Proceedings of the American Mathematical Society
This journal is devoted entirely to research in pure and applied mathematics.

Editorial Policy

To be published in the Proceedings, a paper must be correct, new, nontrivial and significant. Further, it must be well written and of interest to a substantial number of mathematicians. Piecemeal results, such as an inconclusive step toward an unproved major theorem or a minor variation on a known result, are in general not acceptable for publication. Proceedings Editors shall solicit, and encourage publication of, worthy papers of length not exceeding 15 typed pages.

Very short notes not to exceed two printed pages are also accepted, and appear under the heading SHORTER NOTES. Items deemed suitable include an elegant new proof of an important and well-known theorem, an illuminating example or counterexample, or a new viewpoint on familiar results. New results, if of a brief and striking character, might also be acceptable, though in general a paper which is merely very short will not be suitable for the SHORTER NOTES department.

On January 23, 1979, the Council of the American Mathematical Society abolished blind refereeing as a policy for the Proceedings, but decided that any author who so requests and who provides a blind copy of a manuscript will have the manuscript refereed blind.

Two copies of a manuscript should be submitted. If blind refereeing is intended, one should be complete and one blind, and then the latter will be sent to the referee without disclosure of the author's name or institution.

SUBSCRIPTION INFORMATION. PROCEEDINGS OF THE AMERICAN MATHEMATICAL SOCIETY is published monthly. Subscription prices for Volumes 105–107 (1989) are $413 list; $330 institutional member; $248 individual member. A late charge of 10% of the subscription price will be imposed upon orders received from nonmembers after January 1 of the subscription year. Subscribers outside the United States and India must pay a postage surcharge of $25: subscribers in India must pay a postage surcharge of $38. Expedited delivery to destinations in North America—$30; elsewhere—$40. Combination paper and microfiche subscription prices are $549 list; $439 institutional member. Microfiche of each issue will be mailed the fastest way possible before the camera copy is sent to the printer. Microfilm subscriptions may be purchased from University Microfilms International, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

BACK NUMBER INFORMATION. Back number prices per volume are for Volumes 1–89, $113 list, $90 institutional; for Volumes 90–92, $129 list; $103 institutional member; for Volumes 93–95, $173 list; $136 institutional member; for Volumes 96–98, $191 list; $153 institutional members; for Volumes 99–104, $202 list; $162 institutional member.

Subscriptions and orders for publications of the American Mathematical Society should be addressed to American Mathematical Society, P. O. Box 1571, Annex Station, Providence, R. I. 02901-1571. All orders must be accompanied by payment. Other correspondence should be addressed to P. O. Box 6248, Providence, R. I. 02940.

PROCEDINGS of the American Mathematical Society is published monthly by the American Mathematical Society at 201 Charles Street, Providence, R. I. 02904. Second-class postage is paid at Providence, Rhode Island. Postmaster: Send address changes to PROCEEDINGS, American Mathematical Society, P. O. Box 6248, Providence, R. I. 02940.

Copyright ©1989 American Mathematical Society. All rights reserved.

Printed in the United States of America

Information on Copying and Reprinting can be found at the back of this journal.

The paper used in this journal is acid-free and falls within the guidelines established to ensure permanence and durability.

This publication was typeset using AMSTeX, the American Mathematical Society's TeX macro system.
Manuscript Information

1. Articles submitted for publication should be typewritten, double spaced, and no more than 15 (8½" x 11") pages long. The Manual for Authors, available from the Society, should be consulted for symbols and style conventions. Authors should take the greatest possible care in preparing the original manuscript. Hand drawn symbols are satisfactory, if clearly done; directions to the printer should be included where necessary on a separate sheet. Authors must keep complete copies of their manuscripts, and editors will acknowledge receipt. To encourage the submission of manuscripts in electronic form using TeX and the AMS-TeX macro package, the Executive Committee of the Council has adopted a policy that allows for accelerating the publication date of such manuscripts by as much as 20 weeks, which is approximately equal to the time normally needed by the Society for copyediting, typesetting, and proofreading an average manuscript.

2. The first page should consist of a descriptive title, followed by an abstract which summarizes the article in language suitable for workers in the general field (algebra, analysis, etc.). The descriptive title should be short, but informative; useless or vague phrases such as "some remarks about" or "concerning" should be avoided. The abstract should be at least one complete sentence, and at most 150 words. Included with the footnotes to the paper, but placed before the first footnote, there should be first the 1980 Mathematics Subject Classification (1985 Revision) representing the primary and secondary subjects of the article. This may be followed by a list of key words and phrases describing the subject matter of the article and taken from it. A list of the numbers may be found in the annual subject index of Mathematical Reviews, published with the December issue starting in 1984.

3. A Copyright Transfer Agreement is required before a paper will be published in the Proceedings. A copy of the form is sent with the acknowledgement of receipt of manuscript from the Providence office of the Society. Authors are urged to return the forms immediately to prevent delays in processing and publishing of the manuscript.

OFFPRINTS AND ADDRESS CHANGES. Any inquiries concerning a paper which has been accepted for publication, including information regarding offprints or changes of address for mailing proof, should be sent directly to the Editorial Department, American Mathematical Society, P.O. Box 6248, Providence, Rhode Island 02940.

GALLEY PROOF. When a paper with more than one author has been accepted for publication, only one set of galley proof will be sent. Joint authors should, therefore, indicate on the original manuscript which of them should receive galley proof in the event that the manuscript is accepted for publication.

BACKLOG. 150 pages. Papers currently being accepted by the editors will be published in 12–14 months.

COPYING AND REPRINTING. Individual readers of this publication, and nonprofit libraries acting for them are permitted to make fair use of the material, such as to copy an article for use in teaching or research. Permission is granted to quote brief passages from this publication in reviews provided the customary acknowledgement of the source is given.

Republication, systematic copying, or multiple reproduction of any material in this publication (including abstracts) is permitted only under license from the American Mathematical Society. Requests for such permission should be addressed to the Executive Director, American Mathematical Society, P.O. Box 6248, Providence, Rhode Island 02940.

The appearance of the code on the first page of an article in this journal indicates the copyright owner's consent for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law, provided that the fee of $1.00 plus $.25 per page for each copy be paid directly to Copyright Clearance Center, Inc., 21 Congress Street, Salem, Massachusetts 01970. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotion purposes, for creating new collective works, or for resale.
Submission of Manuscript

Send papers directly to one of the editors listed under the subject field of the paper. The numbers in parentheses are the first two digits of major classification from the 1980 Mathematics Subject Classification (1985 Revision) and describe the fields being handled by the editor.

LOGIC AND FOUNDATIONS (03 04)
Andreas R. Blass, Department of Mathematics, University of Michigan, Ann Arbor, Michigan 48109-1003

COMBINATORICS AND DISCRETE MATHEMATICS (05 15)
Thomas H. Brylawski, Department of Mathematics, University of North Carolina, Chapel Hill, North Carolina 27514

COMBINATORICS, COMPUTER SCIENCE AND INFORMATION THEORY (05 68 94)
Andrew Odlyzko, Room 2C-370, Bell Laboratories, Murray Hill, New Jersey 07974

COMMUTATIVE ALGEBRA (06 12 13 14 15 18)
Louis J. Ratliff, Jr., Department of Mathematics, University of California, Riverside, California 92502

GENERAL ALGEBRA (16 17 18 08)
Maurice Auslander, Department of Mathematics, Brandeis University, P.O. Box 9110, Waltham, Massachusetts 02254-9110

GROUP THEORY (20)
Warren J. Wong, Department of Mathematics, University of Notre Dame, Notre Dame, Indiana 46556

ALGEBRAIC AND DIFFERENTIAL TOPOLOGY (55 57 58)
Frederick R. Cohen, Department of Mathematics, University of Kentucky, Lexington, Kentucky 40506

REAL VARIABLES (26 28 40)
R. Daniel Mauldin, Department of Mathematics, North Texas State University, Denton, Texas 76203

COMPLEX VARIABLES (30 31 32)
Clifford J. Earle Jr., Cornell University, White Hall, Ithaca, New York 14853

NUMBER THEORY (11)
William Adams, Department of Mathematics, University of Maryland, College Park, MD 20742

ORDINARY DIFFERENTIAL EQUATIONS AND DYNAMICAL SYSTEMS (33 34 39 49 58)
Kenneth R. Meyer, Department of Mathematical Sciences, University of Cincinnati, Cincinnati, Ohio 45221-0025

PARTIAL DIFFERENTIAL EQUATIONS (35 49)
Barbara Lee Keyfitz, Institute for Mathematics and Its Applications, University of Minnesota, 514 Vincent Hall, 206 Church Street S. E., Minneapolis, MN 55455

GENERAL ANALYSIS (41 42 43 44 45)
J. Marshall Ash, Department of Mathematics, DePaul University, Chicago, Illinois 60614

FUNCTIONAL ANALYSIS AND OPERATOR THEORY (46 47)
Palle E. T. Jorgensen, University of Iowa, Iowa City, Iowa 52242

FUNCTIONAL ANALYSIS AND CONVEXITY (46 52)
William J. Davis, Department of Mathematics, Ohio State University, Columbus, Ohio 43210

COMPLEX VARIABLES, FUNCTIONAL ANALYSIS AND OPERATOR THEORY (30 46 47)
Paul S. Muhly, Department of Mathematics, University of Iowa, Iowa City, Iowa 52242

LIE GROUPS AND GEOMETRY (22 51 53)
Jonathan M. Rosenberg, Department of Mathematics, University of Maryland, College Park, Maryland 20742

GENERAL TOPOLOGY (54)
Dennis Burke, Department of Mathematics, Miami University of Ohio, Oxford, Ohio 45056
James E. West, Department of Mathematics, Cornell University, Ithaca, New York 14853

PROBABILITY AND CERTAIN OTHER FIELDS (60-94 inclusive)
William D. Sudderth, Department of Statistics, University of Minnesota, Minneapolis, Minnesota 55455
George C. Papanicolaou, Applied Mathematics Division, New York University-Courant Institute, 251 Mercer Street, New York, New York 10012

All other communications should be addressed to the Managing Editor, William J. Davis, at the above address.
**Copying and reprinting.** Individual readers of this publication, and nonprofit libraries acting for them, are permitted to make fair use of the material, such as to copy a chapter for use in teaching or research. Permission is granted to quote brief passages from this publication in reviews, provided the customary acknowledgement of the source is given.

Republication, systematic copying, or multiple reproduction of any material in this publication (including abstracts) is permitted only under license from the American Mathematical Society. Requests for such permission should be addressed to the Executive Director, American Mathematical Society, P.O. Box 6248, Providence, Rhode Island 02940.

The owner consents to copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law, provided that a fee of $1.00 plus $.25 per page for each copy be paid directly to the Copyright Clearance Center, Inc., 21 Congress Street, Salem, Massachusetts 01970. When paying this fee please use the code 0002-9939/88 to refer to this publication. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotion purposes, for creating new collective works, or for resale.

Copyright ©1989 by the American Mathematical Society. All rights reserved.
Printed in the United States of America
The American Mathematical Society retains all rights except those granted to the United States Government.
The paper used in this book is acid-free and falls within the guidelines established to ensure permanence and durability.
AUTHOR INDEX

1989

Volumes 105–107

Throughout this index, bold numerals are used to denote the volume number; lightface numerals denote the pages.

*Starred items are “Shorter Notes”.

Abi-Khuzam, Faruk F. Maximum modulus convexity and the location of zeros of an entire function, 106, 1063.

Acosta, Maria D. and Paya, Rafael. Denseness of operators whose second adjoints attain their numerical radii, 105, 97.

Adams, Colin C. Tangles and the Gromov invariant, 106, 269.


Agarwal, A. K. New combinatorial interpretations of two analytic identities, 107, 561.

