Pacific Journal of Mathematics

VOLUME XVI 1966

PACIFIC JOURNAL OF MATHEMATICS

EDITORS

H. SAMELSON

Stanford University Stanford, California

R. M. BLUMENTHAL

University of Washington Seattle, Washington 98105 *J. DUGUNDJI

University of Southern California Los Angeles, California 90007

RICHARD ARENS

University of California Los Angeles, California 90024

ASSOCIATE EDITORS

E. F. BECKENBACH

B. H. NEUMANN

F. Wolf

K. Yosida

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 TOKYO UNIVERSITY OF UTAH WASHINGTON STATE UNIVERSITY UNIVERSITY OF WASHINGTON

AMERICAN MATHEMATICAL SOCIETY CHEVRON RESEARCH CORPORATION TRW SYSTEMS NAVAL ORDNANCE TEST STATION

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

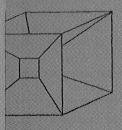
CONTENTS

Gert Almkvist, Stability of linear differential equations with
periodic coefficients in Hilbert space
L. Argabright, Invariant means on topological semigroups 193
Larry Armijo, Minimization of function having Lipschitz con-
tinuous first partial derivatives
William B. Arveson, A theorem of the action of Abelian unitary
groups
Richard Askey and Stephen Wainger, A transplantation theorem
for ultraspherical coefficients
Joseph Barback, Two notes on regressive isols
Allen R. Bernstein and Abraham Robinson, Solution of an in-
variant subspace problem of K. T. Smith and P. R. Halmos . 421
Leon Bernstein, New infinite classes of periodic Jacobi-Perron
algorithms
E. M. Bolger and W. L. Harkness, Some characterizations of ex-
ponential type distributions
John S. Bradley, Adjoint quasi-differential operators of Euler
type
James R. Brown, Approximation theorems for Markov operators. 13
Richard A. Brualdi, Permanent of the direct product of matrices, 471
W. W. Comfort and Kenneth A. Ross, Pseudocompactness and
uniform continuity in topological groups 491
Doyle O. Cutler, Quasi-isomorphism for infinite Abelian p-groups. 25
Don Deckard and L. K. Durst, Unique factorization in power
series rings and semigroups
A. Devinatz, The deficiency index of ordinary self-adjoint differ-
ential operators
L. K. Durst, See Don Deckard and L. K. Durst
R. E. Edwards, Operators commuting with translations 259
J. M. G. Fell, Algebras and fiber bundles 497
Alessandro Figà-Talamanca and Daniel Rider, A theorem of Little-
wood and Lacunary series for compact groups 505
Avner Friedman, Differentiability of solutions of ordinary differ-
ential equations in Hilbert spaces
Boris Garfinkel and Gregory T. McAllister, Singularities in a
·
variational problem with an inequality
Seymour Ginsburg and Edwin H. Spanier, Semigroups, Presburger
formulas and languages
C. M. Glennie, Some identities valid in special Jordan algebras. 47
P. R. Halmos, Invariant subspaces of polynomially compact
operators

W. L. Harkness, See E. M. Bolger and W. L. Harkness
Burrell W. Helton, Integral equations and product integrals 297
Edgar J. Howard, First and second category Abelian groups with
the n-adic topology $\dots \dots \dots$
Thomas W. Hungerford, A description of Multi (A^1, \dots, A^n) by
generators and relations
James H. Jordan, The distribution of cubic and quintic non-
residues.
JP. Kahane, On the construction of certain bounded continuous
functions
J. Colby Kegley, Convexity with respect to Euler-Lagrange differ-
ential operators
Tilla Klotz, On the determination of conformal imbeddings 113
Paul Koosis, On the spectral analysis of bounded functions 121
A. H. Kruse and P. W. Liebnitz, An application of a family
homotopy extension theorem to ANR spaces
P. W. Liebnitz, See A. H. Kruse and P. W. Liebnitz
David London, Two inequalities in nonnegative symmetric matrices. 515
A. Marden, I. Richard and B. Rodin, On the regions bounded by
homotopic curves
Gregory T. McAllister, See Boris Garfinkel and Gregory T. McAllister
V. V. Menon, A theorem on partitions of mass-distributions 133
Willard Miller, Jr., A branching law for the symplectic groups . 341
A. P. Morse, See D. W. Bressler and A. P. Morse
R. C. Mullin, The enumeration of Hamiltonian polygons in
triangular maps
N. J. Pullman, Infinite products of substochastic matrices 537
I. Richard, See A. Marden, I. Richard and B. Rodin
Daniel Rider, See Alessandro Figà-Talamanca and Daniel Rider
Marc A. Rieffel, A characterization of the group algebras of
finite groups $\dots \dots \dots$
Abraham Robinson, See Allen R. Bernstein and Abraham Robinson
E. E. Robkin and F. A. Valentine, Families of parallels associated
$with sets \dots \dots$
B. Rodin, See A. Marden, I. Richard and B. Rodin
Melvin Rosenfeld, Commutative-algebras
Kenneth A. Ross, See W. W. Comfort and Kenneth A. Ross
Parfeny P. Saworotnow, On two-sided H^* -algebras
A. Seidenberg, Derivations and integral closure
James M. Sloss, Reflection and approximation by interpolation
along the boundary for analytic functions 545
Edwin H. Spanier, See Seymour Ginsburg and Edwin H. Spanier
John G. Thompson, Factorizations of p-solvable groups 371
Shih-Hsiung Tung, Harnack's inequalities on the classical Cartan

