

INTERNATIONAL ASSOCIATION OF MATHEMATICAL PHYSICS



IAMP NEWS BULLETIN

MARCH 1993

President:

*Prof. A.M. Jaffe
Department of Physics
Harvard University
Cambridge, Mass. 02138, USA*

Secretary:

*Prof. A. Truman
Department of Mathematics
and Computer Science
University College of Swansea
SWANSEA SA2 8PP UK*

Vice-President:

*Prof. Y. Sinai
Landau Institute of Theor. Phys.
Academy of Science
Vorobiev Chasse 2
Moscow V-334, Russia*

Treasurer:

*Prof. G.G. Emch
Department of Mathematics
University of Florida
Gainesville, FL 32611, USA*

News from the President

This January I visited Paris, and I am happy to report that arrangements are proceeding well for the 1994 Congress. It is now already time to consider our next meeting in 1997! I invite inquiries and proposals from interested groups to host such a meeting. I hope that it will be possible to have a site for 1997 selected by the end of the Paris Congress. This means that proposals should be made in the not too distant future, in order that they can be circulated and considered by the Executive Committee before they meet at the Paris Congress. Any groups seriously considering making such proposals should contact me. I will try to advise you, based on my experience. I hope that the proposals themselves can be sent to me by the end of February 1994.

There is another topic about which I would like some feedback from the membership. I plan to propose to the Executive Committee that the I.A.M.P. appoint a committee on electronic communications. I feel that the Texas preprint server is an excellent example of the potential for electronic communications among members in the future. It seems to me important to have an I.A.M.P. committee to look carefully at questions of electronic communication. We need to consider how to improve the intra-I.A.M.P. communication, as well as how to interface our members with related services of other organizations. Please write me with your comments on this issue:

Arthur Jaffe
Lyman Laboratory of Physics
Harvard University
Cambridge, MA 02138
U.S.A
email.iamp@math.harvard.edu

INTERNATIONAL CONGRESS OF MATHEMATICAL PHYSICS
(ICMP)

Paris, 18 - 23 July 1994

Dear Colleagues and Friends, members of the IAMP,

It is a great pleasure for me to present the next International Congress of Mathematical Physics (ICMP), which will take place in Paris from Monday, July 18 to Saturday, July 23, 1994. It will be complemented for interested participants by some specialized colloquia from Monday, July 25 to Wednesday, July 27. You can be sure we will do everything possible to welcome you in the best possible way, and to allow you to enjoy a top-quality scientific program. In agreement with wishes many of you expressed, the Congress will take place entirely inside Paris. It will meet at the sites indicated below, in contrast to the preliminary announcement made last year. We will do our best to ensure that financial problems will not be an obstacle: with low-cost accommodation possible, e.g. in Cité Universitaire in nice surroundings, with reduced costs negotiated in selected, good quality hotels (see enclosed information), and with reduced registration fees (covering direct services to participants) available whenever needed. I expect that the normal fee will be around 800-1000 FF and a reduced fee around 400-500 FF. We are hoping that we can arrange the minimum total cost (including the reduced fee and living expenses at Cité Universitaire) to be less than 1,500FF. Finally, a large number of fellowships in relevant cases will pay these expenses and possibly part of the travel expenses. They are intended in particular (though not exclusively) to participants from Eastern Europe and developing countries.

The ICMP-Paris is organized in close collaboration by IAMP (which has appointed the International Scientific Committee) and a Paris Committee composed of scientists representing a number of universities and institutes of the Paris area, such as departments of Centre d'Etudes de Saclay, Collège de France, Ecole Normale Supérieure, Ecole Polytechnique, Institut des Hautes Etudes Scientifiques, Paris VI, Paris VII, Paris-Dauphine, Paris-Sud (Orsay). The organization also includes the important cooperation and support of the United Nations Educational, Scientific and Cultural Organization (UNESCO), and of the Centre National de la Recherche Scientifiques (CNRS) and the Commissariat à l'Energie Atomique (CEA). On the other hand, the Congress is also sponsored by the French Ministers of Education and of Research, the Mayor of Paris, and the French, European, and International Societies of Physics and of Mathematics, in particular the IMU (International Mathematical Union) and IUPAP (International Union of Pure and Applied Physics). Some other institutions will also probably give us some financial support.

The main site of the Congress will be the modern, comfortable, and beautiful Centre de Conférences of UNESCO, in the heart of Paris, close to Champs de Mars and the Eiffel Tower. There will also be one day in the Sorbonne, the historical heart of the French university, in Quartier Latin. Lectures at the Sorbonne will be held in the somewhat less comfortable, but impressive and beautiful Grand Amphithéâtre, which is used only for cultural activities with particular prestige. I can safely say that this combination

(UNESCO and the Sorbonne) corresponds to the very best international standards from both the technical and cultural viewpoints.

The scientific program will include approximately 10-12 plenary one-hour lectures of general interest and around 12 sessions on developments and trends in fields of mathematical physics (with two simultaneous parallel sessions the rule). Besides invited lectures, all participants will be welcome to contribute by sending abstracts to be included in a book distributed at the beginning of the Congress. On the other hand, the possibility for participants to organize and present short communications in special sessions is under study.

As you can imagine, there are many enjoyable activities in Paris apart from the scientific program. We shall help you in various ways with cultural activities, and we shall also propose social events, including a reception-cocktail at Hotel de Ville of Paris for early registrants, a cocktail in Grand Salon of Sorbonne, a trip on the bateaux mouches along the river Seine,.... We hope they will be enjoyable and will also favour general scientific exchanges. These social events will be free of supplementary charge, with the exception of the cocktail-buffet at Sorbonne (200-250FF).

For participants wishing to stay in Paris after the Congress, various colloquia will be proposed the following week. We hope to offer fellowships which will also partly cover living expenses during this second week, especially for those attending these colloquia and/or participating in the International Congress of Mathematics in Zürich (or other scientific activities) starting in early August. Excursions (e.g. to Versailles) may be organized on Saturday afternoon, July 24 or Sunday, July 25 and a 2-day excursion to the Chateaux de la Loire may also be considered the week following the Congress.

I very much hope a very large number of you will come to Paris and I am convinced your stay here should indeed be exciting, interesting, and useful. Please, fill out and send me the enclosed preregistration form if you are interested and whether or not you have decided to come. You will then receive further information, in particular the scientific program, on which you can base your further plans.

D. Iagolnitzer
Service de Physique Théorique
CEA-Saclay
F-91191 Gif-sur-Yvette Cedex
France

Information on Accommodation (costs = 1 night)
(1 US dollar = 5,6 FF in February, 1993)

Student-type: Cité Universitaire, 10 minutes from the Sorbonne, 15-20 minutes
from UNESCO, b, subway
100-150 FF single room, 70-100 FF per person double room

Hotels: All costs indicated apply to the room occupied by 1, 2 (or possibly 3) persons.
(There is only a small difference.) They include a 10-15% reduction in 2
or in 3-star hotels, and a 40-50% in 4-star hotels. They do not include
breakfast unless otherwise stated.

- Low cost hotels (Quartier Latin,...): 300FF
- Good 2-star, large and modern: Hotel Arcade, close to UNESCO: 400-450FF
- Good 2 and 3-star hotels (Quartier Latin, Montparnasse,...): 450-650FF
- 4-star hotels:

Pullmann St. Jacques (close to Denfert-Rochereau, modern international
hotel, not very well situated, but direct subway or bus to UNESCO
or Sorbonne (10-15 minutes). Large and comfortable rooms, but
not excellent. 730FF

Hotel Hilton includes a buffet breakfast for 1 or 2 persons.

It is a good international hotel, with comfortable rooms, close
to the Eiffel Tower, a nice 15 minute walk to UNESCO through
gardens of Champ de Mars, direct subway to Quartier Latin.
900-950FF

Hotel Lutetia includes a continental breakfast for 1 or 2 persons. It is a
renowned, attractive hotel in traditional French style. 15
minute walk either to UNESCO or the Sorbonne, 5-7 minutes by
direct subway or bus in either case. Standard rooms in Lutetia are
less comfortable than Hilton ones. Deluxe rooms are better.
850-950-1050FF (standard, deluxe, executive)

Apartments: 400-800FF (and more) depending on quality, situation, number of rooms, ...
Good choice available.

QP — PQ

QUANTUM PROBABILITY AND APPLICATIONS

Nottingham, 29 March - 3 April 1993

The conference seeks to bring together mathematicians and physicists interested in various aspects of quantum probability. The mornings will be reserved for expository lectures which are intended to be accessible to non-specialists. Research presentations will be scheduled for early evening, leaving afternoons free for less formal seminars and discussion.

Among the topics to be discussed are: quantum stochastic flows and non-commutative geometry; markov structures and quantum groups; quantum martingales and stopping times; non-commutative independence and central limit theorems; non-causal, Wiener space and white noise analysis; quantum measurement and open systems; quantum entropy and statistical mechanics.

Organised by: R L Hudson, J M Lindsay

Registration Fee: £ 90 *Accommodation (incl. breakfast):* £ 150

For further information please contact:

Jo Frampton, Conference Secretary

Email: jof@maths.nott.ac.uk

FAX: +44-602-514951

Telex: 37346 UNINOTG

Mathematics Department, University Park,

GB-Nottingham NG7 2RD

INTERNATIONAL CONFERENCE

on

MATHEMATICAL RESULTS IN QUANTUM MECHANICS

in

BLOSSIN near BERLIN (Germany)

May 17 - 21, 1993

TOPICS

Spectral and Scattering Theory of Schrödinger Operators including Electric, Magnetic, Random and Strongly Singular Potentials, Feller Generators and Stochastic Spectral Analysis, Quantum Waveguides, Quantum Mechanics on Graphs and Extension Theory, Quantum Chaotic Systems

ORGANIZING COMMITTEE

Michael Demuth (Potsdam, Germany)
Pavel Exner (Prague, Czechoslovakia)
Hagen Neidhardt (Berlin, Germany)
Valentin Zagrebnov (Leuven, Belgium)

INFORMATION

H. Neidhardt Phone: (030) 314 79399 (office)
Technische Universität Berlin Phone: (030) 9490532 (private)
FB Mathematik MA 7-2 FAX: (030) 314 21577
Straße des 17. Juni 136 E-Mail: neidhard@math.tu-berlin.de
W-1000 Berlin 12
Deutschland

The conference is supported by DFG, SFB 288 and Max-Planck-Gesellschaft.

Organizing Committee

Per Christian Hemmer, Professor of Physics, Norwegian Institute of Technology, University of Trondheim

Helge Holden, Professor of Mathematics, Norwegian Institute of Technology, University of Trondheim

Signe Kjelstrup Flakke, Professor of Physical Chemistry, Norwegian Institute of Technology, University of Trondheim

Harald A. Øye, Professor of Inorganic Chemistry, Norwegian Institute of Technology, University of Trondheim, President of NTVA

Geir Waise, Director of Department of Chemistry and Chemical Engineering, Norwegian Institute of Technology, University of Trondheim, Executive Secretary of NTVA

Further information:

The Onsager Symposium
The Norwegian Institute of Technology
N-7034 Trondheim
Norway

E-mail: onsager93@imf.unit.no
Telefax: + 47 7 591676

The Lars Onsager Symposium

Coupled Transport Processes and Phase Transitions



June 2-4 1993



Venue: The Norwegian
Institute of Technology
Trondheim
Norway



The Norwegian Academy of
Technological Sciences

Lars Onsager was born in Oslo, Norway on 27 November 1903. He graduated from the *Norwegian Institute of Technology (NTH)* in 1925 as a chemical engineer. After having worked at ETH (Zürich), Johns Hopkins University and Brown University, he stayed with Yale University from 1933 to his retirement in 1972. He was associated with the University of Miami during his last years, until he died on 5 October 1976.

Onsager's scientific achievements were characterized by deep insights in the natural sciences. His two most well-known contributions are the explicit solution of the two-dimensional Ising model, and his classic work on irreversible processes. The Ising model solution was a mathematical *tour-de-force* that created a sensation when it appeared, and gave the theory of phase transitions new impetus. The 1931 work on the reciprocal relations for irreversible processes, on the other hand, did not receive the attention it deserved before many years later. In 1968 Onsager was awarded the *Nobel Prize* in Chemistry for this discovery.

To commemorate the 90th anniversary of Lars Onsager's birth, the *Norwegian Institute of Technology*, his *Alma Mater*, and the *Norwegian Academy of Technological Sciences (NTVA)* will host this symposium on

**Coupled Transport Processes
and
Phase Transitions**

The first *Lars Onsager Lecture* will be presented by

Professor Michael E. Fisher
University of Maryland, USA

Lars Onsager 1903-1976:
Theorist for the Twentieth Century

Invited speakers:

- R. Baxter (Canberra)
- M.E. Fisher (Maryland)
- H.L. Friedman (Stony Brook)
- L. Kadanoff[?] (Chicago)
- J.L. Lebowitz (Rutgers)
- H.N.W. Lekkerkerker (Utrecht)
- E.H. Lieb (Princeton)
- J. Nagle (Carnegie Mellon)
- G. Stell (Stony Brook)

[?] to be confirmed

Preliminary registration form

Please return this form as soon as possible.

- Please send me the second announcement
- I am planning to attend
- I am planning to submit a contribution to the following session:
 - Coupled transport processes
 - Phase transitions
 - I prefer poster talk

Last name: _____
 First name: _____
 Address: _____

Telephone: _____
 Telefax: _____

E-mail: _____

In addition to the invited lectures there will be two parallel sessions for contributed talks of 15-20 min duration, and one afternoon with poster sessions. The parallel sessions will be devoted to (1) *Coupled transport processes* and to (2) *Phase transitions*.

Call for papers

The deadline for submission of abstracts for contributed talks or posters is February 1, 1993. The abstract, in English, should be typewritten (1 A4 page).

Registration

The registration fee includes admittance to all sessions, booklet of abstracts, coffee/tea during breaks and the conference dinner.

Early Registration before March 20, 1993:

NOK 1000 Graduate students: NOK 800

Late Registration deadline May 1, 1993:

NOK 1200 Graduate students: NOK 1000

Prepayment is required (by cheque, bank giro or invoice).

Key Dates

Submission of abstracts, deadline February 1, 1993

Authors notified of abstract selection March 1, 1993

Early Registration, deadline March 20, 1993

Late Registration, deadline May 1, 1993

Sponsors

Support from *The Norwegian Research Council for Science and the Humanities (NAVF)* and *The Royal Norwegian Council for Technical and Industrial Research (NTNF)* is gratefully acknowledged.

**NATO ADVANCED RESEARCH WORKSHOP
JULY 19-24, 1993, LEUVEN, BELGIUM**

ON THREE LEVELS
**The mathematical physics of
micro-, meso- and macro- phenomena.**

Horizon

Large deviations and entropy in dynamical systems, microscopic models of reaction-diffusion processes, quantum groups, quantum spin systems, Bethe-Ansatz, computational aspects, semi-classical approaches and wave mechanics of mesoscopic systems, hydrodynamic limits, kinetic limits, weak and strong coupling limits, quantum disorder, quantum Hall effect and random Schrödinger operators, macroscopic quantum effects, large scale fluctuations.

Invited speakers

- M. Aizenman (Princeton)
 - P. Collet (Paris)
 - B. Derrida (Saclay)
 - D.E. Evans (Swansea)
 - J. Fritz* (Budapest)
 - T. Kennedy (Tucson)
 - L. Landau (London)
 - B. Nachtergaele (Princeton)
 - E. Presutti* (Rome)
 - S.B. Shlosman (Irvine)
 - H. Spohn (München)
 - H. Tasaki (Tokyo)
 - R.F. Werner (Osnabrück)
 - H.T. Yau (Courant)
 - R. Alicki (Gainesville)
 - A. DeMasi (l'Aquila)
 - R.L. Dobrushin (Moscow)
 - P.A. Ferrari (São Paulo)
 - G. Gallavotti* (Rome)
 - B. Kümmerner (Tübingen)
 - T. Matsui (Tokyo, Leuven)
 - C.E. Pfister (Lausanne)
 - J.V. Pulé (Dublin)
 - J.P. Solovej (Princeton)
 - U.M. Studer (Leuven)
 - A.C.D. van Enter (Groningea)
 - S.L. Woronowicz* (Warsaw)
 - V.A. Zagrebnov (Leuven)
- (* = to be confirmed)

J.L. Lebowitz (Rutgers)
E.H. Lieb (Princeton)

Advisory board
J.T. Lewis (Dublin)

Ph.A. Martin (Lausanne)
E.R. Speer (Rutgers)

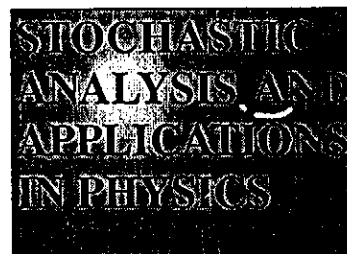
Organizing committee
G.L. Sewell (London)
A. Verbeure (Leuven)

Local organizers

M. Fannes, C. Maes and A. Verbeure

Leuven is a small town, center of a mainly rural region. The city has preserved rather well its medieval character. The university is very present in the everyday life, not only through the many historical buildings and institutes but also through its staff and students. Many festivals and street happenings are organized in summer time. The conference will be held on the campus in Heverlee, which is within walking distance from the center of Leuven.

