

Communications in
**Mathematical
Physics**

Volume 169 1995

Chief Editor A. Jaffe, Cambridge, MA

Editorial Board H. Araki, Kyoto
D. Brydges, Charlottesville, VA
A. Connes, Bures-sur-Yvette
R. Dijkgraaf, Amsterdam
J.-P. Eckmann, Genève
G. Felder, Chapel Hill, NC
M. E. Fisher, College Park, MD
M. Herman, Palaiseau
M. Jimbo, Kyoto
A. Kupiainen, Helsinki
J. L. Lebowitz, New Brunswick, NJ
B. Simon, Pasadena, CA
Ya. G. Sinai, Princeton, NJ
S.-T. Yau, Cambridge, MA

Advisory Board M. F. Atiyah, Oxford
L. Faddeev, St. Petersburg
F. Hirzebruch, Bonn
R. Schrieffer, Santa Barbara, CA
I. Singer, Cambridge, MA
C. N. Yang, Stony Brook, NY



Springer

Copyright

Submission of a manuscript implies: that the work described has not been published before (except in the form of an abstract or as part of a published lecture, review, or thesis); that it is not under consideration for publication elsewhere; that its publication has been approved by all coauthors, if any, as well as by the responsible authorities at the institute where the work has been carried out; that, if and when the manuscript is accepted for publication, the authors agree to automatic transfer of the copyright to the publisher; and that the manuscript will not be published elsewhere in any language without the consent of the copyright holders.

All articles published in this journal are protected by copyright, which covers the exclusive rights to reproduce and distribute the article (e. g., as offprints), as well as all translation rights. No material published in this journal may be reproduced photographically or stored on microfilm, in electronic data bases, video disks, etc., without first obtaining written permission from the publisher.

The use of general descriptive names, trade names, trademarks, etc., in this publication, even if not specifically identified, does not imply that these names are not protected by the relevant laws and regulations.

While the advice and information in this journal is believed to be true and accurate at the date of its going to press, neither the authors, the editors, nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, express or implied, with respect to the material contained herein.

Special regulations for photocopies in the USA:

Photocopies may be made for personal or in-house use beyond the limitations stipulated under Section 107 or 108 of U.S. Copyright Law, provided a fee is paid. All fees should be paid to the Copyright Clearance Center, Inc., 21 Congress Street, Salem, MA 01970, USA, stating the ISSN 0010-3616, the volume, and the first and last page numbers of each article copied. The copyright owner's consent does not include copying for general distribution, promotion, new works, or resale. In these cases, specific written permission must first be obtained from the publisher.

The Canada Institute for Scientific and Technical Information (CISTI) provides a comprehensive, worldwide document delivery service for all Springer-Verlag journals. For more information, or to place an order for a copyright-cleared Springer-Verlag document, please contact Client Assistant, Document Delivery, Canada Institute for Scientific and Technical Information, Ottawa K1A 0S2, Canada (Tel.: 613-993-9251; Fax: 613-952-8243; e-mail: cisti.docdel@nrc.ca).

Springer-Verlag Berlin Heidelberg New York Tokyo Hong Kong Barcelona Budapest

Printers: Salabdruck, Berlin

Printed in Germany – © Springer-Verlag Berlin Heidelberg 1995

Springer-Verlag GmbH & Co KG, Berlin, Germany

Contents

- Andersen, H. H., Paradowski, J.: Fusion Categories Arising from Semisimple Lie Algebras 563
- Alekseev, A. Yu., Malkin, A. Z.: Symplectic Structure of the Moduli Space of Flat Connection on a Riemann Surface 99
- Avellaneda, M.: Statistical Properties of Shocks in Burgers Turbulence, II: Tail Probabilities for Velocities, Shock-Strengths and Rarefaction Intervals 45
- Bonechi, F., Giachetti, R., Sorace, E., Tarlini, M.: Deformation Quantization of the Heisenberg Group 627
- Bose, S. K.: The Galilean Group in $2+1$ Space-Times and its Central Extension 385
- Cherednik, I.: Elliptic Quantum Many-Body Problem and Double Affine Knizhnik-Zamolodchikov Equation 441
- den Hollander, F. → van der Hofstad, R. 397
- Faddeev, L. D., Kashaev, R. M.: Generalized Bethe Ansatz Equations for Hofstadter Problem 181
- Fiore, G.: Realization of $U_q(so(N))$ within the Differential Algebra on R_q^N 475
- Galperin, G., Krüger, T., Troubetzkoy, S.: Local Instability of Orbits in Polygonal and Polyhedral Billiards 463
- Gawdzki, K.: $SU(2)$ WZW Theory at Higher Genera 329
- Giachetti, R. → Bonechi, F. 627
- Hempel, R., Herbst, I.: Strong Magnetic Fields, Dirichlet Boundaries, and Spectral Gaps 237
- Herbst, I. → Hempel, R. 237
- Hof, A.: On Diffraction by Aperiodic Structures 25
- Johansson, K.: On Separation of Phases in One-Dimensional Gases 521
- Kargaev, P., Korotyaev, E.: Effective Masses and Conformal Mappings 597
- Kashaev, R. M. → Faddeev, L. D. 181
- Katsoulakis, M. A., Souganidis, P. E.: Generalized Motion by Mean Curvature as a Macroscopic Limit of Stochastic Ising Models with Long Range Interactions and Glauber Dynamics 61
- Korotyaev, E. → Kargaev, P. 597
- Kopper, C., Magnen, J., Rivasseau, V.: Mass Generation in the Large N Gross-Neveu Model 121
- Kunz, M.: Some Analytical Results About Two Physical Models of Phyllotaxis 261
- Krob, D., Leclerc, B.: Minor Identities for Quasi-Determinants and Quantum Determinants 1
- Krüger, T. → Galperin, G. 463
- Leclerc, B. → Krob, D. 1
- Liguori, A., Mintchev, M.: Fock Representations of Quantum Fields with Generalized Statistics 635
- Magnen, J. → Kopper, C. 121
- Malkin, A. Z. → Alekseev, A. Yu. 99
- Melvin, P. M., Morton, H. R.: The Coloured Jones Function 501
- Mintchev, M. → Liguori, A. 635
- Moroianu, A.: La Première Valeur Propre de l'Opérateur de Dirac sur les Variétés Kählériennes Compactes 373
- Morton, H. R. → Melvin, P. M. 501
- Paradowski, J. → Andersen, H. H. 563

