

THE LONDON MATHEMATICAL SOCIETY NEWSLETTER

No. 205

May 1993

FORTHCOMING SOCIETY MEETINGS

Thursday, Friday 13-14 May 1993, Cambridge
Numerical Analysis and Dynamical Systems

Friday 18 June 1993, Burlington House
R.W.K. Odoni, W. Feit

Friday 15 October 1993, Burlington House
Symplectic Geometry and Hamiltonian Dynamics

Friday 19 November 1993, Burlington House
D.G. Crighton, M.V. Berry

4 YEAR MMATH DEGREE APPROVED

In a letter dated 31st March, 1993, the Department for Education has confirmed that the proposed 4 year MMath (or MSci) degree will be designated as a first degree course, notwithstanding its duration and

title. A copy of the letter is being circulated to all Heads of University Mathematics Departments in England, Wales and Northern Ireland.

LMS 1993 HONORARY MEMBER

At the Society Meeting on 19th March 1993, Professor J. Tits was elected an Honorary Member of the London Mathematical Society in recognition of his enor-

mously influential contributions to mathematics, particularly in geometry and in algebra.

INVITED LECTURES SERIES

The Society's Invited Lectures series consists of meetings at which a single speaker gives a course of about ten expository lectures, examining some subject in depth, over a five day period (Monday to Friday) during a University vacation. The meetings are residential and open to all interested. It is intended that the texts of the lectures given in the series shall be published. In addition to full expenses, the lecturer is offered a fee of £1000 for giving the course and a further fee of £1500 on delivery of the text in a form suitable for publication. Previous lecturers in the series have been Professor R. Melrose, Professor J.E. Marsden, Professor P.J. Olver

and Professor L. de Branges.

For the 1995 meeting, proposals are now invited from any member who, in addition to suggesting a topic and lecturer, would be prepared to organise the meeting at the member's own institution or a suitable conference centre. Enquiries about this series should be directed to the Meetings and Membership Secretary, Dr. D.J. Collins, School of Mathematical Sciences, Queen Mary and Westfield College, Mile End Road, London E1 4NS; telephone 071-975-5480; email d.j.collins@uk.ac.qmw, to whom proposals should be sent no later than 31st August 1993.

LONDON MATHEMATICAL SOCIETY

NOTICE OF GENERAL MEETING

There will be a General Meeting of the Society on Friday 18 June 1993 at 3.30 p.m. in the Meeting Room of the Geological Society, Burlington House, Piccadilly, London W1V 0NL, to consider a proposal by the Council of the Society to delete the existing By-Law II,1 and to substitute that printed below.

The Council of the Society has, in the light of the new Statute 11, increased the annual subscription of individual members for 1993-94 by £1.30; Council has also increased the prices per volume of the **Bulletin**, the **Journal** and the **Proceedings** to individual members for 1993-94 by £1.00. The new By-Law II,1 would record the new rates.

Text of the proposed By-Law II,1

The annual subscription to the Society of Ordinary Members for the 1993-94 session shall be £14.50. The prices of the Society's periodicals to Ordinary Members for the 1993-94 session shall be: **Proceedings** £14.50 per volume, **Journal** £14.50 per volume, **Bulletin** £14.50 per volume.

R.Y. Sharp
Council & General Secretary

PROGRAMME AND CONFERENCE FUND

Members are reminded that the Society's Programme and Conference Fund is used to provide financial support for visitors to the UK and for conferences. The fund is administered by the Society's Programme Committee and information about the proposals it is willing to consider was given in the January 1993 issue (No. 201) of the Newsletter. The Meetings and Membership Secretary, Dr.

D.J. Collins, will be pleased to discuss proposals informally with potential applicants and to give advice on submission of an application to the Society. He can be reached at: School of Mathematical Sciences, Queen Mary and Westfield College, Mile End Road, London E1 4NS; telephone 071-975-5480; email d.j.collins@uk.ac.qmw.

VISIT OF PROFESSOR W. HENSON

Professor W. Henson from Tubingen, will be visiting the UK in June. The dates of his talks are as follows: 9th, 10th and 11th June (3 talks) University of Hull, contact N.J. Cutland, email cutland@uk.ac.hull; 14th June, University of Leeds, contact J.K. Truss, email jkt@uk.ac.leeds.dcs; 17th June, Queen Mary & Westfield

College, contact W. Hodges, email wilfrid@uk.ac.qmw.maths and 18th June, University of Oxford, contact A.J. Wilkie, email wilkie@uk.ac.oxford.maths. The title of his talk in each case is Model Theory of Banach Spaces. The visit is being supported by a Scheme 2 grant from the London Mathematical Society.

LONDON MATHEMATICAL SOCIETY

TWO DAY MEETING

THURSDAY - FRIDAY 13 - 14 MAY 1993
UNIVERSITY OF CAMBRIDGE

Numerical Analysis and Dynamical Systems

Thursday	2.00	Opening Session
	2.10	C. Foias (Bloomington, Indiana): "Interpolation theory and the localization of the global attractor"
	3.10	Tea
	3.45	C. Grebogi (College Park, Maryland): "Shadowing in chaotic systems"
	4.45	Break
Friday	5.00	D. Watkins (Seattle, Washington): "A numerical analyst's view of isospectral flows"
	10.15	R.D. Skeel (Urbana-Champaign, Illinois): "Symplectic integration with multiple time steps and variable step size"
	11.15	Coffee
	12.00	C.M. Elliott (Sussex): "Dynamical phase transitions and parabolic equations"
	1.00	Lunch
	2.30	E. Doedel (Caltech): "On algorithms and software for bifurcation problems"
	3.30	Meeting closes

The lectures will be held at the Mill Lane Lecture Rooms,
(opposite DPMMS) Cambridge.

