OPEN POSITION

The Center for Transport Theory and Mathematical Physics
Virginia Polytechnic Institute and State University

The Center for Transport Theory and Mathematical Physics of Virginia Polytechnic Institute and State University is expecting (but not guaranteed) funding, beginning in the 1994 Academic year, for a two-year visiting position. This position would carry a one-course per semester teaching load in either the Mathematics or Physics Departments. There is a chance that the position could evolve into a tenure-track appointment. Please send curricula vitae and a one-page letter describing your research interests to gogo@vtvmi.cc.vt.edu

Center for Transport Theory and Mathematical Physics
212A Robeson Hall,
Virginia Polytechnic Institute & State University,
Blacksburg, Virginia 24060-0435.

If your interests and experience are compatible with our research goals, we will contact you to have letters of reference sent.

P.F. Zweifel
University Distinguished Professor
Director

Pamp News Bulletin
March 1994

International Association of Mathematical Physics
The following candidates have been voted onto the Executive Committee:

H. Araki
J.E. Avron
S. Doplicher
J. Fröhlich
D. Iagolnitzer
A. Jaffe
V. Jones
H. Narnhorfer
C. Newman
I. Todorov
A. Truman
S. Varadhan

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**Result of IAMP Executive Committee Ballot, 1994/97**

**President:** A. Jaffe  
**Vice President:** J. Fröhlich  
**Treasurer:** H. Araki  
**Secretary:** A. Truman

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**Unesco - Sorbonne**

**Mailing address:** ICMP-Paris, Service de Physique Théorique, CE-Saclay, F-91191 Gif-sur-Yvette Cedex, France  
**Fax:** 331/99.09.31.10  
**Satellite conferences:** July 25-28, 1994

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**Bulletin n°2**

**Revised version - January 1994**

**Dear Colleagues,**

This bulletin, sent with our second poster, gives complementary information on the scientific program and other topics, and will answer main questions raised in your mail.

Everything is, I believe, now ready for a great Congress in prestigious cultural sites in the heart of Paris, with the participation of a very large number of scientists from all countries and many of the best specialists in various domains of mathematical physics and related areas. It is now a good time to join us if you have not yet done it.

Everyone working in or interested in mathematical physics is welcome!

D. Iagolnitzer  
Congress Chairman

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**Organizing Committee of the ICMP-Paris**

**Congress Chairman:** Daniel Iagolnitzer (Saclay), chairman of the Paris Committee  
**Co-Chairman:** Arthur Jaffe (Harvard), President of the IAMP and chairman of the International Committee  
**International Committee (other members):** T. Fröhlich (Zurich), D. Ruelle (IHES-Orsay), Y. Sinai (Moscow)  
**IMU representative:** L. Paddock  
**UNESCO representative:** S. Rahbar  
**Local administration:** F. Lefèvre

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*In collaboration with the International Association of Mathematical Physics (IAMP)*

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Sheila Jones  
Secretary to the  
Secretary of IAMP  
March 1994
1. Organizers and sponsors

The ICMP-Paris is co-organized by the IAMP and scientific departments of the Paris area: Centre de Saclay, Collège de France, Ecole Normale Supérieure, Ecole Polytechnique, Institut des Hautes Études Scientifiques, Université Cergy-Pontoise, Jussieu, Orsay. It benefits from the sponsorship and support of the Mayor of Paris, the French Ministères de l'Éducation et de la Recherche, and from the crucial cooperation and support of the following institutions:

- CEA (Commissariat à l'Energie Atomique), Basic Research Division
- CNRS (Centre National de la Recherche Scientifique)
- Commission of European Communities - DG XII
- IUPAP (International Union of Pure and Applied Physics)
- UNESCO (United Nations Educational, Scientific and Cultural Organization)

The further sponsorship of the IMU (International Mathematical Union), the European Physical and Mathematical Societies, the Société Française de Physique, the Société Mathématique de France and the Académie des Sciences is also gratefully acknowledged.

2. General organization and social events

The Congress will take place in the beautiful Centre des Conférences of UNESCO, July 18-22, and on Saturday 23, in the impressive Grand Amphithéâtre of the Sorbonne, the historical heart of the French University in Quartier Latin. Satellite conferences (July 25-28) will take place in the Sorbonne and other sites: see Sect.4 and Annex 1. The general organization of the congress is shown below, up to minor changes. P denotes a plenary one-hour lecture, S an afternoon session with 4 to 6 invited speakers, s a morning session with 3 or 4 invited speakers, and r a session of short communications. Public lectures on Saturday will be devoted to topics of general interest and are intended to a larger audience.

<table>
<thead>
<tr>
<th>morning (9.00-12.45)</th>
<th>afternoon (14.15-18.00)</th>
<th>late afternoon (18.00-20.00)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>P₁, P₂</td>
<td>S₁, S₂</td>
</tr>
<tr>
<td>Tuesday</td>
<td>P₃, P₄, P₅, P₆</td>
<td>S₁, S₂, S₄</td>
</tr>
<tr>
<td>UNESCO</td>
<td>bateau-mouche</td>
<td>cocktail Hôtel de Ville</td>
</tr>
<tr>
<td>Thursday</td>
<td>P₇, P₈</td>
<td>S₅, S₆, S₇</td>
</tr>
<tr>
<td>Friday</td>
<td>P₉, P₁₀</td>
<td>General Assembly of IAMP</td>
</tr>
<tr>
<td>Sorbonne (Grand Amph.)</td>
<td>P₁₁, P₁₂</td>
<td>public lectures</td>
</tr>
</tbody>
</table>

A reception-cocktail in the beautiful salons of the Hôtel de Ville is offered by the Mayor of Paris to 300 participants. Invitations are reserved in particular to all early registrants (before March 15, 1994) paying a normal fee.

An afternoon tea on bateau-mouche across Paris along the river Seine is planned on Wednesday (15.30-17.30) on a special boat for the Congress, and a cocktail-buffet will follow the round table on Thursday evening (see costs in the registration form). Excursions (Château de Versailles, Châteaux de la Loire, ...) will be proposed on Sunday 24.

3. Scientific program

Plenary lectures:

- I. Affleck (Vancouver), M. Atiyah (Cambridge, UK), A. Connes (Paris and IHES-Bures), T. Damour (IHES-Bures), L. Kadmanoff (Chicago), M. Kontsevich (Bonn), A. Kupianen (Helsinki), J. Magnen (Palaiseau), M. Viana (Rio de Janeiro), I. Wisdom (MIT), E. Witten (Princeton), S.T. Yau (Harvard), J. Yngvason (Reykjavik), A.B. Zamolodchikov (Rutgers).

Sessions (and session organizers). The detailed program will be given later.


Round Table: Physics and mathematics: close partners or not? (contributions of physics to mathematics and vice versa, are mathematics essential or dangerous for physics and conversely, ...). There will be short talks by scientific personalities, including M. Atiyah, A. Jaffe, D. Ruelle and others, and a general discussion with the participation of the audience.

Contributions by participants:

Participants are welcome to contribute to a book of abstracts (10 lines at most including title, author(s), reference(s), deadline of receipt: June 15, 1994. No special instructions for typing, and to present their works through posters (4 pages, typed if possible), exhibit of preprints, reprints, ... during the Congress.

On the other hand, short communications (around 10-12 minutes) will be invited, or accepted, upon recommendation of the relevant session organizer or of one member of our committees. Interested participants should contact them as soon as possible (deadline: June 1st, 1994). Some works may alternatively be presented in satellite conferences (contact their organizers).

Two small lecture rooms will be at the disposal of participants for private meetings and discussions outside the official program.
Satellite conferences

Four satellite conferences are sponsored by the ICMP-Paris, July 25-27 or 28. Our participants can register to all of them for a very low cost independent of the number of conferences attended: see registration form. More informations on No 2 and 4 are given in separate posters, sent together with this bulletin or available from the organizers upon request. Announcements of No 1 and 3 are given in Annex 1 of this bulletin.

N°1 Topology, strings and integrable models (see Annex 1, location of Institut Henri Poincaré: E4 on the map, Guy-Lussac, 4m. Saint-Jacques; this conference is open only to participants of the ICMP-Paris. Otherwise, an invitation of the organizers is needed.


N°3 New problems in the general theory of fields and particles (see Annex 1).


Other events

International Congress of Mathematicians - ZURICH (3-11 August 1994)

Other events of possible interest to our participants include the: Summer Institute of Theoretical Physics of Ecole Normale Superieure, Paris (following the satellite conference No 1); the Symposium on Classical and Quantum Billiards, Ascona, Switzerland (July 25-30, 1994), Information: M. Cbils, EPFL, CH-1015 Lausanne, Switzerland; the Les Houches Summer School, Session: "Fluctuating geometries in statistical mechanics and field theory", (Aug. 2 - Sept. 9, 1994), Information: Ecole d'Eté de Physique Théorique, F-74310 Les Houches, France.

5: Accommodation and costs:

Registration fees: see registration form. Proceedings are included in all cases. The reduced fee is mainly intended to students. However, it can also be used by other participants whenever payment of the normal fee is an actual obstacle to participation. (No special format: Indicate you wish to benefit from it.)

Travel: We hope to obtain interesting conditions from the Air France company. If confirmed, information will be sent to registrants when available.

Meals: Low-cost, good and complete lunches are proposed in the cafeterias of Ministries next to UNESCO. Lunches at UNESCO itself (6th floor) in somewhat more pleasant conditions (self-service cafeteria, restaurant) are also proposed. See registration form. Advance reservations are required in either case. Reimbursement of lunches not taken will be possible under some conditions. We thus recommend reservations with registration. There are some private restaurants in the neighbourhood of UNESCO. There are many near the Sorbonne.

Meals (lunch or dinner) in restaurants universitaires (Cité Universitaire, Quartier Latin): 25 FF.

Transportation in Paris: free transportation by subway, bus, train in Paris during one week (Monday to Sunday): 60 FF. Otherwise, one subway ticket: 4 FF.

Accommodation: You are welcome to ask us the following reservations (see locations on the map in Annex 2). There are convenient subway lines or buses both to UNESCO and to the Sorbonne in all cases. Short walks are indicated below. Costs indicated in selected hotels (and apartments) take into account 20 to 50% reductions. Double rooms have one large bed or two single beds. A third bed is often possible: Breakfast (if not included): 10 FF at Cité Universitaire and around 35-40 FF (continental) or 50-60 FF (buffet) if you take it in your hotel. (Note that drink and cake will be served to participants at the UNESCO, 8:30-9:00.)

Early reservations are recommended. Always indicate second choices (regroupings might be needed).

