

VOLUME 42 (SERIES II) PART 3
OCTOBER 1999

ISSN 0013 0915

Proceedings
of the
Edinburgh
Mathematical
Society

OXFORD UNIVERSITY PRESS

PROCEEDINGS

OF THE

EDINBURGH MATHEMATICAL SOCIETY

EDITORIAL BOARD

C. M. CAMPBELL (Managing Editor)

A. M. ETHERIDGE (Stochastic Analysis)
L. O'CARROLL (Algebra)
B. STRAUGHAN (Applied Mathematics)
G. A. WATSON (Numerical Analysis)

C. MACLACHLAN (Topology)
R. W. K. ODONI (Number Theory)
A. S. WASSERMANN (Analysis)

I. TWEDDLE (Reviews Editor)

CONSULTING EDITORS

K. R. DAVIDSON
University of Waterloo
D. MCDUFF
SUNY at Stony Brook
W. D. NEUMANN
University of Melbourne
M. J. D. POWELL
University of Cambridge
C. A. STUART
Swiss Federal Institute of Technology, Lausanne

K. R. GOODEARL
University of California, Santa Barbara
A. J. MACINTYRE
University of Edinburgh
G. PISIER
Universite Paris VI
C. E. PRAEGER
University of Western Australia
D. ZAGIER
Max-Planck-Institut für Mathematik, Bonn

Frequency One volume of the *Proceedings of the Edinburgh Mathematical Society* is published annually, consisting of three issues in February, June and October.

Subscriptions The subscription rates for 1999 are: £110 in the UK and Europe, and US\$215 in the rest of the world. These prices include air-speeded delivery to Australia, Canada, India, Japan, New Zealand, and the USA. Delivery elsewhere is by surface post, although airmail rates can be quoted on request.

Payment is required with all orders and may be made by the following methods:

Cheque (made payable to Oxford University Press)
National Girobank (account 500 1056)
Credit cards (Access, Visa, American Express, Diners Club)
UNESCO Coupons.

Bankers: Barclays Bank plc, PO Box 333, Oxford, UK Code 20-65-18, Account 00715654.

Requests for sample copies, subscription enquiries, orders and changes of address should be sent to the Journals Subscription Department, Oxford University Press, Walton Street, Oxford OX2 6DP, UK.

Back numbers Copies of the current volume and the two immediately preceding volumes can be obtained from Oxford University Press at the above address. Earlier volumes in Series II (from Volume 15 onwards) can be obtained from William Dawson and Sons, Cannon House, Park Farm Road, Folkestone, Kent, CT19 5EE, UK.

Series I comprised forty-four volumes published from 1884 to 1926. Enquiries regarding back numbers of Series I and Volumes 1-14 of Series II should be addressed to Kraus Reprint Ltd., Route 100, Millwood, NY 10546, USA.

COPYRIGHT © 1999 THE EDINBURGH MATHEMATICAL SOCIETY

All rights reserved; no part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise without either the prior written permission of the Publishers, or a licence permitting restricted copying issued in the UK by the Copyright Licensing Agency Ltd, 90 Tottenham Court Road, London, W1P 9HE, or in the USA by the Copyright Clearance Center, 27 Congress Street, Salem, Mass 01970.

Published by Oxford University Press, Walton Street, Oxford, OX2 6DP, UK.

Web address: <http://www.oup.co.uk/edmath/>

Printed in Great Britain by Bell and Bain Ltd., Glasgow

PROCEEDINGS
OF THE
EDINBURGH MATHEMATICAL SOCIETY

EDITED BY

C. M. CAMPBELL	A. M. ETHERIDGE
C. MACLACHLAN	L. O'CARROLL
R. W. K. ODONI	B. STRAUGHAN
I. TWEDDLE	A. S. WASSERMANN
G. A. WATSON	

CONSULTING EDITORS

K. R. DAVIDSON	K. R. GOODEARL
D. MCDUFF	A. J. MACINTYRE
W. D. NEUMANN	G. PISIER
M. J. D. POWELL	C. E. PRAEGER
C. A. STUART	D. ZAGIER

VOLUME 42 (SERIES II)
1999

OXFORD UNIVERSITY PRESS

COPYRIGHT © 1999 THE EDINBURGH MATHEMATICAL SOCIETY

Printed in Great Britain by
Bell and Bain Ltd, Glasgow

CONTENTS

	<i>Page</i>
IAN M. ABERBACH AND BRIAN MACCRIMMON Some results on test elements	541
RAVI P. AGARWAL, MARTIN BOHNER AND PATRICIA J. Y. WONG Positive solutions and eigenvalues of conjugate boundary value problems	349
H. AYIK AND N. RUŠKUC Generators and relations of Rees matrix semigroups	481
P. BANDIERI, A. C. KIM AND M. MULAZZANI On the cyclic coverings of the knot 5_2	575
G. BARBATIS On the approximation of Finsler metrics on Euclidean domains	589
MICHAEL BATTY A criterion for hyperbolicity	445
V. V. BAVULA AND T. H. LENAGAN A Bernstein-Gabber-Joseph theorem for affine algebras	311
MARTIN BOHNER, see RAVI P. AGARWAL	
BOOK REVIEWS	209, 425, 655
A. BOUMENIR AND B. CHANANE Computing eigenvalues of Sturm-Liouville systems of Bessel type	257
RACHEL CAMINA Some natural subgroups of the Nottingham group	333
J. CARR AND R. M. DUNWELL Asymptotic behaviour of solutions to the Becker-Döring equations	415
MARÍA J. CARRO, STEFAN ERICSSON AND LARS-ERIK PERSSON Real interpolation for divisible cones	285
GIANFRANCO CASNATI The cover associated to a (1,3)-polarized bielliptic abelian surface and its branch locus	375
JOAN CERDÀ AND JOAQUIM MARTÍN Interpolation restricted to decreasing functions and Lorentz spaces	243
B. CHANANE, see A. BOUMENIR	
SOON-YEONG CHUNG Uniqueness in the Cauchy problem for the heat equation	455
FERNANDO COBOS, PEDRO FERNÁNDEZ-MARTÍNEZ, ANTÓN MARTÍNEZ AND YVES RAYNAUD On duality between K - and J - spaces	43
M. J. CRABB AND C. M. MCGREGOR Faithful, irreducible $*$ -representations for group algebras of free products	559