All interested are very welcome

A dinner will be held at The University Centre on the evening of Thursday 13 May at 8.00pm. The cost of the dinner will be £18.50 per person, inclusive of wine. Those wishing to attend should inform A. Iserles, DAMTP, Silver Street Cambridge CB3 9EW, enclosing a cheque payable to "University of Cambridge", to arrive by 7 May.

Enquiries may be addressed to A. Iserles, DAMTP, Silver Street, Cambridge, CB3 9EW (email A.Iserles@uk.ac.cam.amtp) or A. Spence, School of Mathematical Sciences, University of Bath, Claverton Down, Bath BA2 7AY (email as @uk.ac.bath.maths).

VISIT OF PROFESSOR W.G. BADE

Professor W.G. Bade (University of California, Berkeley) is a Scheme 2 Visitor supported by the London Mathematical Society. He will lecture on "Uniqueness of norm for quotients of Banach function algebras" in Leeds on 11 May (contact J.R.Partington) and in Edinburgh on 2 June (contact A.M.Sinclair), and he will lecture on "The Wedderburn decomposability of some

commutative Banach algebras" in Cambridge on 26 May (contact G.R.Allan). Professor Bade will also lead a seminar on "Wedderburn decompositions and cohomology of Banach algebras" in Leeds in the period 20 April - 11 June 1993; anyone interested in attending should contact H.G. Dales (email pmt6hgd@uk.ac.leeds.gps) for details.

VISIT OF PROFESSOR M. HERRMANN

Professor M. Herrmann of the University of Köln, Germany, will be visiting the UK in May and June. It is planned that he will give the following lectures: Wednesday 26 May 1993, University of Sheffield, "On the blowing up of powers of ideals"; Friday 28 May 1993, University of Edinburgh, "The Gorenstein property of multi-graded Rees rings"; and Thursday 10 June 1993, University of Exeter, "On Rees and form-rings of almost complete intersection

ideals". Professor Herrmann's visit is partially supported by a Scheme 2 grant from the London Mathematical Society. For further information, contact Dr L. O'Carroll, Department of Mathematics, The University, Mayfield Road, Edinburgh EH9 3JZ (e-mail: loc@uk.ac.ed) or Professor R. Y. Sharp, Department of Pure Mathematics, The University, Sheffield S3 7RH (e-mail: r.y.sharp@sheffield.ac.uk).

VISIT OF PROFESSOR NGO VIET TRUNG

Professor Ngo Viet Trung of the Institute of Mathematics, Hanoi, Vietnam, will be visiting the UK in May and June. It is planned that he will give the following lectures: Wednesday 26 May 1993, University of Sheffield, "Criteria for Gorenstein Rees algebras"; Friday 28 May 1993, University of Edinburgh, "Refined degree and the effective ideal membership problem"; and Wednesday 2 June 1993, University of Glasgow, "On Gorenstein

Rees algebras". Professor Trung's visit is partially supported by a Scheme 2 grant from the London Mathematical Society. For further information, contact Dr L. O'Carroll, Department of Mathematics, The University, Mayfield Road, Edinburgh EH9 3JZ (e-mail: loc@uk.ac.ed) or Professor R. Y. Sharp, Department of Pure Mathematics, The University, Sheffield S3 7RH (e-mail: r.y.sharp@sheffield.ac.uk).

VISIT OF DR M.L. NAZAROV

Dr M.L. Nazarov (Moscow State University) will be visiting the University of Wales, Aberystwyth for a period of three weeks from approximately 15th May - 5th June 1993. His visit is being supported by the London Mathematical Society fSU Visitor Scheme. He will give lectures on 'Duality between Yangians and the degenerate affine Hecke algebras' at the University of Wales, Swansea at 4 p.m. on Friday 28th May and on 'Young's symmetrizers for irreducible projective representations of the symmetric group' in Aberystwyth at 4 p.m. on Thursday 3rd June. Both lectures will be transmitted on

the University of Wales Video Network and thus can also be seen in the Video Network studios at Bangor and Cardiff. Additional lectures on 'Irreducible finite-dimensional representations of the degenerate affine Hecke algebra and the fusion process' will be delivered at Aberystwyth on dates to be arranged. Further details may be obtained from A.O. Morris, Department of Mathematics, University of Wales, Aberystwyth, Dyfed SY23 3BZ (e-mail: aom@uk.ac.aberystwyth) or D.E. Evans Department of Mathematics, University of Wales, Swansea SA2 8PP (e-mail: madai@pyramid.swansea.ac.uk).

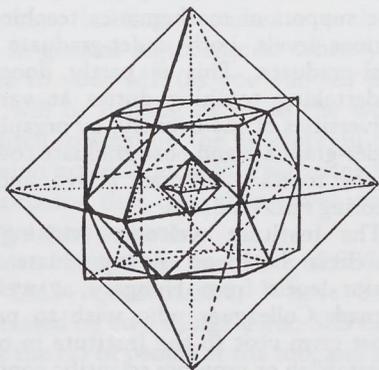
LONDON MATHEMATICAL SOCIETY

1993 POPULAR LECTURES

Edinburgh University - Thursday 24 June

Leeds University - Friday 25 June

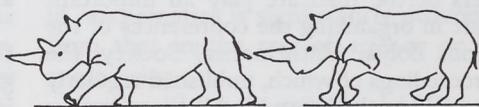
Imperial College - Friday 2 July



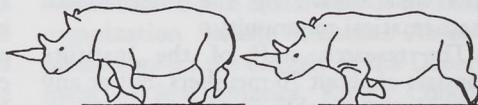
Professor S.A. Robertson

How to See Objects in Four Dimensions

Professor R. McNeill Alexander



Optimization of Running and Jumping



EDINBURGH Commences at 2.00 pm, 3.00 pm refreshments, ends 4.30. Lecture Theatre 4, Appleton Tower, George Square, Edinburgh EH9 3JZ. Admission is free. Enquires to Dr P. Heywood, Department of Mathematics & Statistics, Edinburgh University, James Clerk Maxwell Building, The King's Buildings, Edinburgh EH9 3JZ.

