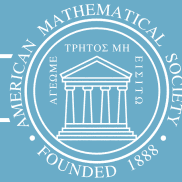

VOLUME 360 NUMBER 12



DECEMBER 2008

WHOLE NUMBER 883

TRANSACTIONS

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

EDITED BY

Dan Abramovich

Alejandro Adem

Richard F. Bass

Mark Feighn

Robert Guralnick, Managing Editor

Lisa C. Jeffrey

Yunping Jiang

Alexander Kleshchev

Steffen Lemp

William P. Minicozzi II

Alexander Nagel

Peter Polacik

Gustavo Ponce

Jonathan Rogawski

Dimitri Shlyakhtenko

Robert J. Stanton

John R. Stembridge

Daniel Tataru

Mina Teicher

PROVIDENCE, RHODE ISLAND USA

ISSN 0002-9947

Available electronically at
www.ams.org/tran/

Transactions of the American Mathematical Society

This journal is devoted entirely to research in pure and applied mathematics.

Submission information. See **Information for Authors** at the end of this issue.

Publisher Item Identifier. The Publisher Item Identifier (PII) appears at the top of the first page of each article published in this journal. This alphanumeric string of characters uniquely identifies each article and can be used for future cataloging, searching, and electronic retrieval.

Postings to the AMS website. Articles are posted to the AMS website individually after proof is returned from authors and before appearing in an issue.

Subscription information. *Transactions of the American Mathematical Society* is published monthly. Beginning in January 1996 *Transactions* is accessible from www.ams.org/journals/. Subscription prices for Volume 360 (2008) are as follows: for paper delivery, US\$1814 list, US\$1451 institutional member, US\$1633 corporate member; for electronic delivery, US\$1633 list, US\$1306 institutional member, US\$1470 corporate member. Upon request, subscribers to paper delivery of this journal are also entitled to receive electronic delivery. If ordering the paper version, add US\$49 for surface delivery outside the United States and India; US\$53 to India. Expedited delivery to destinations in North America is US\$79; elsewhere US\$144. For paper delivery a late charge of 10% of the subscription price will be imposed upon orders received from nonmembers after January 1 of the subscription year.

Back number information. For back issues see www.ams.org/bookstore.

Subscriptions and orders should be addressed to the American Mathematical Society, P.O. Box 845904, Boston, MA 02284-5904 USA. *All orders must be accompanied by payment.* Other correspondence should be addressed to 201 Charles Street, Providence, RI 02904-2294 USA.

Copying and reprinting. Material in this journal may be reproduced by any means for educational and scientific purposes without fee or permission with the exception of reproduction by services that collect fees for delivery of documents and provided that the customary acknowledgment of the source is given. This consent does not extend to other kinds of copying for general distribution, for advertising or promotional purposes, or for resale. Requests for permission for commercial use of material should be addressed to the Acquisitions Department, American Mathematical Society, 201 Charles Street, Providence, RI 02904-2294 USA. Requests can also be made by e-mail to reprint-permission@ams.org.

Excluded from these provisions is material in articles for which the author holds copyright. In such cases, requests for permission to use or reprint should be addressed directly to the author(s). (Copyright ownership is indicated in the notice in the lower right-hand corner of the first page of each article.)

Transactions of the American Mathematical Society (ISSN 0002-9947) is published monthly by the American Mathematical Society at 201 Charles Street, Providence, RI 02904-2294 USA. Periodicals postage is paid at Providence, Rhode Island. Postmaster: Send address changes to *Transactions*, American Mathematical Society, 201 Charles Street, Providence, RI 02904-2294 USA.

© 2008 by the American Mathematical Society. All rights reserved.

This journal is indexed in *Mathematical Reviews*, *Zentralblatt MATH*, *Science Citation Index*[®], *Science Citation Index*TM-*Expanded*, *ISI Alerting Services*SM, *CompuMath Citation Index*[®], and *Current Contents*[®]/*Physical, Chemical & Earth Sciences*. This journal is archived in *Portico*.

Printed in the United States of America.

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

TRANSACTIONS OF THE AMERICAN MATHEMATICAL SOCIETY

CONTENTS

Vol. 360, No. 12

Whole No. 883

December 2008

Stevo Todorcevic and Stuart Zoble, Baire reflection	6181
Alan Hammond and Yuval Peres, Fluctuation of a planar Brownian loop capturing a large area	6197
Jürgen Herzog, Takayuki Hibi, Ngô Viêt Trung, and Xinxian Zheng, Standard graded vertex cover algebras, cycles and leaves	6231
Ch. Riedtmann and G. Zwara, The zero set of semi-invariants for extended Dynkin quivers	6251
Frauke M. Bleher and Ted Chinburg, Galois structure of homogeneous coordinate rings	6269
François Dahmani and Daniel Groves, Detecting free splittings in relatively hyperbolic groups	6303
Siddhartha Bhattacharya, Isomorphism rigidity of commuting automorphisms	6319
E. Kirkman, J. Kuzmanovich, and J. J. Zhang, Rigidity of graded regular algebras	6331
Dong-Uy Shin, Polyhedral realization of the highest weight crystals for generalized Kac-Moody algebras	6371
Anthony To-Ming Lau and Michael Leinert, Fixed point property and the Fourier algebra of a locally compact group	6389
Athanassios S. Fokas and Laihan Luo, On the asymptotic linearization of acoustic waves	6403
Florin Diacu, Toshiaki Fujiwara, Ernesto Pérez-Chavela, and Manuele Santoprete, Saari's homographic conjecture of the three-body problem	6447
G. Letac and J. Wesołowski, Laplace transforms which are negative powers of quadratic polynomials	6475
Dmitry Kleinbock, An extension of quantitative nondivergence and applications to Diophantine exponents	6497
Stoyu Barov and Jan J. Dijkstra, On closed sets with convex projections under narrow sets of directions	6525
Ross G. Pinsky, A probabilistic approach to bounded/positive solutions for Schrödinger operators with certain classes of potentials	6545
Martin Hadac, Well-posedness for the Kadomtsev-Petviashvili II equation and generalisations	6555
Tobias Kaiser, Dirichlet regularity of subanalytic domains	6573
Tong-jun He and Yi Shen, Maximal operators of tree martingale transforms and their maximal operator inequalities	6595
Helena Reis, Semi-complete vector fields of saddle-node type in \mathbb{C}^n	6611
Paolo Stellari, A finite group acting on the moduli space of K3 surfaces ..	6631
Tomohiro Okuma, The geometric genus of splice-quotient singularities ..	6643
Ian Melbourne and Matthew Nicol, Large deviations for nonuniformly hyperbolic systems	6661
Uwe Einmahl and Deli Li, Characterization of LIL behavior in Banach space	6677

Daniel Levin and Mark Wildon, A combinatorial method for calculating the moments of Lévy area	6695
Roger L. Jones, Andreas Seeger, and James Wright, Strong variational and jump inequalities in harmonic analysis	6711

INDEX TO VOLUME 360 (2008)

- Ackermann, Nils, Thomas Bartsch, Petr Kaplický, and Pavol Quittner. *A priori bounds, nodal equilibria and connecting orbits in indefinite superlinear parabolic problems*, 3493
- Adell, J. A., and P. Jodrá. *On a Ramanujan equation connected with the median of the gamma distribution*, 3631
- Akin, Ethan, Eli Glasner, and Benjamin Weiss. *Generically there is but one self homeomorphism of the Cantor set*, 3613
- Alama, Stan, Lia Bronsard, and Etienne Sandier. *On the shape of interlayer vortices in the Lawrence–Doniach model*, 1
- Alesker, Semyon, and Joseph H. G. Fu. *Theory of valuations on manifolds, III. Multiplicative structure in the general case*, 1951
- Alves, José F., and Vilton Pinheiro. *Topological structure of (partially) hyperbolic sets with positive volume*, 5551
- An, Jinpeng, and Zhengdong Wang. *Nonabelian cohomology with coefficients in Lie groups*, 3019
- Angeleri Hügel, Lidia, Silvana Bazzoni, and Dolors Herbera. *A solution to the Baer splitting problem*, 2409
- Anshelevich, Michael. *Orthogonal polynomials with a resolvent-type generating function*, 4125
- Artebani, Michela. *Heegner divisors in the moduli space of genus three curves*, 1581
- Ash, J. Marshall, and Stefan Catoiu. *Quantum symmetric L^p derivatives*, 959
- Atanasi, Laura, and Massimo A. Picardello. *The Lusin area function and local admissible convergence of harmonic functions on homogeneous trees*, 3327
- Ayache, Antoine, and Nikolay Tzvetkov. *L^p properties for Gaussian random series*, 4425
- Azzam, Jonas, Michael A. Hall, and Robert S. Strichartz. *Conformal energy, conformal Laplacian, and energy measures on the Sierpinski gasket*, 2089
- Baddeley, Robert W., Cheryl E. Praeger, and Csaba Schneider. *Intransitive Cartesian decompositions preserved by innately transitive permutation groups*, 743
- Balan, Radu. *The noncommutative Wiener lemma, linear independence, and spectral properties of the algebra of time-frequency shift operators*, 3921
- Bañuelos, Rodrigo, and Prabhu Janakiraman. *L^p -bounds for the Beurling–Ahlfors transform*, 3603
- Barnea, Y., and D. S. Passman. *Filtrations in semisimple Lie algebras, II*, 801
- Barov, Stoyu, and Jan J. Dijkstra. *On closed sets with convex projections under narrow sets of directions*, 6525
- Barron, E. N., L. C. Evans, and R. Jensen. *The infinity Laplacian, Aronsson’s equation and their generalizations*, 77
- Bartsch, Thomas. *See Ackermann, Nils*
- Bass, Richard F., and Takashi Kumagai. *Symmetric Markov chains on \mathbb{Z}^d with unbounded range*, 2041
- Baumann, Pierre, and Christophe Hohlweg. *A Solomon descent theory for the wreath products $G \wr \mathfrak{S}_n$* , 1475
- Baur, Karin, and Robert J. Marsh. *A geometric description of m -cluster categories*, 5789
- Bavula, V. V. *Simple derivations of differentially simple Noetherian commutative rings in prime characteristic*, 4007
- Bazzoni, Silvana. *See Angeleri Hügel, Lidia*
- Beiglböck, Mathias, Vitaly Bergelson, Neil Hindman, and Dona Strauss. *Some new results in multiplicative and additive Ramsey theory*, 819
- Bejenaru, Ioan. *Quadratic nonlinear derivative Schrödinger equations - Part 2*, 5925
- Bejenaru, Ioan, and Daniela De Silva. *Low regularity solutions for a 2D quadratic nonlinear Schrödinger equation*, 5805
- Belletini, G., and G. Fusco. *The Γ -limit and the related gradient flow for singular perturbation functionals of Perona–Malik type*, 4929
- Benedetto, Robert L. *An Ahlfors Islands Theorem for non-archimedean meromorphic functions*, 4099
- Bercovici, Hari, and Jiun-Chau Wang. *Limit theorems for free multiplicative convolutions*, 6089
- Berele, Allan, and Amitai Regev. *Asymptotic behaviour of codimensions of p . i. algebras satisfying Capelli identities*, 5155
- Berenstein, Arkady, and Sebastian Zwicknagl. *Braided symmetric and exterior algebras*, 3429
- Bergelson, Vitaly. *See Beiglböck, Mathias*

