THE LONDON MATHEMATICAL SOCIETY NEWSLETTER

No. 221 **November 1994**

FORTHCOMING SOCIETY MEETINGS

Friday 18 November 1994, Burlington House
Annual General Meeting
B.E. Johnson, J.R. Ringrose (Presidential Address)
Friday-Saturday, 17-18 February 1995, Warwick University
Mathematics and Computers
Friday-Saturday, 12-13 May 1995, Oxford University
A Hundred Years of Analysis
Friday 16 June 1995, Burlington House
Friday 20 October 1995, Scientific Societies Lecture Theatre
Friday 17 November 1995, Burlington House

THE 1995 HARDY LECTURER

As was announced in a previous issue of the Newsletter, Professor K.R. Parthasarathy has accepted the Society's invitation to be the Hardy Lecturer for 1995. Professor Parthasarathy graduated from the University of Madras in 1957 and obtained his PhD in 1962 at the Indian Statistical Institute. After a fellowship at the Steklov Institute in Moscow, he returned to India for two years as a Lecturer at the Indian Statistical Institute in Calcutta. In 1965 he moved to the University of Sheffield and in 1968 took up a chair at the University of Manchester. In 1970 he returned to India, holding a succession of chairs, first at the University of Bombay, then at the Indian Institute of Technology and finally at the Indian Statistical Institute in Delhi where he has held the post of Distinguished Scientist since 1984. He is the author of several books in probability theory, most recently a monograph on quantum stochastic calculus.

Professor Parthasarathy will be visiting the UK for about four weeks beginning around the middle of May 1995. He will give about twelve lectures, including the 1995 Hardy Lecture to the Society on Friday, 16 June 1995. The list of topics which he has offered is given below. Institutions that wish to invite Professor Parthasarathy to give a lecture should write 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 (d.j.collins@qmw.ac.uk) by 31 December 1995 indicating first and second choices of lecture topics. It is expected that more invitations will be received than can be accepted and neighbouring institutions are encouraged to submit joint invitations. The itinerary and lecture title at each venue will be decided by the Society's Programme Committee, in consultation with Professor Parthasarathy and the host institutions.

Lecture topics: (1) Quantum stochastic calculus starting from Brownian motion; (2) What is a quantum Markov process? (3) A boundary theory for quantum Markov processes; (4) A mathematical approach to the filtering of quantum noise; (5) Casimir chaos in boson Fock space; (6) Construction of classical and quantum self-similar fields from Maassen kernels; (7) Azéma martingales as perturbations of the Wiener process. Potential hosts may wish to note that the lectures (1) and (2) are intended to be of a more general character.

VISIT OF PROFESSOR PETER GILKEY

Professor Peter Gilkey (University of Oregon) is visiting the UK from 3 - 8 December. His visit is supported by a London Mathematical Society Scheme 2 grant. He will speak on "Manifolds of positive scalar curvature, equivariant spin bordism and the eta invariant" at the University of Edinburgh, James Clerk Maxwell Building, Room 5215 at 2.00 pm on 5 December, "Heat content asymptotics" at the University of St Andrews, Mathematical Institute, Room 1A at 3.00 pm on 6 December and "Heat content asymptotics" at Heriot-Watt University, Mathematics Seminar Room M3.20 at 4.00 pm on 7 December.

Seminar details may be obtained from the local organisers: K.J. Falconer (kjf@uk.ac.st-andrews), M. van den Berg (mthmv@uk.ac.hw.vaxb).

VISIT OF PROFESSOR MIKHAIL KARASEV

The London Mathematical Society has awarded a grant under its fSU scheme to enable Professor Mikhail V. Karasev to visit the UK. He will spend two weeks in Sheffield visiting K.C.H. Mackenzie followed by the first two weeks of November at the Isaac Newton Institute. Professor Karasev is the coauthor, with V.P. Maslov, of the recent book "Nonlinear Poisson brackets: Geometry and quantization" and is an inventor of the notion of symplectic groupoid.

DEPARTMENTAL NEWS

Durham University Dr J.A. Gracey, Dr J.R. Parker and Dr L. Hardy have been appointed temporary lecturers for 2 years starting 1 October 1994.

SET^7

The second annual week of science and technology, SET^7, is now only about four months away. It begins on Friday, 17 March 1995. I hope that by now most Departments have already started to plan what they will do. If you send details to the British Association by the end of the year, they can be included in the final Programme.

The British Association are not trying to direct the week, but they do have staff who are qualified in science communication and are willing to offer advice. There are also small amounts of money available, either from COPUS (contact Cheryl Davies at the Royal Society on 071-839-5561 Ext 247) or the London Mathematical Society (contact Dr T. Porter, Department of Mathematics, Bangor).

ANNUAL DINNER

The 1994 Annual Dinner will be held after the Annual General Meeting on Friday 18 November at 6.30 pm for 7.00 pm at the Naval & Military Club, 94 Piccadilly, London W1. The Club requests that while on its premises, visitors should dress smartly and, in particular, gentlemen wear a jacket and tie. The cost is £26.00 per person and members may book places for guests. The booking form enclosed with the October Newsletter, should be returned together with payment to the London Mathematical Society office by **Wednesday 9 November.**

HONOUR FOR BERNHARD NEUMANN

In the Queen's Birthday Honours in June, Professor B.H. Neumann, FRS, was appointed a Companion of the Order of Australia (AC). The AC is the highest honour that can be bestowed in Australia.

LONDON MATHEMATICAL SOCIETY

Annual General Meeting
Friday 18 November 1994 at 3.15 pm

B.E. Johnson, FRS, (Newcastle)
will speak at 3.30 pm on

Applications of Cohomology in Banach Algebras

J.R. Ringrose, FRS, (Newcastle)
will give his Presidential Address at 5.00 pm on

The Cohomology of Operator Algebras: a survey

All interested are very welcome.
Tea will be served at 4.30 pm

The meeting will be held at the Linnean Society,
Burlington House, Piccadilly, London W1.

Please note early start at 3.15 pm

PREPARING PAPERS FOR LONDON MATHEMATICAL SOCIETY PUBLICATIONS

Authors may now prepare and submit articles using LaTeX and a special document style **lms.sty.** Papers prepared using the LaTeX **article** document style are also acceptable (as a second best) provided that default settings are used and there has been minimal direct formatting. Such a paper will be set conventionally if its LaTeX file proves to be unsuitable.

Papers accepted for the *Bulletin* and *Journal* can now be printed directly from author-prepared disks which use LaTeX and **lms.sty.** Use of this style file enables authors to prepare a paper and print out a good rough approximation to the final layout using Computer Modern fonts (though this layout may differ slightly from the final printed version). It is subsequently used by the Printer for typesetting.

The style file **lms.sty** and a guide to its use in the LaTeX file **lmsguide.tex** are in a single file **lms.all.** This can be obtained by anonymous ftp from

- the CUP archive at ftp.cup.cam.ac.uk in the directory **/pub/texarchive/journals/latex,**

or

- the LMS archive at ftp.qmw.ac.uk in the directory **/pub/LMS.**

Details of how to down-load files using anonymous ftp are given on page 8 of the July 1994 *Newsletter.* Files are *not* supplied on disk.