LEEDS Commences at 7.00 pm, 8.00 pm refreshments, ends at 9.30. Rupert Beckett Lecture Theatre, Arts Building, University of Leeds. Admission free, with ticket in advance. Apply by Monday 21 June to Mr L. Smith, Department of Mathematics, University of Leeds, Leeds LS2 9JT. A stamped addressed envelope would be appreciated.

LONDON Commences at 7.30 pm, 8.30 pm refreshments, ends at 10.00 pm. The Great Hall, Sherfield Building, Imperial College, South Kensington, London SW7. Admission free, with ticket in advance. Apply by Monday 28 June to Miss S.M. Oakes, London Mathematical Society, Burlington House, Piccadilly, London W1V 0NL. A stamped addressed envelope would be appreciated.

THE MATHEMATICAL INSTITUTE OF THE HUNGARIAN ACADEMY OF SCIENCES

The Institute was founded by the Hungarian Academy of Sciences in 1949. Its first director was Alfréd Rényi who headed the Institute till his early death in 1970. Successive directors were László Fejes Tóth (1970-1982), András Hajnal (1982-1992) and Domokos Szász (1993-).

The main duty of the Institute is to carry out research in various fields of pure and applied mathematics. The research staff of the Institute is distributed over smaller departments or research teams covering the following research topics: Algebra, Algebraic logic and computer science, Approximation theory, Differential equations, Discrete mathematics, Functional analysis, Geometry, Information theory, Mathematical statistics, Number theory, Operations research, Probability theory, Set theory, Statistical physics, Topology. The scientific output of the Institute is well certified by the research papers published by its staff in leading international journals. The members of the Institute play an important part in organizing the conferences of the János Bolyai Mathematical Society, the proceedings of which, published regularly by the North Holland Publishing Co., are also well known by the international mathematical community.

The research staff of the Institute consists of about 70 members, but at any time a considerable part of these (typically 20-30%) are on leave, fulfilling longer term invitations/temporary position at various universities or research centres abroad. The following elected members of the Hungarian Academy of Sciences are among the leading scientists of the Institute: A. Császár (topology and real analysis), I. Csiszár (information theory), P. Erdős (discrete mathematics, number theory, approximation theory,

probability theory etc.), L. Fejes Tóth (discrete geometry), A. Hajnal (discrete mathematics, set theory and topology), V.T. Sós (discrete mathematics and number theory), D. Szász (dynamical systems and statistical physics) and E. Szemerédi (discrete mathematics and theoretical computer science).

Besides the research work another important duty of the Institute is the active support of mathematics teaching at various levels, both under-graduate and post-graduate. This is partly done by undertaking teaching duties at various universities of the country, by organizing under-graduate and post-graduate courses in the topics mentioned above, and by tutoring PhD students.

The Institute welcomes visiting researchers both on post-graduate and senior levels from Hungary as well as abroad. Colleagues who wish to pay a short term visit to the Institute in order to establish or promote scientific contacts are also welcome.

For further information please contact the Mathematical Institute of the Hungarian Academy of Sciences, POB 127, H-1364 Budapest, Hungary, Tel: (+361) 117 3050, Fax: (+361) 117 7166. For general information about scientific exchange programs with Hungary please contact either The Royal Society (6 Carlton House Terrace, London SW1Y 5AG, Tel: 071-839 5561 ext. 236) or the Hungarian Academy of Sciences (Nádor utca 7, H-1051 Budapest, Hungary, Tel: (+361) 117 6215). Note also the recent possibility of EC fellowships, e.g. the Go East program; for details contact the EC Commission, Scientific Cooperation with Central and Eastern Europe (75 rue Montoyer, B-1040 Brussels, Belgium, Tel: (+322) 236 3308).

ROLLO DAVIDSON TRUST

The Trustees of the Rollo Davidson Trust give notice that they have awarded Rollo Davidson Prizes for 1993 to Gérard Ben Arous (Paris) for his work on large deviations, stochastic Taylor formulae,

and interacting particle systems, and to Robin Pemantle (Wisconsin) for his work on probability on trees, reinforced random walk and the contact process.

SAVE BRITISH SCIENCE

Included with this issue of the Newsletter, members in the UK should receive a leaflet inviting them to join Save British Science. The London Mathematical Society is already a corporate member of SBS, but many mathematicians are individual members as well, and we want to increase the number. For a modest subscription (currently £10) you receive notices of meetings, briefing documents to help you in general arguments or when you write to your MP (as you should) and you will be helping us to do the work required to keep up the pressure on the decision makers - including gathering the information that they themselves don't always seem to have.

Since I joined the executive of SBS as the LMS representative, I have been impressed by two things. First, SBS does have the ear of people at the top, and has been able to exert some influence. A delegation from SBS were among the very first scientists to meet the new Minister after his appointment, we have been invited to give evidence to the House of Lords Select Committee on Science and Technology, and there are many informal contacts as well at all levels. Secondly, however, raising the profile of science in the United Kingdom is not an easy task. Charles Babbage and Prince Albert both found this to be so, and things don't seem to have changed all that much. It looks like SBS is going to be needed for a long time to come,

whichever political party happens to be in office.

Besides inviting you to join, could I also urge you to send me any information which you think SBS ought to be aware of. Details of individual problems are especially useful, because the powers that be are often more impressed by a single concrete example than by statistics. Naturally I will make sure that anything I am sent is used in a way that will not embarrass the sender!

If there are any issues that you think SBS ought to be taking up, do let me know. These can be about science in general or mathematics in particular, as part of my role on the executive is to make sure that the problems of the non-experimental sciences are not overlooked. At the moment we are working on a document on career structures, and I would be especially grateful for suggestions; this is an area where the situation in mathematics is significantly different from that in the rest of science or in engineering.