- Bertram, Aaron, Renzo Cavalieri, and Gueorgui Todorov. *Evaluating tautological classes using only Hurwitz numbers*, 6103
- Beyaz, Ahmet. *A new construction of 6-manifolds*, 4409
- Bhattacharya, Siddhartha. *Isomorphism rigidity of commuting automorphisms*, 6319
- Bhosle, Usha N., and Indranil Biswas. *Stable real algebraic vector bundles over a Klein bottle*, 4569
- Biggins, J. D. *The growth of iterates of multivariate generating functions*, 4305
- Biswas, Indranil. *See* Bhosle, Usha N.
- Blecher, David P., and Louis E. Labuschagne. *Applications of the Fuglede-Kadison determinant: Szegő's theorem and outers for noncommutative H^p* , 6131
- Bleher, Frauke M., and Ted Chinburg. *Galois structure of homogeneous coordinate rings*, 6269
- Blömker, Dirk, Stanislaus Maier-Paape, and Thomas Wanner. *Second phase spinodal decomposition for the Cahn-Hilliard-Cook equation*, 449
- Bobiński, Grzegorz. *Geometry of regular modules over canonical algebras*, 717
- Boltje, Robert, and Bangteng Xu. *On p -permutation equivalences: Between Rickard equivalences and isotopies*, 5067
- Bonami, Aline, Sandrine Grellier, and Mohammad Kacim. *Truncations of multilinear Hankel operators*, 1377
- Borodachov, S. V., D. P. Hardin, and E. B. Saff. *Asymptotics for discrete weighted minimal Riesz energy problems on rectifiable sets*, 1559
- Borwein, Peter, Tamás Erdélyi, and Friedrich Littmann. *Polynomials with coefficients from a finite set*, 5145
- Brady, Thomas, and Colum Watt. *Non-crossing partition lattices in finite real reflection groups*, 1983
- Bronsard, Lia. *See* Alama, Stan
- Busuioc, Cecilia. *The Steinberg symbol and special values of L -functions*, 5999
- Cabot, Alexandre. *Stabilization of oscillators subject to dry friction: Finite time convergence versus exponential decay results*, 103
- Callegaro, Filippo, Davide Moroni, and Mario Salvetti. *Cohomology of affine Artin groups and applications*, 4169
- Cao, Daomin, Ezzat S. Noussair, and Shusen Yan. *Multiscale-bump standing waves with a critical frequency for nonlinear Schrödinger equations*, 3813
- Carlson, Jon F., Zongzhu Lin, and Daniel K. Nakano. *Support varieties for modules over Chevalley groups and classical Lie algebras*, 1879
- Catoiu, Stefan. *See* Ash, J. Marshall
- Cavalieri, Renzo. *See* Bertram, Aaron
- Chang, K. S., D. H. Cho, B. S. Kim, T. S. Song, and I. Yoo. *Sequential Fourier-Feynman transform, convolution and first variation*, 1819
- Chari, Vyjayanthi, and Jacob Greenstein. *Graded level zero integrable representations of affine Lie algebras*, 2923
- Chen, Shuxing. *Transonic shocks in 3-D compressible flow passing a duct with a general section for Euler systems*, 5265
- Chen, William Y. C., and Arthur L. B. Yang. *Stanley's zrank conjecture on skew partitions*, 3121
- Cheng, Shun-Jen, Weiqiang Wang, and R. B. Zhang. *Super duality and Kazhdan-Lusztig polynomials*, 5883
- Cheskidov, Alexey. *Blow-up in finite time for the dyadic model of the Navier-Stokes equations*, 5101
- Chinburg, Ted. *See* Bleher, Frauke M.
- Chipot, Michel, and Arnaud Rougirel. *On the asymptotic behaviour of the eigenmodes for elliptic problems in domains becoming unbounded*, 3579
- Cho, D. H. *See* Chang, K. S.
- Cho, Dong Hyun. *A simple formula for an analogue of conditional Wiener integrals and its applications*, 3795
- Cholak, Peter A., and Leo A. Harrington. *Extension theorems, orbits, and automorphisms of the computably enumerable sets*, 1759
- Christ, Michael, and M. Burak Erdoğan. *Mixed norm estimates for certain generalized Radon transforms*, 5477

- Chuang, Joseph, Hyohe Miyachi, and Kai Meng Tan. *Kleshchev's decomposition numbers and branching coefficients in the Fock space*, 1179
- Cianchi, Andrea. *Sharp Morrey-Sobolev inequalities and the distance from extremals*, 4335
- Cimasoni, David, and Vincent Florens. *Generalized Seifert surfaces and signatures of colored links*, 1223
- Cochran, Tim D., and Taehee Kim. *Higher-order Alexander invariants and filtrations of the knot concordance group*, 1407
- Colliander, James, Justin Holmer, and Nikolaos Tzirakis. *Low regularity global well-posedness for the Zakharov and Klein-Gordon-Schrödinger systems*, 4619
- Colonius, Fritz, and Wolfgang Kliemann. *Controllability properties of nonlinear behaviors*, 5667
- Conrad, Brian, Keith Conrad, and Robert Gross. *Prime specialization in genus 0*, 2867
- Conrad, Keith. *See* Conrad, Brian
- Console, Sergio, and Carlos Olmos. *Level sets of scalar Weyl invariants and cohomogeneity*, 629
- Coskun, Hasan. *An elliptic BC_n Bailey Lemma, multiple Rogers–Ramanujan identities and Euler's Pentagonal Number Theorems*, 5397
- Coskun, Izzet. *Gromov-Witten invariants of jumping curves*, 989
- Coussement, E., J. Coussement, and W. Van Assche. *Asymptotic zero distribution for a class of multiple orthogonal polynomials*, 5571
- Coussement, J. *See* Coussement, E.
- Cuccagna, Scipio. *On asymptotic stability in 3D of kinks for the ϕ^4 model*, 2581
- Cuchillo-Ibáñez, E., J. Dydak, A. Koyama, and M. A. Morón. *C_0 -coarse geometry of complements of Z -sets in the Hilbert cube*, 5229
- Dahmani, François, and Daniel Groves. *Detecting free splittings in relatively hyperbolic groups*, 6303
- Dalang, Robert C., Carl Mueller, and Roger Tribe. *A Feynman-Kac-type formula for the deterministic and stochastic wave equations and other p.d.e.'s*, 4681
- D'Antoni, Claudio, and László Zsidó. *Abelian strict approximation in AW^* -algebras and Weyl-von Neumann type theorems*, 4705
- De Medts, Tom, and Yoav Segev. *Identities in Moufang sets*, 5831
- De Silva, Daniela. *See* Bejenaru, Ioan
- Defant, Andreas, and David Pérez-García. *A tensor norm preserving unconditionality for \mathcal{L}_p -spaces*, 3287
- Demers, Mark F., and Carlangelo Liverani. *Stability of statistical properties in two-dimensional piecewise hyperbolic maps*, 4777
- Demeter, Ciprian, Terence Tao, and Christoph Thiele. *Maximal multilinear operators*, 4989
- Derfel, Gregory, Peter J. Grabner, and Fritz Vogl. *The zeta function of the Laplacian on certain fractals*, 881
- Diaconis, Persi, and I. M. Isaacs. *Supercharacters and superclasses for algebra groups*, 2359
- Diacu, Florin, Toshiaki Fujiwara, Ernesto Pérez-Chavela, and Manuele Santoprete. *Saari's homographic conjecture of the three-body problem*, 6447
- Diamantis, Nikolaos, and Cormac O'Sullivan. *The dimensions of spaces of holomorphic second-order automorphic forms and their cohomology*, 5629
- Dijkstra, Jan J. *See* Barov, Stoyu
- Ding, Fan, Shicheng Wang, and Jiangang Yao. *On embedding all n -manifolds into a single $(n + 1)$ -manifold*, 6017
- Dipper, Richard, Stephen Doty, and Jun Hu. *Brauer algebras, symplectic Schur algebras and Schur-Weyl duality*, 189
- Dolfi, Silvio. *Large orbits in coprime actions of solvable groups*, 135
- Dong, Chongying, and Cuipo Jiang. *Bimodules and g -rationality of vertex operator algebras*, 4235
- Doty, Stephen. *See* Dipper, Richard
- Douglas, Ronald G., and Gadadhar Misra. *Equivalence of quotient Hilbert modules-II*, 2229
- Douglass, J. Matthew, and Gerhard Röhrle. *Homology of generalized Steinberg varieties and Weyl group invariants*, 5959
- Drápal, Aleš. *Structural interactions of conjugacy closed loops*, 671
- Dydak, J. *See* Cuchillo-Ibáñez, E.
- Echterhoff, Siegfried, and Dana P. Williams. *Inducing primitive ideals*, 6113

- Edmundo, Mário J., and Arthur Woerheide. *Comparison theorems for o -minimal singular (co)homology*, 4889
- Einmahl, Uwe, and Deli Li. *Characterization of LIL behavior in Banach space*, 6677
- Eisenbud, David, and Frank-Olaf Schreyer. *Relative Beilinson monad and direct image for families of coherent sheaves*, 5367
- Elliott, George A., and Katsunori Kawamura. *A Hilbert bundle characterization of Hilbert C^* -modules*, 4841
- Erdélyi, Tamás. See Borwein, Peter
- Erdoğan, M. Burak. See Christ, Michael
- Escher, J., and J. Seiler. *Bounded H_∞ -calculus for pseudodifferential operators and applications to the Dirichlet-Neumann operator*, 3945
- Etnyre, John B., and Burak Ozbagci. *Invariants of contact structures from open books*, 3133
- Evans, L. C. See Barron, E. N.
- Evstigneev, Igor V., and Klaus Reiner Schenk-Hoppé. *Stochastic equilibria in von Neumann–Gale dynamical systems*, 3345
- Faget, Zoé. *Optimal constants in the exceptional case of Sobolev inequalities on Riemannian manifolds*, 2303
- Farmaki, V., and S. Negrepointis. *Schreier sets in Ramsey theory*, 849
- Fausk, Halvard. *Generalized Artin and Brauer induction for compact Lie groups*, 5043
- Fayers, Matthew. *Decomposition numbers for weight three blocks of symmetric groups and Iwahori–Hecke algebras*, 1341
- Feng, Keqin, and Chaoping Xing. *A new construction of quantum error-correcting codes*, 2007
- Fiebig, Peter. *The combinatorics of Coxeter categories*, 4211
- Fisher, David. *Deformations of group actions*, 491
- Florens, Vincent. See Cimasoni, David
- Fokas, Athanassios S., and Laihan Luo. *On the asymptotic linearization of acoustic waves*, 6403
- Folch-Gabayet, Magali, and James Wright. *Singular integral operators associated to curves with rational components*, 1661
- Forstnerič, Franc, and Christine Laurent-Thiébaud. *Stein compacts in Levi-flat hypersurfaces*, 307
- Frank, Natalie Priebe, and E. Arthur Robinson, Jr. *Generalized β -expansions, substitution tilings, and local finiteness*, 1163
- Frantzikinakis, Nikos. *Multiple ergodic averages for three polynomials and applications*, 5435
- Friedl, Stefan, and Taehee Kim. *The parity of the Cochran–Harvey invariants of 3-manifolds*, 2909
- . *Twisted Alexander norms give lower bounds on the Thurston norm*, 4597
- Friedman, Avner, and Bei Hu. *Stability and instability of Liapunov–Schmidt and Hopf bifurcation for a free boundary problem arising in a tumor model*, 5291
- Fu, Joseph H. G. See Alesker, Semyon
- Fujiwara, Toshiaki. See Diaconu, Florin
- Fulman, Jason. *Stein’s method and random character ratios*, 3687
- Fusco, G. See Bellettini, G.
- Gallardo-Gutiérrez, Eva A., María J. González, and Artur Nicolau. *Composition operators on Hardy spaces on Laurentian domains*, 395
- Gallego, Francisco Javier, and Bangere P. Purnaprajna. *Classification of quadruple Galois canonical covers I*, 5489
- Gao, Su, Steve Jackson, Miklós Laczkovich, and R. Daniel Mauldin. *On the unique representation of families of sets*, 939
- Gekeler, Ernst-Ulrich. *Frobenius distributions of Drinfeld modules over finite fields*, 1695
- Gelfert, Katrin, and Christian Wolf. *Topological pressure via saddle points*, 545
- Gerhardy, Philipp, and Ulrich Kohlenbach. *General logical metatheorems for functional analysis*, 2615
- Ghioca, D., and T. J. Tucker. *Equidistribution and integral points for Drinfeld modules*, 4863
- Ghioca, Dragos. *The isotrivial case in the Mordell–Lang Theorem*, 3839
- Glasner, Eli. See Akin, Ethan
- Gleizer, Oleg. *Symmetries of the hypergeometric function ${}_mF_{m-1}$* , 2547
- Göğüş, Nihat Gökhan. *Local and global C -regularity*, 2693
- Gönye, Zsuzsanna. *Dimension of escaping geodesics*, 5589