- Cité Universitaire, nice surroundings. See costs in registration form. Common kitchen facilities. Private bathroom for a small supplement (limited number).
- Student-type residence close to Quartier Latin (lower costs but often old), E4, D6, E6 on the map.
- International Hôtel ARCADE, single 380, double 410, 5 minutes walk to UNESCO.
- Hôtel WALLACE, charm single 400, double 500, breakfast included, 5 minutes walk to UNESCO.
- Hôtel TRIANON, traditional, good appearance, single 420, double 500, breakfast included, In front of Sorbonne.
- Hôtel de Balad de SUFFREN, charm, single or double 500, 2 minutes walk to UNESCO.
- Hôtel de SANCE, very quiet, beautiful rooms, single or double 450, 5 minutes walk to UNESCO.
- Hôtel du Midi de SUFFREN, charm, single or double 500, 2 minutes walk to UNESCO.
- Hôtel ADAGIO, beautiful and excellent modern hotel, single or double 500, direct bus to UNESCO.
- LUTTETIA, beautiful and renowned, traditional French style, close to St-Germain-des-Prés, de luxe single room 850, double 900, including breakfast (a cost exception for the quality).

Apartments (with kitchen, bathroom, TV, phone, price in FF per day):
- Residence Cristaline Montparnasse (1-room 350-400, 2 or 3 persons), Porte de Versailles, A6 on the map.
- Residence Pierre & Vacances (2-room 450, 4 persons, Porte de Versailles, A6 on the map).
- Private larger apartments, closer to the UNESCO, to be possibly shared by several participants, (1-room 475, 2-room 665, 3-room 790, 4-room 950, minimum 7 days, reductions for longer stays)

For information, low-cost hotels (200-300), rooms to be reserved directly by you: ask the brochure at Office du Tourisme de Paris, 127 Champs Elysées, 75008 PARIS (Tel. 149252354) and contact hotels directly (examples: Hôtel des Académies, 15 rue de la Grande Chaumière, 75006 Paris, Montparnasse-Vavin, Tel. 14326644 - Hôtel des Carmes, 5 rue des Carmes, 75005 PARIS, Maubert-Mutualité, Tel. 143294293).

Grants and fellowships:
See registration form. A financial support covering the fees, possibly living expenses and (in few cases) part of travel expenses might still be available. Decisions of our committee on March 15, 1994. For NSF grants, contact Beth Rustek: bruske@cmic.uml.edu.
NEW PROBLEMS IN THE GENERAL THEORY OF FIELDS AND PARTICLES
PARIS - La Sorbonne - July 25-28, 1994
Satellite colloquium of the ICMP-Paris

Advisory Scientific Committee
H.J. Borcherds (Göttingen), D. Buchholz (Hamburg)
R. Haag (Hamburg), F. Strocchi (Trieste), A.S. Wightman (Princeton)

Organizer
J. Bros, Service de Physique Théorique
CE-Saclay, F-91191 Gif-sur-Yvette Cedex, France
Tel. (33) 1 69 08 80 74 - Fax: (33) 1 69 08 81 20

The colloquium will mostly include 45-minute invited lectures; an afternoon will be reserved for short communications by participants.

This colloquium concerns the general problems and the conceptual aspects of the quantum theory of fields and particles. Its purpose is to complement the corresponding ICMP session (entitled "General Field Theory") which can only feature a few highlights in this domain, while other important developments deserve to be presented and discussed in a more specialized forum.

In this colloquium, the emphasis will be on results which deepen our understanding of the fundamental interactions of matter in connection with the basic principles of quantum theory, locality and (general) relativity; in particular, this will include works which explore the consequences of these principles, as well as their interrelations. The scope ranges from rigorous results of perturbation theory and exact properties of specific models which appear to have conceptual importance, to structural results pertaining to the general settings of quantum field theory (Araki-Haag-Kastler nets of local algebras, Wightman fields, Euclidean quantum field theory).

Among the various domains of investigation which should be represented in this colloquium, the following topics (presenting overlapping aspects) are of particular interest:

- Problems in gauge field theory (including: status of QED, QCD, confinement, infrared properties, etc.).
- Charge sectors and their properties (Statistics and "quantum symmetries" in low dimensions - Symmetry breaking and anomalies - Higgs mechanism - etc.)
- Analytic structure of correlation functions and Green functions (In various physical parameters and variables).
- Thermal representations of quantum field theory.
- Quantum field theory in curved space-time manifolds.
- Construction and classification of local nets. Conformal quantum field theory in dimension d=2. Field theory and K-theory, etc.
- Discussion of the "axioms". Links between the Wightman field viewpoint and the local observable viewpoint. Nuclearity conditions. Use of modular operators.

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TOPOLOGY, STRINGS, AND INTEGRABLE MODELS

a Satellite colloquium to the ICMP
Paris Conference (July 1994)
JULY 25-26TH 1989 AT INSTITUT Henri Poincaré
11 rue Pierre et Marie Curie 75231 PARIS Cedex 05.

Organizing Committee:
C. Bachas (École Polytechnique),
L. Baulieu (Université Paris VI-VII),
D. Bernard, P. Di Francesco, V. Pasquier, (CE Saclay),

Tentative list of invited speakers:
C. Callan, I. Cherednik, E. Corrigan,
D. Gross, A. Jevicki, A. Leclair,
T. Miwa, G. Moore, D. Olive,
H. Saleur, A.S. Schwartz, S. Shatashvili,
I. Singer, F. Smirnov, C. Vafa,
H. Verlinde, E. Witten, A.A. Zamolodchikov.

Scientific program:

The conference will be devoted to recent progress in two-dimensional field theory and string theory, going from superstrings to lattice integrable models. A sample of active topics covered includes classical and quantum gravities, QCD strings, (affine) Toda theories, N = 2 supersymmetric and/or topological conformal theories, quantum deformations of Lie algebraic structures, string field theories and their background (in)dependence.

This is meant as a complement to the main conference sessions on conformal and topological field theories and integrable models.

1 Conference e-mail: satellite@apeco.saclay.cea.fr
2 not mentioning speakers from France
PARIS, July 18 - 23, 1994

REGISTRATION FORM

Write in capital letters, type if possible, and return to:
ICMIF-Paris, Service de Physique Theorique, CE-Saclay, F-91191 Gif-sur-Yvette Cedex, France - TEL: 33/1/69.88.1.20

Family name  First name  Nationality

Institution:

Mailing address:

Postal code:  Town  Country
Fax:  E-mail:

Title:  Student  IAMP member  Accompanying persons

Do you request a GRANT or FELLOWSHIP?

If you do, join a curriculum vitae, your request, list of main publications, recommendation letter(s) (for students...). If your participation depends on our support, your registration is provisional and you do not need to fill the following part of this form.

P A Y M E N T:

Registration fee to ICMIF (to be always joined - otherwise your registration is provisional until payment)

<table>
<thead>
<tr>
<th>Registration received</th>
<th>before March 1st, 1994</th>
<th>after March 15th, 1994</th>
</tr>
</thead>
<tbody>
<tr>
<td>normal IAMP members</td>
<td>700 FF</td>
<td>900 FF</td>
</tr>
<tr>
<td>non IAMP members</td>
<td>800 FF</td>
<td>1000 FF</td>
</tr>
</tbody>
</table>
| reduced fee (students, other participants if needed) | 400 FF | 500 FF

Other payments (are optional and can be postponed. Cancellations and, if possible, modifications with no penalty up to May 1st, 1994. Give explanations and wishes on a separate page if needed)

- Registration to satellite conferences. Encircle those of interest to you: n°1  n°2  n°3  n°4 (Registration fee: 200 independently of the number of conferences attended, reduced 100)
- Afternoon tea at bateau-mouche (60 + accompanying persons 120 x ...)
- For participants:
  - Cocktail-buffet (250)
  - 5 lunches (July 18-22) at ICMIF (200)
  - 4 lunches (July 19,21,22,23) at UNESCO (160)
  - Luncghes at UNESCO, 90 or 180 each, specify the dates: 90 x ... 180 x ...
- Reservation at Cité Universitaire: July, Monday 18 - Saturday 23 morning (5 nights)
  - single 650
  - in a double room 450
  - supplementary nights (specify): 130 + 90 130 x ... or 90 x ...
- In case of double room reservation, I wish to share my room with:
- Other reservations:
  - first choice: second choice: special wishes
  - partial payment 650 FF (4-star hotels and apartments: 1000 FF)

Date of arrival:  Date of departure:  Total FF

MODE OF PAYMENT:

- Personal cheque or Traveller cheque in French Francs (to order the check ICMIF-Paris)
- Bank transfer
- Visa card
- American Express Card
- Eurocard/Mastercard

For credit cards: Card number:  Card expiry date:  Card holder's signature:

Amount FF:  Card holder's name:  Date:  -10-
I. Contributions by participants

(i) Do you plan to contribute to the book of abstracts? (deadline: June 15, 1994)
   If you do, tentative title (to be confirmed later):

(ii) Do you plan to present a poster?
    If you do, tentative title:

(iii) Do you wish to present a short report? (deadline: June 1st, 1994)
    If you do, tentative title:

Session to which it can be naturally linked (if there is one):

Satellite colloquium in which this work can alternatively be presented (if there is one):

Important note: informations given here are only for our secretariat. Please follow instructions given in Sect. 3, in particular if you wish to present a short communication (we cannot guarantee it will be accepted).

II. Organization of the week

Wednesday afternoon: are you interested by:
   the bateau-mouche:
   an excursion to Versailles:

Week-end (July 23-24): are you interested by:
   an excursion to Versailles:
   an excursion to Chateaux de la Loire:
   an excursion to Mont-Saint-Michel:
   other excursions (specify):

Special wishes and comments:
4. Scientific Program
The program will be devoted to the following major topics:

- Non-perturbative methods in quantum theory
- Quantum nonlinear integrable systems
- Berry phase and magnetic monopoles
- Quantum systems in curved spaces
- Quantum groups

The following invited talks have been confirmed:

- Vittorio de Alfaro (University of Turin, Italy)
  - Quantum corrections to sphaleron
  - Instanton transitions
to be announced
- Juergen Bause (University of Dortmund, Germany)
- A. Barut (University of Colorado at Boulder, USA)
- Michael Berry (University of Bristol, UK)
- Vladimir Dobrov (Institute of Nuclear Research and Energy, Bulgaria)
- Ludmil Hadjilivanov (Institute of Nuclear Research and Energy, Bulgaria)
- Sergey Klin (Institute of Physics, Minsk)
- Y. S. Kim (University of Maryland, USA)
- Carlos Lousto (University of Barcelona, Spain)
- Vladimir Manko (P.N. Lebedev Institute, Russia)
- Poul Olsen (Niels Bohr Institute, Denmark)
- Murray Peshkin (Argonne National Laboratory, USA)
- David Saxson (University of Glasgow, UK)
- Joseph Sucher (University of Maryland, USA)
- Peter Trower (Virginia Polytechnic Institute, USA)
- Luc Vinet (University of Montreal, Canada)

The Workshop Sessions will take place in the afternoons and will be devoted to the main subjects reviewed in the morning. They will consist of short invited talks and of presentation of contributed papers. Contributions on the subjects covered by the Workshop Sessions will be welcome. Participants wishing to present papers should send a short abstract of the contributed paper to the Organizing Committee by 1 February, 1994 (by e-mail, preferably in the LaTeX format).