Finally, if you are outside the UK but would like to join either SBS or its sister organization British Scientists Abroad, please contact me directly at the Department of Mathematics, King's College, Strand, London WC2R 2LS or by e-mail: P.Saunders@uk.ac.kcl.cc.oak if you prefer.

Peter Saunders
King's College London

FELLOWSHIP OF THE ROYAL SOCIETY OF EDINBURGH

Amongst those elected to Fellowship of the Royal Society of Edinburgh at a meeting held on 1 March 1993 were Professor Kenneth Alexander Brown (Titular Professor, Department of Mathematics, Glasgow University) and Professor John Joseph McCutcheon (Professor

of Actuarial Studies, Department of Actuarial Mathematics and Statistics, Heriot-Watt University). Professor Klaus Friedrich Roth, Emeritus Professor of Mathematics, Imperial College of Science & Technology was elected an Honorary Fellow.

JOINT AMS-DMV MATHEMATICS MEETING 1-3 OCTOBER 1993

The first joint meeting of the American Mathematical Society (AMS) and the Deutsche Mathematiker-Vereinigung (DMV) will be held at the University of Heidelberg, Germany. The scientific programme starts on Friday 1 October at 14.15 and ends on Sunday 3 October at 18.00. To a large extent, this meeting follows the pattern of the Joint AMS-LMS Meeting at Cambridge, U.K. in 1992. There are six Invited Addresses and twelve Special Sessions. The Invited Addresses will be given by G. Faltings (Princeton), G. Harder (Bonn), H. Hofer (Bochum), M. Hopkins (MIT), V.F.R. Jones (Berkeley) and R.P. Langlands (I.A.S., Princeton).

As of 15 March the following are the Special Sessions (and organizers); Arithmetic algebraic geometry (N. Schap-

pacher), Automorphic forms (J. Franke and G. Harder), Homotopy theory (H.-W. Henn and M. Hopkins), Operator algebras (J. Cuntz), Geometry and computer visualization (G.K. Francis), Complex analysis (K. Diederich and J.E. Fornaess), Optimization (H.G. Bock and M. Grötschel), Mathematical physics (J. Fröhlich and E.H. Lieb), Modelling in science (W. Jäger and P. Fife), Commutative algebra (R. Buchweitz), Recursion theory (K. Ambos-Spies and S. Lempp), Stochastics (H. Rost and R. Williams).

The registration fee is DM50 for members of the AMS or DMV, payable by 15 July. For further details contact: Mathematisches Institut der Universität, Tagungsbüro DMV-AMS-Tagung, Im Neuenheimer Feld 288, DW-6900 Heidelberg, Germany.

PERTURBATIONS OF BLACK HOLES AND RELATIVISTIC STARS SIXTH GREGYNOG RELATIVITY WORKSHOP

A small workshop will take place at Gregynog Hall, Newtown, Powys (a stately home that is run as a conference centre by the University Wales) from 23rd to 26th August 1993. The meeting will focus on the mathematical description of perturbations of relativistic stars and black holes, and analytic and numerical methods for obtaining the relevant solutions.

The costs (including room, full board and a small conference fee) will not

exceed £180. Space considerations limit the number of participants to about 35. The workshop is supported (subsistence and travel for speakers) by the London Mathematical Society.

For further information contact Dr Nils Andersson, Department of Physics and Astronomy, University of Wales College of Cardiff, PO Box 913, Cardiff CF2 3YB, telephone 0222 874000 ext. 5120, fax 0222 874056, email andersson@uk.ac.cardiff.

ADAMS LECTURER

A visiting lectureship has been established at the University of Manchester in memory of Frank Adams. The first lecturer is Professor William M. Singer of Fordham University, New York.

Professor Singer will visit Manchester from 25 May to 5 June 1993. He will give a short series of lectures on "Invariant Theory and the Steenrod Algebra" on

Wednesday 26, Thursday 27 and Friday 28 May. For further details, please contact the organisers, Dr Nigel Ray (nige@uk.ac.man.ma.top1) or Dr Grant Walker (grant@uk.ac.man.ma.top1), Department of Mathematics, University of Manchester, Oxford Road, Manchester M13 9PL. The Adams Lectureship is supported by KPMG Peat Marwick.

TRANSFORMATION SEMIGROUPS AND THEIR APPLICATIONS

The University of Essex will host a conference entitled Transformation Semigroups and their Applications from Tuesday 3rd (arrival day) to Saturday 6th August (departure day). This will act as a satellite conference to the NATO Advanced Study Institute on Semigroups,

Formal Languages and Groups which will run from the 7th to 21st of August at the University of York. For further information contact Peter M. Higgins, Dept of Maths, University of Essex, Colchester, Essex, C04 3SQ, email peteh@uk.ac.sx, phone: (0206) 873019.

SEMIGROUPS, FORMAL LANGUAGES AND GROUPS NATO ADVANCED STUDY INSTITUTE

This NATO Advanced Study Institute will be held at the University of York during the period 7th-21st August 1993. Invited speakers will lecture on pseudovarieties, profinite groups, algebraic groups and monoids, circuit complexity and connections with automata, logic and semigroups, combinatorial group theory, including automatic groups and Λ -trees, combinatorial inverse semigroup theory and semigroup theory applied to group theory.

The principal lecturers are J. Almeida (Porto), I Chiswell (QMW), S.W. Margolis (Lincoln, Nebraska), J. Meakin (Lincoln, Nebraska), D. Perrin (LITP, Paris), J-E Pin

(LITP, Paris), S.J. Pride (Glasgow), M. Putcha (Raleigh, N. Carolina), L. Renner (Western Ontario), J. Rhodes (Berkeley), M. Sapir (Lincoln, Nebraska), H. Short (New York), L. Solomon (Madison, Wisconsin), D. Thérien (Montreal), W. Thomas (Kiel) and P. Weil (LITP, Paris).