- González, María J. *See* Gallardo-Gutiérrez, Eva A.
- Grabner, Peter J. *See* Derfel, Gregory
- Greenberg, Noam, and Antonio Montalbán. *Ranked structures and arithmetic transfinite recursion*, 1265
- Greenstein, Jacob. *See* Chari, Vyjayanthi
- Grellier, Sandrine. *See* Bonami, Aline
- Gross, Robert. *See* Conrad, Brian
- Groves, Daniel. *See* Dahmani, François
- Guibé, Olivier, and Anna Mercaldo. *Existence of renormalized solutions to nonlinear elliptic equations with two lower order terms and measure data*, 643
- Guillou, Lucien. *Free lines for homeomorphisms of the open annulus*, 2191
- Gulisashvili, Archil. *Classes of time-dependent measures, non-homogeneous Markov processes, and Feynman-Kac propagators*, 4063
- Hadac, Martin. *Well-posedness for the Kadomtsev-Petviashvili II equation and generalisations*, 6555
- Hall, Michael A. *See* Azzam, Jonas
- Hamkins, Joel David, and Benedikt Löwe. *The modal logic of forcing*, 1793
- Hammett, Adam, and Boris Pittel. *How often are two permutations comparable?*, 4541
- Hammond, Alan, and Yuval Peres. *Fluctuation of a planar Brownian loop capturing a large area*, 6197
- Han, Deguang. *Frame representations and Parseval duals with applications to Gabor frames*, 3307
- Hanzer, Marcela. *Unitary dual of the non-split inner form of $Sp(8, F)$* , 1005
- Hardin, D. P. *See* Borodachov, S. V.
- Harrington, Leo A. *See* Cholak, Peter A.
- Harris, Adam, and Krzysztof Wysocki. *Branch structure of J -holomorphic curves near periodic orbits of a contact manifold*, 2131
- Hartmann, Julia, and Anne V. Shepler. *Jacobians of reflection groups*, 123
- Hassell, Andrew, and Simon Marshall. *Eigenvalues of Schrödinger operators with potential asymptotically homogeneous of degree -2* , 4145
- Hassler, Wolfgang, Ryan Karr, Lee Klingler, and Roger Wiegand. *Indecomposable modules of large rank over Cohen-Macaulay local rings*, 1391
- Hays, Christopher S., and B. Doug Park. *Non-isotopic symplectic surfaces in product 4-manifolds*, 5771
- He, Tong-jun, and Yi Shen. *Maximal operators of tree martingale transforms and their maximal operator inequalities*, 6595
- Heittokangas, Janne, Risto Korhonen, and Jouni Rättyä. *Linear differential equations with coefficients in weighted Bergman and Hardy spaces*, 1035
- Helffer, Bernard, and Yuri A. Kordyukov. *Semiclassical asymptotics and gaps in the spectra of periodic Schrödinger operators with magnetic wells*, 1681
- Herbera, Dolores. *See* Angeleri Hügel, Lidia
- Hermi, Lotfi. *Two new Weyl-type bounds for the Dirichlet Laplacian*, 1539
- Herzog, Jürgen, Takayuki Hibi, Ngô Viêt Trung, and Xinxian Zheng. *Standard graded vertex cover algebras, cycles and leaves*, 6231
- Hibi, Takayuki. *See* Herzog, Jürgen
- Hindman, Neil. *See* Beiglböck, Mathias
- Hoa, Lê Tuấn. *Finiteness of Hilbert functions and bounds for Castelnuovo-Mumford regularity of initial ideals*, 4519
- Hohlweg, Christophe. *See* Baumann, Pierre
- Holmer, Justin. *See* Colliander, James
- Hora, Akihito, and Nobuaki Obata. *Asymptotic spectral analysis of growing regular graphs*, 899
- Hovey, Mark. *Morava E -theory of filtered colimits*, 369
- . *Erratum to “Classifying subcategories of modules”*, 2809
- Hu, Bei. *See* Friedman, Avner
- Hu, Huyi. *Equilibriums of some non-Hölder potentials*, 2153
- Hu, Jun. *See* Dipper, Richard
- Húska, Juraj. *Exponential separation and principal Floquet bundles for linear parabolic equations on general bounded domains: Nondivergence case*, 4639

- Isaacs, I. M. *See* Diaconis, Persi
- Ishii, Taku, and Tomonori Moriyama. *Spinor L-functions for generic cusp forms on $GS(2)$ belonging to principal series representations*, 5683
- Ito, Kentaro. *On continuous extensions of grafting maps*, 3731
- Jackson, Steve. *See* Gao, Su
- Janakiraman, Prabhu. *See* Bañuelos, Rodrigo
- Jenkins, Adrian. *Holomorphic germs and the problem of smooth conjugacy in a punctured neighborhood of the origin*, 331
- Jensen, R. *See* Barron, E. N.
- Jiang, Cuipo. *See* Dong, Chongying
- Jing, Bing-Yi, Qi-Man Shao, and Wang Zhou. *Towards a universal self-normalized moderate deviation*, 4263
- Jodrá, P. *See* Adell, J. A.
- Jones, Roger L., Andreas Seeger, and James Wright. *Strong variational and jump inequalities in harmonic analysis*, 6711
- Kacim, Mohammad. *See* Bonami, Aline
- Kaiser, Tobias. *Dirichlet regularity of subanalytic domains*, 6573
- Kalfagianni, Efstratia, and Xiao-Song Lin. *Knot adjacency and fibering*, 3249
- Kameko, Masaki, and Nobuaki Yagita. *The Brown-Peterson cohomology of the classifying spaces of the projective unitary groups $PU(p)$ and exceptional Lie groups*, 2265
- Kaplický, Petr. *See* Ackermann, Nils
- Karch, Grzegorz, and Wojbor A. Woyczyński. *Fractal Hamilton-Jacobi-KPZ equations*, 2423
- Karol', Andrei, Alexander Nazarov, and Yakov Nikitin. *Small ball probabilities for Gaussian random fields and tensor products of compact operators*, 1443
- Karr, Ryan. *See* Hassler, Wolfgang
- Kasagawa, Ryoji. *On crossed homomorphisms on symplectic mapping class groups*, 4815
- Kashiwara, Masaki, Toshiki Nakashima, and Masato Okado. *Affine geometric crystals and limit of perfect crystals*, 3645
- Kawamura, Katsunori. *See* Elliott, George A.
- Kawasaki, Takeshi. *Finiteness of cousin cohomologies*, 2709
- Kazami, Takahiro, and Kôhei Uchiyama. *Random walks on periodic graphs*, 6065
- Kerner, Otto, and Jan Trlifaj. *Constructing tilting modules*, 1907
- Kessar, Radha, and Markus Linckelmann. *ZJ-theorems for fusion systems*, 3093
- Kharchenko, V. K. *PBW-bases of coideal subalgebras and a freeness theorem*, 5121
- Kim, B. S. *See* Chang, K. S.
- Kim, Hee Jung, and Daniel Ruberman. *Topological triviality of smoothly knotted surfaces in 4-manifolds*, 5869
- Kim, Jong Uhn. *On a stochastic wave equation with unilateral boundary conditions*, 575
- Kim, Seick. *Gaussian estimates for fundamental solutions of second order parabolic systems with time-independent coefficients*, 6031
- Kim, Taehee. *See* Cochran, Tim D.
- . *See* Friedl, Stefan
- Kinyon, Michael K., J. D. Phillips, and Petr Vojtěchovský. *When is the commutant of a Bol loop a subloop?*, 2393
- Kirkman, E., J. Kuzmanovich, and J. J. Zhang. *Rigidity of graded regular algebras*, 6331
- Kirkup, George A. *Minimal primes over permanent ideals*, 3751
- Kleinbock, Dmitry. *An extension of quantitative nondivergence and applications to Diophantine exponents*, 6497
- Kliemann, Wolfgang. *See* Colonius, Fritz
- Klingler, Lee. *See* Hassler, Wolfgang
- Kochloukova, Dessimilava H., and Pavel A. Zalesskii. *Profinite and pro-p completions of Poincaré duality groups of dimension 3*, 1927
- Kohlenbach, Ulrich. *See* Gerhardy, Philipp
- Kordyukov, Yuri A. *See* Helffer, Bernard
- Korhonen, Risto. *See* Heittokangas, Janne
- Koyama, A. *See* Cuchillo-Ibáñez, E.
- Krammer, Daan. *A class of Garside groupoid structures on the pure braid group*, 4029

- Kulshrestha, Amit, and R. Parimala. *R-equivalence in adjoint classical groups over fields of virtual cohomological dimension 2*, 1193
- Kumagai, Takashi. *See* Bass, Richard F.
- Kurenok, Vladimir. *A note on L_2 -estimates for stable integrals with drift*, 925
- Kuwae, Kazuhiro, and Takashi Shioya. *Variational convergence over metric spaces*, 35
- Kuzmanovich, J. *See* Kirkman, E.
- Labuschagne, Louis E. *See* Blecher, David P.
- Laczkovich, Miklós. *See* Gao, Su
- Landesman, Peter. *Generalized differential Galois theory*, 4441
- Lapointe, Luc, and Jennifer Morse. *Quantum cohomology and the k -Schur basis*, 2021
- Lau, Anthony To-Ming, and Michael Leinert. *Fixed point property and the Fourier algebra of a locally compact group*, 6389
- Laurent-Thiébaud, Christine. *See* Forstnerič, Franc
- Lê, Thang T. Q. *Strong integrality of quantum invariants of 3-manifolds*, 2941
- Leinert, Michael. *See* Lau, Anthony To-Ming
- Lenart, Cristian, and Alexander Postnikov. *A combinatorial model for crystals of Kac-Moody algebras*, 4349
- Letac, G., and J. Wesolowski. *Laplace transforms which are negative powers of quadratic polynomials*, 6475
- Levin, Daniel, and Mark Wildon. *A combinatorial method for calculating the moments of Lévy area*, 6695
- Li, Deli. *See* Einmahl, Uwe
- Li, Weigu, and Kening Lu. *Rotation numbers for random dynamical systems on the circle*, 5509
- Lian, Bong H., Andrew R. Linshaw, and Bailin Song. *Chiral equivariant cohomology II*, 4739
- Liang, Jin, Rainer Nagel, and Ti-Jun Xiao. *Approximation theorems for the propagators of higher order abstract Cauchy problems*, 1723
- Lim, Seonhee. *Minimal volume entropy for graphs*, 5089
- Lin, Xiao-Song. *See* Kalfagianni, Efstratia
- Lin, Zongzhu. *See* Carlson, Jon F.
- Linckelmann, Markus. *See* Kessar, Radha
- Lind, Joan R. *Hölder regularity of the SLE trace*, 3557
- Linshaw, Andrew R. *See* Lian, Bong H.
- Lisca, Paolo. *On symplectic fillings of lens spaces*, 765
- Littmann, Friedrich. *See* Borwein, Peter
- Liu, Fu. *Ehrhart polynomials of lattice-face polytopes*, 3041
- Liverani, Carlangelo. *See* Demers, Mark F.
- Lorentzen, Lisa. *Continued fractions with circular twin value sets*, 4287
- Löwe, Benedikt. *See* Hamkins, Joel David
- Lowen, Wendy. *Algebroid prestacks and deformations of ringed spaces*, 1631
- Lu, Kening. *See* Li, Weigu
- Lucas, Adam R. *Small unitary representations of the double cover of $SL(m)$* , 3153
- Luo, Feng, and Stephan Tillmann. *Angle structures and normal surfaces*, 2849
- Luo, Laihan. *See* Fokas, Athanassios S.
- Macpherson, Dugald, and Charles Steinhorn. *One-dimensional asymptotic classes of finite structures*, 411
- Maier-Paape, Stanislaus. *See* Blömker, Dirk
- Marcelli, Cristina. *Necessary and sufficient conditions for optimality of nonconvex, noncoercive autonomous variational problems with constraints*, 5201
- Marklof, Jens, Yves Tourigny, and Lech Wołowski. *Explicit invariant measures for products of random matrices*, 3391
- Marsh, Robert J. *See* Baur, Karin
- Marshall, Simon. *See* Hassell, Andrew
- Matui, Hiroki. *Torsion in coinvariants of certain Cantor minimal \mathbb{Z}^2 -systems*, 4913
- Matysiak, Wojciech, and Paweł J. Szablowski. *Generalized stationary random fields with linear regressions - an operator approach*, 3909
- Mauldin, R. Daniel. *See* Gao, Su
- McCammond, Jonathan P., and Daniel T. Wise. *Locally quasiconvex small-cancellation groups*, 237