Limited funds are available to cover partial support. Applications should be sent not later than April 15 to:
A. Verbeure, Instituut Theoretische Fysica, KULeuven,
Celestijnenlaan 200D, B-3001 Heverlee, Belgium.
Email: conference%tf%fys@cc3.kuleuven.ac.be
FAX: +32-16-239123, Tel: +32-16-201015



*NATO Advanced Study
Institute at Universidade da
Madeira*

August 6 - 19, 1993

The last decade saw enormous achievements in stochastic analysis and its applications in connection with analysis on infinite dimensional spaces. Especially quantum physics and dynamical systems were among the inspiring sources for these developments. The school will bring experts in these fields together for a comprehensive review in order to achieve coherence and to stimulate future research.

AIMS

Through lectures on recent developments in stochastic analysis and applications in theoretical and mathematical physics the school aims at an intense exchange of current ideas in stochastics and physics, and to create new directions of research. Among its topics are:

- Markov and Quantum Fields
- Dirichlet Forms
- Analysis on Loop Groups
- Monte Carlo Methods
- Stochastic Methods in Quantum Field Theory
- Quantum Probability
- Stochastic (Partial) Differential Equations
- Feynman Integration
- Stochastic Dynamical Systems
- White Noise Analysis

Please post 1

LECTURERS

The list of speakers will include: S. Albeverio (Bochum), P. Collet (Paris), M. Fukushima (Osaka), L. Gross (Cornell), G. Jona-Lasinio (Rome), C. B. Lang* (Graz), R. Villela Mendes (Lisbon), P. A. Meyer* (Strasbourg), P. K. Mitter (Paris), B. Oksendal (Oslo), E. Pardoux* (Marseille), J. Potthoff (Mannheim), R. Seneor (Paris), L. Streit (Funchal, Bielefeld) (Speakers marked with a * are not yet fully confirmed)

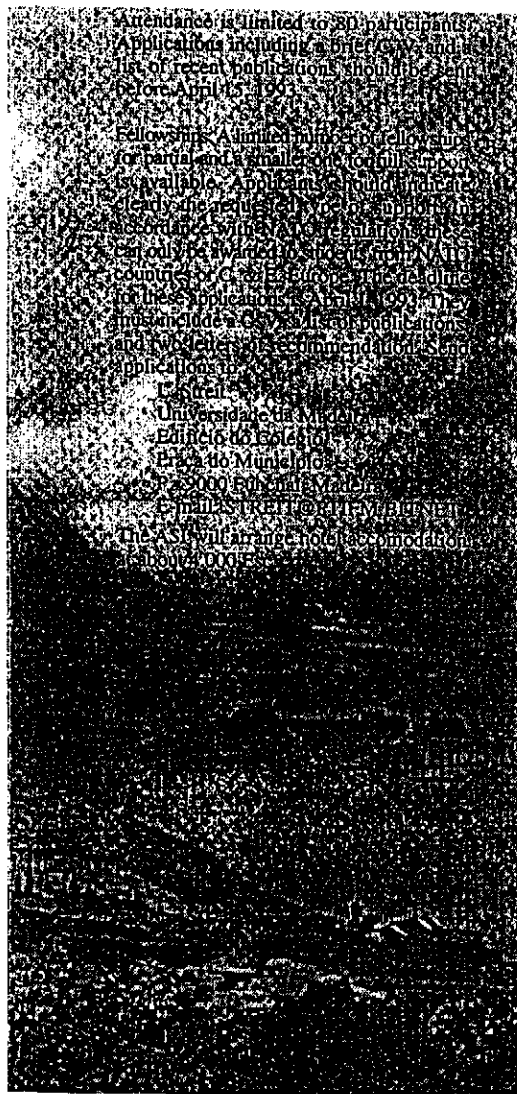
SCIENTIFIC COMMITTEE

A. I. Cardoso (Funchal), M. de Faria (Funchal), J. Potthoff (Mannheim), R. Seneor (Paris), L. Streit (Funchal, Bielefeld)

LOCAL COMMITTEE

L. Streit (ASI director)
A. I. Cardoso, J. da Costa, M. Cunha,
M. Faria, C. Rodrigues,
J. Luis Silva

See reverse for application and fellowship information



XXIIIème ECOLE D'ETE DE CALCUL DES PROBABILITES

SAINT-FLOUR (Cantal)

18 Août - 4 Septembre 1993

CONFERENCIERS INVITES

- P. BIANE, Professeur à l'Université Pierre et Marie Curie (PARIS VI)
"Calcul Stochastique Non Commutatif"
- R. DURRETT, Professeur à l'Université d'ITHACA (U.S.A.)
"Systems of Particles"
- R. KARP, Professeur à l'Université de Berkeley, Californie (U.S.A.)
"Probabilistic Algorithms in Computer Sciences"

INSCRIPTIONS et RENSEIGNEMENTS COMPLEMENTAIRES

P. BERNARD
Université Blaise Pascal
Mathématiques Appliquées

F63177 AUBIERE CEDEX

Tél. 73.40.70.52 ou 73.40.70.50
Telefax 73.40.70.64
E-Mail : stflour@ucfma.univ-bpclermont.fr
ou E-Mail : bernard@ucfma3,Univ-bpclermont.fr

INTERNATIONAL SEMINAR ON
NONLINEAR FIELDS IN THEORY OF GRAVITY

September 15-21, 1993
Ulyanovsk, RUSSIA

LIST OF INVITED PARTICIPANTS

V.de Alfaro (Torino), A.V.Aminova (Kazan), V.G.Bagrov (Tomsk) B.A.Bambah (Hyderabad), I.D. Barrow (Brighton), P.Bergmann (New York), A.Beccham (Kwa-Dlangezwa), S.Boffazzola (Roma), K.A.Bronnikov (Moscow), A.B.Burd (London), E.Copeland (Botavia), N.A.Chernikov (Dubna), S.V. Chervon (Ulyanovsk), N.Dadish (Pune), V.Ferrari (Roma), E.Fishbach (West Laffayette), Ya.Fujii (Tokyo), M.Forger (Berlin), S.Fubini (Trieste), G.Furlan (Trieste), D.V.Galtsov (Moscow), I.Goldman (Tel Aviv), A.A.Grib (St.Peterburg), J.J.Gross (Princeton), T.Hirschmann (Berlin), W.A.Hiscock (Montaña), T.Hori (Tokyo), V.R.Kajgorodov (Kazan), C.Kiefer (Heidelberg), A.Kshirsagar (Pune), L.Li (Beijing), D.Maison (Munich), R.A.Matzner (Austin), V.N.Melnikov (Moscow), M.A.Melvin (Santa Barbara), R.Myers (Montreal), C.Mukku (Hayderabad), J.Narlikar (IUCAA, Pune), P.van Niuwenhuizen (New York), M.Novello (Rio de Janeiro), I.D.No:ikov (Moscow), Yu.N.Obuchov (Moscow), D.Olive (London), V.N.Ponomarev (Moscow), R.Rivers (London), R.Ruffini (Roma), V.de Sabbata (Bologna), N.Sanohz (Meudon), H.Sato (Kyato), G.Schafer (Germany), R.Schimming (Greifswald), E.Schmutzer (Jena), V.K.Shigolev (Ulyanovsk), G.N.Shikin (Moscow), A:A.Starobinsky (Moscow), K.S.Thorne (Pasadena), M.S.Turner (Chicago), S.R.Vallury (London, Ontario), Yu.S.Vladimirov (Moscow).

INTERNATIONAL SEMINAR ON
NONLINEAR FIELDS IN THEORY OF GRAVITY.

15 - 21 September, 1993
Ulyanovsk, Russia

REGISTRATION FORM

I plan to attend the Seminar on Nonlinear fields in Theory of Gravity in Ulyanovsk, Russia, September 15 - 21, 1993.

Name: _____

Address: _____

e-mail: _____ Fax: _____

Telex: _____ Telephone: _____

I would like to present a paper, provisionally entitled:

Please send this form by April 30 to:

Dr. S.V. Chervon

MSU Branch

L. Tolstoy Str. 42

432700 Ulyanovsk, RUSSIA

Tel. (8422) 344338 Tlx. 263440 "SHTRIKH"

Fax. (8422) 312058 e-mail: master @ adm.univ.sibirsk.SU

ELECTRONIC MATHEMATICAL PHYSICS ARCHIVE

Dear Colleague:

We remind you that the archive is completely free to the user, and can be accessed by sending email messages to the internet address mp_arc@math.utexas.edu. Instructions are automatically returned to the sender of any such request to that address.

We append an update list of papers from October 1992, each with an identification number; To receive the paper from the archive whose number is Y-N, send the message (precisely; in particular be careful of capitals, colon, etc.):

REQUEST: send papers
NUMBER: Y-N

to the address mp_arc@math.utexas.edu.

Finally, we note that the archive is also a repository of email addresses and some utilities for use with the archive, and that there are three new features to the archive: a keyword search, optional file compression, and a subscription service for abstracts of archived papers.

H. Koch, R. de la Llave, C. Radin

Dept. of Mathematics
University of Texas at Austin

(Update from October 1992)

92-171
R.de la Llave
HYPERBOLIC DYNAMICAL SYSTEMS AND
GENERATION OF MAGNETIC FIELDS BY PERFECTLY CONDUCTING
FLUIDS.
(32K, Plain Tex)

92-172
Krishna M.
Absolutely continuous spectrum for sparse Potentials
(18K, AmsTeX)

92-174
Martinelli F., Olivieri E.
Finite Volume Mixing Conditions for Lattice Spin Systems and
Exponential
Approach to Equilibrium of Glauber Dynamics.
(54K, plaintext)

92-179
Easton R.E., Meiss J.D., Carver S.
Exit Times and Transport for Symplectic Twist Maps
(480K, Microsoft Word 4.0 RTF Format (from Macintosh) with embedded)

92-181
Schenkel A., Stubbe J., Wittwer P.
Asymptotics of Solutions in a $A+B \rightarrow C$ Reaction-Diffusion System
(219K, postscript)

92-182
Bartocci C., Bruzzo U., Hernandez Ruiperez D., Pestov V.G.
FOUNDATIONS OF SUPERMANIFOLD THEORY: THE AXIOMATIC
APPROACH
(66K, AmSTeX -Requires style available from the second author)

92-183
Binder P.-M., Privman, V.
Second-Order Dynamics in the Collective
Evolution of Coupled Maps and Automata,
11 pages and 4 figures, preprint OUTP-92-51S.
(174K, TeX (plain), PostScript figures.)

92-185
Landi G., Marmo G., Vilasi G.
REMARKS ON THE COMPLETE INTEGRABILITY OF DYNAMICAL
SYSTEMS WITH
FERMIONIC VARIABLES
(34K, LaTeX)

92-186
Fabio Martinelli, Enzo Olivieri
Approach to equilibrium of Glauber dynamics in the one phase
region. I: the attractive case
(137K, plain tex)

92-188
V.Baladi, L.-S.Young
On the spectra of randomly perturbed expanding maps
(145K, AmS TeX Version 2.1 (Postscript figure))

93-47

Hattori K., Hattori T., Watanabe H.
Asymptotically one-dimensional diffusions on
the Sierpinski gasket and the abc-gaskets
(102K, LaTeX)

93-49

Giuseppe GAETA
Critical sections of gauge functionals: a symmetry approach
(32K, Plain TeX)

93-50

Giuseppe GAETA
Michel's theorem and critical section
of gauge functionals
(100K, Plain TeX)

93-53

Giuseppe GAETA
Reduction and Equivariant Branching Lemma:
Dynamical Systems, Evolution PDEs, and Gauge Theories
(67K, Plain TeX)

93-55

Giuseppe GAETA
Lie-point symmetries in Mechanics
(29K, Plain TeX)

93-56

Giuseppe GAETA
Simple models of DNA dynamics
(58K, Plain TeX)

93-58

Derrida B., Janowsky S.A., Lebowitz J.L., Speer E.R.
Exact Solution of the Totally Asymmetric Simple Exclusion
Process: Shock Profiles
(77K, LaTeX)

93-59

Privman V., Doering C.R., Frisch H.L.
Crossover from Rate-Equation to Diffusion-Controlled Kinetics in Two-
Particle Coagulation
(29K, TeX (plain))

DUBLIN INSTITUTE FOR ADVANCED STUDIES

School of Theoretical Physics, 10 Burlington Road, Dublin 4, Ireland

Telephone: +353-1-680748. Telegrams: DIAS DUBLIN. Telex: 31687 DIAS EI. AIRMAIL (Dialcom) 74:EIIM252

Fax: +353-1-680561. Email: PHYSICS@STP.DIAS.IE

Electronic mail (EARN/BITNET): PHYSICS@STP.DIAS.IE

DOCUMENT LIST 40: August to December 1992

Preprints unless marked * (= not available) or reprints will be sent out to requests
as long as supplies are available. Apply to the Secretary

DIAS-STP-92-

- 18: J. BURZLAFF, A. CHAKRABARTI, & D.H. TCHRAKIAN: Generalised self-dual Chern-Simons vortices.
- 19: BRIAN P. DOLAN: Quantum non-demolition of the universe.
- 20: J.V. PULÉ, & V.A. ZAGREBNOV: A pair Hamiltonian model of a non-ideal Boson gas.
- 21: A. PATRICK: On phase separation in the spherical model of a ferromagnet : quasi-average approach.
- 22: Z.-Q. MA, & D.H. TCHRAKIAN: Wu-Yang fields.
- 23: D. MCMULLAN: Constrained quantisation, gauge fixing and the Gribov ambiguity.
- 24: S.H. HUGHES, D.J. MCMANUS, & M.A. VANDYCK: Weak-field gravity of circular cosmic strings. (To appear in *Phys. Rev. D*)
- 25: D.G.C. MCKEON, & T.N. SHERRY: Operator regularization and the phase of one-loop determinants. *Annals of Physics* 218(1992)325-345.
- 26: PH. RUELLE, E. THIRAN, & J. WEYERS: Implications of an arithmetical symmetry of the commutant for modular invariants.
- 27: J.-L. GERVAIS, L. O'RAIFEARTAIGH, A.V. RAZUMOV, & M.V. SAVELIEV: Gauge conditions for the constrained-WZNW-Toda reductions.

- 28: T.N. SHERRY, & D.H. TCHRAKIAN: Can the electroweak model be extended to support instanton solutions.
- 29: M.P. TUIE: Monstrous moonshine and the uniqueness of the moonshine module.
- 30: D.J. MCMANUS, & M.A. VANDYCK: Weak-field gravity of revolving circular cosmic strings. (To appear in *Phys. Rev. D*)
- 31: N.G. DUFFIELD: Rigorous bounds for queue lengths in heterogeneous ATM multiplexers.
- 32: V.I. GAIDUK, B.M. TSEITLIN, V.V. GAIDUK, & J.R. MCCONNELL: The complex susceptibility of a two-potential system of reorientating polar molecules.
- 33: NOT PUBLISHED:
- 34: A. PATRICK: The influence of external boundary conditions on the spherical model of a ferromagnet I: Magnetization profiles.
- 35: D.R. KARAKHANIAN: On holomorphic factorization of two-dimensional gravity action.
- 36: D. O'CONNOR, & C.R. STEPHENS: Geometry the renormalization group and gravity. *Misner Feischrift edited by B.L. Hu et al., C.U.P. '93*
- 37: D. O'CONNOR, & C.R. STEPHENS: The renormalization group in curved spacetime. (To appear in *Classical and Quantum Gravity*)
- 38: F. FREIRE, D. O'CONNOR, & C.R. STEPHENS: Finite temperature phase transitions in quantum field theory. (To appear in *Classical and Quantum Gravity*)
- 39: C. NASH, & D. O'CONNOR: Ray-Singer torsion, topological field theories and Riemann Zeta function at $s=3$. *Proceedings of the Workshop on Low-Dimensional Topology, Cambridge.*
- 40: C. NASH, & D. O'CONNOR: Determinants of Laplacians and the Ray-Singer torsion.
- 41: D. O'CONNOR, & C.R. STEPHENS: Crossover scaling : a renormalization group approach.
- 42: F. FREIRE, D. O'CONNOR, & C.R. STEPHENS: Finite-size scaling below T_c .
- 43: D. O'CONNOR, & C.R. STEPHENS: Finite size scaling functions to two loops.