The style file is suitable for all standard versions of LaTeX, including LaTeX2ε (in a mode compatible with LaTeX 2.09).

Authors are invited to submit papers tothe appropriate member of the Editorial Board in the usual way, sending two paper copies as usual, plus *one* disk containing the LaTeX file. It is essential that the paper copies and the source code on the disk should match exactly. The disk should also contain any personal macros that are used; these should not include definitions which affect formatting.

Disks should be formatted for use on PCs which use DOS. Macintosh users should convert their files using Apple File Exchange. Settings for the options are given in **lmsguide.**

Proofs will be sent for proof-reading to authors in the usual way, accompanied by marked 'manuscript'. Authors should make corrections to proofs on paper, and *not* electronically.

The use of LaTeX and **lms.sty** has advantages both for the author and for the Society:

- greater accuracy;
- greater speed;
- a preprint which resembles the printed version of the paper;
- greatly reduced typesetting costs.

These advantages also occur, but to a lesser extent, if you use the **article** document style.

Please down-load **lms.all,** and give it a try! Better still, if you are on a network, ask the system manager to do so, and to make it available to the network users.

SYMPOSIUM ON SIEVE METHODS, EXPONENTIAL SUMS AND THEIR APPLICATIONS IN NUMBER THEORY

The Symposium will be held from 17 - 21 July 1995 at the University of Wales College of Cardiff. Speakers will include: H. Iwaniec, N. Katz, W. Schmidt, G. Tenenbaum, R. Baker, J. Friedlander, Y. Motohashi, R. Murty.

The Symposium is supported by the Engineering and Physical Sciences Research Council and by the London Mathematical Society. For further information contact: Dr. G. Greaves, UWCC, School of Mathematics, 23 Senghennydd Road, PO Box 926, Cardiff CF2 4YH; e-mail: greaves@cardiff.ac.uk; telephone: 0-1222-874811; fax: 0-1222-874199.

1995 BRITISH MATHEMATICAL COLLOQUIUM
Preliminary Announcement

The 47th British Mathematical Colloquium will be held at Heriot-Watt University, Edinburgh from 3 - 6 April 1995, with financial support from a London Mathematical Society Programme Committee grant. Lectures will begin on the evening of Monday 3, and end at lunchtime on Thursday 6. Principal Speakers: J-P Serre, Collége de France (Monday); G. Pisier, Paris (Tuesday); and E. Bombieri, Princeton (Wednesday).

Morning Speakers: R.J. Archbold, R.W. Carter, J.E. Cremona, A.M. Etheridge, N.D. Gilbert, W.T. Gowers, M.R. Jerrum, J.T. Lewis, L.J. Mason, J.B. Paris, A.W. Reid, M. Reid, C. Ringel, R.L. Taylor, J.F. Toland. Special Sessions: Functional Analysis (organised by A.M. Sinclair), and Ring Theory (K.A. Brown).

As usual, there will be Splinter Groups on a variety of topics, depending on demand, an Education Forum and one other discussion forum, Book Displays, and the facility for software demonstrations.

Accommodation is available on the Riccarton campus, on the outskirts of Edinburgh, where the Colloquium is to be held.

Part of the LMS grant is specifically earmarked for subsidising the attendance of postgraduate students at the Colloquium, so enquiries and applications from them are particularly encouraged.

Further information will appear in a future Newsletter, together with registration forms. Enquiries should be made to: Professor J. Howie, Department of Mathematics, Heriot-Watt University, Riccarton, Edinburgh EH14 4AS; e-mail: bmc@ma.hw.ac.uk; tel: 0131-451 3240; fax: 0131-451 3249.

ARTHUR CAYLEY (1821-1895)
Special Day

The British Society for the History of Mathematics is organizing a special day to commemorate the life and mathematical work of Arthur Cayley. It will be held at the Mathematical Institute, 24-29 St Giles, Oxford, on Saturday 11 February 1995, from 10.00 am to 5.00 pm. The talks will be aimed at a nonspecialist audience, and the list of speakers is: John Coates (Cambridge), Walter Ledermann (Sussex), Peter Neumann (Oxford), David Rowe (Mainz), Maria Estrada (Lisbon), Tony Crilly (Middlesex), Keith Lloyd (Southampton), Jeremy Gray (Open University), June Barrow-Green (Open University).

Entry is by ticket only, to be issued on a first-come first-served basis. The registration fee is £15 (BSHM members £12, students, unwaged and retired £8), including morning coffee and afternoon tea, but not including lunch. (There are several places to eat nearby.) Cheques should be made payable to BSHM. Tickets and further details can be obtained from Dr Robin Wilson, Faculty of Mathematics and Computing, The Open University, Walton Hall, Milton Keynes MK7 6AA.

PUBLISH WITH THE LMS

A leaflet entitled "Publish with the LMS" is enclosed with this Newsletter. Further information is available from Professor D.A. Brannan (Publications Secretary), Department of Pure Mathematics, The Open University, Walton Hall, Milton Keynes MK7 6AA, e-mail: d.a.brannan@open.ac.uk or Professor Norman Blackburn (Deputy Publications Secretary) Department of Mathematics, The University, Manchester M13 9PL, e-mail: norman@ma.man.ac.uk.

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Ref 94144X. Available from March 1995 in the Discipline of Mathematics, which offers a full range of undergraduate and postgraduate research degrees. The appointee will assist in the development of teaching in information science and contribute to research programmes in mathematics related to this area.

Essential criteria include a PhD or equivalent; strong record of research and commitment to high quality teaching.

Further information, including position documentation, must be obtained from Assoc Prof K Gopalsamy, phone (618) 201 2098 or (618) 201 2890, fax (618) 201 2904 or email: mathspos@ist.flinders.edu.au. The selection process will be based upon the selection criteria specified in the documentation. Appointment will not normally be made above A$46 252 pa.

Applications, addressing the selection criteria, quoting the reference number, and giving details of qualifications and experience together with 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, Flinders University, GPO Box 2100, Adelaide SA Australia 5001 by 27 January 1995.

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

Equal Opportunity is University Policy.

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CONFERENCE ON NUMERICAL METHODS FOR FLUID DYNAMICS
3-6 April 1995, Oxford

Invited Speakers include: H. Deconinck (VKI, Belgium); J.C.R. Hunt (Meteorological Office); M.A. Leschziner (UMIST); D. Mavriplis (ICASE, NASA Langley); K.W. Morton (Oxford); K.G. Powell (Michigan); A. Quarteroni (Milan); S. Rill (Deutsche Aerospace Airbus GmbH, Germany); A.N. Staniforth (Quebec); B. Stoufflet (Avions Marcel Dassault, France); J. Thomas (NASA Langley); N.P. Weatherill (Swansea); P. Wesseling (Delft).

This is the fourth international conference on CFD organised by the ICFD (Institute for Computational Fluid Dynamics), a joint research organisation at the Universities of Oxford and Reading set up in 1983 with the support of the SERC to collaborate with industry in this area. Previous conferences were held at the University of Reading in 1985 and 1992 and at the University of Oxford in 1988 in a series of conferences on the same theme held on the two sites over the last thirteen years.

