# Pacific Journal of Mathematics

VOLUME LXXXI 1979

# PACIFIC JOURNAL OF MATHEMATICS

### **EDITORS**

DONALD BABBITT (Managing Editor)

University of California Los Angeles, California 90024

Hugo Rossi

University of Utah Salt Lake City, UT 84112

C. C. MOORE

University of California Berkeley, CA 94720 J. DUGUNDJI

Department of Mathematics University of Southern California Los Angeles, California 90007

R. FINN AND J. MILGRAM

Stanford University

Stanford, California 94305

# 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, RENO
NEW MEXICO STATE UNIVERSITY
OREGON STATE UNIVERSITY
UNIVERSITY OF OREGON

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

Printed in Japan by International Academic Printing Co., Ltd., Tokyo, Japan

# CONTENTS

# A-ALGEBRA AND NUMBER THEORY

R. F. Damiano, Coflat rings and modules	349
finite projective covers	45
R. J. Evans, Resolution of sign ambiguities in Jacobi and Jacobsthal sums	71
H. Gaskill, See A. Day, H. Gaskill and W. Poguntke M. Gould and H. H. James, Automorphism groups retracting	
onto symmetric groups	93
the lattice of divisors of an integer	411
C. Levesque, A class of fundamental units and some classes of Jacobi-Perron algorithms in pure cubic fields	447
J. E. Mills, The idempotents of a class of 0-simple inverse semigroups	159
W. Poguntke, See A. Day, H. Gaskill and W. Poguntke L. J. Ratliff, Jr., Two theorems on the prime divisors of zero	
in completions of local domains	537
a related eigenvalue problem	217
D. J. Winter, Triangulable subalgebras of Lie p-algebras	273
B-ANALYSIS	
T. E. Armstrong, Simplicial subdivision of infinite dimensional compact cubes	1
<ul><li>H. S. Bear, Approximate identities and pointwise convergence.</li><li>E. Behrends, The centralizer of tensor products of Banach spaces</li></ul>	17
(a function space representation)	291
on convex sets with the Radon-Nikodym property R. Carlson, Eigenfunction expansions for self-adjoint integro-	29
differential operators	
on foundation semigroups with weakly compact orbits U. Elias, Necessary conditions and sufficient conditions for	
disfocality and disconjugacy of a differential equation J. A. Fridy, Tauberian theorems via block dominated matrices .	
A. Hopenwasser and D. Larson, The carrier space of a reflexive operator algebra	417

K. Kreith, Nonlinear differential equations with monotone	!
	. 101
D. Larson, See A. Hopenwasser and D. Larson	
TC. Lim, A constructive proof of the infinite version of	
	. 467
R. C. McCann, Asymptotically stable dynamical systems are	
linear	
P. A. McCoy, Approximation and harmonic continuation of	
axially symmetric potentials in $E^{\mathfrak s}$	
B. W. McEnnis, Shifts on indefinite inner product spaces	
J. Miles, On entire functions of infinite order with radically	
distributed zeros	
E. J. Moulis, Jr., Generalizations of the Robertson functions.	
T. Nakazi, Extended weak-Dirichlet algebras	
C. L. Prather, On the zeros of derivatives of balanced trigonometric	
polynomials	
I. Raeburn, An implicit function theorem in Banach spaces.	
G. L. G. Sleijpen, See H. A. M. Dzinotyiweyi and G. L. G. Sleijpen	
R. R. Smith and J. D. Ward, M-ideals in $B(l_p)$	
M. Talagrand, Deux generalisations d'un theoreme de I. Namioka	
J. Voigt, On Y-closed subspaces of X, for Banach spaces $X \subset Y$ ;	
existence of alternating elements in subspaces of $C(J)$	. 253
J. D. Ward, See R. R. Smith and J. D. Ward	
S. M. Webster, On mapping an n-ball into an $(n+1)$ -ball in	
$complex \ space \ \ldots \ \ldots \ \ldots \ \ldots \ \ldots$	. 267
D — GEOMETRY	
E. Akyildiz, Vector fields and equivariant bundles	
G. R. Burton, Congruent sections of a convex body	
R. Moynihan and B. Schweizer, Betweenness relations in	
- ·	. 175
B. Schweizer, See R. Moynihan and B. Schweizer	
S. E. Wilson, Operators over regular maps	559
$\mathbf{F} - \mathbf{STATISTICS}$	
M. Sambandham, On the average number of real zeros of a class	
of random algebraic curves	207
G-TOPOLOGY	
J. W. Carlson, H-closed and countably compact extensions	
E. K. van Douwen and W. F. Pfeffer, Some properties of	
the Sorgenfrey line and related spaces	371