- 44: Y. KUBYSHIN, & D. O'CONNOR: Decoupling of heavy fermions in the Kaluza-Klein approach. *Proceedings of Quarks '92, Zvenigorod, Russia*
- 45: PH. RUELLE: Automorphisms of the affine SU(3) fusion rules.
- 46: L. O'RAIFEARTAIGH, N. STRAUMANN, & A. WIPF: Aharonov-Bohm effect in presence of superconductors.

ooooo

PREPRINTS (RECEIVED IN GAINESVILLE)

NOTE entries for this listing should be addressed to:

John R. Klauder, IAMP News Bulletin, Department of Mathematics, University of Florida, Gainesville, FL 32611

Detlev Buchholz, Institut für Theoretische Physik, Universität Hamburg, W-2000 Hamburg 50, Germany and Stephen J. Summers, Department of Mathematics, University of Florida, Gainesville, FL 32611
AN ALGEBRAIC CHARACTERIZATION OF VACUUM STATES IN MINKOWSKI SPACE

Edward P. Osipov, Department of Theoretical Physics, Institute for Mathematics, 630090 Novosibirsk 90 Russia
QUANTUM FIELDS AND SOLUTIONS OF STOCHASTIC PARTIAL DIFFERENTIAL EQUATIONS

Margherita Barbieri, Marco Maioli, and Andrea Sacchetti, Dipartimento di Matematica Pura ed Applicata, Università degli Studi di Modena, I-41100 Modena, Italy
ABSENCE OF SINGULAR CONTINUOUS SPECTRUM FOR A CLASS OF RANDOM SCHRÖDINGER OPERATORS

A. C. D. van Enter, Institute for Theoretical Physics, P.O. Box 800, University of Groningen, Groningen, The Netherlands, A. Hof, Departement Mathematik, ETH-Zentrum, 8092 Zürich, Switzerland, and Jacek Miękiś, Institut de Physique Théorique, Université Catholique de Louvain, B-1348 Louvain-la Neuve, Belgium
OVERLAP DISTRIBUTIONS FOR DETERMINISTIC SYSTEMS WITH MANY PURE STATES

Preprints Received in Kyoto

February 1993

Denes PETZ¹ and Gabor TOTH¹

¹ Department of Mathematics, Faculty of Chemical Engineering, Technical University of Budapest, Sztoctak u.2.R op.II.25, H-1521 Budapest XI, Hungary;

² Department of Mathematical Sciences, Rutgers University, Campus at Camden, Camden, New Jersey 08102, USA.

The Bogoliubov Inner Product in Quantum Statistics.

J.Wierzbicki and Y.Watatani

Department of Mathematics, Hokkaido University, Sapporo 060, Japan.

Commuting Squares and Relative Entropy for Two Subfactors.

RIMS-902 Arkady BERENSTEIN and Andrei ZELEVINSKY
String Bases for Quantum Groups of Type A_r
October 1992

RIMS-903 Vitaliy TARASOV
Cyclic Monodromy Matrices for $sl(n)$ Trigonometric
R-matrices
November 1992

RIMS-904 Michio JIMBO, Tetsuji MIWA and Atsushi NAKAYASHIKI
Difference Equations for the Correlation Functions
of the Eight Vertex Model
November 1992

RIMS-905 Noboru NAKANISHI
Covariant Operator Formalism of Quantum Einstein
Gravity
-- Brief Review and Recent Development --
November 1992

RIMS-906 Kazuo MUROTA
Comparison of Conventional and "Invariant"
Schemes of Fundamental Solutions Method
for Annular Domains
November 1992

RIMS-907 Takayuki ODA
An Explicit Integral Representation of Whittaker
Function for the Representations of the Discrete Series
-- The Case of $Sp(2, R)$ --
December 1992

RIMS-908 Hitoshi KONNO
 $SO(2)_k \times SU(2)_l / SU(2)_{k+l}$ Coset Conformal Field
Theory and Topological Minimal Model on
Higher Genus Riemann Surface
December 1992

RIMS-909 Kazuo MUROTA
An Identity for Matching and Determinant
December 1992

RIMS-910 Kazuhiro KIMURA
On Free Boson Representations of the
Quantum Affine Algebra $U_q(\hat{sl}_2)$
December 1992

RIMS-911 Noriaki IKEDA and K.-I. IZAWA
Gauge Theory based on Quadratic Lie Algebras
and 2D Gravity with Dynamical Torsion
January 1993

RIMS-912 Hideaki NAKAMURA
Quantum Einstein Gravity as a Differential Geometry II
--- Derivation of Quantum Einstein-Hilbert Action
Based on an Intrinsic Orthosymplectic Super-Symmetry ---
February 1993

PREPRINTS RECEIVED IN SWANSEA

- J.-P. Antoine, Institut de Physique Théorique, Université Catholique de Louvain, B-1348 Louvain-la-Neuve, Belgium.
Preprint No: UCL-IPT-92-23
Proc. XIth Workshop Geom.Meth.Phys., Bialowieza, July 1992.
Coherent States: A General Formalism
- J.-P. Antoine¹ and F. Bagarello^{2*}, Institut de Physique Théorique, Université Catholique de Louvain, B-1348 Louvain-la-Neuve, Belgium. ¹ email: Antoine@fyma.ucl.ac.be ² Permanent address: Dipartimento di Matematica ed Applicazioni, Fac. Ingegneria, Università di Palermo, I-90128 Palermo, Italy. * Work supported by 'Fondazione Angelo Della Riccia'.
Preprint No.UCL-IPT-92-27, December 1992.
Some Analytical Considerations on Two-Scale Relations
- J.-P. Antoine^{1,2}, A. Inoue² and C. Trapani³, Institut de Physique Théorique, Université Catholique de Louvain, B-1348 Louvain-la-Neuve, Belgium. ² Department of Applied Mathematics, Fukuoka University, Fukuoka, 814-01, Japan. ³ Istituto di Fisica dell'Università di Palermo, I - 90123 - Palermo, Italy.
Preprint No: UCL-IPT-92-24, November 1992.
*Spatial theory of *-automorphisms of partial O*-algebras*
- J.-P. Antoine^{1,2}, A. Inoue² and C. Trapani³, Institut de Physique Théorique, Université Catholique de Louvain, B-1348 Louvain-la-Neuve, Belgium. ² Department of Applied Mathematics, Fukuoka University, Fukuoka, 814-01, Japan. ³ Istituto di Fisica dell'Università di Palermo, I - 90123 - Palermo, Italy.
Preprint No: UCL-IPT-92-25, November 1992.
*Generalized *-Derivations of Unbounded Operator Algebras*
- J.-P. Antoine¹, Y. Soulet² and C. Trapani³, Institut de Physique Théorique, Université Catholique de Louvain, B-1348 Louvain-la-Neuve, Belgium. ² Laboratoire de Physique Quantique, Université Paul Sabatier, F-31062 - Toulouse, France. ³ Istituto di Fisica dell'Università di Palermo, I - 90123 - Palermo, Italy.
Preprint No: UCL-IPT-92-22, October 1992.
*Weights on Partial *-Algebras*
- D. Applebaum, Department of Mathematics, Statistics and Operational Research, The Nottingham Trent University, Burton Street, Nottingham, NG1 4BU.
Spectral Families of Quantum Stochastic Integrals

- M. Bauer and C. Itzykson, Service de Physique Théorique[†], Centre d'Etudes de Saclay, 91191 Gif-sur-Yvette Cedex, France.
Preprint No: Saclay, SPhT/92-122
[†] Laboratoire de la Direction des Sciences de la Matière du Commissariat à l'Energie Atomique.
Triangulations
- M. Boiti^{*}, F. Pempinelli^{*} and P.C. Sabatier, Laboratoire de Physique Mathématique[†], Université Montpellier II, 34095 Montpellier Cedex 05, France. * Permanent address: Dipartimento di Fisica dell'Università, 73100 Lecce, Italy. [†] Unité de Recherche Associée au CNRS, URA 768.
Preprint No: PM/ 92-33, August.
Nonlinear Evolution Equations from an Inverse Spectral Problem
- A.K. Callebaut¹ and M. Fannes². ¹ Onderzoeker IKW, Departement Natuurkunde, UIA, B-2610 Wilrijk. ² Onderzoeksleider, Instituut Theoretische Fysica, KU Leuven, B-3001 Leuven.
Ground State Fluctuations of Quantum Mean Field Systems
- P. Droz-Vincent, Laboratoire de Physique Théorique, G.C.R., C.N.R.S. URA 769, Université Pierre et Marie Curie, Tour 22-12, boîte courrier 142, 4 place Jussieu 75252 Paris Cedex 05, France.
The Quantum Relativistic Two-body Problem in Time-dependent External Potentials
- A.C.D. van Enter^{*1}, R. Fernandez² and A.D. Sokal³, ¹Institute for Theoretical Physics, University of Groningen, Nijenborgh 4, 9747 AG Groningen, The Netherlands. ² Institut de Physique Théorique, EPFL, PHB-Ecublens, CH-1015 Lausanne, Suisse. ³ Department of Physics, New York University, 4 Washington Place, New York, NY 10003, U.S.A. * Speaker at the Conference
Non-Gibbsian States
- A.C.D. van Enter^{*1}, R. Fernandez² and A.D. Sokal³, ¹Institute for Theoretical Physics, University of Groningen, Nijenborgh 4, 9747 AG Groningen, The Netherlands. ² Institut de Physique Théorique, EPFL, PHB-Ecublens, CH-1015 Lausanne, Suisse. ³ Department of Physics, New York University, 4 Washington Place, New York, NY 10003, U.S.A. * Speaker at the Conference
Non-Gibbsian States for Renormalization-group Transformations and Beyond

- A.C.D. van Enter¹, A. Hof² and J. Miekisz³. ¹ Institute for Theoretical Physics, University of Groningen, Nijenborgh 4, 9747 AG Groningen, The Netherlands. ² Departement Mathematik, ETH-Zentrum, 8092 Zürich, Switzerland. ³ Institut de Physique Théorique, Université Catholique de Louvain, B-1348 Louvain-la-Neuve, Belgium.
Overlap Distributions for Deterministic Systems with Many Pure States
- A.C.D. van Enter¹, R. Fernandez² and A.D. Sokal³, ¹Institute for Theoretical Physics, University of Groningen, Nijenborgh 4, 9747 AG Groningen, The Netherlands, email: aenter@rugth4.th.rug.nl. ² Institut de Physique Théorique, EPFL, PHB-Ecublens, CH-1015 Lausanne, Suisse, email: fernande@eldp.epfl.ch. ³ Department of Physics, New York University, 4 Washington Place, New York, NY 10003, U.S.A., email: sokal@acf3.nyu.edu.
Regularity Properties and Pathologies of Position-space Renormalization-group Transformations
- V.I. Gaiduk¹, B.M. Tseitlin¹, V.V. Gaiduk¹ and J. McConnell². ¹ Institute of Radio Engineering and Electronics of the Russian Academy of Sciences, Vvedensky sq.1, Frayazino, Moscow Region, 141120 Russia. ² School of Theoretical Physics, Dublin Institute for Advanced Studies, Dublin 4, Ireland.
Preprint No: DIAS-STP-92-32
The Complex Susceptibility of a Two-Potential System of Reorientating Polar Molecules
- P. Garbaczewski*, Center for Nonlinear Dynamics, Department of Physiology, McGill University, Montreal, Quebec, Canada, H3G 1Y6.
* Permanent address: Institute of Theoretical Physics, University of Wrocław, pl. Maxa Borna 9, 50-204 Wrocław, Poland.
Preprint No: ITP uWr 815/92, September 1992.
Quantum Dynamics from the Brownian Recoil Principle II. Physical Meaning of the Nelson-Newton Laws
- J.-L. Gervais¹, L. O'Raiheartaigh², A.V. Razumov³ and M.V. Saveliev^{4†}
¹ Laboratoire de Physique Théorique de L'École Normale Supérieure*, 24 rue Lhomond, 75231 Paris Cédex 05, France. ²School of Theoretical Physics, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland. ³ Institute for High Energy Physics, 142284 Protvino, Moscow Region, Russia. ⁴ Isaac Newton Institute for Mathematical Sciences, University of Cambridge, 20 Clarkson Road, Cambridge, CB3 0EH.
† On leave of absence from the Institute for High Energy Physics, 142284, Protvino, Moscow region, Russia.

* Unité Propre du Centre National de la Recherche Scientifique, associée à l'École Normale Supérieure et à l'Université de Paris-Sud.
Preprint No: ¹ hep-th/9211088; ² DIAS/92/27; ³ IHEP 92-155; ⁴ NI92008.
Gauge Conditions for the Constrained-WZNW-Toda Reductions

- G. C. Hegerfeldt, Institut für Theoretische Physik, Universität Göttingen, Germany.
How to Reset an Atom after a Photon Detection. Application to Photon Counting Processes
- G. C. Hegerfeldt and M.B. Plenio, Institut für Theoretische Physik, Universität Göttingen, Germany.
Coherence with Incoherent Light: A New Type of Quantum Beats for a Single Atom
- G. C. Hegerfeldt and M.B. Plenio, Institut für Theoretische Physik, Universität Göttingen, Germany.
*Macroscopic Dark Periods without a Metastable State**
(Appeared in Physical Review A, Volume 46 No.1, 1 July 1992)
- J. Hietarinta, Department of Physics, University of Turku, 20500 Turku, Finland. Email: Hietarin@utu.fi
Preprint No: Turku-FL-P1
Some Constant Solutions to Zamolodchikov's Tetrahedron Equations
- J. Hietarinta, Department of Physics, University of Turku, 20500 Turku, Finland. Email: Hietarin@utu.fi
Preprint No: Turku-FL-R7
Solving the Two-dimensional Constant Quantum Yang-Baxter Equation
- G. Hofmann, Universität Leipzig, Fachb. Mathematik, Augustusplatz 10, D-0-7010 Leipzig, Germany.
Reprinted from Publ. RIMS, Kyoto Univ. 28 No.3 (1992), 455-494.
On Algebraic #-Cones in Topological Tensor-Algebras, I. Basic Properties and Normality
- L.P. Horwitz*, Institute for Advanced Study, School of Natural Sciences, Princeton, N.J. 08540, U.S.A. * Permanent address: School of Physics, Raymond and Beverly Sackler, Faculty of Exact Sciences, Tel Aviv University, Ramat Aviv, Israel.
Preprint No: TAUP 2008-92, IASSNS 92/70, November 1992
Some Spectral Properties of Anti-Self-Adjoint Operators on a Quaternion Hilbert Space

- S.J. Hughes^{1*}, D.J. McManus^{1†} & M.A. Vandyck^{2‡}. ¹ School of Theoretical Physics, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland. ² Physics Department, University College Cork, Ireland, and Physics Department, Cork Regional Technical College, Ireland.
 * On leave from Lyman Laboratory of Physics, Harvard University, Cambridge, MA 02138, U.S.A.
 † Address after 1st September 1992: Department of Mathematics, Statistics and Computer Science, Dalhousie University, Halifax, Nova Scotia, Canada B3H 4H6.
 ‡ Research Associate of the Dublin Institute for Advanced Studies. Preprint No: DIAS-STP 92 - 24 - To appear in Physical Review D *Weak-Field Gravity of Circular Cosmic Strings*
- D.R. Karakhanian, Yerevan Physics Institute, Theory Department, Alikhanian Br.2, Yerevan, Armenia.
 Preprint No: DIAS-STP-92-35
On Holomorphic Factorization of Two-dimensional Gravity Action
- T.W. Körner, Trinity Hall, Cambridge.
Dr. Körner's Helpful Guide for Mathematicians Seeking a Cambridge Research Fellowship
- J. Leon, Département de Physique Mathématique, Université Montpellier II, 34095 Montpellier - France.
 Preprint No: PM/92-34, September
Stimulated Raman Scattering: an Integrable System which Blows up in Finite Time
- G. Lindblad, Department of Theoretical Physics, Royal Institute of Technology, S-100 44 Stockholm, Sweden. email: gli@theophys.kth.se
Irreversibility and Randomness in Linear Response Theory
- J. M. Lindsay, Department of Mathematics, University Park, Nottingham, NG7 2RD
Quantum and Non-Causal Stochastic Calculus
- R. Longo*, Dipartimento di Matematica, Università di Roma "Tor Vergata", Via della Ricerca Scientifica, I-00133 Roma, Italy.
 Email: longo@mat.utovrm.it
 * Supported in part by Ministero della Ricerca Scientifica and CNR-GNAFA.
A Duality for Hopf Algebras and for Subfactors. I

- D.J. McManus^{1*} & M.A. Vandyck^{2†}. ¹ School of Theoretical Physics, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland. ² Physics Department, University College Cork, Ireland, and Physics Department, Cork Regional Technical College, Ireland.
 * Address after 1st September 1992: Department of Mathematics, Statistics and Computer Science, Dalhousie University, Halifax, Nova Scotia, Canada B3H 4H6.
 † Research Associate of the Dublin Institute for Advanced Studies. Preprint No: DIAS-STP 92 - 30 - To appear in Physical Review D *Weak-Field Gravity of Revolving Circular Cosmic Strings*
- D. McMullan, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland. Email: mcmullan@stp.dias.ie
 Preprint No: DIAS-STP-92-23
Constrained Quantisation, Gauge Fixing and the Gribov Ambiguity
- J. Navarro-Salas^{1†}, M. Navarro^{2,3} and V. Aldaya^{2,3}. ¹ Theory Division, CERN, CH-1211, Geneva 23, Switzerland. ² Departamento de Física Teórica y del Cosmos, Facultad de Ciencias, Universidad de Granada, Campus de Fuenteneuva, Granada 18002, Spain. ³ IFIC, Centro Mixto Universidad de Valencia - CSIC, Burjasot, 46100 Valencia, Spain.
 Preprint No: (Revised Version) FTUV-92-56, IFIC-92-54
 † Permanent address: Departamento de Física Teórica, Facultad de Físicas and IFIC (CSIC), Burjasot-46100, Valencia.
*Covariant Phase-space Quantization of the Induced 2D Gravity**
 *Work partially supported by the Comisión Interministerial de Ciencia y Tecnología.
- J. Navarro-Salas^{1,2}, M. Navarro^{2,3,4} and V. Aldaya^{2,4}. ¹ Departamento de Física Teórica, Facultad de Físicas, Burjasot-46100, Valencia, Spain. ² IFIC, Centro Mixto Universidad de Valencia - CSIC, Burjasot, 46100 Valencia, Spain. ³ The Blackett Laboratory, Imperial College, London, SW7 2BZ. ⁴ Departamento de Física Teórica y del Cosmos, Facultad de Ciencias, Universidad de Granada, Campus de Fuenteneuva, Granada 18002, Spain. Preprint No: FTUV/93-3, IFIC/93-3.
*Wave Functions of the Induced 2D-Gravity**
 * Work partially supported by the Comisión Interministerial de Ciencia y Tecnología.
- L. O'Raifeartaigh¹, N. Staumann² and A. Wipf³. ¹ Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland. ² Institute for Theoretical Physics, University of Zürich, Schönberggasse 9, CH-8001 Zürich, Switzerland. ³ Institute for Theoretical Physics, Eidgenössische Technische Hochschule, Hönggerberg, CH-8093 Zürich, Switzerland. Preprint No: DIAS-STP-92-46
Aharonov-Bohm Effect in Presence of Superconductors

F. Pempinelli[†], Laboratoire de Physique Mathématique[†], Université Montpellier II, 34095 Montpellier Cedex 05, France. [†] Permanent address: dipartimento di Fisica dell'Università, 73100 Lecce, Italy.

