

**Pacific
Journal of
Mathematics**

VOLUME XXVIII

1969

PACIFIC JOURNAL OF MATHEMATICS

EDITORS

H. ROYDEN
Stanford University
Stanford, California

J. DUGUNDJI
Department of Mathematics
University of Southern California
Los Angeles, California 90007

R. R. PHELPS
University of Washington
Seattle, Washington 98105

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 WEAPONS CENTER

CONTENTS

P. R. Ahern, <i>On the geometry of the unit ball in the space of real annihilating measures</i>	1
Richard Arens and Donald G. Babbitt, <i>The geometry of relativistic n particle interactions</i>	243
Donald G. Babbitt, See Richard Arens and Donald G. Babbitt	
Kirby A. Baker, <i>Hypotopological spaces and their embeddings in lattices with Birkhoff interval topology</i>	275
———, <i>Equational classes of modular lattices</i>	9
E. F. Beckenbach and G. A. Hutchison, <i>Meromorphic minimal surfaces</i>	17
J. L. Berggren, <i>Finite groups in which every element is conjugate to its inverse</i>	289
Beverly L. Brechner, <i>Homeomorphism groups of Dendrons</i>	295
J. F. Carlson, <i>Automorphisms of groups similitudes over F_3</i>	485
Tae Ho Choe, <i>Intrinsic topologies in a topological lattice</i>	49
R. R. Colby and E. A. Rutter, Jr., <i>QF-3 rings with zero singular ideal</i>	303
S. D. Comer, <i>Classes without the amalgamation property</i>	309
W. W. Comfort, Neil Hindman and S. Negrepointis, <i>F'-spaces and their product with P-spaces</i>	489
John B. Conway, <i>A theorem on sequential convergence of measures and some applications</i>	53
Roger Cuppens, <i>On the decomposition of infinitely divisible probability laws without normal factor</i>	61
Lynn H. Erbe, <i>Nonoscillatory solutions of second order nonlinear differential equations</i>	77
Burton Fein, <i>The Schur index for projective representations of finite groups</i>	87
Stephen Fisher, <i>Bounded approximation by rational functions</i> . . .	319
Robert Gaines, <i>Continuous dependence for two-point boundary value problems</i>	327
Bernard R. Gelbaum, <i>Banach algebra bundles</i>	337
A. G. Gibson, <i>Triples of operator-valued functions related to the unit circle</i>	503
David S. Gillman, <i>Free curves in E^3</i>	513
Moses Glasner and Richard Katz, <i>Function-theoretic degeneracy criteria for Riemannian manifolds</i>	351
Fletcher Gross, <i>Fixed-point-free operator groups of order 8</i>	357
Stanley P. Gudder, <i>A note on proposition observables</i>	101
S. R. Harsymiv, <i>On approximation by dilations of distributions</i> . . .	363
E. A. Heard and J. H. Wells, <i>An interpolation problem for sub-</i>	

