Proceedings of the American Mathematical Society

This journal is devoted entirely to research in pure and applied mathematics. The following statement was adopted by order of the Council of the American Mathematical Society on January 22, 1975.

Statement of Editorial Policy

To be published in the Proceedings, a paper must be correct, new, nontrivial and significant. Further, it must be well written and of interest to a substantial number of mathematicians. Piecemeal results, such as an inconclusive step toward an unproved major theorem or a minor variation on a known result, are in general not acceptable for publication. Proceedings Editors shall solicit, and encourage publication of, worthy papers of length not exceeding 11 typed pages.

Blind Refereeing: Author’s Responsibility

In January, 1975, the Council of the Society selected the Proceedings for a two-year experiment with “blind refereeing”. Policy now in effect is that an author submitting a paper to the Proceedings shall send two manuscripts: one containing all pertinent personal data and the other not containing the author’s name or institutional affiliation. This second copy will be refereed, and the Editor shall not reveal the name or institution of the author to the referee. It shall not be the responsibility of the Editor to suppress evidence internal to the paper from which the referee might guess the author’s identity.

Authors are cautioned that the Editor may not initiate the refereeing process until two copies of the manuscript have been received from the author.

Subscription Information

Subscription prices for Volumes 47–53 (1975) are list $140.00, member $70.00. Subscription prices for Volumes 54–61 (1976) are list $176.00, member $88.00. Back number prices per volume for Volumes 1–46 (1950–1974) are list $30.00, member $22.50. Volumes 47–53 (1975), when sold at back number prices, will be, per volume, list $30.00, member $22.50.

Microfilm Editions

Back volumes of PROCEEDINGS are also available on 16 mm microfilm, either negative or positive, and may be mounted on spools or in Eastman or 3M cartridges. Volumes 1–46 (1950–1974) are mounted on 9 spools and cost $310.00 for spools or $337.00 for cartridges. Only current subscribers are eligible to purchase back volumes on microfilm.

THE PROCEEDINGS OF THE AMERICAN MATHEMATICAL SOCIETY is published monthly. Subscriptions and orders for publications of the American Mathematical Society should be addressed to the American Mathematical Society, P.O. Box 1571, Annex Station, Providence, RI 02901. All orders must be accompanied by payment. Other correspondence should be addressed to P.O. Box 6248, Providence, RI 02940.

Second class postage paid at Providence, Rhode Island, and additional mailing offices.

Copyright © American Mathematical Society 1975
Printed in the United States of America
Submission of Manuscript

Send papers directly to one of the editors listed under the subject field of the paper. The numbers in parentheses are the first two digits of major classifications from the AMS (MOS) Subject Classification Scheme (1970) and describe the fields being handled by the editor.

Logic and foundations (02 04 06) K. Jon Barwise, Mathematics Department, University of California at Los Angeles, Los Angeles, California 90024

Combinatorics and discrete mathematics (05 15) Jay R. Goldman, Department of Mathematics, University of California at La Jolla, San Diego, California 92037

Commutative algebra (12 13 14 15 18) Robert M. Fossum, Department of Mathematics, University of Illinois, Urbana, Illinois 61801

General algebra (16 17 18 08) Barbara L. Osofsky, Department of Mathematics, Rutgers University, New Brunswick, New Jersey 08903

Group theory (20) Norman Blackburn, Department of Mathematics, The University, Manchester M13 9PL, England

Algebraic and differential topology (55 57 58) Glen E. Bredon, Department of Mathematics, Rutgers University, New Brunswick, New Jersey 08903

Real variables (26 28 40) Richard A. Hunt, Department of Mathematics, Purdue University, West Lafayette, Indiana 47907

Complex variables and analytic number theory (10 30 32) Louis Brickman, Department of Mathematics, State University of New York at Albany, Albany, New York 12203

Lawrence A. Zalcman, Department of Mathematics, University of Maryland, College Park, Maryland 20742

Differential equations (33 34 35 39 49) Richard K. Miller, Department of Mathematics, Iowa State University, Ames, Iowa 50010

General analysis (41 42 43 44 45) Richard R. Goldberg, Department of Mathematics, University of Iowa, Iowa City, Iowa 52240

