

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, the Reports of the Academy of Sciences in the USSR. DOKLADY publishes 500 articles a year, each about four pages long.

Mathematics of the USSR–Izvestiya, a bimonthly journal, is a cover-to-cover translation of IZVESTIYA AKADEMII NAUK SSSR SERIYA MATEMATICHESKAYA, published by the Academy of Sciences of the USSR. This is a journal of current research in all fields of pure mathematics.

Mathematics of the USSR–Sbornik is a bimonthly journal and is a cover-to-cover translation of MATEMATICHESKIĬ SBORNIK (NOVAYA SERIYA), published by the Moscow Mathematical Society and the Academy of Sciences of the USSR. This is a journal of current research in all fields of pure mathematics.

Theory of Probability and Mathematical Statistics is the cover-to-cover translation into English of the TEORIYA VEROYATNOSTĖĬ I MATEMATICHESKAYA STATISTIKA published by Kiev University, beginning with the 1970 Soviet publication.

Transactions of the Moscow Mathematical Society is a translation into English of TRUDY MOSKOVSKOGO MATEMATICHESKOGO OBSHCHESTVA which contains the results of original research in pure mathematics.

Proceedings of the Steklov Institute of Mathematics is a translation of the AKADEMIYA NAUK SSSR TRUDY ORDENA LENINA MATEMATICHESKOGO INSTITUTA IMENI V. A. STEKLOVA. Issues contain book-length articles or collections of articles pertaining to the same topic.

CONTENT AND SUBMISSION INFORMATION FOR RESEARCH JOURNALS

Bulletin (New Series) of the American Mathematical Society contains Research-Expository Papers, Research Announcements and Reviews of Books on Advanced Mathematics. See inside front cover for submission information.

Journal of the American Mathematical Society is devoted to research articles of the highest quality in all areas of pure and applied 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. In addition, reviews and notes in these and related fields are published. Prospective publications should be sent to the Editor, WALTER GAUTSCHI, Computer Sciences Department, Purdue University, West Lafayette, Indiana 47907.

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. An issue of the MEMOIRS is made up of one or more numbers; a number contains either a single monograph or a group of cognate papers. Copy is supplied by the author; information on preparation of camera copy may be obtained by writing to the Editorial Department of the American Mathematical Society. Papers should be sent to the appropriate editor of 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. 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 1980 Mathematics Subject Classification (1985 Revision) and describe the fields being handled by the editor.

Logic and foundations (03 04) to ANDREAS R. BLASS, Department of Mathematics, University of Michigan, Ann Arbor, Michigan 48109-1003

Combinatorics and discrete mathematics (05 15) to THOMAS H. BRYLAWSKI, University of North Carolina, Chapel Hill, North Carolina 27514

Combinatorics, computer science and information theory (05 68 94) to ANDREW ODLYZKO, Room 2C-370, Bell Laboratories, Murray Hill, New Jersey 07974

Commutative algebra (06 12 13 14 15 18) to LOUIS J. RATLIFF, JR., Department of Mathematics, University of California, Riverside, California 92502

General algebra (16 17 18 08) to MAURICE AUSLANDER, Department of Mathematics, Brandeis University, P.O. Box 9110, Waltham, Massachusetts 02254-9110

Group theory (20) to WARREN J. WONG, Department of Mathematics, University of Notre Dame, Notre Dame, Indiana 46556

Algebraic and differential topology (55 57 58) to FREDERICK R. COHEN, Department of Mathematics, University of Kentucky, Lexington, Kentucky 40506

Real variables (26 28 40) to R. DANIEL MAULDIN, Department of Mathematics, North Texas State University, Denton, Texas 76203

Complex variables (30 31 32) to CLIFFORD J. EARLE JR., Cornell University, White Hall, Ithaca, New York 14853

Number theory (11) to WILLIAM ADAMS, Department of Mathematics, University of Maryland, College Park, MD 20742

Ordinary differential equations and dynamical systems (33 34 39 49 58) to KENNETH R. MEYER, Department of Mathematical Sciences, University of Cincinnati, Cincinnati, Ohio 45221-0025

Partial differential equations (35 49) to BARBARA L. KEYFITZ, Institute for Mathematics and Its Applications, University of Minnesota, 514 Vincent Hall, 206 Church Street S. E., Minneapolis, MN 55455