Ahlbrandt, Calvin D., Ridenhour, Jerry and Thompson, Russell C. Oscillation of superlinear matrix differential equations, 105, 141.

Akeroyd, John. Point evaluations and polynomial approximation in the mean with respect to harmonic measure, 105, 575.

Albrecht, Ulrich and Goeters, H. Pat. A dual to Baer’s lemma, 105, 817.

Allegretto, W. Second order elliptic equations with degenerate weight, 107, 989.

Alonso, Juan M. Fibrations that are cofibrations. II, 105, 486.

Anderson, J. M. and Hinkkanen, A. The Cauchy transform on bounded domains, 107, 179.

Anderson, Mark. Manifolds and Stiefel-Whitney classes, 105, 209.

Arapura, Donu and Jaffe, David B. On Kodaira vanishing for singular varieties, 105, 911.


Ashbaugh, Mark S. and Benguria, Rafael. Optimal lower bound for the gap between the first two eigenvalues of one-dimensional Schrödinger operators with symmetric single-well potentials, 105, 419.

Avramid, Florin and Brown, Lawrence. A generalized Hölder inequality and a generalized Szego theorem, 107, 687.


Baker, Andrew. On the homotopy type of the spectrum representing elliptic cohomology, 107, 537.

Baker, Mark D. Covers of Dehn fillings on once-punctured torus bundles, 105, 747.

Ball, J. M. and Murat, F. Remarks on Chacon’s Biting Lemma, 107, 655.

Ballico, Edoardo. A characterization of the Veronese surface, 105, 531.


Balogun, Bola O. On the primitivity of group rings of amalgamated free products, 106, 43.


Barge, Marcy. Rescaling planar hyperbolic sectors, 107, 145.

Barnes, Bruce A. Continuity properties of the spectrum of operators on Lebesgue spaces, 106, 415.

Beattie, Margaret. Inner gradings and Galois extensions with normal basis, 107, 881.


Bennett, Andrew G. The T1 theorem for Martingales, 107, 493.

INDEX TO VOLUME 105–107


Benzinger, Harold E. A generalization of nonharmonic Fourier series, 105, 670.


Berhanu, S. Hypo-analytic pseudodifferential operators, 105, 582.

_________. Microlocal hypo-analyticity and hypo-analytic pseudodifferential operators, 105, 594.


Berman, Kenneth A. and Konsowa, Mokhtar. A counterexample to the conjecture of Woess on simple random walks on trees, 105, 443.

Berman, Kenneth A. and Paul, Jerome L. A 4-color theorem for surfaces of genus g, 105, 513.

Bhattacharya, Prabr. See Mukherjee, N. P.

Blair, Robert L. Errata to “Extensions of continuous functions from dense subspaces”, 106, 857.

Blair, Robert L., Polkowski, Lech T. and Swardson, Mary Anne. On barely α-compact spaces and remote points in βαX\X, 107, 1079.

Bleiler, Steven A. and Litherland, Richard A. Lens spaces and Dehn surgery, 107, 1127.

Bloom, Steven. Pointwise multipliers of weighted BMO spaces, 105, 950.


Borwein, Peter. Hypertranscendence of the functional equation g(x²) = [g(x)]² + cx, 107, 215.

Bostock, F. A. See Baston, V. J.

Boyarsky, A. See Göra, P.

Bożejko, Marek. Remark on Walter’s inequality for Schur multipliers, 107, 133.

Bratteli, Ola, Goodman, Fred M., Jorgensen, Palle E. T. and Robinson, Derek W. Unitary representations of Lie groups and Gàrding’s inequality, 107, 627.


Brown, J. B., Humke, P. and Laczkovich, M. Addendum to “Measurable Darboux functions”, 107, 1147.

Brown, Lawrence. See Avram, Florin.

Brown, Russell M. The oblique derivative problem for the heat equation in Lipschitz cylinders, 107, 237.

Brucks, Karen M. Uniqueness of aperiodic kneading sequences, 107, 223.

Brummelhuis, R. G. M. and de Paeppe, P. J. Point derivations on function algebras generated by holomorphic functions, 105, 117.

Brylinski, Jean-Luc. Remark on Witten’s modular forms, 105, 773.


Burke, Maxim R. Weakly dense subsets of the measure algebra, 106, 867.

Cambern, Michael and Jarosz, Krzysztof. Isometries of spaces of weak* continuous functions, 106, 707.

_________. The isometries of H1, 107, 205.

_________. Ultraproducts, c-multipliers, and isomorphisms, 105, 929.


Cârjâ, Ovidiu. Range inclusion for convex processes on Banach spaces; applications in controllability, 105, 185.


_________. Immersed projective planes in lens spaces, 106, 251.

Cartwright, Donald I. and Soardi, P. M. Convergence to ends for random walks on the automorphism group of a tree, 107, 817.

Castillo, Jesús M. F. Sums and products of Hilbert spaces, 105, 362.


Castro, Alfonso and Shivaji, R. Non-negative solutions for a class of radially symmetric non-positone problems, 106, 735.
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Volume</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cavicchioli, Alberto</td>
<td>A combinatorial characterization of $S^3 \times S^1$ among closed 4-manifolds</td>
<td>105</td>
<td>1008</td>
</tr>
<tr>
<td>Cellina, A.</td>
<td>See Bressan, A.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chaber, J.</td>
<td>See Bennett, H. R.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chang, Pei-Kun and Deturck, Dennis</td>
<td>On hearing the shape of a triangle</td>
<td>105</td>
<td>1033</td>
</tr>
<tr>
<td>Charalambous, M. G.</td>
<td>Universal spaces for locally finite-dimensional Tychonoff spaces</td>
<td>106</td>
<td>507</td>
</tr>
<tr>
<td>Chermak, Andrew and Delgado, Alberto</td>
<td>A measuring argument for finite groups</td>
<td>107</td>
<td>907</td>
</tr>
<tr>
<td>Chiba, Keiko</td>
<td>A remark on the normality of infinite products</td>
<td>105</td>
<td>510</td>
</tr>
<tr>
<td>Chinea, D.</td>
<td>See Gonzalez, J. C.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chou, Arthur W.</td>
<td>Criteria for self-adjointness of the Dirac operator on pseudomanifolds</td>
<td>106</td>
<td>1107</td>
</tr>
<tr>
<td>Chow, Shiu-Nee, Li, Chengzhi and Wang, Duo</td>
<td>A simple proof of the uniqueness of periodic orbits in the 1 : 3 resonance problem</td>
<td>105</td>
<td>1025</td>
</tr>
<tr>
<td>Christ, Michael.</td>
<td>Estimates for fundamental solutions of second-order subelliptic differential operators</td>
<td>105</td>
<td>166</td>
</tr>
<tr>
<td>Christianson, Bruce</td>
<td>The positive fixed points on Banach lattices</td>
<td>107</td>
<td>255</td>
</tr>
<tr>
<td>Chuang, Chen-Lian</td>
<td>On nilpotent derivations of prime rings</td>
<td>107</td>
<td>67</td>
</tr>
<tr>
<td>Ciesielski, Krzysztof and Guzicki, Wojciech.</td>
<td>Generic families and models of set theory with the axiom of choice</td>
<td>106</td>
<td>199</td>
</tr>
<tr>
<td>Cifuentes, Patricio</td>
<td>A characterization of $H^2$ classes on rank one symmetric spaces of noncompact type</td>
<td>106</td>
<td>519</td>
</tr>
<tr>
<td>Cima, Joseph A., Janson, Svante and Yale, Keith</td>
<td>Completely continuous Hankel operators on $H^\infty$ and Bourgain algebras</td>
<td>105</td>
<td>121</td>
</tr>
<tr>
<td>Cochrane, Todd</td>
<td>Small solutions of cubic congruences</td>
<td>106</td>
<td>333</td>
</tr>
<tr>
<td>Cohn, P. M.</td>
<td>Distributive factor lattices in free rings</td>
<td>105</td>
<td>34</td>
</tr>
<tr>
<td>Colombo, G.</td>
<td>See Bressan, A.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connett, William C. and Schwartz, Alan L.</td>
<td>A Hardy-Littlewood maximal inequality for Jacobi type hypergroups</td>
<td>107</td>
<td>137</td>
</tr>
<tr>
<td>Connor, J. and Loomis, I.</td>
<td>Isometries on conservative subalgebras of bounded sequences</td>
<td>107</td>
<td>743</td>
</tr>
<tr>
<td>Conrey, J. Brian and Smiley, Michael W.</td>
<td>Some geometric aspects of hyperbolic boundary value problems</td>
<td>107</td>
<td>591</td>
</tr>
<tr>
<td>Cowen, Michael J.</td>
<td>Automorphisms of Grassmannians</td>
<td>106</td>
<td>99</td>
</tr>
<tr>
<td>Csordas, G. and Varga, R. S.</td>
<td>Fourier transforms and the Hermite-Biehler theorem</td>
<td>107</td>
<td>645</td>
</tr>
<tr>
<td>Cu, Ta Khac.</td>
<td>See Nhu, Nguyen To</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cumino, Caterina, Greco, Silvio and Manaresi, Mirella</td>
<td>Hyperplane sections of weakly normal varieties in positive characteristic</td>
<td>106</td>
<td>37</td>
</tr>
<tr>
<td>Currier, Robert J.</td>
<td>Spheres with locally pinched metrics</td>
<td>106</td>
<td>803</td>
</tr>
<tr>
<td>Dahlberg, Randall P.</td>
<td>Injective hulls of simple $\mathfrak{sl}(2, \mathbb{C})$ modules are locally Artinian</td>
<td>107</td>
<td>35</td>
</tr>
<tr>
<td>Dajczer, Marcos</td>
<td>A characterization of complex hypersurfaces in $\mathbb{C}^n$</td>
<td>105</td>
<td>425</td>
</tr>
<tr>
<td>Daly, James E. and Phillips, Keith</td>
<td>On the classification of homogeneous multipliers bounded on $H^1(\mathbb{R}^2)$</td>
<td>106</td>
<td>685</td>
</tr>
<tr>
<td>Daughtry, John and Johns, Ronald</td>
<td>Arveson nests and operator factorization along commutative subspace lattices</td>
<td>107</td>
<td>943</td>
</tr>
<tr>
<td>Davie, A. M. and Gamelin, T. W.</td>
<td>A theorem on polynomial-star approximation</td>
<td>106</td>
<td>351</td>
</tr>
<tr>
<td>De Groot, Joost</td>
<td>See Baars, Jan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>de Paepe, P. J.</td>
<td>See Brummelhuis, R. G. M.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deaconescu, Marian</td>
<td>Classification of finite groups with all elements of prime order</td>
<td>106</td>
<td>625</td>
</tr>
<tr>
<td>Deckhart, Robert W.</td>
<td>On the arithmetic of weight spaces in the root lattice</td>
<td>106</td>
<td>81</td>
</tr>
<tr>
<td>Dehornoy, Patrick</td>
<td>Algebraic properties of the shift mapping</td>
<td>106</td>
<td>617</td>
</tr>
<tr>
<td>DeLaubenfels, Ralph</td>
<td>Polynomials of generators of integrated semigroups</td>
<td>107</td>
<td>197</td>
</tr>
<tr>
<td>Delgado, Alberto</td>
<td>See Chermak, Andrew</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delon, Françoise</td>
<td>Définissabilité avec paramètres extérieurs dans $Q_p$ et $\mathbb{R}$</td>
<td>106</td>
<td>193</td>
</tr>
<tr>
<td>Delsarte, Philippe and Genin, Yves</td>
<td>A simple proof of Livingston's inequality for Carathéodory functions</td>
<td>107</td>
<td>1017</td>
</tr>
<tr>
<td>Deng, Keng and Levine, Howard A.</td>
<td>On the blowup of $u_t$ at quenching</td>
<td>106</td>
<td>1049</td>
</tr>
<tr>
<td>Deturck, Dennis</td>
<td>See Chang, Pei-Kun</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diaz, J. C.</td>
<td>Unconditional bases in countably-$\mathcal{Z}$ spaces</td>
<td>106</td>
<td>357</td>
</tr>
<tr>
<td>Dickson, D. G.</td>
<td>Factoring Fourier transforms with zeros in a strip</td>
<td>106</td>
<td>407</td>
</tr>
</tbody>
</table>
INDEX TO VOLUME 105-107

Dlab, Vlastimil and Ringel, Claus Michael. Every semiprimary ring is the endomorphism ring of a projective module over a quasi-hereditary ring, 107, 1.


