Editorial Information

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 solicit and encourage publication of worthy papers of length not exceeding 10 published pages. Published pages are the same size as those generated in the style files provided for \texttt{AM\$S-L\TeX} or \texttt{AM\$S-T\TeX}.

Very short notes not to exceed two printed pages 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.

As of December 31, 2000, the backlog for this journal was approximately 9 issues. This estimate is the result of dividing the number of manuscripts for this journal in the Providence office that have not yet gone to the printer on the above date by the average number of articles per issue over the previous twelve months, reduced by the number of issues published in four months (the time necessary for editing and composing a typical issue). In an effort to make articles available as quickly as possible, articles are posted to e-MATH individually soon after proof is returned from authors and before appearing in an issue.

A Consent to Publish and Copyright Agreement is required before a paper will be published in this journal. After a paper is accepted for publication, the Providence office will send out a Consent to Publish and Copyright Agreement to all authors of the paper. By submitting a paper to this journal, authors certify that the results have not been submitted to nor are they under consideration for publication by another journal, conference proceedings, or similar publication.

Information for Authors

Initial submission. Two copies of the paper should be sent directly to the appropriate Editor and the author should keep a copy. \textit{If an editor is agreeable}, an electronic manuscript prepared in \texttt{T\TeX} or \texttt{L\TeX} may be submitted by pointing to an appropriate URL on a preprint or e-print server.

The first page of an article must consist of a descriptive title, followed by an abstract that 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 should be the 2000 Mathematics Subject Classification representing the primary and secondary subjects of the article. The classifications are accessible from \url{www.ams.org/msc/}. The list of classifications is also available in print starting with the 1999 annual index of Mathematical Reviews. The Mathematics Subject Classification footnotes may be followed by a list of key words and phrases describing the subject matter of the article and taken from it. Journal abbreviations used in bibliographies are listed in the latest Mathematical Reviews annual index. The series abbreviations are also accessible from \url{www.ams.org/publications/}. To help in preparing and verifying references, the AMS offers MR Lookup, a Reference Tool for Linking, at \url{www.ams.org/mrlookup/}. When the manuscript is submitted, authors should supply the editor with electronic addresses if available. These will be printed after the postal address at the end of each article.

Electronically prepared manuscripts. The AMS encourages electronically prepared manuscripts, with a strong preference for \texttt{AM\$S-L\TeX}. To this end, the Society has prepared \texttt{AM\$S-L\TeX} author packages for each AMS publication. Author packages include instructions for preparing electronic manuscripts, the \texttt{AMS Author Handbook}, samples, and a style file that generates the particular design specifications of that publication series. Articles properly prepared using the \texttt{AM\$S-L\TeX} style file and the \texttt{\label} and \texttt{\ref}
commands automatically enable extensive intra-document linking to the bibliography and other elements of the article for searching electronically on the Web. Because linking must often be added manually to electronically prepared manuscripts in other forms of \TeX, using \LaTeX also reduces the amount of technical intervention once the files are received by the AMS. This results in fewer errors in processing and saves the author proofreading time. \LaTeX papers also move more efficiently through the production stream, helping to minimize publishing costs.

\LaTeX is the highly preferred format of \TeX, but author packages are also available in \AmSTeX. Those authors who make use of these style files from the beginning of the writing process will further reduce their own efforts. Manuscripts prepared electronically in \AmSTeX or plain \TeX are normally not acceptable due to the high amount of technical time required to insure that the file will run properly through the AMS in-house production system. \AmSTeX users will find that \LaTeX is the same as \AmSTeX with additional commands to simplify the typesetting of mathematics, and users of plain \TeX should have the foundation for learning \LaTeX.

Authors may retrieve an author package from e-MATH starting from www.ams.org/tex/ or via FTP to ftp.ams.org (login as anonymous, enter username as password, and type cd pub/author-info). The AMS Author Handbook and the Instruction Manual are available in PDF format following the author packages link from www.ams.org/tex/. The author package can also be obtained free of charge by sending email to pub@ams.org (Internet) or from the Publication Division, American Mathematical Society, P.O. Box 6248, Providence, RI 02940-6248. When requesting an author package, please specify \LaTeX or \AmSTeX, Macintosh or IBM (3.5) format, and the publication in which your paper will appear. Please be sure to include your complete mailing address.