General analysis (41 42 43 44 45) to J. MARSHALL ASH, Department of Mathematics, DePaul University, Chicago, Illinois 60614

Functional analysis and operator theory (46 47) to PALE E. T. JORGENSEN, University of Iowa, Iowa City, Iowa 52242

Functional analysis and convexity (46 52) to WILLIAM J. DAVIS, Department of Mathematics, Ohio State University, Columbus, Ohio 43210

Complex variables, functional analysis, and operator theory (30 46 47) to PAUL S. MUHLY, Department of Mathematics, University of Iowa, Iowa City, Iowa 52242

Lie groups and geometry (22 51 53) to JONATHAN M. ROSENBERG, Department of Mathematics, University of Maryland, College Park, Maryland 20742

General topology (54) to DENNIS BURKE, Department of Mathematics, Miami University of Ohio, Oxford, Ohio 45056, or JAMES E. WEST, Department of Mathematics, Cornell University, Ithaca, New York 14853

Probability and certain other fields (60-94 inclusive) to WILLIAM D. SUDDERTH, Department of Statistics, University of Minnesota, Minneapolis, Minnesota 55455, or GEORGE C. PAPANICOLAOU, Applied Mathematics Division, New York University-Courant Institute, 251 Mercer Street, New York, New York 10012

All other communications should be addressed to the Managing Editor, WILLIAM J. DAVIS, at the above address.

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. Two copies of the manuscript should be submitted to one of the following editors.

Ordinary differential equations, partial differential equations and applied mathematics to ROGER D. NUSSBAUM, Department of Mathematics, Rutgers University, New Brunswick, NJ 08903

Harmonic analysis, representation theory and Lie theory to ROBERT J. ZIMMER, Department of Mathematics, University of Chicago, Chicago, IL 60637.

Abstract analysis to MASAMICHI TAKESAKI, Department of Mathematics, University of California, Los Angeles, CA 90024

Classical analysis (including complex, real and harmonic) to EUGENE FABES, Department of Mathematics, University of Minnesota, Minneapolis, MN 55455

Algebra, algebraic geometry and number theory to DAVID J. SALTMAN, Department of Mathematics, University of Texas at Austin, Austin, TX 78713

Geometric topology and general topology to JAMES W. CANNON, Department of Mathematics, Brigham Young University, Provo, UT 84602

Algebraic topology and differential topology to RALPH COHEN, Department of Mathematics, Stanford University, Stanford, CA 94305

Global analysis and differential geometry to JERRY L. KAZDAN, Department of Mathematics, University of Pennsylvania, E1, Philadelphia, PA 19104-6395

Probability and statistics to BURGESS DAVIS, Departments of Mathematics and Statistics, Purdue University, West Lafayette, IN 47907.

Combinatorics and number theory to CARL POMERANCE, Department of Mathematics, University of Georgia, Athens, GA 30602

Logic, set theory and general topology to JAMES E. BAUMGARTNER, Department of Mathematics, Dartmouth College, Hanover, NH 03755

Automorphic and modular functions and forms, geometry of numbers, multiplicative theory of numbers, zeta and L -functions of number fields and algebras to AUDREY TERRAS, Department of Mathematics, University of California at San Diego, La Jolla, CA 92093

All other communications to the editors should be addressed to the Managing Editor, RONALD L. GRAHAM, Mathematical Sciences Research Center, AT&T Bell Laboratories, 600 Mountain Avenue, Murray Hill, NJ 07974.

OTHER JOURNALS

Abstracts of Papers Presented to the American Mathematical Society contains abstracts of invited hour addresses, of papers presented in special sessions or in sessions for contributed papers, and of papers presented to the Society "by title".

Current Mathematical Publications, issued triweekly, 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. Abstracts and reviews are grouped according to the 1980 Mathematics Subject Classification scheme (1985 Revision). The subscription includes an annual author and subject index.

Notices of the American Mathematical Society, published ten times a year, contains programs and reports of the meetings of the Society, reports on Society business, communications to the membership, and news items and information of interest to the mathematical community.