[†] Unité de Recherche Associée au CNRS, URA 768.

Preprint No: PM/ 92-32, August.

*Localized Soliton Solutions for the Davey-Stewartson I and Davey-Stewartson III Equations**

* Work supported in part by INFN - Sezione di Lecce - Italy.

Ph. Ruelle, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland. E-mail address: ruelle@stp.dias.ie
Preprint No: DIAS-STP-92-45
Automorphisms of the Affine SU(3) Fusion Rules

Ph. Ruelle¹, E. Thiran² and J. Weyers³, ¹Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland. ² Institut für Theoretische Physik, Eidgenössische Technische Hochschule, Hönggerberg, CH-8093 Zürich, Switzerland. ³ Institut de Physique Théorique, Université Catholique de Louvain, Chemin du Cyclotron, 2, B-1348 Louvain-la-Neuve, Belgium.
Preprint No: STP-DIAS-92-26
Implications of an Arithmetical Symmetry of the Commutant for Modular Invariants

D. Ryter, Ascom Tech AG, CH-3018 Bern and Institute for Communication Technology, ETH Zentrum, CH-8092 Zürich, Switzerland.
An Alternative Approach to the Kramers Problem

M.P. Tuite, Department of Mathematical Physics, University College, Galway, Ireland and Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland.
Email: mphtuite@bodkin.ucg.ie
Preprint No: DIAS-STP-92-29
*Monstrous Moonshine and the Uniqueness of the Moonshine Module**
* Talk presented at the Nato Advanced Research Workshop on 'Low Dimensional Topology and Quantum Field Theory', Cambridge, 6-13 September 1992.

Lecture Notes in Physics - New Series in Monographs

Managing Ed.: W. Beiglböck. Eds.: H. Araki, E. Brézin, J. Ehlers, U. Frisch, K. Hepp, R.L. Jaffe, R. Kippenhahn, H.A. Weidenmüller, J. Wess, J. Zittartz.

H. Hora, CERN, Geneva, Switzerland

Plasmas at High Temperature and Density

Applications and Implications of Laser-Plasma Interaction

Vol. m1. 1991. XIII, 442 pp. Hardcover DM 72,- ISBN 3-540-54312-0

P. Busch, University of Cologne, FRG; P.J. Lahti, University of Turku, Finland; P. Mittelstaedt, University of Cologne, FRG

The Quantum Theory of Measurement

Vol. m2. 1991. XIII, 165 pp. Hardcover DM 44,- ISBN 3-540-54334-1

A. Heck, Observatoire Astronomique, Strasbourg, France; J.M. Perdang, Université de Liège, Belgium (Eds.)

Applying Fractals in Astronomy

Vol. m3. 1991. IX, 210 pp. Hardcover DM 46,- ISBN 3-540-54353-8

R.K. Zeytounian, Université de Lille I, Villeneuve d'Ascq, France

Mécanique des fluides fondamentale

Vol. m4. 1991. XIV, 615 pp. Relie DM 96,- ISBN 3-540-54441-0

R.K. Zeytounian, Université de Lille, France

Meteorological Fluid Dynamics

Asymptotic Modelling, Stability and Chaotic Atmospheric Motion

Vol. m5. 1991. XI, 346 pp. Hardcover DM 66,- ISBN 3-540-54446-1

N.M.J. Woodhouse, Wadham College, Oxford, UK

Special Relativity

Vol. m6. 1992. VIII, 86 pp. Hardcover DM 54,- ISBN 3-540-55049-6

G. Morandi, University of Bologna, Italy

The Role of Topology in Classical and Quantum Physics

Vol. m7. 1992. XIII, 239 pp. Hardcover DM 66,- ISBN 3-540-55088-7

D. Funaro, University of Pavia, Italy

Polynomial Approximation of Differential Equations

Vol. m8. 1992. X, 305 pp. Hardcover DM 72,- ISBN 3-540-55230-8

M. Namiki, Waseda University, Tokyo, Japan

Stochastic Quantization

In collaboration with I. Ohba, K. Okano, Y. Yamanaka, A.K. Kapoor,
H. Nakazato, S. Tanaka
Vol. m9. 1992. X, 217 pp. Hardcover DM 62,- ISBN 3-540-55563-3

J. Hoppe, University of Karlsruhe, FRG

Lectures on Integrable Systems

Vol. m10. 1992. VIII, 111 pp. Hardcover DM 54,- ISBN 3-540-55700-8

A.D. Yaghjian, Rome Laboratory (AFSC), Hanscom Air Force Base, MA

Relativistic Dynamics of a Charged Sphere

Updating the Lorentz-Abraham Model
Vol. m11. 1992. XII, 115 pp. Hardcover DM 54,- ISBN 3-540-97887-9

G. Esposito, International Centre for Theoretical Physics, Trieste, Italy

Quantum Gravity, Quantum Cosmology and Lorentzian Geometries

Vol. m12. 1992. XVI, 326 pp. Hardcover DM 72,- ISBN 3-540-55836-5

M. Klein, A. Knauf, TU Berlin, FRG

Classical Planar Scattering by Coulombic Potentials

Vol. m13. 1992. V, 142 pp. Hardcover DM 54,- ISBN 3-540-55987-6

A. Lerda, University of Turin, Italy

Anyons

Quantum Mechanics of Particles with Fractional Statistics
Vol. m14. 1992. XI, 138 pp. Hardcover DM 54,- ISBN 3-540-56105-6

P. Christe, University of Berne, Switzerland; M. Henkel, University of Geneva, Switzerland

Introduction to Conformal Invariance and Its Applications to Critical Phenomena

Vol. m16. 1993. XV, 260 pp. Hardcover DM 66,- ISBN 3-540-56504-3

M. Schoen, University of Witten, Germany

Computer Simulation of Condensed Phases in Complex Geometries

Vol. m17. 1993. X, 136 pp. Hardcover DM 54,- ISBN 3-540-56564-7

H. Carmichael, University of Oregon, Eugene, OR

An Open Systems Approach to Quantum Optics

Lectures Presented at the Université Libre de Bruxelles, October 28 to November 4, 1991
Vol. m18. 1993. X, 179 pp. Hardcover DM 58,- ISBN 3-540-56634-1

LEIS AND MONOGRAPHS IN PHYSICS

Eds.: R. Balian, W. Beiglböck, H. Grosse, E.H. Lieb, W. Thirring

A. Galindo, University of Madrid; P. Pascual, University of Barcelona

Quantum Mechanics I/II

Translated from the Spanish by J.D. Garcia, L. Alvarez-Gaumé
Volume I: 1990. XVI, 417 pp. 56 figs. Hardcover DM 95,- ISBN 3-540-51406-6
Volume II: 1991. XVI, 374 pp. 70 figs. Hardcover DM 85,- ISBN 3-540-52309-X

H. Spohn, University of Munich, FRG

Large Scale Dynamics of Interacting Particles

1991. XI, 342 pp. 19 figs. Hardcover DM 120,- ISBN 3-540-53491-1

R. Balian, CEA, Gif-sur-Yvette, France

From Microphysics to Macrophysics

Methods and Applications of Statistical Physics
Translated from the French by D. ter Haar, J.F. Gregg
Volume I: 1991. XXII, 465 pp. 39 figs. Hardcover DM 80,- ISBN 3-540-53266-8
Volume II: 1992. XX, 607 pp. 90 figs. Hardcover DM 128,- ISBN 3-540-53599-3

P. Blanchard, University of Bielefeld, FRG; E. Brüning, University of Cape Town, South Africa

Variational Methods in Mathematical Physics

A Unified Approach
Translated from the German by G.M. Hayes
1992. XII, 410 pp. 7 figs. Hardcover DM 128,- ISBN 3-540-16190-2

A. Derdzinski, Ohio State University, Columbus, OH

Geometry of the Standard Model of Elementary Particles

1992. XII, 199 pp. Hardcover DM 68,- ISBN 3-540-54356-2

R. Fernández, J. Fröhlich, ETH Hönggerberg, Zurich, Switzerland; A.D. Sokal, New York University, NY

Random Walks, Critical Phenomena, and Triviality in Quantum Field Theory

1992. XVII, 444 pp. 26 figs. Hardcover DM 120,- ISBN 3-540-54358-9

R. Haag, University of Hamburg, FRG

Local Quantum Physics

Fields, Particles, Algebras
1st ed. 1992. Corr. 2nd printing 1993. XIV, 356 pp. 15 figs. Hardcover DM 98,-
ISBN 3-540-53610-8

B. Thaller, University of Graz, Austria

The Dirac Equation

1992. XVIII, 300 pp. 2 figs. Hardcover DM 128,- ISBN 3-540-54883-1

M. Ohya, Science University of Tokyo, Noda City, Japan; D. Petz, Hungarian Academy of Sciences, Budapest, Hungary

Quantum Entropy and Its Use

1993. VIII, 335 pp. Hardcover DM 148,- ISBN 3-540-54881-5

F.J. Ynduráin, University of Madrid, Spain

The Theory of Quark and Gluon Interactions

2nd, completely rev. and enl. ed. 1993. XV, 319 pp. 66 figs. Hardcover DM 128,- ISBN 3-540-55803-9

A. Bohm, University of Texas, Austin, USA

Quantum Mechanics

Foundations and Applications

2nd, rev. and enlarged ed. 1986. XVII, 596 pp. 94 figs. Softcover DM 135,- ISBN 3-540-13985-0. 3rd, enlarged ed. Due May 1993. Approx. 700 pp. 100 figs. Hardcover DM 102,- (projected) ISBN 3-540-97944-1

MONOGRAPHS

W. Thirring, University of Vienna

A Course in Mathematical Physics

Translated from the German by E. M. Harrell

Vol. 1: Classical Dynamical Systems. 2nd ed. 1992. XVIII, 286 pp. 76 figs. Hardcover DM 88,- ISBN 3-540-53612-4

Vol. 2: Classical Field Theory. 2nd ed. 1986. X, 261 pp. 74 figs. Hardcover DM 88,- ISBN 3-211-96266-2

Vol. 1+2: 2nd ed. 1992. XX, 261 pp. 144 figs. (Springer Study Edition) Softcover DM 124,- ISBN 3-540-97609-4

Vol. 3: Quantum Mechanics of Atoms and Molecules. 1st ed. 1981. Corr. 2nd printing 1990. VIII, 300 pp. 23 figs. Hardcover DM 82,- ISBN 3-211-81620-8

Vol. 4: Quantum Mechanics of Large Systems. 1983. X, 290 pp. 39 figs. Cloth DM 89,- ISBN 3-211-81701-8

Elliott H. Lieb

The Stability of Matter: From Atoms to Stars

Selecta of Elliott H. Lieb

Edited by W. Thirring, University of Vienna, with a Preface by F. Dyson
1991. VIII, 565 pp. Hardcover DM 130,- ISBN 3-540-53039-8

PROCEEDINGS

K. Schmüdgen, University of Leipzig, FRG (Ed.)

Mathematical Physics X

Proceedings of the Xth Congress on Mathematical Physics Held at Leipzig, Germany,
30 July - 9 August 1991
1992. XX, 497 pp. 3 figs. Hardcover DM 138,- ISBN 3-540-55166-2

POST-DOCTORAL POSITIONS - SISSA/ISAS TRIESTE

The International School for Advanced Studies (SISSA/ISAS) in Trieste expects to offer a number of post-doctoral positions in the following fields:

Nonlinear Analysis and Geometry

Mathematical Physics

Theoretical Particle Physics

Theory of Condensed Matter

Theoretical Astrophysics and Cosmology

These positions will be available from the Fall of 1993 for one year and renewable for a second year. Candidates, who must not be over 36 years of age, should submit their applications by 16 January 1993 with their Curriculum Vitae, list of published works and their research programme. They should arrange for 2 letters of reference to be sent by the same date.

Applications and correspondence should be sent to:

Postdoc Programme

International School for Advanced Studies

Via Beirut 2-4

34013 TRIESTE-ITALY

OPEN POSITION

The Institute for Theoretical Physics of the University of Göttingen is looking for a

Professor of Theoretical Physics (successor of H.J. Borchers)

The research activities at the Institute for Theoretical Physics belong to statistical physics/condensed matter physics, relativity/gravitation, foundation of statistical mechanics, quantum optics, and quantum field theory.

Applicants should have research interests relating to the area of mathematical physics, in particular quantum field theory, elementary particle physics, gauge theory, quantum gravity.

The teaching language is German, and the successful applicant is expected to have, or to rapidly acquire, proficiency in German.

Details, such as deadlines, can be requested from the Dean, Department of Physics, University of Göttingen, Lotzestr. 16-18, D-3400 Göttingen. Applications should be sent to him at the earliest notice.



The Universidade da Madeira announces openings for professors and assistants in the fields of mathematics, theoretical and experimental physics.

The candidates for professorships and assistantships must hold, respectively, doctorate and masters degrees or equivalent.

The evaluation of candidates will be based on the scientific, pedagogical and professional achievements with preferences for experience on the following research areas:

- Functional Analysis, Stochastic Processes, Classical and Quantified Dynamical Systems as well as Disordered and Complex Systems.

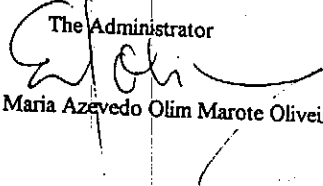
The teaching language is Portuguese.

Candidatures, with curriculum vitae and list of publications should be directed to Presidente da Comissão Instaladora da Universidade da Madeira, Colégio dos Jesuítas, Largo do Município, 9000 Funchal, Portugal, and have to contain the following information: full name, names of parents, date and place of birth, single/married, residential address and telephone number, academic degree with listing of corresponding courses and grade, grades obtained in first academic degree, university where this grades were obtained and dates as well, as any other materials that the candidate considered as relevant for his evaluation. The deadline for application is April 5, 1993.

Annual salaries.

| | |
|-------------------|---------------|
| Full professor | 7.354.550\$00 |
| Assoc. professor | 5.701.150\$00 |
| Assist. professor | 4.938.150\$00 |
| Assistants | 3.538.150\$00 |

Universidade da Madeira, 08 of January 1993

The Administrator

(Elisabete Maria Azevedo Olim Marote Oliveira)

THE UNIVERSITY OF ADELAIDE IS AN EQUAL OPPORTUNITY EMPLOYER.

THE UNIVERSITY OF ADELAIDE
Invites applications from both women and men for the following position:

PROFESSOR OF MATHEMATICAL PHYSICS
(Tenurable Full Professor)

(Ref: 1516) in the DEPARTMENT OF PHYSICS AND MATHEMATICAL PHYSICS. The vacancy follows the appointment of Professor P.C.W. Davies to the chair of Natural Philosophy in the University. The Department is responsible for the teaching of physics in the Faculty of Science and mathematical physics in the Faculty of Mathematical and Computer Sciences. The Department offers subjects for physics majors, Honours students, and also for students of the professional faculties and other departments in the Faculty of Science and the Faculty of Mathematical and Computer Sciences.

The Department has research groups working in the areas of mathematical physics, theoretical nuclear and particle physics, atmospheric physics, cosmic rays and high energy astrophysics, medical physics, molecular physics, and optics. The current research interests in mathematical physics are quantum gravity, general relativity and cosmology, field theory, and statistical mechanics. There are cognate interests in differential geometry in the Department of Pure Mathematics.

The new professor will be expected to contribute to the academic leadership of the whole Department but will have a particular responsibility for establishing a research group and developing and teaching subjects in the discipline of mathematical physics that lead to degrees in the Faculty of Mathematical and Computer Sciences. A commitment to excellence in both teaching and research is expected.

Further information concerning the duties of the position may be obtained from the Head of Department, Dr. A.J. Blake: telephone (+61 8) 303 5113; fax: (+61 8) 232 6541; e-mail: ablake@physics.adelaide.edu.au

It is University policy to encourage women to apply for consideration for appointment to tenurable academic appointments. Holders of full-time tenured or tenurable academic appointments have the opportunity to take leave without pay on a half-time basis for a specific period of up to ten years where this is necessary for the care of children.

INFORMATION about the general conditions of appointment may be obtained from the Director, Personnel Services Branch at the University.

