

**Pacific
Journal of
Mathematics**

VOLUME LXVIII

1977

CONTENTS

William A. Adkins, Aldo Andreotti and J. V. Leahy, <i>An analogue of Oka's theorem for weakly normal complex spaces</i>	297
Richard J. Bagby, <i>On L^p, L^q multipliers of Fourier transforms</i>	1
Robert Beauwens and Jean-Jacques Van Binnebeek, <i>Convergence theorems in Banach algebras</i>	13
J. C. Becker, <i>Skew linear vector fields on spheres in the stable range</i>	25
Michael J. Beeson, <i>Continuity and comprehension in intuitionistic formal systems</i>	29
A. K. Boyle, M. G. Deshpande and E. H. Feller, <i>On nonsingularly k-primitive rings</i>	303
Rolando B. Chuaqui, <i>Measures invariant under a group of transformations</i>	313
W. D. Curtis and F. R. Miller, <i>Gauge groups and classification of bundles with simple structural groups</i>	331
James K. Deveney, <i>Generalized primitive elements for transcendental field extensions</i>	41
G. J. Etgen and W. E. Taylor, Jr., <i>The essential uniqueness of bounded nonoscillatory solutions of certain even order differential equations</i>	339
Paul Ezust, <i>On a representation theory for ideal systems</i>	347
S. Feder, S. Gitler and K. Y. Lam, <i>Composition properties of projective homotopy classes</i>	47
N. J. Fine, <i>Tensor products of function rings under composition</i>	63
Benno Fuchssteiner, <i>Iterations and fixpoints</i>	73
Richard C. Gilbert, <i>The deficiency index of a third order operator</i>	369
John Ginsburg, <i>S-spaces in countably compact spaces using Ostaszewski's method</i>	393
B. Gordon and S. P. Mohanty, <i>On a theorem of Delaunay and some related results</i>	399
Douglass L. Grant, <i>Topological groups which satisfy an open mapping theorem</i>	411
Charles L. Hagopian, <i>A characterization of solenoids</i>	425
Kyong T. Hahn, <i>On completeness of the Bergman metric and its subordinate metrics, II</i>	437
Wolfgang Heil, <i>On punctured balls in manifolds</i>	81
G. Hochschild and D. Wigner, <i>Abstractly split group extensions</i>	447
Shigeru Itoh, <i>A random fixed point theorem for a multivalued contraction mapping</i>	85

Gary S. Itzkowitz, <i>Inner invariant subspaces</i>	455
Nicholas P. Jewell, <i>Continuity of module and higher derivations</i>	91
Roger D. Konyndyk, <i>Residually central wreath products</i>	99
Linda Lesniak-Foster and John Roberts, <i>On Ramsey theory and graphical parameters</i>	105
Vo-Thanh Liem, <i>Some cellular subsets of the spheres</i>	115
Jiang Luh and Mohan S. Putcha, <i>A commutativity theorem for non-associative algebras over a principal ideal domain</i>	485
Dieter Lutz, <i>A perturbation theorem for spectral operators</i>	127
P. H. Maserick, <i>Moments of measures on convex bodies</i>	135
Stephen McAdam, <i>Unmixed 2-dimensional local domains</i>	153
D. B. McAlister and N. R. Reilly, <i>E-unitary covers for inverse semigroups</i>	161
William H. Meeks III and Julie Patrusky, <i>Representing codimension-one homology classes by embedded submanifolds</i>	175
Premalata Mohapatro, <i>Generalised quasi-Nörlund summability</i>	177
Takahiko Nakazi, <i>Superalgebras of weak-* Dirichlet algebras</i>	197
D. J. Newman and A. R. Reddy, <i>Addendum to “Rational approximation of e^{-x} on the positive real axis”</i>	489
Catherine L. Olsen, <i>Norms of compact perturbations of operators</i>	209
Akio Osada, <i>On the distribution of a-points of a strongly annular function</i>	491
William H. Ruckle, <i>Absolutely divergent series and isomorphism of subspaces II</i>	229
Bernard Russo, <i>On the Hausdorff–Young Theorem for integral operators</i>	241
A. Sagle and J. Schumi, <i>Anti-commutative algebras and homogeneous spaces with multiplications</i>	255
Jeffrey L. Spielman, <i>A characterization of the Gaussian distribution in a Hilbert space</i>	497
R. M. Stephenson, Jr., <i>Symmetrizable-closed spaces</i>	507
R. E. Stong, <i>Stiefel–Whitney classes of manifolds</i>	271
D. Suryanarayana, <i>On a theorem of Apostol concerning Möbius functions of order k</i>	277
Yoshio Tanaka, <i>On closedness of C- and C^*-embeddings</i>	283
P. G. Trotter and Takayuki Tamura, <i>Completely semisimple inverse Δ-semigroups admitting principal series</i>	515
C. Vinsonhaler and W. J. Wickless, <i>Torsion free abelian groups quasi-projective over their endomorphism rings</i>	527
Frank Wattenberg, <i>Topologies on the set of closed subsets</i>	537
Chi Song Wong, <i>Characterizations of certain maps of contractive types</i>	293
R. A. Zalik, <i>Integral representation of Tchebychef systems</i>	553