- Rivasseau, V. → Kopper, C. 121
- Schlieder, S.: EPR-Relations, von Neumann's Standard Forms and a Proof Concerning a Conjecture of E. Scheibe 589
- Schomerus, V.: Construction of Field Algebras with Quantum Symmetry from Local Observables 193
- Sengupta, A.: The Semiclassical Limit for $SU(2)$ and $SO(3)$ Gauge Theory on the Torus 297
- Sorace, E. → Bonechi, F. 627
- Souganidis, P. E. → Katsoulakis, M. A. 61
- Tarlini, M. → Bonechi, F. 627
- Troubetzkoy, S. → Galparin, G. 463
- Van der Hofstad, R., den Hollander, F.: Scaling for a Random Polymer 397
- Wojciechowski, K. P.: The Additivity of the η -Invariant. The Case of a Singular Tangential Operator 315

Indexed in *Current Contents*

Evaluated and abstracted for PHYS on STN

Communications in Mathematical Physics

Volume 169 Number 3 1995

- G. Galperin, T. Krüger, Local Instability of Orbits in Polygonal
S. Troubetzkoy and Polyhedral Billiards 463
- G. Fiore Realization of $U_q(so(N))$
within the Differential Algebra on R_q^N 475
- P. M. Melvin, H. R. Morton The Coloured Jones Function 501
- K. Johansson On Separation of Phases in One-Dimensional
Gases 521
- H. H. Andersen, Fusion Categories Arising from Semisimple
J. Paradowski Lie Algebras 563
- S. Schlieder EPR-Relations, von Neumann's Standard Forms
and a Proof Concerning a Conjecture of E. Scheibe 589
- P. Kargaev, E. Korotyaev Effective Masses and Conformal Mappings 597
- F. Bonechi, R. Giachetti, Deformation Quantization of the Heisenberg Group 627
E. Sorace, M. Tarlini
- A. Liguori, M. Mintchev Fock Representations of Quantum Fields
with Generalized Statistics 635
- Contents of Volume 169 I
- Indexed in *Current Contents*
Evaluated and abstracted for *PHYS* on *STN*
- CMPHAY 169 (3) 463-652
May (I) 1995



Springer



Springer L^AT_EX and plain-T_EX macros

We can use your T_EX files directly for phototypesetting if you have used our macros.
Makropackages are available for the following journals:

IJour1 L^AT_EX styles for Acta Informatica, Applicable Algebra in Engineering, Communication and Computing, Archive for Mathematical Logic, Astronomy & Astrophysics Reviews, Calculus of Variations, Communications in Mathematical Physics, Continuum Mechanics and Thermodynamics, Economic Theory, Inventiones mathematicae, Journal of Evolutionary Economics, Journal of Mathematical Biology, Manuscripta mathematica, Mathematische Annalen, Mathematische Semesterberichte, Mathematische Zeitschrift, Numerische Mathematik, Probability Theory and Related Fields, Statistical papers, Theoretica Chimica Acta

Pjour1g global plain T_EX packages for all journals mentioned above; **Pjour 1** may also still be used. All packages are available via mailserver, FTP server or on DOS diskettes.

Mailserver

Send an e-mail message to svserv@vax.ntp.springer.de
which must contain one (several) of the following commands:

IJour1 get /tex/latex/ijour1.zip
Pjour1g get /tex/plain/pjour1g.zip

In order to be transmitted ungarbled via the net, the files are pkzipped and uuencoded. The line get /tex/help-tex.txt in your e-mail to svserv will send you a file explaining how to unpack the files you receive.
Please do not send regular e-mail to this address.

FTP server

The internet address is 192.129.24.12 (trick.ntp.springer.de) The username is FTP
or ANONYMOUS and the files are in the directory /pub/tex

Diskettes

To get the macro files and the AMS fonts (when needed) on 3.5" DOS diskettes
please write to:

Springer-Verlag, Journal Production,
Tiergartenstr. 17
D-69121 Heidelberg, Germany
e-mail: springer@vax.ntp.springer.de
FAX number: x 49 6221 487625

Please indicate clearly which macro package
you need and the journal for which your paper
is intended.

**Use our L^AT_EX and plain-T_EX macros
to prepare your article
for this and for other Springer journals.**