Doust, Ian. Well-bounded and scalar-type spectral operators on spaces not containing c₀, 105, 367.

Dow, Alan, Simon, Petr and Vaughan, Jerry E. Strong homology and the proper forcing axiom, 106, 821.

Dowling, Patrick N. Complemented copies of c₀ in vector-valued Hardy spaces, 107, 251.

Dow, Alan, Simon, Petr and Vaughan, Jerry E. Strong homology and the proper forcing axiom, 106, 821.

Drutet, Maria J. The rank in homogeneous space sof nonpositive curvature, 105, 972.


Duncan, Della C. and Ihrig, Edwin C. Homogeneous spacetimes of zero curvature, 107, 785.


Duren, Peter and Schober, Glenn. Linear extremal problems for harmonic mappings of the disk, 106, 967.

*Durumeric, Oguz C. Addendum to “Manifolds of almost half of the maximal volume”, 107, 1145.

Dydek, Jerzy and Walsh, John J. Cohomological local connectedness of decomposition space, 107, 1095.


Eie, Minking. On the values of negative half-integers of the dedekind zeta function of a real quadratic field, 107, 1143.

Elduque, Alberto. On semisimple Malcev algebras, 107, 73.

Elton, John. Continuity properties of optimal stopping value, 105, 736.


Enomoto, Masatoshi and Watatani, Yasuo. Powers’ binary shifts on the hyperfinite factor of type II₁, 105, 371.

Enright, Thomas J. and Shelton, Brad. Highest weight modules for Hermitian symmetric pairs of exceptional type, 106, 807.

Evans, Martin J. Primitive elements in free groups, 106, 313.


Fadell, E. and Hussein, S. A note on the category of the free loop space, 107, 527.

FalcConer, K. J. Dimensions and measures of quasi self-similar sets, 106, 543.

Feng, Qi. On weakly stationary sets, 105, 727.

Ferguson, T. S. See Baston, V. J.

Ferrero, Miguel and Parmenter, Michael M. A note on Jacobson rings and polynomial rings, 105, 281.

Finkelstein, Mark and Tucker, Howard G. A necessary and sufficient condition for convergence in law of random sums of random variables under nonrandom centering, 107, 1061.

Fitzpatrick, Simon. See Borwein, Jonathan M.

Flahive, M. See Borosh, I.


Fleissner, William and Levy, Ronnie. Ordered spaces all of whose continuous images are normal, 105, 231.


*Fokkink, Robbert. A note on pseudocompact groups, 107, 569.


Freniche, Francisco J. Some remarks on the average range of a vector measure, 107, 119.
INDEX TO VOLUME 105–107

Fried, E. and Grätzer, G.  Pasting and modular lattices, 106, 885.
Friedlander, Leonid.  The asymptotics of the determinant function for a class of operators, 107, 169.
Fuller, K. R.  See Burgess, W. D.
Gallardo, Diego and Martín-Reyes, F. J.  On the almost everywhere existence of the ergodic Hilbert transform, 105, 636.
Gamelin, T. W.  See Davie, A. M.
Gardiner, Stephen J.  Minimal harmonic functions on Denjoy domains, 107, 963.
Gawel, Boleslaw.  On the theorems of Sarkovskii and Stefan on cycles, 107, 125.
Geller, S. and Weibel, C.  Hochschild and cyclic homology are far from being homotopy functors, 106, 49.
Genin, Yves.  See Delsarte, Philippe.
Ghanaat, Patrick.  First eigenvalue of the Laplacean and torsion of parallelizable Riemannian manifolds, 107, 807.
Giambruno, Antonio and Sehgal, Sudarshan K.  A Lie property in group rings, 105, 287.
Glaz, Sarah.  On the coherence and weak dimension of the rings \( R(x) \) and \( R(x) \), 106, 579.
Glazebrook, James F.  An inequality for harmonic maps of compact Kähler manifolds that implies holomorphicity, 107, 261.
Godefroy, Gilles and Saphar, Pierre David.  Three-space problems for the approximation properties, 105, 70.
Goeters, H. Pat.  See Albrecht, Ulrich.
Goldstein, Jerome A. and Svirsky, Roman.  On a domain characterization of Schrödinger operators with gradient magnetic vector potentials and singular potentials, 105, 317.
Gonzalez, J. C. and Chinea, D.  Quasi-Sasakian homogeneous structures on the generalized Heisenberg group \( H(p, 1) \), 105, 173.
Goodaire, Edgar G. and Milies, César Polcino.  Torsion units in alternative loop rings, 107, 7.
Goodman, Fred M.  See Bratteli, Ola.
Góra, P. and Boyarsky, A.  Approximating the invariant densities of transformations with infinitely many pieces on the interval, 105, 922.
Gordon, Gary and McMahon, Elizabeth.  A greedoid polynomial which distinguishes rooted arborescences, 107, 287.
Gould, Matthew.  See Adams, M. E.
Grace, E. E. and Vought, Eldon J.  Refinable maps and \( \theta_n \)-continua, 106, 231.
Graham, Ian.  Holomorphic mappings into strictly convex domains which are Kobayashi isometries at one point, 105, 917.
Gräter, Joachim.  An integrally closed ring which is not the intersection of valuation rings, 107, 333.
Grätzer, G.  See Fried, E.
Greco, Silvio.  See Cumino, Caterina.
Grothmann, R.  See Borwein, P. B.
Grzeszczuk, Piotr and Puczyłowski, Edmund R.  Gabriel and Krull dimensions of modules over rings graded by finite groups, 105, 17.
Gu, Zhi-Bin.  Hyperbolic surfaces and quadratic equations in groups, 107, 859.
Gunter, Elsa L.  M-groups with Sylow towers, 105, 555.
Guralnick, Robert.  See Aschbacher, Michael.
Guizicki, Wojciech.  See Ciesielski, Krzysztof.
Ha, Young-Hwa.  \( L^2 \)-boundedness of spherical maximal operators with multidimensional parameter sets, 105, 401.
<table>
<thead>
<tr>
<th>Authors</th>
<th>Title</th>
<th>Volume</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haas, Andrew and Susskind, Perry</td>
<td>The geometry of the hyperelliptic involution in genus two</td>
<td>105</td>
<td>159</td>
</tr>
<tr>
<td>Hadwin, Don and Hoover, T. B.</td>
<td>Operator algebras and the conjugacy of transformations II</td>
<td>106</td>
<td>365</td>
</tr>
<tr>
<td>Haile, Darrell</td>
<td>A useful proposition for division algebras of small degree</td>
<td>106</td>
<td>317</td>
</tr>
<tr>
<td>Hamana, Masamichi</td>
<td>Monotone closures of commutative C*-algebras</td>
<td>105</td>
<td>683</td>
</tr>
<tr>
<td>Han, Chong Kyu</td>
<td>Regularity of mappings of G-structures of Frobenius type</td>
<td>106</td>
<td>127</td>
</tr>
<tr>
<td>Handel, Michael</td>
<td>Periodic point free homeomorphism of T²</td>
<td>107</td>
<td>511</td>
</tr>
<tr>
<td>Happel, Dieter and Unger, Luise</td>
<td>Almost complete tilting modules</td>
<td>107</td>
<td>603</td>
</tr>
<tr>
<td>Hardy, Kenneth, Kaplan, Pierre and Williams, Kenneth S.</td>
<td>The representation of a pair of integers by a pair of positive-definite binary quadratic forms</td>
<td>105</td>
<td>847</td>
</tr>
<tr>
<td>Harte, Robin</td>
<td>The ghost of an index theorem</td>
<td>106</td>
<td>1031</td>
</tr>
<tr>
<td>Hasegawa, Keizo</td>
<td>Minimal models of nilmanifolds</td>
<td>106</td>
<td>65</td>
</tr>
<tr>
<td>Haskell, Peter</td>
<td>L²-Dolbeault complexes on singular curves and surfaces</td>
<td>107</td>
<td>517</td>
</tr>
<tr>
<td>Hass, Joel and Thompson, Abigail</td>
<td>A necessary and sufficient condition for a 3-manifold to have Heegaard genus one</td>
<td>107</td>
<td>1107</td>
</tr>
<tr>
<td>Hayasida, Kazuya</td>
<td>On the regularity properties for solutions of the Cauchy problem for the porous media equation</td>
<td>107</td>
<td>107</td>
</tr>
<tr>
<td>Heath, Jo</td>
<td>Tree-like continua and exactly k-to-1 functions</td>
<td>105</td>
<td>765</td>
</tr>
<tr>
<td>Hébert, M., McKenzie, R. N. and Weaver, G. E.</td>
<td>Two definability results in the equational context</td>
<td>107</td>
<td>47</td>
</tr>
<tr>
<td>Heinzer, William</td>
<td>Prime ideals in two-dimensional polynomial rings</td>
<td>107</td>
<td>577</td>
</tr>
<tr>
<td>Heinzer, William and Wiegand, Sylvia</td>
<td>The conjugacy problem for finite graph products</td>
<td>106</td>
<td>589</td>
</tr>
<tr>
<td>Hert, A.</td>
<td>Second order differential equations with rational coefficients</td>
<td>106</td>
<td>667</td>
</tr>
<tr>
<td>Hirano, Norimichi</td>
<td>Existence of multiple periodic solutions for a semilinear evolution equation</td>
<td>106</td>
<td>107</td>
</tr>
<tr>
<td>Hofbauer, Josef and So, Joseph W.-H.</td>
<td>Uniform persistence and repellors for maps</td>
<td>107</td>
<td>1137</td>
</tr>
<tr>
<td>Hofmann, Steve</td>
<td>Weighted weak-type (1, 1) inequalities for rough operators</td>
<td>107</td>
<td>423</td>
</tr>
<tr>
<td>Hoover, T. B.</td>
<td>A short proof of a continued fraction test for the stability of polynomials</td>
<td>105</td>
<td>76</td>
</tr>
<tr>
<td>Horadam, K. J.</td>
<td>The conjugacy problem for finite graph products</td>
<td>106</td>
<td>589</td>
</tr>
<tr>
<td>Horiuchi, Ryutaro and Tanimoto, Tomihiko</td>
<td>Fixed points of automorphisms of compact Riemann surfaces and higher-order Weierstrass points</td>
<td>105</td>
<td>856</td>
</tr>
<tr>
<td>Hoste, Jim and Przytycki, Józef H.</td>
<td>An invariant of Dichromatic links</td>
<td>105</td>
<td>1003</td>
</tr>
<tr>
<td>Hovstad, R. M.</td>
<td>A note on Roe's characterization of the sine function</td>
<td>105</td>
<td>658</td>
</tr>
<tr>
<td>Huang, Senzhong</td>
<td>Each hyperinvariant subspace for multiplication operator is spectral</td>
<td>106</td>
<td>1037</td>
</tr>
<tr>
<td>Huerta, Carlos C.</td>
<td>Measure requirements on distributive lattices for Boolean algebras and topological applications</td>
<td>106</td>
<td>307</td>
</tr>
<tr>
<td>Huigsmans, C. B.</td>
<td>An elementary proof of a theorem of Schaefer</td>
<td>Wolff and Arendt</td>
<td>105</td>
</tr>
<tr>
<td>Humpe, K.</td>
<td>See Brown, J. B.</td>
<td>106</td>
<td>207</td>
</tr>
<tr>
<td>Huseini, S.</td>
<td>See Fadell, E.</td>
<td>106</td>
<td>1039</td>
</tr>
<tr>
<td>Hwang, Suk Geun</td>
<td>On the monotonicity of the permanent</td>
<td>106</td>
<td>59</td>
</tr>
<tr>
<td>Iannacci, R. and Nkashama, M. N.</td>
<td>Nonlinear two point boundary value problems at resonance without Landesman-Lazer condition</td>
<td>106</td>
<td>943</td>
</tr>
<tr>
<td>Ihrig, Edwin C.</td>
<td>See Duncan, Della C.</td>
<td>106</td>
<td>632</td>
</tr>
<tr>
<td>Ingram, W. T.</td>
<td>Periodic points for homeomorphisms of hereditarily decomposable chainable continua</td>
<td>107</td>
<td>549</td>
</tr>
</tbody>
</table>
INDEX TO VOLUME 105–107

Innami, Nobuhiro.  *Euclidean metric and flat metric outside a compact set*, 105, 701.