Other invited speakers include D. Easdown (Sydney) and P. Trotter (Hobart) who are supported by a grant from the London Mathematical Society.

Anyone interested in attending the meeting should contact Dr V.A.R. Gould, Department of Mathematics, University of York, Heslington, York YO1 5DD as soon as possible.

SPIITALFIELDS DAY AT THE NEWTON INSITUTE

There will be an LMS Spitalfields Day at the Newton Institute, University of Cambridge, on Friday, 28th May, 1993, in conjunction with the programme "L-functions and Arithmetic". It is planned

to hold 4 lectures, accessible to a wide audience, commencing at 10 a.m. The detailed programme will be published later. All interested are welcome to attend.

CONFERENCE IN MEMORY OF G. VORONOV

The Institute of Mathematics of Ukrainian Academy of Sciences and the Odessa Pedagogical Institute intend to organise an International Conference dedicated to the memory of G. Voronov in October 1993 (probably 4 - 8 October). The scientific programme of the conference will be divided into the following sections: analytical number theory;

geometrical number theory; algebraic number theory and linear methods of summation of series. For further information, contact G. Svta, The Secretary, Conference of Voronov, Institute of Mathematics, Ukrainian Academy of Science, Tereshchenko 3, 252601 Kiev 4, GSP, Ukraine.

LONDON MATHEMATICAL SOCIETY

1993 HARDY LECTURE

The 1993 Hardy Lecturer, Professor Walter

- Friday May 21 London Algebra Colloquium
Steinberg Characters
4.45 pm Mathematics Lecture Theatre
Queen Mary and Westfield College
- Monday May 24 University of Cambridge
Steinberg Characters
11.15 am Newton Institute
- Wednesday May 26 University of Bath
The existence of algebraic number fields with given
Galois group and maximal subfields of division rings
4.15 pm Room 3 East 2.2
- Thursday May 27 University of Southampton
The existence of algebraic number fields with given
Galois group and maximal subfields of division rings
3.10 pm Room 5A Mathematics Building
- Friday May 28 University of Exeter
The existence of algebraic number fields with given
Galois group and maximal subfields of division rings
3.00 pm Laver Building
- Tuesday June 1 University of Oxford
Steinberg Characters
4.30 pm Mathematics Institute
- Wednesday June 2 University of Warwick
Representation of quivers and the generalised
McKay Correspondence
4.00 pm Mathematics Institute
- Friday June 4 University of Birmingham
The existence of algebraic number fields with given
Galois group and maximal subfields of division rings
4.15 pm Lecture Room B, Watson Building

All interested are welcome to attend any of the meetings
to check the time and venue with the department coordinator
may be directed to the LMS Administrator, Miss Susanna

MATHEMATICAL SOCIETY

LECTURE TOUR

Professor Feit (Yale), will give the following lectures:

- Monday June 7 University of Wales
Steinberg Characters
2.00 pm Video Conferencing Room, Llanbarn
Campus, Aberystwyth
- Tuesday June 8 University of Manchester
Steinberg Characters
4.00 pm Mathematics Tower, Oxford Road
- Thursday June 10 University of Dublin
Representation of quivers and the generalised
McKay Correspondence
4.30 pm Hamilton Lecture Theatre 1, Trinity College
- Friday June 11 Edinburgh Mathematical Society
The existence of algebraic number fields with given
Galois group and maximal subfields of division rings
4.30 pm. Lecture Theatre B, David Hume Tower,
George Square
- Tuesday June 15 University of Newcastle
The existence of algebraic number fields with given
Galois group and maximal subfields of division rings
4.00 pm Room M421 Merz Court
- Wednesday June 16 University of Leeds
The existence of algebraic number fields with given
Galois group and maximal subfields of division rings
4.00pm Classroom E
- Friday June 18 London Mathematical Society
Representation of quivers and the generalised
McKay Correspondence
5.00 pm, Burlington House, London

lectures addressed by the Hardy Lecturer, but it is advisable
to be concerned. General enquiries about Professor Feit's visit
should be addressed to Susan Oakes, telephone 071-437-5377.

THE FERRAN SUNYER I BALAGUER PRIZE 1992

The Institut d'Estudis Catalans has awarded the first Ferran Sunyer i Balaguer Prize to Alexander Lubotzky for his monograph entitled "Discrete groups, expanding graphs and invariant measures". The Prize consists of 12,000 ECU. The monograph will be published in Brikhäuser Verlag's series "Progress in

Mathematics".

Each year, the Ferran Sunyer i Balaguer Prize will be awarded for a mathematical monograph of an expository nature presenting the latest developments in an active area of research in Mathematics, in which the applicant has made important contributions.

GRUENBERGFEST

There will be a meeting at Queen Mary & Westfield College during the afternoon of Friday 25th June 1993, supported by the London Mathematical Society, to mark the retirement of Karl Gruenberg from teaching. It is expected that there will be three speakers, including Alan Camina and Dan Segal. Members of the

London Mathematical Society are cordially invited to attend, and to go the dinner afterwards. The expected cost of the dinner is approximately £20.00. Enquiries to I.M. Chiswell, Queen Mary & Westfield College, Mile End Road, London E1 4NS, telephone 071 975 5475, email chiswell@uk.ac.qmw.maths.

MATHEMATICS RESEARCH CENTRE - UNIVERSITY OF WARWICK

WARWICK SYMPOSIUM 1993-94

The dynamics of \mathbb{Z}^n -actions and their connections with Commutative Algebra, Number Theory, and Statistical Mechanics

Organisers:

William Parry, Klaus Schmidt and Peter Walters

Special Events:

Introductory Conference - September 20th - 24th 1993
Workshop - April 11th - 15th 1994
Workshop - July 18th - 22nd 1994

The Mathematics Research Centre has a small grant from the L.M.S. to assist with expenses for British mathematicians attending mathematical activities at Warwick - in particular visits of a few days or more to Symposia or Workshops, etc. For further information please write to: Peta McAllister, Mathematics Research Centre, University of Warwick, Coventry CV4 7AL.

