JOURNALS PUBLISHED BY THE AMERICAN MATHEMATICAL SOCIETY

TRANSLATION JOURNALS

Soviet Mathematics-Doklady is a bimonthly translation journal containing the entire pure mathematics section of the DOKLADY AKADEMII NAUK SSSR.

Mathematics of the USSR-Izvestija, a bimonthly journal is a cover-to-cover translation of IZVESTIJA AKADEMIĬ NAUK SSSR SERIJA MATEMATIČESKAJA.

Mathematics of the USSR-Sbornik is a monthly journal and is a cover-to-cover translation of MATEMATICSKII SBORNIK (NOVAJA SERIJA).

Theory of Probability and Mathematical Statistics is the cover-to-cover translation into English of the TEORIJA VEROJATNOSTEÏ I MATEMATIČESKAJA STATISTIKA.

Vestnik of the Leningrad University (Mathematics) is the complete translation into English of the mathematics section of the VESTNIK LENINGRADSKOGO UNIVERSITETA.

Transactions of the Moscow Mathematical Society is a translation into English of TRUDY MOSKOVSKOGO MATEMATIČESKOGO OBŠČESTVA.

Proceedings of the Steklov Institute of Mathematics is a translation of the PROCEEDINGS OF THE STEKLOV INSTITUTE OF MATHEMATICS IN THE ACADEMY OF SCIENCES OF THE USSR.

RESEARCH JOURNALS

Submission information for these journals is included in the May and September issues of this *Bulletin*.

Bulletin (New Series) of the American Mathematical Society. Contains Research-Expository Papers, Research Announcements and Reviews of Books on Advanced Mathematics.

Mathematics of Computation is a quarterly journal devoted to original papers in numerical analysis, the application of numerical methods and high-speed calculator devices, the computation of mathematical tables, the theory of high-speed calculating devices, and other aids to computation.

Memoirs of the American Mathematical Society is a bimonthly journal constituting a series of paperbound research tracts which are of the same general character as the papers published in the TRANSACTIONS.

Proceedings of the American Mathematical Society is a monthly journal devoted entirely to research in pure and applied mathematics, principally to the publication of original papers of moderate length. A department called Shorter Notes was established for the purpose of publishing very short papers of an unusually elegant and polished character for which there is normally no other outlet.

Transactions of the American Mathematical Society is a monthly journal devoted entirely to research in pure and applied mathematics and, in general, includes longer papers than those in the PROCEEDINGS.

OTHER JOURNALS

Current Mathematical Publications, issued biweekly, contains a subject-classified index of papers and books being published currently in mathematics.

Mathematical Reviews is a monthly journal devoted to abstracts and reviews of the current mathematical literature of the world. Each volume consists of six regular issues plus an index issue. Abstracts and reviews are grouped under subject headings.

BULLETIN (New Series) of the American Mathematical Society

EDITORIAL BOARD FOR RESEARCH-EXPOSITORY ARTICLES

Lipman Bers Frederick W. Gehring
Felix E. Browder, Donald S. Ornstein
Chairman James B. Serrin
Paul J. Cohen Stephen Smale
Morton L. Curtis John T. Tate

EDITORIAL BOARD FOR RESEARCH ANNOUNCEMENTS

Irving Kaplansky

Robert P. Langlands

Richard K. Lashof

Hugh P. McKean, Jr.

Cathleen S. Morawetz

David Mumford

Gian-Carlo Rota

I. M. Singer, Chairman

Hugh L. Montgomery Elias M. Stein

BOOK REVIEW EDITOR: Meyer Jerison

MANAGING EDITOR: I. M. Singer

MANUSCRIPT, PROOF AND COPYING INFORMATION

SUBMISSION OF MANUSCRIPT

Articles submitted for publication should be typewritten and double spaced. 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.

For Research-Expository Articles and Research Announcements, the first footnote should include subject classification numbers representing the primary and secondary subjects of the article. The 1980 Mathematics Subject Classification can be found in the December index volumes of Mathematical Reviews.

COPYRIGHT TRANSFER AGREEMENT

The signing of a Copyright Transfer Agreement is a requirement of publication in the BULLETIN. A copy of the agreement is sent to authors upon receipt of a manuscript in the Providence Office of the Society; in case of joint authors, copies are sent to the author who is designated to receive galley proof. Authors are urged to return the form immediately to prevent delays in processing and publishing of the manuscript. The 1978 edition of the *Manual for Authors* has a description of Society policy concerning copyright and a copy of the agreement.

PUBLICATION CHARGES

Research Announcements carry a page charge of \$40.00 per page to help defray the cost of publication. This amount is charged to the institution or to a contract supporting the research reported in the published paper. The publication charge policy of the United States Federal Council for Science and Technology (FCST) is reported on page 112 of the February, 1975 issue of the NOTICES of the American Mathematical Society. In no case is the author personally responsible for paying the page charge, nor is acceptance of the author's paper for publication dependent upon payment of the page charge.

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.

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.

COPYING AND REPRINTING

Individual readers of this publication, and nonprofit libraries acting for them are permitted to make fair use of the material, such as to copy an article for use in teaching or research. Permission is granted to quote brief passages from this publication in reviews provided the customary acknowledgement of the source is given.

Republication, systematic copying, or multiple reproduction of any material in this publication (including abstracts) is permitted only under license from the American Mathematical Society. Requests for such permission should be addressed to the Executive Director, American Mathematical Society, Box 6248, Providence, Rhode Island 02940.