The aim of the conference, as in previous years, is to bring together mathematicians and engineers and other scientists in the field of computational aerodynamics and computational fluid dynamics to review recent advances in mathematical and computational techniques for modelling fluid flows.

The subject area is very large with many active researchers in industry, government laboratories and universities working on a wide variety of methods and applications. The conference will cover all areas of CFD but it is hoped to emphasise three main areas: Algorithms and Algorithmic Needs Arising from Applications; Navier-Stokes on Flexible Grids; Environmental CFD.

In addition to invited lectures the programme will include contributed talks of twenty minutes and poster sessions. These will be selected mainly on the basis of their likely contribution to the above themes.

Call for Papers Two page abstracts for contributed papers should be submitted by 9 December 1994 stating preference for oral or poster presentation. Notification of acceptance will be given by 31 January 1995. Papers accepted for oral presentation will be required at the meeting for publication in the proceedings.

Correspondence Abstracts and enquiries regarding the conference should be addressed to: Mrs B Byrne, ICFD Secretary, Oxford University, Computing Laboratory, Wolfson Building, Parks Road, Oxford OX1 3QD; e-mail: bette@comlab.ox.ac.uk; tel: 0865 273883; fax: 0865 273839.

BANACH ALGEBRAS '95

This conference, the twelfth in a series which started in Los Angeles in 1974, will be held in Newcastle on 17-28 July 1995. It is supported by grants from the University of Newcastle and the London Mathematical Society. The programme will consist of lectures by the participants on recent developments in the subject. These will be scheduled for the morning and late afternoon, leaving the rest of the afternoon and evening free for informal discussion, workshops, etc.

About 50 mathematicians, including some of the leading workers in the area, have said that they are 80% certain to participate and a list of their names is available from the organisers. There will be a conference fee of £40 and accommodation for the period of the conference will cost £203.50. Limited financial help will be available to some of our participants.

The organisers, from whom further information, including an up to date list of expected participants, can be obtained are: Professor B.E. Johnson and Dr M.C. White, Department of Mathematics and Statistics, University of Newcastle, Newcastle upon Tyne NE1 7RU; e-mail: michael.white@uk.ac.newcastle; fax: 0191 222 8020.

Research Mathematicians

Bristol

Bold research initiatives, investment to develop future technologies, and commitment to fostering a culture that is both academic and commercially aware.

These principles have placed Hewlett-Packard Laboratories at the forefront of innovation in Information Technology.

Since 1984 our Bristol research facility – the largest outside of HP's California headquarters – has been a crucible for fresh concepts and applied creativity. Here, within our Networking and Communications Laboratory, the Mathematics Group focuses on applying leading-edge mathematical research to address key technical issues.

A recent example is our substantial contribution using Coding Theory to HP's 100Mb/s state-of-the-art LAN product, 100VG-AnyLAN.

Blend the theoretical with the applied

The Mathematics Group is chartered to give the company's products competitive advantage by applying novel research to a variety of product and application areas.

This involves significant emphasis on the coding, algorithm design and performance modeling of transmission elements within networks – coupled with expanding interests in complex systems and non-linear mathematics.

But we also encourage theoretical research, as well as applied. The group is currently working with the UK's leading maths institute to develop a greater common under-standing in the area of non-linear sciences.

We are seeking exceptionally able people who are strongly academic and who wish to work in an applied science setting. You will need at least a good degree in Pure or Applied Mathematics/Theoretical Physics – and ideally a Masters or PhD.

Proven industrial experience, whilst not essential, may have been gained in the communications arena or other industry utilising scientific R&D such as petrochemicals, pharmaceuticals or electricity supply.

At HP Labs, you will work closely with technical project teams on specific commercial endeavours. But you will also be an expert individual contributing to the expansion of our research horizons.

Please send your CV with a day-time number in confidence, quoting reference LM-0008, to the TSI Group, Columbia Centre, Market Street, Bracknell RG12 1PA.
Telephone: +44 (0) 344 860919.
Facsimile: +44 (0) 344 860581.

As an equal opportunity employer, Hewlett-Packard welcomes applications from all sections of the community. We would be particularly encouraged to receive applications from women (as well as men), ethnic minorities, and people with disabilities.

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EUROPEAN MATHEMATICAL TRUST

The European Mathematical Trust (EMT) was established to guide a major project (Euromath) funded through the Science programme of the European Commission. The intention was to provide a powerful support system as the core of a mathematical computing environment. Software has been developed through European collaboration involving commercial organisations in France, Germany and Portugal, and mathematical scientists in Denmark, Sweden, Germany, Slovakia, Eire and the UK. The product is based on the structured WYSIWYG editor Grif and uses SGML markup, as does the related Open Maths Project. The current release includes an editor, a Gopher interface and automated on-line access to remote databases. The UK played a significant part in bidding for funds to the EC and in demonstrating and defining the needs of European Mathematicians which Euromath aims to meet. The Trust is a registered charity financially based in the UK. Euromath offers:

Structured Editing A Document Type Definition or DTD (similar to a LaTeX document style) determines what structures are available. Structure elements may be added or deleted. Euromath presently has three DTDs - article, slide and sheet. Letter and fax DTDs will appear soon and other DTDs supporting specific mathematical disciplines are scheduled over the next three years.

WYSIWYG interface (What You See Is What You Get) Unlike LaTeX, the document is presented on screen as it will appear in the printed version. There is no need for an editing/previewing cycle.

LaTeX interchange Documents may be imported from LaTeX or exported in LaTeX format. Formulae may be created in LaTeX and converted to WYSIWYG with a keystroke.

Formula generation Formulae can be created in a WYSIWYG fashion, appearing on screen as they will in print or entered as LaTeX and converted.

Automatic updating of numbering Section numbers, references, bibliographies, footnotes, theorem numbers and cross references are automatically numbered by the editor.

Full SGML Compatibility Standard Generalized Markup Language (SGML) is fast becoming the standard for publishing and for full text databases. Euromath is an SGML editor with support for mathematics.

Commutative Diagrams The editor facilitates WYSIWYG generation of commutative diagrams.

National language support Euromath has keyboard input for Isolatin Characters, plus extensive symbol fonts.

Navigation and search and replace The user may navigate using a scroll bar, the cursor or via a separate 'Table of Contents' view. Searches can be for text strings or for regular expressions.

Incorporation of graphics X11 Bitmaps, Xdump (xwd), Idraw, PostScript (EPSF), Computer Graphics Metafile (CGM) and TIFF formats may be included in documents. A drawing program derived from Idraw is included.

Subsequent releases will include an integrated mailing system, an extended help system, an interface to computer algebra systems, development of the directory and information services, and extra DTDs.

Platforms The Euromath system is UNIX and X-Window based, although a PC version is expected within the next year. It is available in versions for SUNSPARC, HP, DEC and IBM. Euromath needs 12MB of main memory and 20MB of disk space. It is currently in use at 6 sites in the UK and has 60 subscribers overall, and is available to Mathematical Institutes on a subscription basis.

