Pacific Journal of Mathematics

VOLUME CXLVII 1991

PACIFIC JOURNAL OF MATHEMATICS EDITORS

V. S. VARADARAJAN (Managing Editor) University of California Los Angeles, CA 90024-1555-05

HERBERT CLEMENS University of Utah Salt Lake City, UT 84112

THOMAS ENRIGHT University of California, San Diego La Jolla, CA 92093 R. Finn

Stanford University Stanford, CA 94305

HERMANN FLASCHKA University of Arizona Tucson, AZ 85721

VAUGHAN F. R. JONES University of California Berkeley, CA 94720

STEVEN KERCKHOFF Stanford University Stanford, CA 94305 C. C. MOORE University of California Berkeley, CA 94720

MARTIN SCHARLEMANN University of California Santa Barbara, CA 93106

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

ASSOCIATE EDITORS

R. Arens E. F. Beckenbach (1906–1982) B. H. NEUMANN

F. Wolf K. Yoshida (1904–1989)

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

B. Alpers, Round quadratic forms under algebraic extensions	213
G. M. Bergman, Right orderable groups that are not locally indi-	
<i>cable</i>	243
M. Chamarie and I. M. Musson, Rings of differential operators on	
one dimensional algebras	269
R. F. Coleman and F. O. McGuinness, Rational formal group	
laws	25
T. J. Ford, Division algebras over nonlocal Henselian surfaces	301
K. H. Leung, A construction of an ordered division ring with a	
rank one valuation	139
F. O. McGuinness, See R. F. Coleman and F. O. McGuinness	
I. M. Musson, See M. Chamarie and I. M. Musson	

B – ANALYSIS

H. Alexander, Polynomial hulls of graphs	201
K. Aomoto, Point spectrum on a quasi homogeneous tree	231
M. S. Ashbaugh, E. M. Harrell II, and R. Svirsky, On minimal	
and maximal eigenvalue gaps and their causes	1
C. de Boor, N. Dyn, and A. Ron, On two polynomial spaces asso-	
ciated with a box spline	249
J. M. Cygan and L. F. Richardson, D-harmonic distributions and	
global hypoellipticity on nilmanifolds	29
N. Dyn, See C. de Boor, N. Dyn, and A. Ron	
M. Fragoulopoulou, Automatic continuity of *-morphisms be-	
tween non-normed topological *-algebras	57
S. J. Gardiner, Removable singularities for subharmonic functions	71
H. Halpern, V. Kaftal, and L. Zsidó, Finite weight projections in	
von Neumann algebras	81
E. M. Harrell II, See M. S. Ashbaugh, E. M. Harrell II, and R.	
Svirsky	
T. Hatziafratis, Explicit $\overline{\partial}$ -primitives of Henkin-Leiterer kernels	
on Stein manifolds	123
V. Kaftal, See H. Halpern, V. Kaftal, and L. Zsidó	
M. Putinar, On invariant subspaces of several variable Bergman	
spaces	355
L. F. Richardson, See J. M. Cygan and L. F. Richardson	

- A. Ron, See C. de Boor, N. Dyn, and A. Ron
- V. Runde, Automatic continuity of derivations and epimorphisms 365
- R. Svirsky, See M. S. Ashbaugh, E. M. Harrell II, and R. Svirsky
- C. Sweezy, *L-harmonic functions and the exponential square class* 187 L. Zsidó, See H. Halpern, V. Kaftal, and L. Zsidó

D – GEOMETRY

N.	Ejiri, Two applications of the unit normal bundle of a minimal	
	surface in \mathbb{R}^N	291
H.	C. Wente, A note on the stability theorem of J. L. Barbosa and	
	M. do Carmo for closed surfaces of constant mean curvature	375
R.	Ye, Foliation by constant mean curvature spheres	381