ALGEBRAIC GROUPS AND LIE THEORY LMS - SERC POSTGRADUATE SHORT COURSE

An LMS-SERC Postgraduate Short Course on Algebraic Groups and Lie Theory will be held from 19 to 25 September, 1993 at the University of Lancaster. The course is intended to provide postgraduate students with instruction in these important, central areas of mathematics. The meeting is for students from all mathematical backgrounds, and no special knowledge will be assumed. Supervisors are requested to bring the course to the attention of their students. Travel and accommodation charges for SERC students will be paid for by the SERC; there will also be places for

some non-SERC students.

The programme is organised by M.J. Taylor (UMIST) on behalf of the London Mathematical Society and consists of three 7-hour lecture courses: R. Carter (Warwick): Lie algebras and root systems; I.G. Macdonald (QMW): Algebraic groups; and G. Segal (Cambridge): Lie groups.

Further details and application forms are available from John Gilbert, Mathematics Department, Lancaster University, Lancaster LA1 4YF, direct telephone: 0524 593941, e-mail: maa002@cent1.lancs.ac.uk.

CHARLES BURKILL

Dr John Charles Burkill died on 6 April 1993 at the age of 93. He was elected an ordinary member of the London Mathematical Society on 15 December 1921. He served on the London Mathematical Society Council from 1932-37.

MICHAEL M. CRUM

Mr Michael M. Crum who was elected a member of the London Mathematical Society on 17 January 1946, died on 7 February 1992.

JEAN A. DIEUDONNÉ

Professor Jean A. Dieudonné died on 26 November 1993 at the age of 86. He was elected an Honorary Member of the London Mathematical Society on 17 February 1972.

PHILIP HOLGATE

Professor Philip Holgate died on 13 April 1993 at the age of 58. He was elected an ordinary member of the London Mathematical Society on 16 January 1964. He served on the London Mathematical Society Council from 1984-90, organiser of the LMS Popular Lectures since 1985 and Book Reviews Editor since 1991.

BØRGE JESSEN

Professor Børge Jessen died on 20 March 1993. He has elected a reciprocity member of the London Mathematical Society on 18 December 1952.

MAX A. ZORN

Max Zorn, Professor of Mathematics at Indiana University from 1946 to 1971 and subsequently Emeritus Professor, died at Bloomington, Indiana on 9th March 1993, aged 86. Zorn's Lemma, named by Bourbaki, is the frequently used equivalent of the Axiom of Choice.

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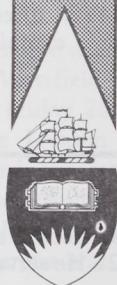
Essential criteria include PhD or equivalent; significant achievement in research and teaching, and proven ability in administration and professional activities.

Further information, including duty statement and selection criteria, from Prof W Moran, email: mathspos@ist.flinders.edu.au, phone (61 8) 201 2712 or (61 8) 201 2890 or fax (61 8) 201 2904.

Applications, addressing the selection criteria, quoting the reference number, and giving full details of qualifications and experience and the names, addresses and facsimile numbers of three referees of whom confidential enquiries may be made, should be lodged, in duplicate, with the Manager, Human Resources, The Flinders University of South Australia, GPO Box 2100, Adelaide, South Australia 5001, Australia, by 18 June 1993.

The University reserves the right not to make an appointment or to invite applications.

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Applications, enclosing five copies of a curriculum vitae and the names of two referees, must explain the candidate's current research interests and plans. They should be sent to Professor E.G. Rees, Department of Mathematics and Statistics, University of Edinburgh, King's Buildings, Mayfield Road, Edinburgh EH9 3JZ. E-mail: elmer@uk.ac.ed.maths or Fax (031) 650 6553. The closing date for applications is **14th May 1993**.

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Products of Groups

BERNHARD AMBERG, SILVANA FRANCIOSI, AND FRANCESCO DE GIOVANNI

This monograph gives the first detailed account of the most important results that have been found over the past 35 years about groups that are the product of two subgroups, including a special chapter on conjugacy and splitting theorems obtained by means of the cohomology of groups which has never appeared in book form before. The material presented here will be invaluable for research students and specialists in group theory.

Oxford Mathematical Monographs

232 pages, Clarendon Press, January 1993

0-19-853575-9 £45.00 Hardback

A Plain TeX Primer

MALCOLM CLARK

This concise introduction to TeX provides the reader with sufficient information to get started with the majority of tasks which he or she may wish to tackle. It explains why TeX approaches its subject in the way it does, and provides the 'context' into which it fits. With the aid of this book, scientists and researchers preparing their own books and papers will find little difficulty in adopting TeX's approach.

490 pages, line drawings, December 1992

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Rings and Fields

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This accessible introduction to rings and fields will give the reader an appreciation of the power of algebraic techniques to handle diverse and difficult problems. Dr Ellis presents his ideas clearly and lucidly in this practically oriented book, a review of the prerequisite mathematics is given at the start of the book and exercises to help understanding are included.

178 pages, line drawings, Clarendon Press, December 1992

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Curve and Surface Fitting with Splines

PAUL DIERCKX

This text describes the algorithms and mathematical fundamentals of a widely used software package for data fitting with (tensor product) splines. As such it gives a survey of possibilities and benefits but also of the problems to cope with when approximating with this popular type of function. Special attention is paid to strategies for an automatic and adaptive knot selection with intent to obtain serious data reductions. The practical use of the smoothing software is illustrated with many diverse examples.