Subscription involves
A copy of the Euromath software;
A licence to run Euromath for up to 50 machines on a network;

Options to obtain favourable rates for on-line access to the Zentralblatt MATH database at STN (FIZ Karlsruhe);
The Euromath Bulletin;
Documentation and upgrades for the period of the subscription;
Access to data about European mathematicians especially those in Eastern and Central Europe and the former Soviet Union.

Cost The cost of an initial subscription until 31 December 1994 is 1,500 ECUs.

Further information For further information contact: European Mathematical Trust, The Registry, University of Kent at Canterbury, Kent, CT2 7NZ or Jill Tardivel, Computing Laboratory, The University, Canterbury, Kent CT2 7NF; tel: 0227 764000 ext. 7697; e-mail: gmt@ukc.ac.uk.

John Slater
Jill Tardivel

MATHEMATICS OF NEURAL NETWORKS AND APPLICATIONS
1st Announcement - Call for Papers

This international conference will be held at Lady Margaret Hall, Oxford, 3-7 July 1995 run by University of Huddersfield in association with University of Brighton. It is the first conference on the Mathematics of Neural Networks and Applications (MANNA), in which it is aimed to provide both top class research and a friendly motivating atmosphere.

Applications of neural networks (NNs) have often been carried out with a limited understanding of the underlying mathematics but it is now essential that fuller account should be taken of the many topics that contribute to NNs - such as approximation theory, control theory, genetic algorithms, dynamical systems, numerical analysis, optimisation, statistical decision theory, statistical mechanics, computability and information theory. The aim is to consider the links between these topics and the insights they offer, and identify mathematical tools and techniques for analysing and developing NN theories, algorithms and applications. Working sessions and panel discussions are planned.

Keynote speakers who have provisionally accepted invitations include: N.M. Allinson (York University, UK); S-i Amari (Tokyo); N.L. Biggs (LSE, London); G. Cybenko (Dartmouth USA); J.G. Taylor (King's College, London); S. Grossberg (Boston, USA); M. Hirsch (Berkeley, USA); T. Poggio (MIT, USA); H. Ritter (Bielefeld, Germany); P.C. Parks (Oxford, UK).

It is anticipated that about 40 contributed papers and posters will be presented. The proceedings will be published, probably as a volume of an international journal, and contributed papers will be considered for inclusion. The deadline for submission of abstracts is 17 February 1995. Accommodation will be available at Lady Margaret Hall (LMH) where many rooms have en-suite facilities - early bookings are recommended. The conference will start with Monday lunch and end with Friday lunch, and there will be a full-board charge (including conference dinner) of about £235 for this period as well as a modest conference fee (to be fixed later). It is hoped to be able to offer a reduction in fees to those who give submitted papers and to students.

There will be a supporting social programme, including reception, outing(s) and conference dinner, and family accommodation may be arranged in local guest houses. If you wish to receive further information, contact: Ros Hawkins, School of Computing and Mathematics, University of Huddersfield, Queensgate, Huddersfield, West Yorkshire HDl 3DH, England. (e-mail: j.c.mason@hud.ac.uk), supplying name, address, telephone, fax, e-mail, intention of submitting a paper, and area of proposed contribution.

HOW COMPUTERS CAN HELP TEACHERS AND LEARNERS
CTI Centre for Mathematics and Statistics

Computers can contribute to the teaching and learning of mathematics by

- carrying out routine and administrative tasks relating to the preparation of course material and assessment of students (supporting the teacher);
- providing an environment where mathematical ideas can be presented as many times as are required for their understanding (supporting the student);
- making available powerful software that can "do" mathematics

The CTI Centre for Mathematics and Statistics was set up to collect and disseminate information about courseware for degree-level courses. *Courseware* is a generic term referring to computer-based material which can be used to deliver or assist in the delivery of courses. This includes commercially available or academically developed software, lecture notes, worksheets and laboratory guides. A large number of packages have been categorised and listed in the Centre's publication *Maths & Stats: Guide to Software for Teaching.* Details of packages mentioned by name in this article are included in that publication unless they are of more recent provenance. Recently the Centre undertook a survey of courseware as used in 96 university departments, and this provided the basis of the figures quoted below.

Computer applications to support the teacher

Demonstration software can enable the lecturer to illustrate and enliven the material being taught in the traditional lecture by using the computer as an electronic blackboard. This can take place in a networked lab, where each student can view a nearby screen, or with the use of a projector or a full colour overhead projector palette. It is particularly useful in topics like calculus, where animation of diagrams, graphs and mathematical derivations can enhance the student's understanding of difficult concepts. As an example, David Tall's *Graphics Calculus* is used in five departments.

There is a growing interest in the contribution that computers can make in the area of assessment. At a recent workshop 13 packages were described which can be used for diagnostic, self test, monitoring or grading assessment. For example, *Diagnosys* is an adaptive diagnostic test for basic mathematical skills. An analysis of existing paper-based tests at five universities led to the specification of a computer-based test which would adapt to students and provide results identifying their individual needs. This software has been developed under the Teaching and Learning Technology Programme (TLTP) and will become generally available in March 1995.

Other applications include programming languages, authoring packages, administrative software and desktop applications such as word processors, spreadsheets and database management systems.

Courseware developed to explain mathematical ideas

We are aware of over 200 packages in this category, covering most of the standard topics that students learn during their first year: analysis and calculus, linear algebra, discrete mathematics and probability and statistics. To this list can be added foundation studies, to cover the mathematics needed before these standard topics are introduced.

Enthusiasts have been developing such packages ever since BBC computers became available. Most have tended to address specific topics or the needs of a particular department, but some have gained a wider circulation. *CALMAT,* a range of revision modules from Glasgow Caledonian University, is used in 18 departments. The *CALM* project from Heriot-Watt is a series of computer tutorials designed to support a traditional lecture course in calculus. It consists of 20 modules providing revision text, worked examples and exercises, and is currently used in eight departments.

Computer Illustrated Texts are textbooks with accompanying software designed to

provide interactive examples. The series contains six mathematics titles and is used in eight departments. In a further six the St Andrews courseware *MacTutor* is available to cover the full range of first year Mathematics, and give students the opportunity to conduct experiments, to investigate a family of functions, see illustrations of difficult concepts, or simulate physical phenomena.

More recently the TLTP has brought academics together to design modules which have a wide relevance and applicability. Three of these projects are relevant to Mathematics teaching; one relating to assessment has been described above. It is envisaged that courseware developed under the TLTP will be distributed to groups of students over networks both within and between institutions.

The TLTP product *Mathwise* has been developed by the UK Mathematics Courseware Consortium. It consists of an *entry unit* or welcome screen, *leaflets* covering mathematical topics, *modules* each equivalent to a five hour lecture course and *resources,* which can be local to the module or global to the system. Institutions will be able to add their own resources to those already planned, which include a grapher, calculator, glossary and help files. Ten modules in foundation mathematics are now available for evaluation.