Salary per annum: \$77,900

APPLICATIONS IN DUPLICATE, quoting reference number 1516 and giving full personal particulars (including whether candidates hold Australian permanent residency status), details of academic qualifications and names and addresses of three referees, should reach the Director, Personnel Services Branch, The University of Adelaide, South Australia 5005, Telex UNIVAD AA 89141, Fax (+61 8) 303 4353, not later than 1 October 1993.

The University reserves the right to make enquiries of any person regarding any candidate's suitability for appointment, not make an appointment or to appoint by invitation.

INTERNATIONAL ASSOCIATION OF MATHEMATICAL PHYSICS



IAMP NEWS BULLETIN

AUGUST 1993

President:

Prof. A.M. Jaffe
Department of Physics
Harvard University
Cambridge, Mass. 02138, USA

Secretary:

Prof. A. Truman
Department of Mathematics
University College of Swansea
SWANSEA SA2 8PP UK

Vice-President:

Prof. Y. Sinai
Landau Institute of Theor. Phys.
Academy of Science
Vorobiev Chasse 2
Moscow V-334, Russia

Treasurer:

Prof. G.G. Emch
Department of Mathematics
University of Florida
Gainesville, FL 32611, USA

Change of Address: Please inform the Treasurer:
Prof. G.G. Emch if you
should change your address.

NEWS FROM THE PRESIDENT

With plans proceeding for the Paris Congress, we should now focus on the 1997 I.A.M.P. Congress. Since this is the most visible activity of the association, I urge you to consider this seriously. Although a couple of individuals have expressed interest to me privately about hosting the 1997 Congress, up to this date I have received no explicit proposals. I hope that members who might consider hosting that Congress will contact me as soon as possible.

Please send Aubrey Truman news of open positions for mathematical physicists, for inclusion in the next bulletin.

Arthur Jaffe
Lyman Laboratory of Physics
Harvard University
Cambridge, MA 02138
U.S.A.
email:iamp@math.harvard.edu

Bulletin n°1

June 1993

1. General informations

This bulletin is a complement to the first poster of the Congress. A next bulletin and the (more refined) final poster will come out in a few months.

The ICMP-Paris is the XIth International Congress of Mathematical Physics, following Moscow (1972), Warszawa, Kyoto, Rome, Lausanne, Berlin, Boulder, Marseille, Swansea and Leipzig (1991). It is open to everyone working in or interested in mathematical physics. Coorganized by the IAMP and Universities and Institutes of the Paris area, it benefits from the crucial cooperation and support of the UNESCO, the CEA and the CNRS, and from the further sponsorship and support of the Mayor of Paris, the Commission of European Communities, the French Ministères of Education and Research and the French, European and International Physical and Mathematical Societies (see poster).

From Monday 18 to Friday 22, the Congress will take place in the modern, comfortable and prestigious Centre de Conférences of UNESCO, close to the Champ de Mars and the Eiffel Tower. Lectures on Saturday 23 will be given in the impressive and prestigious Grand Amphithéâtre of the Sorbonne, the historical heart of the French University in Quartier Latin. Both sites are in the centre of Paris, on the left bank of the river Seine, at 15 minutes from each other by direct subway or bus.

The main part of the scientific program will consist of about 12 invited one-hour lectures and 12 topical sessions (see poster) with two parallel sessions the rule and 4 to 6 invited speakers in each session. This program will start on Monday July 18 at 10.00 and will end on Saturday, July 23 at 12.30 or 1.00 p.m. Wednesday afternoon will be free. It will be completed by a round table (Wednesday late afternoon, about 6 to 7.30 p.m.), probably on relations between physics and mathematics, and possibly by public plenary lectures intended to a larger audience on Saturday afternoon (under discussion).

Participants are welcome to contribute to the book of abstracts (details in a next bulletin), and during the Congress by posters, exhibition of preprints, reprints,.... Some lecture rooms will also be available at UNESCO for special sessions of short communications by participants on Wednesday afternoon and on some late afternoons, about 6.30 to 8.00 p.m., after the main program.

2. Social events

A reception-cocktail in the beautiful salons of Hotel de Ville of Paris is offered to 300 participants, probably on Tuesday, 6.30 to 8.00 p.m.

At least half of the invitations are reserved to first registrants paying a normal fee.

The following further events are planned :

- Trip on bateau-mouche across Paris along the river Seine on Wednesday afternoon (15.30 - 17.30), on special boat for the Congress with afternoon tea (tea or wine, soft drinks, pastry) : 60 FF ; accompanying persons : 120 FF.
- Cocktail-buffet (replacing dinner) an evening at UNESCO (7th floor) or in the Grand Salon of the Sorbonne (cost : 250 FF, date to be confirmed).

Finally, cultural activities (concerts, Opera), excursions during the week-end, sightseeing program for accompanying persons, ... may be proposed according to wishes of participants.

3. Satellite colloquia and other scientific activities around the Congress

So far, four satellite colloquia (July 25-27 or 28) are sponsored by the IAMP and the ICMP-Paris : see enclosed preliminary announcements of three of them. The last one, on "New problems in the general theory of fields and particles" is organized by J. BROS, Service de Physique Théorique, Saclay, same address as the ICMP-Paris. Organizing Committee : to be announced later, place : probably the Sorbonne. The list may be completed, depending on proposals we shall receive and on wishes expressed by participants. Among sites considered by the organizers (see announcements) : the Institut Henri Poincaré is at a few minutes walk from Quartier Latin (and from the Sorbonne), and Ecole Polytechnique, in Palaiseau, can be reached by direct train from Quartier Latin in about 50 minutes (it offers also low-cost student-type accomodation on the site).

Other important scientific activities of possible interest to our participants : the International Congress of Mathematicians in Zurich (3-14 August), the Summer Institute of Theoretical Physics of Ecole Normale Supérieure in Paris (directly after the satellite colloquium on "Topology, strings and integrable models"), the August session of the Les Houches Summer School on problems in field theory and statistical physics.

Among more specialized activities : the symposium on "Classical and Quantum billiards", July 25-30, Ascona, Switzerland (organizers : Ph. Choquard, M. Cibils, D. Szasz, A. Kramli, Information : M. Cibils, Physique Théorique, EPFL, CH-1015 Lausanne, Switzerland).

Organizers of other relevant scientific activities are welcome to send us informations for our next bulletin.

4. Accommodation and costs

(1 US dollar = 5,5 FF, May 1993)

Registration fee to the ICMP-Paris including book of the Proceedings, before and after March 1st, 1994, respectively :

| | |
|---|-------------|
| IAMP members : | 700, 800 FF |
| Non IAMP members : | 800, 900 FF |
| (the difference will be returned to you if you join IAMP at latest during the Congress) | |
| Reduced fee (students, Paris area, other participants upon request) | 400, 500 FF |

Registration to satellite colloquia : 200 FF, reduced fee 100 FF (total cost independent of the number of colloquia attended).

Lunch :

5 complete lunches (July 18-22) in French Ministeres next to UNESCO : 200 FF
 4 lunches (July 18,19,21,22) : 160 FF
 Lunches at UNESCO itself (6th floor) in somewhat more pleasant conditions :
 90 FF (self-service), 180 FF (restaurant) for each lunch

Advance reservations are required in either case. There are not many private restaurants in the immediate neighbourhood of UNESCO. There are many near the Sorbonne, at all costs (starting from 60 FF for a correct meal, or less for fast food).

Meals (lunch or dinner) in restaurants universitaires (Cité Universitaire, Quartier Latin) : students 12 FF, non students 24 FF (add 10-15 FF for a better meal).

Transportation : all transportations by subway, bus, train in Paris during one week (Monday to Sunday) : 60 FF. One subway ticket : 4 FF.

Accommodation : you can ask us, if you wish, the following reservations.

a) *Student-type accommodation* in the Cité Universitaire in nice surroundings, 20 minutes by subway to UNESCO, 10 minutes to Quartier Latin, July 18-23 (5 nights) : 450 FF for each person in a double room, 650 FF for a single room. Add 90 FF and 130 FF respectively for each supplementary night. We cannot guarantee reservation in the case of late requests.

b) *Selected hotels* : see below

Costs indicated take into account a 10-20% reduction for our participants in 2- and 3-star hotels (400-700 FF for one night) and 40-50% in 4-star hotels (700-1000 FF). Breakfasts, or buffet-breakfasts are often offered. Costs are the same, or almost the same, for single or for double rooms (with 1 large bed or 2 single beds) : *divide by two for each person, in the latter case.*

Hotels have been selected on the basis of their quality/cost ratio, comfort and/or charm, convenient location (close to UNESCO, or pleasant areas on the left bank such as Quartier Latin, St-Germain-des-Prés, Montparnasse, at less than 15 minutes, either by walk or by direct subway or bus, from UNESCO and the Sorbonne).

Selected hotels

- 2-star large and modern international hotel *Arcade*, 5 minutes walk to UNESCO. small but comfortable rooms (with shower and toilet), single 400, double 430.
- 3-star hotels :
 - Trianon* (very close to the Sorbonne, single around 450, double 550, breakfast offered)
 - Latitudes St-Germain and Mercure-Montparnasse* (around 600, single or double rooms)
 - Villa des Artistes* (Montparnasse, 500 single, double, triple : 700, 800, buffet-breakfasts offered)
 - Frantour* (next to Hilton hotel below, 670 single, 700 double, buffet-breakfasts offered)
- 4-star hotels :
 - Pullmann St-Jacques* (without much charm and not the best situated but comfortable rooms 730 FF single or double)
 - Hilton* (next to the Eiffel Tower, facing the Seine, comfortable, nice 15 minutes walk to UNESCO through gardens of Champ de Mars, 950 FF single or double, buffet-breakfasts offered)
 - Lutetia* (renowned and attractive, in traditional french style, near St-Germain-des-Prés, 850-950-1050 FF single or double classical - de luxe - executive, continental breakfasts offered. Executive rooms, 55% reduction, are excellent).

In view of constraints on the minimal and maximal number of rooms in each hotel, we cannot guarantee your first choice and you should thus indicate a second one.

Our list does not include low-cost hotels (150-300 FF), or excellent but small hotels, which do not accept groups. Alternatively, you may directly contact hotels of your choice (a list of hotels will be sent to you upon request ; it is not difficult to find hotel rooms during the period of the Congress) or ask Elysée 12-12, 9 rue d'Artois, 75008 PARIS (Tel. 33-1-43591212), a company which seems reasonably efficient according to some organizers of previous conferences in Paris (but we take no responsibility).

c) *Apartments* (1 to 3 rooms, kitchen, bathroom) : various possibilities, 500-1000 FF for each night for a few days, reductions for long stays.

5. Fellowships

Explain your situation, with curriculum vitae, the financial support requested with an estimate (in FF or US dollars) of the minimal cost of travel if you ask us to contribute to it, main publications, and possibly one or more recommendation letters (students,...).

Fellowships will mainly cover the registration fee alone, or the registration fee plus living expenses with accommodation at Cité Universitaire or similar (in a double room to be shared, single room in some cases), lunches next to UNESCO (July 18-22), other meals in restaurants universitaires. Extensions to the week following the Congress can be considered.

Direct contributions to travel expenses will be considered only if the cost is small (e.g. travel by bus from some countries of Eastern Europe) and for a few participants from developing countries. You should thus make efforts to obtain support from other sources. On the other hand, we will do our best in cases when the request must come from the organizers (International Science Foundation, ...). Give us any useful information.

Title : Mathematical physics of disordered systems

Dates : 25-27 July 1994

Place : Paris

Organiser : Flora Koukiou

Scientific committee : M. Aizenman (Princeton), B. Derrida (Saclay),
G. Grimmett (Cambridge), F. Koukiou (Palaiseau), L. Pastur (Kharkov)

This colloquium can be viewed as the continuation and amplification of the session on disordered systems of the IAMP congress ; it will be devoted to the recent advances of the probability theory and mathematical physics of large disordered systems. The intended program includes the following, closely related, subjects.

Equilibrium statistical mechanics of disordered systems :

Gibbsian formalism, interfaces in disordered media, spin glasses and neural networks, turbulent, almost- and quasi-crystals, percolation theory.

Evolution of systems of interacting particles :

dynamical phase transitions, nucleation and crystal growth, metastability, diffusion processes.

Quantum and non linear random systems :

Schrödinger operators in disordered media, random matrices, random diffusion, wave propagation in random media.

The three mornings would be reserved for 50-minute main lectures and the afternoons for shorter communications and discussions.

For additionnal information :

F. Koukiou

CPT Ecole Polytechnique

F - 91128 Palaiseau Cedex

France

e-mail : koukiou@orphee.polytechnique.fr

TOPOLOGY, STRINGS AND INTEGRABLE MODELS.

(Satellite colloquium to the ICMP

Paris Conference (July 1994))

Dates: Monday-Thursday, July 25-28

Place: Institut Henri Poincaré (July 25-27) and Ecole Polytechnique (July 28).

Organizing Committee: C. Bachas, D. Bernard, M. Broué, P. Cartier, P. Di Francesco, J.-L. Gervais and V. Pasquier.

Persons to contact: bachas@orphee.polytechnique.fr, philippe@amoco.saclay.cea.fr and pasquier@amoco.saclay.cea.fr.

The conference will be devoted to recent progress in field theory going from strings to lattice integrable models, including quantum gravity, topology and conformal field theory.

This is meant as a complement to the main conference sessions on conformal and topological field theory and integrable models. It covers the following topics:

-Connections between Yang-Baxter equation, (deformed) Knizhnik-Zamolodchikov equation, and quantum group symmetry in solvable models

-W-symmetries and recent progress in conformal field theory and its perturbations in relation to classically integrable systems

-New topological invariants of knots, topological field theories and N=2 superconformal systems...

-Superstring unification, effective low-energy Lagrangians, matrix models of random surfaces, stringy black holes

The above is a tentative list of possible topics, subject to changes following the rapid evolution of the fields covered. Besides relieving some pressure from the main-conference sessions, this colloquium will provide an intense and focused environment for exchanging informations and ideas on the above topics (apart from the main conference halls, the new Institut Henri Poincaré as well as the Ecole Polytechnique provide office room for private discussions).

THIRD INTERNATIONAL WIGNER SYMPOSIUM

5 - 11 September 1993

The Third International Wigner Symposium will be held at Christ Church, Oxford, from the evening of Sunday, 5th September to the morning of Saturday, 11th September, 1993. Details may be obtained by sending the message GET WIGSYM INFO to LISTRAL@IB.RL.AC.UK.

This symposium is a residential conference and priority of registration will be given to those who opt to reside in Christ Church. This is a rare opportunity for people whose work overlaps in any way that of E P Wigner.

The Joint Organizers are:

| | |
|--|--|
| Dr L Laurence Boyle University Chemical Laboratory Canterbury Kent CT2 7NH Telephone: 0227 764000 Ext 3584 Fax: 0227 475475 Email: LLB@ukc.ac.uk | Prof Allan I Solomon Faculty of Mathematics The Open University Walton Hall Milton Keynes Bedfordshire MK7 6AA Telephone: 0908 652326 Fax: 0908 653744 Email: a.i.solomon@open.ac.uk |
|--|--|

The Local Secretary is:

Dr Maia N Angelova, Somerville College, Woodstock Road, Oxford OX2 6HD Telephone: 0865 270659; Fax: 0865 270616; Email: angelova@vax.ox.ac.uk

The Honorary Chairman is Professor Eugene Wigner (Princeton University) and the Patron is Professor Sir Roger Elliott (Oxford University).

The members of the International Advisory Committee are:

- L C Biedenharn (University of Texas at Austin) on Quantum Groups
- J L Birman (City College of the City University, New York) on Condensed Matter Physics
- H-D Doebner (University of Clausthal) on Geometric Quantization
- G Emch (University of Florida) on Foundations of Quantum Mechanics
- F Iachello (Yale University) on Nuclear Physics
- B R Judd (The Johns Hopkins University, Baltimore) on Atomic and Molecular Physics

- V G Kadyshevsky (Joint Institute for Nuclear Research, Dubna) on Elementary Particle Physics
- Y S Kim (University of Maryland, College Park) on Lorentz Group and Extended Particles
- P L Knight (Imperial College, London) on Wigner Functions and Quantum Optics
- M Moshinsky (Universidad Nacional Autonoma de Mexico) on Group-Theoretical Methods
- N Sanchez (Observatoire de Paris) on Gravity and General Relativity

The members of the International Steering Committee are:

- D Han (Goddard Space Flight Center of NASA)
- H-D Doebner (University of Clausthal)
- Y S Kim (University of Maryland)
- F Schroeck (Florida Atlantic University)
- W W Zachary (Howard University, Washington, D.C.)

The first and second meetings of this series of symposia took place at College Park, Maryland (U.S.A.) in 1988 and at Goslar (Germany) in 1991 respectively.

Contributions

Provided that the topic falls within the general definition of a Wigner Symposium, i.e. is in a field in which Wigner made a major contribution, the organisers will accept one contribution per participant until either the conference is deemed to be full or the deadline for submission of abstracts passes, whichever is the earlier. After this date the organisers will select on the basis of the abstracts received and any other evidence of ability to present an interesting and stimulating lecture and in consultation with the Advisory Committee when appropriate, those contributions which are to be presented as short talks: the remainder will be presented as posters. Poster communications and short oral communications will have exactly the same allowance of space in the published proceedings which will be refereed. Details for the preparation and submission of abstracts and the information required for registration available in the LISTRAL database.