Monographs on Numerical Analysis

286 pages, 56 line figures, Clarendon Press, March 1993

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The authors examine various areas of graph theory, using the prominent role of the Petersen graph as a unifying feature. A number of unsolved problems as well as topics of recent study are also included. The book will be useful for second courses in graph theory or as a reference for specialists.

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By modern standards, the topics treated here are rather classical and the techniques used rather far-ranging. Several topics which have been given short shrift in other recent treatments are fully developed here. As a result, this book will be useful to and enjoyed by students who, even if they do not intend to devote a major portion of their careers to the study of probability theory, want to know what they are missing if they do not.

£30.00 net HB 0 521 43123 9 464 pp. 1993

Acta Numerica 1993

Edited by A. ISERLES

Continuing the tradition established with the 1992 volume, this year's *Acta Numerica* presents six invited papers on a broad range of topics from numerical analysis. Papers treat each topic at a level intelligible by any numerical analyst from graduate student to professional. Highlights include recent advances in finite elements and multigrid methods, stability analysis for initial value problems, graphical problems such as path following and multivariate splines and a lengthy paper on parallel methods in linear algebra.

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Walter de Gruyter
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Nilpotent Groups and their Automorphisms

1993. 17 x 24 cm. XIV, 252 pages. USA, Canada, Mexico: Cloth US \$ 89.00
All other countries: DM 158,- ISBN 3-11-013672-4

de Gruyter Expositions in Mathematics, Volume 8

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

This book is devoted to the exposition of recent results on the structure of nilpotent groups admitting certain groups of automorphisms. The first part presents linear and combinatorial methods in the theory of nilpotent groups and is written in a style accessible to students who would like to learn the basic results and techniques. The second part of the book deals with the present state of the theory, including detailed proofs and comments as well as open problems. A particular feature of this text is the interplay of methods and techniques from various parts of mathematics, which leads to interesting and highly non-trivial results.

Contents:

Part I Linear Methods

Chapter 1: Preliminaries

Groups - Rings and modules - Lie rings - Mappings, homomorphisms, automorphisms - Group actions on a set - Fixed points of automorphisms - The Jordan normal form of a linear transformation of finite order - Varieties and free groups - Groups with operators - Higman's Lemma

Chapter 2: Nilpotent groups

Commutators and commutator subgroups - Definitions and basic properties of nilpotent groups - Some sufficient conditions for soluble groups to be nilpotent - The Schur-Baer Theorem and its converses - Lower central series. Isolators - Nilpotent groups without torsion - Basic commutators and the collecting process - Finite p -groups

Chapter 3: Associated Lie rings

Results on Lie ring analogues to theorems about groups - Constructing a Lie ring from a group - The Lie ring of a group of prime exponent - The nilpotency of soluble Lie rings satisfying the Engel condition

Part II Automorphisms

Chapter 4: Lie rings admitting automorphisms with few fixed points

Extending the ground ring - Regular automorphisms of soluble Lie rings - Regular automorphisms of Lie rings - Almost regular automorphisms of prime order - Comments

Chapter 5: Nilpotent groups admitting automorphisms of prime order with few fixed points

Regular automorphisms of prime order - Nilpotent p -groups with automorphisms of order p - Nilpotent groups with an almost regular automorphism of prime order - Comments

Chapter 6: Nilpotency in varieties of groups with operators

Preliminary lemmas - A nilpotency theorem - A local nilpotency theorem - Corollaries - Comments

Chapter 7: Splitting automorphisms of prime order and finite p -groups admitting a partition

The connection between splitting automorphisms of prime order and finite p -groups admitting a partition - The Restricted Burnside Problem for groups with a splitting automorphism of prime order - The structure of finite p -groups admitting a partition and a positive solution of the Hughes problem - Bounding the index of the Hughes subgroup - Comments

Chapter 8: Nilpotent p -groups admitting automorphisms of order p^k with few fixed points

An application of the Mal'cev correspondence - Powerful p -groups - A weak bound for the derived length - A strong bound for the derived length of a subgroup of bounded index

References - Index of names - Subject index



Walter de Gruyter
Berlin • New York

Norbert Steinmetz, Universität Dortmund

Rational Iteration

Complex Analytic Dynamical Systems

1993. 17 x 24 cm. X, 189 pages. With 44 figures. Cloth DM 108,-
ISBN 3-11-013765-8

de Gruyter Studies in Mathematics, Volume 16

This book gives a comprehensive and self-contained presentation of the theory of rational iteration. It includes, among others, a rigorous treatment of the fundamental work of Julia and Fatou, results of Siegel, Arnol'd and Herman on rotation domains, Sullivan's No Wandering Domain Theorem, and part of the work of Douady and Hubbard on iteration of polynomials.

The theory of rational iteration - complex analytic dynamical systems on the Riemann sphere - is a very active field in analytic function theory, partly due to the work of Sullivan, Douady and many others, and partly due to the wonderful computer graphics of Julia-Fatou sets, illustrating the esthetics of this field. The material presented may serve as a textbook for a course following a one-year introduction to analytic function theory. Each section is provided with a list of exercises, most of which are purely mathematical, but there are also problems which stimulate the reader to do experimental mathematics.

