

ISSN 0017 0895

Glasgow Mathematical Journal

Volume 40 Part 3 September 1998

OXFORD UNIVERSITY PRESS

GLASGOW MATHEMATICAL JOURNAL

Editorial Board

A. W. Mason *Editor-in-Chief*

I. Anderson	H. R. Dowson	R. W. K. Odoni
C. Athorne	R. Hollerbach	P. F. Smith
A. J. Baker	S. Merkulov	W. W. Stothers
S. D. Cohen	W. D. Munn	J. R. L. Webb

The *Glasgow Mathematical Journal* is the continuation of the *Proceedings of the Glasgow Mathematical Association*. It was founded in 1952 by the late Professor T. M. MacRobert and published with the support of the University Court of the University of Glasgow. The present name was adopted in 1967 and since 1987 the Journal has been owned by the Glasgow Mathematical Journal Trust, an independent charitable trust (Scottish Charity Number SC006017).

Frequency. The *Glasgow Mathematical Journal* publishes three issues each year (in January, May and September) forming a volume of approximately 380 pages.

Subscriptions. The subscription rates for 1998 are: £80 in the U.K. and Europe, and US\$150 in the rest of the world.

These prices include air-speeded delivery to Australia, Canada, India, Japan, New Zealand and the U.S.A. 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 card (Access, Visa, American Express, Diners Club)
- UNESCO Coupons

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

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

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 can be obtained from William Dawson and Sons, Cannon House, Park Farm Road, Folkestone, Kent CT19 5EE, U.K.

Submission of papers. Information for authors is to be found on the inside back cover.

ISSN 0017 0895

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

Typeset by Variorum Publishing Ltd, Rugby.

Printed and bound in Northern Ireland by The Universities Press (Belfast) Ltd.

© Glasgow Mathematical Journal Trust 1998.

GLASGOW MATHEMATICAL JOURNAL
VOLUME 40

Glasgow Mathematical Journal

Volume 40 1998

OXFORD UNIVERSITY PRESS

GLASGOW MATHEMATICAL JOURNAL

Editorial Board

A. W. Mason *Editor-in-Chief*

I. Anderson	H. R. Dowson	R. W. K. Odoni
C. Athorne	R. Hollerbach	P. F. Smith
A. J. Baker	S. Merkulov	W. W. Stothers
S. D. Cohen	W. D. Munn	J. R. L. Webb

ISSN 0017 0895

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

Typeset by Variorum Publishing Ltd, Rugby.

Printed and bound in Northern Ireland by The Universities Press (Belfast) Ltd.

© Glasgow Mathematical Journal Trust 1998.

CONTENTS OF VOLUME 40

Akhavan-Malayeri, Mehri and Rhemtulla, Akbar , Commutator length of abelian-by-nilpotent groups	117
Alaminos, J., Choi, Y. S., Kim, S. G. and Payá, R. , Norm attaining bilinear forms on spaces of continuous functions	359
Arroyo, J., Barros, M. and Garay, O.J. , Spectral decomposition of spherical immersions with respect to the Jacobi operator	205
Ballester-Bolinches, A., Bechtell, H. and Ezquerro, L. M. , On Prefrattini residuals	187
Barros, M. , <i>See</i> Arroyo, J., Barros, M. and Garay, O. J.	205
Barros, Manuel , Free elasticae and Willmore tori in warped product spaces	265
Bechtell, H. , <i>See</i> Ballester-Bolinches, Bechtell, H. and Ezquerro, L. M.	187
Birkenmeier, Gary F., Kim, Jin Yong and Park, Jae Keol , A characterization of minimal prime ideals	223
Brick, Stephen G. and Corson, Jon M. , Dehn functions and complexes of groups	33
Burenkov, Viktor, Schulze, Bert-Wolfgang and Tarkhanov, Nikolai N. , Extension operators for Sobolev spaces commuting with a given transform	291
Carreras, Francisco J., Giménez, Fernando and Miquel, Vicente , Bounded mean curvature isometric immersions of a compact Riemannian manifold with image contained in a tube	97
Chatters, A.W. , Rings which are nearly principal ideal domains	343
Chen, Hui-Xiang , Cleft extensions for a Hopf algebra $k_q[X, X^{-1}, Y]$	147
Choe, Boo Rim and Lee, Young Joo , On \mathcal{M} -harmonic Block functions and their Carleson measures	273
Choi, Kun Wook , n -Reflexivity for linear spaces of operators	385
Choi, Y. S. , <i>See</i> Alaminos, J., Choi, Y. S., Kim, S. G. and Payá, R.	359
Corson, Jon M. , <i>See</i> Brick, Stephen G. and Corson, Jon M.	33
De Smet, P. J., Dillen, F., Verstraelen, L. and Vrancken, L. , The normal curvature of totally real sub manifolds of $S^6(1)$	199
de Weger, Benjamin M.M. , On the fourth-power free part of $x^2 + 2$	299
Dillen F. , <i>See</i> De Smet, P. J., Dillen, F., Verstraelen, L. and Vrancken, L.	199
Dontchev, Julian and Noiri, Takashi , A note on Saleh's paper 'Almost continuity implies closure continuity'	473
Duggal, B.P. , On the spectrum of n -tuples of p -hyponormal operators	123
Ellis, Graham , On Peiffer central series	177
Ermet, Olaf , A lower bound on the homological bidimension of a non-unital C^* -algebra	435
Ezquerro, L. M. , <i>See</i> Ballester-Bolinches, A., Bechtell, H. and Ezquerro, L.M.	187
Garay, O.J. , <i>See</i> Arroyo, J., Barros, M. and Garay, O.J.	205
Gerth III, Frank , On 2-class field towers for quadratic number fields with 2-class group of type (2,2)	63
Giménez, Fernando , <i>See</i> Carreras, Francisco J., Giménez, Fernando and Miquel, Vicente	97
Higgs, R. J. , On projective characters of the same degree	431
Höfling, Burkhard , Periodic radical products of two locally nilpotent subgroups	241
Jean, In Ho , On joint essential spectra of doubly commuting n -tuples of p -hyponormal operators	353