Functional analysis and operator theory (46 47) Chandler Davis, Department of Mathematics, University of California, Berkeley, California 94720

Ronald G. Douglas, Department of Mathematics, State University of New York at Stony Brook, Stony Brook, New York 11790

Peter A. Fillmore, Department of Mathematics, Dalhousie University, Halifax, Nova Scotia, Canada

Geometry (22 50 52 53) Joseph A. Wolf, Department of Mathematics, University of California, Berkeley, California 94720

General topology (54) W. Wistar Comfort, Department of Mathematics, Wesleyan University, Middletown, Connecticut 06457

Thomas A. Chapman, Department of Mathematics, University of Kentucky, Lexington, Kentucky 40506

Probability and other fields (31 60—99 inclusive) James D. Kuelbs, Department of Mathematics, University of Wisconsin, Madison, Wisconsin 53706

All other communications should be addressed to the Managing Editor, W. Wistar Comfort, at the above address.
Preparation and Submission of Manuscript

1. Articles for insertion should be typewritten, double spaced, and no more than 11 pages \((8\frac{1}{2}'' \times 11'')\) long. Ditto is not generally satisfactory, although other modes of multiple reproduction may be. The Manual for Authors, available from the Society, should be consulted for symbols and style conventions. Authors should take the greatest possible care in preparing the original manuscript. Hand drawn symbols are satisfactory, if clearly done; directions to the printer should be included where necessary on a separate sheet. Authors must keep a complete copy of their manuscript, and editors will acknowledge receipt.

2. The first page should consist of a descriptive title, followed by an abstract which summarizes the article in language suitable for workers in the general field (algebra, analysis, etc.). The descriptive title should be short, but informative; useless or vague phrases such as "some remarks about" or "concerning" should be avoided. The abstract should be at least one complete sentence, and at most 150 words. Included with the footnotes to the paper, but placed before the first footnote, there should be first the AMS (MOS) subject classification numbers representing the primary and secondary subjects of the article. This may be followed by a list of key words and phrases describing the subject matter of the article and taken from it. The AMS (MOS) Subject Classification Scheme (1970) with instructions for its use can be found as an appendix to Mathematical Reviews, Index to Volume 39 (June 1970). See the June 1970 Notices for more details, as well as illustrative examples.

3. Very short notes not to exceed 1 printed page are also accepted, and appear under the heading SHORTER NOTES. Items deemed suitable include an elegant new proof of an important and well-known theorem, an illuminating example or counterexample, or a new viewpoint on familiar results. New results, if of a brief and striking character, might also be acceptable, though in general a paper which is merely very short will not be suitable for the SHORTER NOTES department.

Reprints and Address Changes

Any inquiries concerning a paper which has been accepted for publication, including information regarding reprints or changes of address for mailing proof, should be sent directly to the Editorial Department, American Mathematical Society, P.O. Box 6248, Providence, Rhode Island 02940.

Galley Proof

When a paper with more than one author has been accepted for publication, only one set of galley proof will be sent. Joint authors should, therefore, indicate which of them should receive galley proof in the event that the manuscript is accepted for publication.
CONTENTS—Continued from back cover

Approximation of functions by convexity preserving continuous linear operators. By JEAN TZIMBALARIO

On asymptotic behaviors of analytic mappings on the Martin boundary. By MIKIO NIIMURA

On perturbing bases of complex exponentials in $L^2(-\pi, \pi)$. By ROBERT M. YOUNG

Complete domains with respect to the Carathéodory distance. II. By DONG S. KIM

On an operator equation involving mappings of monotone type. By CHAITAN P. GUPTA

A characterisation of Lipschitz classes on $0$-dimensional groups. By WALTER R. BLOOM

Stability theory for Hill equations with generalized coefficient. By H. GUGGENHEIMER

On decomposability of compact perturbations of operators. By M. RADJABALIPOUR

A closed graph theorem. By S. O. IYAHEN

Integration is differentiable. By ALLAN GOTTLIEB

C. APPLIED MATHEMATICS

Duality theorems and theorems of the alternative. By L. McLINDEN

D. GEOMETRY

On compact Einstein-Kaehler manifolds. By BANG-YEN CHEN and KOICHI OGIUE

A note on the differential concomitant. By P. R. EISEMAN and A. P. STONE

A totally real surface in $CP^2$ that is not totally geodesic. By GERALD D. LUDDEN, MASAFUMI OKUMURA and KENTARO YANO