5. Proceedings
All papers presented at the Workshop will be published in the proceedings by World Scientific. The publisher's instructions for contributors will be enclosed in Bulletin # 2.

6. Schedule
The arrival day is Sunday, 22 May. The Workshop will start in the morning of Monday, 23 May and will last until noon of Saturday, 28 May. The departure day is Sunday, 29 May. The Organizing Committee is planning to arrange a sightseeing tour of Minsk, a visit to the Academician Bolot Theatre of Belorsia for extra charge.

7. Registration
Please find enclosed a copy of the Registration Form for the Workshop. It should be returned before February 1, 1994.

The Workshop Fee: 200 US dollars covers accommodation, full board, welcome reception, and session coffee breaks. Also participants will have a special transportation from Minsk airport (train station) to the hotel on arrival and departure days. The Workshop Fee is to be paid on arrival in Minsk by cash in US dollars.

8. Climate
The weather in Belarus at end of May is mostly fine and not very cool, with occasional showers. The temperature in Minsk ranges between 15°C and 25°C. A light coat or a sweater may be useful in the evenings.

More detailed information about the scientific program and other aspects of the Workshop will be provided in the second Bulletin.

QS-94 Organizing Committee
Dr. Ya.M. Shnir
Institute of Physics
Academy of Sciences of Belarus,
P. Skatyrna Avenue 70,
Minsk, 220072, Republic of Belarus

Phone: (7)(0172)394659
Fax: (7)(0172)393131
E-mail: shnir@domis.lanet.com
Telex: 25277 nauka SU
Institute of Physics

-13-
INTERNATIONAL CONFERENCE
ON
NONLINEAR DYNAMICS
AND
PATTERN FORMATION
IN THE
NATURAL ENVIRONMENT

ICPF '94

Leeuwenhorst Congress Centre
Noordwijkerhout, the Netherlands

JULY 4-7, 1994

The conference is an initiative of:
The Mathematical Institute of the University of Utrecht
and is supported by:
The Dutch National Research Foundation (NWO)
The Dutch Royal Academy of Science
Netherlands Convention Bureau
THE GOAL AND THEME OF THE CONFERENCE

The conference aims at the communication of new results and the exploration of new ideas concerning the mathematical theory of nonlinear dynamics and the study of pattern generating phenomena in the natural environment. Phenomena of this type occur in a multitude of scientific areas and application fields. There is an intimate relationship between new insights in the mathematical aspects of nonlinear pattern formation and the apprehension of these phenomena. The conference will therefore have two, partly overlapping, main themes: one in which the emphasis is put on generally applicable mathematical theories and techniques and one in which the phenomenology of pattern evolution in various areas is discussed. Recently, both these themes have been the subject of challenging new developments. The main purpose of the conference is to stimulate the interaction between theory and application.

PROGRAMME

The programme of the conference consists of plenary and parallel sessions. In the plenary sessions, keynote speakers will give a state-of-the-art survey on one of the main topics of the conference. There will be invited, contributed and poster presentations during the parallel sessions. The structure of the parallel sessions will be based on the scientific topics. Some of the sessions will be devoted to one of the mini-symposia incorporated in the conference.

PLenary Presentations

W. Eckhaus (Utrecht): Pattern formation in systems with slowly varying geometry
E. Basset (Bayreuth): Pattern formation far from criticality
K. Kirchgasser (Stuttgart): Water waves and their long-time evolution
B. Matkowsky (Northwestern): Pattern formation and nonlinear dynamics in combustion
A. Nowell (Tucson): Towards a universal theory of patterns
L. Segel (Weizmann): Some examples of biological pattern formation, in space and aspect
G. Semmema (Genoa): Sediment transport and morphodynamics

MINI SYMPOSIA

Incorporated in the conference will be a number of mini-symposia. The mini-symposia will be of variable duration. There will be a number of invited speakers presenting a mini-symposium or not supplemented with contributed presentations. Invited speakers are invited to submit a proposal for a mini-symposium they would like to organise. Amongst others, the following mini-symposia are planned:

Nonlinear phenomena in the climate system
Organizers: J. Wischmann (BMIB), K. Hasselgass (KSR), J. Ruesch (MPIE)

The objective is to convey the theory of nonlinear systems (oscillation analysis, multiple equilibria, periodic solutions and their stability, chaotic systems) with numerical experiments using either simplified or high-resolution models. Observations of the climate, with special emphasis on the role of the thermodynamic circulation.

Spatio-temporal evolution of patterns in non-linear mechanics
Organizer: A. Doodman (Utrecht)

This mini-symposium is organised by the cooperating analysis groups of the universities of Heros-Was (Edinburgh), Rice, Stuttgart and Utrecht. New research results on the mathematical methods and theories for pattern formation will be presented. Topics such as non-linear stability theory, nonlinear waves, modulation equations and microstructures (phase transitions in solids) will be covered.

Reaction-diffusion equations and applications
Organizers: R. Kapoulas (Utrecht), B. Matkowsky (Northwestern)

The focus of this mini-symposium is nonlinear dynamics and pattern formation in reaction-diffusion systems. Applications areas may include such topics as the evolution of fronts in combustion and solidification processes.

CONTRIBUTIONS

Researchers interested in one of the topics of the scientific programme are invited to send in abstracts for a contribution on one of the topics of the conference, which will take place in parallel sessions. In order to achieve a well-balanced and interesting programme, these abstracts will be rated. Authors will be notified whether their contribution will be accepted for oral or poster presentation. A selection of the contributing researchers will be invited to write a paper for the conference proceedings. Young researchers are especially encouraged to participate in the conference.

ABSTRACTS CAN BE SUBMITTED ON THE SUBJECTS:

Nonlinear dynamics
- Pattern formation
- General fluid dynamics
- Geophysics
- Meteorology
- Reaction-diffusion problems
- Combustion
- Population dynamics
- Geophysical fluid dynamics
- Biological fluid dynamics
- Crystal growth
- Theory versus data

MINI-SYMPOSIUM

Researchers are invited to submit proposals for mini-symposium which they are willing to organise.
- Each proposal should clearly define the scope of the mini-symposium and give an indication on the number of speakers and their names.
- There is a limited amount of money available for the organisation of mini-symposia.

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THE COMMITTEES

THE SCIENTIFIC ADVISORY COMMITTEE
J.M. Ball (Heriot-Watt)
P. Collet (Palaiseau)
W. Eckhaus (Utrecht)
P. Fife (Edinburgh)
C. Ewing (Katholieke University)
G. Iooss (Nice)
K. Kirchgasser (Stuttgart)
B. Maskowski (Northwestern)
A. Melde (Hannover)
A. Newell (Texas)
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INSTRUCTIONS FOR SUBMISSION OF ABSTRACTS
+ Abstracts must consist of maximally two pages.
+ On each abstract should be indicated: the name of the author(s), the mail and (email) address, telephone and fax number
+ and the subject of the scientific program it relates to.
+ Authors are urged to send their abstracts in two ways, both as a (La)TEX file by electronic mail to:
  - cost-patterns@math.uva.nl and as a hardcopy in twofold to the Conference Office.

CONFERENCE REGISTRATION
Registration will include attendance at all sessions, coffee and tea during sessions, four lunches and the programme with abstracts.
Furthermore, there will be an informal conference dinner on Wednesday July 6. This dinner is offered to all participants. The
conference fee is Dfl. 455, - in case of registration before May 1, 1994 and Dfl. 495, - after that date.

THE REGISTRATION FORM
included in this announcement is the registration form on which the details concerning the payment of the fee, the dinners at the
Conference Center and the hotel reservation are present. Advance registration is encouraged. Registration without advance
payment cannot be accepted. A confirmation, enclosing a map on how to get to the Conference Center, will be sent after the receipt
of the payment. Please note that payment must have been received by the organisation one week before the conference. If you,
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SCHEDULE
January 15, 1994: deadline submission abstracts/proposals mini-symposia
April 1, 1994: acceptance or oral/poster presentation; invitation of papers for the proceedings.

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Arrival date:
Departure date:

FEES
☐ Conference fee paid before 1 May paid after 1 May
Dfl. 455 Dfl. 495
☐ Dinner 4 July 4 x Dfl. 45 =
Dfl. 
☐ Dinner 5 July 4 x Dfl. 45 =
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Dfl. 

Please indicate how many.
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☐ Submit an abstract
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ADDRESSES
Submission of abstracts, information, registration
Holland Organising Centre (H.O.C.)
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2514 JD The Hague
The Netherlands
Telephone +31 70 565 78 59
Fax +31 70 561 48 46

Scientific organisation
University of Utrecht
Mathematical Institute
a.c. P. Doelman/A. van Harten
P.O. Box 80010
3508 TA Utrecht
The Netherlands
Fax +31 30 518594

Conference Center:
Leuvenseweg Congres Centrum
Langeldonk 3
2211 XT Noordwijk/Noord-Holland
The Netherlands

(email cost-patterns@math.uva.nl)

ADDRESS: 4-7 July 1994, Noordwijk/Noord-Holland, The Netherlands

First name:
Surname:
☐ Mr ☐ Ms

Affiliation:

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Dfl.

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Dfl.

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After 1 May, 1994 requests will be accepted but hotel accommodation cannot be guaranteed.

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Total amount fees  DL. ____________________

Hotel reservation  DL. ____________________

Total amount to be paid:  DL. ____________________

Payment of fees should be made in advance by one of the following means:

☐ Remittance to ICPR '94, ABN/AMRO Bank, Koesterdijk, The Hague. Account number 48.11.77.191, stating attendees name, all transfers should be net of bank charges (approx. DL. 25 per transfer).

☐ Banker's draft forwarded together with the registration form. The banker's draft should be made out to ICPR '94, net of bank charges (approximately DL. 25 per transfer). Personal cheques cannot be accepted. For attendees who wish to pay by "Eurocheque" or "Euroclearbank", please make sure not to fill in a higher amount than DL. 300 per cheque.