Isaacs, I. M.  *The fixed-point-space dimension function for a finite group representation*, 107, 867.

Ishihara, Toru.  *Complete Möbius strips minimally immersed in R3*, 107, 803.


Izuìmino, Saichi.  *Quotients of bounded operators*, 106, 427.


Jaffe, David B.  See Arapura, Donu.


James, Donald G.  *Even quadratic forms with cube-free discriminant*, 106, 73.

Janson, Svante.  See Cima, Joseph A.

Jaramillo, J. A.  *Bounded real-analytic submanifolds of Banach spaces*, 105, 126.

Jarosz, Krzysztof.  See Cambern, Michael.


Jiaxing, Hong.  *Harmonic maps defined on a manifold with a degenerate metric*, 106, 471.

Johns, Ronald.  See Daughtry, John.

Johnson, W. B. and Zippin, M.  *Extension of operators from subspaces of c0(Γ) into C(Γ) spaces*, 107, 751.

Jørgensen, Palle E. T.  See Bratteli, Ola.


Kamowitz, Herbert, Scheinberg, Stephen and Wortman, Dennis.  *Compact endomorphisms of Banach algebras II*, 107, 417.

Kanai, Masahiko.  *A pinching theorem for cusps of negatively curved manifolds with finite volume*, 107, 777.


Kaplan, Pierre.  See Hardy, Kenneth.

Kasparek, A.  See Van Daele, A.


Kearton, C.  *Mutation of knots*, 105, 206.

Kecharis, A. S.  See Dougherty, R.

Kelly, John B.  *Partitions with equal products (II)*, 107, 887.

Kempf, George R.  *Notes of the inversion of integrals I*, 107, 873.


Kirk, W. A.  *An iteration process for nonexpansive mappings with applications to fixed point theory in product spaces*, 107, 411.


Kleidman, Peter B. and Liebeck, Martin W.  *On a theorem of Feit and Tits*, 107, 315.


Klimek, M.  *Infinitesimal pseudo-metrics and the Schwarz lemma*, 105, 134.

Knuth, Donald E. and Pittel, Boris.  *A recurrence related to trees*, 105, 335.


Kochman, Fred, Murray, Alan and West, Douglas B.  *An entropy inequality for the bi-multivariate hypergeometric distribution*, 107, 479.


INDEX TO VOLUME 105–107

Komjáth, Péter.  On second-category sets, 107, 653.
Konstantinou, Moiktar.  See Berman, Kenneth A.
Kroó, A.  See Börwein, P. B.
Kroó, András, Sommer, Manfred and Strauss, Hans.  On strong uniqueness in one-sided L¹-
approximation of differentiable functions, 106, 1011.
Krstic, Sava.  On graphs representing automorphisms of free groups, 107, 573.
Krupski, Pawel.  On tree-like continua which are homogeneous with respect to confluent light
mappings, 106, 531.
Krystock, Robert L.  Adherent compact spaces, 107, 1117.
Kunen, Kenneth.  See van Douwen, Eric K.
Kuo, Kung-Hwang and Wu, Pei Yuan.  Factorization of matrices into partial isometries, 105, 263.
Kuperberg, K. M. and Reed, Coke S.  A dynamical system on R³ with uniformly bounded trajectories
and no compact trajectories, 106, 1095.
Kurland, Henry L.  On the two definitions of the Conley index, 106, 1117.
Lachlan, A. H. and Yi, X.  A remark on pseudo-jump operators, 106, 489.
Laczkovich, M.  See Brown, J. B.
Ladas, G.  See Györi, I.
Lancaster, Kirk E.  Existence and nonexistence of radial limits of minimal surfaces, 106, 757.
Lau, Anthony To-Ming and Wong, James C.S.  Weakly almost periodic elements in L∞(G) of a
locally compact group, 107, 1031.
Lazer, A. C. and Mckenna, P. J.  A semi-Fredholm principle for periodically forced systems with
homogeneous nonlinearities, 106, 119.
Le, Maohua.  A note on the diophantine equation x²p – Dy² = 1, 107, 27.
Le Bruyn, Lieven.  Quiver concomitants are often reflexive azumaya, 105, 10.
Leep, David B. and Shapiro, Daniel B.  Multiplicative subgroups of index three in a field, 105, 802.
Leung, Ka Hin.  Positive semidefinite forms over ordered skew fields, 106, 933.
Leung, Y. J. and Schober, G.  The simple-zero theorem for support points in Σ, 105, 603.
Levine, Howard A.  See Deng, Keng.
Levy, Ronnie.  See Fleissner, William.
Li, Chengzhi.  See Chow, Shiu-Nee.
Li, Hai-Zhong.  Stability of surfaces with constant mean curvature, 105, 992.
Li, Jian-Shu.  On the singular rank of a representation, 106, 567.
Li, Wei.  Remarks on rings of constants of derivations, 107, 337.
Lichtman, A. I. and Wehrfritz, B. A. F.  Finite dimensional subalgebras in matrix rings over trans-
scendental division algebras, 106, 335.
Liebeck, Martin W.  See Kleidman, Peter B.
Lin, Tzu-chu.  Approximations of fixed points for condensing non-self-maps defined on a sphere,
105, 66.
Lindström, Mikael.  On compact and bounding holomorphic mappings, 105, 356.
Lipsman, Ronald L.  Solvability of non-invariant differential operators on homogeneous spaces, 107,
271.
Litherland, Richard A.  See Bleiler, Steven A.
Longo, Roberto.  Maximal Abelian subalgebras with simple normalizer, 107, 165.
Loomis, I.  See Connor, J.
López-Permouth, S. R.  See Jain, S. K.
Lorenz, Martin.  On the global dimension of fixed rings, 106, 923.
Loring, Terry.  See Exel, Ruy.
Lowen, E. and Lowen, R.  On the nonsimplicity of some convergence categories, 105, 305.
Lowen, R.  See Lowen, E.
Lozano, M. T. and Safont, C.  Virtually regular coverings, 106, 207.
Lubarsky, Robert S.  There’s no forcing a least upper bound, 105, 998.
Lucas, Thomas G.  Characterizing when R[X] is integrally closed, 105, 861.
MacGregor, T. H.  See Hirschweiler, R. A.
Maddux, Roger D.  Canonical relativized cylindric set algebras, 107, 465.
INDEX TO VOLUME 105–107

Magnus, Alphonse P.     See van Assche, Walter.

Mamone, P. and Shapiro, D. B.     The Albert quadratic form for an algebra of degree four, 105, 525.

Manaresi, Mirella.     See Cumino, Caterina.

Mandelkern, Mark.     Metrization of the one-point compactification, 107, 1111.

Martin-Reyes, F. J.     See Gallardo, Diego.

Martin-Reyes, F. J. and Sawyer, E.     Weighted inequalities for Riemann-Liouville fractional integrals of order one and greater, 106, 727.

Maskit, Bernard.     Canonical domains on Riemann surfaces, 106, 713.

Massey, David B.     A reduction theorem for the Zariski multiplicity conjecture, 106, 379.

Mathes, D. Benjamin.     Operator ranges and completely bounded homomorphisms, 107, 155.

Mathieu, Martin.     Weakly compact homomorphisms from C* -algebras are of finite rank, 107, 761.

Maxson, C. J. and Smith, K. C.     Simple near-rings associated with meromorphic products, 105, 564.

McConnell, Mark.     The rational homology of toric varieties is not a combinatorial invariant, 105, 986.


McKenna, P. J.     See Lazer, A. C.

McKenzie, R. N.     See Hébert, M.

McLeod, Robert M. and Meisters, Gary H.     Smooth polynomial paths with nonanalytic tangents, 107, 697.

McMahon, Elizabeth.     See Gordon, Gary.

McNeal, Jeffery D.     Holomorphic sectional curvature of some pseudoconvex domains, 107, 113.

Meisters, Gary H.     See McLeod, Robert M.

Meisters, Gary Hosler.     Linear operators commuting with translations on D(R) are continuous, 106, 1079.

Mera, Ruben.     Generalization of a classical theorem of Pólya and Szegö, 105, 666.

Metelli, Claudia.     Subgroups of almost separable torsionfree abelian groups, 106, 9.

Michael, E.     A generalization of a theorem on continuous selections, 105, 236.


Milies, César Polcino.     See Goodaire, Edgar G.

Millar, Terrence.     Tame theories with hyperarithmetic homogeneous models, 105, 712.

Miller, A. and Zimmermann, B.     Large groups of symmetries of handlebodies, 106, 829.

Miller, Harry I.     Generalization of a result of Borwein and Ditor, 105, 889.

Mingarelli, A. B.     See Dzurnak, A.


Morgan, Frank.     The Torus Lemma on calibrations, extended, 107, 675.

Mueller, Julia and Schmidt, W. M.     On the number of good rational approximations to algebraic numbers, 106, 859.

Mukherjee, N. P. and Bhattacharya, Prabir.     The normal index of a maximal subgroup of a finite group, 106, 25.

Murat, F.     See Ball, J. M.

Murphy, Gerald J.     Simple C*-algebras and subgroups of Q, 107, 97.

Murray, Alan.     See Kochman, Fred.


Navarro, Gabriel.     On the Glauberman correspondence, 105, 52.

Neubauer, Michael G.     The variety of pairs of matrices with rank (AB − BA) ≤ 1, 105, 787.

Nhu, Nguyen To and Cu, Ta Khac.     Probability measure functors preserving the ANR-property of metric spaces, 106, 493.

Nicolau, A.     The coefficients of Nevanlinna’s parametrization are not in HP, 106, 115.

Nïlssen, Rodney.     Group actions and direct sum decompositions of Lp spaces, 106, 975.

Nkashama, M. N.     See Iannacci, R.

Noll, Dominikus.     On the preservation of Baire category under preimages, 107, 847.

Noll, Dominikus and Stadler, Wolfgang.     Sliding hump technique and spaces with the Wilansky property, 105, 903.
INDEX TO VOLUME 105-107

Noronha, Maria Helena. A splitting theorem for complete manifolds with nonnegative curvature operator, 105, 979.

Norris, Douglas, A. Isometries homotopic to the identity, 105, 692.

Norton, Alec. Functions not constant on fractal quasi-arcs of critical points, 106, 397.

Nunokawa, Mamoru, Obradovic, Milutin and Owa, Shigeyoshi. One criterion for univalency, 106, 1035.

Obradovic, Milutin. See Nunokawa, Mamoru.

Ohm, Jack. The Henselian defect for valued function fields, 107, 299.

Okayasu, Takashi. $O(2) \times O(2)$-invariant hypersurfaces with constant negative scalar curvature in $E^4$, 107, 1045.

Onneweer, C. W. and Quek, T. S. Multipliers on weighted $L_p$-spaces over locally compact Vilenkin groups, 105, 622.