- Meckes, Elizabeth. *Linear functions on the classical matrix groups*, 5355
- Melbourne, Ian, and Matthew Nicol. *Large deviations for nonuniformly hyperbolic systems*, 6661
- Mercaldo, Anna. See Guibé, Olivier
- Metcalfe, Jason, and Ann Stewart. *Almost global existence for quasilinear wave equations in waveguides with Neumann boundary conditions*, 171
- Migliore, Juan, Uwe Nagel, and Tim Römer. *Extensions of the Multiplicity conjecture*, 2965
- Mihalcea, Leonardo Constantin. *Giambelli formulae for the equivariant quantum cohomology of the Grassmannian*, 2285
- Mileti, Joseph R. *The canonical Ramsey theorem and computability theory*, 1309
- Miller, Joseph S., and Liang Yu. *On initial segment complexity and degrees of randomness*, 3193
- Misra, Gadadhar. See Douglas, Ronald G.
- Mitreă, Dorina. *A generalization of Dahlberg's theorem concerning the regularity of harmonic Green potentials*, 3771
- Miyachi, Hyohe. See Chuang, Joseph
- Montalbán, Antonio. See Greenberg, Noam
- Morier-Genoud, Sophie. *Geometric lifting of the canonical basis and semitoric degenerations of Richardson varieties*, 215
- Moriyama, Tomonori. See Ishii, Taku
- Morón, M. A. See Cuchillo-Ibáñez, E.
- Moroni, Davide. See Callegaro, Filippo
- Morse, Jennifer. See Lapointe, Luc
- Motreanu, D., V. V. Motreanu, and N. S. Papageorgiou. *Positive solutions and multiple solutions at non-resonance, resonance and near resonance for hemivariational inequalities with p -Laplacian*, 2527
- Motreanu, V. V. See Motreanu, D.
- Mueller, Carl. See Dalang, Robert C.
- Muíć, Goran, and Gordan Savin. *The center of the category of (\mathfrak{g}, K) -modules*, 3071
- Muñoz Porras, José M., and Fernando Pablos Romo. *Generalized reciprocity laws*, 3473
- Nagatomo, Yasuyuki. *The twistor sections on the Wolf spaces*, 4497
- Nagel, Rainer. See Liang, Jin
- Nagel, Uwe. See Migliore, Juan
- Nakano, Daniel K. See Carlson, Jon F.
- Nakashima, Toshiki. See Kashiwara, Masaki
- Nane, Erkan. *Higher order PDE's and iterated processes*, 2681
- Navarro, Gabriel, and Pham Huu Tiep. *Rational irreducible characters and rational conjugacy classes in finite groups*, 2443
- Nazarov, Alexander. See Karol', Andrei
- Negrepontis, S. See Farmaki, V.
- Neufang, Matthias, Zhong-Jin Ruan, and Nico Spronk. *Completely isometric representations of $M_{cb}A(G)$ and $UCB(\hat{G})^*$* , 1133
- Ng, Siu-Hung, and Peter Schauenburg. *Central invariants and higher indicators for semisimple quasi-Hopf algebras*, 1839
- Nicol, Matthew. See Melbourne, Ian
- Nicolau, Artur. See Gallardo-Gutiérrez, Eva A.
- Nikitin, Yakov. See Karol', Andrei
- Noussair, Ezzat S. See Cao, Daomin
- Nyström, Kaj. *On area integral estimates for solutions to parabolic systems in time-varying and non-smooth cylinders*, 2987
- Obata, Nobuaki. See Hora, Akihito
- Okado, Masato. See Kashiwara, Masaki
- Okoudjou, Kasso A., Laurent Saloff-Coste, and Alexander Teplyaev. *Weak uncertainty principle for fractals, graphs and metric measure spaces*, 3857
- Okuma, Tomohiro. *The geometric genus of splice-quotient singularities*, 6643
- Oliker, Vladimir I. *A Minkowski-style theorem for focal functions of compact convex reflectors*, 563
- Olmos, Carlos. See Console, Sergio
- Osserman, Brian. *Frobenius-unstable bundles and p -curvature*, 273
- O'Sullivan, Cormac. See Diamantis, Nikolaos

- Ozbagci, Burak. *See* Etnyre, John B.
- Pablos Romo, Fernando. *See* Muñoz Porras, José M.
- Papageorgiou, N. S. *See* Motreanu, D.
- Parimala, R. *See* Kulshrestha, Amit
- Park, B. Doug. *See* Hays, Christopher S.
- Passman, D. S. *See* Barnea, Y.
- Peres, Yuval. *See* Hammond, Alan
- Pérez-Chavela, Ernesto. *See* Diacu, Florin
- Pérez-García, David. *See* Defant, Andreas
- Pesenson, Isaac. *Sampling in Paley-Wiener spaces on combinatorial graphs*, 5603
- Pham, Hung Le. *The kernels of radical homomorphisms and intersections of prime ideals*, 1057
- Phillips, J. D. *See* Kinyon, Michael K.
- Picardello, Massimo A. *See* Atanasi, Laura
- Pigola, Stefano, Marco Rigoli, and Alberto G. Setti. *A correction to: "Some characterizations of space-forms"*, 3943
- Pinheiro, Vilton. *See* Alves, José F.
- Pinsky, Ross G. *A probabilistic approach to bounded/positive solutions for Schrödinger operators with certain classes of potentials*, 6545
- Pitsch, Wolfgang. *Integral homology 3-spheres and the Johnson filtration*, 2825
- Pittel, Boris. *See* Hammett, Adam
- Postnikov, Alexander. *See* Lenart, Cristian
- Praeger, Cheryl E. *See* Baddeley, Robert W.
- Pridham, J. P. *Deformations of schemes and other bialgebraic structures*, 1601
- Purnaprajna, Bangere P. *See* Gallego, Francisco Javier
- Quittner, Pavol. *See* Ackermann, Nils
- Rättyä, Jouni. *See* Heittokangas, Janne
- Regev, Amitai. *See* Berele, Allan
- Reis, Helena. *Semi-complete vector fields of saddle-node type in \mathbb{C}^n* , 6611
- Riedtmann, Ch., and G. Zwara. *The zero set of semi-invariants for extended Dynkin quivers*, 6251
- Rigoli, Marco. *See* Pigola, Stefano
- Ringel, Claus Michael, and Markus Schmidmeier. *The Auslander-Reiten translation in submodule categories*, 691
- Robinson, E. Arthur, Jr. *See* Frank, Natalie Priebe
- Röhrle, Gerhard. *See* Douglass, J. Matthew
- Römer, Tim. *See* Migliore, Juan
- Romik, Dan. *The dynamics of Pythagorean Triples*, 6045
- van Roosmalen, Adam-Christiaan. *Classification of abelian hereditary directed categories satisfying Serre duality*, 2467
- Rosenberg, Jonathan. *An analogue of the Novikov Conjecture in complex algebraic geometry*, 383
- Rosický, J., and W. Tholen. *Erratum to "Left-determined model categories and universal homotopy theories"*, 6179
- Rougirel, Arnaud. *See* Chipot, Michel
- Ruan, Zhong-Jin. *See* Neufang, Matthias
- Rubenthaler, Hubert. *The $(\mathbf{A}_2, \mathbf{G}_2)$ duality in \mathbf{E}_6 , octonions and the triality principle*, 347
- Ruberman, Daniel. *See* Kim, Hee Jung
- Saff, E. B. *See* Borodachov, S. V.
- Sagave, Steffen. *Universal Toda brackets of ring spectra*, 2767
- Saloff-Coste, Laurent. *See* Okoudjou, Kasso A.
- Salvetti, Mario. *See* Callegaro, Filippo
- Sandier, Etienne. *See* Alama, Stan
- Santoprete, Manuele. *See* Diacu, Florin
- Savin, Gordan. *See* Muić, Goran
- Schauenburg, Peter. *See* Ng, Siu-Hung
- Schechter, Martin. *Sandwich pairs in critical point theory*, 2811
- Schenk-Hoppé, Klaus Reiner. *See* Evstigneev, Igor V.
- Schmidmeier, Markus. *See* Ringel, Claus Michael

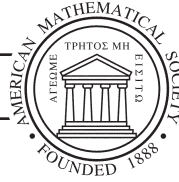
- Schneider, Csaba. *See* Baddeley, Robert W.
- Schoutens, Hans. *Pure subrings of regular rings are pseudo-rational*, 609
- Schreyer, Frank-Olaf. *See* Eisenbud, David
- Scott, Richard. *Right-angled mock reflection and mock Artin groups*, 4189
- Scull, Laura. *A model category structure for equivariant algebraic models*, 2505
- Seeger, Andreas. *See* Jones, Roger L.
- Segev, Yoav. *See* De Medts, Tom
- Seiler, J. *See* Escher, J.
- Setti, Alberto G. *See* Pigola, Stefano
- Shahgholian, Henrik. *Free boundary regularity close to initial state for parabolic obstacle problem*, 2077
- Shao, Qi-Man. *See* Jing, Bing-Yi
- Shen, Yi. *See* He, Tong-jun
- Shen, Zhongwei, and Peihao Zhao. *Uniform Sobolev inequalities and absolute continuity of periodic operators*, 1741
- Shepler, Anne V. *See* Hartmann, Julia
- Shepler, Anne V., and Sarah Witherspoon. *Hochschild cohomology and graded Hecke algebras*, 3975
- Shin, Dong-Uy. *Polyhedral realization of the highest weight crystals for generalized Kac-Moody algebras*, 6371
- Shioya, Takashi. *See* Kuwae, Kazuhiro
- Shlapentokh, Alexandra. *Elliptic curves retaining their rank in finite extensions and Hilbert's Tenth Problem for rings of algebraic numbers*, 3541
- Shvartsman, Pavel. *The Whitney extension problem and Lipschitz selections of set-valued mappings in jet-spaces*, 5529
- Singh, Anurag K., and Uli Walther. *A connectedness result in positive characteristic*, 3107
- Song, Bailin. *See* Lian, Bong H.
- Song, T. S. *See* Chang, K. S.
- Spronk, Nico. *See* Neufang, Matthias
- Steinhorn, Charles. *See* Macpherson, Dugald
- Stellari, Paolo. *A finite group acting on the moduli space of K3 surfaces*, 6631
- Stewart, Ann. *See* Metcalfe, Jason
- Stoimenow, A. *Bennequin's inequality and the positivity of the signature*, 5173
- Strauss, Dona. *See* Beiglböck, Mathias
- Strichartz, Robert S. *See* Azzam, Jonas
- Szablowski, Pawel J. *See* Matysiak, Wojciech
- Tan, Kai Meng. *See* Chuang, Joseph
- Tao, Terence. *See* Demeter, Ciprian
- Teh, Jyh-Haur. *Harnack-Thom theorem for higher cycle groups and Picard varieties*, 3263
- Teplyaev, Alexander. *See* Okoudjou, Kasso A.
- Thas, Koen, and Hendrik Van Maldeghem. *Geometric characterizations of finite Chevalley groups of type B_2* , 2327
- Thiele, Christoph. *See* Demeter, Ciprian
- Tholen, W. *See* Rosický, J.
- Tiep, Pham Huu. *See* Navarro, Gabriel
- Tiglay, Feride. *The Cauchy problem and integrability of a modified Euler-Poisson equation*, 1861
- Tillmann, Stephan. *See* Luo, Feng
- Toda, Yukinobu. *Stability conditions and crepant small resolutions*, 6149
- Todorovic, Stevo, and Stuart Zoble. *Baire reflection*, 6181
- Todorov, Gueorgui. *See* Bertram, Aaron
- Toms, Andrew S. *An infinite family of non-isomorphic C^* -algebras with identical K -theory*, 5343
- Tourigny, Yves. *See* Marklof, Jens
- Tri, Nguyen Minh. *Semilinear hypoelliptic differential operators with multiple characteristics*, 3875
- Tribe, Roger. *See* Dalang, Robert C.
- Trlifaj, Jan. *See* Kerner, Otto
- Trung, Ngô Viêt. *See* Herzog, Jürgen
- Tucker, T. J. *See* Ghioca, D.