BULLETIN (New Series) of the American Mathematical Society

EDITORS

EDITORIAL BOARD FOR RESEARCH-EXPOSITORY ARTICLES

Lenore Blum	Richard S. Palais
Morris W. Hirsch	David Vogan
Chairman	Alan Weinstein
Barry Mazur	Guido L. Weiss

EDITORIAL BOARD FOR RESEARCH ANNOUNCEMENTS

William B. Arveson	Victor W. Guillemin
Spencer Bloch	Roger E. Howe
Gregory L. Cherlin	Chairman
Percy Alec Deift	Frank S. Quinn III
Michael D. Fried	Peter B. Shalen
Ronald L. Graham	Nolan R. Wallach

BOOK REVIEWS EDITOR: Murray Protter

MANAGING EDITOR: Morris W. Hirsch

MANUSCRIPT, PROOF, AND COPYING INFORMATION

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; special instructions for the typesetter, when necessary, should be included 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 (1985 Revision) can be found in the annual subject index volumes of *Mathematical Reviews*.

To encourage the submission of manuscripts in electronic form using \TeX and the $\mathcal{A}\mathcal{M}\mathcal{S}\text{-}\text{\TeX}$ macro package, the Executive Committee of the Council has adopted a policy that allows for accelerating the publication date of such manuscripts by as much as 20 weeks, which is approximately equal to the time normally needed by the Society for copyediting, typesetting, and proofreading an average manuscript.

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 acknowledgment 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

VOLUME 21



1989

BULLETIN

(N E W S E R I E S)
OF THE

A M E R I C A N M A T H E M A T I C A L S O C I E T Y

EDITORS

Morris W. Hirsch, *Research Expository Articles*
Murray Protter, *Book Reviews*
Roger E. Howe, *Research Announcements*

ASSOCIATE EDITORS

William B. Arveson	Barry Mazur
Spencer Bloch	Richard S. Palais
Lenore Blum	Frank S. Quinn III
Gregory Cherlin	Peter B. Shalen
Percy Alec Deift	David Vogan
Michael D. Fried	Nolan R. Wallach
Ronald L. Graham	Alan Weinstein
Victor W. Guillemin	Guido L. Weiss

PROVIDENCE, RHODE ISLAND USA

ISSN 0273-0979

Executive Director, American Mathematical Society, P.O. 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 fee of \$1.00 plus \$.25 per page for each copy be paid directly to Copyright Clearance Center, Inc., 21 Congress Street, Salem, Massachusetts 01970. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotion purposes, for creating new collective works, or for resale.

OFFPRINTS 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.

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 the author upon receipt of a manuscript in the Providence Office of the Society; in case of joint authors, a copy is sent to each author. Authors are urged to return the form immediately to prevent delays in processing and publishing the manuscript. The 1984 edition of the *Manual for Authors* has a description of Society policy concerning copyright and a copy of the agreement.

PUBLICATION CHARGES

There are no page charges assessed on papers published in the BULLETIN.

COPYING AND REPRINTING. Individual readers of this publication, and non-profit 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 acknowledgment 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, P.O. Box 6248, Providence, Rhode Island 02940.

The appearance of the code on the first page of an article in this book 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 fee of \$1.00 plus \$.25 per page for each copy be paid directly to the Copyright Clearance Center, Inc., 21 Congress Street, Salem, Massachusetts 01970. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale.

Copyright ©1989 by the American Mathematical Society. All rights reserved.

Printed in the United States of America.

The paper used in this book is acid-free and falls within the guidelines established to ensure permanence and durability. ∞

INDEX TO VOLUME 21

July–October 1989

RESEARCH-EXPOSITORY PAPERS

- Blum, Lenore, Shub, Mike and Smale, Steve. *On a theory of computation and complexity over the real numbers; NP-completeness, recursive functions and universal machines*, 1
- Eisenbud, David and Harris, Joe. *Progress in the theory of complex algebraic curves*, 205
- Harris, Joe. *See* Eisenbud, David
- Shub, Mike. *See* Blum, Lenore
- Smale, Steve. *See* Blum, Lenore