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XXIVème ECOLE D'ETE DE CALCUL DES PROBABILITES
SAINT-FLOUR (Cantal)
7 - 23 Juillet 1994

CONFERENCE INVITED

- M. DOBRUSHIN, Professeur à l'Université de Moscow (Russia)
  "Perturbation Methods in the Theory of Gibbs Field"

- M. GROENEBOOM, Professeur à l'Université de Technologie de Delft (Pays-Bas)
  "Inverse problems in Statistics"

- M. LEDOUX, Professeur à l'Université Paul Sabatier, Toulouse III
  "Sobolev inequality and analyse gaussienne"

INSCRIPTIONS et RENSEIGNEMENTS COMPLEMENTAIRES

P. BERNARD
Université Blaise Pascal
Mathématiques Appliquées
F 63177 AUBIERE CEDEX
Tel. 73.40.70.50 ou 73.40.70.50
Telefax 73.40.70.64
E-Mail : bernard@ucfma.univ-bpclermont.fr
Preliminary announcement and call for papers
International Workshop on
Quantum Communications and Measurement
Nottingham, July 11-16, 1994

This conference follows the successful meeting on Quantum Aspects of Optical Communications organised by CNRS and Tamagawa University in Paris in November 1990. This time it will be held at the University of Nottingham, England. The conference will be devoted to mathematical, physical and interpretative problems of quantum noise and quantum information in open systems and optical communications. It will bring into contact research workers in experimental and engineering aspects of quantum optics and communication systems with mathematicians and physicists working in quantum probability and measurement theory.

Topics will include: Mathematical foundations of quantum communications, Quantum noise and output stochastic processes, Quantum measurement and dynamical reduction theory, Causality, filtering and control in quantum systems, Squeezed states and nonclassical light, New quantum optical phenomena and effects, Proposed experiments for quantum communications, Devices for quantum communication systems.

For further information contact V P Belavkin:
Tel 0602 514954, Fax 0602 514951, E-mail qcm@mths.nott.ac.uk,
Mathematics Department, University of Nottingham, University Park, Nottingham NG7 2RD, UK.
This colloquium is the continuation and amplification of the topical session on disordered systems of the main congress. It will be devoted to the recent advances of the probability theory and mathematical physics of large disordered systems. Topics which will receive special attention include equilibrium statistical mechanics of disordered systems, evolution of systems of interacting particles, quantum and non-linear random systems.

Invited speakers include

C Albanese (Zürich), E Bolthausen (Zürich), F Denomy (Palaiseau), M Evans (Paris), P Ferrari (Sao Paulo), A Katz (Palaiseau), A Klein (Irvine), F Martinelli (Roma), G Parisi (Roma), L Pastur (Kharkov), Yu Perez (New Haven), D Petritis (Rennes), P Picco (Marseille), D Sherrington (Oxford), S Shlosman (Irvine), G Slade (Hamilton), N Sourlas (Paris), H Spohn (München), A S Sznitman (Zürich), S R S Varadhan (New York)

Individuals seeking additional information may write to F Koukiou by 31 March 1994.
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 August 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 August 1993)

93-206
Landi G., Marmo G., Vilasi G.
Recursion Operators: Meaning and Existence for Completely Integrable
Systems
(25K, LaTeX)

93-208
J. van den Berg, C. Maes
Disagreement percolation in the study of Markov fields
(44K, AMSTeX)

93-210
C. Maes, K. Vande Velde
The (non-)Gibbssian nature of states invariant under stochastic
transformations
(44K, LaTeX)

93-211
Esposito R., Marra R., Yau H. T.
Diffusive limit of asymmetric simple exclusion
(104K, LaTeX/documentstyle_article)

93-216
Bach, V., Lieb E. H., Loss, M. and Sigal, J.P.
There are no unfilled shells in Hartree-Fock theory
(11K, Plain TeX)

93-217
Siedentop H.
Bound for the Atomic Ground State Density at the Nucleus
(12K, AMSLaTeX)

93-220
Bertini L., Presutti E., Rudiger B., Saada E.
Dynamical fluctuations at the critical point: convergence to a non linear
stochastic PDE
(126K, AMSLaTeX)

93-221
Bertini L., Cancrini N.
Reduction formula for Moments of Stochastic Integrals
(36K, LaTeX)

93-222
Giovanni Gallavotti
Rotation Axis Variation Due to Spin Orbit Resonance
(24K, TeX)

93-223
Anton Bovier, Veronique Gayraud
Rigorous results on the Hopfield model of neural networks
(153K, ps)

93-224
F. Lizzi, G. Marmo, G. Sparano (Napoli) and A. M. Vinogradov (Salerno)
Eikonal Type Equations for Geometrical Singularities of
Solutions in
Field Theory
(52K, LaTeX)

93-226
Cuerno R.
Spectrum of an Elliptic Free Fermionic Corner Transfer Matrix Hamiltonian
(20K, LaTeX)
DIAS-STP-93:

-14: D. McMullan, & I. Tsutsui: On the emergence of gauge structures and generalized spin when quantizing on a coset space.


-16: D. Heffernan, P. Jenkins, & M. Daly: $f(a)$ spectrum of pruned Baker's map. (To appear in Z. fur Naturforschung)

-17: M. Daly, & D. Heffernan: Chaos in a resonantly kicked oscillator. (To appear in Phys. Rev. E.)


-23: F. Abdelwahid, & J. Burzlaff: Existence theorems for $90^\circ$ vortex-vortex scattering.


-30: N.G. Duffield, & N. O'Connell: Large deviations and overlow probabilities for the general single-server queue, with applications.

-31: V.I. Gaiduk, V.V. Gaiduk, T.A. Novskova, & B.M. Tsitlin: Dielectric response and a phenomenon of a narrow band absorption for a classical rotor in a double well potential.

-32: M.A. Vandyck: On the damped harmonic oscillator in the de Broglie-Bohm "Hidden-Variable" theory.

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

I. V. Volovich, Department of Physics, Simon Fraser University, Burnaby, British Columbia, V3A 1S6, Canada

POSITIVITY DEFINED GRAVITATIONAL ACTION, COSMOLOGICAL CONSTANT AND SUPERSTRING THEORY

I. Ya. Aref'eva, Steklov Mathematical Institute, Vavilov st. 423, GSP-1, 117966, Moscow, Russia, R. Parthasarathy, The Institute of Mathematical Sciences, Madras 600 13, India, K. S. Viswanathan, and I. V. Volovich, Department of Physics, Simon Fraser University, Burnaby, British Columbia, V3A 1S6, Canada

COHERENT STATES, DYNAMICS AND SEMICLASSICAL LIMIT ON QUANTUM GROUPS

L. Accardi, Dipartimento di Matematica, Università di Roma "Tor Vergata", Via della Ricerca Scientifica - 00133 Roma, Y. G. Lu, Dipartimento di Matematica, Università di Bari, and I. Volovich, on leave - Steklov Mathematical Institute, Vavilov st. 423, GSP-1, 117966, Moscow, Russia

THE STOCHASTIC SECTOR OF QUANTUM FIELD THEORY

Marco Ferrara, Dipartimento di Matematica, Università di Cagliari, Via Ospedale 72, 09124 Cagliari, Italy, Mauro Francaviglia and Igor Volovich, Istituto di Fisica Matematica "J.-L. Lagrange", Università di Torino, Via C. Alberto 10, 10122 Torino, Italy

A MODEL OF TOPOLOGICAL AFFINE GRAVITY IN TWO DIMENSIONS AND TOPOLOGY CONTROL

S. J. Summers, Dept. of Mathematics, Univ. of Florida, Gainesville, Florida and R. Verch, II. Inst. für Theoretische Physik, Universität Hamburg

AN APPLICATION OF MODULAR INCLUSION TO QUANTUM FIELD THEORY IN CURVED SPACE-TIME

Martin Prohse, George Reim, Physikalisches Institut, Universität Würzburg, D-97074, Würzburg, Germany, and Stephen Summers, Department of Mathematics, University of Florida, Gainesville, FL 32611

QUADRATIC REPRESENTATIONS OF THE CANONICAL COMMUTATION RELATIONS

P. E. T. Jorgensen, Department of Mathematics, The University of Iowa, Iowa City, Iowa 52242, L. M. Schmitt, University of Aizu, Aizu-Wakamatsu, Fukushima Prefecture 965, Japan, and R. F. Werner, F. B. Physik, Universität Osnabrück, 49069 Osnabrück, Germany

POSITIVE REPRESENTATIONS OF GENERAL COMMUTATION RELATIONS ALLOWING WICK ORDERING

P. E. T. Jørgensen, Department of Mathematics, The University of Iowa, Iowa City, Iowa 52242, and R. F. Werner, F. B. Physik, Universität Osnabrück, 49069 Osnabrück, Germany

COHERENT STATES OF THE $q$-CANONICAL COMMUTATION RELATIONS

Palle E. T. Jorgensen, Department of Mathematics, The University of Iowa, Iowa city, Iowa 52242, and Steen Pedersen, Department of Mathematics, Wright State University, Dayton, OH 45435

HARMONIC ANALYSIS OF FRACTAL MEASURES

Horst Behnke, Universität der Osnabrück, FB Mathematik/Informatik, 49069 Osnabrück, Germany

ON THE HARTMAN WINTNER THEOREM

THE $m$-FUNCTION FOR HAMILTONIANS WITH WIGNER VON NEUMANN POTENTIALS

SMALL EFFECTS IN RUNNING

A MATHEMATICAL MODEL FOR THE FORCE AND ERGETICS IN COMPETITIVE RUNNING

Donald M. Marolf, Physics Department, Syracuse University, Syracuse, New York 13244

POISSON BRACKETS ON THE SPACE OF HISTORIES

THE GENERALIZED PEIERLS BRACKET

Jorma Louko and Donald M. Marolf, Department of Physics, Syracuse University, Syracuse, New York 13244-1130

SOLUTION SPACE OF $2+1$ GRAVITY ON $R \times T^2$ IN WITTEN'S CONNECTION FORMULATION
Abhay Ashtekar, Center for Gravitational Physics and Geometry, Penn State University and Jerzy Lewandowski, Department of Physics, University of Florida, Gainesville, FL

REPRESENTATION THEORY OF ANALYTIC HOLONOMY C*-ALGEBRAS

Carlo Rovelli, Department of Physics, University of Pittsburgh, Pittsburgh, PA 15260; Dipartimento di Fisica, Universita di Trento; INFN, Sez di Padova, Italia and Leo Smolin, Department of Physics, Syracuse University, Syracuse, NY 13244; Center for Gravitational Physics and Geometry, Pennsylvania State University, University Park, PA 16802-6360

THE PHYSICAL HAMILTONIAN IN NON-PERTURBATIVE QUANTUM GRAVITY

R. Loll, Center for Gravitational Physics and Geometry, Pennsylvania State University, University Park, PA 16802-6300

CHROMODYNAMICS AND GRAVITY AS THEORIES ON LOOP SPACE

THE LOOP FORMULATION OF GAUGE THEORY AND GRAVITY

Chopin Soo and Ye Nam Chang, Institute for High Energy Physics, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061-04345

SUPERSPACE DYNAMICS PERTURBATIONS AROUND "EMPTINESS"

