

Communications in  
**Mathematical  
 Physics**

Volume 93 Number 1 1984

- |  |   |
|--|---|
| L. M. Sibner, R. J. Sibner<br>Zhongxin Zhao                          | Removable Singularities of Coupled Yang-Mills Fields in $R^3$ 1<br>Uniform Boundedness of Conditional Gauge and Schrödinger<br>Equations 19   |
| J. Harnad, Y. Saint-Aubin,<br>S. Shnider                             | The Soliton Correlation Matrix and the Reduction Problem<br>for Integrable Systems 33   |
| T. Chayes, L. Chayes, E. H. Lieb<br>T. Ando, M. Zerner<br>W. Arveson | The Inverse Problem in Classical Statistical Mechanics 57<br>Sur une Valeur propre d'un Operateur 123<br>Quantization and the Uniqueness of Invariant Structures<br><i>Addendum</i> 141 |

Indexed in Current Contents  
 Evaluated for Physics Briefs and INKA-PHYS data base



Springer-Verlag  
 Berlin Heidelberg New York Tokyo

# Communications in Mathematical Physics

**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 the authors and by the responsible authorities — tacitly or explicitly — in the institutes where the work was carried out and that, if accepted, it will not be published elsewhere in the same form, in either the same or another language, without the consent of the copyright holders. By submitting a manuscript, the authors agree that the copyright for their article is transferred to the publisher if and when the article is accepted for publication. The copyright covers the exclusive rights to reproduce and distribute the article, including reprints, photographic reproductions, microform, electronic data-base, video-disks, or any other reproductions of similar nature, and translations. Photographic reproduction, microform, electronic data-base, video-disks, or any other reproduction of text, figures or tables from this journal is prohibited without permission obtained from the publishers.

While the advice and information in this journal is believed to be true and accurate at the date of going to press, neither the authors nor the editors nor the publisher can accept 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 the USA.* Photocopies may be made for personal or internal use beyond that permitted by Section 107 or 108 of the U.S. Copyright Law, provided a fee is paid. This fee is \$ 0.20 per page or a minimum of \$ 1.00 if an article consists of less than five pages. Please pay this fee to the Copyright Clearance Center, Inc., 21 Congress Street, Salem, MA 01970, USA, stating the ISSN 0010-3616 volume, and first and last page numbers of each article copied.

The copyright owner's consent does not extend to copying for general distribution, for promotion, for creating new works, or for resale. Specific written permission must be obtained from the publisher for such copying.

**Authors should mark manuscripts according to the "Instructions to Authors." They should be aware that manuscripts which are not properly marked require additional time for publication. Manuscripts should be sent to:**

*Prof. H. Araki*, Research Institute for Mathematical Sciences, Kyoto University, Kyoto, 606, Japan

*Mathematical methods with direct relevance to physics*

*Prof. J. Fröhlich*, ETH-Hönggerberg, CH-8093 Zürich, Switzerland

*Equilibrium statistical mechanics*

*Prof. R. Haag*, II. Institut für Theoretische Physik, Luruper Chaussee 149, D-2000 Hamburg 50, Federal Republic of Germany

*Conceptual structure*

*Prof. S. Hawking*, Department of Applied Mathematics and Theoretical Physics, University of Cambridge, Silver Street, Cambridge CB3 9EW, England

*Gravitation and field theories*

*Prof. A. Jaffe*, Lyman Laboratory of Physics, Harvard University, Cambridge, MA 02138, USA

*Chief Editor*

*Prof. O. Lanford*, I. H. E. S., F-91440 Bures-sur-Yvette, France

*Dynamical systems*

*Prof. J. Lascoux*, Physique Théorique, Ecole Polytechnique, F-91120 Palaiseau, France

*Prof. J. L. Lebowitz*, Department of Mathematics, Rutgers University, New Brunswick, NJ 08903, USA

*Nonequilibrium statistical mechanics*

*Prof. G. Mack*, II. Institut für Theoretische Physik, Luruper Chaussee 149, D-2000 Hamburg 50, Federal Republic of Germany

*Quantum field theory and statistical mechanics*

*Prof. J. Mather*, Department of Mathematics, Fine Hall, Princeton University, Princeton, NJ 08544, USA

*Classical dynamical systems*

*Prof. L. Nirenberg*, Courant Institute, New York University, 251 Mercer Street, New York, NY, 10012, USA

*Partial differential equations*

*Prof. K. Osterwalder*, E.T.H. Zentrum, CH-8092 Zürich, Switzerland

*Constructive quantum field theory and general theory of quantized fields*

*Prof. B. Simon*, Department of Mathematics, California Institute of Technology, Pasadena, CA 91125, USA

*Schrödinger operators and atomic physics*

*Prof. Ya. G. Sinai*, L. D. Landau Institute for Theoretical Physics, Academy of Sciences, Vorobyevskoe Shosse, 2, SU-117334 Moscow, USSR

*Statistical physics and dynamical systems*

*Prof. T. Spencer*, Courant Institute, New York University, 251 Mercer Street, New York, NY 10012, USA

*Disordered systems*

*Prof. R. Stora*, CERN, Theory Division, CH-1211 Geneva 23, Switzerland

*Lagrangian quantum field theory*

*Prof. S.-T. Yau*, School of Mathematics, The Institute for Advanced Study, Princeton, NJ 08540, USA

*Relativity; geometry and physics*

100 offprints of each article will be supplied to the author free of charge and additional copies may be obtained at cost price if ordered before the issue goes to press.

**Subscription Information.** Vols. 92-96, (4 issues each) will appear in 1984. The price of each volume is DM 394.00 or approx. US \$ 151.60. Prices for back volumes are available on request. Correspondence concerning subscriptions should be addressed to the publisher. **North America.** Annual subscription rate: US \$ 802.00, including carriage charges. Subscriptions are entered with prepayment only. Orders should be addressed to: Springer-Verlag New York Inc., Service Center Secaucus, 44 Hartz Way, Secaucus, NJ 07094, USA, Telephone (201) 348-4033, Telex 0023 125994. Members of the International Association of Mathematical Physics (IAMP) are entitled to receive the journal strictly for their own personal use at a special reduced rate. The orders must be placed through the IAMP. **All Other Countries.** Annual subscription rate: DM 1970.00, plus carriage charges. Airmail delivery on request only. For Japan, carriage charges (Surface Airmail Lifted) are DM 191.40; for India DM 108.50. Single issue price DM 118.20 plus carriage charges. — Orders for all countries except North America can either be placed with your bookdealer or sent directly to: Springer-Verlag, Heidelberger Platz 3, D-1000 Berlin 33. Tel. 0 30/82 07-1, Telex 01 83 319. **Changes of Address:** Allow six weeks for all changes to become effective. All communications should include both old and new addresses (with Postal Codes) and should be accompanied by a mailing label from a recent issue. **Microform:** Microform editions are available from: University Microfilms International, 300 N. Zeeb Road, Ann Arbor, MI 48106, USA.

## Production

Journal Production Department I, Springer-Verlag,  
Postfach 10 52 80, D-6900 Heidelberg 1, Federal Republic of Germany,  
Tel. 0 62 21/4 87-3 26, Telex 04 61 723