

LONDON MATHEMATICAL SOCIETY

PROFESSOR V. W. GUILLEMIN (I.H.E.S.)

TRACES IN GEOMETRY AND ANALYSIS

PROFESSOR C. T. C. WALL (Liverpool)

THE 1976 WHITEHEAD LECTURE

**FREE ACTIONS OF FINITE GROUPS ON
SPHERES, 1890–1980**

Friday, 21 May, 1976, at 3 p.m.

**Mathematics Institute,
University of Warwick,
Coventry**

Tea will be served at 4 p.m.

LMS NEWSLETTER

No. 29

May 1976

MEMBERSHIP LIST AND SUBSCRIPTIONS

A new Membership List is in course of preparation. It will not contain members whose subscriptions are in arrears. Anyone in this position and anyone who wishes

his entry to be revised should write to Mrs. Shalit, London Mathematical Society Burlington House, Piccadilly, London, W1V 0NL as soon as possible.

I. M. JAMES

SOCIETY DINNER

A buffet dinner will be served in the Senior Common Room, East Site, University of Warwick, at 6.30 p.m. on Friday, 21 May, 1976 at a cost of £1.50 per person, wine included. The dinner is subsidised by the Mathematics Institute, University of Warwick.

Will those wishing to attend please book by sending a cheque (payable to the Mathematics Institute, University of Warwick) for the appropriate amount to Mrs. M. Taylor, Mathematics Institute, University of Warwick, Coventry, CV4 7AL? Cheques should be sent as soon as possible.

HODGE MEMORIAL MEETING

The June meeting of the Society will be the Hodge Memorial Meeting; it will take place in Cambridge on 18 June. It will be jointly sponsored by the Cambridge Department of Pure Mathematics and Mathematical Statistics, the Edinburgh Mathematical Society and the L.M.S.

Speakers will include M. F. Atiyah

(Oxford), P. Griffiths (Harvard) and W. Schmid (Columbia).

It is expected that the meeting will be from 11 a.m. to 5 p.m. Lunch will be available, and in the evening there will be a dinner in Pembroke College. Final details and prices will be announced later.

J. L. BRITTON

HARDY LECTURER

The Society's 1977 Hardy Lecturer will be Professor J. Moser (Courant Institute of Mathematical Sciences, New York).

Although exact dates have not yet been fixed, the period of his visit is expected to be from 1 June, 1977 to the end of June (or possibly early July). As before, the Hardy Lecturer will visit up to 10 Universities in the United Kingdom. He will deliver the Hardy Lecture at the June 1977 meeting of the Society.

Professor Moser has suggested some tentative titles for his lecture programme:

- (1) Closed orbits and bifurcation theory;
- (2) Stability in celestial mechanics;
- (3) Recent results on the n -body problem;
- (4) Integrable Hamiltonian systems;

(5) Unstable and random motions; and he would possibly offer a lecture on several complex variables.

If you would like Professor Moser to visit your university, please ask your head of department or L.M.S. representative (if your institution already has a local representative) to let me know by 17 June, 1976. Please note that Professor Moser's travelling expenses will be paid by the Society but the host university will be responsible for accommodation expenses. My address is: Mathematics Department Queen Elizabeth College, Campden Hill, London, W8 7AH.

J. L. BRITTON

LEEDS/SHEFFIELD ALGEBRA DAY

There will be a one-day algebra conference in the University of Leeds on Wednesday, 19 May, 1976 starting at 10 a.m. The invited speakers are R. W. Carter (Warwick) D. Kirby (Southampton)

and J. C. McConnell (Leeds). Further details can be obtained from J. C. Robson, School of Mathematics, University of Leeds, Leeds LS2 9JT.

1976 NOTTINGHAM QUANTUM THEORY CONFERENCE

This conference will be held at Nottingham University from 20 July to 23 July, 1976. Subject: Probability in quantum theory. Speakers include Sir S. Edwards, S. P. Gudder, J. T. Lewis and H. Primas.

Details from Dr. R. L. Hudson, Mathematics Department, University of Nottingham, University Park, Nottingham NG7 2RD.