Also under the TLTP, the Transitional Mathematics Project *(TMP)* at Imperial College is developing modules in the form of Mathematica Notebooks, each nominally supporting one hour of individual study, for use in a Preliminary Mathematics course. A fully tested package of tutorial modules will be available by February '95. A team at Leeds University is also developing Mathematica-based learning modules with a highly interactive interface aimed at providing students with a mechanism for revising and consolidating material, in their own time and at their own pace. Known as *Transmath,* six modules will be available for evaluation in October and the rest in December.

Computer Tools that "do" Mathematics

Commercially developed packages can provide an environment for students to explore basic principles in linear algebra, calculus, analysis and number theory, and powerful tools for the solution of problems. There is also a need to prepare students for the packages used in later employment; this is a common demand made, for example, by engineering departments. The Centre has published various articles describing the use of such packages in teaching in its quarterly newsletter *Maths&Stats.* Good working notes are essential in the first instance, and well-structured material to get the students going, but once they can operate a package and are aware of its limitations, its benefits will be available across the curriculum.

The computer algebra systems in most common use in undergraduate labs are Maple, used in 43 departments, *Derive* in 37 and *Mathematica* in 18. Two numerical packages have been found particularly relevant: *Matlab,* used in 31 departments, and *MathCad* in 9. In Management Science, standard linear programming packages can help students learn about the theory of optimisation as well as carry out realistic exercises. Spreadsheets are utilised extensively in Business Mathematics teaching; *Excel* is used in 11 departments and *Quattro* in 5.

Where to get more information

The Centre disseminates information about courseware in many ways. Lecturers in higher education can join the mailing list for *Maths&Stats* on request. The 1991 edition of *Maths & Stats: Guide to Software for Teaching* is still available from the Centre and a new edition, currently in preparation, will be distributed to departments on publication. Information sheets are published on paper and electronically, and queries are answered promptly. There is an electronic discussion list cti-maths on Mailbase, and a Web server on http://sun1.bham.ac.uk For further details of any of the Centre's services, contact Pam Bishop, CTICMS, Centre for Computer-Based Learning, University of Birmingham, Birmingham B15 2TT, tel: 021-414 4800, fax: 021-414 6267, e-mail: ctimath@bham.ac.uk.

APPLICATIONS OF LOGIC
Announcement and Call for Papers

The Institute of Mathematics and its Applications is organising a conference on the applications of mathematical logic to be held from Monday 27 March to Wednesday 29 March 1995 at the University of York. Papers are solicited on any aspect of the application of logic to any domain of discourse. Domains of discourse include, but are not limited to: Automatic Reasoning; Cognitive Science; Computer Science; Legal Reasoning; Linguistics; Machine Learning; Medical Practice; and Planning and Modelling. Papers in fields not in this list are also welcome. Contributions are welcome from domain experts who have applied logic to their own domain as well as from logicians. For further details, contact Miss Pamela Irving, Conference Officer, The Institute of Mathematics and its Applications, Catherine Richards House, 16 Nelson Street, Southend-on-Sea, Essex SS1 1EF, tel: (0702) 354020, fax: (0702) 354111.

ICTP TRIESTE
Mathematical Activities 1995

The International Centre for Theoretical Physics, Trieste, will be organising the following activities in 1995.

22 May - 2 June: Workshop on Dynamical Systems; directors: J. Palis, Y. Sinai, J.-C. Yoccoz; deadline for requesting participation: 15 November 1994.

21 August - 1 September: Conference on PDEs and Applications to Geometry; directors: K.-C. Chang, M. Giaquinta; deadline for requesting participation: 28 February 1995.

4 - 15 September: Workshop on General Theory of PDEs and Microlocal Analysis; directors: Qi Min-you, L. Rodino; dealine for requesting participation: 28 February 1995.

For further details contact I.C.T.P., PO Box 586, 34100 Trieste, Italy; e-mail: laurenti@ictp.trieste.it.

JOURNAL BACKLOG

	No. of Issues	No. of Pages	Backlog	Estimate (months)
Math. Proc. Camb.	6	1200	150	12-18
Edin. Math. Society	3	514	180	15 - 20
Glasg. Math.Journ.	3	384	180	15 - 19
LMS Bulletin	6	624	200	8 - 14
LMS Journal	6	1248	740	15 - 12
LMS Proceedings	6	1344	350	15 - 24
Mathematika	2	440	200	18 - 27
Oxford Q J M	4	512	320	12 - 18
R S Edin. Proc. A.	6	1280	900	14 - 16

University of Cambridge
Isaac Newton Institute for Mathematical Sciences
COMPUTER SYSTEMS MANAGER

The Newton Institute is a highly successful international research institute which has now been in operation for two and a half years. In that time it has established a formidable reputation as being at the forefront of developments in the mathematical sciences and has had many distinguished visitors from all parts of the world attending its six-month programmes. Both its scientific and administrative networks are heavily used.

Applications are invited for the post of Computer Systems Manager. This is a key position within the Institute and the post holder, with the support of the Computing Assistant, is responsible for the running of the network of UNIX workstations (Sun, Hewlett-Packard and Apple) and a Novell network, and providing support to an ever changing population of users.

Familiarity with at least one of SunOS, HP-UX and A/UX is essential, together with an understanding of TCP/IP, X, C and FORTRAN. Experience of Novell networks is also highly desirable.

The person appointed must be able to deal with a wide variety of different tasks at the same time and remain calm under pressure. S/he will have good interpersonal skills, will enjoy meeting people and be able to communicate with patience and good humour.

The appointment will be on the academic-related COI/II scale with a salary in the range £20,133 to £27,473 according to age and experience, with membership of the Universities Superannuation Scheme.

For further details and an application form please contact Florence Leroy, Isaac Newton Institute for Mathematical Sciences, 20 Clarkson Road, Cambridge CB3 0EH (e-mail: f.leroy@newton.cam.ac.uk). Applications must be received by **November 11th.**

The University of Cambridge is an equal opportunities employer.

AFRICAN MATHEMATICAL UNION AND THE CHALLENGE OF DEVELOPING MATHEMATICAL SCIENCES IN AFRICA!

Introduction

The African Mathematical Union (AMU) was founded in 1976 during the first Pan-African Congress of Mathematicians in Rabat, Morocco. Since then, the Union has been making efforts to tackle the various problems confronting research and education in the Mathematical Sciences through its various activities.

Prominent among the problems militating against progress in the mathematical sciences are: (a) inadequacy of journals, books and facilities for teaching and research; (b) shortage of mathematics teachers at all levels; (c) inadequate financial support by the African Governments for the development of the mathematical sciences; (d) prospective mathematical scientists being attracted away to more lucrative professions; (e) relative isolation of African mathematicians; (f) brain-drain of African mathematicians resulting in those on the ground becoming an endangered species; (g) environmental problems such as political instability, natural and man-made disasters, dysfunctioning social services etc.

The aim of this short article is to invite, through the London Mathematical Society, the International Mathematical Community to co-operate with the African Mathematical Union in its effort to find solutions to some of these problems.

