

**Pacific
Journal of
Mathematics**

VOLUME CXIX

1985

PACIFIC JOURNAL OF MATHEMATICS

EDITORS

V. S. VARADARAJAN (Managing Editor)

University of California

Los Angeles, CA 90024

CHARLES R. DEPRIMA

California Institute of Technology

Pasadena, CA 91125

R. FINN

Stanford University

Stanford, CA 94305

HERMANN FLASCHKA

University of Arizona

Tucson, AZ 85721

RAMESH A. GANGOLLI

University of Washington

Seattle, WA 98195

ROBION KIRBY

University of California

Berkeley, CA 94720

C. C. MOORE

University of California

Berkeley, CA 94720

H. SAMELSON

Stanford University

Stanford, CA 94305

HAROLD STARK

University of California, San Diego

La Jolla, CA 92093

ASSOCIATE EDITORS

R. ARENS

E. F. BECKENBACH

B. H. NEUMANN

F. WOLF

K. YOSHIDA

(1906–1982)

SUPPORTING INSTITUTIONS

UNIVERSITY OF ARIZONA

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

CONTENTS

A – ALGEBRA AND NUMBER THEORY

M. Chacron, <i>Non-isotropic unitary spaces and modules with Cauchy-Schwarz inequalities</i>	1
F. J. Pastijn and P. G. Trotter, <i>Lattices of completely regular semi-group varieties</i>	191
I. Raeburn and J. L. Taylor, <i>The bigger Brauer group and étale cohomology</i>	445
D. Rosen, <i>The diophantine equation $ax+by=c$ in $Q(\sqrt{5})$ and other number fields</i>	465
R. Sitaramachandrarao, See M. V. Subbarao and R. Sitaramachandrarao	
M. V. Subbarao and R. Sitaramachandrarao, <i>On some infinite series of L. J. Mordell and their analogues</i>	245
J. L. Taylor, See I. Raeburn and J. L. Taylor	
P. G. Trotter, See F. J. Pastijn and P. G. Trotter	
R. I. Yager, <i>Iwasawa theory for the anticyclotomic extension</i> . . .	489

B – ANALYSIS

M. A. Akcoglu and M. Falkowitz, <i>A general local ergodic theorem in L_1</i>	257
M. Déchamps-Gondim, F. Lust-Piquard and H. Queffelec, <i>On the minorant properties in $C_p(H)$</i>	89
M. Falkowitz, See M. A. Akcoglu and M. Falkowitz	
K. Floret and V. B. Moscatelli, <i>On bases in strict inductive and projective limits of locally convex spaces</i>	103
J. E. Galé, <i>Gelfand theory in algebras of differentiable functions on Banach spaces</i>	303
H. Gingold, <i>On the location of zeroes of oscillatory solutions of $y^{(n)}=c(x)y$</i>	317
K. Izuchi, <i>Zero sets of interpolating Blaschke products</i>	337
F. Lust-Piquard, See M. Déchamps-Gondim, F. Lust-Piquard and H. Queffelec	
V. B. Moscatelli, See K. Floret and V. B. Moscatelli	
M. G. Nerurkar, <i>Ergodic continuous skew product actions of amenable groups</i>	343
R. Owens, <i>A maximal function characterization of a class of Hardy spaces</i>	365
J. A. Packer, <i>Point spectrum of ergodic abelian group actions and the corresponding group-measure factors</i>	381

J. A. Packer, <i>On the embedding of subalgebras corresponding to quotient actions in group-measure factors</i>	407
K. K. Park, <i>Nice dense subsets for ergodic flows and Bernoulli flows</i>	181
H. Queffelec, See M. Déchamps-Gondim, F. Lust-Piquard and H. Queffelec	
M.-H. Shih and K.-K. Tan, <i>Non-compact sets with convex sections</i>	473
R. M. Shortt, <i>Reticulated sets and the isomorphism of analytic powers</i>	215
D. A. Stegenga and K. Stephenson, <i>Generic covering properties for spaces of analytic functions</i>	227
K. Stephenson, See D. A. Stegenga and K. Stephenson	
K.-K. Tan, See M.-H. Shih and K.-K. Tan	

D – GEOMETRY

N. Goldstein, <i>Degenerate secant varieties and a problem on matrices</i>	115
L. Whitt, <i>Codimension two isometric immersions between Euclidean spaces</i>	481