JOURNAL OF APPLIED PROBABILITY

The subscription rates in 1977 for L.M.S. members will be £6.80 for individual

members; £20.40 for corporate members. G. E. H. REUTER

DUBLIN CONFERENCE ON NUMERICAL ANALYSIS

A conference on numerical analysis organised by the Royal Irish Academy will be held in Dublin on 16-20 August, 1976. The following speakers have been invited to read 45-minute papers:

P. Arminjon (Montreal); G. Capriz (Pisa); P. G. Ciarlet (Paris); G. Dahlquist (Stockholm); J. Descloux (Lausanne); J. Douglas (Chicago); H. Fujita (Tokyo); J. W. J. Hosken (Sunbury-on-Thames); H. B. Keller (Pasadena); N. N. Kuznetsov (Moscow); J. L. Lions (Paris); D. Loewenthal (Tel-Aviv); G. I. Marchuk (Novosibirsk); W. L. Miranker (Yorktown Heights); N. Nassif (Beirut); J. A. Nitsche (Freiburg); R. E. O'Malley Jr. (Tucson); E. L. Ortiz

(London); M. R. Osborne (Canberra); V. Pereyra (Caracas); P. Rabinowitz (Rehovot); P. Rozsa (Budapest); M. N. Spijker (Leiden); J. Stoer (Wurzburg); F. G. Tcheremissine (Moscow); R. Témam (Orsay); S. Treitel (Tulsa); A. Wakulicz (Warsaw); M. Yamaguti (Kyoto).

A special accommodation/air travel package has been arranged for about £80 from most United Kingdom cities (this does not include dinners). The registration fee is £25. Further information from Professor J. Miller, School of Mathematics, Trinity College, Dublin 2. Registrations must be received by 1 July, 1976.

MATHEMATICAL LANGUAGE AND THOUGHT

An international symposium on Mathematical Language and Mathematical Thought, organised by the Ecole Normale Supérieure (Paris) and the Centre Universitaire (Luxemburg), will be held on 9-10 June, 1976 in Luxemburg. Speakers will include Agazzi (Genova); Atlan (Paris); Dieudonné (Paris); Gauthier (Montreal); Hirsch (Brussels); Kleene (Madison);

Kuratowski (Warsaw); Levy-Lebland (Strasbourg); Martin-Lof (Stockholm); Muller (Heidelberg); Papy (Brussels); Thom (Paris). For further information write to Jean-Paul Pier, Séminaire de Mathématique, Centre Universitaire de Luxemburg, 162A, Avenue de la Faïencerie, Luxembourg.

UNIVERSITY OF RIYAD, RIYAD, SAUDI ARABIA

Teaching Positions in Mathematics

Applications are invited from candidates qualified in Analysis or Algebraic Topology for teaching positions in the Department of Mathematics.

For further information write to:—

Dean of Science,
University of Riyad,
Riyad,
Saudi Arabia.

LIBRARY

As many mathematical periodicals are being cancelled by university and other libraries, it seems an appropriate time to remind members that they are entitled to use the mathematics library at University College London which houses the L.M.S. collection of books and periodicals. A list of the periodicals can be found at the back of the membership list. The rules governing borrowing are as follows:—

- (1) L.M.S. members may borrow in person or by postal applications and have up to five items on loan at any one time. When an item is borrowed by post, the member is responsible for the return postage.
- (2) A photocopy of a periodical article will normally be provided when the cost of this is less than £1. Items borrowed may be retained for as

long as required, except that they must be returned at the Annual Recall in June, or if recalled for another reader.

- (3) Certain categories of material may not be lent, such as reference books, restricted loan items and current issues of periodicals. The loan of rare material is at the discretion of the L.M.S. Librarian.
- (4) When a photocopy request is made, the item together with the invoice will be sent to the L.M.S. member. The current charge is 4p per exposure plus postage.

Borrowing by members will be facilitated if application is made on a copy of the form printed opposite.

D. G. LARMAN

MEMBER'S APPLICATION TO BORROW FROM L.M.S./U.C. LIBRARY

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ANALYTICAL METHODS OF OPTIMIZATION

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University of Aston in Birmingham

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BOOKS RECEIVED FOR REVIEW IN THE *BULLETIN*

The following have been submitted for review in the *Bulletin* of the L.M.S. Not all books submitted are reviewed.

Optimization and optimal control (Proceedings of a Conference held at Oberwolfach, 1974). Editors: R. Bulirsch, W. Oettli, J. Stoer: pp.vii, 294. DM 28,—; US\$11·50. (Springer Lecture Notes in Mathematics 477, 1975.)

Ecole d'été de probabilités de Saint-Flour IV-1974. Editors: X. M. Fernique, J. P. Conze, J. Gani: pp.xi, 293. DM 28,—; US\$11·50. (Springer Lecture Notes in Mathematics 480, 1975.)

Differentiation of integrals in \mathbb{R}^n . M. de Guzmán: pp. xii, 226. DM 23,—; US\$9·50. (Springer Lecture Notes in Mathematics 481, 1975.)