RESEARCH ANNOUNCEMENTS

- Anderson, Michael T. *Moduli spaces of Einstein metrics on 4-manifolds*, 275
- Berkovich, Yakov G. *On solvable subgroups of the symmetric group*, 233
- Blasius, D. and Rogawski, J. *Galois representations for Hilbert modular forms*, 65
- Bump, Daniel, Friedberg, Solomon and Hoffstein, Jeffrey. *A nonvanishing theorem for derivatives of automorphic L-functions with applications to elliptic curves*, 89
- Douglas, R. G., Hurder, S. and Kaminker, J. *Eta-invariants and von Neumann algebras*, 83
- Foreman, Matthew. *Amenable group actions on the integers; an independence result*, 237
- Friedberg, Solomon. *See* Bump, Daniel
- Gehring, F. W. and Martin, G. J. *Iteration theory and inequalities for Kleinian groups*, 57
- Hara, Takashi and Slade, Gordon. *The triangle condition for percolation*, 269
- Hoffstein, Jeffrey. *See* Bump, Daniel
- Houderé, Christian. *Stochastic processes as Fourier integrals and dilation of vector measures*, 281
- Hurder, S. *See* Douglas, R. G.
- Jackson, Steve. *AD and the very fine structure of $L(\mathbf{R})$* , 77
- Jerison, David. *Harmonic measure in convex domains*, 255
- Jingbo, Xia. *See* Muhly, Paul
- Jordan, Bruce W. and Livné, Ron. *Conjecture "Epsilon" for weight $k > 2$* , 51
- Kaminker, J. *See* Douglas, R. G.
- Kieffer, John C. *An ergodic theorem for constrained sequences of functions*, 249
- Livné, Ron. *See* Jordan, Bruce W.
- Martin, G. J. *See* Gehring, F. W.
- Mohar, Bojan. *The diameter and the mean distance of a Riemannian manifold*, 261
- Muhly, Paul S., Putnam, Ian F. and Xia, Jingbo. *Contributions to the K-theory of C^* -algebras of Toeplitz and singular integral operators*, 47
- Müller, Stefan. *A surprising higher integrability property of mappings with positive determinant*, 245
- Nishikawa, Seiki, Ramachandran, Mohan and Tondeur, Philippe. *Heat conduction for Riemannian foliations*, 265
- Putnam, Ian F. *See* Muhly, Paul S.
- Ramachandran, Mohan. *See* Nishikawa, Seiki
- Rogawski, J. *See* Blasius, D.
- Slade, Gordon. *See* Hara, Takashi
- Tondeur, Philippe. *See* Nishikawa, Seiki

INDEX TO VOLUME 21

- White, Brian. *Every three-sphere of positive Ricci curvature contains a minimal embedded torus*, 71
- Zhongmin, Shen. *Finiteness and vanishing theorems for complete open Riemannian manifolds*, 241