Guillermo A. Mena Marugan, Center for Gravitational Physics and Geometry, The Pennsylvania State University, 104 Davey Laboratory, University Park, PA 16802-6300

REALITY CONDITIONS IN NONPERTURBATIVE QUANTUM COSMOLOGY

J. Fernando Barbero G., 104 Davey Lab., Penn State University, University Park, PA 16802

GENERAL RELATIVITY AS A THEORY OF TWO CONNECTIONS

Rodolfo Gambini, Instituto de Fisica, Facultad de Ciencias, Tristam Narvaez 1674, Montevideo, Uruguay, and Jorge Pullin, Center for Gravitational Physics and Geometry, The Pennsylvania State University, University Park, PA 16802

THE GAUSS LINKING NUMBER IN QUANTUM GRAVITY

Bruno Nachtergaele, Department of Physics, Princeton University, Jadwin Hall, Princeton, NJ 08544-0708

A STOCHASTIC GEOMETRIC APPROACH TO QUANTUM SPIN SYSTEMS

STOCHASTIC GEOMETRIC ASPECTS OF SOME QUANTUM SPIN CHAINS

Michael Aizenman and Bruno Nachtergaele, Department of Physics, Princeton University, Jadwin Hall, P.O. Box 708, Princeton, NJ 08544-0708

GEOMETRIC ASPECTS OF QUANTUM SPIN STATES


SYMPLECTIC REDUCTION VIA COMPLEX GROUP ACTIONS

Guillermo A. Mena Marugán, Center for Gravitational Physics and Geometry, Pennsylvania State University, 104 Davey Laboratory, University Park, PA 16802-6300

REALITY CONDITIONS FOR LORENTZIAN AND EUCLIDEAN GRAVITY IN THE ASHTEKAR FORMULATION

J. Fernando Barbero G., Center for Gravitational Physics and Geometry, 104 Davey Lab., Pennsylvania State University, University Park, PA 16802

A REAL POLYNOMIAL FORMULATION OF GENERAL RELATIVITY IN TERMS OF CONNECTIONS

Steven E. Galovich, Harvard University, Cambridge, MA 02138 and John Z. Imbrie, Math.-Astronomy Bldg., University of Virginia, Charlottesville, VA 22903

THE BROKEN SUPERSYMMETRY PHASE OF A SELF-AVOIDING RANDOM WALK


THE (NON-)GIBBSIAN NATURE OF STATES INVARIANT UNDER STOCHASTIC TRANSFORMATIONS

Hans de Jong, Institute for Theoretical Physics, University of Groningen, Nijenborgh 4, 9747 AG Groningen, The Netherlands and Christian Maes, Institute for Theoretical Physics, University of Leuven, Celestijnenlaan 200D, 3001 Leuven, Belgium

EXTENDED APPLICATION OF HIGH NOISE CONSTRUCTIVE CRITERIA FOR INTERACTING PARTICLE SYSTEMS

J. Van Den Berg, CWI, Kruislaan 413, 1098 SJ Amsterdam, The Netherlands and Christian Maes, Instituut voor Theoretische Fysica, Celestijnenlaan 200D, 3001 Leuven, Belgium

DISAGREEMENT PERCOLATION IN THE STUDY OF MARKOV FIELDS

Vincenzo Giordani, Dipartimento di Matematica, Universita di Bologna, I-40127 Bologna, Italy and Andrea Sacchetti, Dipartimento di Matematica, Universita di Modena, I-41100 Modena, Italy

ASYMPTOTICS OF ZENER DOUBLE WELL SPLITTINGS AND MAGNETIC GAPS

Gerald Hofmann, Universität Leipzig, FB Mathematik und Informatik, Augustusplatz 10. 0-710, Leipzig

ON THE CONES OF a+ AND/generalized a+-POSITIVITY FOR QUANTUM FIELD THEORIES WITH INDEFINITE METRIC
Vincenzo Grecchi, Dipartimento di Matematica, Università di Bologna, I-40127 Bologna, Italy, Marco Maloffi and Andrea Sacchetti, Dipartimento di Matematica, Università di Modena, Italy

STARK LADDERS OF RESONANCES: WANNIER LADDERS AND PERTURBATION THEORY

Mikhail V. Saveliev, Institute for Theoretical Physics, ETH-Zürich, CH-8093 Zürich, Switzerland and Svetlana A. Savelieva, Institute for High Energy Physics, 142284, Protvino, Moscow region, Russia

$H_{\infty}$-GEOMETRY AND ASSOCIATED CONTINUOUS Toda SYSTEM

Dénes Petcz, Department of Mathematics, Faculty of Chemical Engineering, Technical University Budapest, H-1521 Budapest XII. Sztczech u. 2. H ép. II. 26

DISCRIMINATION BETWEEN STATES OF A QUANTUM SYSTEM BY OBSERVATIONS

Funio Hani, Department of Mathematics, Ibaraki University, Mito, Ibaraki 310, Japan, Dénes Petcz, Research Institute for Mathematical Sciences, Kyoto University, Kyoto 606-01, Japan, and Gabor Toth, Department of Mathematics, Rutgers University, Camden, New Jersey 08102

CURVATURE IN THE GEOMETRY OF CANONICAL CORRELATION

N. P. Landsman, Department of Applied Mathematics and Theoretical Physics, University of Cambridge, Silver Street, Cambridge CB3 9EW, United Kingdom

RIEFFEL INDUCTION AS GENERALIZED QUANTUM MARSDEN-WEINSTEIN REDUCTION


$\eta$-CANONICAL COMMUTATION RELATIONS AND STABILITY OF THE CUNTZ ALGEBRA

$\eta$-RELATIONS AND STABILITY OF $C^*$-ISOMORPHISM CLASSES

Charles J. K. Batty, St. John's College, Oxford, OXI 3JP, U.K., Ola Bratteli, University of Oslo, P.B. 1063 Blindern, N-0316 Oslo 3, Norway, Palle E. T. Jorgensen, Dept. of Mathematics, University of Iowa, Iowa City, IA 52242-1468, and Derek W. Robinson, Centre for Mathematics and its Applications, School of Mathematical Sciences, Australian National University, Canberra, ACT 0200, Australia

ASYMPTOTICS OF PERIODIC SUBELLiptIC OPERATORS

Palle E. T. Jorgensen, Dept. of Mathematics, University of Iowa, Iowa City, IA 52242 and Steen Pedersen, Department of Mathematics, Wright State University, Dayton, OH 45435

HARMONIC ANALYSIS OF FRACTAL MEASURES INDUCED BY REPRESENTATIONS OF A CERTAIN $C^*$-ALGEBRA

SPECTRAL THEORY FOR BOREL SETS IN $R^*$ OF FINITE MEASURE

Palle E. T. Jorgensen, Dept. of Mathematics, University of Iowa, Iowa City IA 52242

QUANTIZATION AND DEFORMATION OF LIE ALGEBRAS

SELF-ADJOINT OPERATOR EXTENSIONS AND CLIFFORD ALGEBRAS

UNITARY DILATIONS OF COMMUTATION RELATIONS ASSOCIATED TO ALTERNATING BILINEAR FORMS

INTERTWINING OPERATORS, DERIVATIONS OF THE CAR-ALGEBRA, AND REPRESENTATIONS OF U(p,q)

Bennis Brenken, Department of Mathematics, University of Calgary, Calgary, Alberta T2N 1N4, Canada and Palle E. T. Jorgensen, Department of Mathematics, University of Iowa, Iowa City, Iowa 52242

A FAMILY OF DILATION CROSS PRODUCT ALGEBRAS

P. E. T. Jorgensen, Dept. of Mathematics, University of Iowa, Iowa City IA 52242 and R. F. Werner, FB Physik, Universität Osnabrück, Postfach 4469, D-4500 Osnabrück, Germany

COHERENT STATES OF THE $\eta$-CANONICAL COMMUTATION RELATIONS

Michel L. Lapidus, The University of California, Department of Mathematics, Sproul Hall, Riverside, CA 92521-0135

VIBRATIONS OF FRACTAL DRUMS, THE RIEMANN HYPOTHESIS, WAVES IN FRACTAL MEDIA, AND THE WEYL-BERRY CONJECTURE
PREPRINTS RECEIVED IN KYOTO

August 1993 - March 1994

Asao Arai
Department of Mathematics, Hokkaido University, Sapporo 060 Japan
On Self-adjointness of Dirac operators in Boson-Fermion Fock spaces.

Asao Arai and Norio Tomiaga
The same address as above.
Scaling limit of anticommuting self-adjoint operators and nonrelativistic limit
of Dirac operators.

J.A.de Azcarraga and D.Ellinas
Departamento de Fisica teorica and IFIC, Centro Mixto Universidad de Valencia
- CSIC, E-46100 Burjasot, Valencia, Spain
Complex analytic realizations for quantum algebras.

D.Ellinas
The same address as above.
Path integrals for quantum algebras and the classical limit.

D.Ellinas and V.Kovalie
The same address as above.
Motion of wave function zeros in spin-boson systems.

Chris Pledger, Yoshimi Sato and Tomio Umeda
1,2 Dept.Math. Univ. Alabama at Birmingham, Birmingham, Alabama 35294,USA
3 Dept.Math. Hiwas Institute of Technology, Hiwasji 671-22, Japan
Resolvent estimates of the Dirac operator.

Radiation condition for Dirac operators.

Asymptotic behavior of the resolvent of the Dirac operator.