Fonctions de plusieurs variables complexes II. (Séminaire F. Norguet, 1974-75.) Editor: F. Norguet: pp ix, 367. DM 32,—; US\$13·20 (Springer Lecture Notes in Mathematics 482, 1975.)

Geometry of Banach spaces—selected topics. J. Diestel: pp. xi, 282. DM 28,—; US\$11·50 (Springer Lecture Notes in Mathematics 485, 1975.)

Representations of AF-algebras and of the group $U(\infty)$. S. V. Strătilă, D. V. Voiculescu: pp. ix, 169. DM 20,—; US\$8·20 (Springer Lecture Notes in Mathematics 486, 1975.)

Etude geometrique des espaces vectoriels. J. Bair, R. Fourneau: pp. vii, 185. DM 20,—; US\$8·20. (Springer Lecture Notes in Mathematics 489, 1975.)

The geometry of metric and linear spaces. (Proceedings of a Conference 1974). Editor: L. M. Kelly: pp. x, 244. DM 25,—; US\$10·30. (Springer Lecture Notes in Mathematics 490, 1975.)

Invariants for real-generated uniform topological and algebraic categories. K. A. Broughan: pp. x, 197. DM 20,—; US\$8·20. (Springer Lecture Notes in Mathematics 491, 1975.)

Infinitary logic: In Memoriam Carol Karp. Editor: D. W. Kueker: pp. vi, 206. DM 23,—; US\$9·50. (Springer Lecture Notes in Mathematics 492, 1975.)

Foliated bundles and characteristic classes. F. W. Kamber, P. Tondeur: pp. xiii, 208. DM 23,—; US\$9·50 (Springer Lecture Notes in Mathematics 493, 1975.)

Order and potential resolvent families of kernels. A. Cornea, G. Licea: pp. iv, 154. DM 18,—; US\$7·40. (Springer Lecture Notes in Mathematics 494, 1975.)

Representations of permutation groups II. A. Kerber: pp. v, 175. DM 20,—; US\$8·20. (Springer Lecture Notes in Mathematics 495, 1975.)

Topics in K-theory. L. H. Hodgkin, V. P. Snaith: pp. iii, 294. DM 28,—; US\$11·50. (Springer Lecture Notes in Mathematics 496, 1975.)

Analyse harmonique sur les groupes de Lie. (Seminar Nancy-Strasbourg 1973-75.) Editors: P. Eymard, J. Faraut, G. Schiffmann, R. Takahashi: pp. vi, 710. DM 52,—; US\$21·40. (Springer Lecture Notes in Mathematics 497, 1975.)

Model theory and algebra. (A Memorial Tribute to Abraham Robinson). Editors: D. H. Saracino, V. B. Weispfennig: pp. viii, 463. DM 37,—; US\$15·20. (Springer Lecture Notes in Mathematics 498, 1975.)

ISILC—Logic Conference. (Proceedings of Colloquium, Kiel, 1974). Editors: G. H. Muller, A. Oberschelp, K. Potthoff: pp. vi, 651. DM 49,—; US\$20·10. (Springer Lecture Notes in Mathematics 499, 1975.)

Fibre bundles. D. Husemoller, 2nd Edition: pp. xv, 327. DM 41, 20; US\$16·90. (Springer Graduate Texts in Mathematics 20, 1975.)

Geometric functional analysis and its applications. R. B. Holmes: pp. x, 246. DM 39, 10; US\$16·10. (Springer Graduate Texts in Mathematics 24, 1975.)

Commutative algebra I. O. Zariski, P. Samuel: pp. xi, 329. DM 34, 50; US\$14·20 (corrected reprint). (Springer Graduate Texts in Mathematics 28, 1975.)

Differential equations and their applications. M. Braun: pp. xiv, 718. DM 36, 20; US\$14·80 (Springer Verlag, 1975.)

Admissible sets and structures. J. Barwise: pp. xiv, 394. DM 72,—; US\$29·60. (Springer Verlag, 1975.)

Embeddings and extensions in analysis. (Ergebnisse, Vol. 84). J. H. Wells, L. R. Williams: pp. vii, 108. DM 34, 90; US\$14·40. (Springer Verlag, 1975.)

Sums of independent random variables. (Ergebnisse, Vol. 82). V. V. Petrov: pp. x, 346. DM 92,—; US\$37·80. (Springer Verlag, 1975.)

Approximation of functions of several variables and imbedding theorems. (Grundlehren, Vol. 205). S. M. Nikol'skii (translated from the Russian by J. M. Danskin): pp. viii, 418. DM 108,—; US\$44·30, (Springer Verlag, 1975.)