<i>algebras of H^∞</i>	543
Neil Hindman, See W. W. Comfort, Neil Hindman and S. Negrepointis	
C. S. Hoo, <i>Nilpotency class of a map and Stasheff's criterion</i> . . .	375
A. E. Hurd, <i>A uniqueness theorem for weak solutions of symmetric quasilinear hyperbolic systems</i>	555
G. A. Hutchison, See E. F. Beckenbach and G. A. Hutchison	
E. W. Johnson and J. P. Lediaev, <i>Representable distributive Noether lattices</i>	561
Kenneth M. Kapp, <i>On Croisot's theory of decompositions</i>	105
Richard Katz, <i>A note on extremal length and modulus</i>	381
———, See Moses Glasner and Richard Katz	
Robert Kaufman, <i>Gap series and an example to Malliavin's theorem</i>	117
David G. Kendall, <i>Incidence matrices, interval graphs and Seriation in archaeology</i>	565
H. L. Krall and I. M. Sheffer, <i>Difference equations for some orthogonal polynomials</i>	383
Robert L. Kruse, <i>On the join of subnormal elements in a lattice</i> .	571
D. B. Lahiri, <i>Some restricted partition functions; Congruence modulo 3</i>	575
N. D. Lane and K. D. Singh, <i>Strong cyclic, parabolic and conical differentiability</i>	583
J. P. Lediaen, See E. W. Johnson and J. P. Lediaen	
Yu-Lee Lee, <i>On the construction of lower radical properties</i> . . .	393
W. F. Lucas, <i>Games with unique solutions that are nonconvex</i> .	599
E. A. Maier, <i>Representation of real numbers by generalized geo- metric series</i>	603
Daniel P. Maki, <i>A note on recursively defined authogonal poly- nomials</i>	611
Mark Mandelker, <i>F'-spaces and z-embedded subspaces</i>	615
J. R. McLaughlin and J. J. Price, <i>Comparison of Haar series with gaps with trigonometric series</i>	623
E. J. McShane, R. B. Warfield, Jr., and V. M. Warfield, <i>Invariant extensions of linear functionals, with applications to meas- ures and stochastic processes</i>	121
E. Michael and A. H. Stone, <i>Quotients of the space of irra- tionals</i>	629
M. V. Mielke, <i>Rearrangement of spherical modifications</i>	143
W. H. Mills and Neal Zierler, <i>On a conjecture of Golomb</i>	635
S. Negrepointis, See W. W. Comfort, Neil Hindman and S. Negrepointis	
Akio Osada, <i>On unicity of capacity functions</i>	151
J. N. Pandey, <i>An extension of Haimo's form of Hankel con- volutions</i>	641
D. S. Passman, <i>Some $5/2$ transitive permutation groups</i>	157

H. LeRoy Peterson, <i>Regular and irregular measures on groups and dyadic spaces</i>	173
Robert Phillips, <i>Liouville's theorem</i>	397
J. J. Price, See J. R. McLaughlin and J. J. Price	
Terence J. Reed, <i>On the boundary correspondence of quasiconformal mappings of domains bounded by quasicircles</i> . . .	653
Haskell P. Rosenthal, <i>A characterization of the linear sets satisfying Herz's criterion</i>	663
E. A. Rutter, Jr., See R. R. Colby and E. A. Rutter, Jr.	
Habib Salehi, <i>On interpolation of q-variate stationary stochastic processes</i>	183
G. T. Sallee, <i>The maximal set of constant width in a lattice</i> . .	669
I. M. Sheffer, See H. L. Krall and I. M. Sheffer	
I. H. Sheth, <i>On normaloid operators</i>	675
Yum-Tong Siu, <i>Analytic sheaf cohomology groups of dimension n of n-dimensional noncompact complex manifolds</i>	407
K. D. Singh, See N. D. Lane and K. D. Singh	
M. S. Skaff, <i>Vector valued Orlicz spaces generalized N-functions, I</i> .	193
———, <i>Vector valued Orlicz spaces, II</i>	413
James D. Stasheff, <i>Torsion in BBSO</i>	677
James D. Stein, Jr., <i>Homomorphisms of B^*-algebras</i>	431
A. H. Stone, See E. Michael and A. H. Stone	
Mark L. Teply, <i>Torsionfree injective modules</i>	441
B. J. Thorne, <i>A-P congruences on Baer semigroups</i>	681
Richard R. Tucker, <i>The δ^2-process and related topics II</i>	455
David W. Walkup and Roger J.-B. Wets, <i>Lifting projections of convex polyhedra</i>	465
A. J. Ward, <i>On H-equivalence of uniformities</i>	207
R. B. Warfield Jr., [See E. J. McShane, R. B. Warfield, Jr., and V. M. Warfield	
R. B. Warfield, Jr., <i>Purity and algebraic compactness for modules</i> .	699
V. M. Warfield, See E. J. McShane, R. B. Warfield, Jr., and V. M. Warfield	
J. H. Wells, See E. H. Heard and J. H. Wells	
Roger J.-B. Wets, See David W. Walkup and Roger J.-B. Wets	
Thomas P. Whaley, <i>Algebras satisfying the descending chain condition for subalgebras</i>	217
———, <i>Large sublattices of a lattice</i>	477
George K. White, <i>On subgroup of fixed index</i>	225
Joseph Zaks, <i>On minimal complexes</i>	721
Neal Zierler, See W. H. Mills and Neal Zierler	
Martin M. Zuckerman, <i>A unifying condition for implications among the axioms of choice for finite sets</i>	233