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Research Institute for Mathematical Sciences, Kyoto 606, Japan

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Staggered Realization of Vertex Models with \( U_q(SL(n)) \)-Symmetry
July 1993

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August 1993

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in the Heisenberg Picture. II
-- Various Models --
August 1993

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Equation of Level 0
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Cumrun Vafa
Kodaira-Spencer Theory of Gravity and Exact Results for Quantum String Amplitudes
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RIMS-947 Takashi Aoki, Takahiro Kawai and Yoshitsugu Takei
Algebraic Analysis of Singular Perturbations
-- on Exact WKB Analysis --
October 1993
Makoto Idzumi
- Level two irreducible representations of $U_q(\widehat{sl}_2)$, vertex operators, and their correlations

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V. TARASOV and A. VARCHENKO
Jackson Integral Representations for Solutions of the Quantized Knizhnik-Zamolodchikov Equation

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On the Mixed Hodge Structure of Siegel Modular Variety

November 1993

Takuya MIYAZAKI and Takayuki ODA
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Hilbert Modular Surfaces with $p_g \leq 1$

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Kazuo MUROTA
Combinatorial Relaxation Algorithm for the Maximum Degree of Subdeterminants: Computing Smith-McMillan Form at Infinity and Structural Indices in Kronecker Form

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Yasutaka IHARA
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Mochiko SAITO
Admissible Normal Functions

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Takahiro KAWAI and Henry P. STAPP
Quantum Electrodynamics at Large Distances

January 1994

Kyoji SAITO
Representation Varieties of a Finitely Generated Group not $SL_2$ or $GL_2$

December 1993

Hidetoshi MINATA, Masafumi FUKUMA, Satoru ODAKE and Yas-Hiro QUANO
Eigensystem and Full Character Formula of the $W_{1+\alpha}$ Algebra with $c=1$

January 1994

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Makoto MATSUMOTO
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Invariant Sheaves

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Functional Equations of Iterated Integrals with Regular Singularities

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Non-abelian Unipotent Periods Monodromy of Iterated Integrals

February 1994
PREPRINTS RECEIVED IN SWANSEA

F. Abdelwahid 1 and J. Burzlaff 1,2. 1 School of Mathematical Sciences, Dublin City University, Dublin 9, Ireland. 2 School of Theoretical Physics, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland.
Preprint No: DIAS- STP-93-23
Existence Theorems for 90o Vortex-Vortex Scattering

V. Aldaya 1,2, J. Bisquert 3, J. Guerrero 1 and J. Navarro-Sala 1,2. 1 Departamento de Fisica Teorica y del Cosmos, Facultad de Ciencias, Universidad de Granada, Campus de Fuentenueva, Granada 18002, Spain. 2 IFIC, Centro Mixto Universidad de Valencia- CSIC, Burjasot 46100-Valencia, Spain. 3 Departamento de Ciencias Experimentales, Universitat Jaume I, Cira. Borriol s/n, apdo 224, Castellon 12085, Spain.
Preprint No: FTUV-93-17, IFIC-93-11, UG-FT-34/93
Group-Theoretical Construction of the Quantum Relativistic Harmonic Oscillator*
* Work partially supported by the CICYT and DGICYT

R. Allicki 1,2 and M. Fannes 3, 1 Inst. Theor. Fysica, Universiteit Leuven, B-3001 Leuven, Belgium. 2 On leave of absence from the Institute of Theoretical Physics and Astrophysics, University of Gdansk, PL-80-952 Gdansk, Poland. 3 Onderzoekskleider, N.F.W.O. Belgium.
Preprint No: KUL-TF-94/2
Defining Quantum Dynamical Entropy

J.-P. Antoine, Institut de Physique Theorique, Universite Catholique de Louvain, B-1348 Louvain-la-Neuve, Belgium.
Coherent States: How Far Can One Go?*

D.B. Applebaum, Department of Mathematics, Statistics and Operational Research, The Nottingham Trent University, Burton Street, Nottingham, NG1 4BU.
Preprint No.10/93
On the Second Quantisation of Hilbert-Schmidt Processes

P.S. Aspinwall 1, B.R. Greene 1, and D.R. Morrison 2, 1 School of Natural Sciences, Institute for Advanced Study, Princeton, NJ 08540. 2 School of Mathematics, Institute for Advanced Study, Princeton, NJ 08540.
* On leave from F.R. Newman Laboratory of Nuclear Studies, Cornell University, Ithaca, NY 14853. 3 On leave from Department of Mathematics, Duke University, Durham, NC 27708.
Measuring Small Distances in N=2 Sigma Models

S. Benkadda and Y. Elskens. Equipe Turbulence plasma, URA 773 CNRS - Université de Provence, IMT, technopôle de Château-Gombert, F-13451 Marseille cedex 20, France.
Preprint No: TP 93.04.
Saddle Point Bifurcation and Onset of Large Scale Stochasticity in 1.5 Degree of Freedom Hamiltonian Systems*

S. Benkadda 1, Y. Elskens 1, B. Rago 1, and J.T. Mendonça 2. 1 Equipe Turbulence Plasma, URA 773 CNRS - Université de Provence, IMT, technopôle de Château-Gombert, F-13451 Marseille cedex 20, France. 2 Centro de Electrodynamicas, Instituto Superior Tecnico, 1096-Lisboa codex, Portugal.
Preprint No: TP 93.06-a
Exit Times and Chaotic Transport in Hamiltonian Systems

P. Berglund 1 and M. Henningson 1. School of Natural Sciences, Institute for Advanced Study, Princeton, NJ 08540.
1 Email: berglund@guinness.isas.edu 1 Email: mans@guinness.isas.edu
Preprint No: IASSNS-HEP-93/92
Landau-Ginzburg Orbifolds, Mirror Symmetry and the Elliptic Genus

G. Bhanot 1,2, M. Creutz 3, U. Glässner 4, and K. Schilling 4. 1 Thinking Machines Corporation, 245 First Street, Cambridge, MA 02142, U.S.A. 2 Institute for Advanced Study, Princeton, NJ 08540, U.S.A. 3 Brookhaven National Laboratory, Upton, NY 11973, U.S.A. 4 Physics Department, University of Wuppertal, Gaussstrasse 20, 42097 Wuppertal, Germany.
Specific Heat Exponent for the 3-d Ising Model from a 24-th Order High Temperature Series

J. Bijlебier 1 and J. Broekaert 1. Theoretische Natuurkunde, Vrije Universiteit Brussel, Pleinlaan 2, B-1050 Brussels, Belgium. 1 Senior Research Associate at the National Fund for Scientific Research (Belgium).
1 Researcher at the Inter-University Institute for Nuclear Sciences (Belgium).
Preprint No: VUB/TENA/93/04
What Happens with the Relative Time Excitations after a Three-Dimensional Reduction of the Bethe-Salpeter Equation?

H.J. Borchers 3 and I. Yngvason 2. 1 Institut für Theoretische Physik, Universität Göttingen, Bunsenstrasse 9, D 3400 Göttingen. 2 Science Institute, University of Iceland, Dunhaga 3, IS 107 Reykjavik, Iceland.
Transitivity of Locality and Duality in Quantum Field Theory. Some Modular Aspects
D. Buchholz, Institut für Theoretische Physik, Universität Hamburg, D-22761 Hamburg, Germany.
Preprint No: DESY 93-155, November 1993
On the Manifestations of Particles

D. Buchholz and S.J. Summers. 1 Institut für Theoretische Physik, Universität Hamburg, D-22761 Hamburg, Germany. 2 Department of Mathematics, University of Florida, Gainesville, U.S.A.
An Algebraic Characterization of Vacuum States in Minkowski Space

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@TAUINIVM.
† Bitnet: HORWITZ@TAUNIVM. Also at Department of Physics, Bar-Ilan University, Ramat-Can, Israel.
Preprint No: TAUP-2115-93.
Equilibrium Relativistic Mass Distribution for Indistinguishable Events

C. Callan and F. Wilczek. School of Natural Sciences, Institute for Advanced Study, Princeton, NJ 08540, U.S.A.
On Geometric Entropy

C. Callan, I.R. Klebanov, A.W.W. Ludwig* and J.M. Maldacena. 1 School of Natural Sciences, Institute for Advanced Study, Princeton, NJ 08544, U.S.A.; E-mail: callan@puhep1.princeton.edu 2 Department of Physics, Princeton University, Princeton, NJ 08544, U.S.A. *On leave from Princeton University. † E-mail: klebanov@puhep1.princeton.edu ‡ E-mail: ludwig@puhep1.princeton.edu ‡ E-mail: maldacena@puhep1.princeton.edu
Exact Solution of a Boundary Conformal Field Theory

F. Calogero, 1 Laboratoire de Physique Mathématique et Théorique,URA-CNRS 768, Université de Montpellier II, 34095 Montpellier Cedex 5, France. † Dipartimento di Fisica, Università di Roma 'La Sapienza', Istituto Nazionale di Fisica Nucleare, Sezione di Roma, Italy.
A Class of C-integrable PDEs in Multidimensions

S. Carlip* and C. Teitelboim2. 1 Department of Physics, University of California, Davis, CA 95616, USA; E-mail: carlip@dirac.ucdavis.edu 2 Centro de Estudios Científicos de Santiago, Casilla 16443, Santiago 9, Chile and Institute for Advanced Study, Olden Lane, Princeton, NJ 08540, U.S.A.; E-mail: ccteite@lnsascie.ucc.cl
The Off-Shell Black Hole

Colour, Families and the Clifford Algebra R_4,2

Spin Gauge Theories: Clifford Algebraic Formulation, Principles and Predictions

Y.M. Cho, School of Natural Sciences, Institute for Advanced Study, Princeton, NJ 08540, U.S.A.
Parity and Time-Reversal in Anyon Superconductivity

Y.M. Cho, School of Natural Sciences, Institute for Advanced Study, Princeton, NJ 08540, U.S.A.
Preprint No: IASSNS-HEP-93/86.
Violation of Equivalence Principle in Brauns-Dicke Theory

Y.M. Cho1 and S.W. Zoh. 1 School of Natural Sciences, Institute for Advanced Study, Princeton, NJ 08540, U.S.A. 2 Department of Physics, University of Utah, Salt Lake City, UT 84112, U.S.A.
Preprint No: IASSNS-HEP-93/85.
Unified Field Theory of String

C. Claude, Physique Mathématique et Théorique, CNRS-URA 768, UM II, 34095 Montpellier Cedex 05, France.
Preprint No: PM94/02.
Solution of 3 Waves Interaction Type Models with Non Trivial Asymptotic and Boundary Conditions
T. Damour1, S. Deser2 and J. McCarthy3, 1 Institut des Hautes Etudes Scientifiques, 91440 Bures sur Yvette and D.A.R.C., CNRS - Observatoire de Paris, 92195 Meudon, France. 2 School of Natural Sciences, Institute for Advanced Study, Princeton, NJ 08540, U.S.A. and Physics Department, Brandeis University, Waltham, MA 02254, U.S.A. 3 Department of Physics and Mathematical Physics, University of Adelaide, Adelaide, SA 5005, Australia.