Orr, John L. A note on quasicentral approximate units in $B(H)$, 105, 149.

Ortel, Marvin and Schneider, Walter. Uniqueness of bounded harmonic functions, 107, 937.

Ossiander, Mina and Waymire, Edward C. Certain positive-definite kernels, 107, 487.

Otal, J. and Peña, J. M. Characterizations of the conjugacy of Sylow $p$-subgroups of $CC$-groups, 106, 605.

Owa, Shigeyoshi. See Nunokawa, Mamoru.

Pakula, L. See Győri, I.

Parish, James L. A family of abelian varieties rationally isogenous to no Jacobian, 106, 1.

Papanicolaou, Vassilis G. Short-time asymptotics for the trace of one- and multi-dimensional Schrödinger semigroups, 107, 927.

Papastavridis, Stavros. The image of $H_*(BSO; Z_2)$ in $H_*(BO; Z_2)$, 107, 1071.

———. The image of $H_*(BSU; Z_p)$ in $H_*(BU; Z_p)$, 107, 1075.

Papazyan, Talin. The existence of almost translation invariant ultrafilters on any semigroup, 107, 1133.

Papick, Ira J. See Heinzer, William J.


Parmenter, Michael M. See Ferrero, Miguel.

Paul, Jerome L. See Berman, Kenneth A.

Paulsen, Vern. See McCullough, Scott.

Pawlikowski, Janusz. Products of perfectly meager sets and Lusin's function, 107, 811.

Paya, Rafael. See Acosta, Maria D.

Peña, J. M. See Otal, J.

Pennings, Tim and Peters, Justin. Dynamical systems from function algebras, 105, 80.

Pergner, Pedro L. Q. Manifolds with $(Z_2)^k$-action, 106, 1091.

Peters, Justin. See Pennings, Tim.

Peterson, Gary L. Automorphism groups emitting local endomorphism near-rings, 105, 840.

Pettet, Martin R. On inner automorphisms of finite groups, 106, 87.

Phillips, Keith. See Daly, James E.


Pinkall, Ulrich and Thorbergsson, Gudlaugur. Deformations of Dupin hypersurfaces, 107, 1037.

Pittel, Boris. See Knuth, Donald E.

Polewczak, Jacek. Ordinary differential equations on closed subsets of Fréchet spaces with applications to fixed point theorems, 107, 1005.

Poljak, Svatopluk. Maximum rank of powers of a matrix of a given pattern, 106, 1137.

Polkowski, Lech T. See Blair, Robert L.

Poon, Yiu Tung. Stable rank of some crossed product $C^*$-algebras, 105, 868.


Prus-Wiśniowski, Franciszek. On superposition of functions of bounded $\varphi$-variation, 107, 361.

Przytycki, Jósef H. See Hoste, Jim.

Puczyłowski, Edmund R. See Grzeszczuk, Piotr.


Quek, T. S. See Onneweer, C. W.

Rădulescu, Marius. See Rădulescu, Sorin.
INDEX TO VOLUME 105–107

Rădulescu, Sorin and Rădulescu, Marius.  An application of Hadamard-Lévy’s theorem to a scalar initial value problem, 106, 139.

Rahman, Mizan.  A simple proof of Koornwinder’s addition formula for the little q-Legendre polynomials, 107, 373.


Rammaha, M. A.  Formation of singularities in compressible fluids in two-space dimensions, 107, 705.

Randell, Richard.  Lattice-isotopic arrangements are topologically isomorphic, 107, 555.

Rayburn, Marlon C.  Compactifications with almost locally compact outgrowth, 106, 223.

Reed, Coke S.  See Kuperberg, K. M.

Reese, Sylvester.  Some Fourier-Stieltjes coefficients revisited, 105, 384.

Reis, C. M.  When are Rees congruences principal?, 106, 593.

Ridenhour, Jerry.  See Ahlbrandt, Calvin D.

Riecanova, Zdenka.  See Pulmannova, Sylvia.

Riehm, Carl R.  The linear and quadratic Schur subgroups over the S-integers of a number field, 107, 83.

Ringel, Claus Michael.  See Diab, Vlastimil.

Robertson, Wendy J.  See Saxon, Stephen A.

Robinson, Derek W.  See Bratteli, Ola.


Rossi, John.  See Hinkkanen, A.

Rubin, D.  See Borosh, I.


Saff, E. B.  See Borwein, P. B.

Saff, E. B.  See Ivanov, K. G.

Safont, C.  See Lozano, M. T.

Sakai, Akira.  A characterization of weak pseudoconvexity, 105, 314.

Sakaki, Makoto.  Remarks on the rigidity and stability of minimal submanifolds, 106, 793.

Salavessa, Isabel Maria da Costa.  Graphs with parallel mean curvature, 107, 449.

Sancho de Salas, Juan B. and Sancho de Salas, Maria Teresa.  Dimension of dense subalgebras of C(X), 105, 491.

Sancho de Salas, Maria Teresa.  See Sancho de Salas, Juan B.

Sanjurjo, José M. R.  Stability of the fixed point property and universal maps, 105, 221.

Santanilla, Jairo.  Existence of nonnegative solutions of a semilinear equation at resonance with linear growth, 105, 963.

Saphar, Pierre David.  See Godefroy, Gilles.

Sáfrány, András.  See Nathanson, Melvyn B.

Sato, Yoshihisa.  Smooth 2-knots in S^2 x S^2 with simply connected complements are topologically unique, 105, 479.

Sawyer, E.  See Kerman, R.

Sawyer, E.  See Martin-Reyes, F. J.

Saxon, Stephen A. and Robertson, Wendy J.  Dense barrelled subspaces of uncountable codimension, 107, 1021.

Scheinberg, Stephen.  See Kamowitz, Herbert.

Schlumprecht, Thomas.  On dual spaces with bounded sequences without weak* convergent convex blocks, 107, 395.

Schmidt, W. M.  See Mueller, Julia.

Schmitt, Lothar M.  A remark on Radon-Nikodym properties of ordered Hilbert spaces, 105, 938.

Schneider, Walter.  See Ortel, Marvin.

Schober, G.  See Leung, Y. J.

Schober, Glenn.  See Duren, Peter.

 Schroeder, Viktor.  A cusp closing theorem, 106, 797.

Schroeder, Viktor and Strake, Martin.  Local rigidity of symmetric spaces of nonpositive curvature, 106, 481.

Schwartz, Alan L.  Erratum to “Classification of one-dimensional hypergroups”, 107, 285.
<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Title</th>
<th>Volume</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schwartz</td>
<td>Alan L.</td>
<td>See Connett, William C.</td>
<td>105</td>
<td>436</td>
</tr>
<tr>
<td>Schwarze</td>
<td>M. G.</td>
<td>Preorders compatible with probability measures defined on a Boolean algebra</td>
<td>105</td>
<td>436</td>
</tr>
<tr>
<td>Sehgal</td>
<td>Sudarshan K.</td>
<td>See Giambruno, Antonio.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serizawa</td>
<td>Hisamitsu</td>
<td>A semigroup treatment of a one dimensional nonlinear parabolic equation</td>
<td>106</td>
<td>187</td>
</tr>
<tr>
<td>Servatius</td>
<td>Brigitte</td>
<td>See Servatius, Herman.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Servatius</td>
<td>Herman</td>
<td>Droms, Carl and Servatius, Brigitte. Surface subgroups of graph groups</td>
<td>106</td>
<td>573</td>
</tr>
<tr>
<td>Shaked-Monderer</td>
<td>Naomi</td>
<td>An absolutely extremal flow with a nonabsolutely extremal factor</td>
<td>105</td>
<td>215</td>
</tr>
<tr>
<td>Shapiro</td>
<td>Daniel B.</td>
<td>See Leep, David B.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shapiro</td>
<td>D. B.</td>
<td>See Mammone, P.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shiel-Small</td>
<td>T.</td>
<td>On the zeros of $L' + L^2$ for certain rational functions $L$</td>
<td>107</td>
<td>1013</td>
</tr>
<tr>
<td>Shelton</td>
<td>Brad.</td>
<td>See Douglass, J. Matthew.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shen</td>
<td>Chun-Li.</td>
<td>A global pinching theorem of minimal hypersurfaces in the sphere</td>
<td>105</td>
<td>192</td>
</tr>
<tr>
<td>Shieh</td>
<td>Narn-Rueih.</td>
<td>Collisions of Levy processes</td>
<td>106</td>
<td>503</td>
</tr>
<tr>
<td>Shimomura</td>
<td>Takashi.</td>
<td>The pseudo-orbit tracing property and expansiveness on the Cantor set</td>
<td>106</td>
<td>241</td>
</tr>
<tr>
<td>Shivaji</td>
<td>R.</td>
<td>See Castro, Alfonso</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shortt</td>
<td>R. M.</td>
<td>Representation of an abstract measure using Borel-isomorphism types</td>
<td>105</td>
<td>609</td>
</tr>
<tr>
<td>Siegel</td>
<td>Jerrold and Williams, Frank.</td>
<td>Uniform bounds for isoperimetric problems</td>
<td>107</td>
<td>459</td>
</tr>
<tr>
<td>Silverman</td>
<td>Joseph H.</td>
<td>Elliptic curves of bounded degree and height</td>
<td>105</td>
<td>540</td>
</tr>
<tr>
<td>Simha</td>
<td>R. A.</td>
<td>The Behnke-Stein theorem for open Riemann surfaces</td>
<td>105</td>
<td>876</td>
</tr>
<tr>
<td>Simon</td>
<td>K.</td>
<td>On the periodic points of a typical continuous function</td>
<td>105</td>
<td>244</td>
</tr>
<tr>
<td>Simon</td>
<td>Petr.</td>
<td>See Dow, Alan.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sin</td>
<td>Peter and Willems, Wolfgang.</td>
<td>On induced projective indecomposable modules</td>
<td>105</td>
<td>793</td>
</tr>
<tr>
<td>Sine</td>
<td>Robert.</td>
<td>Weakly constricted operators and Jamison’s convergence theorem</td>
<td>106</td>
<td>751</td>
</tr>
<tr>
<td>Singh</td>
<td>Ram and Singh, Sukhjit.</td>
<td>Convolution properties of a class of starlike functions</td>
<td>106</td>
<td>145</td>
</tr>
<tr>
<td>Singh</td>
<td>Sukhjit.</td>
<td>See Singh, Ram.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skoug</td>
<td>David.</td>
<td>See Park, Chull</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slodkowski</td>
<td>Zbigniew.</td>
<td>Approximation of analytic multifunctions</td>
<td>105</td>
<td>387</td>
</tr>
<tr>
<td>Smiley</td>
<td>Michael W.</td>
<td>See Conrey, J. Brian</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smith</td>
<td>K. C.</td>
<td>See Maxson, C. J.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smith</td>
<td>S. P.</td>
<td>Can the Weyl algebra be a fixed ring?</td>
<td>107</td>
<td>587</td>
</tr>
<tr>
<td>So</td>
<td>Joseph W.-H.</td>
<td>See Hofbauer, Josef</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soardi</td>
<td>P. M.</td>
<td>See Cartwright, Donald I.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sommer</td>
<td>Manfred.</td>
<td>See Kroó, András</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soudry</td>
<td>David.</td>
<td>See Rallis, Stephen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spraker</td>
<td>John S.</td>
<td>Note on arc-length and harmonic measure</td>
<td>105</td>
<td>664</td>
</tr>
<tr>
<td>Stadler</td>
<td>Wolfgang.</td>
<td>See Noll, Dominikus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stafney</td>
<td>James D.</td>
<td>Noncompact commutators in the commutant of a cyclic operator</td>
<td>106</td>
<td>385</td>
</tr>
<tr>
<td>Stanton</td>
<td>Dennis and Zeilberger, Doron.</td>
<td>The Odlyzko conjecture and O’Hara’s unimodality proof</td>
<td>107</td>
<td>39</td>
</tr>
<tr>
<td>Stempak</td>
<td>Krzysztof.</td>
<td>See Gosselin, John</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stephen P.</td>
<td>Corwin.</td>
<td>The number of indecomposable sequences over an Artin algebra of finite type</td>
<td>105</td>
<td>301</td>
</tr>
<tr>
<td>Sternfeld</td>
<td>Yaki and Weit, Yitzhak.</td>
<td>Affine invariant subspaces of $C(C)$</td>
<td>107</td>
<td>231</td>
</tr>
<tr>
<td>Stout</td>
<td>Edgar Lee.</td>
<td>See Rosay, Jean Pierre</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strake</td>
<td>Martin.</td>
<td>See Schroeder, Viktor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strauss</td>
<td>Hans.</td>
<td>See Kroó, András</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strichartz</td>
<td>Robert S.</td>
<td>Magnified curves on a flat torus, determination of almost periodic functions, and the Riemann-Lebesgue lemma</td>
<td>107</td>
<td>755</td>
</tr>
<tr>
<td>Suen</td>
<td>Ching-Yun.</td>
<td>Completely bounded linear extensions of operator-valued functions on *-semigroups</td>
<td>105</td>
<td>330</td>
</tr>
<tr>
<td>Susskind</td>
<td>Perry.</td>
<td>See Haas, Andrew</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
INDEX TO VOLUME 105–107


Svirsky, Roman. See Goldstein, Jerome A.