J. CRUZ-SAMPEDRO	Unique continuation at infinity of solutions to Schrödinger equations with complex-valued potentials	143
R. M. DUNWELL, see J. CARR		
ALBERTO ELDUQUE AND JOSÉ M. PÉREZ-IZQUIERDO	Composition algebras of degree two	641
STEFAN ERICSSON, see MARÍA J. CARRO		
STEVEN N. EVANS	Random spanning trees of Cayley graphs and an associated compactification of semigroups	611
PEDRO FERNÁNDEZ-MARTÍNEZ, see FERNANDO COBOS		
TIM N. T. GOODMAN, HALIL ORUÇ AND GEORGE M. PHILLIPS	Convexity and generalized Bernstein polynomials	179
A. R. -GRANDJEAN AND M. LADRA	$H_2(T, G, \partial)$ and central extensions for crossed modules	169
P. Z. HERMANN, E. F. ROBERTSON AND N. RUŠKUC	On products of all elements of a finite semigroup	551
SHIN-ICHIRO IAI	Action of finite groups on Rees algebras and Gorensteinness in invariant subrings	393
MARCEL JACKSON	Some undecidable embedding problems for finite semigroups	113
SUDESH K. KHANDUJA AND JAYANTI SAHA	Generalized Hensel's lemma	469
A. C. KIM, see P. BANDIERI		
WINFRIED KOHNEN	Period polynomials and congruences for Hecke eigenvalues	217
M. KOVALYOV AND K. M. LEE	Interaction of some meromorphic solutions of the KdV equation	341
M. LADRA, see A. R. -GRANDJEAN		
MARK V. LAWSON	The structure of O - E -unitary inverse semigroups I: the monoid case	497
JONG BUM LEE	Nilpotent action by an amenable group and Euler characteristic	77
K. M. LEE, see M. KOVALYOV		
T. H. LENAGAN, see V. V. BAVULA		
BRIAN MACCRIMMON, see IAN M. ABERBACH		
BOJAN MAGAJNA	The minimal operator module of a Banach module	191
JOAQUIM MARTÍN, see JOAN CERDÀ		
ANTÓN MARTÍNEZ, see FERNANDO COBOS		
C. M. MCGREGOR, see M. J. CRABB		
V. METAFTSIS	An algorithm for stem products and one-relator groups	37
LAJOS MOLNÁR AND BORUT ZALAR	Reflexivity of the group of surjective isometries on some Banach spaces	17

M. MULAZZANI, see P. BANDIERI	
R. W. K. ODONI On additive polynomials over a finite field	1
TIMUR OIKHBERG AND GILLES PISIER The “maximal” tensor product of operator spaces	267
HALIL ORUÇ, see TIM N. T. GOODMAN	
HALIL ORUÇ AND GEORGE M. PHILLIPS A generalization of the Bernstein polynomials	403
CORNEL PASNICU Extensions of AH algebras with the ideal property	65
JOSÉ M. PÉREZ-IZQUIERDO, see ALBERTO ELDUQUE	
LARS-ERIK PERSSON, see MARÍA J. CARRO	
GEORGE M. PHILLIPS, see TIM N. T. GOODMAN	
GEORGE M. PHILLIPS, see HALIL ORUÇ	
GILLES PISIER, see TIMUR OIKHBERG	
DIMITRIOS POULAKIS Bounds for the size of integral solutions to $Y^m = f(x)$	127
JÜRGEN PRESTIN AND EWALD QUAK Optimal functions for a periodic uncertainty principle and multiresolution analysis	225
EWALD QUAK, see JÜRGEN PRESTIN	
YVES RAYNAUD, see FERNANDO COBOS	
LAURENT RIGAL Normalité de certains anneaux déterminantiels quantiques	621
E. F. ROBERTSON, see P. Z. HERMANN	
N. RUŠKUC, see H. AYIK	
N. RUŠKUC, see P. Z. HERMANN	
JAYANTI SAHA, see SUDESH K. KHANDUJA	
MAKOTO SAKAI Linear combinations of harmonic measures and quadrature domains of signed measures with small supports	433
PAUL TAPPER C^* -ideals generated by polynomials	305
JOSÉ GÓMEZ TORRECILLAS Gelfand-Kirillov dimension of multi-filtered algebras	155
V. R. VAREA Lower semimodular Lie algebras	521
MING-XIN WANG Finite travelling waves for semilinear parabolic systems	83
PAUL WAUTERS The semicentre of a group algebra	95
PATRICIA J. Y. WONG, see RAVI P. AGARWAL	
BORUT ZALAR, see LAJOS MOLNÁR	