

THE LONDON MATHEMATICAL SOCIETY NEWSLETTER

No. 211

December 1993

FORTHCOMING SOCIETY MEETINGS

Friday 21 January 1994 Burlington House
L. Lovasz, C. Thomassen

Friday 18 February 1994, Newcastle

Friday 18 March 1994, Burlington House

Friday - Saturday 13-14 May 1994, Leeds

Friday 17 June 1994, Burlington House

COUNCIL DIARY

On Friday 15 October 1993 the LMS Council met and decided to introduce some 'glasnost' into its affairs. In future, highlights of Council meetings will be reported in the Newsletter. To begin as we mean to go on, here are some notes on the meeting of 15 October.

We had a lively discussion of the White Paper on Science and Technology, which by implication threatens to cut down the number of PhDs in mathematics, and may also pose a threat to the planned 4-year undergraduate mathematics courses. We considered how to transmit the views of the LMS on this to places where they may have some effect. In recent years the LMS has sometimes joined forces with other bodies such as the Institute of Mathematics and its Applications and the Royal Statistical Society, in order to make a more forceful case.

We were enthusiastic about the plans of our Programme Committee to reorganise the schedule of LMS meetings. Starting in 1995, there should be fewer meetings, but they should be spread better around the country; several will be one or two days long, and organised jointly with other societies.

We slightly altered the specification of the LMS Polya Prize, to make it clearer

that this prize can be awarded for outstanding mathematical exposition. We made some plans for LMS involvement in the National Week of Science, Technology and Engineering which is scheduled for March 1994.

We agreed a sum to give the Royal Society, to support their fund which will help some mathematicians to visit the 1994 International Congress of Mathematicians in Zürich. We also discussed how to respond to the sudden appearance of some European funds received by the Royal Society to pay for British mathematicians to visit the Euler Institute in St Petersburg. We agreed to give complimentary library subscriptions to the Bulletin, Journal and Proceedings for a limited period to twenty libraries in the former Soviet Union and Eastern Europe.

The meeting also covered a quantity of routine business, for example eleven pages of financial statements from the Treasurer and twenty-three items from the Council and General Secretary. What have we still kept secret? Well, for example, negotiations about the future form and number of the LMS journals - this is a major part of the work of the LMS Publications team.

Wilfrid Hodges

1993 COUNCIL ELECTIONS

At the Annual General Meeting on 19 November 1993, the following members were elected to Council: J.R. Ringrose (President); R.A. Bailey and A.O. Morris (Vice-Presidents); J.D.M. Wright (Treasurer); R.Y. Sharp (Council and General Secretary); D.J. Collins (Meetings and Membership Secretary); D.A. Brannan (Publications Secretary); J.A. Erdos (Librarian); K.A. Brown, P.T. Saunders

(Members-at-Large, 2-year terms); D.G. Crighton, N.J. Hitchin, W.A. Hodges, J.C. Robson, N.J. Young (Members-at-Large, 1-year terms). F.H.J. Cornish, A. Gardiner, H.R. Morton, M.J. Taylor and C.T.C. Wall are Members-at-Large whose terms expire in 1994.

R. Y. Sharp
Council and General Secretary

LMS INVITED LECTURES DR JOHN MADORE

The London Mathematical Society annually organizes a series of 10 expository lectures, given over the space of one week. The lecturer for 1994 will be Dr John Madore who will speak on the application of non-commutative differential geometry to mathematical physics. The series will start on Monday 21 March and finish at mid-day on Friday 25 March, and will take place in the Department of Mathematics, King's College, London.

Dr Madore is a distinguished mathematical physicist who is located at the CNRS Laboratoire de Physique Theorique et Hautes Energies, Orsay, France. Although a Canadian by birth he has spent his research career in France since 1962. He is well known for his work in general relativity, applied differential geometry and quantum field theory.

The aim of the lectures will be to provide an introduction to non-commutative differential geometry and to

demonstrate ways in which it can be applied to gauge theories and other currently interesting field theories. The central pedagogical tool will be matrix geometry. This is a non-commutative differential geometry in which the structure algebra, defining the geometry, is an algebra of matrices over the complex numbers. Within the context of matrix geometry the non-commutative generalization of ordinary differential geometry and interesting applications can be formulated and developed rapidly. The lectures will include a discussion of currently interesting research.

Further information can be obtained from Dr D.C. Robinson, Department of Mathematics, King's College, Strand, London WC2R 2LS, e-mail: d.robinson@uk.ac.kcl.cc.bay. Accommodation in a College Hall of Residence will be available but reservations must be confirmed by 30 January 1994.

DEPARTMENTAL NEWS

Heriot-Watt University John Lamb (Nottingham), Gordon Low (Glasgow) and Andrew Pickering (Leeds) have been appointed to temporary lectureships in the Department of Mathematics.

University of Kent at Canterbury Professor Alan Common has been appointed as head of the Mathematics Department within the Institute of Mathematics and Statistics with effect

from 1 October 1993.

King's College London Professor E.B. Davies has been awarded a Royal Society Leverhulme Trust Senior Research Fellowship for twelve months commencing 1 October 1993. Dr Yu. Safarov has been awarded a 5 year SERC Advanced Fellowship to be held at King's College, commencing 1 November 1993.

A MEMORIAL MEETING
FOR PROFESSOR PHILIP HOLGATE

WILL BE HELD ON FRIDAY 10th DECEMBER 1993
IN THE HARKNESS HALL, BIRKBECK COLLEGE
MALET STREET, LONDON WC1E 7HX

ALL WHO WISH TO ATTEND ARE WELCOME

Afternoon Session - Scientific Papers

2:00pm Dr J Haigh [Philip Holgate, & Stochastic
Processes in Biology]

2:45pm Professor N H Bingham [Philip Holgate, &
the History of Probability and Statistics]

3:30pm TEA (Old Refectory)

4:00pm Professor R A Bailey [Algebra in Biometry]

4:45pm Professor C D Kemp [Elephant Herds,
Animal Traps, & the Development of
Ecological Distributions]

6:00pm Refreshments (Old Refectory)

Evening Session - Personal Tributes

7:00pm Baroness Blackstone, Master of Birkbeck
College, will introduce the evening session

Speakers will include:

Professor J C Robson, Mr C Chalmers, Mr M Cooper

OAK - BAY

The electronic mail address of the London Mathematical Society office has changed to:
lms@uk.ac.kcl.cc.bay

SIZE OF THE LMS JOURNAL

LMS Council has been concerned for some time about the pressure on space in its periodicals. It is obviously undesirable either to increase the periodicals' backlogs beyond a certain length or to impose a moratorium on submissions. Council has therefore decided to increase the number of pages per issue of the 'LMS Journal',

from 192 pp per issue to 208 pp per issue, with effect from the beginning of 1994.

There will be NO corresponding increase in price. Council has also been concerned at the large price increases imposed by certain journal publishers.

D.A. Brannan
Publications Secretary

NATIONAL SCIENCE FESTIVAL

The London Mathematical Society Education Committee welcomes requests for support for activities such as popular lectures, exhibitions, masterclasses, mathematical competitions, and projects that help improve the 'public image of mathematics'. The availability of grants may make it possible for groups or Mathematics Departments to participate more fully in the national Science Festival which was described in the November

issue of the Newsletter. The committee is hoping to help sponsor some repeats of earlier popular lectures and would welcome enquiries from potential organisers. Since the next committee meeting will be early in January 1994, requests for grants should be sent as soon as possible to Dr T. Porter, School of Mathematics, University College of North Wales, Dean Street, Bangor LL57 1UT.

LMS DURHAM SYMPOSIA 1994

There will be two symposia in 1994
QUANTUM CONCEPTS IN SPACE AND TIME

1st July - 11th July, Organisers: Professor C.J. Isham*, Dr. G. Gibbons, Principal Speakers: A. Ashtekar (Syracuse), J. Hartle (Santa Barbara), G. Horowitz (Santa Barbara), G. t'Hooft (Utrecht), K. Kuchar (Utah), A. Connes (IHES)

GEOMETRY AND COHOMOLOGY IN GROUP THEORY

12th July - 22nd July, Organisers: Dr P.H. Kropholler, Dr. R. Stöhr*, Principal Speakers: G. Baumslag (CUNY), M. Bridson (Princeton/Oxford), J. Carlson (Athens, Georgia), R.I. Grigorchuk (Moscow), P.A. Linnell (Blacksburg, Virginia)

A. Yu. Ol'shanskii (Moscow), E. Rips (Jerusalem), J.S. Wilson (Birmingham).

These research symposia are organised under the auspices of the LMS and are supported by Research Grants from SERC. There may be a few places available for mathematicians not yet invited. Those interested should write for more information to the organisers marked * at the following addresses:

Professor C.J. Isham, Department of Theoretical Physics, The Blackett Laboratory, Imperial College, Prince Consort Road, London SW7 2BZ.