Swardson, Mary Anne. See Blair, Robert L.


Tamaño, K. See Suzuki, J.


Tan, Lin. On the Popov-Pommerening conjecture for groups of type \( A_n \), \textit{106}, 611.

Tanaka, Y. See Suzuki, J.

Tanimoto, Tomihiko. See Horiuchi, Ryutaro.

Tannenbaum, Allen. See Foias, Ciprian.

Tao, Terence. See Hirsch, Morris.

Thorbergsson, Gudlaugur. See Pinkall, Ulrich.

Todorov, T. D. See Salbany, S.


Totik, V. See Ivanov, K. G.

Traldi, Lorenzo. A dichromatic polynomial for weighted graphs and link polynomials, \textit{106}, 279.

Treybig, B. See Borosh, I.

Trigiani, R. Lack of uniform stabilization for noncontractive semigroups under compact perturbation, \textit{105}, 375.

Trubek, Jeanne. Asymptotic behavior of solutions to \( \Delta u + Ku^p = 0 \) on \( \mathbb{R}^n \) for \( n \geq 3 \), \textit{106}, 953.

Tucker, Howard G. See Finkelstein, Mark.

Turpin, Ph. See Khamsi, M. A.


Tysk, Johan. Finiteness of index and total scalar curvature for minimal hypersurfaces, \textit{105}, 429.

Unger, Luise. See Happel, Dieter.


van Douwen, Eric K., Kunen, Kenneth and van Mill, Jan. There can be \( C^* \)-embedded dense proper subspaces in \( \beta \omega - \omega \), \textit{105}, 462.


van Mill, Jan. See Baars, Jan.

van Mill, Jan. See van Douwen, Eric K.

Varga, József V. Traces on irregular ideals, \textit{107}, 715.

Vaughan, R. S. See Csordas, G.

Vaughan, Jerry E. See Dow, Alan.


Venturini, Sergio. Comparison between the Kobayashi and Carathéodory distances on strongly pseudoconvex bounded domains in \( C^n \), \textit{107}, 725.

Vinsonhaler, C. See Arnold, D.

Vought, Eldon J. See Grace, E. E.
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Volume</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vrahatis, Michael N.</td>
<td>A short proof and a generalization of Miranda's existence theorem</td>
<td>107</td>
<td>701</td>
</tr>
<tr>
<td>Vuorinen, Matti</td>
<td>On Picard's theorem for entire quasiregular mappings</td>
<td>107</td>
<td>383</td>
</tr>
<tr>
<td>Waadeland, Haakon</td>
<td>See Jacobsen, Lisa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wachs, Michelle L.</td>
<td>On q-derangement numbers</td>
<td>106</td>
<td>273</td>
</tr>
<tr>
<td>Wallace, D. I.</td>
<td>Terms in the Selberg trace formula for $\text{SL}(3, \mathbb{Z})\backslash\text{SL}(3, \mathbb{R})/\text{SO}(3, \mathbb{R})$ associated to Eisenstein series coming from a maximal parabolic subgroup</td>
<td>106</td>
<td>875</td>
</tr>
<tr>
<td>Walsh, John J.</td>
<td>See Dydak, Jerzy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walsh, John T.</td>
<td>Marczewski sets, measure, and the Baire property. II</td>
<td>106</td>
<td>1027</td>
</tr>
<tr>
<td>Wang, Duo.</td>
<td>See Chow, Shiu-Nee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wang, Shicheng.</td>
<td>Cyclic surgery on knots</td>
<td>107</td>
<td>1091</td>
</tr>
<tr>
<td>Watanabe, Michiaki.</td>
<td>Weak conditions for generation of cosine families in linear topological spaces</td>
<td>105</td>
<td>151</td>
</tr>
<tr>
<td>Watanabe, Michiaki and Watanabe, Shuji.</td>
<td>Self-adjointness of the momentum operator with a singular term</td>
<td>107</td>
<td>999</td>
</tr>
<tr>
<td>Watanabe, Nobuya.</td>
<td>On topological entropy of group actions on $S^1$</td>
<td>106</td>
<td>245</td>
</tr>
<tr>
<td>Waibel, C.</td>
<td>See Geller, S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weis, Lutz W.</td>
<td>Banach Lattices with the subsequence splitting property</td>
<td>105</td>
<td>87</td>
</tr>
<tr>
<td>Weit, Yitzhak.</td>
<td>See Sternfeld, Yaki</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Welsh, Charles C.</td>
<td>Prime length of crossed products</td>
<td>106</td>
<td>91</td>
</tr>
<tr>
<td>Werner, Elisabeth.</td>
<td>Nondentable solid subsets in Banach lattices failing RNP. Applications to renormings</td>
<td>107</td>
<td>611</td>
</tr>
<tr>
<td>West, Douglas B.</td>
<td>See Kochman, Fred</td>
<td></td>
<td></td>
</tr>
<tr>
<td>West, Thelma.</td>
<td>On the spans and width of simple triods</td>
<td>105</td>
<td>776</td>
</tr>
<tr>
<td>Westphal, U. and Frerking, J.</td>
<td>On a property of metric projections onto closed subsets of Hilbert spaces</td>
<td>105</td>
<td>644</td>
</tr>
<tr>
<td>Willems, Wolfgang.</td>
<td>See Sin, Peter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Williams, Frank.</td>
<td>See Siegel, Jerrold</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Williams, Kenneth S.</td>
<td>See Hardy, Kenneth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wisniewski, Jaroslaw A.</td>
<td>Ruled Fano 4-folds of index 2</td>
<td>105</td>
<td>55</td>
</tr>
<tr>
<td>Wojtowicz, Marek.</td>
<td>Finitely nonreflexive Banach spaces</td>
<td>106</td>
<td>961</td>
</tr>
<tr>
<td>Wong, James C. S.</td>
<td>See Lau, Anthony To-Ming</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wong, James S. W.</td>
<td>Oscillation theorems for second-order nonlinear differential equations</td>
<td>106</td>
<td>1069</td>
</tr>
<tr>
<td>Wortman, Dennis.</td>
<td>See Kamowitz, Herbert</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wu, Jang-Mei.</td>
<td>An example of null sets of parabolic measures</td>
<td>107</td>
<td>949</td>
</tr>
<tr>
<td>Wu, Jianhong.</td>
<td>Convergence of monotone dynamical systems with minimal equilibria</td>
<td>106</td>
<td>907</td>
</tr>
<tr>
<td>Wu, Jyh-Yang.</td>
<td>A diameter pinching sphere theorem for positive Ricci curvature</td>
<td>107</td>
<td>797</td>
</tr>
<tr>
<td>Wu, Lisheng.</td>
<td>Souslin subsets of $P(\omega)$-spaces</td>
<td>106</td>
<td>515</td>
</tr>
<tr>
<td>Wu, Pei Yuan.</td>
<td>See Kuo, Kung-Hwang</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wu, Siye.</td>
<td>See Piazza, Paolo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wu, T. S.</td>
<td>Automorphism groups of locally compact reductive groups</td>
<td>106</td>
<td>537</td>
</tr>
<tr>
<td>Xiu, Guo.</td>
<td>On the convergence of a class of maximal subgroups of a finite group</td>
<td>106</td>
<td>329</td>
</tr>
<tr>
<td>Xu, Yuan.</td>
<td>Bonferroni-type inequalities via interpolating polynomials</td>
<td>107</td>
<td>825</td>
</tr>
<tr>
<td>Xue, Weimin.</td>
<td>Artinian duo rings and self-duality</td>
<td>105</td>
<td>309</td>
</tr>
<tr>
<td>Xue, Weimin.</td>
<td>Two examples of local Artinian rings</td>
<td>107</td>
<td>63</td>
</tr>
<tr>
<td>Yajima, Yukinobu.</td>
<td>On the submetacompactness of products</td>
<td>107</td>
<td>503</td>
</tr>
</tbody>
</table>
INDEX TO VOLUME 105–107

Yale, Keith. See Cima, Joseph A.
Yan, Jurang. On the distance between zeroes and the limit-point problem, 107, 971.
Yang, C. H. On composition of four-symbol δ-codes and Hadamard matrices, 107, 763.
Yang, Kichoon. Meromorphic functions on a compact Riemann surface and associated complete minimal surfaces, 105, 706.
Yi, X. See Lachlan, A. H.
Yoshimoto, Takeshi. Vector-valued Hausdorff summability methods and ergodic theorems, 107, 915.
Yukich, J. E. Optimal matching and empirical measures, 107, 1051.
Zaslavsky, Thomas. Matroids determine the embeddability of graphs in surfaces, 106, 1131.
Zeilberger, Doron. See Stanton, Dennis.
Zelditch, Steven. Splitting of geodesics in homology classes, 105, 1015.
Zimmermann, B. See Miller, A.
Zimmermann, Irene. On a theorem of Deskins, 107, 895.
Zippin, M. See Johnson, W. B.
Zivaljević, Rade T. Extremal Minkowski additive selections of compact convex sets, 105, 697.
Zorboska, Nina. Composition operators induced by functions with supremum strictly smaller than 1, 106, 679.
Every semiprimary ring is the endomorphism ring of a projective module over a quasi-hereditary ring. By Vlastimil Dlab and Claus Michael Ringel .......... 1

Torsion units in alternative loop rings. By Edgar G. Goodaire and César Polcino Milies 7

Tutte polynomials and bicycle dimension of ternary matroids. By François Jaeger ...... 27

A note on the diophantine equation $x^{2p} - Dy^2 = 1$. By Le Maohua .......... 35

Injective hulls of simple $sl(2, \mathbb{C})$ modules are locally Artinian. By Randall P. Dahlberg 39

The Odlyzko conjecture and O'Hara's unimodality proof. By Dennis Stanton and Doron Zeilberger ........................................ 47

Zero cycles on quadric hypersurfaces. By Richard G. Swan ......................... 43

Two definability results in the equational context. By M. Hébert, R. N. McKenzie and G. E. Weaver ........................................... 55

Monomial space curves in $P^3_k$ as binomial set theoretic complete intersections. By Apostolos Thoma ........................................ 67

Two examples of local Artinian rings. By Weimin Xue ................................ 69

On nilpotent derivations of prime rings. By Chen-Lian Chuang .................... 83

On semisimple Malcev algebras. By Alberto Elduque .............................. 91