- Mathematische optimierung.** E. Blum, W. Oettli: pp. ix, 413. DM 148,—; US\$60·70. (Springer Verlag, 1975.)
- Statistische tafeln zur multivariaten analysis.** H. Kres. pp. xviii, 431. DM 48,—; US\$19·70 (Springer Verlag, 1975.)
- Deterministic and stochastic optimal control.** W. H. Fleming, R. W. Rishel: pp. xiii, 222. DM 60, 60; US\$24·80. (Springer Verlag, 1975.)
- Kombinatorik.** M. Aigner: pp. xvii, 409. DM 36,—; US\$14·80. (Springer Verlag, 1975.)
- Topics in numerical analysis Vol. II.** Editor: John J. H. Miller (Proceedings of the Royal Irish Academy Conference on N.A. 1974): pp. xiv, 266. £9·20; US\$22·75. (Academic Press Inc., 1975.)
- The Delphi Method: techniques and applications.** Editors: Harold A. Linstone, Murray Turoff: pp. xvii, 620. Hard cover, US\$29·50; paper cover US\$16·50. (Addison-Wesley, Massachusetts, 1975.)
- Lie groups and Lie algebras.** Nicolas Bourbaki: pp. xvii, 450. £24·80. (Addison-Wesley, Massachusetts, 1975.)
- Theoretical statistics.** D. R. Cox, D. V. Hinkley: pp. xii, 511. £6. (Chapman & Hall, Ltd. 1974.)
- Sheaf theory.** B. R. Tennison (London Mathematical Society Lecture Note Series, 20): pp. vii, 164. £3·75. (Cambridge University Press, 1975.)
- Automatic continuity of linear operators.** A. M. Sinclair (London Mathematical Society Lecture Note Series, 21): pp. v, 92. £2·90. (Cambridge University Press, 1976.)
- Presentations of groups.** D. L. Johnson (London Mathematical Society Lecture Note Series, 22): pp. v, 204. £4·50. (Cambridge University Press, 1976.)
- Simple Noetherian rings.** J. Cozzens, C. Faith (Cambridge Tracts in Mathematics, 69): pp. xvii, 135. £5·50. (Cambridge University Press, 1975.)
- Applications of sieve methods to the theory of numbers.** C. Hooley (Cambridge Tracts in Mathematics, 70): pp. xiv, 122. £7·25. (Cambridge University Press, 1976.)
- Surfaces.** H. B. Griffiths: pp. xi, 120. £4·25. (Cambridge University Press, 1976.)
- The wave equation on a curved space-time.** F. G. Friedlander: pp. x, 282. £15. (Cambridge University Press, 1976.)
- Philosophical papers Vol. 1: Mathematics, matter and method.** H. Putnam: pp. xiv, 328. £7·75. (Cambridge University Press, 1975.)
- Groupes et algebras de Lie.** Nicolas Bourbaki: Collection actualités scientifiques et industrielles, 1364. Chapitre VII: Sous-algèbres de Cartan, éléments réguliers. Chapitre VIII: Algebras de Lie semi-simples déployées. pp. 272. 78 F. (Hermann, Paris, 1975.)
- Abstract analytic number theory.** J. Knopfmacher: pp. ix, 322. US\$29·50; Dfl. 75·00. (North-Holland Publishing Co., 1974.)
- Convex analysis and variational problems.** I. Ekeland, R. Teman: pp. ix, 401. US\$29·50; Dfl. 85·00. (North-Holland Publishing Co., 1975.)
- The theory of numbers.** Edited by S. Iyanaga: pp. xi, 541. US\$51·95; Dfl. 130·00. (North-Holland Publishing Co., 1975.)
- Graphs and hypergraphs.** C. Berge: pp. xiv, 528. US\$29·50; Dfl. 80·00. (North-Holland Publishing Co., 1975.)
- Discrete subgroups of Lie groups and applications to moduli: Bombay Colloquium. 1973.** Walter L. Baily and Others: pp. vi, 348. £7·95. (Oxford University Press, 1976.)
- Entailment.** (The Logic of relevance and necessity). A. R. Anderson and N. D. Belnap, Jr.: pp. xxxii, 542. £13·70. (Princeton University Press, 1976.)
- Banach algebras.** Richard D. Mosak: pp. vii, 172. £2·40. (The University of Chicago Press, 1975.)
- The elements of real analysis.** (2nd Edition). R. G. Bartle: pp. xv, 480. £10; US\$20·00. (John Wiley & Sons, 1976.)
- Optimization theory.** Magnus R. Hestenes: pp. xiii, 447. (John Wiley & Sons, 1975.)