At the time of submission, authors should indicate if the paper has been prepared using \LaTeX or \AmSTeX and provide the Editor with a paper manuscript that matches the electronic manuscript. The final version of the electronic manuscript should be sent to the Providence office immediately after the paper has been accepted for publication. The author should also send the final version of the paper manuscript to the Editor, who will forward a copy to the Providence office. Editors will require authors to send their electronically prepared manuscripts to the Providence office in a timely fashion. Electronically prepared manuscripts can be sent via email to pub-submit@ams.org (Internet) or on diskette to the Electronic Prepress Department, American Mathematical Society, P.O. Box 6248, Providence, RI 02940-6248. When sending a manuscript electronically, please be sure to include a message indicating in which publication the paper has been accepted. No corrections will be accepted electronically. Authors must mark their changes on their proof copies and return them to the Providence office. Complete instructions on how to send files are included in the author package.

**Electronic graphics.** Comprehensive instructions on preparing graphics are available at www.ams.org/jourhtml/graphics.html. A few of the major requirements are given here.

Submit files for graphics as EPS (Encapsulated PostScript) files. This includes graphics originated via a graphics application as well as scanned photographs or other computer-generated images. If this is not possible, TIF files are acceptable as long as they can be opened in Adobe Photoshop or Illustrator. No matter what method was used to produce the graphic, it is necessary to provide a paper copy to the AMS.

Authors using graphics packages for the creation of electronic art should also avoid the use of any lines thinner than 0.5 points in width. Many graphics packages allow the user to specify a "hairline" for a very thin line. Hairlines often look acceptable when proofed on a typical laser printer. However, when produced on a high-resolution laser imagesetter, hairlines become nearly invisible and will be lost entirely in the final printing process.

Screens should be set to values between 15% and 85%. Screens which fall outside of this range are too light or too dark to print correctly. Variations of screens within a graphic should be no less than 10%.
AMS policy on making changes to articles after posting. Articles are posted to e-MATH individually after proof is returned from authors and before appearing in an issue. To preserve the integrity of electronically published articles, once an article is individually posted to e-MATH but not yet in an issue, changes cannot be made in place in the paper. However, an “Added after posting” section may be added to the paper right before the References when there is a critical error in the content of the paper. The “Added after posting” section gives the author an opportunity to correct this type of critical error before the article is put into an issue for printing and before it is then reposted with the issue. The “Added after posting” section remains a permanent part of the paper. The AMS does not keep author-related information, such as affiliation, current address, and email address, up to date after a paper is initially posted.

Once the article is assigned to an issue, even if the issue has not yet been posted to e-MATH, corrections may be made to the paper by submitting a traditional errata article to the Editor. The errata article will appear in a future print issue and will link back and forth on the web to the original article online.

Secure manuscript tracking on the Web and via email. Authors can track their manuscripts through the AMS journal production process using the personal AMS ID and Article ID printed in the upper right-hand corner of the Consent to Publish form sent to each author who publishes in AMS journals. Access to the tracking system is available from www.ams.org/mstrack/ or via email sent to mstrack-query@ams.org. To access by email, on the subject line of the message simply enter the AMS ID and Article ID. To track more than one manuscript by email, choose one of the Article IDs and enter the AMS ID and the Article ID followed by the word all on the subject line. An explanation of each production step is provided on the web through links from the manuscript tracking screen. Questions can be sent to proc-query@ams.org.

\TeX files available. Beginning with the January 1992 issue of the Bulletin and the January 1996 issues of Transactions, Proceedings, Mathematics of Computation, and the Journal of the AMS, \TeX files can be downloaded from e-MATH, starting from www.ams.org/journals/. Authors without Web access may request their files at the address given below after the article has been published. For Bulletin papers published in 1987 through 1991 and for Transactions, Proceedings, Mathematics of Computation, and the Journal of the AMS papers published in 1987 through 1995, \TeX files are available upon request for authors without Web access by sending email to file-request@ams.org or by contacting the Electronic Prepress Department, American Mathematical Society, P.O. Box 6248, Providence, RI 02940-6248. The request should include the title of the paper, the name(s) of the author(s), the name of the publication in which the paper has or will appear, and the volume and issue numbers if known. The \TeX file will be sent to the author making the request after the article goes to the printer. If the requestor can receive Internet email, please include the email address to which the file should be sent. Otherwise please indicate a diskette format and postal address to which a disk should be mailed. Note: Because \TeX production at the AMS sometimes requires extra fonts and macros that are not yet publicly available, \TeX files cannot be guaranteed to run through the author’s version of \TeX without errors. The AMS regrets that it cannot provide support to eliminate such errors in the author’s \TeX environment.