Dr R. Stöhr, Department of Mathematics, UMIST, PO Box 88, Manchester M60 1QD.

FREDERICK J.D. SYER

Dr Frederick J.D. Syer, MBE, who was elected a member of the London Mathematical Society on 15 May 1958, died on 15 June 1993 at the age of 90.

MATHEMATICS AND COMPUTING

a m turing



ANONYMOUS FTP ARCHIVE

What is an anonymous ftp archive? It is the electronic equivalent of a public library. Files are stored in a place where you can read them and copy them, provided only that you are connected to Internet. (If you have electronic mail, then almost certainly you are connected to Internet.)

The LMS now has an anonymous FTP archive. To reach it, log in at your computer terminal and type

```
ftp ftp.qmw.ac.uk <return>.
```

After a pause the terminal will ask you for your Name, and you should reply

```
anonymous <return>.
```

You will then be asked for your Password, and for this you type your e-mail address (followed by <return>). When the next prompt appears, type

```
cd /pub/LMS <return>.
```

This will get you into the archive. It contains three items, a file called 'README', a directory called 'filestore' and a directory called 'tmp'. 'README' contains instructions for using the archive, and a list of the items in it. To read it, you have to transport it to your home directory, which you do by typing

```
get README <return>.
```

The archive files are in 'filestore' and to

reach them you type

```
cd filestore <return>.
```

You can then list the files by typing

```
dir <return>.
```

You can transport any of the files to your home directory by typing

```
get (name of file) <return>.
```

Wait until a message appears on the screen to tell you that the transfer is complete. When you have finished transporting items from the archive, type

```
quit <return>
```

and you will be returned to your home directory.

The directory 'tmp' is for putting files into the archive; see the instructions on 'README'.

The archive is also reachable by gopher. Your local system manager can tell you whether you have this facility, and how to use it.

At present the archive contains just one item, the report on 'Mathematics and Education Policy (United Kingdom)' by Tim Porter (see Newsletter 209, October 1993). This is a LaTeX file of length about 10,000 words.

Wilfrid Hodges, w.hodges@qmw.ac.uk
Derek Holt, dfh@maths.warwick.ac.uk

This occasional column is for the discussion of topics on the boundary between mathematics and computer science, thus covering both applications of mathematics in computer science and uses of computers in mathematics. Relevant material such as opinions, notices about Maths & CS meetings and reviews of research, teaching and support software is solicited. Contributions should be sent to the editors of the column: rd@dcs.st-and.ac.uk (Roy Dyckhoff, University of St Andrews) dfh@maths.warwick.ac.uk (Derek Holt, University of Warwick).

EC HUMAN CAPITAL AND MOBILITY PROGRAMME MRI POST-DOCTORAL FELLOWSHIPS IN MATHEMATICS

Applications are invited for a number of fellowships for research in mathematics at the Mathematical Research Institute (MRI) in The Netherlands.

The Mathematical Research Institute (MRI) in The Netherlands has been set up jointly by the mathematics faculties of the universities of Groningen, Nijmegen, Twente and Utrecht. Its aim is to promote research, organise graduate courses and seminars, and stimulate international contacts and exchange. The MRI is one of the main mathematical institutes in The Netherlands. The MRI research programme is divided into three main streams: Algebra and Geometry; Analysis; Stochastics.

Conditions. Applicants must be citizens of a member state of the European Community or resident in the Community; similar rules apply to applicants from several non-member states which participate in the HCM-programme (Austria, Switzerland, Sweden, Norway, Finland, Iceland). The activity is intended primarily for the benefit of young researchers at post-doctoral level, defined as

researchers having at least six years of higher education and who hold a doctorate or an equivalent degree, or have had two or more years of research experience following a post-graduate course.

Applications. These must include a c.v., list of publications, concise description of research interests and letters of recommendation and/or names of 3 referees, and should reach: Mathematical Research Institute, Postdocs Committee, P.O. Box 80.010, 3508 TA Utrecht, The Netherlands, tel: +31-30-531421, fax: +31-30-518394, e-mail: mri@math.ruu.nl by 1 January 1994.

Scientific information is available from the following people: Prof.dr. J.H.M. Steenbrink (Algebra and Geometry) +31-80-653144, e-mail: steenbri@sci.kun.nl, Prof.dr. J.J. Duistermaat (Analysis) +31-30-531513 e-mail: duis@math.ruu.nl, Prof.dr. R.D. Gill (Stochastics) +31-30-533763, e-mail: gill@math.ruu.nl. Duration: 6-12 months, exceptionally 24 months. An MRI committee will make an initial selection of the postdocs in February 1994.

THE UNIVERSITY OF LEEDS Department of Pure Mathematics LECTURESHIPS - 2 POSTS

Applications are invited for the above posts available from 1 October 1994. The appointees will be expected to contribute actively to the research of the Department; principally Algebra, Functional Analysis, Differential Geometry, Mathematical Logic.

Salary for one post will be on the scale for Lecturer Grade A (£13,601-£18,555) or Grade B (£19,642-£25,107) according to qualifications and relevant experience. The other post will be on the scale for Lecturer Grade A (£13,601-£18,555). Informal enquiries about the posts may be made to Professor J.C. McConnell, tel: 0532 335162, fax: 0532 429925, e-mail: PMT6JCM@uk.ac.leeds.

Application forms and further particulars may be obtained from the Personnel Office (Academic Section), The University, Leeds LS2 9JT, tel: 0532 335771 quoting the reference number 51/39.

Closing date for applications **17 December, 1993.**

The University of Leeds promotes an equal opportunities policy.



Walter de Gruyter
Berlin • New York

An-Min Li/Udo Simon/Guosong Zhao

Global Affine Differential Geometry of Hypersurfaces

1993. 17 x 24 cm. Cloth DM 178,--/öS 1.389/sFr 171,--
ISBN 3-11-012769-5

de Gruyter Expositions in Mathematics, Volume 11

Editors: O.H. Kegel - V.P. Maslov - W.D. Neumann - R.O. Wells, Jr.

Contents:

Chapter 0: Preliminaries and basic structural aspects • Affine spaces • Euclidean spaces • Differential geometric structures of affine and Euclidean spaces • Klein's Erlanger programme • Motivation. A short sketch of the Euclidean hypersurface theory • Hypersurfaces in the equiaffine space • Structural motivation for further investigations • Transversal fields and induced structures • Conormal fields and induced structures • Normalizations • Non-degenerate hypersurfaces • Relative normalizations • Gauss structure equations for conormal fields • Affine invariants of the induced structures • Comparison of relative normalizations • Example. The Euclidean normalization as relative normalization • The equiaffine normalization • Equiaffine structure equations • The centroaffine normalization
Chapter 1: Local equiaffine hypersurface theory • Berwald-Blaschke metric and structure equations • The affine normal and the Fubini-Pick form • The equiaffine conormal • Hyperquadrics • Integrability conditions and the local Fundamental theorem

Chapter 2: Affine hyperspheres • Definitions and basic results for affine hyperspheres • Affine hyperspheres with constant sectional curvature • Affine completeness and Euclidean completeness • Affine complete elliptic affine hyperspheres • A differential inequality on a complete Riemannian manifold • Estimates of the Ricci curvatures of affine complete affine hyperspheres of parabolic or hyperbolic type • Classification of complete hyperbolic affine hyperspheres • Complete hyperbolic affine 2-spheres • Appendix: Recent results about affine spheres

Chapter 3: Rigidity and uniqueness theorems • Integral formulas for affine hypersurfaces and their applications • The index method

Chapter 4: Variational problems and affine maximal surfaces • Variational formulas for higher affine mean curvatures • Affine maximal surfaces

Chapter 5: Geometric inequalities • The affine isoperimetric inequality • Inequalities for higher affine mean curvatures

Appendix 1: Basic concepts from differential geometry • Tensors and exterior algebra • Differentiable manifolds • Affine connections and Riemannian geometry. Basic facts • Green's formula

Appendix 2: Laplacian Comparison Theorem



Program Announcement Operator Algebras and Applications September 1994 to August 1995

In 1994-95 The Fields Institute for Research in Mathematical Sciences will be sponsoring an emphasis year on operator algebras and their interrelations with other fields of mathematics. The organizing committee for the program consists of George Elliott (Chairman) (Toronto and Copenhagen), Manduen Choi (Toronto), Alain Connes (College de France), Kenneth Davidson (Waterloo), Peter Fillmore (Dalhousie), David Handelman (Ottawa), Nigel Higson (Pennsylvania State), Vaughan Jones (Berkeley), Ian Putnam (Victoria) and Dan Voiculescu (Berkeley).