A brief review of AMU activities

Conferences, Workshops, Symposia, etc

Since its inception in 1976, the AMU has organised or co-sponsored numerous mathematical symposia, workshops, colloquia etc in various areas of the mathematical sciences. Some of these meetings have been on specialised areas e.g. Algebraic K-theory, Stochastic Analysis, Algebraic Geometry, Bio-Mathematics, while some have been of a general nature, bringing together mathematicians from different specialities and backgrounds, e.g. Symposium on current research trends in Mathematics, Computer Science and Mathematical Physics. Others have been on Mathematics Education, e.g., "Symposium on the Influence of Informatics on Mathematics Education", "Mathematics Education in Africa for the 21st century".

AMU Commissions

There are four Commissions in the AMU:

(a) AMU Commission on Mathematics Education (AMUCME) which aims at improvement in curricula, teacher training and research in Mathematics Education.

(b) AMU Commission on Pan-African Mathematics Olympiad (AMUCPMO) aimed at popularising mathematics and promoting healthy competition among African Youths. Since the Commission came into being there have been five Olympiads - Rabat, Morocco, 1987; Ibadan, Nigeria, 1989; Nairobi, Kenya, 1991; Dakar, Senegal, 1993; Abdjan, Cote D'Ivoire, 1994.

(c) AMU Commission on History of Mathematics in Africa (AMUCHMA) aims at improving communication among those interested in the history of mathematics in Africa. It has published up to twelve highly informative Newsletters since its inception in 1986.

(d) Commission on Women in Mathematics in Africa (AMUCWUMA) aims at organising activities that will eventually lead to the production of more women mathematicians.

AMU Publications

The publication of the AMU journal, **Afrika Matematika**, started in 1978. This journal continues to be a major source of dissemination of research being carried out in the mathematical sciences on the continent of Africa.

Our Information Bulletin also continues to provide information on mathematical activities of the African Mathematical Union and those of the other mathematical organisations inside and outside the continent .

AMU Mathematical Sciences Network

The aims and objectives of the Network include: (i) encouraging North- South and South-South co-operation in the area of research and the training of graduate students for higher degrees of African Universities; (ii) bridging the isolation gap among African Mathematicians through the development of research groups in member Institutions of the Network eventually leading to the production of the critical mass of mathematical scientists so badly needed in the continent for developmental purposes; (iii) accelerating the evolution of members of the Network as centres of excellence for mathematical research and training.

The members of the Network at the moment are: University of Younde, Cameroon (Mathematics Department); University of Nigeria, Nsukka, Nigeria (Mathematics Department); University of Ibadan, Nigeria (Mathematics Department); Universite Cheik Anta Diop de Dakar, Senegal (Mathematics Department); University of Ghana, Accra, Ghana (Mathematics Department); University of Abidjan, Cote D'Ivoire (Mathematics Department and the Insitut de Recherches Mathematiques); Ohafemi Awolowo University, Ile-lfe, Nigeria (Mathematics Department); National Mathematical Centre, Abuja, Nigeria; Institut de Mathematiques et de Sciences Physiques, Porto-Novo, Benin Republic; Zimbabwe, University of Harare (Mathematics Department); University of Khartoum, Sudan (Mathematics Department); Université Mohammed V. Rabat Morocco (Mathematics Department and Laboratorie de Physique Theorique); University of Nairobi, Kenya (Mathematics Department); University of Cairo, Giza, Egypt (Mathematics Department); and University of Tunis, Tunisia (Mathematics Department).

Some areas of need for international co-operation

Mathematical meetings

The AMU will continue to count on the participation and support of the International Community of Mathematicians at its conferences, symposia, workshops etc. We also seize this opportunity to appeal to the International Funding agencies to step up their financial support for the Mathematical Sciences.

Afrika Matematika

The publication of this Journal has depended so far on ad-hoc partial financial support from some International Funding Agencies such as UNESCO and ICTP (Trieste) and some fund-raising efforts on the African scene. So far, the Journal has been distributed free of charge to many African Mathematics Departments and we seek financial stability for the Journal through subscriptions from Libraries in the International Community. The Journal also continues to welcome articles from the International Mathematics Community.

Mathematical Sciences Network

The Network started with a preliminary programme of research visits by young Mathematicians within the network - thanks to a grant from the ICTP which pays for the travel of these young people and another grant from the Association of African Universities (AAU) which has been paying for the local stay of the young mathematicians. Even this preliminary programme may be curtailed unless we find further support for the local stay of the beneficiaries as the Association of African Universities is already finding the project too expensive for its budget. The next stage of the programme for the young people is South-North movement for which we need the co-operation of the International Community. Also envisaged in this project is North-South visits by Professors from the Developed countries. Again, this requires International co-operation.

Journals/Books for Africa

The AMU is currently exploring ways of co-operating with organisations and individuals interested in getting journals/books across to African Institutions.

Aderemi Oluyomi Kuku
AMU President
Department of Mathematics
University of Ibadan, Nigeria

THE UK TeX USERS' GROUP

The UK TeX Users' group exists to be a focus for TeX-related activities in the United Kingdom, in particular to help its members obtain TeX-related software, to provide information on new happenings in the TeX world (such as the release, earlier this year, of the new standard LaTeX, incorporating AMSLaTeX), and to try to deal with common difficulties.

The term 'TeX' is interpreted very widely, to cover not just the TeX program itself but also many other related pieces of software, etc. Many members use LaTeX exclusively; others are wizards in TeX itself or in Metafont.

The Group sells software to members at cost price. There are complete sets of floppy discs of TeX-ware for the PC and also for the Macintosh. There is also a bumper CD-ROM full of TeX goodies through the Group: for example, Norman Walsh's 'Making TeX Work' published by O'Reilly, and 'The LaTeX Companion' by Michel Goossens, Frank Mittelbach and Alexander Samarin, published by Addison-Wesley, as well as the original five books about TeX itself by Donald Knuth.

The Group organizes about four meetings per year. Usually each meeting consists of a series of talks on a related theme, but some meetings are training meetings and others are visits to commercial TeX users. Meetings in the planning stage for 1995 include one on SGML and a training meeting on BiBTeX and MakeIndex.

We publish a newsletter 'Baskerville' six times per year. This includes information about future meetings, comments about current TeX happenings (such as the annual TUG meeting), information about disc sets and book discounts, short tips on 'how to do it', as well as longer articles on such subjects as tables, Maths, Postscript, using colour, and deep programming in TeX. The final issue of 1994 will be devoted to 'Frequently Asked Questions'; anyone joining the group by the middle of December will receive this issue.

The Group is also associated with the world-wide electronic archive of TeX material (CTAN) and with the efforts to produce correct word-division for British English.

The cost of membership will be confirmed at the AGM, but it is expected to be about £20 per year, with a reduced rate for full-time students, and a discount for those who join the international TeX Users' Group at the same time as UK-TUG.

For further details and membership forms, send an e-mail message to uktug-enquiries@tex.ac.uk or write to J. Fine, 203 Coldhams Lane, Cambridge CB1 3HY.