- Tzirakis, Nikolaos. *See* Colliander, James
 Tzvetkov, Nikolay. *See* Ayache, Antoine
 Uchiyama, Kôhei. *See* Kazami, Takahiro
 Van Assche, W. *See* Coussement, E.
 Van Maldeghem, Hendrik. *See* Thas, Koen
 Van den Bergh, Michel. *Double Poisson algebras*, 5711
 Veys, Willem, and W. A. Zúñiga-Galindo. *Zeta functions for analytic mappings, log-principalization of ideals, and Newton polyhedra*, 2205
 Vogl, Fritz. *See* Derfel, Gregory
 Vojtěchovský, Petr. *See* Kinyon, Michael K.
 Walther, Uli. *See* Singh, Anurag K.
 Wang, Jiun-Chau. *See* Bercovici, Hari
 Wang, Shicheng. *See* Ding, Fan
 Wang, Weiqiang. *See* Cheng, Shun-Jen
 Wang, Zhengdong. *See* An, Jinpeng
 Wanner, Thomas. *See* Blömker, Dirk
 Watt, Colum. *See* Brady, Thomas
 Weiss, Benjamin. *See* Akin, Ethan
 Wesolowski, J. *See* Letac, G.
 Wiegand, Roger. *See* Hassler, Wolfgang
 Wildon, Mark. *See* Levin, Daniel
 Williams, Dana P. *See* Echterhoff, Siegfried
 Wilson, Scott O. *Conformal cochains*, 5247
 Wise, Daniel T. *See* McCammond, Jonathan P.
 Witherspoon, Sarah. *See* Shepler, Anne V.
 Woerheide, Arthur. *See* Edmundo, Mário J.
 Wolf, Christian. *See* Gelfert, Katrin
 Wołowski, Lech. *See* Marklof, Jens
 Woyczyński, Wojbor A. *See* Karch, Grzegorz
 Wright, James. *See* Folch-Gabayet, Magali
 ———. *See* Jones, Roger L.
 Wu, Hao. *Braids, transversal links and the Khovanov-Rozansky Theory*, 3365
 Wysocki, Krzysztof. *See* Harris, Adam
 Xia, Jingbo. *On the essential commutant of $\mathcal{T}(QC)$* , 1089
 Xiao, Ti-Jun. *See* Liang, Jin
 Xing, Chaoping. *See* Feng, Keqin
 Xu, Bangteng. *See* Boltje, Robert
 Yagita, Nobuaki. *See* Kameko, Masaki
 Yan, Lixin. *Classes of Hardy spaces associated with operators, duality theorem and applications*, 4383
 Yan, Shusen. *See* Cao, Daomin
 Yang, Arthur L. B. *See* Chen, William Y. C.
 Yao, Jiangang. *See* Ding, Fan
 Yavuz, Onur. *Invariant subspaces for Banach space operators with an annular spectral set*, 2661
 Ye, Rugang. *On the l-function and the reduced volume of Perelman I*, 507
 ———. *On the l-function and the reduced volume of Perelman II*, 533
 Yekutieli, Amnon, and James J. Zhang. *Rigid complexes via DG algebras*, 3211
 Yingst, Andrew Q. *A characterization of homeomorphic Bernoulli trial measures*, 1103
 Yoo, I. *See* Chang, K. S.
 Yu, Liang. *See* Miller, Joseph S.
 Yun, Ki-Heon. *Twisted fiber sums of Fintushel-Stern's knot surgery 4-manifolds*, 5853
 Zaleskii, Pavel A. *See* Kochloukova, Dessislava H.
 Zhang, James J. *See* Yekutieli, Amnon
 Zhang, J. J. *See* Kirkman, E.
 Zhang, R. B. *See* Cheng, Shun-Jen
 Zhao, Peihao. *See* Shen, Zhongwei
 Zheng, Xinxian. *See* Herzog, Jürgen
 Zhou, Wang. *See* Jing, Bing-Yi

INDEX TO VOLUME 360 (2008)

- Zinger, Aleksey. *Pseudocycles and integral homology*, 2741
Živaljević, Rade T. *Equipartitions of measures in \mathbb{R}^4* , 153
Zoble, Stuart. *See* Todorcevic, Stevo
Zsidó, László. *See* D'Antoni, Claudio
Zúñiga-Galindo, W. A. *See* Veys, Willem
Zwara, G. *See* Riedtmann, Ch.
Zwicknagl, Sebastian. *See* Berenstein, Arkady

VOLUME 360



2008

TRANSACTIONS

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

EDITED BY

Dan Abramovich

Alejandro Adem

Richard F. Bass

Mark Feighn

Robert Guralnick, Managing Editor

Lisa C. Jeffrey

Yunping Jiang

Alexander Kleshchev

Steffen Lemp

William P. Minicozzi II

Alexander Nagel

Peter Polacik

Gustavo Ponce

Jonathan Rogawski

Dimitri Shlyakhtenko

Robert J. Stanton

John R. Stembridge

Daniel Tataru

Mina Teicher

PROVIDENCE, RHODE ISLAND USA

ISSN 0002-9947

Transactions of the American Mathematical Society

This journal is devoted entirely to research in pure and applied mathematics.

Submission information. See **Information for Authors** at the end of this issue.

Publisher Item Identifier. The Publisher Item Identifier (PII) appears at the top of the first page of each article published in this journal. This alphanumeric string of characters uniquely identifies each article and can be used for future cataloging, searching, and electronic retrieval.

Postings to the AMS website. Articles are posted to the AMS website individually after proof is returned from authors and before appearing in an issue.

Subscription information. *Transactions of the American Mathematical Society* is published monthly. Beginning in January 1996 *Transactions* is accessible from www.ams.org/journals/. Subscription prices for Volume 360 (2008) are as follows: for paper delivery, US\$1814 list, US\$1451 institutional member, US\$1633 corporate member; for electronic delivery, US\$1633 list, US\$1306 institutional member, US\$1470 corporate member. Upon request, subscribers to paper delivery of this journal are also entitled to receive electronic delivery. If ordering the paper version, add US\$49 for surface delivery outside the United States and India; US\$53 to India. Expedited delivery to destinations in North America is US\$79; elsewhere US\$144. For paper delivery a late charge of 10% of the subscription price will be imposed upon orders received from nonmembers after January 1 of the subscription year.

Back number information. For back issues see www.ams.org/bookstore.

Subscriptions and orders should be addressed to the American Mathematical Society, P.O. Box 845904, Boston, MA 02284-5904 USA. *All orders must be accompanied by payment.* Other correspondence should be addressed to 201 Charles Street, Providence, RI 02904-2294 USA.

Copying and reprinting. Material in this journal may be reproduced by any means for educational and scientific purposes without fee or permission with the exception of reproduction by services that collect fees for delivery of documents and provided that the customary acknowledgment of the source is given. This consent does not extend to other kinds of copying for general distribution, for advertising or promotional purposes, or for resale. Requests for permission for commercial use of material should be addressed to the Acquisitions Department, American Mathematical Society, 201 Charles Street, Providence, RI 02904-2294 USA. Requests can also be made by e-mail to reprint-permission@ams.org.

Excluded from these provisions is material in articles for which the author holds copyright. In such cases, requests for permission to use or reprint should be addressed directly to the author(s). (Copyright ownership is indicated in the notice in the lower right-hand corner of the first page of each article.)

Transactions of the American Mathematical Society (ISSN 0002-9947) is published monthly by the American Mathematical Society at 201 Charles Street, Providence, RI 02904-2294 USA. Periodicals postage is paid at Providence, Rhode Island. Postmaster: Send address changes to *Transactions*, American Mathematical Society, 201 Charles Street, Providence, RI 02904-2294 USA.

© 2008 by the American Mathematical Society. All rights reserved.

This journal is indexed in *Mathematical Reviews*, *Zentralblatt MATH*, *Science Citation Index*[®], *Science Citation Index*TM-*Expanded*, *ISI Alerting Services*SM, *CompuMath Citation Index*[®], and *Current Contents*[®]/*Physical, Chemical & Earth Sciences*. This journal is archived in *Portico*.

Printed in the United States of America.

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

TRANSACTIONS OF THE AMERICAN MATHEMATICAL SOCIETY

CONTENTS

Vol. 360, No. 1

Whole No. 872

January 2008

Stan Alama, Lia Bronsard, and Etienne Sandier, <i>On the shape of interlayer vortices in the Lawrence–Doniach model</i>	1
Kazuhiro Kuwae and Takashi Shioya, <i>Variational convergence over metric spaces</i>	35
E. N. Barron, L. C. Evans, and R. Jensen, <i>The infinity Laplacian, Aronsson’s equation and their generalizations</i>	77
Alexandre Cabot, <i>Stabilization of oscillators subject to dry friction: Finite time convergence versus exponential decay results</i>	103
Julia Hartmann and Anne V. Shepler, <i>Jacobians of reflection groups</i> ..	123
Silvio Dolfi, <i>Large orbits in coprime actions of solvable groups</i>	135
Rade T. Živaljević, <i>Equipartitions of measures in \mathbb{R}^4</i>	153
Jason Metcalfe and Ann Stewart, <i>Almost global existence for quasilinear wave equations in waveguides with Neumann boundary conditions</i>	171
Richard Dipper, Stephen Doty, and Jun Hu, <i>Brauer algebras, symplectic Schur algebras and Schur–Weyl duality</i>	189
Sophie Morier-Genoud, <i>Geometric lifting of the canonical basis and semitoric degenerations of Richardson varieties</i>	215
Jonathan P. McCammond and Daniel T. Wise, <i>Locally quasiconvex small-cancellation groups</i>	237
Brian Osserman, <i>Frobenius-unstable bundles and p-curvature</i>	273
Franz Forstnerič and Christine Laurent-Thiébaud, <i>Stein compacts in Levi-flat hypersurfaces</i>	307
Adrian Jenkins, <i>Holomorphic germs and the problem of smooth conjugacy in a punctured neighborhood of the origin</i>	331
Hubert Rubenthaler, <i>The (A_2, G_2) duality in E_6, octonions and the triality principle</i>	347
Mark Hovey, <i>Morava E-theory of filtered colimits</i>	369
Jonathan Rosenberg, <i>An analogue of the Novikov Conjecture in complex algebraic geometry</i>	383
Eva A. Gallardo-Gutiérrez, María J. González, and Artur Nicolau, <i>Composition operators on Hardy spaces on Lavrentiev domains</i>	395
Dugald Macpherson and Charles Steinhorn, <i>One-dimensional asymptotic classes of finite structures</i>	411
Dirk Blömker, Stanislaus Maier-Paape, and Thomas Wanner, <i>Second phase spinodal decomposition for the Cahn–Hilliard–Cook equation</i> ...	449
David Fisher, <i>Deformations of group actions</i>	491
Rugang Ye, <i>On the l-function and the reduced volume of Perelman I</i>	507
Rugang Ye, <i>On the l-function and the reduced volume of Perelman II</i>	533
Katrin Gelfert and Christian Wolf, <i>Topological pressure via saddle points</i>	545

Vladimir I. Olikier, A Minkowski-style theorem for focal functions of compact convex reflectors	563
Jong Uhn Kim, On a stochastic wave equation with unilateral boundary conditions	575
Hans Schoutens, Pure subrings of regular rings are pseudo-rational	609
Sergio Console and Carlos Olmos, Level sets of scalar Weyl invariants and cohomogeneity	629
Olivier Guibé and Anna Mercaldo, Existence of renormalized solutions to nonlinear elliptic equations with two lower order terms and measure data	643
Aleš Drápal, Structural interactions of conjugacy closed loops	671
Claus Michael Ringel and Markus Schmidmeier, The Auslander-Reiten translation in submodule categories	691
Grzegorz Bobiński, Geometry of regular modules over canonical algebras	717
Robert W. Baddeley, Cheryl E. Praeger, and Csaba Schneider, Intransitive Cartesian decompositions preserved by innately transitive permutation groups	743
Paolo Lisca, On symplectic fillings of lens spaces	765
Y. Barnea and D. S. Passman, Filtrations in semisimple Lie algebras, II	801
Mathias Beiglböck, Vitaly Bergelson, Neil Hindman, and Dona Strauss, Some new results in multiplicative and additive Ramsey theory	819
V. Farmaki and S. Negrepointis, Schreier sets in Ramsey theory	849
Gregory Derfel, Peter J. Grabner, and Fritz Vogl, The zeta function of the Laplacian on certain fractals	881
Akihito Hora and Nobuaki Obata, Asymptotic spectral analysis of growing regular graphs	899
Vladimir Kurenok, A note on L_2 -estimates for stable integrals with drift	925
Su Gao, Steve Jackson, Miklós Laczkovich, and R. Daniel Mauldin, On the unique representation of families of sets	939
J. Marshall Ash and Stefan Catoiu, Quantum symmetric L^p derivatives	959
Izzet Coskun, Gromov-Witten invariants of jumping curves	989
Marcela Hanzer, Unitary dual of the non-split inner form of $Sp(8, F)$	1005
Janne Heittokangas, Risto Korhonen, and Jouni Rättyä, Linear differential equations with coefficients in weighted Bergman and Hardy spaces	1035
Hung Le Pham, The kernels of radical homomorphisms and intersections of prime ideals	1057
Jingbo Xia, On the essential commutant of $\mathcal{T}(\text{QC})$	1089
Andrew Q. Yingst, A characterization of homeomorphic Bernoulli trial measures	1103