V.	L. Hansen, Polynomial covering spaces and homomorphisms
	into the braid groups
K.	B. Lee, Spaces in which compacta are uniformly regular
	$G_{i}$
D.	Maharam and A. H. Stone, Borel boxes 471
S.	Ocken, Perturbing embeddings in codimension two 197
$\mathbf{w}.$	F. Pfeffer, See E. K. van Douwen and W. F. Pfeffer
A.	H. Stone, See D. Maharam and A. H. Stone
G.	Tashjian, Cartesian-closed coreflective subcategories of Tychonoff
	spaces

# Pacific Journal of Mathematics

THOMAS E. ARMSTRONG 1
H. S. BEAR
RICHARD D. BOURGIN 29
ALAN DAY, HERB GASKILL, and WERNER POGUNTKE 45
HENRY A. M. DZINOTYIWEYI and GERARD L. G. SLEIJPEN 61
RONALD J. EVANS 71
J. A. FRIDY 81
MATHEW GOULD and HELEN H. JAMES 93
KURT KREITH101
BRIAN W. McENNIS113
JOSEPH MILES131
JANET E. MILLS
EDWARD J. MOULIS, JR
R. MOYNIHAN and B. SCHWEIZER175
STANLEY OCKEN
M. SAMBANDHAM207
J. L. SEARCY and B. A. TROESCH217
R. R. SMITH and J D. WARD227
MICHEL TALAGRAND239
JURGEN VOIGT253
S. M. WEBSTER267
DAVID J. WINTER

Subject listing on inside back cover

# PACIFIC JOURNAL OF MATHEMATICS

# **EDITORS**

DONALD BABBITT (Managing Editor)

University of California Los Angeles, CA 90024

Hugo Rossi

University of Utah Salt Lake City, UT 84112

C.C. MOORE

University of California Berkeley, CA 94720 J. Dugundji

Department of Mathematics
University of Southern California
Log Appelos CA 20007

Los Angeles, CA 90007

R. FINN and J. MILGRAM

Stanford University Stanford, CA 94305

## 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, RENO
NEW MEXICO STATE UNIVERSITY
OREGON STATE UNIVERSITY
UNIVERSITY OF OREGON

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

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 content 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. Please do not use built up fractions in the text of the manuscript. However, you may use them in the displayed equations. 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. Please propose a heading for the odd numbered pages of less than 35 characters. Manuscripts, in triplicate, may be sent to any one of the editors. Please classify according to the scheme of Math. Reviews, Index to Vol. 39. Supply name and address of author to whom proofs should be sent. All other communications should be addressed to the managing editor, or Elaine Barth, University of California, Los Angeles, California, 90024.

50 reprints to each author 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 numbers issued in the last three calendar years, and changes of address should be sent to Pacific Journal of Mathematics, P.O. Box 969, Carmel Valley, CA 93924, U.S.A. Older back numbers obtainable from Kraus Periodicals Co., Route 100, Millwood, NY 10546.

PUBLISHED BY PACIFIC JOURNAL OF MATHEMATICS, A NON-PROFIT CORPORATION Printed at Kokusai Bunken Insatsusha (International Academic Printing Co., Ltd.). 8-8, 3-chome, Takadanobaba, Shinjuku-ku, Tokyo 160, Japan.

Copyright © 1979 by Pacific Journal of Mathematics Manufactured and first issued in Japan