In addition to regular meetings of seminars and graduate courses, the following workshops are planned (dates tentative): The Baum-Connes Conjectures (Nigel Higson, 14-18 September 1994); Dynamical Systems and C^* -Algebras (David Handelman and Ian Putnam, 26-30 October 1994); The Classification of Amenable C^* -Algebras (George Elliott and Mikael Rordam, 7-11 December

1994); Operator Algebra Free Products and Random Matrices (Dan Voiculescu, 8-12 March 1995); Subfactors and their Applications (Sorin Popa, Antony Wassermann and Hans Wenzl, 29 March - 2 April 1995); Low Dimensional Topology, Statistical Mechanics and Quantum Field Theory (David Evans, Vaughan Jones, Louis Kauffman and Werner Nahm, 26-30 April 1995); Quantum Groups and their Connection with Quantized Functional Analysis (Zhong-Jin Ruan, in honour of Edward Effros, 24-28 June 1995).

The 23rd Canadian Annual Symposium on Operator Algebras will be held at the Fields Institute, 24 - 28 May 1995. (The Symposium organizers are Nigel Higson, John Holbrook and Ian Putnam.)

For further information, please contact: Sandra Valeriote, Executive Assistant, The Fields Institute, 185 Columbia Street West, Waterloo, Ontario, Canada N2L 5Z5, e-mail: valeriote@fields.uwaterloo.ca, phone: (519) 725- 0096, fax: (519) 725-0704.

Call for Applications Operator Algebras and Applications September 1994 to August 1995

The Fields Institute for Research in Mathematical Sciences invites applications for Institute Junior Fellowships for the 1994-95 Operator Algebras and Applications program year. These fellowships will be tenable for two years, the first year at the Fields Institute and the second at a Canadian university. Candidates should possess a Ph.D. degree in mathematical sciences and have a strong research record. Partial support may also be available for a limited number of additional participants and graduate students working in the program area.

Applications, including curriculum vitae (with your e-mail address) and three

letters of reference (sent directly to the Fields Institute), should be sent by 15 February 1994, to:

Dr. J. E. Marsden, Director, The Fields Institute for Research in Mathematical Sciences, 185 Columbia St. W., Waterloo, Ontario, Canada N2L 5Z5.

The Fields Institute is a collaboration involving McMaster University, the University of Toronto, the University of Waterloo and affiliate universities across Canada. It is supported by the Ontario Ministry of Education and Training and the Natural Sciences and Engineering Research Council of Canada.

Klaus Hulek, Constantin Kahn,
Steven H. Weintraub

Moduli Spaces of Abelian Surfaces: Compactification, Degenerations, and Theta Functions

1993. 17 x 24 cm. XII, 347 pages. With 24 figures
Cloth DM 168.--/öS 1.311.--/sFr 161.-- ISBN 3-11-013851-4
de Gruyter Expositions in Mathematics, Volume 12
Editors: O.H. Kegel - V.P. Maslov - W.D. Neumann - R.O. Wells

Contents:

I Compactified moduli spaces

Moduli spaces • **Torus embeddings and applications** • Torus embeddings • Shioda and Kummer modular surfaces • The topology of Shioda and Kummer modular surfaces • **Toroidal compactification of $A^*(1,p)$** • Boundary components • The Tits building • Toroidal compactification • Partial compactifications of $A(1,p)$ • **The boundary of $A^*(1,p)$** • Corank 2 boundary components • Transversality • The topology of $A^*(1,p)$ • **Humbert surfaces and scaffoldings** • The scaffolding • Geometry of the Humbert surfaces • **The Satake compactification**

II Degenerations of abelian surfaces

Mumford's construction • Outline of the construction • Relatively complete models • Construction of G • Properties of G
The basic construction for surfaces • The basic data • Computations • **Degenerate abelian surfaces (the principally polarized case)** • Boundary points and Mumford's construction • Description of singular surfaces • Global aspects • **Degenerate abelian surfaces (the case of $(1,p)$ -polarization)** • Boundary points • Degenerate abelian surfaces • **Polarizations on degenerate abelian surfaces** • Theta functions • Extending polarizations ($p=1$) • Miscellaneous remarks • The general case ($p1$)

III The Horrocks-Mumford map

The Horrocks-Mumford bundle • Basic properties • Horrocks-Mumford surfaces • Geometry in the space of sections • **Construction of the Horrocks-Mumford map** • Heisenberg equivariant embeddings • Odd theta null values • Construction of the Horrocks-Mumford map • **Extension of the Horrocks-Mumford map to $A(1,5)$** • Extension to H_2 • Extension to H_1 • **Extension of the Horrocks-Mumford map to $A^*(1,5)$** • Extension to the central boundary component • Extension to the peripheral boundary components • Extension to the corank 2 boundary components

JUBILEE SOUSLIN CONFERENCE

Michail Yakovlevich Souslin, famous as the founder of Descriptive Set Theory and the author of many outstanding theories, was born in 1894 in Krasavka which is not far from the ancient Russian city of Saratov, located on the great Russian river Volga. Today Saratov is a city of one million inhabitants, a centre of commerce, industry, education and tourism, which keeps old Russian traditions and is apart from noisy political events.

The mathematicians at Saratov have formed The Souslin Foundation, a public society aimed at supporting fundamental mathematical research and organizing regular meetings on Souslin's work. The Souslin conferences aim to provide a platform for the presentation of recent results in the areas of Analysis and Foundations in the broad sense, where these are somehow related to, or issue from, M. Souslin's works.

The Foundation has organized two Souslin Conferences in 1989 and 1991 (which were written about in the journals "Uspehy Matem. Nauk", 1990. V.45, N 2, p.231; 1992. V. 47, N 3, p.197-198 and "Izvestiya vysshikh uchebnykh zavedenii, seriya matematika", 1990. N 3, p.88-89, 1992, N 7, p.87-88).

The Association for Symbolic Logic sponsored Third Souslin Conference, dedicated to

the 100th anniversary of Michail Souslin, 1894 - 1919, will be held during 20-30 July 1994, in Saratov, Russia. Papers presenting original contributions in the following topics are being sought: Analysis, Logic and Foundations, Nonstandard Analysis, Computer Science, General Topology, Set Theory. The scientific programme will consist of invited lectures and short contributions, which will be selected from the submitted papers.

Programme Co-Chairs are Yu.L. Ershov (Institute of Math., Novosibirsk, Russia) and A. Kechris (Caltech, Pasadena, USA). Programme Committee: L. Aksent'ev, S. Artemov (expected), T. Bartoszynski, Yu. Ershov, V. Kanovei (Coordinator), A. Kechris, S. Konyagin, V. Malykhin, V. Matrosov, V. Ponomarev, A. Razborov, D. Ross (expected), V. Tikhomirov. The conference will be organized by the Souslin Foundation; Vladimir Molchanov will be in charge of local arrangements.

Application deadline is 1 January 1994. Further information can be obtained from the Programme coordinator, V. Kanovei, e-mail: pank@compnet.msu.su, or from the local organizer: V. Molchanov, Souslin Foundation, Michurina 92, Saratov 410071 Russia; fax +845 2 240446, e-mail: (addressed to V.Molchanov) postmaster@scnit.saratov.su.

THE MANDELBROT SET - AN UNDERGRADUATE TREATMENT

The Open University has recently launched a new undergraduate course on complex analysis which includes materials that should be of considerable interest to teachers of complex analysis everywhere. As well as covering all the standard complex analysis topics, the course gives detailed accounts of:

(a) the modelling of fluid flow round an obstacle (setting up the model, circulation and flux, complex potential functions and velocity functions, statement of the obstacle problem and its solution by conformal mapping, the Kutta-Joukowski hypothesis and lift on an aerofoil);

(b) complex iteration (classifying fixed points and periodic points, basins of attraction, Newton-Raphson method, Julia sets of quadratic functions, the Mandelbrot set and

some of its basic properties).

These topics are treated in extensively-illustrated 'study units', designed for students to work through at home. Each study unit is about 60 pages long and contains many problems, all with full solutions.

The entire course, M337 Complex Analysis, consists of 14 such study units, with associated audio cassettes, and a one hour video cassette of computer animations to illustrate geometric properties of complex functions. It is available from: Open University Educational Enterprises Limited, 12 Cofferidge Close, Stony Stratford, Milton Keynes MK11 1BY, tel: 0908 261662, fax: 0908 261001.

Phil Rippon
Open University

Springer-Verlag Wien New York

B. Sturmfels

Algorithms in Invariant Theory

1993. 5 figures. VII, 197 pages.