The linear and quadratic Schur subgroups over the $S$-integers of a number field. By Carl R. Riehm ............................................. 107

On abelian quotients of primitive groups. By Michael Aschbacher and Robert Guralnick ........................................ 119

Simple $C^*$-algebras and subgroups of $Q$. By Gerald J. Murphy ................. 123

Sums and products of Hilbert spaces. By Jesús M. F. Castillo ..................... 127

On the regularity properties for solutions of the Cauchy problem for the porous media equation. By Kazuya Hayasida ................. 139

Holomorphic sectional curvature of some pseudoconvex domains. By Jeffery D. McNeal ..................................... 151

Some remarks on the average range of a vector measure. By Francisco J. Freniche ... 165

On the theorems of Šarkovskii and Štefan on cycles. By Boleslaw Gawel ........ 177

Remark on Walter's inequality for Schur multipliers. By Marek Bożeiko ...... 189

A Hardy-Littlewood maximal inequality for Jacobi type hypergroups. By William C. Connett and Alan L. Schwartz ......................... 201

Rescaling planar hyperbolic sectors. By Marcy Barge ............................. 215

Operator ranges and completely bounded homomorphisms. By D. Benjamin Mathes ............................... 227

Maximal Abelian subalgebras with simple normalizer. By Roberto Longo .......... 239

The asymptotics of the determinant function for a class of operators. By Leonid Friedlander ........................................ 255

The Cauchy transform on bounded domains. By J. M. Anderson and A. Hinkkanen ... 263

A note on joint hyponormality. By Scott McCullough and Vern Paulsen .......... 275

Polynomials of generators of integrated semigroups. By Ralph DeLaubenfels ...... 287

The isometries of $H^p_k$. By Michael C. Connett and Kęstutis Česnavičius .... 299

Hypertranscendence of the functional equation $g(x^2) = [g(x)]^2 + cx$. By Peter Borwein 307

Uniqueness of aperiodic kneading sequences. By Karen M. Brucks ............... 317

Affine invariant subspaces of $C(C)$. By Yaki Sternfeld and Yitzhak Weit ...... 329

The oblique derivative problem for the heat equation in Lipschitz cylinders. By Russell M. Brown ..................................... 341

Complemented copies of $c_0$ in vector-valued Hardy spaces. By Patrick N. Dowling .... 353

The positive fixed points on Banach lattices. By Bruce Christianson ............ 365
G.  TOPOLOGY

An inequality for harmonic maps of compact Kähler manifolds that implies holomorphicity.

By James F. Glazebrook ................................................................. 261

Solvability of non-invariant differential operators on homogeneous spaces. By

Ronald L. Lipsman ................................................................. 271

Irreducible representations of normal spaces. By Leonard R. Rubin ................. 277

Erratum to “Classification of one-dimensional hypergroups”. By Alan L. Schwartz ..... 285
A. ALGEBRA AND NUMBER THEORY

A greedoid polynomial which distinguishes rooted arborescences. By GARY GORDON and ELIZABETH McMAHON ................................................................. 287
The Henselian defect for valued function fields. By JACK OHM .......................... 299
Graded rings and Krull Orders. By ERIC JESPERS and PAUL WAUTERS .................. 309
On a theorem of Feit and Tits. By PETER B. KLEIDMAN and MARTIN W. LIEBECK ...... 315
A $p$-adic analogue of the Gauss-Bonnet Theorem for certain Mumford curves. By RICHARD M. FREIJE ................................................................. 323
An integrally closed ring which is not the intersection of valuation rings. By JOACHIM GRÄTER ................................................................. 333
Remarks on rings of constants of derivations. By WEI LI .................................. 337
Ideal theoretic complete intersections in $P^2_k$. By APOSTOLOS THOMA ............... 341
Representatives for finite sets. By XING-DE JIA .............................................. 347

B. ANALYSIS

Group $C^*$-algebras as algebras of “continuous functions” with non-commuting variables. By Wojciech Szymański ........................................... 353
On superposition of functions of bounded $\phi$-variation. By FRANCISZEK PRUS-WISIOWSKI 361
On the existence of idempotent liftings. By S. GREKAS .................................... 367
A simple proof of Koornwinder’s addition formula for the little $q$-Legendre polynomials. By MIZAN RAHMAN ................................................................. 373
On Picard’s theorem for entire quasiregular mappings. By MATTI VOORINEN ............ 383
On dual spaces with bounded sequences without weak* convergent convex blocks. By THOMAS SCHLUMPRECHT ........................................... 395
A new proof of uniqueness for multiple trigonometric series. By J. MARSHALL ASH ...... 409
An iteration process for nonexpansive mappings with applications to fixed point theory in product spaces. By W. A. KIRK ........................................... 411
Compact endomorphisms of Banach algebras II. By HERBERT KAMOWITZ, STEPHEN SCHEINBERG and DENNIS WORTMAN .................................................. 417
Weighted weak-type $(1, 1)$ inequalities for rough operators. By STEVE HOFMANN ........ 423

C. APPLIED MATHEMATICS

The Number Hides Game. By V. J. BASTON, F. A. BOSTOCK and T. S. FERGUSON ........ 437

D. GEOMETRY

Graphs with parallel mean curvature. By ISABEL MARIA DA COSTA SALAVESSA ............ 449
Uniform bounds for isoperimetric problems. By JERROLD SIEGEL and FRANK WILLIAMS . 459

E. LOGIC AND FOUNDATIONS

Canonical relativized cylindric set algebras. By ROGER D. MADDOX ......................... 465

F. STATISTICS AND PROBABILITY

An entropy inequality for the bi-multivariate hypergeometric distribution. By FRED KOCHMAN, ALAN MURRAY and DOUGLAS B. WEST ......................... 479
Certain positive-definite kernels. By MINA OSSIANDER and EDWARD C. WAYMIRE ........ 487
The $T_1$ theorem for Martingales. By ANDREW G. BENNETT .................................. 493

G. TOPOLOGY

On the submetacompactness of products. By YUKINOBU YAJIMA ............................ 503
Periodic point free homeomorphism of $T^2$. By MICHAEL HANDEL ......................... 511
$L^2$-Dolbeault complexes on singular curves and surfaces. By PETER HASKELL ............ 517
A note on the category of the free loop space. By E. FADELL and S. HUSSEINI ............ 527
On the homotopy type of the spectrum representing elliptic cohomology. By Andrew Baker

Periodic points for homeomorphisms of hereditarily decomposable chainable continua. By W. T. Ingram

Lattice-isotopic arrangements are topologically isomorphic. By Richard Randell

New combinatorial interpretations of two analytic identities. By A. K. Agarwal

SHORTER NOTE

A note on pseudocompact groups. By Robbert Fokkink
PROCEEDINGS OF THE AMERICAN MATHEMATICAL SOCIETY

CONTENTS

Vol. 107, No. 3  November 1989  Whole No. 365

A. ALGEBRA AND NUMBER THEORY

On graphs representing automorphisms of free groups. By Sava Krstic .......... 573
Prime ideals in two-dimensional polynomial rings. By William Heinzer and Sylvia Wiegand .......... 577
Can the Weyl algebra be a fixed ring? By S. P. Smith ............................... 587
Some geometric aspects of hyperbolic boundary value problems. By J. Brian Conrey and Michael W. Smiley .......... 591
Almost complete tilting modules. By Dieter Happel and Luise Unger .......... 603

B. ANALYSIS

Nondentable solid subsets in Banach lattices failing RNP. Applications to renormings. By Elisabeth Werner .............. 611
Algebraic structure in complex function spaces. By A. J. Ellis .................. 621
Unitary representations of Lie groups and Gårding's inequality. By Ola Bratteli, Fred M. Goodman, Palle E. T. Jørgensen and Derek W. Robinson .......... 627
On second-category sets. By Péter Komjáth ............................................. 653
Remarks on Chacon's Biting Lemma. By J. M. Ball and F. Murat .................. 655
Self-adjointness of the *-representation generated by the sum of two positive linear functionals. By Atsushi Inoue .......... 665
The Torus Lemma on calibrations, extended. By Frank Morgan .......... 675
A weak-star rational approximation problem connected with subnormal operators. By James Dudziak .......... 679
A generalized Hölder inequality and a generalized Szego theorem. By Florin Avram and Lawrence Brown .......... 687
Smooth polynomial paths with nonanalytic tangents. By Robert M. McLeod and Gary H. Meisters .......... 697
A short proof and a generalization of Miranda's existence theorem. By Michael N. Vrahatis .......... 701
Formation of singularities in compressible fluids in two-space dimensions. By M. A. Rammaha .......... 705
Traces on irregular ideals. By József V. Varga .......... 715
Comparison between the Kobayashi and Carathéodory distances on strongly pseudoconvex bounded domains in C". By Sergio Venturini .......... 725
The Stieltjes moments problem for rapidly decreasing functions. By Antonio J. Duran .......... 731
Isometries on conservative subalgebras of bounded sequences. By J. Connor and I. Loomis .......... 743
Extension of operators from subspaces of c0(Γ) into C(K) spaces. By W. B. Johnson and M. Zippin .......... 747
Weakly compact homomorphisms from C*-algebras are of finite rank. By Martin Mathieu .......... 761

C. APPLIED MATHEMATICS

On composition of four-symbol δ-codes and Hadamard matrices. By C. H. Yang .......... 763

D. GEOMETRY

A pinching theorem for cusps of negatively curved manifolds with finite volume. By Masahiko Kanai .......... 777
Homogeneous spacetimes of zero curvature. By Della C. Duncan and Edwin C. Ihrig .......... 785
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A diameter pinching sphere theorem for positive Ricci curvature.</td>
<td>797</td>
</tr>
<tr>
<td>By Jyh-Yang Wu</td>
<td></td>
</tr>
<tr>
<td>Complete Möbius strips minimally immersed in $\mathbb{R}^3$.</td>
<td>803</td>
</tr>
<tr>
<td>By Toru Ishihara</td>
<td></td>
</tr>
<tr>
<td>First eigenvalue of the Laplacean and torsion of parallelizable</td>
<td>807</td>
</tr>
<tr>
<td>Riemannian manifolds.</td>
<td></td>
</tr>
<tr>
<td>By Patrick Ghanaat</td>
<td></td>
</tr>
<tr>
<td>E. LOGIC AND FOUNDATIONS</td>
<td></td>
</tr>
<tr>
<td>Products of perfectly meager sets and Lusin's function.</td>
<td>811</td>
</tr>
<tr>
<td>By Janusz Pawlikowski</td>
<td></td>
</tr>
<tr>
<td>F. STATISTICS AND PROBABILITY</td>
<td></td>
</tr>
<tr>
<td>Convergence to ends for random walks on the automorphism group of a</td>
<td>817</td>
</tr>
<tr>
<td>tree.</td>
<td></td>
</tr>
<tr>
<td>By Donald I. Cartwright and P. M. Soardi</td>
<td></td>
</tr>
<tr>
<td>Bonferroni-type inequalities via interpolating polynomials.</td>
<td>825</td>
</tr>
<tr>
<td>By Yuan Xu</td>
<td></td>
</tr>
<tr>
<td>G. TOPOLOGY</td>
<td></td>
</tr>
<tr>
<td>Unstable $v_1$-periodic homotopy groups of a Moore space.</td>
<td>833</td>
</tr>
<tr>
<td>By Robert D. Thompson</td>
<td></td>
</tr>
<tr>
<td>On the preservation of Baire category under preimages.</td>
<td>847</td>
</tr>
<tr>
<td>By Dominikus Noll</td>
<td></td>
</tr>
<tr>
<td>A new example in $K$-theory of loopspaces.</td>
<td>855</td>
</tr>
<tr>
<td>By Tahsin Ghazal</td>
<td></td>
</tr>
<tr>
<td>Erratum to “Continuity properties of optimal stopping value”.</td>
<td>857</td>
</tr>
<tr>
<td>By John Elton</td>
<td></td>
</tr>
</tbody>
</table>
A. ALGEBRA AND NUMBER THEORY

