Franklin's squares.

All six of Franklin's known squares, including the four 'missing squares' described in [1], are again examined in detail; and so too is Franklin's magic circle, with Pasles's own suggestion about its construction from one of the 'missing squares'. The novelty of Franklin's squares is that many V-shaped 'broken rows', as well as all rows and columns, have the same sum, but his main diagonals usually fail to have this property. Only his 'missing' 16×16 square succeeded, outdoing Franklin's other remarkable square of this size that he himself dubbed "the most magically magical square ever made by any magician".

All known correspondence about the squares, and the books that Franklin may have read, are thoroughly investigated. Pasles discovers that Franklin knew Ozanam's *Recreations Mathematical and Physical* in its 1708 English translation (but he does not mention that magic squares feature also in the well-known 1740 *Elements of Algebra* of Nicolas Saunderson).

Striving for popular appeal, Pasles's digressions at times take him rather far from his theme. This is particularly so of the many arithmetical and mathematical problems and solutions reproduced from published Almanacs and Diaries. His informal style occasionally grates, and his vocabulary at times goes over the top – Franklin's numerical creations are described variously as "miraculous", "fantastic", "virtually supernatural" and inspiring "wonderment and awe". Those who have already read Pasles's 2001 article [1] will learn only a little more from this book, but the well-produced section of colour illustrations is a very worthwhile addition. Those who have not read the earlier article will enjoy this comprehensive, well-illustrated and more leisurely account of Franklin's fascinating arithmetical constructs.

However, the present reviewer cannot accept the grand claim of the dust jacket that "Franklin indulged in many areas of mathematics, including number theory, geometry, statistics, and economics". Though Franklin the polymath was certainly arithmetically adept, and tried to quantify many aspects of life, he was in no sense a trained mathematician abreast of current developments. His numerical puzzles were a recreation from more serious matters; in his own words (quoted in [1, p. 509]:

*The magical squares, how wonderful so ever they may seem, are what I cannot value myself upon, but I am rather ashamed to have it known I spent any part of my time in an employment that cannot possibly be of any use to myself or others.*

Alex D.D. Craik
University of St Andrews

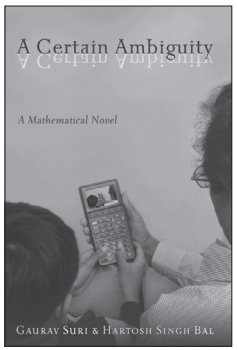
**Reference**

1. P.C. Pasles, 'The Lost Squares of Dr. Franklin: Ben Franklin's Missing Squares and the Secret of the Magic Circle', *American Mathematical Monthly* 108 (2001) 489-511.

**A Certain Ambiguity: A Mathematical Novel** by Gaurav Suri and Hartosh Singh Bal, Princeton University Press, 2007, 281 pp, £16.95, ISBN 978-0-691-12709-5.

As a child, Ravi Kapoor was filled with a love for mathematics by his grandfather Vijay Sahni, who had been a professional mathematician in his day. But when the time comes to study at university, financial pressures push Ravi to study economics at Stanford, where he takes a 'mathematics for poets' course. There he makes congenial friends and discovers that his revered grandfather had not only taught at a university in New Jersey but had been arrested and charged in 1919 with blasphemy. So the stage is set for two converging narratives, both about the significance of mathematics for daily life, one set in the present (what should Ravi do with his life?) and one in 1919 (does mathematics have anything to say about religious beliefs in general and Christianity in particular?) as Ravi searches through the documentary records for the surprising story of his grandfather.

The mathematics for poets course, given by



one of those Socratic teachers we all wish we had but seldom did, moves at a pace impressive even for Stanford through the familiar paradoxes of the infinite. Ravi's fellow-students are well described and their involvement in his quest to find out about his grandfather is nicely done. The other track, concerning Vijay's gentle but persistent interrogation by a distinguished local judge, is a persuasive dialogue about whether the certainty offered by Euclid's *Elements* is a sufficient reproach to the supposed certainties of any faith that religion should be rejected as a basis for life. In the end the judge discovers non-Euclidean geometry and shakes Vijay's convictions, and Ravi and his friends discover that there is no ultimate truth in modern mathematics either, because consistent axioms systems are not necessarily also true. The religious may also be sincere and recognise their lives are based on an act of faith. The conclusion may not be profound, and in fact religious principles do not closely resemble axiom systems, but it is humane and most of us will not disagree.

Non-mathematicians will find this book not only readable and enjoyable as a novel but instructive about mathematics, its content and its wider significance. The idea that religious certainty is still to be found in Kansas, if not New Jersey, hovers so far in the background as to be unexplored, which is perhaps a pity. In the end, I found the rush to get as many famous mathematicians' names in as possible (including those of Einstein and Ramanujan) unsatisfying, and I disliked the letters from almost every source that the authors invented. They are all properly confessed to in the end notes, but my problem is not historical accuracy or invention but the unconvincing feel of these fictions. Mathematicians may also enjoy the book. It has its charms as a novel, and the authors' aim, expressed in their Author's Note, that they would show the reader that mathematics is beautiful, is amply fulfilled.

