

Pacific Journal of Mathematics

VOLUME XCIII

1981

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 AND ANDREW OGG

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

R. ARENS

E. F. BECKENBACH

B. H. NEUMANN

F. WOLF

K. YOSHIDA

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

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

CONTENTS

A — ALGEBRA AND NUMBER THEORY

J. T. Arnold, <i>Power series rings over discrete valuation rings</i> .	31
C. Asmuth and J. Repka, <i>Supercuspidal components of the quaternion Weil representation of $SL(t)$</i>	95
J.-A. Cohen, <i>Topologies on the ring of integers of a global field</i> .	269
E. H. Feller, <i>Rings where the annihilators of α-critical modules are prime ideals</i>	299
B. Jacob, <i>Fans, real valuations and Hereditary-Pythagorean fields</i>	95
J. H. Reinoehl, <i>Lie algebras and Hopf algebras</i>	181
J. Repka, See C. Asmuth and J. Repka	
P. Rowley, <i>Solubility of finite groups admitting a fixed-point-free automorphism of order $n+1$</i>	201
A. C. Woods, <i>The asymmetric product of three homogeneous linear forms</i>	237

B — ANALYSIS

R. Arens, <i>Reducing the order of a Lagrangian</i>	1
L. Brenton, <i>Differentiably k-normal analytic spaces and extensions of holomorphic differential forms</i>	261
L. A. Caffarelli and A. Friedman, <i>Sequential testing of several simple hypotheses for a diffusion process and corresponding free boundary problem</i>	49
A. Friedman, See L. A. Caffarelli and A. Friedman	
G. W. Johnson and D. L. Skoug, <i>Notes on the Feynman integral, I</i>	313
W. J. Kim, <i>Asymptotic properties of nonoscillatory solutions of higher order differential equations</i>	107
C.-M. Ma, <i>A uniqueness theorem for Navier-Stokes equations</i> .	387
M. Nakai and L. Sario, <i>Harmonic functions on open Riemann surfaces</i>	147
D. J. Newman and T. J. Rivlin, <i>Characterization of the weights in a divided difference</i>	407
J. C. Quigg, <i>On the irreducibility of an induced representation</i> .	163
J. Repka, <i>Base change for tempered irreducible representations $GL(n, \mathbf{R})$</i>	193
M. A. Rieffel, <i>C^*-algebras associated with irrational rotations</i> .	415
T. J. Rivlin, See D. J. Newman and T. J. Rivlin	
Kichi-Suke Saito, <i>Invariant subspaces for finite maximum subdiagonal algebras</i>	431
L. Sario, See M. Nakai and Sario	

II

- F. W. Shultz, *Dual maps of Jordan homomorphisms and *-homomorphisms between C^* -algebras* 435
- D. L. Skoug, See G. W. Johnson and D. L. Skoug
- V. A. Solonnikov, *On the solvability of boundary and initial-boundary value problems for the Navier-Stokes system in domains with noncompact boundaries* 443
- T. T. Trent, *New conditions for subnormality* 459
- L. C. Wilson, *Jets with regular zeros* 471
- S. E. Zarantonello, *The sheaf of H^p -functions in product domains* . 479

D — GEOMETRY

- R. Arens, *Manifestly dynamic forms in the Cartan-Hamilton treatment of classical fields* 13
- M. S. Keane and S. J. Sidney, *Distinguishing a plane from other curves similar to it* 325
- S. J. Sidney, See M. S. Keane and S. J. Sidney

G — TOPOLOGY

- I. Blum and S. Swaminathan, *Continuous selections and real-compactness* 251
- R. J. Daverman, *Detecting the disjoint disks property* 277
- R. E. Heisey and H. Toruńczyk, *On the topology of direct limits of ANR's* 307
- W. Lewis, *Embeddings of the pseudo-arc in E^2* 115
- L. A. Luxemburg, *On compact metric spaces with noncoinciding transfinite dimensions* 339
- S. Swaminathan, See I. Blum and S. Swaminathan
- H. Toruńczyk, See R. E. Heisey and H. Toruńczyk
- L. E. Ward, Jr., *Extending Whitney maps* 465

H — COMBINATORICS

- D. A. Marcus, *Closed factors of normal Z -semimodules* 121

Pacific Journal of Mathematics

R. Arens , Reducing the order of a Lagrangian	1
R. Arens , Manifestly dynamic forms in the Cartan-Hamilton treatment of classical fields.....	13
J. T. Arnold , Power series rings over discrete valuation rings	31
C. Asmuth and J. Repka , Supercuspidal components of the quaternion Weil representation of $SL_2(t)$	35
L. A. Caffarelli and A. Friedman , Sequential testing of several simple hypotheses for a diffusion process and the corresponding free boundary problem	49
B. Jacob , Fans, real valuations and Hereditarily-Pythagoren fields.....	95
W. J. Kim , Asymptotic properties of nonoscillatory solutions of higher order differential equations.....	107
W. Lewis , Embeddings of the pseudo-arc in E^2	115
D. A. Marcus , Closed factors of normal Z -semimodules.....	121
M. Nakai and L. Sario , Harmonic functionals on open Riemann surfaces...	147
J. C. Quigg , On the irreducibility of an induced representation	163
J. H. Reinehl , Lie algebras and Hopf algebras.....	181
J. Repka , Base change for tempered irreducible representations of $GL(n, R)$	193
P. Rowley , Solubility of finite groups admitting a fixed-point-free automorphism of order rst I	201
A. C. Woods , The asymmetric product of three homogeneous linear forms..	237

Subject listing on 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 and ANDREW OGG

University of California
Berkeley, CA 94720

J. DUGUNDJI

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

R. FINN and J. MILGRAM

Stanford University
Stanford, CA 94305

ASSOCIATE EDITORS

R. ARENS

E. F. BECKENBACH

B. H. NEUMANN

F. WOLF

K. YOSHIDA

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 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: \$102.00 a year (6 Vols., 12 issues). Special rate: \$51.00 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.

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 © 1981 by Pacific Journal of Mathematics
Manufactured and first issued in Japan