Mathematical Physics

Volume 171 1995

Chief Editor A. Jaffe, Cambridge, MA

Editorial Board H. Araki, Kyoto

D. Brydges, Charlottesville, VA A. Connes, Bures-sur-Yvette R. Dijkgraaf, Amsterdam 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



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publication, the authors agree to automatic transfer of the copyright to the publisher; and that the manuscript will not be published elsewhere in any language without the consent of the copyright holders.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, wich 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 publikation, 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, world-wide 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: Saladruck, Berlin Printed in Germany – © Springer-Verlag Berlin Heidelberg 1995 Springer-Verlag GmbH & Co KG, Berlin, Germany

Contents

- Adler, M., Shiota, T., van Moerbeke, P.: A Lax Representation for the Vertex Operator and the Central Extension 547
- Barata, J. C. A., Nill, F.: Electrically and Magnetically Charged States and Particles in the 2+1-Dimensional Z_N-Higgs Gauge Model 27
- Blau, M., Thompson, G.: On Diagonalization in Map(M, G) 639
- Breitenlohner, P., Maison, D.: On the Limiting Solution of the Bartnik-McKinnon Family 685
- Castellani, L.: Differential Calculus on $ISO_q(N)$, Quantum Poincaré Algebra and q-Gravity 383
- Chayes, L., Kotecky, R., Shlosman, S. B.: Aggregation and Intermediate Phases in Dilute Spin Systems 203
- Cheng, Y.: Modifying the KP, the nth
 Constrained KP Hierarchies and their
 Hamiltonian Structures 661
- Dixon, J. A., Minasian, R., Rahmfeld, J.: Higher Spin BRS Cohomology of Supersymmetric Chiral Matter in D = 4 459
- Efthimiou, C., LeClair, A.: Particle-Field Duality and Form Factors from Vertex Operators 531
- Esteban, M. J., Séré, E.: Stationary States of the Nonlinear Dirac Equation: A Variational Approach 323
- Funar, L.: 2 + 1-D Topological Quantum Field Theory and 2-D Conformal Field Theory 405
- Huybrechts, D.: The Tangent Bundle of a Calabi-Yau Manifold – Deformations and Restriction to Rational Curves 139
- Jiang, Y.: Markov Partitions and Feigenbaum-like Mappings 351

- Khesin, B., Zakharevich, I.: Poisson-Lie Group of Pseudodifferential Symbols 475
- Kimura, T., Stasheff, J., Voronov, A. A.: On Operad Structures of Moduli Spaces and String Theory 1
- Kotecky, R. → Chayes, L. 203
- LeClair, A. → Efthimiou, C. 531
- Maison, D. \rightarrow Breitenlohner, P. 685 Minasian, R. \rightarrow Dixon, J. A. 459
- Nill, F. \rightarrow Barata, J. C. A. 27
- Rahmfeld, J. → Dixon, J. A. 459 Rieffel, M. A.: Non-Compact Quantum Groups Associated with Abelian Subgroups 181
- Rozansky, L.: A Large k Asymptotics of Witten's Invariant of Seifert Manifolds 279
- Seppäläinen, T.: Entropy, Limit Theorems, and Variational Principles for Disordered Lattice Systems 233
- Séré, E. → Esteban, M. J. 323
- Shiota, T. → Adler, M. 547
- Shlosman, S. B. → Chayes, L. 203
- Smoller, J. A., Wasserman, A. G.: An
 Investigation of the Limiting Behavior of Particle-like Solutions to the Einstein-Yang/Mills Equations and a New Black Hole Solution (*Erratum*) 683
- Stasheff, J. \rightarrow Kimura, T. 1
- Thompson, G. → Blau, M. 639 Tong, Y. L. L., Tsai, I-H.: Curvature of Determinant Bundles for Degenerate Families 589
- Tsai, I-H. \rightarrow Tong, Y. L. L. 589
- van Moerbeke, P. → Adler, M. 547 Varchenko, A. N.: Asymptotic Solutions to the Knizhnik-Zamolodchikov Equation and Crystal Base 99

Voronov, A. A. \rightarrow Kimura, T. 1

Walters, S. G.: Inductive Limit Automorphisms of the Irrational Rotation Algebra 365

Wasserman, A. G. \rightarrow Smoller, J. A. 683 Watts, G. M. T.: Fusion in the W_3 Algebra

Widom, H.: Asymptotics for the Fredholm Determinant of the Sine Kernel on a Union of Intervals 159 Yang, T.: A Functional Integral Approach to Shock Wave Solutions of Euler Equations with Spherical Symmetry 607

Zakharevich, I. → Khesin, B. 475

Indexed in *Current Contents*Evaluated and abstracted for PHYS on STN

475

Communications in Mathem

Volume 171 Number 3 1995

J.	A.	Dixon,	R.	Minasian,
			.1	Rahmfeld

Higher Spin BRS Cohomology of Supersymmetric Chiral Matter in D = 4

B. Khesin, I. Zakharevich Poisson-Lie Group of Pseudodifferential Symbols

C. Efthimiou, A. LeClair Particle-Field Duality and Form Factors from Vertex Operators 531

M. Adler, T. Shiota, A Lax Representation for the Vertex Operator and P. van Moerbeke the Central Extension

Y. L. L. Tong, I-Hsun Tsai Curvature of Determinant Bundles for Degenerate Families 589

T. Yang A Functional Integral Approach to Shock Wave Solutions of Euler Equations with Spherical Symmetry 607

M. Blau, G. Thompson On Diagonalization in Map (M, G) 639

Y. Cheng Modifying the KP, the nth Constrained KP Hierarchies and their Hamiltonian Structures 661

J. A. Smoller, An Investigation of the Limiting Behavior of Particle-like A. G. Wasserman Solutions to the Einstein-Yang/Mills Equations and a New Black Hole Solution (Erratum) 683

P. Breitenlohner, On the Limiting Solution of the Bartnik-McKinnon D. Maison Family 685

Contents of Volume 171

Indexed in Current Contents Evaluated and abstracted for PHYS on STN CMPHAY 171 (3) 459-690 August (II) 1995





Springer LATEX and plain-TEX macros

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

LJour1

IATEX 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 $T_{\rm E}X$ 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:

LJour1 PJour1g get /tex/latex/ljour1.zip
get /tex/plain/pjour1g.zip

In order to be transmitted ungarbled via the net, the files are pkzipped and uunencoded. 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 IMEX and plain-TEX macros to prepare your article for this and for other Springer journals.