Inquiries. Any inquiries concerning a paper that has been accepted for publication that cannot be answered via the manuscript tracking system mentioned above should be sent to proc-query@ams.org or directly to the Electronic Prepress Department, American Mathematical Society, P.O. Box 6248, Providence, RI 02940-6248.
Editors

Authors are requested to send papers directly to the appropriate Editor (the one whose area of responsibility and expertise, as described below, most closely approximates the subject field of the manuscript). Only when in doubt about an appropriate Editor, should manuscripts be sent to the Coordinating Editor responsible for the area in mathematics most closely connected to the paper. If in doubt about the area, send the manuscript to the Managing Editor, to whom all other communication about the journal should also be addressed. (All addresses should include the line “Department of Mathematics”, unless another department is indicated.)

Managing Editor: Eric Bedford, Indiana University, Bloomington, IN 47405-5701; e-mail: bedford@indiana.edu

1. ODE, PDE, GLOBAL ANALYSIS, AND DYNAMICAL SYSTEMS
   Coordinating Editor: Linda Keen, CUNY-Lehman College, Bronx, NY 10468; e-mail: linda@alpha.lehman.cuny.edu; keen@bers.gc.cuny.edu
   Partial differential equations, David S. Tartakoff, University of Illinois at Chicago, Chicago, IL 60607; e-mail: dst@uic.edu
   Dynamical systems and ergodic theory, Michael Handel, Department of Mathematics and Computer Science, Herbert Lehman College (CUNY), Bronx, NY 10468-1589; e-mail: michael@alpha.lehman.cuny.edu
   Ordinary differential equations and special functions, Carmen C. Chicone, University of Missouri, Columbia, MO 65211-0001; e-mail: carmen@chicone.math.missouri.edu
   Global analysis, Jozef Dodziuk, Ph.D. Program in Mathematics, Graduate School and University Center (CUNY), 365 Fifth Avenue, New York, NY 10016-4309; e-mail: jodziuk@gc.cuny.edu

2. LIE GROUPS, TOPOLOGY, AND GEOMETRY
   Coordinating Editor: Ronald A. Fintushel, Michigan State University, East Lansing, MI 48824-1027; e-mail: ronfint@math.msu.edu
   Topological groups and Lie groups (symmetric spaces), Rebecca Herb, University of Maryland, College Park, MD 20742; e-mail: rah@math.umd.edu
   Riemannian geometry (including affine, pseudo-Riemannian, contact, classical, and Lorentzian geometries), Wolfgang Ziller, University of Pennsylvania, Philadelphia, PA 19104-6317; e-mail: wziller@math.upenn.edu
   Geometric analysis (geometric PDE, minimal surfaces and harmonic maps), Bennett Chow, University of California San Diego, La Jolla, CA 92093; e-mail: benchow@euclid.ucsd.edu
   Algebraic topology, Paul Goerss, Northwestern University, Evanston, IL 60208-2730; e-mail: pgoerss@math.nwu.edu
   Set-theoretic and general topology, Alan Dow, University of North Carolina at Charlotte, Charlotte, NC 28223-0001; e-mail: adov@math.uncc.edu
   Low dimensional topology, gauge theory, 4-manifolds, Ronald A. Fintushel
   Complex and Kähler geometry, Mohan Ramachandran, State University of New York at Buffalo, Buffalo, NY 14260-2900; e-mail: ramac-m@newton.math.buffalo.edu

3. ANALYSIS AND OPERATOR THEORY
   Coordinating Editor: Christopher D. Sogge, Johns Hopkins University, Baltimore, MD 21218; e-mail: sogge@jhu.edu
   One complex variable and potential theory, Juha M. Heinonen, University of Michigan, Ann Arbor, MI 48109-1109; e-mail: PAMS1@math.lsa.umich.edu
   Several complex variables, Mei-Chi Shaw, University of Notre Dame, Notre Dame, IN 46556-0398; e-mail: mei-chi.shaw.1@nd.edu
Linear and nonlinear functional analysis, Jonathan M. Borwein, Department of Mathematics and Statistics, Simon Fraser University, Burnaby, BC, Canada V5A 1S6; e-mail: jborwein@ccm.sfu.ca