Contents:

Chapter 1: Preliminaries

Basic Notation - Proper Mappings - The Riemann-Hurwitz Formula - The Poincaré Metric - Capacity and Green's Function

Chapter 2: The Dynamical Dichotomy

Two Examples - Notation - The Julia Set - Montel's Criterion - Repelling Cycles - Stable Domains - The Denjoy-Wolff Theorem

Chapter 3: The Fatou Set

Sullivan's Theorem - The Fatou-Cremer Classification - Böttcher Domains - Schröder Domains - Leau Domains and Leau Flowers - Indifferent Cycles - The Centre Problem - Rotation Domains

Chapter 4: The Existence of Rotation Domains

Siegel's Theorem - The Bryuno-Rüssmann Theorem - Arnol'd's Theorem

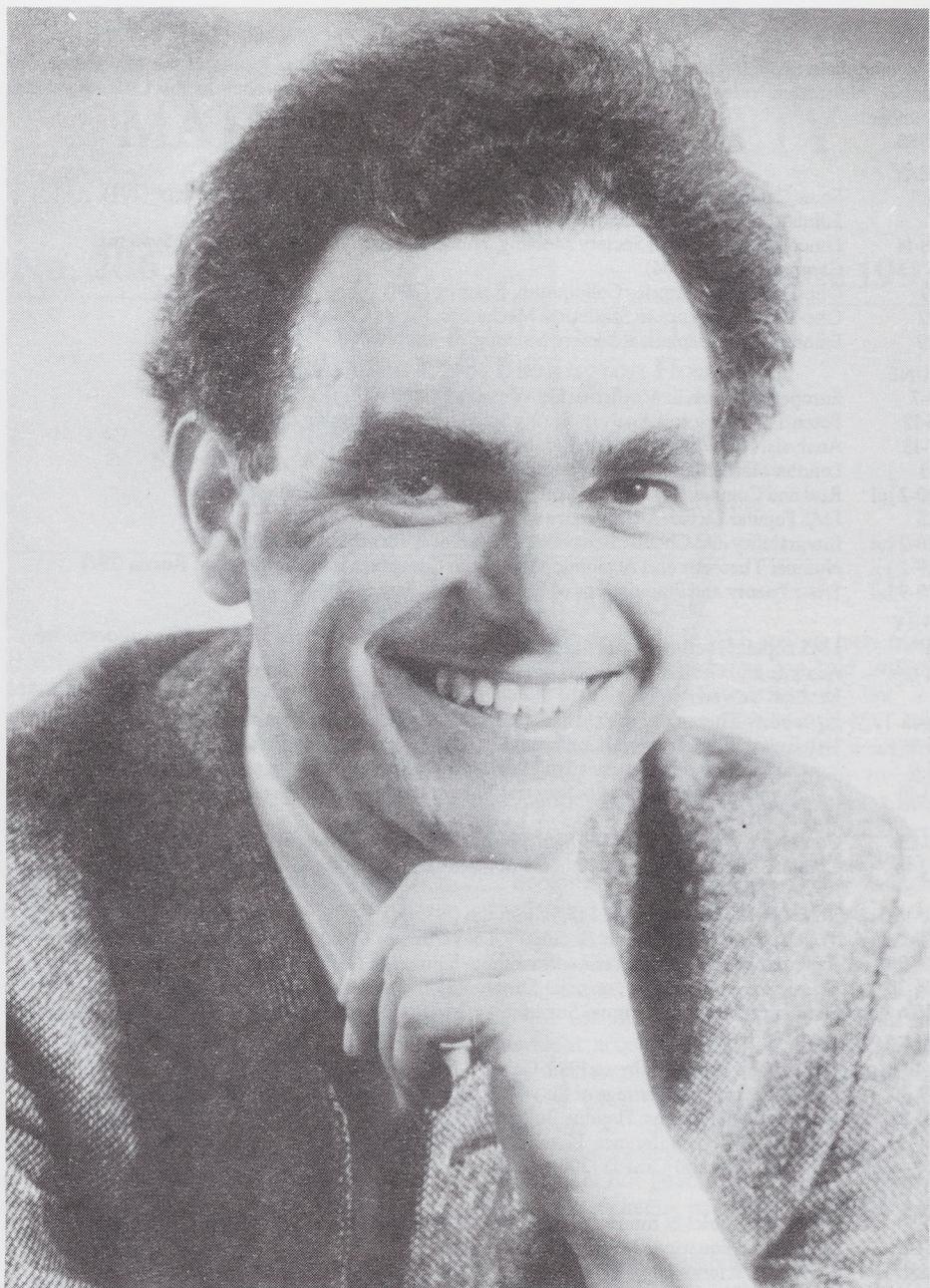
Chapter 5: The Geometry of the Julia Set

Critical Points - Symbolic Dynamics - Smooth Julia Sets - Completely Invariant Stable Domains - Boundaries of Stable Domains

Chapter 6: Miscellanea

Polynomials - The Mandelbrot Set - Lyubich's Invariant Measure - Stable Julia Sets - Permutable Rational Functions

Bibliography - Index



Barry Edward Johnson (born 1937) was educated for a time in Tasmania, taking his BSc from Hobart in 1956 before returning to England to take a PhD at Cambridge in 1961. A succession of appointments at Newcastle established him as a Professor there in 1969. He is well known for his work on Banach algebras. In 1978 he was elected to Fellowship of the Royal Society and was the London Mathematical Society's 60th President, from 1980 to 1982.

DIARY

The diary lists Society meetings and other events publicised 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

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7 Edinburgh Mathematical Society Meeting, Aberdeen (197)
13-14 London Mathematical Society Meeting, Numerical Analysis and Dynamical Systems, Cambridge (203) (204)
19 One-Day Combinatorics Colloquium, Reading (204)
27 One-Day Conference in Statistical Mechanics, King's College London (204)
29 Edinburgh Mathematical Society Meeting, St Andrews (197)

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6-12 Potential Theory and Analysis Spring School, Czechoslovakia (201)
7-18 Analysis, ICMS Short Course, Edinburgh (201)
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25 LMS Popular Lectures, University of Leeds
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5-9 Annual Meeting of the Australian Mathematical Society, Wollongong, Australia (198)
11-16 Computational Techniques in Spectral Theory and Related Topics Workshop, Gregynog, Wales (201)
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23-24 Higher Order Algebra, Logic and Term Rewriting Workshop, Amsterdam, Holland (204)
24 Retirement J.R. Ringrose - Meeting, Newcastle upon Tyne (199)

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.oak.