domains
F. A. Valentine, See E. E. Robkin and F. A. Valentine
S. Verblunsky, On the stability of the set of exponents of a
Cauchy exponential series
Stephen Wainger, See Richard Askey and Stephen Wainger
H. Walum, Some averages of character sums
C. M. Weinbaum, Visualizing the word problem, with an appli-
cation to sixth groups
Adil Yaqub, Primal clusters

Pacific Journal of Mathematics



continuous first partial derivatives 1
E. M. Bolger and W. L. Harkness, Some characterization
of exponential type distribution 5
James R. Brown, Approximation theorems for Markov
operators
Doyle O. Cutler, Quasi-isomorphism for infinite Abelian
p-groups
C. M. Glennie, Some identities valid in special Jordan
algebras
Thomas W. Hungerford, A description of $Multi(A', \dots, A^n)$
by generators and relations 61
James H. Jordan, The distribution of cubic and quintic
non-residues
J. Colby Kegley, Convexity with respect to Euler-Lagrange
differential operators
Tilla Klotz, On the determination of conformal imbeddings113
Paul Koosis, On the spectral analysis of bounded functions121
JP. Kahane, On the construction of certain bounded
continuous functions
V. V. Menon, A theorem on partitions of mass-distributions. 133
R. C. Mullin, The enumeration of Hamiltonian polygons
in triangular139
E. E. Robkin and F. A. Valentine, Families of Parallels
associated with sets147
Melvin Rosenfeld, Commutative-algebras159
A. Seidenberg, Derivation and integral closure167
S. Verblunsky, On the stability of the set of exponents of
a cauchy exponential series
H. Walum, Some averages of character sums189

Larry Armijo, Minimization of function having Lipschitz

PACIFIC JOURNAL OF MATHEMATICS

EDITORS

H. SAMELSON

Stanford University Stanford, California

R. M. BLUMENTHAL

University of Washington Seattle, Washington 98105 J. Dugundji

University of Southern California Los Angeles, California 90007

*RICHARD ARENS

University of California Los Angeles, California 90024

ASSOCIATE EDITORS

E. F. BECKENBACH

B. H. NEUMANN

F. WOLF

K. Yosida

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 TOKYO UNIVERSITY OF UTAH WASHINGTON STATE UNIVERSITY UNIVERSITY OF WASHINGTON

AMERICAN MATHEMATICAL SOCIETY CALIFORNIA RESEARCH CORPORATION SPACE TECHNOLOGY LABORATORIES NAVAL ORDNANCE TEST STATION

Mathematical papers intended for publication in the *Pacific Journal of Mathematics* should by typewritten (double spaced). The first paragraph or two must be capable of being used separately as a synopsis of the entire paper. It should not contain references to the bibliography. No separate author's resumé is required. Manuscripts may be sent to any one of the four editors. All other communications to the editors should be addressed to the managing editor, Richard Arens, at the University of California, Los Angeles, California 90024.

50 reprints per author of each article are furnished free of charge; additional copies may be obtained at cost in multiples of 50.

The *Pacific Journal of Mathematics* is published quarterly, in March, June, September, and December. Effective with Volume 13 the price per volume (4 numbers) is \$18.00; single issues, \$5.00. Special price for current issues to individual faculty members of supporting institutions and to individual members of the American Mathematical Society: \$8.00 per volume; single issues \$2.50. Back numbers are available.

Subscriptions, orders for back numbers, and changes of address should be sent to Pacific Journal of Mathematics, 103 Highland Boulevard, Berkeley 8, California.

Printed at Kokusai Bunken Insatsusha (International Academic Printing Co., Ltd.), No. 6, 2-chome, Fujimi-cho, Chiyoda-ku, Tokyo, Japan.

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

* Basil Gordon, Acting Managing Editor until February 1, 1966.