This Symposium is in receipt of grants from the Commission of the European Communities, the Royal Society of London, the London Mathematical Society, the British Tourist Authority and contributions from the University of Maryland at College Park and the Goddard Space Flight Center of the United States National Aeronautics and Space Administration. It is grateful to the United Kingdom Science and Engineering Research Council for the free use of the LISTRAL automatic mailer.

SYMPOSIUM ON CLASSICAL AND QUANTUM BILLIARDS

July 25-30, 1994 - Ascona, Switzerland

Centro S. Franscini - Monte Verità

This symposium is devoted to mathematical and physical, including numerical, aspects of billiard type dynamical systems, both classical and quantum. The main topics are : non zero Lyapounov exponents, local and global ergodicity, Markov approximations and decay of correlations, polygonal billiards, ergodic vs. integrable behaviours, billiards in hyperbolic domains and arithmetic chaos, distribution of energy levels and random matrices, semiclassical quantization of chaotic billiards, trace formulas, scattering methods, scars...

The symposium will consist of plenary sessions with an appropriate balance between tutorial and seminar lectures. It is at first addressed to PhD students and also to research workers active in one of its main themes. Participants are entitled to present their own work : communication and poster sessions will be organized for this purpose.

In principle the list of speakers will include :

| | | |
|---------------|----------------|---------------|
| M. Berry | M.-J. Giannoni | Y. Sinai |
| E. Bogomolny | M. Gutzwiller | U. Smilansky |
| O. Bohigas | E. Heller | J. Smillie |
| L. Bunimovich | J. Lebowitz | F. Steiner |
| N. Chernov | A. Richter | D. Szász |
| G. Gallavotti | N. Simányi | M. Wojtkowski |

The members of the symposium committee are :

| | |
|----------------|--------------|
| Ph. Choquard * | D. Szász + |
| M. Cibils * | A. Krámlí ++ |

This is a preliminary announcement. Those who would like to participate are invited to express their interest to the following address :

Dr. M. Cibils, Institut de Physique Théorique EPFL, CH-1015 Lausanne.
Fax : ++ 41 21 693 44 44, E-mail : Billiard@ELDP.EPFL.CH

They will be included in a mailing list. A registration form will be sent in November 1993. The symposium fee, including full accomodation and registration, is expected to be 800.- CHF. A small number of fellowships will be available. The lodging in the Centro is limited to sixty people.

This symposium is jointly organized by the Theoretical Physics Institute of EPFL and by the Mathematical Institute of the Hungarian Academy of Science.

Lausanne, May 21, 1993

* Institut de Physique Théorique, Ecole Polytechnique Fédérale de Lausanne.

+ Mathematical Institute of the Hungarian Academy of Science, Budapest.

++ Computer and Automation Institute of the Hungarian Academy of Science, Budapest.

ELECTRONIC MATHEMATICAL PHYSICS ARCHIVE

Dear Colleague:

We remind you that the archive is completely free to the user, and can be accessed by sending email messages to the internet address mp_arc@math.utexas.edu. Instructions are automatically returned to the sender of any such request to that address.

We append an update list of papers from March 1993, each with an identification number; To receive the paper from the archive whose number is Y-N, send the message (precisely; in particular be careful of capitals, colon, etc.):

REQUEST: send papers
NUMBER: Y-N

to the address mp_arc@math.utexas.edu.

Finally, we note that the archive is also a repository of email addresses and some utilities for use with the archive, and that there are three new features to the archive: a keyword search, optional file compression, and a subscription service for abstracts of archived papers.

H. Koch, R. de la Llave, C. Radin

Dept. of Mathematics
University of Texas at Austin

(Update from March 1993)

93-60
Graf G.M., Solovej, J.P.
A correlation estimate with applications to quantum systems with Coulomb interactions
(58K, TeX)

93-62
Toth Balint
Improved Lower Bound on the Thermodynamic Pressure of the Spin 1/2 Heisenberg Ferromagnet
(27K, TeX)

DUBLIN
institute for
advanced
studies

School of Theoretical Physics, 10 Burlington Road, Dublin 4, Ireland
Telephone: +353-1-680748. Telegrams: DIAS DUBLIN. Telex: 31687 DIAS EI. EIRMAIL (Dialcom) 74:EIIN252
Fax: +353-1-680561. Email: PHYSICS@STP.DIAS.IE

DOCUMENT LIST 41: January to July 1993

Preprints unless marked * (= not available) or reprints will be sent out to requests as long as supplies are available. Apply to the Secretary

DIAS-STP-93-

- 01: N.G. DUFFIELD: Exponential bounds for Markovian queues.
- 02: L. FEHÉR, L. O'RAIFEARTAIGH, P. RUELLE, & I. TSUTSUI: On the completeness of the set of classical w -algebras obtained from DS reductions.
- 03: M. LAVALLE, & D. MCMULLAN: A new symmetry for QED.
- 04: M. LAVALLE, & D. MCMULLAN: On quark confinement.
- 05: M. LAVALLE, & D. MCMULLAN: On the physical propagators of QED.
- 06: A.N. LEZNOV, & L. O'RAIFEARTAIGH: The discrete symmetry chain of self-dual equations and its exact integrability in the case of fixed end-points.
- 07: G.A.T.F. DA COSTA: Lattice models and algebras of weights.
- 08: G.A.T.F. DA COSTA: Yang-Baxterization and the BH algebra.
- 09: M.P. TUITE: On the relationship between monstrous moonshine and the uniqueness of the moonshine module.
- 10: V.I. GAIDUK, V.V. GAIDUK, & J. MCCONNELL: The complex susceptibility of liquid water as a two-potential system of reorienting polar molecules.
- 11: R.S. ELLIS, J. GOUGH, & J.V. PULÉ: The large deviation principle for measures with random weights.
- 12: M. LAVALLE, & D. MCMULLAN: Gauge choices and physical variables in QED.
- 13: L. FEHÉR, L. O'RAIFEARTAIGH, & I. TSUTSUI: The vacuum preserving Lie algebra of a classical w -algebra.

PREPRINTS (RECEIVED IN GAINESVILLE)

NOTE entries for this listing should be addressed to:

John R. Klauder, IAMP News Bulletin, Department of Mathematics, University of Florida, Gainesville, FL 32611

Joseph G. Conlon and Juan Redondo, Department of Mathematics, University of Michigan, Ann Arbor, MI 48109
ESTIMATES ON THE SOLUTION OF A SCHRODINGER EQUATION AND SOME APPLICATIONS

ESTIMATES ON THE SOLUTION OF AN ELLIPTIC EQUATION RELATED TO BROWNIAN MOTION WITH DRIFT

Micheal Aizenman, Departments of Physics and Mathematics, Princeton University, Jadwin Hall, P.O. Box 708, Princeton, New Jersey 08544 and Stanislav Molchanov, Department of Probability Theory, Faculty of Mathematics and Mechanics, Moscow State University, Moscow 117234, Russia
LOCALIZATION AT LARGE DISORDER AND AT EXTREME ENERGIES: AN ELEMENTARY DERIVATION

Karin Frank, Centre for Environmental Research, Halle/Leipzig (UFZ), Permoserstrasse 15, D-O-7050 Leipzig, Germany
ON THE GEOMETRY OF NORMAL STATE TRAJECTORIES GENERATED BY DYNAMICAL SEMIGROUPS

Jean-Loup Gervais, Laboratoire de Physique Théorique de l'École Normale Supérieure, 24 rue Lhomond, 75231 Paris Cédex 05, France, Lochlainn O'RaiFeartaigh, School of Theoretical Physics, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4,, Ireland, Alexander V. Razumov, Institute for High Energy Physics, 142284, Protvino, Moscow region, Russia, and Mikhail V. Saveliev, Isaac Newton Institute for Mathematical Sciences, University of Cambridge, 20 Clarkson Road, Cambridge CB3 0EH, U.K.
GAUGE CONDITIONS FOR THE CONSTRAINED-WZNW-TODA REDUCTIONS

Christian Borgs, Institut für theoretische Physik, Freie Universität Berlin, Arnimallee 14, D-1000 Berlin 33, Germany
LONG CYLINDERS, SURFACE TENSION AND ITERATED CLUSTER EXPANSIONS

A MICROSCOPIC THEORY OF FINITE-SIZE SCALING

Christian Borgs and Stefan Kappler, Institut für theoretische Physik, Freie Universität Berlin, Arnimallee 14, D-1000 Berlin 33, Germany
EQUAL WEIGHT VERSUS EQUAL HEIGHT: A NUMERICAL STUDY OF AN ASYMMETRIC FIRST-ORDER TRANSITION

Christian Borgs, Institut für theoretische Physik, Freie Universität Berlin, Arnimallee 14, D-1000 Berlin 33, Germany and Wolfhard Janke, Höchstleistungsrechenzentrum, Forschungszentrum Jülich, Postfach 1913, D-5170 Jülich, Germany
AN EXPLICIT FORMULA FOR THE INTERFACE TENSION OF THE 2D POTTS MODEL

Michel L. Lapidus, Department of Mathematics, Sproul Hall, The University of California, Riverside, CA 92521-0135, and Helmut Maier, Department of Mathematics, Boyd Graduate Studies Research Center, The University of Georgia, Athens, GA 30602
THE RIEMANN HYPOTHESIS, INVERSE SPECTRAL PROBLEM FOR VIBRATING FRACTAL STRINGS AND THE MODIFIED WEYL-BERRY CONJECTURE

Jun Kigami, Department of Mathematics, College of General Education, Osaka University, Toyonaka 560, Japan and Michel L. Lapidus, Department of Mathematics, Sproul Hall, The University of California, Riverside, CA 92521-0135
WEYL'S PROBLEM FOR THE SPECTRAL DISTRIBUTION OF LAPLACIANS ON P.C.F. SELF-SIMILAR FRACTALS

Gerald Hofmann, Universität Leipzig, Fachb. Mathematik, Augustusplatz 10, D-0-7010 Leipzig, Germany
ON ALGEBRAIC #-CONES IN TOPOLOGICAL TENSOR-ALGEBRAS, I. BASIC PROPERTIES AND NORMALITY

- S. Albeverio^{1,2}, A. Boutet de Monvel-Berthier³ and Z. Brzezniak^{2,4,5}.
¹Fakultät für Mathematik, Ruhr Universität, D 4630 Bochum 1, Germany; CERFIM. ²BiBoS-Research Centre, Universität Bielefeld, 4800 Bielefeld 1, Germany. ³Laboratoire de Physique Mathématique et Géométrie EP 004, Université Paris VII, 2 place Jussieu, 75251 Paris Cedex 05, France. ⁴Alexander von Humboldt Stiftung fellow. ⁵On leave from Institute of Mathematics, Jagellonian University, Kraków (Poland).
SFB 237 - Preprint Nr.170, January 1993
The Trace Formula for Schrödinger Operators from Infinite Dimensional Oscillatory Integrals
- S. Albeverio¹ and Z. Brzezniak², ¹Fakultät für Mathematik, Ruhr Universität, D 4630 Bochum, Germany. ²Institute of Mathematics, Jagellonian University, Kraków, Poland.
SFB 237 - Preprint Nr. 173, February 1993
Feynman Path Integrals as Infinite Dimensional Oscillatory Integrals: Some New Developments
- S. Albeverio¹, R. Gielerak², H. Holden³, T. Kolsrud⁴ and M. Mebkhout⁵.
¹Fakultät für Mathematik, Ruhr Universität, D 4630 Bochum 1, Germany; SFB 237 Essen-Bochum-Düsseldorf: BiBoS-Research Centre, Universität Bielefeld, 4800 Bielefeld 1, Germany; CERFIM, Locarno (Switzerland). ²BiBoS-Research Centre, Universität Bielefeld, 4800 Bielefeld 1, Germany. ³Institutt for matematiske fag, Norges tekniske høgskole, Universitetet i Trondheim, N-7034 Trondheim, Norway. ⁴Department of Mathematics, Royal Institute of Technology, S-10044 Stockholm, Sweden. ⁵Université d'Aix Marseille II, Faculté des Sciences de Luminy, F-13288 Marseille, France.
SFB 237 - Preprint Nr. 178, April 1993.
Low Temperature Expansion around Classical Crystalline Ground States
- S. Albeverio¹, W. Karwowski² and V. Koshmanenko³. ¹Fakultät für Mathematik, Ruhr Universität, D 4630 Bochum 1, Germany; SFB 237 Essen-Bochum-Düsseldorf: BiBoS-Research Centre, Universität Bielefeld, 4800 Bielefeld 1, Germany; CERFIM, Locarno (Switzerland). ²Institut of Theoretical Physics, Wroclaw University, Wroclaw, Poland. ³Institute of Mathematics, Ukrainian Academy of Sciences, Kiev, Ukraine.
SFB 237 - Preprint Nr. 176, April 1993
Square Powers of Singularly Perturbed Operators

- S. Albeverio¹, J. Kondratiev² and M. Röckner³. ¹Fakultät für Mathematik, Ruhr Universität, D 4630 Bochum 1, Germany: SFB 237 Essen-Bochum-Düsseldorf: BiBoS-Research Centre, Universität Bielefeld, 4800 Bielefeld 1, Germany: CERFIM, Locarno (Switzerland). ²BiBoS-Research Centre, Universität Bielefeld, D 4800 Bielefeld 1, Germany: Institute of Mathematics, Ukrainian Academy of Sciences, Kiev, Ukraine. ³Institute for Applied Mathematics, Bonn, Germany. SFB 237 - Preprint Nr. 167, January 1993.
An Approximate Criterium of Essential Self-Adjointness of Dirichlet Operators
- S. Albeverio¹ and A. Klar². ¹Fakultät für Mathematik, Ruhr Universität, D 4630 Bochum 1, Germany: SFB 237 Essen-Bochum-Düsseldorf: BiBoS-Research Centre, Universität Bielefeld, 4800 Bielefeld 1, Germany: CERFIM, Locarno (Switzerland). ²Fachbereich Mathematik, Universität Kaiserslautern, 6750 Kaiserslautern, Germany. SFB 237 - Preprint Nr. 168, January 1993
Stationary Behaviour of Stochastic Hamiltonian Systems: The Multidimensional Case
- I. Antoniou¹, J. Levitan^{1*} and L.P. Horwitz^{2†}. ¹Service de Chimie Physique, Université Libre de Bruxelles, C.P. 231, Campus Plaine U.L.B., B-1050 Bruxelles. ²Institute for Advanced Study, School of Natural Sciences, Princeton, N.J. 08540, U.S.A. *Permanent Address: College of Judea and Samaria, Ariel and Department of Physics, Bar Ilan University, Ramat Gan, Israel. †Permanent Address: School of Physics, Raymond and Beverly Sackler Faculty of Exact Sciences, Tel Aviv University, Ramat Aviv, Israel and Department of Physics, Bar Ilan University, Ramat Gan, Israel. Preprint No. IASSNS 92/65, TAUP 2041-93, October 1992.
Estimate for Regeneration up to the Golden Rule Time
- D. Applebaum, Department of Mathematics, Statistics and Operational Research, The Nottingham Trent University, Burton Street, Nottingham, NG1 4BU.
Fermion Stochastic Flows on Quantum Algebras
- D. Applebaum, Department of Mathematics, Statistics and Operational Research, The Nottingham Trent University, Burton Street, Nottingham, NG1 4BU.
Fermionic Stochastic Differential Equations and the Index of Fredholm Operators

- J.E. Avron¹, R. Seiler² and B. Simon³. ¹Department of Physics, Technion, Israel Institute of Technology, 32000 Haifa, Israel. ²Fachbereich Mathematik, Technische Universität Berlin, Strasse des 17. Juni, W-1000 Berlin 12, Germany. ³Division of Physics Mathematics and Astronomy, Caltech., 253-37, Pasadena, CA 91125.
Charge Deficiency, Charge Transport and Comparison of Dimensions*
* To appear in Comm. Math. Phys.
- J.E. Avron¹, R. Seiler² and B. Simon³. ¹Department of Physics, Technion, Israel Institute of Technology, 32000 Haifa, Israel: e-mail: phr97ya@technion.technion.ac.il. ²Fachbereich Mathematik, Technische Universität Berlin, Strasse des 17. Juni, W-1000 Berlin 12, Germany: e-mail: seiler@math.tu-berlin.de ³Division of Physics Mathematics and Astronomy, Caltech., 253-37, Pasadena, CA 91125. Research partially supported by USNSF grant number DMS-9101716.
The Index of a Pair of Projections*
* To appear in J. Func. Anal.
- J.A. de Azcárraga* and D. Ellinas**. Departamento de Física Teórica and IFIC, Centro Mixto Universidad de Valencia - CSIC, E-46100 Burjasot, Valencia, Spain. *azcarraga@evalvx.ific.uv.es. **ellinas@evalvx.ific.uv.es.
Preprint No: FTUV/93-21, IFIC/93-09
Complex Analytic Realizations for Quantum Algebras[†]
[†] Supported by DGICYT, Spain.
- J. Beckers and N. Debergh*. Theoretical and Mathematical Physics, Institute of Physics, B.5, University of Liège, B-4000 Liege 1 (Belgium). * Chercheur, Institut Interuniversitaire des Sciences Nucléaires, Bruxelles.
On a Family of Supersymmetrization Procedures[†]
[†] To be published in J. Math. Phys. (1993)
- J. Beckers and N. Debergh*. Theoretical and Mathematical Physics, Institute of Physics, B.5, University of Liège, B-4000 Liege 1 (Belgium). * Chercheur, Institut Interuniversitaire des Sciences Nucléaires, Bruxelles.
On a Parastatistical Hydrogen Atom and Its Supersymmetric Properties[†]
[†] To be published in Physics Letters A (1993)

J. Beckers and N. Debergh*. Theoretical and Mathematical Physics, Institute of Physics, B.5, University of Liège, B-4000 Liège 1 (Belgium). * Chercheur, Institut Interuniversitaire des Sciences Nucléaires, Bruxelles.