Soft cover DM 59,-, öS 415,-

ISBN 3-211-82445-6

(Texts and Monographs in Symbolic Computation)

Prices are subject to change without notice

J. Kung and G.-C. Rota, in their 1984 paper, write: "Like the Arabian phoenix rising out of its ashes, the theory of invariants, pronounced dead at the turn of the century, is once again at the forefront of mathematics."

The book of Sturmfels is both an easy-to-read textbook for invariant theory and a challenging research monograph that introduces a new approach to the algorithmic side of invariant theory. The Groebner bases method is the main tool by which the central problems in invariant theory become amenable to algorithmic solutions. Students will find the book an easy introduction to this "classical and new" area of mathematics. Researchers in mathematics, symbolic computation, and computer science will get access to a wealth of research ideas, hints for applications, outlines and details of algorithms, worked out examples, and research problems.



Springer-Verlag Wien New York

Sachsenplatz 4-6, P.O.Box 89, A-1201 Wien · Heidelberger Platz 3, D-14197 Berlin
175 Fifth Avenue, New York, NY 10010, USA · 37-3, Hongo 3-chome, Bunkyo-ku, Tokyo 113, Japan

LONDON MATHEMATICAL SOCIETY

NOTICE OF GENERAL MEETING

There will be a General Meeting of the Society on Friday 21 January 1994 at 3.30 p.m. in the Linnean Society Lecture Room, Burlington House, Piccadilly, London W1, to consider a proposal by the Council of the Society to convert the wording of the Society's By-Laws into gender-neutral language.

The Council is making this proposal as a result of discussion, resulting from a letter received from a member of the Society, at the 1993 Council Retreat. There is no proposal at the present time to convert the wording of the Society's Statutes into gender-neutral language: changes to the Statutes involve a more complicated procedure and require the approval of the Lords of the Privy Council. However, Council has resolved that, when, in the future, it feels obliged to approach the Privy Council with a proposal to change a Statute for some other reason, then it will also take the opportunity to convert at the same time the wording of that Statute into gender-neutral language.

In detail, the Council proposes that the existing By-Laws I,2, I,7, III,4, VI,3, X,5 and XII,1, reproduced below, be deleted and replaced by new versions, also printed below.

Text of the existing By-Law I,2

No President or Vice-President shall hold the same office for more than two years consecutively. He shall, however, be eligible for re-election after the lapse of one year.

Text of the proposed By-Law I,2

No President or Vice-President shall hold the same office for more than two years consecutively. However, after the lapse of one year, a former President or Vice-President shall be eligible for re-election to the same office.

Text of the existing By-Law I,7

Each Member voting shall make use of the list as a balloting list by striking out those names for which he does not vote. Each Member completing a balloting list shall validate the list both by signing it and by writing his name legibly upon it. Any balloting list not validated in this way shall be held to be null and void.

Text of the proposed By-Law I,7

Each Member voting shall make use of the list as a balloting list by striking out those names for which a vote is not to be cast. Each completed balloting list shall be validated with the voter's signature and legibly written name. Any balloting list not validated in this way shall be held to be null and void.

Text of the existing By-Law III,4

As soon as is convenient after the election of an Honorary Member, a Diploma, signed by the President and one of the Secretaries, and sealed with the Seal of the Society, shall be forwarded to him by the Secretaries.

Text of the proposed By-Law III,4

A Diploma, signed by the President and one of the Secretaries, and sealed with the Seal of the Society, shall be forwarded by the Secretaries to each newly-elected Honorary Member, as soon as is convenient after the election.

Text of the existing By-Law VI,3

Any Member wishing to propose a topic for discussion at a Meeting, or to make suggestions about the nature of subsequent Meetings, should communicate his proposal in writing to one of the Secretaries. Council shall decide whether or not the proposals received from Members shall be put into effect.

Text of the proposed By-Law VI,3

Any Member wishing to propose a topic for discussion at a Meeting, or to make suggestions about the nature of subsequent Meetings, should communicate the proposal in writing to one of the Secretaries. Council shall decide whether or not the proposals received from Members shall be put into effect.

Text of the existing By-Law X,5

The author of any paper printed by the Society shall be entitled to fifty copies thereof free of all expenses; and, on giving timely notice to the Secretaries, he may purchase at cost price as many additional copies as he may desire.

Text of the proposed By-Law X,5

The author of any paper printed by the Society shall be entitled to fifty copies thereof free of all expenses; such an author may, on giving timely notice to the Editors, purchase additional copies at cost price.

Text of the existing By-Law XII,1

The Library of the Society shall be kept at such place as shall from time to time be determined by the Council. Every Member of the Society shall be entitled to take books out of the Library and shall return them within such period as the Council shall from time to time determine. Any Member who shall not return any book taken out by him on being required to do so shall pay to the Treasurer the cost of another copy if procurable, or such compensation as the Council may decide.

Text of the proposed By-Law XII,1

The Library of the Society shall be kept at such place as shall from time to time be determined by the Council. Every Member of the Society shall be entitled to take books out of the Library and shall return them within such period as the Council shall from time to time determine. Any Member who shall take out a book and then fail to return it on being required to do so shall pay to the Treasurer the cost of another copy if procurable, or such compensation as the Council may decide.

R.Y. Sharp
Council and General Secretary

SYMS MATHS FAIR

The third SYMS (Society for Young Mathematicians) Annual Maths Fair was held this year at the City of London School for Girls on 3 July 1993, repeating our initial venue. We were most grateful again for the support of the London Mathematical Society.

Throughout the day there was a mixture of individual sessions, video showings and continuous activities. Most of the contributors repeated their session which gave people a lot of choice in planning their day. About eight hundred attended, many staying for much of the six hours.

Our sessions included two with a musical feel: Kay Alldridge and Ian Harrison doing complicated rhythmical work, and Joyce Brown with handbells. Mary Ghrist cut up cubes; Erick Gooding talked tessellations, and Robert Barbour (runner-up in the Maths Teacher of the Year competition) considered Pascal's Triangle in Three Dimensions. On the historical side, Helen Gardner's group played with Roman Mosaics and Peter Ransom's "Fun with the Sun" session looked at sun-

dials and early navigational instruments - thank goodness it was a sunny day! David Singmaster, as well as contributing Puzzle Corner from his vast collection, gave a slide lecture on Mediaeval Mathematical Recreations. David Wells considered patterns, both geometrical and numerical, in "Now you see it, now you don't".

Videos were popular to give a break from chasing the Maths trails through the building or playing large floor versions of Neutron and Mu Torere. We showed Christopher Zeeman's RI Masterclass videos and also some short ones including Hypercube.

However, apart from visiting the Mathematical Association shop or the SYMS stall, most of the youngsters (and adults) spent a lot of time in the Hall, which contained a large number of activities, from Moebius strips to walking through a postcard, from cube puzzles to making polyhedra by paper-folding, from games of strategy to flexagons and match stick puzzles. The room buzzed with activity all day.

M.L. Perkins

JOINT RESEARCH PROJECTS WITH JAPAN

An Aide Mémoire has been signed between the Royal Society, the British Council and the Japan Society for the Promotion of Science (JSPS) to encourage and support a programme of Joint Research Projects with effect from July 1993. Two-year projects are considered in

the natural sciences, mathematics, engineering and non-clinical medical research. The number and size of the awards will partly depend on submissions received. Enquiries should be made to Via Cody at the Royal Society, telephone 071 839 5561 ext. 218.

DIFFERENTIAL GEOMETRY WORKSHOP

A Workshop on "Harmonic Maps and Curvature Properties of Submanifolds" will be held at the University of Leeds from 28 July to 1 August 1994. Among those who have already agreed to be speakers are A.I. Bobenko (T.U. Berlin), F.E. Burstall (Bath), A.T. Fomenko (Moscow), Y. Ohnita (Tokyo) F. Pedit (Massachusetts), U. Pinkall (T.U. Berlin), P.J. Ryan (McMaster), G. Thorbergsson (Notre Dame). Invited speakers will be

supported by a grant from the London Mathematical Society and by the E.C. Human Capital and Mobility Scheme. All who are interested are welcome to participate. Further information can be obtained from one of the organisers: S. Carter, e-mail: s.carter@uk.ac.leeds, A. West, e-mail: a.west@uk.ac.leeds or J.C. Wood, e-mail j.c.wood@uk.ac.leeds, School of Mathematics, University of Leeds, Leeds LS2 9JT, fax: 0532-429925.