Hyperbolic surfaces and quadratic equations in groups. By Zhi-Bin Gu .......................... 859
The fixed-point-space dimension function for a finite group representation. By I. M. Isaacs 867
Notes of the inversion of integrals I. By George R. Kempf ................................. 873
Inner gradings and Galois extensions with normal basis. By Margaret Beattie ............. 881
Partitions with equal products (II). By John B. Kelly ........................................ 887
On a theorem of Deskins. By Irene Zimmermann ............................................. 895
A class of simple Lie algebras of characteristic three. By Gordon Brown ............ 901
A measuring argument for finite groups. By Andrew Chermak and Alberto Delgado ... 907

B. ANALYSIS

Vector-valued Hausdorff summability methods and ergodic theorems.
By Takeshi Yoshimoto ................................................................. 915
Short-time asymptotics for the trace of one- and multi-dimensional Schrödinger semigroups.
By Vassilis G. Papanicolaou ....................................................... 927
Uniqueness of bounded harmonic functions. By Marvin Ortel and Walter Schneider 937
Arveson nests and operator factorization along commutative subspace lattices.
By John Daughtry and Ronald Johns ............................................. 943
An example of null sets of parabolic measures. By Jang-Mei Wu .......................... 949
Minimal harmonic functions on Denjoy domains. By Stephen J. Gardiner .............. 963
On the distance between zeroes and the limit-point problem. By Jurang Yan ....... 971
Countably additive full conditional probabilities. By Thomas E. Armstrong ....... 977
Second order elliptic equations with degenerate weight. By W. Allegretto ......... 989
Self-adjointness of the momentum operator with a singular term. By Michiaki Watanabe
and Shuji Watanabe ........................................................................ 999
Ordinary differential equations on closed subsets of Fréchet spaces with applications to fixed
point theorems. By Jacek Polewczak .................................................. 1005
On the zeros of $L' + L^2$ for certain rational functions $L$. By T. Sheil-Small .... 1013
A simple proof of Livingston's inequality for Carathéodory functions.
By Philippe Delgsarte and Yves Genin .............................................. 1017
Dense barrelled subspaces of uncountable codimension. By Stephen A. Saxon and
Wendy J. Robertson ......................................................................... 1021
Weakly almost periodic elements in $L_\infty(G)$ of a locally compact group.
By Anthony To-Ming Lau and James C. S. Wong .................................... 1031

D. GEOMETRY

Deformations of Dupin hypersurfaces. By Ulrich Pinkall and
Gudlaugur Thorbergsson ............................................................... 1037
$O(2) \times O(2)$-invariant hypersurfaces with constant negative scalar curvature in $E^4$.
By Takashi Okayasu ........................................................................ 1045

F. STATISTICS AND PROBABILITY

Optimal matching and empirical measures. By J. E. Yukich .............................. 1051
A necessary and sufficient condition for convergence in law of random sums of random vari-
ables under nonrandom centering. By Mark Finkelstein and Howard G. Tucker 1061

G. TOPOLOGY

The image of $H_*(BSO; Z_2)$ in $H_*(BO; Z_2)$. By Stavros Papastavridis .... 1071
The image of $H_*(BSU; Z_p)$ in $H_*(BU; Z_p)$. By Stavros Papastavridis .... 1075
On barely $\alpha$-compact spaces and remote points in $\beta_\alpha X \setminus X$. By Robert L. Blair,
Lech T. Polkowski and Mary Anne Swardson ........................................ 1079
On extending actions. By ROBERT VAUGHT ........................................ 1087
Cyclic surgery on knots. By SHICHEM WANG ..................................... 1091
Cohomological local connectedness of decomposition space. By JERZY DYDAK and
   JOHN J. WALSH ................................................................. 1095
A necessary and sufficient condition for a 3-manifold to have Heegaard genus one.
   By JOEL HASS and ABIGAIL THOMPSON .................................. 1107
Metrization of the one-point compactification. By MARK MANDELKERN ........ 1111
Adherent compact spaces. By ROBERT L. KRYSOCK ............................. 1117
Lens spaces and Dehn surgery. By STEVEN A. BLEILER and RICHARD A. LITHERLAND .... 1127
The existence of almost translation invariant ultrafilters on any semigroup.
   By TALIN PAPAZYAN ............................................................ 1133
Uniform persistence and repellors for maps. By JOSEF HOFBAUER and JOSEPH W.-H. SO . . 1137
SHORTER NOTES
Short proofs of two hypergeometric summation formulas of Karlsson.
   By SHALOSH B. EKHAD ...................................................... 1143
Addendum to “Manifolds of almost half of the maximal volume”. By OGUZ C. DURUMERIC 1145
Addendum to “Measurable Darboux functions”. By J. B. BROWN, P. HUMKE and
   M. LACZKOVICH ................................................................. 1147
CONTENTS—Continued from back cover

On extending actions. By Robert Vaught ......................................................... 1087
Cyclic surgery on knots. By Shicheng Wang ....................................................... 1091
Cohomological local connectedness of decomposition space. By Jerzy Dydak and
    John J. Walsh .................................................................................................. 1095
A necessary and sufficient condition for a 3-manifold to have Heegaard genus one.
    By Joel Hass and Abigail Thompson ............................................................... 1107
Metrization of the one-point compactification. By Mark Mandelkern .................... 1111
Adherent compact spaces. By Robert L. Krystock ............................................... 1117
Lens spaces and Dehn surgery. By Steven A. Bleiler and Richard A. Litherland .... 1127
The existence of almost translation invariant ultrafilters on any semigroup.
    By Talin Papazyan .......................................................................................... 1133
Uniform persistence and repellors for maps. By Josef Hofbauer and Joseph W.-H. So .. 1137

SHORTER NOTES

Short proofs of two hypergeometric summation formulas of Karlsson.
    By Shalosh B. Ekhad ...................................................................................... 1143
Addendum to “Manifolds of almost half of the maximal volume”. By Oguz C. Durumeric 1145
Addendum to “Measurable Darboux functions”. By J. B. Brown, P. Humke and
    M. Laczkovich ............................................................................................... 1147
## CONTENTS

### A. ALGEBRA AND NUMBER THEORY

<table>
<thead>
<tr>
<th>Title</th>
<th>Author(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyperbolic surfaces and quadratic equations in groups.</td>
<td>Zhi-Bin Gu</td>
<td>859</td>
</tr>
<tr>
<td>The fixed-point-space dimension function for a finite group representation.</td>
<td>I. M. Isaacs</td>
<td>867</td>
</tr>
<tr>
<td>Notes of the inversion of integrals I.</td>
<td>George R. Kempf</td>
<td>873</td>
</tr>
<tr>
<td>Inner gradings and Galois extensions with normal basis.</td>
<td>Margaret Beattie</td>
<td>881</td>
</tr>
<tr>
<td>Partitions with equal products (II).</td>
<td>John B. Kelly</td>
<td>887</td>
</tr>
<tr>
<td>On a theorem of Deskins.</td>
<td>Irene Zimmermann</td>
<td>895</td>
</tr>
<tr>
<td>A class of simple Lie algebras of characteristic three.</td>
<td>Gordon Brown</td>
<td>901</td>
</tr>
<tr>
<td>A measuring argument for finite groups.</td>
<td>Andrew Chermak and Alberto Delgado</td>
<td>907</td>
</tr>
</tbody>
</table>

### B. ANALYSIS

<table>
<thead>
<tr>
<th>Title</th>
<th>Author(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vector-valued Hausdorff summability methods and ergodic theorems.</td>
<td>Takeshi Yoshimoto</td>
<td>915</td>
</tr>
<tr>
<td>Short-time asymptotics for the trace of one- and multi-dimensional Schrödinger semigroups.</td>
<td>Vassilis G. Papamicaou</td>
<td>927</td>
</tr>
<tr>
<td>Uniqueness of bounded harmonic functions.</td>
<td>Marvin Ortel and Walter Schneider</td>
<td>937</td>
</tr>
<tr>
<td>Arveson nests and operator factorization along commutative subspace lattices.</td>
<td>John Daughtry and Ronald Johns</td>
<td>943</td>
</tr>
<tr>
<td>An example of null sets of parabolic measures.</td>
<td>Jang-Mei Wu</td>
<td>949</td>
</tr>
<tr>
<td>Minimal harmonic functions on Denjoy domains.</td>
<td>Stephen J. Gardiner</td>
<td>963</td>
</tr>
<tr>
<td>On the distance between zeroes and the limit-point problem.</td>
<td>Jurang Yan</td>
<td>971</td>
</tr>
<tr>
<td>Countably additive full conditional probabilities.</td>
<td>Thomas E. Armstrong</td>
<td>977</td>
</tr>
<tr>
<td>Second order elliptic equations with degenerate weight.</td>
<td>W. Allegretto</td>
<td>989</td>
</tr>
<tr>
<td>Self-adjointness of the momentum operator with a singular term.</td>
<td>Michiaki Watanabe and Shuji Watanabe</td>
<td>999</td>
</tr>
<tr>
<td>Ordinary differential equations on closed subsets of Fréchet spaces with applications to fixed point theorems.</td>
<td>Jacek Polewczak</td>
<td>1005</td>
</tr>
<tr>
<td>On the zeros of $L^1 + L^2$ for certain rational functions $L$.</td>
<td>T. Sheil-Small</td>
<td>1013</td>
</tr>
<tr>
<td>A simple proof of Livingston’s inequality for Carathéodory functions.</td>
<td>Philippe Delsarte and Yves Genin</td>
<td>1017</td>
</tr>
<tr>
<td>Dense barrelled subspaces of uncountable codimension.</td>
<td>Stephen A. Saxon and Wendy J. Robertson</td>
<td>1021</td>
</tr>
<tr>
<td>Weakly almost periodic elements in $L^\infty(G)$ of a locally compact group.</td>
<td>Anthony To-Ming Lau and James C. S. Wong</td>
<td>1031</td>
</tr>
</tbody>
</table>

### D. GEOMETRY

<table>
<thead>
<tr>
<th>Title</th>
<th>Author(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deformations of Dupin hypersurfaces.</td>
<td>Ulrich Pinkall and Thorbergsson</td>
<td>1037</td>
</tr>
<tr>
<td>$O(2) \times O(2)$-invariant hypersurfaces with constant negative scalar curvature in $E^4$.</td>
<td>Takashi Okayasu</td>
<td>1045</td>
</tr>
</tbody>
</table>

### F. STATISTICS AND PROBABILITY

<table>
<thead>
<tr>
<th>Title</th>
<th>Author(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimal matching and empirical measures.</td>
<td>J. E. Yukich</td>
<td>1051</td>
</tr>
<tr>
<td>A necessary and sufficient condition for convergence in law of random sums of random variables under nonrandom centering.</td>
<td>Mark Finkelstein and Howard G. Tucker</td>
<td>1061</td>
</tr>
</tbody>
</table>

### G. TOPOLOGY

<table>
<thead>
<tr>
<th>Title</th>
<th>Author(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>The image of $H_\ast(BO;Z_2)$ in $H_\ast(BO;Z_2)$.</td>
<td>Stavros Papastavridis</td>
<td>1071</td>
</tr>
<tr>
<td>The image of $H_\ast(BU;Z_p)$ in $H_\ast(BU;Z_p)$.</td>
<td>Stavros Papastavridis</td>
<td>1075</td>
</tr>
<tr>
<td>On barely $\alpha$-compact spaces and remote points in $\beta\alpha X \setminus X$.</td>
<td>Robert L. Blair, Lech T. Polkowski and Mary Anne Swardson</td>
<td>1079</td>
</tr>
</tbody>
</table>

(Continued on inside back cover)