G - TOPOLOGY

S. Deo and K. Varadarajan, Some examples of non-taut subspaces	47
S. Halperin and M. Vigué-Poirrier, The homology of a free loop	
space	311
C. McCord, Nielsen numbers and Lefschetz numbers on solvman-	
ifolds	153
I. Nakai, Nice dimensions for the I_0 equivalence relation of dia-	
grams of map germs	325
K. Sakai and R. Y. Wong, Manifold subgroups of the homeomor-	
phism group of a compact Q-manifold	165
K. Varadarajan, See S. Deo and K. Varadarajan	
M. Vigué-Poirrier, See S. Halperin and M. Vigué-Poirrier	
R. Y. Wong, See K. Sakai and R. Y. Wong	

Pacific Journal of Mathematics

M. S. Ashbaugh, E. M. Harrell, II, and R. Svirsky, On minimal and maximal	
eigenvalue gaps and their causes	1
R. F. Coleman and F. O. McGuinness , Rational formal group laws	25
J. M. Cygan and L. F. Richardson, D-harmonic distributions and global hypoellip-	
ticity on nilmanifolds	29
S. Deo and K. Varadarajan, Some examples of non-taut subspaces	47
M. Fragoulopoulou, Automatic continuity of *-morphisms between non-normed	
topological *-algebras	57
S. J. Gardiner, Removable singularities for subharmonic functions	71
H. Halpern, V. Kaftal, and L. Zsidó, Finite weight projections in von Neumann	
algebras	81
T. Hatziafratis, Explicit $\overline{\partial}$ -primitives of Henkin-Leiterer kernels on Stein mani-	
folds	123
K. H. Leung, A construction of an ordered division ring with a rank one valuation	139
C. McCord, Nielsen numbers and Lefschetz numbers on solvmanifolds	153
K. Sakai and R. Y. Wong, Manifold subgroups of the homeomorphism group of a	
compact Q-manifold	165
C. Sweezy, L-harmonic functions and the exponential square class	187

Subject listing on back cover

PACIFIC JOURNAL OF MATHEMATICS EDITORS

V. S. VARADARAJAN (Managing Editor) University of California Los Angeles, CA 90024-1555-05

HERBERT CLEMENS University of Utah Salt Lake City, UT 84112

THOMAS ENRIGHT University of California, San Diego La Jolla, CA 92093

R. FINN Stanford University Stanford, CA 94305

HERMANN FLASCHKA University of Arizona Tucson, AZ 85721

VAUGHAN F. R. JONES University of California Berkeley, CA 94720

STEVEN KERCKHOFF Stanford University Stanford, CA 94305 C. C. MOORE University of California Berkeley, CA 94720

MARTIN SCHARLEMANN University of California Santa Barbara, CA 93106

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

ASSOCIATE EDITORS

R. Arens	E. F. Beckenbach (1906–1982)	B. H.	Neumann	F. Wolf (1904–1989)	K. Yoshida		
SUPPORTING INSTITUTIONS							
UNIVERSITY O	F ARIZONA		UNIVERSIT	Y OF OREGON			
UNIVERSITY O	F BRITISH COLUMBIA		UNIVERSIT	Y OF SOUTHERN	CALIFORNIA		
CALIFORNIA IN	STITUTE OF TECHNO	LOGY	STANFORD	UNIVERSITY			
UNIVERSITY O	F CALIFORNIA		UNIVERSIT	Y OF HAWAII			
MONTANA STA	TE UNIVERSITY		UNIVERSIT	Y OF TOKYO			
UNIVERSITY O	F NEVADA, RENO		UNIVERSIT	Y OF UTAH			
NEW MEXICO S	TATE UNIVERSITY		WASHINGT	ON STATE UNIV	ERSITY		
OREGON STATI	E UNIVERSITY		UNIVERSIT	Y OF WASHINGT	ON		

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 1980 Mathematics Subject Classification (1985 Revision) scheme which can be found in the December index volumes of Mathematical Reviews. 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 90024-1555-05.

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* (ISSN 0030-8730) is published monthly except for July and August. Regular subscription rate: \$190.00 a year (10 issues). Special rate: \$95.00 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) is published monthly except for July and August. Second-class postage paid at Carmel Valley, California 93924, 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 © 1991 by Pacific Journal of Mathematics