

PROCEEDINGS
OF
THE ROYAL SOCIETY OF EDINBURGH

PROCEEDINGS
OF
THE ROYAL SOCIETY
OF EDINBURGH

Section A (Mathematics)

VOL. 106

1987

PUBLISHED BY
THE ROYAL SOCIETY OF EDINBURGH

22 GEORGE STREET
EDINBURGH EH2 2PQ

1987

NOTES FOR AUTHORS

Papers to be considered for publication should be sent to the Publications Secretary, The Royal Society of Edinburgh, 22 George Street, Edinburgh EH2 2PQ, Scotland.

A paper by more than one author must be submitted with a statement, signed by each author, to the effect that the paper in its entirety is approved by the joint authors and naming the author who will be responsible for correspondence with the Society.

Authors will receive fifty (50) offprints free of charge, this number to be shared between joint authors. Additional offprints may be obtained, in units of fifty, at a fixed scale of prices given on a form which will be attached to the proof.

In view of the high cost of publication, authors must prepare their papers as concisely as possible. Manuscripts should be submitted in triplicate and preferably should be typewritten on one side of A4 paper, double spaced with adequate margins. Authors are advised to retain a copy of their papers as the Society cannot accept responsibility for any loss.

Every paper must be accompanied by a Synopsis, in general not exceeding two hundred words, which will be printed in small type at the beginning of the paper.

References within the text should be indicated by bold numbers in square brackets, e.g. [2] or [3, p. 167]. For style of references at end of text, see recent issues of *Proceedings A*.

Authors should ensure that punctuation carries through the mathematics in the proper manner. The use of hyphens should be consistent. In the text avoid such abbreviations as: iff, w.r.t., a.e., \forall , \exists , and thm.

Footnotes should be avoided. Headings should not be underlined. Every effort should be made to avoid complicated subscripts, superscripts, ranges of summation and integration. Horizontal fraction signs should normally be avoided: use either solidus signs / or negative exponents. Replace $e^{(\dots)}$ by $\exp[\dots]$ if the expression in parenthesis is complicated. Simple formulae should *not* be displayed unless they require a formula number. Use the prime ' or d/dx , but preferably not a dot, to denote ordinary differentiation. If possible use subscripts to denote partial differentiation of $\partial/\partial x$ etc. Bars reaching over several letters should be avoided: use $\sqrt{}$ or the exponent 1/2 for the square root. Sub-subscripts and super-superscripts should be avoided if possible: bars and other devices over indices cannot be supplied.

Note that confusion very often arises between 1 (one) and *l* (ell); 0 (zero) and *O* (Capital oh); \circ (composition) and *o* (lower case oh); x and \times ; U and \cup ; c and \subset ; \in (belongs to) and ϵ (epsilon); \emptyset (empty set) and ϕ (phi); $_1$ and comma $,$; prime ' and 1 ; K and κ ; p and ρ ; w and ω ; \sum (summation) and Σ (capital sigma); \prod (product) and Π (capital pi); v (lower case vee) and ν (Greek nu); a (lower case a) and α (Greek alpha); y (lower case y) and γ (Greek gamma). Please provide pencilled indicators in the margin where necessary. Where capitals and lower case of the same shape have to be printed, please indicate accordingly. Show italics by single underlining (except in the formulae which are set up normally in italics), bold face/Clarendon by wavy underlining and Greek by red underlining.

The statement of theorems, lemmas, et cetera, will be printed in italics and should be underlined. In definitions key words only should be in italics.

Equations should be indicated by numbers in parentheses in the right-hand margin.

Proofs of papers will be sent to the author. The cost of *authors' corrections in excess of five per cent* of the printers' charge for the setting of a particular paper will be charged to the author.

Copyright

© 1987 The Royal Society of Edinburgh and the authors of individual papers.

It is the policy of the Royal Society of Edinburgh not to charge any royalty for the production of a single copy of any one article made for private study or research. Requests for the copying or reprinting of any article for any other purpose should be sent to the Royal Society of Edinburgh, 22/24 George Street, Edinburgh EH2 2PQ

CONTENTS

JAN S. ROGULSKI		
Quasilinear Hamiltonian systems		195
A. D. D. CRAIK		
A note on the exact solutions for non-conservative three-wave resonance		205
B. D. SLEEMAN and E. TUMA		
Comparison principles for strongly coupled reaction-diffusion equations		209
T. F. BANCHOFF and P. J. GIBLIN		
Global theorems for symmetry sets of smooth curves and polygons in the plane		221
BERND SCHULTZE		
A fourth order limit-3 expression with nonempty essential spectrum		233
G. AUBERT		
On a counterexample of a rank 1 convex function which is not polyconvex in the case $N = 2$		237
J. KRÁL		
Boundary regularity and normal derivatives of logarithmic potentials		241
R. B. PARIS and A. D. WOOD		
Results old and new on the hyper-Bessel equation		259
H. S. HASSAN		
Floquet solutions of non-linear ordinary differential equations		267
F. M. ARSCOTT		
Studies in multiplicative solutions to linear differential equations		277
ANDREAS STAHEL		
A remark on the equation of a vibrating plate		307
M. A. KON, A. G. RAMM and L. A. RAPHAEL		
Equisummability for linear operators in Banach spaces		315
J. HULSHOF		
An elliptic-parabolic free boundary problem: continuity of the interface		327
URI ELIAS		
Minors of the wronskian of the differential equation $L_n y + p(x)y = 0$		341
J. NORBURY and A. M. STUART		
Volterra integral equations and a new Gronwall inequality (Part I: The linear case)		361
J. NORBURY and A. M. STUART		
Volterra integral equations and a new Gronwall inequality (Part II: The nonlinear case)		375