Pacific Journal of Mathematics

P. R. Ahern, <i>On the geometry of the unit ball in the space of real annihilating measures</i>	1
Kirby A. Baker, <i>Equational classes of modular lattices</i>	9
E. F. Beckenbach and G. A. Hutchison, <i>Meromorphic minimal surfaces</i>	17
Tae Ho Choe, <i>Intrinsic topologies in a topological lattice</i> ...	49
John B. Conway, <i>A theorem on sequential convergence of measures and some applications</i>	53
Roger Cuppens, <i>On the decomposition of infinitely divisible probability laws without normal factor</i>	61
Lynn H. Erbe, <i>Nonoscillatory solutions of second order nonlinear differential equations</i>	77
Burton Fein, <i>The Schur index for projective representations of finite groups</i>	87
Stanley P. Gudder, <i>A note on proposition observables</i>	101
Kenneth M. Kapp, <i>On Croisot's theory of decompositions</i>	105
Robert Kaufman, <i>Gap series and an example to Malliavin's theorem</i>	117
E. J. McShane, R. B. Warfield, Jr., and V. M. Warfield, <i>Invariant extensions of linear functionals, with applications to measures and stochastic processes</i>	121
M. V. Mielke, <i>Rearrangement of spherical modifications</i>	143
Akio Osada, <i>On unicity of capacity functions</i>	151
D. S. Passman, <i>Some $5/2$ transitive permutation groups</i> ...	157
H. LeRoy Peterson, <i>Regular and irregular measures on groups and dyadic spaces</i>	173
Habib Salehi, <i>On interpolation of q-variate stationary stochastic processes</i>	183
M. S. Skaff, <i>Vector valued Orlicz spaces generalized N-functions, I</i>	193
A. J. Ward, <i>On H-equivalence of uniformities</i>	207
Thomas P. Whaley, <i>Algebras satisfying the descending chain condition for subalgebras</i>	217
George K. White, <i>On subgroup of fixed index</i>	225
Martin M. Zuckerman, <i>A unifying condition for implications among the axioms of choice for finite sets</i>	233

PACIFIC JOURNAL OF MATHEMATICS

EDITORS

H. ROYDEN
Stanford University
Stanford, California

J. DUGUNDJI
Department of Mathematics
University of Southern California
Los Angeles, California 90007

R. R. PHELPS
University of Washington
Seattle, Washington 98105

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 WEAPONS CENTER

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, double spaced with large margins. 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. It should not contain references to the bibliography. Manuscripts, in duplicate if possible, may be sent to any one of the four editors. Please classify according to the scheme of Math. Rev. **36**, 1539-1546. All other communications to the editors should be addressed to the managing editor, Richard Arens, University of California, Los Angeles, California, 90024.

50 reprints are provided free for each article; additional copies may be obtained at cost in multiples of 50.

The *Pacific Journal of Mathematics* is published monthly. Effective with Volume 16 the price per volume (3 numbers) is \$8.00; single issues, \$3.00. Special price for current issues to individual faculty members of supporting institutions and to individual members of the American Mathematical Society: \$4.00 per volume; single issues \$1.50. 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, California, 94708.

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

Printed at Kokusai Bunken Insatsusha (International Academic Printing Co., Ltd.), 7-17, Fujimi 2-chome, Chiyoda-ku, Tokyo, Japan.