

Communications in

Mathematical Physics

Volume 54 1977

Chief Editor J. Glimm, New York, NY

Editorial Board H. Araki, Kyoto
R. Geroch, Chicago, IL
J. Ginibre, Orsay
R. Haag, Hamburg
A. Jaffe, Cambridge, MA
J. L. Lebowitz, New York, NY
E. Lieb, Princeton, NJ
J. Moser, New York, NY
R. Stora, Marseille

Advisory Board G. Gallavotti, Rome
K. Hepp, Zürich
R. Jost, Zürich
M. C. Polivanov, Moscow
D. Ruelle, Bures-sur-Yvette
A. S. Wightman, Princeton, NJ



Springer-Verlag
Berlin Heidelberg New York

The exclusive copyright for all languages and countries, including the right for photomechanical and any other reproduction, also in microform, is transferred to the publisher.

Alle Rechte, einschließlich das der Übersetzung in fremde Sprachen und das der fotomechanischen Wiedergabe oder einer sonstigen Vervielfältigung, auch in Mikroform, vorbehalten. Jedoch wird gewerblichen Unternehmen für den innerbetrieblichen Gebrauch nach Maßgabe des zwischen dem Börsenverein des Deutschen Buchhandels e. V. und dem Bundesverband der Deutschen Industrie abgeschlossenen Rahmenabkommens die Anfertigung einer fotomechanischen Vervielfältigung gestattet. Wenn für diese Zeitschrift kein Pauschalabkommen mit dem Verlag vereinbart worden ist, ist eine Wertmarke im Betrage von DM 0,40 pro Seite zu verwenden. *Der Verlag lässt diese Beträge den Autorenverbänden zufließen.*

Springer-Verlag Berlin Heidelberg New York

Printers: Brühlsche Universitätsdruckerei, Lahn-Gießen

Printed in Germany — © by Springer-Verlag Berlin Heidelberg 1977

Contents

Babbitt, D., Thomas, L.: Ground State Representation of the Infinite One-dimensional Heisenberg Ferromagnet. II. An Explicit Plancherel Formula	255
Bros, J., Lassalle, M.: Analyticity Properties and Many-Particle Structure in General Quantum Field Theory. III. Two-Particle Irreducibility in a Single Channel.	33
Dobrushin, R. L., Tirozzi, B.: The Central Limit Theorem and the Problem of Equivalence of Ensembles	173
Dubois-Violette, M.: A Generalization of the Classical Moment Problem on \star -Algebras with Applications to Relativistic Quantum Theory. II.	151
Evans, D. E.: Irreducible Quantum Dynamical Semigroups	293
Fröhlich, J.: Application of Commutator Theorems to the Integration of Representations of Lie Algebras and Commutation Relations	135
Goddard, A. J.: Foliations of Space-Times by Spacelike Hypersurfaces of Constant Mean Curvature	279
Gurevich, B. M., Suhov, Iu. M.: Stationary Solutions of the Bogoliubov Hierarchy Equations in Classical Statistical Mechanics. 2	81
Kashiwara, M., Kawai, T.: Holonomic Character and Local Monodromy Structure of Feynman Integrals	121
Kawai, T., s. Kashiwara, M.	121
Lassalle, M., s. Bros, J.	33
Lebowitz, J. L., s. Spohn, H.	97
Lüscher, M.: Construction of a Selfadjoint, Strictly Positive Transfer Matrix for Euclidean Lattice Gauge Theories	283
Moscovici, H.: Coherent State Representations of Nilpotent Lie Groups	63
Rabsztyn, S.: On the Integrability of the Lie Algebra of the Conformal Group in Quantum Field Theory	219
Radin, C.: The Dynamical Instability of Nonrelativistic Many-Body Systems	69
Rühl, W., Yunn, B. C.: Quantum Fields with a Multiplicative Structure	249
Spohn, H., Lebowitz, J. L.: Stationary Non-Equilibrium States of Infinite Harmonic Systems . .	97
Štefan, P.: A Theorem of Šarkovskii on the Existence of Periodic Orbits of Continuous Endomorphisms of the Real Line	237
Suhov, Iu. M., s. Gurevich, B. M.	81
Thomas, L., s. Babbitt, D.	255
Tirozzi, B., s. Dobrushin, R. L.	173
Uhlmann, A.: Relative Entropy and the Wigner-Yanase-Dyson-Lieb Concavity in an Interpolation Theory	21
Wald, R. M.: The Back Reaction Effect in Particle Creation in Curved Spacetime	1
Williams, D. N.: The Euclidean Loop Expansion for Massive $\lambda\phi_4^4$: Through One Loop	193
Yunn, B. C., s. Rühl, W.	249