MATHEMATICIANS VISITING THE UK IN 1993/94

BRADFORD UNIVERSITY

Dr M.I.H. Bhatti (Bahauddin Zakariya University, Pakistan) Numerical Simulation in Heat Transfer and Fluid Flow, Jun - Dec 93
 Dr R. Butt (Bahauddin Zakariya University, Pakistan) Optimisation and Control Theory, Apr - Oct 94
 Professor M.A. Kamal (Bahauddin Zakariya University, Pakistan) Fluid Dynamics, May 94
 Dr N.A. Mir (Bahauddin Zakariya University, Pakistan) Numerical Solution of Polynomial Equations, Jun - Dec 93
 Dr A. Rahim (Bahauddin Zakariya University, Pakistan) Fluid Dynamics, Apr - Oct 94

BRUNEL UNIVERSITY -

Mathematics & Statistics

Professor I. Maros (Hungarian Academy of Sciences, Hungary) Mathematical Optimization and Large Scale Linear Programming, 3 Feb - 30 Sep 94
 Professor S. Ruuth (Helsinki University of Technology, Finland) Linear and Discrete Programming, Aug 93 - Jul 94

CAMBRIDGE UNIVERSITY - DAMTP

Dr D.M. Anderson (Northwestern University) Theoretical Geophysics, 1 Sep 93 - 31 Aug 94
 Mr Z. Bajnok (Roland Eötvös University, Hungary) Particle Physics, Oct 93 - Jun 94
 Professor K. Bardakci (University of California, Berkeley) Oct 93 - Jun 94
 Professor R.J. Baxter (Australian National University) 1 Jul 93 - Sep 95
 Dr R. Bonnecaze (University of Texas, Austin) Theoretical Geophysics, Jun - Jul 94
 Dr J. Bush (Harvard University) Environmental/Industrial Fluid Mechanics, 1 Oct 93 - 30 Sep 94
 Professor H.-C. Chang (University of Notre Dame, U.S.A.) Interfacial Turbulence, Waves, 1 Sep - 31 Dec 93
 Dr A.C.-L. Chian (INPE, Brazil) Nonlinear Waves in Space Plasmas, 1 Aug 92 - 31 Jul 94
 Dr B. Dade (University of Washington) Geological Fluid Mechanics
 Dr H. Dai (Nanjing University of Aeronautics and Astronautics, China) Numerical Analysis, 1 Nov 93 - 30 Apr 94
 Dr N. Deruelle (Institut Henri Poincaré) Relativity, Sep 93 - Jun 94
 Dr F. Dowker (Santa Barbara) Relativity, Jan -

Apr 94

Professor V.M. Entov (Moscow Institute) Microhydrodynamics, 11 Jan - 11 Apr 94
 Dr V. Hakim (Laboratoire de Physique Statistique, Paris) Astrophysical Fluid Dynamics, Nonlinear Dynamics, Oct - Dec 93
 Professor J. Hamilton, Particle Physics, Oct 93 - Sep 94
 Professor B. Harms (University of Alabama) Geometry and Gravity, 1 - 31 Jul 94
 Professor H.B. Keller (California Institute of Technology, Pasadena) Numerical Analysis, Fluid Dynamics, Waves, 1 Oct - 31 Dec 93
 Dr C. Kieer (Universität Zürich) Relativity, Aug 93 - Jul 95
 Mr A. Kurapov (Budapest) Coastal Oceanography, Jan - Sep 94
 Ms C. Manuel (Barcelona) Differential Renormalization, Oct 93 - Sep 94
 Professor T. Maxworthy (University of South California) Theoretical Geophysics, May - Jun 94
 Dr O. Nachtmann (Heidelberg) Particle Physics, Apr - Jul 94
 Dr J.L. Nazareth (Washington State University) Numerical Analysis, Oct - Dec 93
 Dr K. Nishimura (Hokkaido University) Environmental Fluid Dynamics, Oct 93 - Aug 94
 Dr A. Raychaudhuri (University of Calcutta) 1 Oct 93 - 31 Mar 94
 Dr Y. Sakai (Nagoya University, Japan) Turbulence Structure and Fractals, 1 Jul 94 - 31 Jan 95
 Dr R. Shuzhan (Chinese Academy of Sciences) Geophysical Fluid Dynamics, 1 Dec 93 - 30 Nov 94
 Dr B. Spencer (Northwestern University) Geophysical Fluid Mechanics, Sep 93 - Sep 95
 Professor K. Tam (McGill University, Canada) Combustion, Wave Propagation, 1 Jan - 31 Mar 94
 Dr S. Vergnolle (CNRS, Paris) Theoretical Geophysics, Jan - Mar 94
 Dr V.A. Vladimirov (University of Nvosibirsk) Astrophysical Fluid Mechanics, Nonlinear Dynamics, Oct 93 - Mar 94

CAMBRIDGE UNIVERSITY - DPMMS

Dr B. Hajek (Urbana) Applied Probability, 21 Aug - 21 Dec 93
 Dr P. Heidelberger (IBM T.J. Watson Research

Center, NY) Mathematical Modelling of Telecommunication Networks, 1 Jun - 31 Aug 94

Dr A.A. Ivanov (Academy of Sciences USSR) Groups and Graphs, 93 - 94

Professor Guo-bing Lu (Southeast University, Nanjing) Applied Probability, Statistics, 10 Oct 93 - 10 Oct 94

Professor M. Marcus (City College, CUNY Graduate Center, New York) Stochastic Processes, 93 - 94

Dr K. Matthews (Queensland) Number Theory, 1 Aug - 31 Dec 93

Professor Mei-Chi Shaw (Notre Dame, USA) Analysis, 1 Sept 93 - 31 Dec 94

Professor P. Wojtaszyk (Wasaw) Analysis, 93 - 94

Professor C. Zhao (Peking) Number Theory, 1 Nov 93 - 30 Apr 94

CENTRAL LANCASHIRE UNIVERSITY

Professor A. Rosa (McMaster University, Canada) Combinatorial Design Theory, Jan - Feb 94

CITY UNIVERSITY

Dr J. Albuquerque e Castro (Universidade Federal Fluminense, Brazil) Low Dimensional Magnetic Structures, 93 - 94

Dr R.B. Muniz (Universidade Federal Fluminense, Brazil) Low Dimensional Magnetic Structures, 93 - 94

COVENTRY UNIVERSITY

Professor V.G. Rumchev (Technical University Sofia, Bulgaria) Decision Support Systems, Optimization, Positive Systems, - Feb 94

DUNDEE UNIVERSITY

Professor H.A. Levine (Iowa State University) P.D.E.s, Jan - Mar 94

DURHAM UNIVERSITY

Professor J. Lukierski (University of Wroclaw, Poland) Particle Theory, 1 Nov - 31 Dec 93

Professor M. Leis (Universidade de Santiago de Compostela) Particle Theory, 23 Sep - 31 Dec 93

EAST ANGLIA UNIVERSITY

Professor V.B. Mnuklin (Radio Engineering Institute, Taganrog, Russia) Algebra, Combinatorics, Feb - May 94

Dr I.E. Shparlinski (MacQuarie University) Computational Number Theory, 1 - 28 Feb 94

EDINBURGH UNIVERSITY

Professor A.B. Aceves (University of New Mexico) Nonlinear Optics and Solitons, Aug 94

Professor E. Berkson (University of Illinois) Harmonic Analysis and Operator Theory, Jun - Jul 94

Professor M. Christ (U.C.L.A.) Harmonic Analysis, Mid-Jun - 31 Jul 94

Professor D.A. Dawson (Carleton University) Infinite Dimensional Stochastic Processes, 21 Mar - 1 Apr 94

Professor S.N. Evans (University of California, Berkeley) Infinite Dimensional Stochastic Processes, 21 Mar - 1 Apr 94

Professor K. Fleischmann (Karl-Weierstrass Institut Berlin) Infinite Dimensional Stochastic Processes, Mar 94

Professor S. Grabiner (Pomona College, Claremont, CA) Banach Algebras, 1 Jan - 31 Jul 94

Professor J. Grabiner (Pomona College, Claremont, CA) History of Mathematics, 1 Jan - 31 Jul 94

Dr D. Hill (University of Wollongong) Industrial Mathematics, 1 Oct - 31 Dec 93

Professor W.L. Kath (Northwestern University) Nonlinear Optics and Solitons, Jul - Aug 94

Dr T.R. Marchart (University of Wollongong) Nonlinear Waves, 1 Feb - 31 May 94

Professor A. McIntosh (Macquarie University) Harmonic Analysis, Jun - Jul 94

Professor V. Metz (Bielefeld) Diffusion Process Flow, Fractals, Dec 93

Professor D. Müller (University of Strasbourg) Harmonic Analysis, Jun - Jul 94

Professor A.C. Newell (University of Arizona) Nonlinear Optics, Aug 94

Professor B. Oksendal (Oslo) Infinite Dimensional Stochastic Processes, 21 Mar - 1 Apr 94