Matthias Neufang, Zhong-Jin Ruan, and Nico Spronk, Completely isometric representations of $M_{cb}A(G)$ and $UCB(\hat{G})^*$	1133
Natalie Priebe Frank and E. Arthur Robinson, Jr., Generalized β -expansions, substitution tilings, and local finiteness	1163
Joseph Chuang, Hyohe Miyachi, and Kai Meng Tan, Kleshchev's decomposition numbers and branching coefficients in the Fock space ..	1179
Amit Kulshrestha and R. Parimala, R -equivalence in adjoint classical groups over fields of virtual cohomological dimension 2	1193
David Cimasoni and Vincent Florens, Generalized Seifert surfaces and signatures of colored links	1223
Noam Greenberg and Antonio Montalbán, Ranked structures and arithmetic transfinite recursion	1265
Joseph R. Mileti, The canonical Ramsey theorem and computability theory	1309
Matthew Fayers, Decomposition numbers for weight three blocks of symmetric groups and Iwahori–Hecke algebras	1341
Aline Bonami, Sandrine Grellier, and Mohammad Kacim, Truncations of multilinear Hankel operators	1377
Wolfgang Hassler, Ryan Karr, Lee Klingler, and Roger Wiegand, Indecomposable modules of large rank over Cohen-Macaulay local rings	1391
Tim D. Cochran and Taehee Kim, Higher-order Alexander invariants and filtrations of the knot concordance group	1407
Andrei Karol', Alexander Nazarov, and Yakov Nikitin, Small ball probabilities for Gaussian random fields and tensor products of compact operators	1443
Pierre Baumann and Christophe Hohlweg, A Solomon descent theory for the wreath products $G \wr \mathfrak{S}_n$	1475
Lotfi Hermi, Two new Weyl-type bounds for the Dirichlet Laplacian	1539
S. V. Borodachov, D. P. Hardin, and E. B. Saff, Asymptotics for discrete weighted minimal Riesz energy problems on rectifiable sets ...	1559
Michela Artebani, Heegner divisors in the moduli space of genus three curves	1581
J. P. Pridham, Deformations of schemes and other bialgebraic structures	1601
Wendy Lowen, Algebroid prestacks and deformations of ringed spaces ...	1631
Magali Folch-Gabayet and James Wright, Singular integral operators associated to curves with rational components	1661
Bernard Helffer and Yuri A. Kordyukov, Semiclassical asymptotics and gaps in the spectra of periodic Schrödinger operators with magnetic wells	1681

Ernst-Ulrich Gekeler, Frobenius distributions of Drinfeld modules over finite fields	1695
--	------

Jin Liang, Rainer Nagel, and Ti-Jun Xiao , Approximation theorems for the propagators of higher order abstract Cauchy problems	1723
Zhongwei Shen and Peihao Zhao , Uniform Sobolev inequalities and absolute continuity of periodic operators	1741
Peter A. Cholak and Leo A. Harrington , Extension theorems, orbits, and automorphisms of the computably enumerable sets	1759
Joel David Hamkins and Benedikt Löwe , The modal logic of forcing .	1793
K. S. Chang, D. H. Cho, B. S. Kim, T. S. Song, and I. Yoo , Sequential Fourier-Feynman transform, convolution and first variation	1819
Siu-Hung Ng and Peter Schauenburg , Central invariants and higher indicators for semisimple quasi-Hopf algebras	1839
Feride Tığlay , The Cauchy problem and integrability of a modified Euler-Poisson equation	1861
Jon F. Carlson, Zongzhu Lin, and Daniel K. Nakano , Support varieties for modules over Chevalley groups and classical Lie algebras	1879
Otto Kerner and Jan Trlifaj , Constructing tilting modules	1907
Dessislava H. Kochloukova and Pavel A. Zalesskii , Profinite and p -completions of Poincaré duality groups of dimension 3	1927
Semyon Alesker and Joseph H. G. Fu , Theory of valuations on manifolds, III. Multiplicative structure in the general case	1951
Thomas Brady and Colum Watt , Non-crossing partition lattices in finite real reflection groups	1983
Keqin Feng and Chaoping Xing , A new construction of quantum error-correcting codes	2007
Luc Lapointe and Jennifer Morse , Quantum cohomology and the k -Schur basis	2021
Richard F. Bass and Takashi Kumagai , Symmetric Markov chains on \mathbb{Z}^d with unbounded range	2041
Henrik Shahgholian , Free boundary regularity close to initial state for parabolic obstacle problem	2077
Jonas Azzam, Michael A. Hall, and Robert S. Strichartz , Conformal energy, conformal Laplacian, and energy measures on the Sierpinski gasket	2089
Adam Harris and Krzysztof Wysocki , Branch structure of J -holomorphic curves near periodic orbits of a contact manifold	2131
Huyi Hu , Equilibriums of some non-Hölder potentials	2153
Lucien Guillou , Free lines for homeomorphisms of the open annulus	2191
Willem Veys and W. A. Zúñiga-Galindo , Zeta functions for analytic mappings, log-principalization of ideals, and Newton polyhedra	2205
Ronald G. Douglas and Gadadhar Misra , Equivalence of quotient Hilbert modules–II	2229

Masaki Kameko and Nobuaki Yagita, The Brown-Peterson cohomology of the classifying spaces of the projective unitary groups $PU(p)$ and exceptional Lie groups	2265
Leonardo Constantin Mihalcea, Giambelli formulae for the equivariant quantum cohomology of the Grassmannian	2285
Zoé Faget, Optimal constants in the exceptional case of Sobolev inequalities on Riemannian manifolds	2303
Koen Thas and Hendrik Van Maldeghem, Geometric characterizations of finite Chevalley groups of type B_2	2327
Persi Diaconis and I. M. Isaacs, Supercharacters and superclasses for algebra groups	2359
Michael K. Kinyon, J. D. Phillips, and Petr Vojtěchovský, When is the commutant of a Bol loop a subloop?	2393
Lidia Angeleri Hügel, Silvana Bazzoni, and Dolores Herbera, A solution to the Baer splitting problem	2409
Grzegorz Karch and Wojbor A. Woyczyński, Fractal Hamilton-Jacobi-KPZ equations	2423
Gabriel Navarro and Pham Huu Tiep, Rational irreducible characters and rational conjugacy classes in finite groups	2443
Adam-Christiaan van Roosmalen, Classification of abelian hereditary directed categories satisfying Serre duality	2467
Laura Scull, A model category structure for equivariant algebraic models ..	2505
D. Motreanu, V. V. Motreanu, and N. S. Papageorgiou, Positive solutions and multiple solutions at non-resonance, resonance and near resonance for hemivariational inequalities with p -Laplacian	2527
Oleg Gleizer, Symmetries of the hypergeometric function ${}_mF_{m-1}$	2547
Scipio Cuccagna, On asymptotic stability in 3D of kinks for the ϕ^4 model ..	2581
Philipp Gerhardy and Ulrich Kohlenbach, General logical metatheorems for functional analysis	2615
Onur Yavuz, Invariant subspaces for Banach space operators with an annular spectral set	2661
Erkan Nane, Higher order PDE's and iterated processes	2681
Nihat Gökhan Göğüş, Local and global C -regularity	2693
Takesi Kawasaki, Finiteness of cousin cohomologies	2709
Aleksey Zinger, Pseudocycles and integral homology	2741
Steffen Sagave, Universal Toda brackets of ring spectra	2767
Mark Hovey, Erratum to "Classifying subcategories of modules"	2809

Martin Schechter, Sandwich pairs in critical point theory	2811
Wolfgang Pitsch, Integral homology 3-spheres and the Johnson filtration ..	2825

Feng Luo and Stephan Tillmann, Angle structures and normal surfaces	2849
Brian Conrad, Keith Conrad, and Robert Gross, Prime specialization in genus 0	2867
Stefan Friedl and Taehee Kim, The parity of the Cochran–Harvey invariants of 3–manifolds	2909
Vyjayanthi Chari and Jacob Greenstein, Graded level zero integrable representations of affine Lie algebras	2923
Thang T. Q. Lê, Strong integrality of quantum invariants of 3-manifolds	2941
Juan Migliore, Uwe Nagel, and Tim Römer, Extensions of the Multiplicity conjecture	2965
Kaj Nyström, On area integral estimates for solutions to parabolic systems in time-varying and non-smooth cylinders	2987
Jinpeng An and Zhengdong Wang, Nonabelian cohomology with coefficients in Lie groups	3019
Fu Liu, Ehrhart polynomials of lattice-face polytopes	3041
Goran Muić and Gordan Savin, The center of the category of (\mathfrak{g}, K)–modules	3071
Radha Kessar and Markus Linckelmann, ZJ-theorems for fusion systems	3093
Anurag K. Singh and Uli Walther, A connectedness result in positive characteristic	3107
William Y. C. Chen and Arthur L. B. Yang, Stanley’s zrank conjecture on skew partitions	3121
John B. Etnyre and Burak Ozbagci, Invariants of contact structures from open books	3133
Adam R. Lucas, Small unitary representations of the double cover of $SL(m)$	3153
Joseph S. Miller and Liang Yu, On initial segment complexity and degrees of randomness	3193
Amnon Yekutieli and James J. Zhang, Rigid complexes via DG algebras	3211
Efstratia Kalfagianni and Xiao-Song Lin, Knot adjacency and fibering	3249
Jyh-Haur Teh, Harnack-Thom theorem for higher cycle groups and Picard varieties	3263
Andreas Defant and David Pérez-García, A tensor norm preserving unconditionality for \mathcal{L}_p-spaces	3287
Deguang Han, Frame representations and Parseval duals with applications to Gabor frames	3307
Laura Atanasi and Massimo A. Picardello, The Lusin area function and local admissible convergence of harmonic functions on homogeneous trees	3327
Igor V. Evstigneev and Klaus Reiner Schenk-Hoppé, Stochastic equilibria in von Neumann–Gale dynamical systems	3345

Jens Marklof, Yves Tourigny, and Lech Wołowski, Explicit invariant measures for products of random matrices	3391
Arkady Berenstein and Sebastian Zwicknagl, Braided symmetric and exterior algebras	3429
José M. Muñoz Porras and Fernando Pablos Romo, Generalized reciprocity laws	3473
Nils Ackermann, Thomas Bartsch, Petr Kaplický, and Pavol Quittner, A priori bounds, nodal equilibria and connecting orbits in indefinite superlinear parabolic problems	3493
Alexandra Shlapentokh, Elliptic curves retaining their rank in finite extensions and Hilbert’s Tenth Problem for rings of algebraic numbers	3541
Joan R. Lind, Hölder regularity of the SLE trace	3557
Michel Chipot and Arnaud Rougirel, On the asymptotic behaviour of the eigenmodes for elliptic problems in domains becoming unbounded	3579
Rodrigo Bañuelos and Prabhuram Janakiraman, L^p-bounds for the Beurling–Ahlfors transform	3603
Ethan Akin, Eli Glasner, and Benjamin Weiss, Generically there is but one self homeomorphism of the Cantor set	3613
J. A. Adell and P. Jodrá, On a Ramanujan equation connected with the median of the gamma distribution	3631
Masaki Kashiwara, Toshiki Nakashima, and Masato Okado, Affine geometric crystals and limit of perfect crystals	3645
Jason Fulman, Stein’s method and random character ratios	3687
Kentaro Ito, On continuous extensions of grafting maps	3731
George A. Kirkup, Minimal primes over permanent ideals	3751
Dorina Mitrea, A generalization of Dahlberg’s theorem concerning the regularity of harmonic Green potentials	3771
Dong Hyun Cho, A simple formula for an analogue of conditional Wiener integrals and its applications	3795
Daomin Cao, Ezzat S. Noussair, and Shusen Yan, Multiscale-bump standing waves with a critical frequency for nonlinear Schrödinger equations	3813
Dragos Ghioca, The isotrivial case in the Mordell–Lang Theorem	3839
Kasso A. Okoudjou, Laurent Saloff-Coste, and Alexander Teplyaev, Weak uncertainty principle for fractals, graphs and metric measure spaces	3857
Nguyen Minh Tri, Semilinear hypoelliptic differential operators with multiple characteristics	3875
Wojciech Matysiak and Paweł J. Szablowski, Generalized stationary random fields with linear regressions - an operator approach	3909
Radu Balan, The noncommutative Wiener lemma, linear independence, and spectral properties of the algebra of time-frequency shift operators ...	3921
Stefano Pigola, Marco Rigoli, and Alberto G. Setti, A correction to: “Some characterizations of space-forms”	3943