Nontrivial Non-Canonical W-Algebras from Kac-Moody Reductions

Reflection Equations and q-Minkowski Space Algebras

Ginzburg Spectrum in a (1+1)-Dimensional Model for QCD

M. Demuth1, Max-Planck-Arbeitsgruppe, FB Mathematik, Universität Potsdam, Am Neuen Palais 10, 0-1571 Potsdam, Germany.
Preprint No: MPI/92-38
Perturbations of Spectral Measures for Feller Operators

M. Demuth1, W. Kirsch2 and I. McGillivray. 1 Max-Planck-Arbeitsgruppe, FB Mathematik, Universität Potsdam, Am Neuen Palais 10, 0-1571 Potsdam, Germany. 2 Fachbereich Mathematik, TU Berlin, Straße des 17 Juni 136, D-1000 Berlin 12, Germany.
Preprint No: MPI/93-58
Schrödinger Semigroups - Geometric Estimates in Terms of the Occupation Time

M. Demuth1 and J.A. van Casteren2. 1 Max-Planck-Arbeitsgruppe, FB Mathematik, Universität Potsdam, Am Neuen Palais 10, 0-1571 Potsdam, Germany. 2 Department of Mathematics and Computer Science, University of Antwerp, UIA, Universiteitsplein 1, Antwerp 2610, Belgium.
Preprint No: MPI/92-48
A Hilbert-Schmidt Property of Resolvent Differences of Singularly Perturbed Generalized Schrödinger Operators

M. Demuth1 and J.A. van Casteren2. 1 Max-Planck-Arbeitsgruppe, FB Mathematik, Universität Potsdam, Am Neuen Palais 10, 0-1571 Potsdam, Germany. 2 Department of Mathematics and Computer Science, University of Antwerp, UIA, Universiteitsplein 1, Antwerp 2610, Belgium.
Preprint No: MPI/93-61
Framework and Results of Stochastic Spectral Analysis

M. Donald, The Cavendish Laboratory, Madingley Road, Cambridge CB3 0HE.
A Mathematical Characterization of the Physical Structure of Observers

E. Eisenberg1 and L.P. Horwitz1,2. 1 Department of Physics, Bar-Ilan University, Ramat-Gan 52900, Israel. 2 School of Physics, Ramond and Beverly Sackler Faculty of Exact Sciences, Tel-Aviv University, Ramat-Aviv, Israel.
Preprint No: TAUP 2074-93
Intrinsic Decoherence in Classical and Quantum Evolution

A.E. Faraggi, School of Natural Sciences, Institute for Advanced Study, Olden Lane, Princeton, NJ 08540, U.S.A. Email address: faraggi@sns.ias.edu
Light Fermion Masses in Superstring Derived Standard-like Models

L. Feher1, L. O’Raifeartaigh and I. Tsfus2. 1 Physikalisches Institut der Universität Bonn, Nussallee 12, 53115 Bonn, Germany. 2 Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland.
* An Alexander von Humboldt Fellow. On leave from Bolyai Institute of Szeged University, H-6720 Szeged, Hungary.
The Vacuum Preserving Lie Algebra of a Classical t-a-Algebra

V.L. Gaiduk1, V.V. Gaiduk1 and J. McConnell1. 1 Institute of Radio Engineering and Electronics of the Russian Academy of Sciences, Vvedensky sq.1, Przhezino, Moscow Region, 141120, Russia. 2 School of Theoretical Physics, Dublin Institute for Advanced Studies, Dublin 4, Ireland.
Preprint No: DIAS-HEP-93-10
Complex Susceptibility of Liquid Water as a Two-Potential System of Reorienting Polar Molecules
P.E.T. Jørgensen and S. Pedersen.
Harmonic Analysis of Fractal Measures*
* Research supported by the NSF

Positive Representations of General Commutation Relations Allowing Wick Ordering

P.E.T. Jørgensen* and R.F. Werner. 1 Department of Mathematics, University of Iowa, Iowa City, IA 52242, USA. 2 FB Physik, Universität Osnabrück, Postfach 4449, D-49010 Osnabrück, Germany, Email: reliner@dosumi1.rz.Uni-Osnabrueck.DE *Supported in part by the NSF(USA) and NATO.

Coherent States of the q-Canonical Commutation Relations†
†Available by anonymous FTP from nstromo.physik.Uni-Osnabrueck.DE §Submitted to CMP

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Deformations of Gabor Frames*
*
To appear in the Journal of Mathematical Physics

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Wavelet Electrodynamics, Part II: Atomic Composition of Electromagnetic Waves

M. Kamionkowski1 and D.N. Spergel2. 1 School of Natural Sciences, Institute for Advanced Study, Princeton, NJ 08540, USA, Email: kamion@guinness.ias.edu 2 Princeton University Observatory, Princeton, NJ 08544, USA, Email: dns@astro.princeton.edu


Large-Angle Cosmic Microwave Background Anisotropies in an Open Universe*
* Submitted to The Astrophysical Journal

M. Kamionkowski1, D.N. Spergel2 and N. Sugiyama3. 1 School of Natural Sciences, Institute for Advanced Study, Princeton, NJ 08540, USA, Email: kamion@guinness.ias.edu 2 Princeton University Observatory, Princeton, NJ 08544, USA, Email: dns@astro.princeton.edu 3 Department of Astronomy, University of California, Berkeley, CA 94720, USA, Email: sugiyama@skyast.berkeley.edu and Department of Physics, Faculty of Science, University of Tokyo, Tokyo 113, Japan.


Small-Scale Cosmic Microwave Background Anisotropies as a Probe of the Geometry of the Universe*
* Submitted to The Astrophysical Journal Letters
Representations of q-Minkowski Space Algebra

M.C. Land†, N. Shnerb‡ and L.P. Horwitz§, 1 School of Physics and Astronomy, Raymond and Beverly Sackler Faculty of Exact Sciences, Tel Aviv University, Ramat Aviv, Israel. 2 Department of Physics, Bar-Ilan University, Ramat Gan, Israel.
Preprint No: TAUP-2076-93
Feynman's Proof of the Maxwell Equations as a Way Beyond the Standard Model

M. Lavelle¹ and D. McMullan². 1 Institut für Physik, Johannes Gutenberg-Universität, D-55099 Mainz, F.R. Germany, Email: lavelle@iphmz.physik.uni-mainz.de. 2 Dublin Institute for Advanced Studies, School of Theoretical Physics, 10 Burlington Road, Dublin 4, Ireland, Email: mcmanull@stp.dias.ie
Preprint No: MZ-TH/93-17, DIAS-STP-93-12
Gauge Choices and Physical Variables in QED

J. Leon, Physique Mathématique et Théorique, CNRS-URA 768, Université Montpellier II, 34095 Montpellier, France.
Preprint No: PM94/01
Nonlinear Integrable Systems Related to Arbitrary Space-Time Dependence of the Spectral Transform

J.T. Lewis¹ and C.-E. Pfister². 1 Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland. 2 École Polytechnique Fédérale de Lausanne, Département de Mathématiques, CH-1015 Lausanne, Switzerland.
Preprint No: DIAS-STP-93-33
Thermodynamic Probability Theory: Some Aspects of Large Deviations

J.T. Lewis¹, C.-E. Pfister² and W.G. Sullivan¹. 1 Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland. 2 École Polytechnique Fédérale de Lausanne, Département de Mathématiques, CH-1015 Lausanne, Switzerland. 3 University College, Department of Mathematics, Belfield, Dublin 4, Ireland.
Preprint No: DIAS-STP-93-24
Large Deviations and the Thermodynamic Formalism: A New Proof of the Equivalence of Ensembles
* Lecture delivered by J.T. Lewis

G. Lindblad, Theoretical Physics, Royal Institute of Technology, S-100 44 Stockholm, Sweden, Email: gli@theophys.kth.se.
Decoherence Properties of Finite Quantum Systems

R.J. McDermott and A.I. Solomon, Faculty of Mathematics, Open University, Walton Hall, Milton Keynes, MK7 6AA, U.K.
Double Squeezing in Generalized q-Coherent States

D. McMullan¹ and I. Tsutsui². 1 School of Mathematics and Statistics, University of Plymouth, Drake Circus, Plymouth, Devon, PL4 8AA, U.K. Email: d.mcmullan@plymouth.ac.uk. 2 Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland, Email: tsutsui@stp.dias.ie. * Address after 15 November 1993: Institute for Nuclear Study, University of Tokyo, Midori-cho, Tanashi-shi, Tokyo 188, Japan.
BPS String and Spin from Inequivalent Quantizations

D. McMullan¹ and I. Tsutsui, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland, Email: mcmanull@stp.dias.ie and tsutsui@stp.dias.ie.
On the Emergence of Gauge Structures and Generalized Spin when Quantizing on a Coset Space

Preprint No: 6/93
The Induced Representations of the k-Poincaré Group. The Massive Case
* Supported by KBN grant 2 0218 91 01

Preprint No: 8/93
The Induced Representations of the k-Poincaré Group. The Massless Case
* Supported by KBN grant 2 0218 91 01

Preprint No: 7/93
The n-Dimensional k-Poincaré Algebra and Group
* Supported by KBN grant 2 0218 91 01
J. Mesger, Institut für Theoretische Physik der Universität Göttingen, Bunsenstrasse 9, D-37073 Göttingen, Germany and Sektion Physik, Theoretische Physik, Universität München, München, Germany and Forschungszentrum Waldökosysteme der Universität Göttingen, Göttingen, Germany.

Nonlinear Network Dynamics, Stability and Growth in Ecosystems

Address postal
Work supported by BMFT, Bonn, Fed. Rep. Germany under project no.OEF 1993-3, part PM 5. The views expressed are those of the author.

C. Nash, 1,2 and D. O'Connor, 1 Department of Mathematical Physics, St. Patrick's College, Maynooth, Ireland. 2 School of Theoretical Physics, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland.

Co-First and O'Connor Preprint No. DIAS-93-22
BRST Quantisation and the Product Formula for the Ray-Singer Torsion

J. Navarro-Salas and C.F. Talavera, Departamento de Física Teórica and IFIC, Centro Mixto Universidad de Valencia-CSIC, Facultad de Física, Universidad de Valencia, Burjasot-46100, Valencia, Spain.

Preprint No: FTUV-93-34, IC/93-34
Quantum Cosmological Approach to 2d Dilaton Gravity

* Work partially supported by the Comisión Interministerial de Ciencia y Tecnología and DICYT.

C. Nayak 1 and F. Wilczek 2, 1 Department of Physics, Joseph Henry Laboratories, Princeton University, Princeton, N.J. 08544, Email: nayak@puhp1.princeton.edu 2 School of Natural Sciences, Institute for Advanced Study, Olden Lane, Princeton, N.J. 08540, Email: WILCZEK@IASNS.BITNET

Research supported in part by a Fannie and John Hertz Foundation Fellowship. Research supported in part by DOE grant DE-FG02-90ER40542.

Non-Formal Liquid Fixed Point in 2±1 Dimensions

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2 Institute for Theoretical Physics, Rijksuniversiteit Utrecht, Prinzenplein 5, 3508TA Utrecht, Netherlands.

Effective Critical Exponents for Dimensional Crossover and Quantum Systems from an Environmentally Friendly Renormalization Group

D. Ó Mathúna, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland.
Preprint No. DIAS-94-04
Jacques II Bernoulli and the Problem of the Vibrating Plate

L. Pittner and P. Uray, Institut für Theoretische Physik, Karl Franzens-Universität Graz.
Duals of Quasitrivially $Z_2$-graded Hopf Algebras and the Classical Limit

* This work was supported by the Fonds zur Förderung der wissenschaftlichen Forschung in Österreich, Projekt Nr. P 9916-PHY.