Poincaré Invariance and Quantum Parasuperfields[†]

[†] To be published in Int.J. Mod.Phys. A (1993)

J. Beckers¹, N. Debergh^{1*} and A.G. Nikitin². ¹Theoretical and Mathematical Physics, Institute of Physics, B.5, University of Liège, B-4000 Liège 1 (Belgium). ²Institute of Mathematics, Academy of Sciences, Repin Street, 3, Kiev 4 (Ukraine). *Chercheur, Institut Interuniversitaire des Sciences Nucléaires, Bruxelles.
On a Hidden Dynamical SU(3)-Symmetry in Parasupersymmetric Quantum Mechanics[†]

[†] To be published in J. Phys. A, Letter (1993).

M. Bordag¹ and S. Voropaev². ¹Universität Leipzig, FB Physik, Augustusplatz 10, 0-7010 Leipzig, Germany. ²Vernadsky Institute, Laboratory of Theoretical and Mathematical Physics, Kossygin Street 19, Moscow, Russia.
Preprint No: 07/1993.

Charged Particle with Magnetic Moment in the Aharonov-Bohm Potential*

* Submitted to Journ. of Physics A

A. Boutet de Monvel-Berthier and L. Pastur*. Équipe de Physique Mathématique et Géométrie, EP 0004, C.N.R.S.-Université Paris-VII, Mathématiques, 45-55, 5^e étage, 2, place Jussieu, 75251 Paris Cedex 05. *On leave from Mathematics Division, Institute for Low Temperature Physics, Ukrainian Academy of Science, Kharkov 310164, Ukraine.

On the Eigenvalue Distribution of the Schrödinger Operator whose Potential is the Sum of a Slowly Growing and a Bounded Function[†]

[†] Published in C.R. Acad. Sci. Paris, t.316, Série I, p.139-144, 1993.

L. Burakovsky* and L.P. Horwitz[†]. School of Physics and Astronomy, Raymond and Beverly Sackler Faculty of Exact Sciences, Tel-Aviv University, Tel-Aviv 69978, Israel.
Preprint No: TAUP-2048-93.

* Bitnet: BURAKOV@TAUNIVM.

[†] Bitnet: HORWITZ@TAUNIVM. Also at Department of Physics, Bar-Ilan University, Ramat-Gan, Israel.
Equilibrium Relativistic Mass Distribution

L. Burakovsky* and L.P. Horwitz[†]. School of Physics and Astronomy, Raymond and Beverly Sackler Faculty of Exact Sciences, Tel-Aviv University, Tel-Aviv 69978, Israel.

* Bitnet: BURAKOV@TAUNIVM.

[†] Bitnet: HORWITZ@TAUNIVM. Also at Department of Physics, Bar-Ilan University, Ramat-Gan, Israel.

Preprint No: TAUP-2081-93.

Galilean Limit of Equilibrium Relativistic Mass Distribution

T. Ceccherini¹, S. Doplicher², C. Pinzari³ and J.E. Roberts³. ¹Mathematics Department, UCLA, Ca 90024, U.S.A. ²Dipartimento di Matematica, Università di Roma "La Sapienza", I-00185 Roma, Italy. ³Dipartimento di Matematica, Università di Roma "Tor Vergata", I-00133 Roma, Italy.
A Generalization of the Cuntz Algebras and Model Actions

J.S.R. Chisholm^{1*†} and R.S. Farwell². ¹Institute of Mathematics and Statistics, University of Kent, Canterbury, Kent, U.K. ²Faculty of Information Technology, University of Brighton, Brighton, East Sussex, U.K. *UKC/IMS/A93/5b. [†]JSRC/RSF/14 June 1993.
Spin Gauge Theories: Principles and Predictions

R.A. Coleman¹ and H.-J. Schmidt². ¹Interdisciplinary Studies in Mathematical Physics and Philosophy of Science, University of Regina, Regina, SAS OA2, Saskatchewan, Canada. ²Fachbereich Physik, Universität Osnabrück, Postfach 44 69, D-4500 Osnabrück, Germany.
A Geometric Formulation of the Equivalence Principle*
*Report Nr. 2/93 of the Research Group on Semantical Aspects of Spacetime Theories (1992/93) at the Center for Interdisciplinary Research (ZiF), University of Bielefeld, Wellenberg 1, D-33615 Bielefeld, Germany.

M. Demuth and B.-W. Schulze. Max-Planck-Institut für Mathematik, Gottfried-Claren-Strasse 26, D-5300 Bonn3, Germany.
Preprint No.: MPI/93-7
Abstracts of the Conference "Partial Differential Equations"

P. Droz-Vincent, Laboratoire de Gravitation et Cosmologie Relativistes, C.N.R.S. URA 769, Université Pierre et Marie Curie, Tour 22-12, boîte courrier 142, 4 place Jussieu 75252 Paris Cedex 05, France.
The Massive Bosonic String in the Center-of-Mass Gauge

- E. Eisenberg¹ and L.P. Horwitz². ¹Department of Physics, Bar-Ilan University, Ramat-Gan 52900, Israel. ²School of Physics, Raymond and Beverly Sackler Faculty of Exact Sciences, Tel-Aviv University, Ramat-Aviv, Israel.
Preprint No: TAU P 2074-93
Intrinsic Decoherence in Classical and Quantum Evolution
- D. Ellinas, Departamento de Fisica Teorica Facultad de Fisica, Universidad de Valencia, E-46100 Burjasot, Valencia, Spain: email: ellinas@evalvx.ific.uv.es.
Preprint No: FTUV/93-7
Path Integrals for Quantum Algebras and the Classical Limit*
* Work presented at the XIX International Colloquium on Group Theoretical Methods in Physics, 29th June - 4th July, 1992 Salamanca, Spain.
- D. Ellinas¹ and V. Kovanis². ¹Departamento de Fisica Teorica, Facultad de Fisica, Universidad de Valencia, E-46100 Burjasot, Valencia, Spain: email: ellinas@evalvx.ific.uv.es. ²Nonlinear Optics Center, Phillips Laboratory, 3350 Aberdeen SE, Kirtland AFB, NM 87117-5776, U.S.A.: email: kovanis@xaos.plk.af.mil.
Preprint No: FTUV/93-13
Motion of Wavefunction Zeros in Spin-Boson Systems
- R. Faibish and L.P. Horwitz, The School of Physics and Astronomy, The Raymond and Beverley Sackler Faculty of Exact Science, Tel-Aviv University, Ramat-Aviv, Israel.
Preprint No: TAU P 2025-93
Non-Compact Dynamical Groups for the Solution of Bound State Problems in Relativistic Quantum Theory: I. The Relativistic Harmonic Oscillator in 1+1 Dimensions
- L. Fehér¹*, L. O'Rai feartaigh², P. Ruelle² and I. Tsutsui². ¹Physikalisches Institut der Universität Bonn, Nussallee 12, D-5300 Bonn 1, Germany. ²Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland. * On leave from Bolyai Institute of Szeged University, H-6720 Szeged, Hungary.
Preprint No: BONN-HE-93-14, DIAS-STP-93-02, April 1993, hep-th/9304125
On the Completeness of the Set of Classical ω -Algebras Obtained from DS Reductions
- H. Fehske¹, D. Ihle², U. Trapper¹ and H. Büttner¹. ¹Physikalisches Institut, Universität Bayreuth, W-8580 Bayreuth, Germany. ²Fachbereich Physik, Universität Leipzig, 0-7010 Leipzig, Germany.
Preprint No: 09/1993
Polaron Formation in the Holstein-Hubbard Model: Finite-density, Squeezing and Correlation Effects
- K. Frank, Centre for Environmental Research, Halle/Leipzig (UFZ), Permoserstrasse 15, D-0-7050 Leipzig, Germany.
Preprint No: 31/92.
On the Geometry of Normal State Trajectories Generated by Dynamical Semigroups*
* The paper is an extension of results of the author's Thesis and relates to a research project carried out at Mathematics Department of Leipzig University in the period 1989-1991.
- M. Frank, Universität Leipzig, FB Mathematik, Augustusplatz 10, 0-7010 Leipzig, Germany.
Preprint No: 08/1993
Normal Operator-valued Weights of Finite Index
- F. Freire¹, D. O'Connor² and C.R. Stephens³. ¹The Blackett Laboratory, Imperial College, London, SW7 2BZ. ²D.I.A.S., 10 Burlington Road, Dublin 4, Ireland. ³Inst. for Theor. Physics, Rijksuniversiteit, Princetonplein 5, P.O. Box 80006, 3508 TA Utrecht, The Netherlands.
Preprint No: DIAS-STP-92-42
Dimensional Crossover and Finite Size Scaling Below T_c
- P. Garbaczewski, Institute of Theoretical Physics, University of Wrocław, pl. M. Borna 9, PL-50 204 Wrocław, Poland.
Preprint No: ITP UWr 829/93, March 1993.
On the Statistical Origins of the de Broglie-Bohm Quantum Potential: Brownian Motion in a Field of Force as the Bernstein Diffusion*[†]
* Supported by the KBN grant No.200609101
[†] Published in Phys. Lett. A 178 (1993), 5th August.
- P. Garbaczewski*, Center for Nonlinear Dynamics, Department of Physiology, McGill University, Montreal, Quebec, Canada H3G 1Y6.
* Permanent Address: Institute of Theoretical Physics, University of Wrocław, pl. M. Borna 9, PL-50 204 Wrocław, Poland.
Preprint No: ITP UWr 815/92, September 1992.
Quantum Dynamics from the Brownian Recoil Principle II. Physical Meaning of the Nelson-Newton Laws[†]
[†] Published in Phys. Lett. A 272 (1993) 209.
- P. Garbaczewski*, Fachbereich Physik, Universität Kaiserslautern, Postfach 3049, D-6750 Kaiserslautern, Germany. *Permanent Address: Institute of Theoretical Physics, University of Wrocław, pl. M. Borna 9, PL-50 204 Wrocław, Poland.
Preprint No: KL-TH-93/12
Relative Wiener Noises and the Schrödinger Dynamics in External Force Fields[†]
[†] Partially supported by the KBN grant No.200 609101

H.-O. Georgii, Mathematisches Institut der Universität München, Theresienstr. 39, D-80333 München.

Large Deviations and the Equivalence of Ensembles for Gibbsian Particle Systems with Superstable Interaction

V.P. Gerdt¹ and W. Lassner². ¹Laboratory of Computing Techniques/Automation Joint Institute for Nuclear Research, Head Post Office, P.O. Box 79, Moscow, Russia. ²Universität Leipzig, FB Mathematik/Informatik, Augustusplatz 10, 0-7010 Leipzig, Germany.

Preprint No: 4/93

Isomorphism Verification for Complex and Real Lie Algebras by Gröbner Basis Technique

F. Gesztesy¹, H. Holden², B. Simon³ and Z. Zhao¹. ¹Department of Mathematics, University of Missouri, Columbia, MO 65211: Email for F.G.: mathfg2@mizzou1.missouri.edu. Email for Z.Z.: mathzz@mizzou1.missouri.edu. ²Department of Mathematical Sciences, The Norwegian Institute of Technology, University of Trondheim, N-7034 Trondheim, Norway: Email:

holden@imf.unit.no. ³Division of Physics, Mathematics and Astronomy, California Institute of Technology, 253-37, Pasadena, CA 91125. Research partially supported by USNSF grant number DMS-9101716.

Trace Formulae and Inverse Spectral Theory for Schrödinger Operators[†]

[†] To appear in Bull. AMS.

F. Ginovart and J. Leon, Physique Mathématique et Théorique, Université Montpellier II, 34095 Montpellier cedex 05, France.

Preprint No: PM 92/24

Nonlinear Propagation of Electromagnetic Pulses in Dense Two-level Media

Z. Haba*, Institute of Theoretical Physics, University of Wrocław, Wrocław, Poland. * Supported by KBN grant No. 2 0060 91 01.

Preprint No: IFT UWR 819/92, December 1992.

Probabilistic Representation of Quantum Dynamics

M. Herrmann and R. Der, Universität Leipzig, Fachbereich Mathematik/Informatik, Institut für Informatik, Augustusplatz 10, 0-7010 Leipzig.

Preprint No: 6/93

Attentional Control of Feature Maps

L.P. Horwitz*, Institute for Advanced Study, School of Natural Sciences, Princeton, N.J. 08540, U.S.A. * Permanent Address: School of Physics, Raymond and Beverly Sackler, Faculty of Exact Sciences, Tel Aviv University, Ramat Aviv, Israel.

Preprint No: TAUP 2008-92, IASSNS 92/70, November 1992.

Some Spectral Properties of Anti-Self-Adjoint Operators on a Quaternion Hilbert Space

L.P. Horwitz^{1*} and C. Piron², ¹Institute for Advanced Study, School of Natural Sciences, Princeton, N.J. 08540, U.S.A. ²Department of Theoretical Physics, University of Geneva, 1211 Geneva 4, Switzerland. *Permanent Address: School of Physics, Raymond and Beverly Sackler, Faculty of Exact Sciences, Tel Aviv University, Ramat Aviv, Israel; also at Department of Physics, Bar Ilan University, Ramat Gan, Israel.

Preprint No: IASSNS 92/58, TAUP 2061-93, September 1992,

Revised March 1993.

The Unstable System and Irreversible Motion in Quantum Theory

R.L. Hudson, Mathematics Department, University of Nottingham, University Park, Nottingham, NG7 2RD.

Fermion Flows and Supersymmetry*

* Part of this work were completed while the author visited MIEM, Moscow, and the Mathematical Institutes of the Slovak Academy of Sciences, Bratislava, and the University of Łódź in Autumn 1991. The hospitality of these institutions is gratefully acknowledged.

R.L. Hudson¹ and K.R. Parthasarathy². ¹Mathematics Department, University of Nottingham, University Park, Nottingham, NG7 2RD. ²Indian Statistical Institute, 7 SJS Sansanwal Marg, New Delhi 110016, India.

Casimir Chaos in Boson Fock Space*

* Work supported by SERC grant GR 1H25317.

R.L. Hudson¹ and K.R. Parthasarathy². ¹Mathematics Department, University of Nottingham, University Park, Nottingham, NG7 2RD, England. ²Indian Statistical Institute, 7 SJS Sansanwal Marg, New Delhi 110016, India.

The Casimir Chaos Map for $U(N)$ *

* Work supported by SERC grant GR1H25317

R.L. Hudson¹ and S. Pulmannová². ¹Mathematics Department, University of Nottingham, University Park, Nottingham, NG7 2RD, England. ²Mathematics Institute, Slovak Academy of Sciences, 81473 Bratislava, Czechoslovakia.

Graded Tensor Products of Quantum Logics*

* Work partially completed when SP visited Nottingham supported by SERC Research Grant GR/G3/376 and continued with the support of Grant 368 of Slovak Academy of Sciences.

R.L. Hudson¹ and S. Pulmannová². ¹Mathematics Department, University of Nottingham, University Park, Nottingham, NG7 2RD, England. ²Mathematics Institute, Slovak Academy of Sciences, 81473 Bratislava, Czechoslovakia.
Sum Logics and Tensor Products*
* Work done partly when the second author visited the University of Nottingham, supported by SERC grant GR/G3/376.

D. Ihle¹, J. Loos² and H. Fehske³. ¹Fachbereich Physik, Universität Leipzig, 04109 Leipzig, Germany. ²Institute of Physics, Czech. Academy of Sciences, 16200 Prague, Czech. Republic. ³Physikalisches Institut, Universität Bayreuth, 95440 Bayreuth, Germany.
Preprint No: 11/1993
Polaron Absorption Spectra in the Holstein-Hubbard Model

A.M. Khorunzhy and L.A. Pastur. Institute for Low Temperature Physics, Academy of Sciences of Ukraine, 47 Lenin Avenue, Kharkov, 310164 Ukraine.
Preprint No: 5, 1992/93.
Limits of Infinite Interaction Radius, Dimensionality and the Number of Components for Random Operators with Off-Diagonal Randomness

A.M. Khorunzhy¹ and L.A. Pastur². Université Paris VII, Equipe de Physique Mathématique et Géométrie, 45-55 5^e étage, 2 Place Jussieu, 75251 Paris Cedex 05. ¹Mathematical Division of the Institute for Low Temperature Physics, Academy of Sciences of Ukraine, 47 Lenin Avenue, Kharkov, 310164 Ukraine. ²On leave from the Mathematical Division of the Institute for Low Temperature Physics, Academy of Sciences of Ukraine, 47 Lenin Avenue, Kharkov, 310164 Ukraine.
Preprint No.1, March 1993.
On the Eigenvalue Distribution of the Deformed Wigner Ensemble of Random Matrices

B. Khoruzhenko, L.A. Pastur and M. Shcherbina. Université Paris VII, Equipe de Physique Mathématique et Géométrie, 45-55 5^e étage, 2 Place Jussieu, 75251 Paris Cedex 05 and Mathematical Division of the Institute for Low Temperature Physics, Academy of Sciences of Ukraine, 47 Lenin Avenue, Kharkov, 310164 Ukraine.
Preprint No.2, March 1993.
The Infinite Component Limit of the Random Anisotropy n-Vector Model

J. Kijowski¹ and G. Rudolph². ¹Center for Theoretical Physics, Polish Academy of Sciences, al. Lotników 32/46, 02-668 Warsaw, Poland. ²Universität Leipzig, FB Physik, Augustusplatz 10, 0-7010 Leipzig, Germany.
Preprint No.10/1993.
Spinor Electrodynamics in Terms of Gauge invariant Quantities

Y. Kubyshev¹, D. O'Connor² and C.R. Stephens³. ¹Nuclear Physics Institute, Moscow State University, Moscow 119899, Russia: email address: kubyshev@compnet.npimsu.msk.su. ²D.I.A.S., 10 Burlington Road, Dublin 4, Ireland: email address: denjoe@maths.may.ie. ³Institute for Theoretical Physics, Rijksuniversiteit Utrecht, 3508 TA Utrecht, The Netherlands: email address: stephens@ruunf.fys.ruu.nl.
Preprint No: DIAS-STP-91-44.
Decoupling of Heavy Masses in the Kaluza-Klein Approach*
* A talk delivered at the "Quarks-92" Seminar, Zvenigorod, Russia, 11-17 May, 1992.