Professor L. Overbelk (Paris VI/Bonn) Infinite-Dimensional Stochastic Processes, Mar 94

Professor E.A. Perkins (University of British Columbia) Infinite-Dimensional Stochastic Processes, 21 Mar - 1 Apr 94

Professor F. Rezakhanlon (University of California, Berkeley) Nonlinear P.D.E.s, 21 Mar - 1 Apr 94

Professor C. Sogge (U.C.L.A.) Harmonic Analysis, Jul 94

Professor S. Wainger (University of Wisconsin) Harmonic Analysis, Jun 94

Professor T. Wolff (University of California, Berkeley) Harmonic Analysis, Jun 94

GLASGOW UNIVERSITY

Professor T. Albu (Bucharest) Ring Theory, Jan - Mar 94

Professor M.E. Antunes Simoes (Lisbon) Ring Theory, Feb 94

Dr Eun Sup Kim (Kyungpook) Ring Theory, Dec 93 - Dec 94

Dr W.H. Haemers (University of Tilburg, The Netherlands) Algebraic Graph Theory and Design Theory, 6 - 11 Dec 93

Dr J. Harlander (Frankfurt) Combinatorial and Geometric Group Theory, Jan - Sep 94

Professor J. Kreinpa (Warsaw) Ring Theory, Nov 93

Professor A.V. Mikhalev (Moscow) Ring Theory, Jul - Aug 94

Dr A. Tercan (Hacettepe) Ring Theory, Jul - Aug 94

Dr Y. Tivas (Hacettepe) Ring Theory, Jul - Aug 94

HERIOT-WATT UNIVERSITY

Dr V.Z. Enol'skii (Kiev) Classical and Quantum Integrable Systems, Theta Functions, 1 Dec 93 - 31 May 94

Dr P. Fratzl (University of Vienna) Kinetics of Phase Separation in Metals, 1 Nov 93 - 31 May 94

Dr B. Toth (Mathematical Institute of the Hungarian Academy of Sciences) Probability Theory, Statistical Mechanics, 1 Jun - 31 Aug 94

KENT UNIVERSITY

Dr E. Catapulte (University of New South Wales) Mathematical Modelling, Statistical Modelling, May - Jun 94

Professor G. Laporte (University of Montreal) Combinatorial Optimization, Location Routing, 15 - 25 Dec 93

KING'S COLLEGE LONDON

Professor J. Goldberg (Syracuse University, New York) General Relativity, Quantum Gravity, 6 Jun - 21 Dec 93

Dr J. Isberg (ITP Stockholm, Sweden) String Theory, 30 Mar 93 - 30 Mar 94

Professor L. Jin (Chengdu University of Science & Technology, China) Partial Differential Equations, 1 Jan - 30 Jun 94

Dr B. Moroz (Max Planck Institute, German) Number Theory, 31 Jan - 31 Jul 94

Dr K. Murakami (Ehime University, Japan) Neural Nets, 6 Apr 94 - 3 Feb 95

KINGSTON UNIVERSITY

Dr H. Reiter (University of North Carolina at Charlotte) Discrete Mathematics, Mathematical Education, Combinatorics, Graph Theory, Sep 93 - Jul 94

LANCASTER UNIVERSITY

Dr A. Donsig (University of Waterloo) Operator Algebras, Nov 93 - Nov 94

Dr A. Katavolos (University of Athens) Operator Algebras, Aug - Dec 93

Professor C. Laurie (University of Alabama) Operator Algebras, Aug - Dec 93

LEEDS UNIVERSITY -

Applied Mathematical Studies

Dr J. Cheng (University of Science & Technology of China) Unsteady Aerodynamics, Computational Fluid Mechanics, Jun - Dec 93

Professor H. Kuiken (Eindhoven Technology University) Industrial Fluid Mechanics, 25 Oct 93 - 24 Mar 94

Professor I. Pop (University of Cluj, Romania) Heat Transfer, Summer 1994

LEEDS UNIVERSITY -

Pure Mathematics

Professor K. Ambos-Spies (University of Heidelberg, Germany) Logic, Recursion Theory, Mar 94

Professor M.M. Arslanov (Kazan University, Russia) Logic, Recursion Theory, Feb 94

Professor W.G. Bade (University of California, Berkeley) Banach Algebras, Apr - May 94

Professor F. Gharamani (University of Manitoba, Winnipeg) Banach Algebras, Mar - Apr 94

Professor C.G. Jockusch, Jr. (University of Illinois at Urbana, U.S.A.) Logic, Recursion Theory, Jul 94

Professor M. Lerman (University of Connecticut, U.S.A.) Logic, Recursion Theory, Jul 94

Professor A.H. Lachlan (Simon Fraser University, Canada) Logic, Recursion Theory, Dec 93

Dr A. Nies (University of Heidelberg, Germany) Logic, Recursion Theory, Jan 94

Professor T.A. Slaman (University of Chicago, U.S.A.) Logic, Recursion Theory, 1 Sep 93 - 31 Aug 94

Professor R.I. Soare (University of Chicago, U.S.A.) Logic, Recursion Theory, Jul 94
Professor R.A. Shore (Cornell University, U.S.A.) Logic, Recursion Theory, Jul 94
Professor W.H. Woodin (University of California, Berkeley) Logic, Dec 93

LIVERPOOL UNIVERSITY - DAMTP

Professor V.A. Brumberg (Institute of Applied Astronomy, St Petersburg, Russia) Celestial Mechanics, Mechanics, Astronomy, 20 -31 Jan 94

LIVERPOOL UNIVERSITY - Pure Mathematics

Professor M.J. Saia (UNESP Rio Claro)
Singularity theory, 1 Jan - 31 Dec 93

LOUGHBOROUGH UNIVERSITY

Mr L. Fernandez-Jambrina (Universidad Complutense, Madrid, Spain) Relativity, 18 Oct - 17 Dec 93

Professor A. Gras-Marti (University of Alicante, Spain) Boltzmann Transport Equations, 1 Aug 93 - 31 Jul 94

MANCHESTER METROPOLITAN UNIVERSITY

Professor S.S. Hassan (Ain Shams University, Cairo, Egypt) Quantum Optics, Jul - Aug 94

MANCHESTER UNIVERSITY

Professor K. Burrage (Queensland) Numerical Analysis, Sep 94
Dr M. Kuzucoglu (Turkey) Pure Mathematics, 15 Nov - 15 Feb 94
Professor A.E. Zaleski (Minsk, Russia) Pure Mathematics, 15 Oct - 15 Dec 93

MIDDLESEX UNIVERSITY

Dr M.A.B. Deakin (Monash University, Melbourne) History of Mathematics, Biomathematics, Maths Education, May - Jun 94

NEWCASTLE UPON TYNE UNIVERSITY

- Engineering Mathematics

Dr T. Yoshinaga (University of Osaka) Nonlinear Wave Propagation, 15 Mar - 14 Aug 94

NORTH LONDON UNIVERSITY

Professor V.I. Burenkov (Moscow

University of Friendship) Theory of Functions, 15 Jan - 15 Mar 94

Professor A.I. Loginov (Moscow Institute of Radiotechnology) Theory of Operators, 31 Jan - 30 Apr 94

Professor V.S. Shulman (Vologda Polytechnic Institute, Russia) Theory of Operator Algebras, 1 Oct - 19 Dec 93

NOTTINGHAM UNIVERSITY - Department of Mathematics

Dr R. Alicki (University of Gdansk, Poland) Quantum Probability, July - Dec 93

Dr O.V. Borodin (Novosibirsk, Russia)

Group Theory, Nov 93 - Mar 94

Dr M.P. Faifman (Kurchatov Institute Moscow) Theory of Muon Catalysed Fusion, Oct - Dec 93

Dr Gu Zhenyu (Yunnan Normal University, Kunming, PR China) Group Theory, Oct 93 - Sep 94

Professor K R Parthasarathy (Indian Statistical Institute, New Delhi) Quantum Probability, Jul-Jul 94

Dr T. Strizh (Russian Nuclear Physics Center, Russia) Theory of Muon Catalysed Fusion, Nov - Dec 93.