Jeremy Gray
Open University



# 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).

## MARCH 2008

**9-12** Mathematics and its Applications in Information Technology, Lahore, Pakistan (362)
**13** Karl Gruenberg Memorial Meeting, Queen Mary, University of London (368)
**14** Edinburgh Mathematical Society Meeting, Dundee (363)
**17-19** Mathematical Neuroscience, Royal Society, Edinburgh (367)
**25-28** BMC, York (367)
**25-28** Markov-Chain Monte Carlo Methods INI Workshop, Cambridge (363)
**31 LMS Northern Regional Meeting, Manchester (368)**
**31-3 Apr** BAMC, Manchester (367)
**31-4 Apr** High Dimensional Statistics in Biology INI Workshop, Cambridge (363)
**31-4 Apr** New Scaling Limits and Other Recent Developments in Probability Conference, Warwick University (364)

## APRIL 2008

**4** Understanding Cellular Calcium Signals Workshop, Nottingham (367)
**7-8** Algebraic Structure of Profinite Groups Workshop, Royal Holloway, University of London (368)
**7-11 LMS Invited Lectures, A. Okounkov, Imperial College London (367)**
**7-11** Combinatorial Identities and Their Applications in Statistical Mechanics, INI Workshop, Cambridge (364)
**22-23** Banach Algebras and Harmonic Analysis Meeting, Leeds (368)
**25 Women in Mathematics Day, London (368)**
**25** Edinburgh Mathematical Society Meeting, Aberdeen (363)

## MAY 2008

**1** Cancer can give you Maths!, LMS–Gresham College Lecture, London (364)
**4** 400 Years of Geometry, Gresham College Lecture, London (362)
**23** Edinburgh Mathematical Society Meeting, St Andrews (363)

## JUNE 2008

**9 LMS Midlands Regional Meeting, Birmingham**
**23-27** Geometric Analysis, Elasticity and PDEs Workshop, Heriot-Watt University (367)
**23-27** Future Directions in High-Dimensional Data Analysis, INI Workshop, Cambridge (366)
**30-4 Jul** European Consortium for Mathematics in Industry, University College London (364)
**30-10 Jul** Mathematical Aspects of Graphical Models, LMS Durham Research Symposia, Durham (368)

## JULY 2008

**4 LMS Meeting, London**
**6-13** ICME 11, Monterrey, Mexico (368)
**7-11** New Horizons in Toric Topology Conference, Manchester (367)
**10-11** Legacy of John Crank Conference, Brunel University (366)
**13** EWM/EMS Workshop, Amsterdam, The Netherlands (366)
**14-18** Fifth European Congress of Mathematics, Amsterdam, The Netherlands (362)
**14-24** Computational Linear Algebra for Partial Differential Equations, LMS Durham Research Symposia, Durham (368)
**14-25** Anderson Localization Transition Introductory Training Course, INI, Cambridge (364)
**14-19 Dec** Mathematics and Physics of Anderson Localization: 50 Years After, INI, Cambridge (352)
**15-19** Bachelier Finance Society Fifth World Congress, London (365)
**21-23** 19th Postgraduate Combinatorial Conference, Warwick (368)
**21-25** Algebraic Structures in Geometry and Physics Workshop, Leicester (367)
**25-31** International Mathematics Competition for University Students, Blagoevgrad, Bulgaria (368)
**26-28** Subfactors and Planar Algebras Instructional Workshop, Belfast (368)
**28-1 Aug** Advanced Methods in Linear and Nonlinear Elasticity, LMS–EPSRC Short Course, Keele (368)

## SEPTEMBER 2008

**1-3** Pairing 2008 Conference, Royal Holloway, University of London (368)
**8-12** Wall Bounded Shear Flows: Transition & Turbulence, INI Workshop (367)
**14-18** EUROMECH Fluid Mechanics Conference, Manchester (362)
**14-19** Phenomena in High Dimensions Workshop, Lancaster University (364)
**15 LMS SW & South Wales Regional Meeting, Swansea**
**29-3 Oct** Inertial-range Dynamics and Mixing, INI Workshop, Cambridge (368)

## NOVEMBER 2008

**21 LMS AGM, London**

## DECEMBER 2008

**12-13** Joint Meeting with the Edinburgh Mathematical Society, Edinburgh

## APRIL 2009

**6-9** BMC, Galway

## AUGUST 2010

**19-27** International Congress of Mathematicians 2010, Hyderabad, India (365)

# A. J. ELLIS

## LMS member 1865–1889

Dr Wallich's Studio, Kensington (1868)

Alexander John Ellis, BA Cambridge, FRS, FCPA, FSA
Vice-President of the Philological Society