J. Escher and J. Seiler , Bounded H_∞ -calculus for pseudodifferential operators and applications to the Dirichlet-Neumann operator	3945
Anne V. Shepler and Sarah Witherspoon , Hochschild cohomology and graded Hecke algebras	3975
V. V. Bavula , Simple derivations of differentiably simple Noetherian commutative rings in prime characteristic	4007
Daan Krammer , A class of Garside groupoid structures on the pure braid group	4029
Archil Gulisashvili , Classes of time-dependent measures, non-homogeneous Markov processes, and Feynman-Kac propagators	4063
Robert L. Benedetto , An Ahlfors Islands Theorem for non-archimedean meromorphic functions	4099
Michael Anshelevich , Orthogonal polynomials with a resolvent-type generating function	4125
Andrew Hassell and Simon Marshall , Eigenvalues of Schrödinger operators with potential asymptotically homogeneous of degree -2 ...	4145
Filippo Callegaro, Davide Moroni, and Mario Salvetti , Cohomology of affine Artin groups and applications	4169
Richard Scott , Right-angled mock reflection and mock Artin groups	4189
Peter Fiebig , The combinatorics of Coxeter categories	4211
Chongying Dong and Cuipo Jiang , Bimodules and g -rationality of vertex operator algebras	4235
Bing-Yi Jing, Qi-Man Shao, and Wang Zhou , Towards a universal self-normalized moderate deviation	4263
Lisa Lorentzen , Continued fractions with circular twin value sets	4287
J. D. Biggins , The growth of iterates of multivariate generating functions	4305
Andrea Cianchi , Sharp Morrey-Sobolev inequalities and the distance from extremals	4335
Cristian Lenart and Alexander Postnikov , A combinatorial model for crystals of Kac-Moody algebras	4349
Lixin Yan , Classes of Hardy spaces associated with operators, duality theorem and applications	4383
Ahmet Beyaz , A new construction of 6-manifolds	4409
Antoine Ayache and Nikolay Tzvetkov , L^p properties for Gaussian random series	4425
Peter Landesman , Generalized differential Galois theory	4441

Yasuyuki Nagatomo , The twistor sections on the Wolf spaces	4497
Lê Tuân Hoa , Finiteness of Hilbert functions and bounds for Castelnuovo-Mumford regularity of initial ideals	4519

Adam Hammett and Boris Pittel, How often are two permutations comparable?	4541
Usha N. Bhosle and Indranil Biswas, Stable real algebraic vector bundles over a Klein bottle	4569
Stefan Friedl and Taehee Kim, Twisted Alexander norms give lower bounds on the Thurston norm	4597
James Colliander, Justin Holmer, and Nikolaos Tzirakis, Low regularity global well-posedness for the Zakharov and Klein-Gordon-Schrödinger systems	4619
Juraj Húska, Exponential separation and principal Floquet bundles for linear parabolic equations on general bounded domains: Nondivergence case	4639
Robert C. Dalang, Carl Mueller, and Roger Tribe, A Feynman-Kac-type formula for the deterministic and stochastic wave equations and other p.d.e.'s	4681
Claudio D'Antoni and László Zsidó, Abelian strict approximation in AW^*-algebras and Weyl-von Neumann type theorems	4705
Bong H. Lian, Andrew R. Linshaw, and Bailin Song, Chiral equivariant cohomology II	4739
Mark F. Demers and Carlangelo Liverani, Stability of statistical properties in two-dimensional piecewise hyperbolic maps	4777
Ryoji Kasagawa, On crossed homomorphisms on symplectic mapping class groups	4815
George A. Elliott and Katsunori Kawamura, A Hilbert bundle characterization of Hilbert C^*-modules	4841
D. Ghioca and T. J. Tucker, Equidistribution and integral points for Drinfeld modules	4863
Mário J. Edmundo and Arthur Woerheide, Comparison theorems for \mathfrak{o}-minimal singular (co)homology	4889
Hiroki Matui, Torsion in coinvariants of certain Cantor minimal \mathbb{Z}^2-systems	4913
G. Bellettini and G. Fusco, The Γ-limit and the related gradient flow for singular perturbation functionals of Perona-Malik type	4929
Ciprian Demeter, Terence Tao, and Christoph Thiele, Maximal multilinear operators	4989
Halvard Fausk, Generalized Artin and Brauer induction for compact Lie groups	5043

Robert Boltje and Bangteng Xu, On p-permutation equivalences: Between Rickard equivalences and isotopies	5067
Seonhee Lim, Minimal volume entropy for graphs	5089
Alexey Cheskidov, Blow-up in finite time for the dyadic model of the Navier-Stokes equations	5101

V. K. Kharchenko, PBW-bases of coideal subalgebras and a freeness theorem	5121
Peter Borwein, Tamás Erdélyi, and Friedrich Littmann, Polynomials with coefficients from a finite set	5145
Allan Berele and Amitai Regev, Asymptotic behaviour of codimensions of p. i. algebras satisfying Capelli identities	5155
A. Stoimenow, Bennequin's inequality and the positivity of the signature	5173
Cristina Marcelli, Necessary and sufficient conditions for optimality of nonconvex, noncoercive autonomous variational problems with constraints	5201
E. Cuchillo-Ibáñez, J. Dydak, A. Koyama, and M. A. Morón, C_0 -coarse geometry of complements of Z-sets in the Hilbert cube	5229
Scott O. Wilson, Conformal cochains	5247
Shuxing Chen, Transonic shocks in 3-D compressible flow passing a duct with a general section for Euler systems	5265
Avner Friedman and Bei Hu, Stability and instability of Liapunov-Schmidt and Hopf bifurcation for a free boundary problem arising in a tumor model	5291
Andrew S. Toms, An infinite family of non-isomorphic C^* -algebras with identical K-theory	5343
Elizabeth Meckes, Linear functions on the classical matrix groups	5355
David Eisenbud and Frank-Olaf Schreyer, Relative Beilinson monad and direct image for families of coherent sheaves	5367
Hasan Coskun, An elliptic BC_n Bailey Lemma, multiple Rogers–Ramanujan identities and Euler's Pentagonal Number Theorems	5397
Nikos Frantzikinakis, Multiple ergodic averages for three polynomials and applications	5435
Michael Christ and M. Burak Erdoğan, Mixed norm estimates for certain generalized Radon transforms	5477
Francisco Javier Gallego and Bangere P. Purnaprajna, Classification of quadruple Galois canonical covers I	5489
Weigu Li and Kening Lu, Rotation numbers for random dynamical systems on the circle	5509
Pavel Shvartsman, The Whitney extension problem and Lipschitz selections of set-valued mappings in jet-spaces	5529
José F. Alves and Vilton Pinheiro, Topological structure of (partially) hyperbolic sets with positive volume	5551
E. Coussement, J. Coussement, and W. Van Assche, Asymptotic zero distribution for a class of multiple orthogonal polynomials	5571
Zsuzsanna Gönye, Dimension of escaping geodesics	5589
Isaac Pesenson, Sampling in Paley-Wiener spaces on combinatorial graphs	5603

Fritz Colonius and Wolfgang Kliemann, Controllability properties of nonlinear behaviors	5667
Taku Ishii and Tomonori Moriyama, Spinor L -functions for generic cusp forms on $GS\mathfrak{p}(2)$ belonging to principal series representations	5683
Michel Van den Bergh, Double Poisson algebras	5711
Christopher S. Hays and B. Doug Park, Non-isotopic symplectic surfaces in product 4-manifolds	5771
Karin Baur and Robert J. Marsh, A geometric description of m -cluster categories	5789
Ioan Bejenaru and Daniela De Silva, Low regularity solutions for a 2D quadratic nonlinear Schrödinger equation	5805
Tom De Medts and Yoav Segev, Identities in Moufang sets	5831
Ki-Heon Yun, Twisted fiber sums of Fintushel-Stern's knot surgery 4-manifolds	5853
Hee Jung Kim and Daniel Ruberman, Topological triviality of smoothly knotted surfaces in 4-manifolds	5869
Shun-Jen Cheng, Weiqiang Wang, and R. B. Zhang, Super duality and Kazhdan-Lusztig polynomials	5883
Ioan Bejenaru, Quadratic nonlinear derivative Schrödinger equations - Part 2	5925
J. Matthew Douglass and Gerhard Röhrle, Homology of generalized Steinberg varieties and Weyl group invariants	5959
Cecilia Busuïoc, The Steinberg symbol and special values of L -functions ..	5999
Fan Ding, Shicheng Wang, and Jiengang Yao, On embedding all n -manifolds into a single $(n + 1)$ -manifold	6017
Seick Kim, Gaussian estimates for fundamental solutions of second order parabolic systems with time-independent coefficients	6031
Dan Romik, The dynamics of Pythagorean Triples	6045
Takahiro Kazami and Kôhei Uchiyama, Random walks on periodic graphs	6065
Hari Bercovici and Jiun-Chau Wang, Limit theorems for free multiplicative convolutions	6089
Aaron Bertram, Renzo Cavalieri, and Gueorgui Todorov, Evaluating tautological classes using only Hurwitz numbers	6103
Siegfried Echterhoff and Dana P. Williams, Inducing primitive ideals ..	6113
David P. Blecher and Louis E. Labuschagne, Applications of the Fuglede-Kadison determinant: Szegő's theorem and outers for noncommutative H^p	6131
Yukinobu Toda, Stability conditions and crepant small resolutions	6149
J. Rosický and W. Tholen, Erratum to "Left-determined model categories and universal homotopy theories"	6179

Alan Hammond and Yuval Peres, Fluctuation of a planar Brownian loop capturing a large area	6197
Jürgen Herzog, Takayuki Hibi, Ngô Việt Trung, and Xinxian Zheng, Standard graded vertex cover algebras, cycles and leaves	6231
Ch. Riedtmann and G. Zwara, The zero set of semi-invariants for extended Dynkin quivers	6251
Frauke M. Bleher and Ted Chinburg, Galois structure of homogeneous coordinate rings	6269
François Dahmani and Daniel Groves, Detecting free splittings in relatively hyperbolic groups	6303
Siddhartha Bhattacharya, Isomorphism rigidity of commuting automorphisms	6319
E. Kirkman, J. Kuzmanovich, and J. J. Zhang, Rigidity of graded regular algebras	6331
Dong-Uy Shin, Polyhedral realization of the highest weight crystals for generalized Kac-Moody algebras	6371
Anthony To-Ming Lau and Michael Leinert, Fixed point property and the Fourier algebra of a locally compact group	6389
Athanassios S. Fokas and Laihan Luo, On the asymptotic linearization of acoustic waves	6403
Florin Diacu, Toshiaki Fujiwara, Ernesto Pérez-Chavela, and Manuele Santoprete, Saari's homographic conjecture of the three-body problem	6447
G. Letac and J. Wołowski, Laplace transforms which are negative powers of quadratic polynomials	6475
Dmitry Kleinbock, An extension of quantitative nondivergence and applications to Diophantine exponents	6497
Stoyu Barov and Jan J. Dijkstra, On closed sets with convex projections under narrow sets of directions	6525
Ross G. Pinsky, A probabilistic approach to bounded/positive solutions for Schrödinger operators with certain classes of potentials	6545
Martin Hadac, Well-posedness for the Kadomtsev-Petviashvili II equation and generalisations	6555
Tobias Kaiser, Dirichlet regularity of subanalytic domains	6573
Tong-jun He and Yi Shen, Maximal operators of tree martingale transforms and their maximal operator inequalities	6595
Helena Reis, Semi-complete vector fields of saddle-node type in \mathbb{C}^n	6611
Paolo Stellari, A finite group acting on the moduli space of K3 surfaces ..	6631
Tomohiro Okuma, The geometric genus of splice-quotient singularities ...	6643
Ian Melbourne and Matthew Nicol, Large deviations for nonuniformly hyperbolic systems	6661
Uwe Einmahl and Deli Li, Characterization of LIL behavior in Banach space	6677
Daniel Levin and Mark Wildon, A combinatorial method for calculating the moments of Lévy area	6695
Roger L. Jones, Andreas Seeger, and James Wright, Strong variational and jump inequalities in harmonic analysis	6711

Editorial Information

To be published in the *Transactions*, 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.