NOTTINGHAM UNIVERSITY - Theoretical Mechanics

Professor K. Aderogba (University of Lagos, Nigeria) Elasticity, Oct 93 - Sep 94

Dr N.K. Hatzitrifon (Aristotle University of Thessaloniki, Greece) Sep 93 - Apr 94

Dr G. Tsolakidis (Aristotle University of Thessaloniki, Greece) Sep 93 - Apr 94

ROYAL HOLLOWAY

Dr H. Sato (Senshu University, Japan) Information Technology, Oct 93 - Sep 94

SALFORD UNIVERSITY

Dr I.N. Landgev (Sofia, Bulgaria) Designs and Coding Theory, Oct 93 - Sep 94

SOUTHAMPTON UNIVERSITY

Dr W. Barretto (Universidad de Oriente, Venezuela) General Relativity, Oct - Dec 93

Professor A. Budnyam (Mongolian Academy of Sciences) Optimization, Jan and Feb 94

Dr A. Garnaev (St Petersburg, Russia) Game Theory, Aug 93 - Jul 94

Dr F. Kralj (Ljubljana, Slovenia) Liquid

Crystals, - Jan 94

Dr J. Liakos (Greece) Semiconductors, Oct 93 - Sep 94

Dr A. Osipov (Moscow, Russia) Liquid Crystals, Nov 93 - Oct 94

Mr L. Reeves (Melbourne, Australia) Geometric Group Theory, mid Oct 93 - Mar 94

Dr G. Swarup (Melbourne, Australia) Geometric Group Theory, Jan and Feb 94

Dr Takarabe (Osaka, Japan)

Semiconductors, Sep 93 - Feb 94

ST ANDREWS UNIVERSITY

Dr P. Baranyai (Technical University, Budapest, Hungary) Linear Programming, May - Jul 94

Dr P. Kortesi (University of Miskolc, Hungary) Ring Theory, Mar - May 94

Dr J. Pelikan (Lorand Eotvos University, Budapest, Hungary) Group Theory, May - Jul 94

Professor K.H. Pollock (North Carolina State University) Statistics, Jun - Jul 94

Dr G. Sereny (Technical University, Budapest, Hungary, Mathematical Logic, May - Jul 94

Dr A. Sri Ranga (Universidade Estadual Paulista, Brazil) Rational Approximation, Moment Problems, Orthogonal Polynomials, Oct 93 - Jun 94

Dr F. Wetli (Technical University, Budapest, Hungary) Finite Geometries, May - Jul 94

Dr E. Zibolen (Technical University, Budapest, Hungary) Computing, May - Jul 94

STRATHCLYDE UNIVERSITY

Professor D. Bedeaux (University of Leiden) Continuum Mechanics, 10 - 18 Nov 93

SUSSEX UNIVERSITY

Dr H. Garcke (Bonn) P.D.E.s in Mechanics, Phase Field Equations

Dr I. Kostin (St Petersburg) Attractors of Evolution Equations, 1 Oct 93 - 31 Mar 94

Dr B. Opic (Czech Academy of Sciences, Prague) Function Spaces, P.D.E.s, Jun 5 - 15 Aug 94

Professor V.D. Stepanov (Far Eastern Branch of the Russian Academy of Sciences) Weighted Norm Inequalities, Fourier Analysis, Differential and Integral Equations, 19 Mar - 20 May 94

UNIVERSITY COLLEGE LONDON

Dr I. Barany (Hungarian Institute, Budapest) Pure Mathematics, Oct - Dec 93

Professor A.M. Cetto (Universidad Nacional Autonoma de Mexico) Applied Mathematics, Oct 93 - Jun 94

Professor L. de La Pena (Universidad Nacional Autonoma de Mexico) Applied Mathematics, Oct 93 - Jun 94

Professor D. Naylor (University of Western Ontario) Applied Mathematics, Jan - Jun 94

UNIVERSITY COLLEGE OF NORTH WALES

Professor K.H. Kamps (Fern Universitat, Hagen, Germany) Homotopy Theory, 9 Nov - 16 Nov 93

Dr Wang Tieping (Shanxi Teachers University) General Topology, Oct 93 - Sep 94

UNIVERSITY OF WALES, ABERYSTWYTH

Professor A. Lascoux (University of Paris VII) Algebraic Combinatorics, Feb - Mar 94

Dr B. Leclerc (University of Paris VII) Algebraic Combinatorics, Feb - Mar 94

Dr J-Y Thibon (University of Paris VII) Algebraic Combinatorics, Feb - Mar 94

Professor A.M. Vershik (Steklov Mathematical Institute, Russia) Representation Theory, Combinatorics, 1 Mar - 10 Apr 94

UNIVERSITY OF WALES COLLEGE OF CARDIFF

Professor V. Burenkov (Moscow) Analysis of Function Spaces, Differential Equations, Feb 94

Professor R. Kerman (Brock University, Canada) Function Spaces and Differential Equations, 13 - 26 Jun 94

Professor Y. Saido (UAB, Alabama) Scattering Theory, 8 Apr - 8 Jun 94

Dr O. Trifonov (Bulgarian Academy of Sciences) Number Theory, Oct - Dec 93

WARWICK UNIVERSITY

J. Aaronson (Tel Aviv University) Ergodic Theory, Jul 94

T. Adachi (Nagoya Institute of Technology) Ergodic Theory, 7 Jul - 10 Aug 94

K. Baker (University of California) Ergodic Theory, 3 - 23 Jul 94

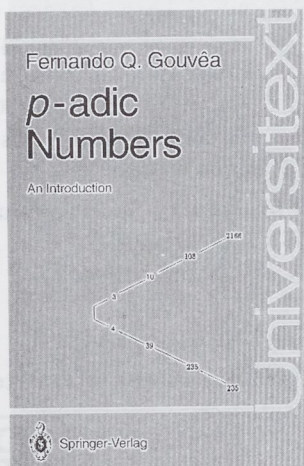
M. Boyle (M.S.R.I.) Ergodic Theory, 1 - 31 Jul 94

D. Berend (Ben Gurion University of the Negev) Ergodic Theory, 1 month between Feb - Apr 94

L. Bunimovich (George Institute of Technology) Ergodic Theory, 15 Jun - 15 Jul 94

- Z. Coelho (University of Sao Paulo) Ergodic Theory, Dec 93 - Aug 94
 E. Coven (Wesleyan University) Ergodic Theory, 16 May - 14 Jul 94
 K. Dajani (Technische Universiteit te Delft) Ergodic Theory, 10 - 16 Apr 95
 V. De Angelis (M.S.R.I.) Ergodic Theory, 1 - 30 Jul 94
 M. Denker (Georg-August-Universität zu Göttingen) Ergodic Theory, 16 - 30 Jul 94
 Y. Derriennic (Université de Bretagne Occidentale) Ergodic Theory, 18 - 22 Jul 94
 J. Feldman (University of California) Ergodic Theory, Apr - Jul 94
 S. Ferenczi (Laboratoire de Mathématiques Discretes) Ergodic Theory, 11 - 15 Apr 94
 C. Frougny (Institut Blaise Pascal) Ergodic Theory, 4 - 30 Apr 94
 M. Gundlach (Universität Bremen) Ergodic Theory, 1 - 25 Mar & 4 - 29 Jul 94
 M. Hurley (Case Western Reserve University) Ergodic Theory, 23 Mar - 20 Apr 94
 A. Iwanik (Université de Bretagne Occidentale) Ergodic Theory, 10 - 16 Apr 94
 R. Johnson (Tufts University) Ergodic Theory, 11 - 15 Apr & 11 - 29 Jul 94
 A. Iwanik (Université de Bretagne Occidentale) Ergodic Theory, 17 - 23 Jul 94
 B. Kaminski (Nicholas Copernicus University of Torun) Ergodic Theory, 20 Jun - 23 Jul 94
 J. Kammeyer (U.S. Naval Academy, Annapolis) Ergodic Theory, 10 - 23 Jul 94
 A. Katsuda (Okayama University) Ergodic Theory, 1 - 15 Aug 94
 A. Katok (Pennsylvania State University) Ergodic Theory, 8 May - 31 Jul 94
 R. Kenyon (ENS-Lyon) Ergodic Theory, 1 - 30 Apr 94
 H. Keynes (University of Minnesota) Ergodic Theory, 16 - 31 Jul 94
 C. Kraaikamp (Technische Universiteit te Delft) Ergodic Theory, 10 - 15 Apr 94
 F. Ledrappier (Université de Paris VI) Ergodic Theory, Jul 94
 D. Lind (University of Washington) Ergodic Theory, 10 - 17 Apr & 1 Jul - 1 Aug 94
 K. Madden (University of Maryland) Ergodic Theory, 16 - 31 Jul 94
 B. Marcus (IBM Aladen Research Laboratory) Ergodic Theory, 1 Jul - 1 Aug 94
 N. Markley (University of Maryland) Ergodic Theory, 16 - 31 July 94
 R. Meester (Rijksuniversiteit te Utrecht) Ergodic Theory, 10 - 16 Apr & 17 - 23 Jul 94
 A. Pinto (Universidade do Porto) Ergodic Theory, 1 - 30 Apr 94
 J. Propp (MIT) Ergodic Theory, 3 - 30 July 94
 I. Putman (University of Victoria) Ergodic Theory, 1 month between Apr - Jul 94
 C. Radin (University of Texas) Ergodic Theory, 11 - 29 Jul 94
 P. Raith (Universität Wien) Ergodic Theory, 18 Sep 93 - 17 Sep 94
 J. Schmeling (IAAS - Berlin) Ergodic Theory, 1 - 21 Apr 94
 M. Sears (University of Witwatersrand) Ergodic Theory, 17 - 31 Jul 94
 M. Shereshevsky (University of Texas) Ergodic Theory, 10 Jul - 5 Aug 94
 C. Skau (University of Trondheim) Ergodic Theory, 10 - 16 Apr & 25 Jun - 23 Jul 94
 M. Smorodinsky (Tel Aviv University) Ergodic Theory, 12 - 15 Apr & Jul 94
 B. Solomyak (University of Washington) Ergodic Theory, 27 Jun - 24 Jul 94
 J. Steiff (Chalmers University of Technology) Ergodic Theory, 17 - 29 Jul 94
 D. Sullivan (Institute des Hautes Études Scientifiques) Ergodic Theory, 17 - 25 Jul 94
 T. Sunada (Tohoku University) Ergodic Theory, 4 - 31 Jul 94
 M. Takesaki (University of California) Ergodic Theory, Jun - Aug 94
 S. Troubetzkoy (Universität Bielefeld) Ergodic Theory, 4 - 31 Jul 94
 S. Velani (Georg-August-Universität zu Göttingen) Ergodic Theory, 11 - 15 Apr 94
 D. Voiculescu (University of California) Ergodic Theory, Jul 94
 T. Ward (Ohio State University) Ergodic Theory, 11 - 15 Apr 94
 B. Weiss (Pennsylvania State) Ergodic Theory, 17 - 31 Jul 94
 S. Williams (University of South Alabama) Ergodic Theory, 30 Jun - 28 Jul 94
 L-S Young (University of Arizona) Ergodic Theory, 16 Jun - 31 Jul 94
 M. Yuri (Sapporo University) Ergodic Theory, 10 Mar - 28 Apr 94
- YORK UNIVERSITY**
 Professor P. Anh (Hungarian Academy of Sciences) Ring Theory, Semigroup Theory, Oct - Dec 93
 Professor L. Marki (Hungarian Academy of Sciences) Ring Theory, Semigroup Theory, Sep - Dec 93
 Professor E. Reich (Minnesota) Quasi-conformal Mapping, Discontinuous Groups, Apr - Jul 94

