

The editors gratefully acknowledge the services of the following persons not members of the Editorial Staff who have been consulted concerning the preparation of the fourth volume of this Journal:

L.V. Ahlfors, R. Arens, N. Aronszajn, R.E. Bellman, L. Bers, D. Blackwell, L.M. Blumenthal, R.P. Boas, R.C. Buck, H. Busemann, J.M. Danskin, P.H. Daus, D.B. Dekker, J.L. Doob, M. Dresher, J. Dugundji, N.J. Fine, M.K. Fort, I.L. Glicksberg, C.J.A. Halberg Jr., J.G. Herriot, T.H. Hildebrandt, J.D. Hill, L.K. Jackson, J. Kiefer, P.D. Lax, R.C. Lyndon, W. Magnus, H.B. Mann, A.P. Morse, T.S. Motzkin, I. Niven, L.J. Paige, G. Pólya, W.T. Reid, C.E. Rickart, H.P. Robertson, P.C. Rosenbloom, W. Rudin, P. Scherk, O.F.G. Schilling, W.T. Scott, J.G. Semple, I.M. Singer, C.E. Springer, R. Steinberg, J.J. Stoker, O. Taussky-Todd, A.E. Taylor, T.Y. Thomas, S.E. Warschawski, W.R. Wasow, J.G. Wendel, F. Wolf, J. Wolfowitz.

Pacific Journal of Mathematics

VOLUME IV

1954

PACIFIC JOURNAL OF MATHEMATICS

EDITORS

M. M. SCHIFFER*
Stanford University
Stanford, California

R. P. DILWORTH
California Institute of Technology
Pasadena 4, California

E. HEWITT
University of Washington
Seattle 5, Washington

E. F. BECKENBACH**
University of California
Los Angeles 24, California

ASSOCIATE EDITORS

H. BUSEMANN

P. R. HALMOS

BØRGE JESSEN

J. J. STOKER

HERBERT FEDERER

HEINZ HOPF

PAUL LÉVY

E. G. STRAUS

MARSHALL HALL

R. D. JAMES

GEORGE PÓLYA

KÔSAKU YOSIDA

SPONSORS

UNIVERSITY OF BRITISH COLUMBIA

UNIVERSITY OF SOUTHERN CALIFORNIA

CALIFORNIA INSTITUTE OF TECHNOLOGY

STANFORD RESEARCH INSTITUTE

UNIVERSITY OF CALIFORNIA, BERKELEY

STANFORD UNIVERSITY

UNIVERSITY OF CALIFORNIA, DAVIS

WASHINGTON STATE COLLEGE

UNIVERSITY OF CALIFORNIA, LOS ANGELES

UNIVERSITY OF WASHINGTON

UNIVERSITY OF CALIFORNIA, SANTA BARBARA

* * *

UNIVERSITY OF NEVADA

AMERICAN MATHEMATICAL SOCIETY

OREGON STATE COLLEGE

HUGHES AIRCRAFT COMPANY

UNIVERSITY OF OREGON

SHELL DEVELOPMENT COMPANY

* To be succeeded in 1955, by H.L. Royden, Stanford University, Stanford, California.

** To be succeeded in 1955, by E.G. Straus, University of California, Los Angeles 24, Calif.

Printed in the United States of America by
Edwards Brothers, Inc., Ann Arbor, Michigan

UNIVERSITY OF CALIFORNIA PRESS * BERKELEY AND LOS ANGELES

COPYRIGHT 1954 BY PACIFIC JOURNAL OF MATHEMATICS

CONTENTS

Henry L. Alder, <i>Generalizations of the Rogers-Ramanujan identities</i>	161
William G. Bade, <i>Unbounded spectral operators</i>	373
William G. Bade, <i>Weak and strong limits of spectral operators</i>	393
E. M. Beesley, <i>Concerning total differentiability of functions of class P</i>	169
H. D. Brunk, <i>On the growth of functions having poles or zeros on the positive real axis</i>	1
L. Carlitz, <i>The number of solutions of some special equations in a finite field</i>	207
Paul Civin, <i>Orthonormal cyclic groups</i>	481
K. L. Cooke, <i>The rate of increase of real continuous solutions of algebraic differential-difference equations of the first order</i>	483
J. Copping, <i>Application of a theorem of Pólya to the solution of an infinite matrix equation</i>	21
M. Cotlar, <i>On a theorem of Beurling and Kaplansky</i>	459
Philip Davis, <i>Linear functional equations and interpolation series</i>	503
Nelson Dunford, <i>Spectral operators</i>	321
George E. Forsythe, <i>Asymptotic lower bounds for the frequencies of certain polygonal membranes</i>	467
Marshall Hall Jr., <i>On a theorem of Jordan</i>	219
Fritz Herzog and George Piranian, <i>Sets of radial continuity of analytic functions</i>	533
D. G. Higman, <i>Remarks on splitting extensions</i>	545
J. D. Hill, <i>Remarks on the Borel property</i>	227
James R. Jackson, <i>On the existence problem of linear programming</i>	29
Margaret Jackson, <i>Transformations of series of the type ${}_3\Psi_3$</i>	557
Shizuo Kakutani, <i>An example concerning uniform boundedness of spectral measures</i>	363
V. L. Klee, Jr., <i>Invariant extension of linear functionals</i>	37
Joseph Lehner, <i>Note on the Schwarz triangle functions</i>	243
Arthur E. Livingston, <i>A generalization of an inequality due to Beurling</i>	251
Shu-Teh Chen Moy, <i>Characterizations of conditional expectation as a transformation on function spaces</i>	47
Hukukane Nikaidô, <i>On von Neumann's minimax theorem</i>	65
G. M. Petersen, <i>Methods of summation</i>	73
George Piranian, <i>See Fritz Herzog and George Piranian</i>	533

G. Power, <i>Some perturbed electrostatic fields</i>	79
M. H. Protter, <i>The two noncharacteristic problem with data partly on the parabolic line</i>	99
S. E. Rauch, <i>Mapping properties of Cesàro sums of order two of the geometric series</i>	109
Edgar Reich, <i>An inequality for subordinate analytic functions</i>	259
Gerson B. Robison, <i>Invariant integrals over a class of Banach spaces</i>	123
P. C. Rosenbloom, <i>Comments on the preceding paper by Herzog and Piranian</i>	539
Herman Rubin and Patrick Suppes, <i>Transformations of systems of relativistic particle mechanics</i>	563
D. R. Scholz, <i>Some minimum problems in the theory of functions</i>	275
J. Schwartz, <i>Perturbations of spectral operators, and applications I. Bounded perturbations</i>	415
A. Seidenberg, <i>On the dimension theory of rings (II)</i>	603
J. C. Shepherdson, <i>On two problems of Kurepa</i>	301
Patrick Suppes, <i>See Herman Rubin and Patrick Suppes</i>	563
Richard S. Varga, <i>Eigenvalues of circulant matrices</i>	151
A. Wald, <i>Congruent imbedding in F-metric spaces</i>	305
Gordon L. Walker, <i>Fermat's theorem for algebras</i>	317
John Wermer, <i>Commuting spectral measures on Hilbert space</i>	355
Bertram Yood, <i>Difference algebras of linear transformations on a Banach space</i> ...	615

