

JOURNAL of the AUSTRALIAN MATHEMATICAL SOCIETY

Series B — Applied Mathematics

Volume 34 Part 1
JULY 1992

Computer-controlled variable-structure systems	1
Xinghuo Yu and Renfrey B. Potts	
Controllability of neutral Volterra integrodifferential systems	18
K. Balachandran	
On the global stability of a delay epidemic model	26
Xiaodong Lin	
An extremal problem concerning finite dimensional subspaces of $C[a, b]$ pertinent in signal theory	35
P. H. Halpern, R. N. Mohapatra, P. J. O'Hara and R. S. Rodriguez	
On generalised convex mathematical programming	43
V. Jeyakumar and B. Mond	
Boundary conditions for approximate differential equations	54
A. J. Roberts	
The transition through resonance of a nonlinear non-autonomous system	81
P. B. Chapman	
Asymptotic distribution of singularities of solutions of Matrix-Riccati dif- ferential equations	112
Gerhard Jank	

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

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). Series B is published in volumes comprising four quarterly parts. Information about Series A and other publications of the Society may be found on the inside back cover.

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 especially welcomed. All papers should include some indication of applicability, and an introduction that can be understood by non-specialist readers from the whole applied mathematical community.

Editor of the Journal, Series B

E. O. TUCK, Applied Mathematics Department, University of Adelaide, G.P.O. Box 498, Adelaide, S.A. 5001, Australia.

Associate Editors

B. D. CRAVEN
Department of Mathematics
University of Melbourne
Parkville Vic 3052

M. R. OSBORNE
Department of Statistics
Institute of Advanced Studies
A.N.U., P.O. Box 4
Canberra A.C.T. 2600

R. H. J. GRIMSHAW
School of Mathematics
University of N.S.W.
Kensington N.S.W. 2033

C. E. M. PEARCE
Applied Mathematics Department
University of Adelaide
G.P.O. Box 498
Adelaide S.A. 5001

J. M. HILL
Department of Mathematics
University of Wollongong
P.O. Box 1144
Wollongong N.S.W. 2500

J. RICKARD
Department of Computing
and Mathematics
Deakin University
Geelong Vic. 3217

C. A. HURST
Department of Physics and
Mathematical Physics
University of Adelaide
G.P.O. Box 498
Adelaide S.A. 5001

I. H. SLOAN
School of Mathematics
University of N.S.W.
Kensington N.S.W. 2033

P. KLOEDEN
Department of Computing
and Mathematics
Deakin University
Geelong Vic. 3217

W. W. WOOD
Department of Mathematics
University of Melbourne
Parkville Vic. 3052

Assistant Editors

E. A. COUSINS, J. VAN DER HOEK, Applied Mathematics Department, University of Adelaide, G.P.O. Box 498, Adelaide, S.A. 5001, Australia.

Manuscripts (three 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\$131 (Members A\$18) per annum by the Australian Mathematical Society, Department of Mathematics, University of Queensland, Qld. 4072, Australia. Second class postage is paid at Ann Arbor, Michigan 48106. Postmaster: Send address change notices to Dr B. D. Jones, Journal of the Australian Mathematical Society, Department of Mathematics, University of Queensland, Qld. 4072, Australia.