Pacific Journal of Mathematics

Richard J. Bagby, <i>On L^p, L^q multipliers of Fourier transforms</i>	1
Robert Beauwens and Jean-Jacques Van Binnebeek, <i>Convergence theorems in Banach algebras</i>	13
J. C. Becker, <i>Skew linear vector fields on spheres in the stable range</i>	25
Michael J. Beeson, <i>Continuity and comprehension in intuitionistic formal systems</i>	29
James K. Deveney, <i>Generalized primitive elements for transcendental field extensions</i>	41
S. Feder, S. Gitler and K. Y. Lam, <i>Composition properties of projective homotopy classes</i>	47
N. J. Fine, <i>Tensor products of function rings under composition</i>	63
Benno Fuchssteiner, <i>Iterations and fixpoints</i>	73
Wolfgang Heil, <i>On punctured balls in manifolds</i>	81
Shigeru Itoh, <i>A random fixed point theorem for a multivalued contraction mapping</i>	85
Nicholas P. Jewell, <i>Continuity of module and higher derivations</i>	91
Roger D. Konyndyk, <i>Residually central wreath products</i>	99
Linda Lesniak-Foster and John Roberts, <i>On Ramsey theory and graphical parameters</i> ..	105
Vo-Thanh Liem, <i>Some cellular subsets of the spheres</i>	115
Dieter Lutz, <i>A perturbation theorem for spectral operators</i>	127
P. H. Maserick, <i>Moments of measures on convex bodies</i>	135
Stephen McAdam, <i>Unmixed 2-dimensional local domains</i>	153
D. B. McAlister and N. R. Reilly, <i>E-unitary covers for inverse semigroups</i>	161
William H. Meeks III and Julie Patrusky, <i>Representing codimension-one homology classes by embedded submanifolds</i>	175
Premalata Mohapatro, <i>Generalised quasi-Nörlund summability</i>	177
Takahiko Nakazi, <i>Superalgebras of weak-* Dirichlet algebras</i>	197
Catherine L. Olsen, <i>Norms of compact perturbations of operators</i>	209
William H. Ruckle, <i>Absolutely divergent series and isomorphism of subspaces II</i>	229
Bernard Russo, <i>On the Hausdorff-Young Theorem for integral operators</i>	241
A. Sagle and J. Schumi, <i>Anti-commutative algebras and homogeneous spaces with multiplications</i>	255
R. E. Stong, <i>Stiefel-Whitney classes of manifolds</i>	271
D. Suryanarayana, <i>On a theorem of Apostol concerning Möbius functions of order k</i>	277
Yoshio Tanaka, <i>On closedness of C- and C*-embeddings</i>	283
Chi Song Wong, <i>Characterizations of certain maps of contractive types</i>	293

PACIFIC JOURNAL OF MATHEMATICS

EDITORS

RICHARD ARENS (Managing Editor)
University of California
Los Angeles, CA 90024

J. DUGUNDJI
Department of Mathematics
University of Southern California
Los Angeles, CA 90007

R. A. BEAUMONT
University of Washington
Seattle, WA 98105

R. FINN AND J. MILGRAM
Stanford University
Stanford, CA 94305

C. C. MOORE
University of California
Berkeley, CA 94720

ASSOCIATE EDITORS

E. F. BECKENBACH

B. H. NEUMANN

F. WOLF

K. YOSHIDA

SUPPORTING INSTITUTIONS

UNIVERSITY OF BRITISH COLUMBIA
CALIFORNIA INSTITUTE OF TECHNOLOGY
UNIVERSITY OF CALIFORNIA
MONTANA STATE UNIVERSITY
UNIVERSITY OF NEVADA
NEW MEXICO STATE UNIVERSITY
OREGON STATE UNIVERSITY
UNIVERSITY OF OREGON
OSAKA UNIVERSITY

UNIVERSITY OF SOUTHERN CALIFORNIA
STANFORD UNIVERSITY
UNIVERSITY OF HAWAII
UNIVERSITY OF TOKYO
UNIVERSITY OF UTAH
WASHINGTON STATE UNIVERSITY
UNIVERSITY OF WASHINGTON

* * *

AMERICAN MATHEMATICAL SOCIETY

The Supporting Institutions listed above contribute to the cost of publication of this Journal, but they are not owners or publishers and have no responsibility for its contents or policies.

Mathematical papers intended for publication in the *Pacific Journal of Mathematics* should be in typed form or offset-reproduced (not dittoed), double spaced with large margins. Underline Greek letters in red, German in green, and script in blue. The first paragraph or two must be capable of being used separately as a synopsis of the entire paper. Items of the bibliography should not be cited there unless absolutely necessary, in which case they must be identified by author and Journal, rather than by item number. Manuscripts, in duplicate, may be sent to any one of the four editors. Please classify according to the scheme of Math. Reviews, Index to Vol. 39. All other communications should be addressed to the managing editor, or Elaine Barth, University of California, Los Angeles, California, 90024.

100 reprints are provided free for each article, only if page charges have been substantially paid. Additional copies may be obtained at cost in multiples of 50.

The *Pacific Journal of Mathematics* is issued monthly as of January 1966. Regular subscription rate: \$72.00 a year (6 Vols., 12 issues). Special rate: \$36.00 a year to individual members of supporting institutions.

Subscriptions, orders for back numbers, and changes of address should be sent to Pacific Journal of Mathematics, 103 Highland Boulevard, Berkeley, California, 94708.

PUBLISHED BY PACIFIC JOURNAL OF MATHEMATICS, A NON-PROFIT CORPORATION
Printed at Jerusalem Academic Press, POB 2390, Jerusalem, Israel.

Copyright © 1977 Pacific Journal of Mathematics
All Rights Reserved