A clear presentation



F. Gouvea,
Colby College,
Waterville, ME

p-adic Numbers **An Introduction**

1993. VI, 284 pp. 15 figs. (Universitext) Softcover DM 58,- ISBN 3-540-56844-1

p -adic numbers are of great theoretical importance in number theory, since they allow the use of the language of analysis to study problems relating to prime numbers and diophantine equations. Further, they offer a realm where one can do things that are very similar to classical analysis, but with results that are quite unusual. This book will be of use to students interested in number theory, and at the same time offers an interesting example of the many connections between different parts of mathematics.

The book strives to be understandable to an undergraduate audience. Very little background has been assumed, and the presentation is leisurely. There are many problems, which should help readers who are working on their own (a large appendix with hints on the problem is included). Most of all, the book should offer undergraduates exposure to some interesting mathematics which is off the beaten track. Those who will later specialize in number theory, algebraic geometry, and related subjects will benefit more directly, but all mathematics students can enjoy this book.



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CONFERENCE ON EVOLUTION EQUATIONS

A conference on Evolution Equations will be held from 25 to 29 July 1994 at the University of Strathclyde, Glasgow. It will be devoted to research in linear and nonlinear differential equations, semigroups of operators, control theory, mathematical physics and related areas and applications.

The following have already agreed to attend and contribute lectures: W. Arendt (Tübingen), H. Amann (Zürich), J. Cooper (Maryland), J. Goldstein (Louisiana State), M. Gyllenberg (Lulea, Sweden), M. Hieber (Zürich), I. Miyadera (Waseda, Japan), J. Neuberger (North

Texas), S. Piskarev (National University, Taiwan), Y. Saito (Alabama), N. Sauer (Pretoria), R. Showalter (Texas), G. Webb (Vanderbilt).

Refereed Proceedings of the Conference will be published by Longman. The organising committee is G.F. Roach (Chair), W. Lamb (Treasurer), W.M. Anderson, C. Constanda, A.C. McBride and D.F. McGehee. Enquiries to: Professor G.F. Roach, Department of Mathematics, University of Strathclyde, Glasgow G1 1XH, tel: +44-41-552 4400 ext 3800, fax: +44-41-552 8657, e-mail: caas24@uk.ac.strath.vaxa.



John Robert Ringrose was born in 1932 and educated at St John's College Cambridge, where he obtained his PhD in 1957. Apart from a two-year spell there, he has taught all his life at the University of Newcastle. He became a Professor in 1964 and was a pro-Vice Chancellor from 1983 to 1988. He is an international authority on non-self-adjoint operators and operator algebras. In 1977 he was elected to Fellowship of the Royal Society. He is the Society's 66th President since 1992.

DIARY

The diary lists Society meetings and other events publicized in previous issues of the Newsletter. For further information, refer to the figure in brackets, which is a cross reference to the LMS Newsletter number.

1993

DECEMBER

- 8-9 Mathematical and Statistical Aspects of DNA and Protein Sequence Analysis Discussion Meeting, Royal Society, London (209)
- 8-12 Metastability and Hydrodynamic Limits for Interacting Particle Systems Symposium, Isaac Newton Institute, Cambridge (209)
- 10 Professor Philip Holgate, Memorial Meeting, Birkbeck College, London (208)(209)
- 10 Edinburgh Mathematical Society Meeting, Napier (209)
- 10-11 Leeds Logic Conference, University of Leeds (210)
- 17 One-Day Conference on Homotopy Theory, Oxford (210)

1994

JANUARY

- 14 Edinburgh Mathematical Society Meeting, Edinburgh (209)
- 21 London Mathematical Society Meeting, London

FEBRUARY

- 11 Edinburgh Mathematical Society Meeting, Edinburgh (209)
- 14-18 Workshop on Galois Module Structure, The Fields Institute for Research in Mathematical Sciences, Ontario, Canada (210)
- 18 London Mathematical Society Meeting, Newcastle
- 28-4 Mar Workshop on Algebraic K-theory and Arithmetic, The Fields Institute for Research in Mathematical Sciences, Ontario, Canada (210)

MARCH

- 7-25 Workshop on Fluid Mechanics, ICTP, Trieste, Italy (207)
- 11 Edinburgh Mathematical Society Meeting, Dundee (209)
- 17 Seventh Schrödinger Lecture, Dr M.F. Perutz, Imperial College, London (210)
- 18 London Mathematical Society Meeting, London
- 18-27 National Science Festival (210)
- 21-25 L-functions Conference, The Fields Institute for Research in Mathematical Sciences, Ontario, Canada (210)
- 21-25 Matrix Geometry and Physics, LMS Invited Lectures, King's College, London (207)
- 21-25 Symplectic Geometry of Moduli Spaces Conference, France (209)
- 21-1 Apr Stochastic Partial Differential Equations, University of Edinburgh (210)
- 28-31 British Mathematical Colloquium, University of Wales, College of Cardiff (210)

APRIL

- 1-31 July Harmonic Analysis and Partial Differential Equations Research Programme, Edinburgh (210)
- 11-15 Workshop on L-functions and Automorphic Forms, The Fields Institute for Research in Mathematical Sciences, Ontario, Canada (210)

MAY

- 6 Edinburgh Mathematical Society Meeting, Aberdeen (209)
- 13-14 Two-day London Mathematical Society Meeting, Leeds
- 16-27 Workshop on Commutative Algebra and its Relation to Combinatorics and Computer Algebra, ICTP, Trieste, Italy (207)

JUNE

- 1-7 Algebraic Topology Conference, Barcelona, Spain (201)
- 4 Edinburgh Mathematical Society Meeting, St Andrews (209)
- 13-17 Elliptic & Parabolic Problems Conference, Pont-a-Mousson, France (204)

The Newsletter is published monthly except in August. Items and advertisements for inclusion in the Newsletter should be sent to the Editor, Susan Oakes, London Mathematical Society, Burlington House, Piccadilly, London W1V 0NL, to arrive before the first day of the month prior to publication. Telephone 071- 437 5377, fax 071-439 4629, e-mail lms@uk.ac.kcl.cc.bay.