F – PROBABILITY AND STATISTICS

J. M. DeLaurentis and B. G. Pittel, <i>Random permutations and Brownian motion</i>	287
B. G. Pittel, See J. M. DeLaurentis and B. G. Pittel	

G – TOPOLOGY

W. W. Comfort and L. C. Robertson, <i>Cardinality constraints for pseudocompact and for totally dense subgroups of compact topological groups</i>	265
H. M. Hastings and S. Waner, <i>G-bordism with singularities and G-homology</i>	125
T. Isiwata, <i>Clopen realcompactification of a mapping</i>	153
H. Kato, <i>Concerning hyperspaces of certain Peano continua and strong regularity of Whitney maps</i>	159
E. Katz and S. A. Morris, <i>Free products of topological groups with amalgamation</i>	169
S. A. Morris, See E. Katz and S. A. Morris	
L. C. Robertson, See W. W. Comfort and L. C. Robertson	
S. Waner, See H. M. Hastings and S. Waner	

Pacific Journal of Mathematics

M. Chacron , Non-isotropic unitary spaces and modules with Cauchy-Schwarz inequalities	1
M. Déchamps-Gondim, F. Lust-Piquard and H. Queffelec , On the minorant properties in $C_p(H)$	89
K. Floret and V. B. Moscatelli , On bases in strict inductive and projective limits of locally convex spaces	103
N. Goldstein , Degenerate secant varieties and a problem on matrices	115
H. M. Hastings and S. Waner , G -bordism with singularities and G -homology	125
T. Isiwata , Clopen realcompactification of a mapping	153
H. Kato , Concerning hyperspaces of certain Peano continua and strong regularity of Whitney maps	159
E. Katz and S. A. Morris , Free products of topological groups with amalgamation	169
K. K. Park , Nice dense subsets for ergodic flows and Bernoulli flows	181
F. J. Pastijn and P. G. Trotter , Lattices of completely regular semigroup varieties	191
R. M. Shortt , Reticulated sets and the isomorphism of analytic powers	215
D. A. Stegenga and K. Stephenson , Generic covering properties for spaces of analytic functions	227
M. V. Subbarao and R. Sitaramachandrarao , On some infinite series of L. J. Mordell and their analogues	245

Subject listing on back cover

PACIFIC JOURNAL OF MATHEMATICS

EDITORS

DONALD BABBITT (Managing Editor)
University of California
Los Angeles, CA 90024

CHARLES R. DEPRIMA
California Institute of Technology
Pasadena, CA 91125

R. FINN
Stanford University
Stanford, CA 94305

HERMANN FLASCHKA
University of Arizona
Tucson, AZ 85721

RAMESH A. GANGOLLI
University of Washington
Seattle, WA 98195

ROBION KIRBY
University of California
Berkeley, CA 94720

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

HUGO ROSSI
University of Utah
Salt Lake City, UT 84112

H. SAMELSON
Stanford University
Stanford, CA 94305

HAROLD STARK
University of California, San Diego
La Jolla, CA 92093

ASSOCIATE EDITORS

R. ARENS E. F. BECKENBACH B. H. NEUMANN F. WOLF K. YOSHIDA
(1906–1982)

SUPPORTING INSTITUTIONS

UNIVERSITY OF ARIZONA
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 must be capable of being used separately as a synopsis of the entire paper. In particular it should contain no bibliographic references. 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.

There are page-charges associated with articles appearing in the *Pacific Journal of Mathematics*. These charges are expected to be paid by the author's University, Government Agency or Company. If the author or authors do not have access to such Institutional support these charges are waived. Single authors will receive 50 free reprints; joint authors will receive a total of 100 free reprints. 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: \$190.00 a year (5 Vols., 10 issues). Special rate: \$66.00 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. Old back numbers obtainable from Kraus Periodicals Co., Route 100, Millwood, NY 10546.

The Pacific Journal of Mathematics at P.O. Box 969, Carmel Valley, CA 93924 (ISSN 0030-8730) publishes 5 volumes per year. Application to mail at Second-class postage rates is pending at Carmel Valley, California, and additional mailing offices. Postmaster: Send address changes to Pacific Journal of Mathematics, P.O. Box 969, Carmel Valley, CA 93924.

PUBLISHED BY PACIFIC JOURNAL OF MATHEMATICS, A NON-PROFIT CORPORATION

Copyright © 1985 by Pacific Journal of Mathematics