BOOK REVIEWS

- Aigner, Martin. *Combinatorial search*, reviewed by Hu, T. C., 314
- Alling, N. L. *Foundations of analyses over surreal number fields*, reviewed by Cohn, P. M., 148
- Auslander, Joseph. *Minial flows and their extensions*, reviewed by Glasner, Eli, 316
- Bayod, J. M. *See* Stroyan, K. D.
- Beals, Richard and Greiner, Peter. *Calculus on Heisenberg manifolds*, reviewed by Stanton, Nancy K., 177
- Bell, J. L. *Toposes and local set theories: An introduction*, reviewed by Lambek, J., 325
- Bercovici, Hari. *Operator theory and arithmetic in H^∞* , reviewed by Wu, Pei Yuan, 184
- Berezin, Felix Alexandrovich. *Introduction to superanalysis*, reviewed by Rothstein, Mitchell, J., 189
- Bharucha-Reid, A. T. and Sambandham, M. *Random polynomials*, reviewed by Samal, G., 182
- Brown, K. S. *Buildings*, reviewed by Humphreys, James E., 303
- Burdzy, K. *Multidimensional Brownian excursions and potential theory*, reviewed by Salisbury, Thomas S., 152
- Cohn, P. M. *Free rings and their relations*, reviewed by Lewin, Jacques, 139
- Conway, J. H. and Sloane, N. J. A. *Sphere packings, lattices and groups*, reviewed by Guy, Richard K., 142
- Cordes, H. O. *Spectral theory of linear differential operators and comparison algebras*, reviewed by Dynin, Alexander, 105
- Dales, H. G. and Woodin, W. H. *An introduction to independence for analysts*, reviewed by Louveau, M. Alain, 179
- Davidson, Kenneth R. *Nest algebras*, reviewed by Power, Stephen, 322
- Doran, R. S. *See* Fell, J. M. G.
- Fell, J. M. G. and Doran, R. S. *Representations of *-algebras, locally compact groups, and Banach *-algebraic bundles; Basic representation theory of groups and algebras*, vol. 1; *Banach *-algebraic bundles, induced representations, and the generalized Mackey analysis*, vol. 2, reviewed by Williams, Dana P., 311
- Fine, Nathan J. *Basic hypergeometric series and applications*, reviewed by Askey, Richard, 130
- Gallot, S., Hulin, D. and Lafontaine, J. *Riemannian geometry*, reviewed by Greene, Robert E., 157
- Goldblatt, Robert. *Orthogonality and spacetime geometry*, reviewed by Taimanov, A. D. and Guts, Alexander K., 199
- Goodearl, K. R. *Partially ordered abelian groups with interpolation*, reviewed by Elliott, George A., 200
- Goresky, M. and MacPherson, R. *Stratified Morse theory*, reviewed by Fieseler, K.-H., 186
- Greiner, Peter. *See* Beals, Richard
- Hansen, Vagn Lundsgaard. *Collected mathematical papers of Jacob Nielson*, reviewed by Gilman, Jane, 125
- Herrmann, M., Ikeda, S. and Orbanz, U. *Equimultiplicity and blowing up; with an appendix* by Moonen, B., reviewed by Vogel, Wolfgang, 300
- Hulin, D. *See* Gallot, S.
- Ikeda, S. *See* Herrmann, M.

INDEX TO VOLUME 21

- Iwasawa, Kenkichi. *Local class field*, reviewed by Hazewinkel, Michiel, 95
- Jacod, J. and Shiryaev, A. N. *Limit theorems for stochastic processes*, reviewed by Karr, Alan F., 369
- Kane, R. M. *The homology of Hopf spaces*, reviewed by Lin, J. P., 339
- Kifer, Yuri. *Ergodic theory of random transformations*, reviewed by Walters, Peter, 113
- Körner, T. W. *Fourier analysis*, reviewed by Brown, Gavin, 307
- Lafontaine, J. *See* Gallot, S.
- Lang, Serge. *Introduction to Arakelov theory*, reviewed by Silverman, Joseph H., 171
- Llavona, J. G. *Approximation of continuously differentiable functions*, reviewed by Sundaresan, K., 296
- Lennox, John C. and Stonehewer, Stewart S. *Subnormal subgroups of groups*, reviewed by Kegel, O. H., 346
- Lochak, Pierre and Meunier, Claude. *Multiphase averaging for classical systems, with applications to adiabatic theorems*, reviewed by Philip Holmes, 101
- MacPherson, R. *See* Goresky, M.
- Manin, Yuri I. *Gauge field theory and complex geometry*, reviewed by LeBrun, Claude, 192
- Markus, A. S. *Introduction to the spectral theory of polynomial operator pencils*, reviewed by Gohberg, I. and Kaashoek, M. A., 350
- Meunier, Claude. *See* Lochak, Pierre
- Nag, Subhashis. *The complex analytic theory of Teichmüller spaces*, reviewed by Abikoff, William, 162
- Neukirch, Jürgen. *Class field theory*, reviewed by Hazewinkel, Michiel, 95
- Oda, Tadao. *Convex bodies and algebraic geometry: An introduction to toric varieties*, reviewed by Reid, Miles, 360
- Orbanz, U. *See* Herrmann, M.
- Petrushev, P. P. and Popov, V. A. *Rational approximation of real functions*, reviewed by Ganelius, Tord H., 348
- Popov, V. A. *See* Petrushev, P. P.
- Ribenboim, Paulo. *The book of prime number records*, reviewed by Wagstaff, S. S., Jr., 365
- Porter, Jack R. and Woods, R. Grant. *Extensions and absolutes of Hausdorff spaces*, reviewed by Henriksen, Melvin, 168
- Preuss, Gerhard. *Theory of topological structures. An approach to categorical topology*, reviewed by Tholen, Walter, 149
- Rodrigues, J.-F. *Obstacle problems in mathematical physics*, reviewed by Lieberman, Gary M., 319
- Ronan, M. A. *Lectures on buildings*, reviewed by Humphreys, James E., 303
- Rosenblatt, Murray. *Stationary sequences and random fields*, reviewed by Kallianpur, G., 133
- Rybakowski, Krzysztof P. *The homotopy index and partial differential equations*, reviewed by Mawhin, Jean, 118
- Sambandham, M. *See* Bharucha-Reid, A. T.
- Scharlau, Winfried. *Quadratic and Hermitian forms*, reviewed by Lam, T. Y., 121
- de Shalit, Ehud. *Iwasawa theory of elliptic curves with complex multiplication*, reviewed by Rubin, Karl, 108
- Sharpe, Michael. *General theory of Markov processes*, reviewed by Meyer, Paul André, 292
- Shiryaev, A. N. *See* Jacod, J.
- Sloane, N. J. A. *See* Conway, J. H.
- Stroyan, K. D. and Bayod, J. M. *Foundations of infinitesimal stochastic analysis*, reviewed by Hoover, D. N., 287
- Stonehewer, Stewart S. *See* Lennox, John C.