CONTENTS

Katriňák, Tibor , Free distributive P-algebras: a new approach	333
Kellay, K. , Existence de sous-espaces hyper-invariants	133
Kim, Dae San , Gauss sums for $U(2n, q^2)$	79
Kim, Jin Yong , <i>See</i> Birkenmeier, Gary F., Kim, Jin Yong and Park, Jae Keol	223
Kim, S. G. , <i>See</i> Alaminos, J., Choi, Y.S., Kim, S. G. and Payá, R.	359
Ladra, M. , <i>See</i> R.-Grandjean, A. and Ladra, M.	323
Lee, Min Ho , Hilbert cusp forms and special values of Dirichlet series of Rankin type	71
Lee, Young Joo , <i>See</i> Choe, Boo Rim and Lee, Young Joo	273
Malfait, Wim and Szczepański, Andrzej , Almost Bieberbach groups with (in)finite outer automorphism group	47
Marcum, Howard J. , Cone length of the exterior join	445
May, Coy L. , Finite 3-groups acting on bordered surfaces	463
Miller, T. L. and Miller, V. G. , an operator satisfying Dunnford's condition (C) but without Bishop's property (β)	427
Miller, V. G. , <i>See</i> Miller, T. L. and Miller V. G.	427
Miquel, Vicente , <i>See</i> Carreras, Francisco J., Giménez, Fernando and Miquel, Vicente	97
Nicholson, W. F. and Yousif, M. F. , Annihilators and the CS-condition	213
Nicholson, W. F. and Yousif, M. F. , Corrigendum	475
Noiri, Takashi , <i>See</i> Dontchev, Julian and Noiri, Takashi	473
Nuño Ballesteros, J. J. and Saia, M. J. , Multiplicity of Boardman strata and deformations of map germs	21
O'Regan, Donal , A continuation theory for weakly inward maps	311
Park, Jae Keol , <i>See</i> Birkenmeier, Gary F., Kim, Jin Yong and Park, Jae Keol	223
Payá, R. , <i>See</i> Alaminos, J., Choi, Y. S., Kim, S. G. and Payá, R.	359
Pogorzały, Zygmunt , Algebras stably equivalent to selfinjective algebras whose Auslander-Reiten quivers consist only of generalized standard components	1
Pugach, L. I. , On the C-projectivity of ideals in Banach algebras	143
R-Grandjean, A. and Ladra, M. , On totally free crossed modules	323
Rhemtulla, Akbar , <i>See</i> Akhavan-Malayeri, Mehri and Rhemtulla, Akbar	117
Robdera, Mangatiana A. and Saab, Paulette , Convolution operators associated with vector measures	367
Saab, Paulette , <i>See</i> Robdera, Mangatiana A. and Saab, Paulette	367
Saia, M. J. , <i>See</i> Nuño Ballesteros, J. J. and Saia, M. J.	21
Saleh, Mohammad , Almost continuity implies closure continuity	263
Schoissengeier, J. S. , A metrical result on the discrepancy of $(n\alpha)$	393
Schulze, Bert-Wolfgang , <i>See</i> Burenkov, Victor, Schulze, Bert-Wolfgang and Tarkhanov, Nikolai, N.	291
Smith, Howard and Wiegold, James , Groups isomorphic to their non-nilpotent subgroups	257
Sun, Huafei , Totally real pseudo-umbilical submanifolds of a quaternion space form	109
Szczepański, Andrzej , <i>See</i> Malfait, Wim and Szczepański, Andrzej	47
Tarkhanov, Nikolai N. , <i>See</i> Burenkov, Viktor, Schulze, Bert-Wolfgang and Tarkhanov, Nikolai N.	291
Verstraelen, L. , <i>See</i> DeSmet, P. J., Dillen, F., Verstraelen, L. and Vrancken, L.	199
Vrancken, L. , <i>See</i> DeSmet, P. J., Dillen, F., Verstraelen, L. and Vrancken, L.	199
Wiegold, James , <i>See</i> Smith, Howard and Wiegold, James	257

CONTENTS

Wilkins, Elwood , An equivalence induced by Ext and Tor applied to the finitistic weak dimension of coherent rings	167
Ximin, Lin , Totally complex submanifolds of the Cayley projective plane	161
Yang, Youngoh , On a class of operators	237
Yeh, Lina , Addendum	297
Yousif, M.F. , See Nicholson, W. K. and Yousif, M. F.	213
Yousif, M. F. , See Nicholson, W. K. and Yousif, M. F.	475