On mixed volumes of nonconvex sets. By WOLFGANG WEIL

G. TOPOLOGY

Strongly homogeneous spaces. By CAROL KITAI

Two examples in proximity spaces. By P. L. SHARMA

A loop condition for embedded compacta. By D. CORAM, R. J. DAVERMAN and P. F. DUVALL, JR

Evidence of a conspiracy among fixed point theorems. By IRA ROSENHOLTZ

Metric rigidity in $E^n$. By BRIAN M. SCOTT and RALPH JONES

Common fixed points of commuting mappings. By WILLIAM J. GRAY and CAROL M. SMITH

Torus-like products $\lambda$ connected continua. By CHARLES L. HAGopian

A fixed point theorem for hyperspaces of $\lambda$ connected continua. By CHARLES L. HAGopian

An alternate characterization of the Cantor set. By ALAN H. SCHOENFELD and GARY GRUENHAGE

Compatible group topologies. By KEVIN J. SHARPE

H. COMBINATORICS

Identities in combinatorics. II: A $q$-analog of the Lagrange inversion theorem. By GEORGE E. ANDREWS

Branchings and partitions. By L. CARLITZ and RICHARD P. STANLEY

SHORTER NOTES

The Rudin-Carleson theorem for vector-valued functions. By J. GLOBEVI NIK
CONTENTS

Vol. 53, No. 1 NOVEMBER 1975 Whole No. 197

A. ALGEBRA AND NUMBER THEORY

Factors and roots of the van der Pol polynomials. By F. T. HOWARD

On the coradical of a finite-dimensional Hopf algebra. By DAVID E. RADFORD

Rings whose cyclic modules are injective or projective. By S. C. GOEL, S. K. JAIN

and SURJEET SINGH

Power-associativity of antiflexible rings. By HASAN A. ÇELIK and DAVID L. OUTCALT

On the number of generators of powers of an ideal. By JUDITH D. SALLY

Powers of a matrix with coefficients in a Boolean ring. By GERT ALMKVIST

The intersection of the subgroups of finite index in some finitely presented groups.

By RONALD HIRSHON

The Picard sequence of a fibration. By ANDY R. MAGID

On the center of some finite linear groups. By HARVEY I. BLAU

A note on the geometric criteria for the factoriality of an affine ring. By JAMES

HORNELL

Finite groups with semisimple endomorphism rings. By CARTER LYONS

B. ANALYSIS

Linear interpolating bases in $C[0, 1]$ are not Besselian. By RONN CARPENTER

Characterizing hol$(\Omega)$. By RONN CARPENTER

The derivative of a bounded holomorphic function in the disk. By SHINJI YAMASHITA

Remarks on differential inequalities in Banach spaces. By ROBERT H. MARTIN, JR.

A Sturm-Liouville theorem for some odd multivalued maps. By JOÃO-PAULO DIAS

and JESÚS HERNÁNDEZ

A topological translation of a fundamental problem in cluster set theory. By J. A.

EIDSWICK

Remarks on dilations in $L^p$-spaces. By M. A. AKCOGLU and L. SUCHESTON

Flow-invariant domains of Hölder continuity for nonlinear semigroups. By ANDREW

T. PLANT

Equality of spectra of quasi-similar hyponormal operators. By STUART CLARY

Uniqueness for nonlinear Cauchy problems in Banach spaces. By JEROME A.

GOLDSTEIN

Bounded multiplier convergence in measure of random vector series. By C. RYLL-

NARDZEWSKI and W. A. WOCZYŃSKI

The double centralizer algebra as a linear space. By ROBERT A. FONTENOT

Operators quasisimilar to a normal operator. By CONSTANTIN APOSTOL

The Mackey topology as a mixed topology. By J. B. COOPER

A common fixed-point theorem for compact convex semigroups of nonexpansive maps-

ings. By RONALD E. BRUCK, JR

Subspaces of $LC(H)$ and $C_p$. By YAAKOV FRIEDMAN

Birelations and Sidon sets. By S. W. DRURY

Continued on inside back cover