Papers submitted to the *Transactions* should exceed 10 published journal pages in length. Shorter papers may be submitted to the *Proceedings of the American Mathematical Society*. Published pages are the same size as those generated in the style files provided for $\mathcal{A}\mathcal{M}\mathcal{S}$ - $\mathcal{L}\mathcal{A}\mathcal{T}\mathcal{E}\mathcal{X}$ or $\mathcal{A}\mathcal{M}\mathcal{S}$ - $\mathcal{T}\mathcal{E}\mathcal{X}$.

Information on the backlog for this journal can be found on the AMS website starting from <http://www.ams.org/tran>.

In an effort to make articles available as quickly as possible, articles are posted to the AMS website individually 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 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. The AMS uses Centralized Manuscript Processing for initial submissions. Authors should submit a PDF file using the Initial Manuscript Submission form found at www.ams.org/peer-review-submission, or send one copy of the manuscript to the following address: Centralized Manuscript Processing, TRANSACTIONS OF THE AMS, 201 Charles Street, Providence, RI 02904-2294 USA. If a paper copy is being forwarded to the AMS, indicate that it is for *Transactions* and include the name of the corresponding author, contact information such as email address or mailing address, and the name of an appropriate Editor to review the paper (see the list of Editors below).

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 300 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 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 footnote 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 www.ams.org/msnhtml/serials.pdf. To help in preparing and verifying references, the AMS offers MR Lookup, a Reference Tool for Linking, at www.ams.org/mrlookup/.

Electronically prepared manuscripts. The AMS encourages electronically prepared manuscripts, with a strong preference for $\mathcal{A}\mathcal{M}\mathcal{S}$ - $\mathcal{L}\mathcal{A}\mathcal{T}\mathcal{E}\mathcal{X}$. To this end, the

Society has prepared $\mathcal{A}\mathcal{M}\mathcal{S}$ - \LaTeX author packages for each AMS publication. Author packages include instructions for preparing electronic manuscripts, samples, and a style file that generates the particular design specifications of that publication series. Articles properly prepared using the $\mathcal{A}\mathcal{M}\mathcal{S}$ - \LaTeX style file and the `\label` and `\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 $\mathcal{A}\mathcal{M}\mathcal{S}$ - \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. $\mathcal{A}\mathcal{M}\mathcal{S}$ - \LaTeX papers also move more efficiently through the production stream, helping to minimize publishing costs.

$\mathcal{A}\mathcal{M}\mathcal{S}$ - \LaTeX is the highly preferred format of \TeX , but author packages are also available in $\mathcal{A}\mathcal{M}\mathcal{S}$ - \TeX . 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 \LaTeX 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. \LaTeX users will find that $\mathcal{A}\mathcal{M}\mathcal{S}$ - \LaTeX is the same as \LaTeX with additional commands to simplify the typesetting of mathematics, and users of plain \TeX should have the foundation for learning $\mathcal{A}\mathcal{M}\mathcal{S}$ - \LaTeX .

Authors may retrieve an author package for *Transactions of the AMS* from www.ams.org/tran/tranauthorpac.html or via FTP to [ftp.ams.org](ftp://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 from the author package link. The author package can also be obtained free of charge by sending email to tech-support@ams.org (Internet) or from the Publication Division, American Mathematical Society, 201 Charles Street, Providence, RI 02904-2294 USA. When requesting an author package, please specify $\mathcal{A}\mathcal{M}\mathcal{S}$ - \LaTeX or $\mathcal{A}\mathcal{M}\mathcal{S}$ - \TeX and the publication in which your paper will appear. Please be sure to include your complete email address.

After acceptance. 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 to the Editor, who will forward a copy to the Providence office. Accepted electronically prepared manuscripts can be submitted via the web at www.ams.org/submit-book-journal/, sent via email to pub-submit@ams.org (Internet), or sent on diskette to the Electronic Prepress Department, American Mathematical Society, 201 Charles Street, Providence, RI 02904-2294 USA. When sending a manuscript electronically via email or diskette, 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 starting from www.ams.org/authors/journals.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, TIFF 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 the AMS website 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 the AMS website 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 the AMS website, corrections may be made to the paper by submitting a traditional errata article. 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. 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/. An explanation of each production step is provided on the web through links from the manuscript tracking screen. Questions can be sent to tran-query@ams.org.

T_EX files available upon request. T_EX files are available upon request for authors by sending email to file-request@ams.org or by contacting the Electronic Prepress Department, American Mathematical Society, 201 Charles Street, Providence, RI 02904-2294 USA. 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 T_EX 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 T_EX production at the AMS sometimes requires extra fonts and macros that are not yet publicly available, T_EX files cannot be guaranteed to run through the author’s version of T_EX without errors. The AMS regrets that it cannot provide support to eliminate such errors in the author’s T_EX 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 tran-query@ams.org or directly to the Electronic Prepress Department, American Mathematical Society, 201 Charles Street, Providence, RI 02904-2294 USA.

Editors

The AMS uses Centralized Manuscript Processing for initial submissions to AMS journals. Authors should follow instructions listed on the Initial Submission page found at www.ams.org/tran/transubmit.html.

Algebra, ALEXANDER KLESHCHEV, Department of Mathematics, University of Oregon, Eugene, OR 97403-1222 USA; e-mail: ams@noether.uoregon.edu

Algebraic geometry, DAN ABRAMOVICH, Department of Mathematics, Brown University, Box 1917, Providence, RI 02912 USA; e-mail: amsedit@math.brown.edu

Algebraic geometry and its applications, MINA TEICHER, Emmy Noether Research Institute for Mathematics, Bar-Ilan University, Ramat-Gan 52900, Israel; e-mail: teicher@macs.biu.ac.il

Algebraic topology, ALEJANDRO ADEM, Department of Mathematics, University of British Columbia, Room 121, 1984 Mathematics Road, Vancouver, British Columbia, Canada V6T 1Z2; e-mail: transactions@math.ubc.ca

Combinatorics, JOHN R. STEMBRIDGE, Department of Mathematics, University of Michigan, Ann Arbor, MI 48109-1043 USA; e-mail: jrs@umich.edu

Complex analysis and harmonic analysis, ALEXANDER NAGEL, Department of Mathematics, University of Wisconsin, 480 Lincoln Drive, Madison, WI 53706-1313 USA; e-mail: nagel@math.wisc.edu

Differential geometry and global analysis, LISA C. JEFFREY, Department of Mathematics, University of Toronto, Bahen Centre for Information Technology, 40 St. George Street 6th Floor, Toronto, Ontario, Canada M5S 2E4; e-mail: jeffrey@math.toronto.edu

Dynamical systems and ergodic theory and complex analysis, YUNPING JIANG, Department of Mathematics, CUNY Queens College and Graduate Center, 65-30 Kissena Boulevard, Flushing, NY 11367 USA; e-mail: yunping.jiang@qc.cuny.edu

Functional analysis and operator algebras, DIMITRI SHLYAKHTENKO, Department of Mathematics, University of California, Los Angeles, CA 90095 USA; e-mail: shlyakht@math.ucla.edu

Geometric analysis, WILLIAM P. MINICOZZI II, Department of Mathematics, Johns Hopkins University, 3400 N. Charles Street, Baltimore, MD 21218 USA; e-mail: trans@math.jhu.edu

Geometric topology, MARK FEIGHN, Department of Mathematics, Rutgers University, Newark, NJ 07102 USA; e-mail: feighn@andromeda.rutgers.edu

Harmonic analysis, representation theory, and Lie theory, ROBERT J. STANTON, Department of Mathematics, Ohio State University, 231 West 18th Avenue, Columbus, OH 43210-1174 USA; e-mail: stanton@math.ohio-state.edu

Logic, STEFFEN LEMPP, Department of Mathematics, University of Wisconsin, 480 Lincoln Drive, Madison, WI 53706-1388 USA; e-mail: lempp@math.wisc.edu

Number theory, JONATHAN ROGAWSKI, Department of Mathematics, University of California, Los Angeles, CA 90095 USA; e-mail: jonr@math.ucla.edu

Partial differential equations, GUSTAVO PONCE, Department of Mathematics, South Hall, Room 6607, University of California, Santa Barbara, CA 93106 USA; e-mail: ponce@math.ucsb.edu

Partial differential equations and dynamical systems, PETER POLACIK, School of Mathematics, University of Minnesota, Minneapolis, MN 55455 USA; e-mail: polacik@math.umn.edu

Probability and statistics, RICHARD F. BASS, Department of Mathematics, University of Connecticut, Storrs, CT 06269-3009 USA; e-mail: bass@math.uconn.edu

Real analysis and partial differential equations, DANIEL TATARU, Department of Mathematics, University of California, Berkeley, CA 94720 USA; e-mail: tataru@math.berkeley.edu

All other communications to the editors should be addressed to the Managing Editor, ROBERT GURALNICK, Department of Mathematics, University of Southern California, Los Angeles, CA 90089-1113 USA; e-mail: guralnic@math.usc.edu

MEMOIRS OF THE AMERICAN MATHEMATICAL SOCIETY

Memoirs is devoted to research in pure and applied mathematics of the same nature as *Transactions*. An issue consists of one or more separately bound research tracts for which the authors provide reproduction copy. Papers intended for *Memoirs* should normally be at least 80 pages in length. *Memoirs* has the same editorial committee as *Transactions*; authors may choose an Editor from the list above upon submission.

(Continued from back cover)

Paolo Stellari , A finite group acting on the moduli space of K3 surfaces .	6631
Tomohiro Okuma , The geometric genus of splice-quotient singularities ..	6643
Ian Melbourne and Matthew Nicol , Large deviations for nonuniformly hyperbolic systems	6661
Uwe Einmahl and Deli Li , Characterization of LIL behavior in Banach space	6677
Daniel Levin and Mark Wildon , A combinatorial method for calculating the moments of Lévy area	6695
Roger L. Jones, Andreas Seeger, and James Wright , Strong variational and jump inequalities in harmonic analysis	6711

TRANSACTIONS OF THE AMERICAN MATHEMATICAL SOCIETY
 CONTENTS

Vol. 360, No. 12 Whole No. 883 December 2008

Stevo Todorčević and Stuart Zoble, Baire reflection 6181
Alan Hammond and Yuval Peres, Fluctuation of a planar Brownian loop capturing a large area 6197
Jürgen Herzog, Takayuki Hibi, Ngô Việt Trung, and Xinxian Zheng, Standard graded vertex cover algebras, cycles and leaves 6231
Ch. Riedtmann and G. Zwara, The zero set of semi-invariants for extended Dynkin quivers 6251
Frauke M. Bleher and Ted Chinburg, Galois structure of homogeneous coordinate rings 6269
François Dahmani and Daniel Groves, Detecting free splittings in relatively hyperbolic groups 6303
Siddhartha Bhattacharya, Isomorphism rigidity of commuting automorphisms 6319
E. Kirkman, J. Kuzmanovich, and J. J. Zhang, Rigidity of graded regular algebras 6331
Dong-Uy Shin, Polyhedral realization of the highest weight crystals for generalized Kac-Moody algebras 6371
Anthony To-Ming Lau and Michael Leinert, Fixed point property and the Fourier algebra of a locally compact group 6389
Athanassios S. Fokas and Laihan Luo, On the asymptotic linearization of acoustic waves 6403
Florin Diacu, Toshiaki Fujiwara, Ernesto Pérez-Chavela, and Manuele Santoprete, Saari’s homographic conjecture of the three-body problem 6447
G. Letac and J. Wesolowski, Laplace transforms which are negative powers of quadratic polynomials 6475
Dmitry Kleinbock, An extension of quantitative nondivergence and applications to Diophantine exponents 6497
Stoyu Barov and Jan J. Dijkstra, On closed sets with convex projections under narrow sets of directions 6525
Ross G. Pinsky, A probabilistic approach to bounded/positive solutions for Schrödinger operators with certain classes of potentials 6545
Martin Hadac, Well-posedness for the Kadomtsev-Petviashvili II equation and generalisations 6555
Tobias Kaiser, Dirichlet regularity of subanalytic domains 6573
Tong-jun He and Yi Shen, Maximal operators of tree martingale transforms and their maximal operator inequalities 6595
Helena Reis, Semi-complete vector fields of saddle-node type in \mathbb{C}^n 6611

(Continued on inside back cover)



0002-9947(200812)360:12*;1-H