The appearance of the code on the first page of an article in this journal indicates the copyright owner's consent for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law, provided that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (For details write CCC Operations Staff, P.O. Box 765, Schenectady, New York 12301).

CONTENTS January 198

Ergodic theory of amenable group actions: I. The Rohlin lemma by Donald S. Ornstein and Benjamin Weiss	Four-dimensional topology: An introduction by Richard Mandelbaum
On nonlinear desingularization by M. S. Berger and L. E. Fraenkel. An analogue of the Mostow-Margulis rigidity theorems for ergodic actions of semisimple Lie groups by Robert J. Zimmer. A topological characterization of real algebraic varieties, by Selman Akbulut and Henry C. King. A topological resolution theorem by Selman Akbulut and Larry Taylor	ESEARCH ANNOUNCEMENTS
An analogue of the Mostow-Margulis rigidity theorems for ergodic actions of semisimple Lie groups by Robert J. Zimmer	
Lie groups by Robert J. Zimmer	On nonlinear desingularization by M. S. Berger and L. E. Fraenkel
A topological resolution theorem by Selman Akbulut and Larry Taylor	
On irreducible maps by R. Bautista	
Sufficiency of McMullen's conditions for f-vectors of simplicial polytopes by Louis Billera and Carl W. Lee	A topological resolution theorem by Selman Akbulut and Larry Taylor
An introduction to the general theory of algorithms by Michael Machtey and Pauroung—Reviewed by Robert P. Daley	On irreducible maps by R. Bautista
An introduction to the general theory of algorithms by Michael Machtey and Pate Young—Reviewed by Robert P. Daley	
Recursion-theoretic hierarchies by Peter G. Hinman—Reviewed by Keith J. Devlin	DOK REVIEWS
On uniformization of complex manifolds: The role of connections by R. C. Gunning Reviewed by Shoshichi Kobayashi	
Reviewed by Shoshichi Kobayashi	Recursion-theoretic hierarchies by Peter G. Hinman-Reviewed by Keith J. Devlin
Differenzenapproximationen partieller Anfangswertaufgaben by R. Ansorge-Reviewe by Wolfgang Wasow	
Elliptic systems in the plane by W. L. Wendland—Reviewed by Vadim Komkov	
Introduction to modular forms by Serge Lang—Reviewed by Audrey Terras	
Georg Cantor, his mathematics and philosophy of the infinite by Joseph Warre Dauben—Reviewed by Stanley H. Stahl	Elliptic systems in the plane by W. L. Wendland-Reviewed by Vadim Komkov
Integral representations of functions and imbedding theorems, Vols. I and II by Oleg I Besov, Valentin P. II'in, and Sergei M. Nikol'skii-Reviewed by Steven G. Krantz The algebra of random variables by M. D. Springer-Reviewed by Samuel Kotz Unitary group representations in physics, probability, and number theory by Georg Mackey-Reviewed by Karl Gustafson Nonlinear mappings of monotone type by Dan Pascali and Silviu Sburlan-Reviewed by Jeffrey R. L. Webb Differentiation of real functions by Andrew M. Bruckner-Reviewed by Dani Waterman Elements of homotopy theory by George W. Whitehead-Reviewed by J. F. Adams Percy Alexander MacMahon: Collected papers, Volume I, Combinatorics, edited by George E. Andrews-Reviewed by John Riordan	Introduction to modular forms by Serge Lang-Reviewed by Audrey Terras
Besov, Valentin P. II'in, and Sergei M. Nikol'skii-Reviewed by Steven G. Krantz The algebra of random variables by M. D. Springer-Reviewed by Samuel Kotz Unitary group representations in physics, probability, and number theory by George Mackey-Reviewed by Karl Gustafson Nonlinear mappings of monotone type by Dan Pascali and Silviu Sburlan-Reviewed by Jeffrey R. L. Webb Differentiation of real functions by Andrew M. Bruckner-Reviewed by Dani Waterman Elements of homotopy theory by George W. Whitehead-Reviewed by J. F. Adams Percy Alexander MacMahon: Collected papers, Volume I, Combinatorics, edited by George E. Andrews-Reviewed by John Riordan Multiple-conclusion logic by D. J. Shoesmith and T. J. Smiley-Reviewed by Andrew	
Unitary group representations in physics, probability, and number theory by Georg Mackey-Reviewed by Karl Gustafson	
Mackey-Reviewed by Karl Gustafson	The algebra of random variables by M. D. Springer-Reviewed by Samuel Kotz
Differentiation of real functions by Andrew M. Bruckner—Reviewed by Dani Waterman Elements of homotopy theory by George W. Whitehead—Reviewed by J. F. Adams Percy Alexander MacMahon: Collected papers, Volume I, Combinatorics, edited by George E. Andrews—Reviewed by John Riordan	
Waterman Elements of homotopy theory by George W. Whitehead—Reviewed by J. F. Adams Percy Alexander MacMahon: Collected papers, Volume I, Combinatorics, edited by George E. Andrews—Reviewed by John Riordan	., ,
Percy Alexander MacMahon: Collected papers, Volume I, Combinatorics, edited by George E. Andrews-Reviewed by John Riordan	
George E. Andrews—Reviewed by John Riordan	
Invariant theory by T. A. Springer-Reviewed by Robert B. Gardner	Invariant theory by T. A. Springer-Reviewed by Robert B. Gardner