Banach spaces and linear functional analysis, N. Tomczak-Jaegermann, University of Alberta, Edmonton, AB, Canada T6G 2G1; e-mail: ntomczak@math.ualberta.ca; nicole.tomczak@ualberta.ca

Operator Theory, Joseph A. Ball, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061; e-mail: ball@math.vt.edu

Operator algebras and wavelets, David R. Larson, Texas A&M University, College Station, TX 77843-3368; e-mail: larson@math.tamu.edu

Geometric measure theory and classical real analysis, David Preiss, University College London, Gower Street, London WC1E 6BT, UK; e-mail: dp@math.ucl.ac.uk

Harmonic analysis, Andreas Seeger, University of Wisconsin, Madison, WI 53706; e-mail: seeger@math.wisc.edu

Analytic number theory and automorphic forms, Dennis A. Hejhal, School of Mathematics, University of Minnesota, Minneapolis, MN 55455-0488; e-mail: hejhal@math.umn.edu

4. ALGEBRA, NUMBER THEORY, COMBINATORICS, AND LOGIC
Coordinating Editor: Lance W. Small, University of California San Diego, La Jolla, CA 92093-0112; e-mail: lws@ucsd.edu

General number theory, David E. Rohrlich, Boston University, Boston, MA 02215-2411; e-mail: rohrlich@math.bu.edu

Commutative algebra, Wolmer V. Vasconcelos, Rutgers University, New Brunswick, NJ 08903-2101; e-mail: vasconce@math.rutgers.edu

Group theory, Stephen D. Smith, University of Illinois at Chicago, Chicago, IL 60607; e-mail: smiths@math.uic.edu

Algebraic geometry, Michael Stillman, Cornell University, Malott Hall, Ithaca, NY 14853-4201; e-mail: mike@math.cornell.edu

Combinatorics, John R. Stembridge, University of Michigan, Ann Arbor, MI 48109-1109; e-mail: jrs@math.lsa.umich.edu

Analytic number theory and automorphic forms, Dennis A. Hejhal, School of Mathematics, University of Minnesota, Minneapolis, MN 55455-0488; e-mail: hejhal@math.umn.edu

Logic and foundations, Carl G. Jockusch, Jr., University of Illinois, 1409 W. Green St., Urbana, IL 61801-2917; e-mail: jockusch@math.uiuc.edu

Lie algebras, Dan M. Barbasch, Cornell University, Malott Hall, Ithaca, NY 14853-4201; e-mail: barbasch@math.cornell.edu

Noncommutative rings, Martin Lorenz, Temple University, Philadelphia, PA 19122-6094; e-mail: lorenz@math.temple.edu

5. APPLIED MATHEMATICS, PROBABILITY, AND STATISTICS
Coordinating Editor: Mark J. Ablowitz, Department of Applied Mathematics, Campus Box 526, University of Colorado, Boulder, CO 80309-0526; e-mail: markjab@newton.colorado.edu

Probability, Claudia M. Neuhauser, School of Mathematics, University of Minnesota, Minneapolis, MN 55455; e-mail: nhauser@math.umn.edu

Statistics, Richard A. Davis, Department of Statistics, Colorado State University, Fort Collins, CO 80523-1877; e-mail: rdavis@stat.colostate.edu
**Applied mathematics**, David Sharp, Theoretical Division, Los Alamos National Laboratory MSB285, Los Alamos, NM 87545; e-mail: dhs@lanl.gov

**Hyperbolic partial differential equations**, Suncica Canic, University of Houston, Houston, TX 77204-3476; e-mail: canic@math.uh.edu
Mohamed Allali and Tomasz Przebinda, Strictly positive definite functions on a compact group .................................................. 1459
Peter Borwein and Richard Lockhart, The expected $L_p$ norm of random polynomials ..................................................... 1463
Buma Fridman, Lop-Hing Ho, and Daowei Ma, A compact set with noncompact disc-hull .................................................. 1473

C. APPLIED MATHEMATICS

Peter Mathé, Hilbert space analysis of Latin Hypercube Sampling ............. 1477

