JOURNAL of the AUSTRALIAN MATHEMATICAL SOCIETY

Series B — Applied Mathematics

Volume 23 Part 2 OCTOBER 1981

Set by the American Mathematical Society Printed by Cushing-Malloy, Inc., Ann Arbor, Michigan, U.S.A.

THE JOURNAL

The Journal of the Australian Mathematical Society began publication in 1959, and from 1975 appears in two series, Series A (Pure Mathematics and Statistics) and Series B (Applied Mathematics). Information about Series A may be found on the inside back cover.

SERIES B APPLIED MATHEMATICS

This series is published in volumes, comprising four parts, starting with Volume 19 Part I in 1975. From 1980, four parts are published annually. Subscriptions may be arranged through the Business Manager (see inside back cover). The annual cost for 1981 is A\$60 (Members A\$10).

It is the editorial policy of Series B to accept papers in any field of applied mathematics and related mathematical sciences. Novel applications of mathematics in real situations are welcomed. Authors are encouraged to write an introduction accessible to the whole applied mathematical community. Every effort will be made to publish suitable material with a minimum of delay.

Editor of the Journal, Series B

I. H. SLOAN, School of Mathematics, University of New South Wales, Kensington, NSW 2033 Australia.

Associate Editors

B. D. O. ANDERSON, Department of Electrical Engineering, University of Newcastle, Newcastle, NSW 2308 B. DAVIES, Department of Theoretical Physics, Australian National University, Canberra, ACT 2600

B.-S. GOH, Department of Mathematics University of W.A., Nedlands, WA 6009

J. IMBERGER, Department of Civil Engineering University of W.A., Nedlands, WA 6009 V. G. HART, Department of Mathematics, University of Queensland, St. Lucia, Qld 4067

M. R. OSBORNE, Department of Statistics, IAS, Australian National University, Canberra, ACT 2600

W. E. SMITH, School of Mathematics, University of N.S.W., Kensington, NSW 2033 University of Adelaide, Adelaide, SA 5000 R. B. POTTS, Department of Applied Mathematics.

C. A. HURST,

Physics,

University of Adelaide, Adelaide, SA 5001

Department of Mathematical

C. J. THOMPSON, Department of Mathematics, University of Melbourne, Parkville, Vic. 3052

Assistant Editors

J. D. FENTON, W. D. MCKEE, School of Mathematics, University of New South Wales, Kensington, NSW 2033 Australia.

Manuscripts (two copies) for publication should be sent to the editor or to an appropriate associate editor at the address given above. Such action is a representation by the author that the manuscript has not been copyrighted or published, and that it is not being considered for publication elsewhere.

Authors are asked to read the section "Preparation of Manuscripts" on the outside cover.

Irrespective of the number of authors, 100 free offprints of each paper are provided; additional offprints may be ordered at the expense of the authors.

Excessive costs incurred by the Society through corrections to or withdrawal of articles may be charged to the authors concerned.

Journal of the Australian Mathematical Society, Series B-Applied Mathematics (ISSN 0334-2700) is published quarterly for A\$60 (Members A\$10) per annum by the Australian Mathematical Society, Department of Mathematics, University of Queensland, St. Lucia, Qld 4067, Australia. Application to mail at second class postage rates is pending at Ann Arbor, Michigan 48106. Postmaster: Send address change notices to Dr V. G. Hart, Journal of the Australian Mathematical Society, Department of Mathematics, University of Queensland, St. Lucia, Qld 4067, Australia.