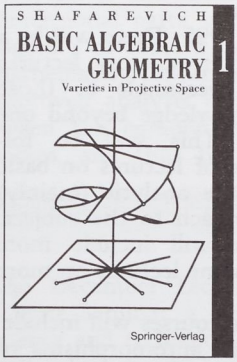
UNIONE MATEMATICA ITALIANA

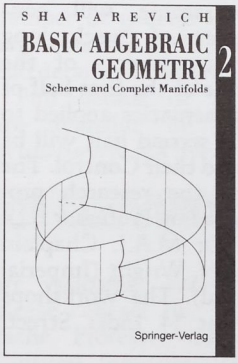
Membership dues for members of associations with a reciprocity agreement with the U.M.I. for 1995 are It. L. 60.000 (50% reduction with respect to ordinary dues for foreign members). Membership privileges include:

- Notiziario dell'U.M.I. (monthly + supplements), free
- Membership list, free (included in the first issue of the year of the Notiziario)
- Bollettino dell'U.M.I., Section A (3 issues), free
- Bollettino dell'U.M.I., Section B (4 issues) and other publications of the U.M.I. with discounts. Subscription price to Section B for 1995 (for members) is L.40.000; please, subscribe in this case by 31 January 1995. Subscription to Bollettino di Storia delle Scienze Matematiche for 1995 (discounted price for ordinary members): L. 32.000 (note the 1995 issues will appear with some delay).
- Discounted fees for U.M.I. meetings (next major meeting will be in Padova in 1995)
- Right to vote in the election of officers
- A book (from a special list) is sent as a gift to all members paying dues by 31 January 1995.

Payment can be sent by bank cheque or by international postal order. Apply to Segreteria U.M.I., Dipartimento di Matematica, Piazza Porta S. Donato 5, 40127 Bologna, Italy.

THE popular introduction to basic algebraic geometry





I.R. Shafarevich

Basic Algebraic Geometry

Volume 1: Varieties in Projective Space

Translated from the Russian by **M. Reid**

2nd, rev. and exp. ed. 1994. Approx. 310 pp. 21 figs.
(Springer Study Edition, Vol. 1)
Softcover DM 68,- ISBN 3-540-54812-2

Basic Algebraic Geometry, Volume 1, is a revised and expanded new edition of the first four chapters of Shafarevich's well-known introductory book on algebraic geometry. The author has added plenty of new, mostly concrete geometrical material like Grassmannian varieties, plane cubic curves, the cubic surface, degenerations of quadrics and elliptic curves, the Bertini theorems, and normal surface singularities. There are also some new number-theoretical applications.

Shafarevich succeeds in making algebraic geometry accessible to non-specialists and beginners and his two-volume book will remain one of the most popular introductions to this field. The book is suitable for third-year undergraduates in mathematics and also for students of theoretical physics.

I.R. Shafarevich

Basic Algebraic Geometry

Volume 2: Schemes and Complex Manifolds

Translated from the Russian by **M. Reid**

2nd, rev. and exp. ed. 1994. Approx. 270 pp. 12 figs.
(Springer Study Edition, Vol. 2)
Softcover DM 68,- ISBN 3-540-57554-5

The second volume of Shafarevich's introductory book on algebraic varieties and complex manifolds has now been published. As with Volume 1, the author has revised the text and added new material, e.g. a section on real algebraic curves. Although the material is more advanced than in Volume 1, the algebraic apparatus is kept to a minimum making the book accessible to non-specialists. It can be read independently of Volume 1 and is suitable for beginning graduate students in mathematics as well as in theoretical physics.

Springer

Prices are subject to change without notice. In EC countries the local VAT is effective. Customers in EC countries, please state your VAT-Identification-Number if applicable. For information on prices in Austrian schillings and Swiss francs please consult the German book directory "VLB - Verzeichnis lieferbarer Bücher" or our general catalogue.

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INTERNATIONAL CENTRE FOR MATHEMATICAL SCIENCES
Dates of Programmes 1994-95

1. Mathematics in Medicine

The Research Programme will concentrate on a series of week long workshops on various aspects of the topic. The main theme of the first half of the year will be Mathematics applied to Physiology while the second half will be devoted to Cancers and their Control. The scientific aspects of the research programme are coordinated by Professor B.D. Sleeman (Dundee), Dr M.A.J. Chaplain (Bath) and Professor N. Wright (Imperial Cancer Research Fund). The workshops will all take place at 14 India Street, Edinburgh.

THE LUNG AND CARDIOVASCULAR SYSTEM : 7 - 11 November 1994 The main speakers will be: T. Pedley (Leeds); J. Grotberg (Northwestern); R. Kamm (MIT); S. Weinbaum (NYCU); J. Spaan (Amsterdam).

Some of the topics to be discussed are: high frequency ventilation/gas mixing in the lung; surface tension effects in the lung; flow and oscillations in collapsible tubes; modelling the coronary circulation; computational methods for arterial fluid mechanics; fluid and solute transport in tissue.

BIOMECHANICS: 5 - 9 December 1994 The main speakers will be: R. Skalak (UCSD); R. McNeill Alexander (Leeds); S. Cowin (NYCU); R. Huiskes (Nijmegen); T. McMahon (Harvard).

Some of the topics to be discussed are: bone properties and stress analysis; remodelling of bone and joint lubrication; gait analysis, sitting, standing; mechanics of cells; cell adhesion and locomotion.

The titles and dates of future workshops are: Wound Healing: 9 - 13 January 1995; Tumour Growth and Development: 13 - 17 February 1995; Chemotherapy: 10 - 14 April 1995; Cell Kinetics: 23 - 27 May 1995; Image Analysis: 12 - 16 June 1995.

Further details and registration forms are available from: Louise Williamson, ICMS, 14 India Street, Edinburgh EH3 6EZ; tel: 0131-220-1777; e-mail: icms@maths.ed.ac.uk.

2. Instructional Conference on Several Complex Variables

20 March - 1 April 1995. There will be a series of 4-5 very introductory lectures on basic material accessible to those with very little knowledge beyond one complex variable. This will be followed by 3 courses of lectures on basic material covering the analytic (mainly) and geometric approach to the subject. The second week will include more courses as well as some lectures on more advanced material.

The topics of the courses will include: Bergman kernel and automorphisms of domains; D-bar operator; Hardy spaces on domains in C^n; Complex dynamics; CR structures.

The organising committee of the conference consists of S. Krantz (St Louis); N. Sibony (Orsay); T. Bailey and E. Rees (Edinburgh). The course is supported by a generous grant from the EC-HCM fund. Enquiries to Louise Williamson.

3. Statistics and Neural Networks

19 - 21 April 1995. A research workshop organised by J.W. Kay (SASS) and D.M. Titterington (Glasgow). Invited speakers include: Leo Breiman (Berkeley); Phil Brown (Liverpool); David Hand (Open University); Trevor Hastie (ATT and Stanford); Nathan Intrator (Tel Aviv); Michael Jordan (MIT); David Loe (Aston); David Mackay (Cambridge); Radford Neal (Toronto) and Brian Ripley (Oxford). The workshop will take place from 19-20 April 1995, and will be followed by an Open Forum on 21 April 1995. The meetings will form part of the Edinburgh Science Festival. Although participation in the Workshop will be predominantly by invitation, there will be a small number of places for direct applicants. For details contact either J.W. Kay (SASS, Macaulay Land Use Research Institute, Craigiebuckler, Aberdeen, AB9 2QJ; sassk@mluri.sari.ac.uk) or D.M. Titterington (Department of Statistics, University of Glasgow, Glasgow G12 8QQ; mike@stats.gla.ac.uk) as soon as possible.