D. GEOMETRY

D. Burago, S. Ferleger, B. Kleiner, and A. Kononenko, Gluing copies of a 3-dimensional polyhedron to obtain a closed nonpositively curved pseudomanifold .................................................. 1493
András I. Stipsicz, Indecomposability of certain Lefschetz fibrations .......... 1499

E. LOGIC AND FOUNDATIONS

Hans-Dieter Donder, Cardinal elementary extensions .............................. 1503
Su Gao, The action of $SL(2, \mathbb{Z})$ on the subsets of $\mathbb{Z}^2$ ..................... 1507

F. STATISTICS AND PROBABILITY

Sara Brofferio and Wolfgang Woess, On transience of card shuffling ......... 1513
Onésimo Hernández-Lerma and Jean B. Lasserre, Further criteria for positive Harris recurrence of Markov chains ................................. 1521

G. TOPOLOGY

T. Budak, N. Işık, P. Milnes, and J. Pym, The action of a semisimple Lie group on its maximal compact subgroup ............................. 1525
Dennis K. Burke and Roman Pol, Products of Michael spaces and completely metrizable spaces .............................................. 1535
Mustafa Korkmaz and Burak Ozbagci, Minimal number of singular fibers in a Lefschetz fibration ............................................. 1545
Sergei M. Ageev and Dušan Repovš, A new construction of semi-free actions on Menger manifolds ........................................... 1551
PROCEEDINGS OF THE AMERICAN MATHEMATICAL SOCIETY

CONTENTS

Vol. 129, No. 5     Whole No. 503     May 2001

A. ALGEBRA, NUMBER THEORY, AND COMBINATORICS

Ivan Pan, Les transformations de Cremona stellaires ........................................ 1257
Min Ru, A note on p-adic Nevanlinna theory ............................................................ 1263
Rainer H. Kaenders, The mixed Hodge structure on the fundamental group of a punctured Riemann surface ................................................................. 1271
Elena V. Black, Lifting wreath product extensions .................................................... 1283
Flávio Ulhoa Coelho, Maria Izabel R. Martins, and José Antonio de la Peña, Quasitilted extensions of algebras I ............................................................ 1289
Eero Hyry, Coefficient ideals and the Cohen-Macaulay property of Rees algebras ................................................................. 1299
Alberto Corso and Claudia Polini, On residually $S_2$ ideals and projective dimension one modules ................................................................. 1309

B. ANALYSIS

Luc Vinet and Alexei Zhedanov, Generalized little q-Jacobi polynomials as eigensolutions of higher-order q-difference operators ........................................ 1317
Xiaoai Lin, On the independence of correspondences .............................................. 1329
El Mostafa Kaloun and Hassan Riahi, Topological KKM theorems and generalized vector equilibria on G-convex spaces with applications ........................................ 1335
Roger L. Jones, Joseph M. Rosenblatt, and Máté Wierdl, Oscillation inequalities for rectangles ................................................................. 1349
Fernando Bombal and Ignacio Villanueva, On the Dunford-Pettis property of the tensor product of $C(K)$ spaces ................................................................. 1359
Thomas Vils Pedersen, Holomorphic perturbation of Fourier coefficients .............. 1365
Hermann Pfitzner, A note on asymptotically isometric copies of $l^1$ and $c_0$ ........ 1367
G. Laschon, Creation and propagation of logarithmic singularities by interaction of two piecewise smooth progressing waves ........................................ 1375
Hajime Ishihara, Locating subsets of a Hilbert space ............................................. 1385
Shulim Kaliman and Mikhail Zaidenberg, Non-hyperbolic complex space with a hyperbolic normalization ................................................................. 1391
Atanas Stefanov, Strichartz estimates for the Schrödinger equation with radial data ................................................................. 1395
Jan Kolář, Porous sets that are Haar null, and nowhere approximately differentiable functions ................................................................. 1403
Klaus Thomsen, On absorbing extensions ................................................................. 1409
Jinghui Qiu, Local completeness and dual local quasi-completeness ..................... 1419
Jacques Delaporte and Antoine Derighetti, Invariant projections and convolution operators ................................................................. 1427
Hans-Olav Tylli, Duality of the weak essential norm ............................................ 1437
Shaobo Gan, Sturmian sequences and the lexicographic world .................................. 1445

(Continued on inside back cover)