M. Lavelle¹ and D. McMullan². ¹Institut für Physik, Johannes Gutenberg-Universität, Staudingerweg 7, Postfach 3980, W-6500 Mainz, F.R. Germany: email: lavelle@vipmza.physik.uni-mainz.de. ²Dublin Institute for Advanced Studies, School of Theoretical Physics, 10 Burlington Road, Dublin 4, Ireland: email: mcmullan@stp.dias.ie.
Preprint No: MZ-TH/93-02, DIAS-STP-93-03, Revised Version.
A New Symmetry for QED

M. Lavelle¹ and D. McMullan². ¹Institut für Physik, Johannes Gutenberg-Universität, Staudingerweg 7, Postfach 3980, W-6500 Mainz, F.R. Germany: email: lavelle@vipmza.physik.uni-mainz.de. ²Dublin Institute for Advanced Studies, School of Theoretical Physics, 10 Burlington Road, Dublin 4, Ireland: email: mcmullan@stp.dias.ie.
Preprint No: MZ-TH/93-03, DIAS-STP-93-04.
On Quark Confinement

M. Lavelle¹ and D. McMullan². ¹Institut für Physik, Johannes Gutenberg-Universität, Staudingerweg 7, Postfach 3980, W-6500 Mainz, F.R. Germany: email: lavelle@vipmza.physik.uni-mainz.de. ²Dublin Institute for Advanced Studies, School of Theoretical Physics, 10 Burlington Road, Dublin 4, Ireland: email: mcmullan@stp.dias.ie.
Preprint No: MZ-TH/93-05, DIAS-STP-93-05.
On the Physical Propagators of QED

J. Leon, Laboratoire de Physique Mathématique, Université Montpellier II, 34095 Montpellier, France.
Interaction of Radiation with Matter: Integrable Problems*
* Published in Physical Review A, Vol. 47, No.4, April 1993.

- H. Maassen¹ and A. Tip². ¹Vakgroep Wiskunde, Katholieke Universiteit Nijmegen, Toernooiveld 1, 6525 ED Nijmegen, The Netherlands. ²FOM Instituut voor Atoom- en Molecuulfysica, Kruislaan 407, 1098 SJ Amsterdam, The Netherlands.
A Fock Space Representation for the Quantum Lorentz Gas
- P. Maslanka*, Department of Functional Analysis, Institute of Mathematics, University of Łódź, ul. Banacha 22, 90-238 Łódź, Poland. * Supported by KBN grant 2 0218 91 01.
Preprint No: 1/93, IM UL
Deformation Map and Hermitean Representations of k -Poincare Algebra
- P. Maslanka*, Department of Functional Analysis, Institute of Mathematics, University of Łódź, ul. Banacha 22, 90-238 Łódź, Poland. * Supported by KBN grant 2 0218 91 01.
Preprint No: 5/93, IM UL
Global Counterpart of K -Poincare Algebra
- P. Maslanka, Department of Functional Analysis, Institute of Mathematics, University of Łódź, ul. Banacha 22, 90-238 Łódź, Poland.
Preprint No: 2/93.
The Two Dimensional Quantum Euclidean Group
- H. Matsumoto, Department of Mathematics, Faculty of General Education, Gifu University, Yanagido, Gifu 501-11, Japan.
Semiclassical Asymptotics of Eigenvalue Distributions for Schrödinger Operators with Magnetic Fields
- V.B. Matveev*, Laboratoire de Physique Mathématique, Université Montpellier II, Place Eugène Bataillon, Case 50, 34095 - Montpellier Cédex 05. *Permanent address: St.-Petersburg branch of Steklov Mathematical Institute, Fontanka 27, St.-Petersburg 191011, Russia.
Preprint No: 93/03, February 1993.
Asymptotics of the Multipositon-Soliton τ -Function of the KdV Equation and the Supertransparency Phenomenon
- J. Messer, Institut für Theoretische Physik der Universität Göttingen, Bunsenstrasse 9, D-W-3400 Göttingen, Fed. Rep. Germany* and Sektion Physik, Theoretische Physik, Universität München, München, Fed. Rep. Germany. * Present postal address.
Subsystems of Forest Systems as Hypercyclic Nets[†]
[†] Work supported by BMFT, Bonn, Fed. Rep. Germany under project no. OEF 2019-3, part PM 5. The views expressed are those of the author.

- C. Nash¹ and D.J. O'Connor². ¹Department of Mathematical Physics, St. Patrick's College, Maynooth, Ireland. ²School of Theoretical Physics, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland.
Preprint No: DIAS-STP-92-40
Determinants of Laplacians, the Ray-Singer Torsion on Lens Spaces and the Riemann Zeta Function
- C. Nash¹ and D.J. O'Connor². ¹Department of Mathematical Physics, St. Patrick's College, Maynooth, Ireland. ²School of Theoretical Physics, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland.
Preprint No: DIAS-STP-92-39
Ray-Singer Torsion, Topological Field Theories and the Riemann Zeta Function at $s = 3$
- D.J. O'Connor¹ and C.R. Stephens². ¹School of Theoretical Physics, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland. ²Inst. voor Theor. Fysica, Rijksuniversiteit Utrecht, 3508TA Utrecht, Netherlands.
Preprint No: DIAS-STP-92-41
Crossover Scaling: A Renormalization Group Approach
- D.J. O'Connor¹ and C.R. Stephens². ¹School of Theoretical Physics, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland. ²Inst. voor Theor. Fysica, Rijksuniversiteit Utrecht, 3508TA Utrecht, Netherlands.
Preprint No: DIAS-STP-92-36
Geometry, the Renormalization Group and Gravity
- L.A. Pastur, Mathematical Division of the Institute for Low Temperature Physics, Academy of Sciences of Ukraine, 47 Lenin Avenue, 310164 Kharkov, Ukraine.
On the Universality of the Level Spacing Distribution for Some Ensembles of Random Matrices*
* Published in Letters in Mathematical Physics 25, 1992, pp.259-265.
- J.U.H. Petersen*, Theoretical Physics Group, Physics Department, Queen Mary and Westfield College, Mile End Road, London, E1 4NS: email address: j.petersen@qmw.ac.uk (decnet: 19678::petersen). *Work supported by a S.E.R.C. Research Studentship.
Preprint No: QMW-92/19, hep-th/9211009, November 1992.
A Quadratic Deformation of the Heisenberg-Weyl and Quantum Oscillator Enveloping Algebras[†]
[†] To be published in the Int. J. Mod. Phys. A

R. del Rio^{1,3,*†}, S. Jitomirskaya², N. Makarov^{3,†} and B. Simon^{3,†}.

¹Permanent address: IIMAS-UNAM, Apdo. Postal 20-726, Admon No.20, 01000 Mexico D.F., Mexico. ²Department of Mathematics, University of California, Irvine, CA 92717. ³Division of Physics, Mathematics and Astronomy, 253-37, California Institute of Technology, Pasadena, CA 91125. *Research partially supported by DGAPA-UNAM and CONACYT. †This material is based upon work supported by the National Science Foundation under Grant No.DMS-9207071. The Government has certain rights in this material. ‡This material is based upon work supported by the National Science Foundation under Grant No.DMS-9101715. The Government has certain rights in this material.

Singular Continuous Spectrum is Generic*

* To be submitted to Bull. AMS.

M.V. Saveliev^{1*} and S.A. Savelieva². ¹Institute for Theoretical Physics, ETH-Hönggerberg, CH-8093 Zürich, Switzerland. ²Institute for High Energy Physics, 142284, Protvino, Moscow Region, Russia. *On leave of absence from the Institute for High Energy Physics, 142284, Protvino, Moscow Region, Russia: email: SAVELIEV@M10.IHEP.SU. Preprint No: hep-th@xxx/9305152, ETH-TH/93-21, May 1993.

W_∞ - Geometry and Associated Continuous Toda System[†]

[†] L^AT_EX file available from hep-th@xxx.lanl.gov(#9305152).

K. Schmüdgen, Universität Leipzig, FB Mathematik/Informatik, Augustusplatz 10, 0-7010 Leipzig, Germany. Preprint No: 3/93.

Integrable Operator Representations of \mathbb{R}_q^2 , $X_{q,\nu}$ and $SL_q(2, \mathbb{R})$

N. Shnerb¹ and L.P. Horwitz^{1,2} ¹Department of Physics, Bar-Ilan University, Ramat-Gan 52900, Israel. ²School of Physics, Raymond and Beverly Sackler Faculty of Exact Sciences, Tel-Aviv University, Ramat-Aviv, Israel. Gauge and Group Properties of Massless Fields in Any Dimension

N. Shnerb¹ and L.P. Horwitz^{1,2} ¹Department of Physics, Bar-Ilan University, Ramat-Gan 52900, Israel. ²School of Physics, Raymond and Beverly Sackler Faculty of Exact Sciences, Tel-Aviv University, Ramat-Aviv, Israel. Preprint No: TAUP 2067-93. On the Canonical Quantization of Four and Five Dimensional U(1) Gauge Theories

B. Simon*, Division of Physics, Mathematics and Astronomy, California Institute of Technology, 253-37 Pasadena, CA 91125. *This material is based upon work supported by the National Science Foundation under Grant No. DMS-9101715. The Government has certain rights in this material.

Cyclic Vectors in the Anderson Model[†]

[†] To be submitted to Rev. Math. Phys.

B. Simon*, Division of Physics, Mathematics and Astronomy, California Institute of Technology, 253-37 Pasadena, CA 91125. *This material is based upon work supported by the National Science Foundation under Grant No. DMS-9101715. The Government has certain rights in this material.

Operators with Singular Continuous Spectrum: I. General Operators[†]

[†] To be submitted to Ann. Math.

S. Tasaki¹, E. Eisenberg² and L.P. Horwitz^{2,3}. ¹International Solvay Institutes for Physics and Chemistry, CP 231 Campus Plaine ULB, Boulevard du Triomphe, 1050 Brussels, Belgium. ²Department of Physics, Bar-Ilan University, Ramat-Gan 52900, Israel. ³School of Physics, Raymond and Beverly Sackler Faculty of Exact Sciences, Tel-Aviv University, Ramat-Aviv, Israel. Preprint No: TAUP 2068-93.

Measurement Theory in Lax-Phillips Formalism

A. Tip, FOM Instituut voor Atoom- en Molecuulfysica, Kruislaan 407, 1098 SJ Amsterdam, The Netherlands. Absolute Continuity of the Integrated Density of States of the Quantum Lorentz Gas for a Class of Repulsive Potentials

Preprints Received in Kyoto

July 1993

Asao Arai

Department of Mathematics, Hokkaido University, Sapporo 060 Japan
Characterization of anticommutativity of self-adjoint operators in connection
with Clifford algebra and applications.

Asao Arai and Norio Tomimaga

The same address as above.
Quantization of angle-variables.

Fumio Hiai,¹ Dones PETZ² and Gabor Toth³

¹ Department of Mathematics, Ibaraki University, Mito, Ibaraki 310, Japan
² Research Institute for Mathematical Sciences, Kyoto University, Sakyo, Kyoto 606, Japan
³ Department of Mathematical Sciences, Rutgers University, Campus at Camden, Camden, New Jersey 08102, USA.
Curvature in the geometry of canonical correlation.

Masao Hirokawa

Advanced Research Laboratory, Hitachi Ltd., Hatoyama, Saitama 350-03, Japan
Mori's memory kernel equation for a quantum harmonic oscillator coupled to RWA-oscillator.

Mori's memory kernel equation in equilibrium quantum systems in finite volumes.

A method of estimating the Heisenberg picture of a quantum harmonic oscillator coupled to infinitely many scalar bosons from its autocorrelation function.

A mathematical relation between the rotating wave approximation and Mori's theory of generalized Brownian motion.

K. Kawagoe, A. Kunewasa, and Y. Watatani

Department of Mathematics, Hokkaido University, Sapporo 060, Japan
Generalized spin models.

Tsunehiro Kobayashi

Institute of Physics, University of Tsukuba, Ibaraki 305, Japan
Exactly calculable model for detector with macroscopic energy emissions and wave-function collapse in quantum measurements.

Shuichi Matsumoto

Department of Mathematics, University of the Ryukyus, Okinawa 903-01, Japan
A reexamination of the Wigner and Araki-Yanase Theorem. II.

Simba A. Mutangadura

Department of Physics, University of Zimbabwe, Box MP 167, Mt. Pleasant, Harare, Zimbabwe
Comparative probability on von Neumann algebras.

Yong Moon Park¹ and Hyun Jae Yoo²

¹ Department of Mathematics, Yonsei University, Seoul 120-749, Korea
² Department of Physics, Yonsei University, Seoul 120-749, Korea
A characterization of Gibbs states of lattice Boson systems.

K.S. Saito and Y. Watatani

Department of Mathematics, Hokkaido University, Sapporo 060, Japan
Subdiagonal algebras for subfactors

Jerzy Wierzbicki

Department of Mathematics, Hokkaido University, Sapporo 060, Japan
An estimation of the depth from an intermediate subfactor.

RIMS-913 Maxim NAZAROV and Vitaly TARASOV
Yangians and Gelfand-Zetlin bases

February 1993

- RIMS-914 Mitsuo ABE and Noboru NAKANISHI
How to Solve the Covariant Operator Formalism
of Gauge Theories and Quantum Gravity
in the Heisenberg Picture. IV
-- Cauchy Problem Involving Noncommutative Quantities --
February 1993
- RIMS-915 M. BERSHADSKY, S. CECOTTI, H. OOGURI and C. VAFA
Holomorphic Anomalies in Topological Field Theories
February 1993
- RIMS-916 Wolfgang Ansgar SCHNIZER
Roots of Unity: Representations of Quantum Groups
February 1993
- RIMS-917 Masaki KASHIWARA
Crystal Bases of Modified Quantized Enveloping Algebra
March 1993
- RIMS-918 Noriaki IKEDA and K.-I. IZAWA
General Form of Dilaton Gravity and Nonlinear
Gauge Theory
April 1993
- RIMS-919 Yoshihisa SAITO
PBW Basis of Quantized Universal Enveloping Algebras
April 1993
- RIMS-920 Hidetoshi AWATA, Satoru ODAKE and Jun'ichi SHIRAIISHI
Free Boson Representation of $U_q(\widehat{sl}_3)$
May 1993
- RIMS-921 Takahiro KAWAI and Yoshitsugu TAKI
On the Structure of Painlevé Transcendents with a
Large Parameter
May 1993
- RIMS-922 Omar FODA, Michio JIMBO, Tetsuji MIWA, Kei MIRI and
Atsushi NAKAYASHIKI
Vertex Operators in solvable Lattice Models
May 1993

- RIMS-923 Fumio HIAI and Dénes PETZ
Entropy Densities for Gibbs States of Quantum Spin Systems
May 1993
- RIMS-924 Hidetoshi AWATA, Satoru ODAKE and Jun'ichi SHIRAIISHI
Free Boson Realization of $U_q(\widehat{sl}_N)$
May 1993
- RIMS-925 Makoto MATSUMOTO
Combinatorial Dehn Twists
May 1993
- RIMS-926 Makoto IDZUMI
Correlation Functions of the Spin-1 Analog of the
XXZ Model
June 1993
- RIMS-927 Hitoshi KONNO
BRST Cohomology in Quantum Affine Algebra $U_q(\widehat{sl}_2)$
June 1993
- RIMS-928 Noriaki IKEDA
Gauge Theory based on Nonlinear Lie Superalgebras
and Structure of 2D Dilaton Supergravity
June 1993
- RIMS-929 Mitsuo ABE and Noboru NAKANISHI
New Diagramatic Method for Quantum Field Theory
in the Heisenberg Picture. I
-- Two-Dimensional Quantum Gravity --
June 1993
- RIMS-930 Yas-Hiro QUANO
Spontaneous Polarization of the Z_n -Baxter Model
June 1993
- RIMS-931 Takahiro KAWAI and Henry P. STAPP
Infrared Catastrophe in a Massless Feynman Function
June 1993
- RIMS-932 Dénes PETZ
Geometry of Canonical Correlation on the State Space
of a Quantum System
July 1993