INDEX TO VOLUME 21

- Temam, Roger. *Infinite-dimensional dynamical systems in mechanics and physics*, reviewed by Guckenheimer, John, 196
- Traub, J. F., Wasilkowski, G. W. and Woźniakowski. *Information-based complexity*, reviewed by Kon, Mark A., 332
- Vassiliev, V. A. *Lagrange and Legendre characteristic classes*, reviewed by Audin, Michèle, 375
- Vogan, David A. Jr. *Unitary representation of reductive Lie groups*, reviewed by Knapp, A. W., 380
- Vuorinen, Matti. *Conformal geometry and quasiregular mappings*, reviewed by Manfredi, Juan J., 354
- Waskowski, G. W. See Traub, J. F.
- Woodin, W. H. See Dales, H. G.
- Woods, R. Grant. See Porter, Jack R.
- Woźniakowski, H. See Traub, J. F.

(Continued from back cover)

Minimal flows and their extensions by <i>Joseph Auslander</i> —Reviewed by <i>Eli Glasner</i>	316
Obstacle problems in mathematical physics by <i>J.-F. Rodrigues</i> —Reviewed by <i>Gary M. Lieberman</i>	319
Nest algebras by <i>Kenneth R. Davidson</i> —Reviewed by <i>Stephen Power</i> ...	322
Toposes and local set theories: An introduction by <i>J. L. Bell</i> —Reviewed by <i>J. Lambek</i>	325
Information-based complexity by <i>J. F. Traub, G. W. Wasilkowski and H. Woźniakowski</i> —Reviewed by <i>Mark A. Kon</i>	332
The homology of Hopf spaces by <i>R. M. Kane</i> —Reviewed by <i>James P. Lin</i>	339
Subnormal subgroups of groups by <i>John C. Lennox and Stewart S. Stonehewer</i> —Reviewed by <i>O. H. Kegel</i>	346
Rational approximation of real functions by <i>P. P. Petrushev and V. A. Popov</i> —Reviewed by <i>Tord H. Ganelius</i>	348
Introduction to the spectral theory of polynomial operator pencils by <i>A. S. Markus</i> —Reviewed by <i>I. Gohberg and M. A. Kaashoek</i>	350
Conformal geometry and quasiregular mappings by <i>Matti Vuorinen</i> —Reviewed by <i>Juan J. Manfredi</i>	354
Convex bodies and algebraic geometry: An introduction to toric varieties by <i>Tadao Oda</i> —Reviewed by <i>Miles Reid</i>	360
The book of prime number records by <i>Paulo Ribenboim</i> —Reviewed by <i>S. S. Wagstaff, Jr.</i>	365
Limit theorems for stochastic processes by <i>J. Jacod and A. N. Shiryaev</i> —Reviewed by <i>Alan F. Karr</i>	369
Lagrange and Legendre characteristic classes by <i>V. A. Vassiliev</i> —Reviewed by <i>Michèle Audin</i>	375
Unitary representations of reductive Lie groups by <i>David A. Vogan, Jr.</i> —Reviewed by <i>A. W. Knap</i>	380