Indexed in Current Contents

Communications in
**Mathematical
Physics**

Volume 54 Number 1 1977

- R. M. Wald The Back Reaction Effect in Particle Creation
in Curved Spacetime 1
- A. Uhlmann Relative Entropy and the Wigner-Yanase-Dyson-
Lieb Concavity in an Interpolation Theory 21
- J. Bros, M. Lassalle Analyticity Properties and Many-Particle
Structure in General Quantum Field Theory.
III. Two-Particle Irreducibility in a Single
Channel 33
- H. Moscovici Coherent State Representations of Nilpotent
Lie Groups 63
- C. Radin The Dynamical Instability of Nonrelativistic
Many-Body Systems 69
- B. M. Gurevich,
Iu. M. Suhov Stationary Solutions of the Bogoliubov
Hierarchy Equations in Classical Statistical
Mechanics. 2 81

Indexed in Current Contents



Springer-Verlag
Berlin Heidelberg New York

Commun. math. Phys.

ISSN 0010-3616 CMPHAY 54 (1) 1 ~ 96 (1977)

13. V. 1977

Communications in Mathematical Physics

It is a fundamental condition that submitted manuscripts have not been, and will not be, simultaneously submitted elsewhere.

With the acceptance of a manuscript for publication the publisher acquires the sole copyright for all languages and countries.

Photographic reproduction, microform, or any other reproduction of text, figures, or tables from this journal is prohibited without permission obtained from the publisher.

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.

Manuscripts may be sent to:

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

Mathematical methods (Functional analysis, operator algebra and group theory, with direct relevance to physics)

Prof. R. Geroch, E. Fermi Institute, University of Chicago, 933 East 56 Street, Chicago, IL 60637, USA

General relativity

Prof. J. Ginibre, Laboratoire de Physique Théorique et Hautes Énergies, Université de Paris IX, Batiment 211, F-91405 Orsay, France

Quantum mechanics

Prof. J. Glimm, The Rockefeller University, 1230 York Avenue, New York, NY 10021, USA

Chief Editor

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

General structure of quantum field theory and foundations of quantum mechanics

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

Constructive quantum field theory

Prof. J. L. Lebowitz, Belfer Graduate School of Science, Yeshiva University, New York, NY 10033, USA

Nonequilibrium statistical mechanics (Time development of infinite systems, ergodic theory, transport theory, random processes, dissipative phenomena)

Prof. E. Lieb, Physics Department, Princeton University, P.O. Box 708, Princeton, NJ 08540, USA

Equilibrium statistical mechanics

Prof. J. Moser, New York University, Courant Institute of Mathematical Sciences, 251 Mercer Street, New York, NY 10012, USA

Dynamical systems (Differential equations and their application to physical systems), classical mechanics

Prof. R. Stora, Centre National de la Recherche Scientifique, Centre de Physique Théorique, 31, chemin J. Aiguier, F-13274 Marseille, Cedex 2, France

Lagrangian quantum field theory

In order to avoid delay in publication this journal appears in loose numbers which can be subsequently assembled in volumes.

Subscription Information

Volumes 52—57 (3 issues each) will appear in 1977. Information about obtaining back volumes and microform editions available upon request.

All Countries (Except North America). Subscription rate: DM 888,—, plus postage and handling. Orders can either be placed with your bookdealer or sent directly to: Springer-Verlag, Heidelberger Platz 3, D-1000 Berlin 33.

North America. Subscription rate: \$ 374.30, including postage and handling. Subscriptions are entered with prepayment only. Orders should be addressed to: Springer-Verlag New York Inc., 175 Fifth Avenue, New York, NY 10010, USA.

Springer-Verlag

Journal Production Dept. I
Postfach 105280
D-6900 Heidelberg 1
Telephone (0621) 487-1
Telex 04-61690

Springer-Verlag

Heidelberger Platz 3
D-1000 Berlin 33
Telephone (030) 822001
Telex 01-83319

Springer-Verlag

New York Inc.
175 Fifth Avenue
New York, NY 10010, USA
Telephone (212) 673-2660
Telex 23-2235