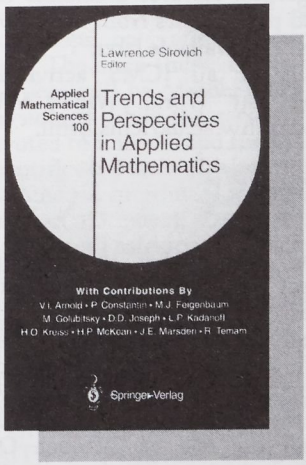
4. The Analysis of Multibodies
5 - 6 June 1995. A workshop organised by P.G. Ciarlet and H. Le Dret (Paris). Many engineering structures consist of rods, plates and shells as well as three-dimensional parts which are connected together to form a 'multibody'. Recent mathematical advances have led to an improved analysis of the junctions between the component parts of multibodies, and thus to better predictions of their overall static and dynamic behaviour. The aims of the workshop are to review the latest theoretical thinking in a series of seminars and to explain the contributions mathematics can make in a number of general lectures accessible to engineers and participants from industry. Full details will be available later.

Full details of all ICMS activities are available on World Wide Web http://www.ma.hw.ac.uk/icms.html.

ITALIAN SCIENCE LECTURE

The December Lecture of the Italian Science Seminar, a series of lectures on science and technology organised by the Italian Embassy in London, will be given on Thursday 1st December 1994 at 5.30 pm (with tea and coffee at 5.00 pm) at the Italian Cultural Institute by Professor Antonio Ambrosetti, Scuola Normale Superiore, Pisa, on "Variational Methods and Nonlinear Problems". All interested are welcome. For further information please contact the Italian Scientific Attaché, Professor Eugenio Tabet, Italian Cultural Institute, 39 Belgrave Square, London SW1; e-mail: galileo@uk.ac.ulcc; tel: 071-312 2200, fax: 071-495 4171. A leaflet with the details of the lecture will appear before the end of October. Of course Professor Ambrosetti's lecture will be in English.

The successful series for practitioners



L. Sirovich (Ed.)

Trends and Perspectives in Applied Mathematics

1994. 358 pp. 77 figs.
(Applied Mathematical Sciences, Vol. 100)
Hardcover DM 98,- ISBN 3-540-94201-7

This is the *100th volume* of the **Applied Mathematical Sciences** series. In order to mark the occasion, this special volume has been created and will have an impact on the community that practices and is served by applied mathematics.

Ten leading figures in the field present their own perspective of applied mathematics. The articles that are collected in this volume bear testimony to both the vitality and diversity of the subject. The articles cover such topics as: mathematical problems in classical physics; geometric and analytic studies in turbulence; viscous and viscoelastic potential flow; difference methods for time dependent partial differential equations; and geometric mechanics, stability and control.

A. Chorin

Vorticity and Turbulence

1994. Approx. 190 pp. 33 figs.
(Applied Mathematical Sciences, Vol. 103)
Hardcover DM 68,- ISBN 3-540-94197-5

This book provides an introduction to turbulence in vortex systems, and to turbulence theory for incompressible flow described in terms of the vorticity field. It is the author's hope that by the end of the book the reader will believe that these subjects are identical, and constitute a special case of fairly standard statistical mechanics, with both equilibrium and non-equilibrium aspects. The author's main goal is to relate turbulence to statistical mechanics.

The book is organized as follows: the first three chapters constitute a fairly standard introduction to homogeneous turbulence in incompressible flow; a quick review of fluid mechanics; a summary of the appropriate Fourier theory; and a summary of Kolmogorov's theory of the inertial range. The next four chapters present the statistical theory of vortex notion, and the vortex dynamics of turbulence. The book ends with the major conclusion that turbulence can no longer be viewed as incomprehensible.

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J.A. DARBOUX
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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.

NOVEMBER 1994

3 Gresham College Public Lecture in Geometry, Professor I. Stewart (219)
18 London Mathematical Society Meeting, Annual General Meeting, London
18 Edinburgh Mathematical Society Meeting, Strathclyde University, Dr. J.N.Elgin (219)
24 Gresham College Public Lecture in Geometry, Professor I. Stewart(219)

DECEMBER 1994

9 Edinburgh Mathematical Society Meeting, Edinburgh University, Professor D. McDuff (219)
12-17 Pacific Rim Geometry Conference, National University of Singapore (214)

JANUARY 1995

13 Edinburgh Mathematical Society Meeting, Heriot-Watt University, Dr H. Ockendon (219)

FEBRUARY 1995

5-9 ANZIAM'95, University of Western Australia (219)
7-10 Fractals in the Natural and Applied Sciences International Working Conference, Marseilles, France (217)
10 Edinburgh Mathematical Society Meeting, Edinburgh University, Professor M.J. Dunwoody (219)
17-18 Two-day London Mathematical Society Meeting, Mathematics and Computers, Warwick University

MARCH 1995

10 Edinburgh Mathematical Society Meeting, Abertay, Dr A.D.Wood (219)
17-24 Sciences, Engineering and Technology Week (219)
19-22 Carolus Magnus on Arithmetic and Geometry Colloquium, Aachen, Germany (217)

APRIL 1995

3-6 British Mathematical Colloquium, Heriot-Watt
18-22 Professor P.F. Baum, LMS Invited Lectures, Manchester University (218)
23-26 Korteweg and de Vries International Symposium, Amsterdam, The Netherlands (210)
24-28 Operator Algebras Symposium, Fields Institute, Canada (212)

MAY 1995

12-13 Two-day London Mathematical Society Meeting, 'A Hundred Years of Analysis', Oxford University.
29-1 June Mathematical Modelling Conference, University of Brunei Darussalam (214)

JUNE 1995

2 Edinburgh Mathematical Society Meeting, Stirling University, Dr. C.J.H. McDiarmid (219)
16 London Mathematical Society Meeting, Burlington House, London
28-30 Conference on the Legacy of George Boole, University College, Cork (219)

JULY 1995

3-7 Fifteenth British Combinatorial Conference, University of Stirling (210)
3-7 International Congress on Industrial and Applied Mathematics, Hamburg (213)
10-12 Linear Algebra and Its Applications Conference, Manchester University (220)
11-14 Finite Fields & Applications International Conference, University of Glasgow (219)
13-16 British Congress of Mathematics Education, Manchester Metropolitan University (220)
17-28 Banach Algebras Conference, Newcastle University (217)
24-29 European Women in Mathematics Conference, Universidad Complutense de Madrid, Spain (219)

AUGUST 1995

28-1 Sep The A.C. Aitken Centenary Conference, University of Dunedin, New Zealand (210)

OCTOBER 1995

20 London Mathematical Society Meeting, Scientific Societies Lecture Theatre, London

NOVEMBER 1995

17 London Mathematical Society Meeting, Burlington House, London

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 WIV 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. The London Mathematical Society is registered with the Charity Commissioners.

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