J.V. Pule, A. Verbeure and V.A. Zagrebnov 1, Institut für Theoretische Physik, Universität Leuven, B-3001 Leuven, Belgium. 1 Permanent address: Mathematical Physics Department, University College Dublin, Belfield, Dublin 4, Ireland. 1 Present Address: Ecole Nationale Supérieure des Télécommunications, 46 Rue Barrault, 75634 Paris Cedex 13, France (E-mail: zagrebnov@imaginet.fr).
Preprint No: KUL-TF-93/11.
Peierls-Fröhlich Instability and Kohn Anomaly

M. Requardt, Institut für Theoretische Physik der Universität Göttingen, Bunsenstrasse 9, 34-Göttingen, Germany.

An Analysis of (A) Causal Behaviour in the Microworld and its Relation to 'Potential' resp. 'Actual' (Quantum) Existence

M. Requardt, Institut für Theoretische Physik der Universität Göttingen, Bunsenstrasse 9, 34-Göttingen, Germany.
The 'Mystery of the Cosmological Constant Problem' and the 'Universal Energy-Mass-Equivalence-Axiom'

M. Requardt, Institut für Theoretische Physik der Universität Göttingen, Bunsenstrasse 9, 34-Göttingen, Germany.

Why there don't exist Supersolid Cricket Balls. An Approach to Quantum Decoherence within the Framework of Statistical Mechanics of Phase Transitions

Quantization of Lie Groups and Lie Algebras

* Preprint in Russian


D. Ryder, Ascom Tech AG, CH-3018 Bern, and Institute for Communication Technology, ETH Zentrum, CH-8092 Zürich, Switzerland.
Alternative Approach to Kramers-Type Problems, with Intrinsic "Bridging", and Specification of the Exit Points
S.L. Shatashvili, School of Natural Sciences, Institute for Advanced Study, Olden Lane, Princeton, NJ 08540. * Research supported by NSF grant PHY92-45317. † On leave of absence from St. Petersburg Branch of Mathematical Institute (LOMI), Fontanka 27, St. Petersburg 191011, Russia. Preprint No: IASSNS-HEP-93/66

On the Problems with Background Independence in String Theory

N. Shnerb¹ and L.P. Horwitz². ¹ Department of Physics, Bar-Ilan University, Ramat-Gan 52900, Israel. ² School of Natural Sciences, Institute for Advanced Study, Princeton, N.J. 08540. * 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 93/62, TAUP 2106-93

Gauge and Group Properties of Massless Fields in Any Dimension

N. Shnerb¹ and L.P. Horwitz². ¹ Department of Physics, Bar-Ilan University, Ramat-Gan 52900, Israel. ² School of Natural Sciences, Institute for Advanced Study, Princeton, N.J. 08540. * 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 93/63, TAUP 2119-93

On the Group Theory of the Polarization States of a Massless Field

A.I. Solomon and R.J. McDermott*, Faculty of Mathematics and Computing, The Open University, Milton Keynes, MK7 6AA, U.K.

* Talk presented at the International Workshop on Symmetry Methods in Physics in honour of the late Professor Ya. A. Smorodinsky, Dubna, Russia, 6-10 July 1993.

General Deformations of Bosons and Their Coherent States

O. Steinmann, Universität Bielefeld, Fakultät für Physik, D-33501 Bielefeld, Germany. Preprint No: Bi-TP 93/71

Perturbative Quantum Field Theory at Positive Temperatures: An Axionic Approach

D.H. Tchrakian, Department of Mathematical Physics, St. Patrick's College, Maynooth, Ireland and School of Theoretical Physics, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland. Preprint No: DIAS-STP 93-27

Skyrme-Like Models in Gauge Theory

-63-

M.P. Tuite, Department of Mathematical Physics, University College, Galway, Ireland and Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland. Preprint No: DIAS-1TP-93-09, May 1993.

On the Relationship between Monstrous Moonshine and the Uniqueness of the Moonshine Module

M.A. Vandycz, Physics Department, University College, Cork, Ireland and Physics Department, Cork Regional Technical College, Bishopstown, Co. Cork, Ireland. Preprint No: DIAS-STP-93-32

On the Damped Harmonic Oscillator in the de Broglie-Bohm 'Hidden-Variable' Theory

M.A. van Eijck¹, D. O'Connor² and C.R. Stephens². ¹ Institute for Theoretical Physics, University of Amsterdam, Valckenierstraat 65, NL-1018 XE Amsterdam, Netherlands. ² Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland. Preprint No: DIAS-STP-93-25

Heating Field Theory the "Environmentally Friendly" Way!


A.C.D. van Enter¹, R. Fernández² and A.D. Sokal³. ¹ Instituut voor Theoretische Natuurkunde, Rijksuniversiteit Groningen, Nijenborgh 4, NL 9747 AG Groningen, The Netherlands. ² Institut de Physique Théorique, EPF Lausanne, PB 1015 Lausanne, Switzerland. ³ Department of Physics, New York University, 4 Washington Place, New York, NY 10003, USA. * Speaker at the Conference.

Gibbsian Versus Non-Gibbsian Measures: Some Results and Some Questions in Renormalization Group Theory and Stochastic Dynamics

A.C.D. van Enter¹, R. Fernández² and A.D. Sokal³. ¹ Instituut voor Theoretische Natuurkunde, Rijksuniversiteit Groningen, Nijenborgh 4, NL 9747 AG Groningen, The Netherlands, E-mail: Aenter@th.rug.nl ² Institut de Physique Théorique, EPF Lausanne, PB 1015 Lausanne, Switzerland, E-mail: Fernandez@epfl.ch ³ Department of Physics, New York University, 4 Washington Place, New York, NY 10003, USA, E-mail: Sokal@ac4.nyu.edu * Speaker at the Conference.

Renormalization Transformations: Source of Examples and Problems in Probability and Statistics†

† Invited talk at the V CLAPEM, Sao Pualo, 28 June - 3 July 1993.
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Professor of Theoretical Physics

from September 1995. This full professorship involves the teaching of theoretical physics in collaboration with the other theoreticians of the University and of the Lausanne Federal Institute of Technology. The teaching is in French. At a more advanced level, the new professor could be asked to lecture in the domain of relativistic quantum field theory. He is expected to pursue research activity in the domain of his choice, and to advise thesis students. A good background and some experience in particle physics theory are desirable.

Applications (including C.V., list of publications, reprints of three publications, research project and three references) should be sent before December 15, 1994 to the Dean of the Faculty of Science, CP, CH-1015 Lausanne (Switzerland). Further information can be obtained from Prof. J.-J. Loeffel, University of Lausanne, BSP, CH-1015 Lausanne (Switzerland) (tel. +41 21 692 37 30 or +41 21 692 37 51, fax +41 21 692 36 05, e-mail : jvuille@ipt.unil.ch).

October 1994 / JIL

INTERNATIONAL ASSOCIATION OF MATHEMATICAL PHYSICS

IAMP NEWS BULLETIN

NOVEMBER 1994

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. J. Fröhlich
Theoretical Physics
ETH-Hönggerberg
CH-8093 Zurich
Switzerland

Treasurer:
Professor H. Araki
RIMS
Kyoto University
Kyoto 606-01
Japan

Change of Address: Please inform the President:
Prof. A.M. Jaffe if you
should change your address.
News from the President

Our Australian representative Angas Hurst has served in that post since 1977, i.e. from the founding of our Association. We are indebted to Angas for his long and enthusiastic service and we are truly grateful. This year he has stepped down. While his shoes are impossible to fill, Paul Pearce has cheerfully agreed to follow in his footsteps. I also extend warm thanks to Gérard Emch for his service as Treasurer of the Association from 1988 through early 1994, which we acknowledged at the General Assembly in July.

Our Paris Congress in July was extraordinarily successful. Not only did we have extremely good talks, but over 1,000 persons attended, approximately twice the number who attended the largest previous meeting. The use of UNESCO was especially advantageous. The lecture halls were large and air-conditioned, providing some comfort in the unusual heat wave that hit Paris the week of our meeting. These rooms opened onto a large area which provided extensive space for informal discussion, the registration desk, posters, and book exhibits. Just outside the building, the peaceful Japanese garden on the UNESCO ground provided an excellent place for walkers and discussion. The seventh floor dining rooms also provided lunch for those who wanted to eat without leaving the premises.

The Congress took place in a wonderful, large city, filled with many interesting things to do. In spite of this, all the sessions of the Congress were well attended. Even on the final Saturday morning session, we filled the Grand Amphitheater at the Sorbonne.

By keeping the main Congress to within one week, it was possible to hold satellite workshops. We had four excellent satellite meetings the week following the actual Congress. These were also well attended and provided a more intimate, in-depth discussion of several topics from the Congress. I am very happy with the results of these meetings and hope that our members are as well.

The Executive Committee met twice in Paris, once the day before the Congress and a second time after the General Assembly. One unusual result of these meetings was the authorization of two committees, namely the "Committee on Electronic Communication" and the "UNESCO Committee." The Committee on Electronic Communication will be an advisory committee. I believe that the Committee on Electronic Communication will play an extremely important role in the evolution of IAMP. I hope that this committee will be a vehicle for providing lines between our communications with other societies and organizations, as we all try to grapple with the fast-unfolding new developments in electronic communication. Several members of that committee plan to attend the upcoming M.S.R.I. workshop on electronic communication. A report about this meeting will appear in the next issue of the Bulletin. The Committee consists of J.-P. Eckmann,
MINUTES OF THE IAMP GENERAL ASSEMBLY

Friday, 22nd July 18.30 hours
Salle 1   UNESCO Headquarters Paris

1. Introduction

The President of IAMP, Professor Arthur Jaffe, opened the meeting by congratulating the Paris Organising Committee and particularly Professor Daniel Iagolnitzer for arranging such a successful congress. The record number of participants (over 1,000) and the high scientific standard of the talks were testament to this being one of the best congresses to be held to date. The use of the UNESCO conference centre was a great coup and UNESCO's generosity in giving us the use of their HQ for free had contributed significantly to the success of the meeting. It was hoped that UNESCO and IAMP could cooperate to their mutual advantage in other joint projects in the future. The President thanked the main sponsors IUPAP, .... and especially the French Government whose generosity had enabled over 190 participants from Eastern Europe and the developing nations to attend the Congress with full subsistence and travel funding.

The President then invited the Secretary, Professor Aubrey Truman, to give the Secretary's Report.

2. Secretary's Report

Since the last congress in Leipzig, 6 News Bulletins had been produced in Swansea - an average of 2 per year. The dates and costs are detailed below:

<table>
<thead>
<tr>
<th>Date</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 1991</td>
<td>£584.68</td>
</tr>
<tr>
<td>May 1992</td>
<td>£583.02</td>
</tr>
<tr>
<td>October 1992</td>
<td>£696.94</td>
</tr>
<tr>
<td>March 1993</td>
<td>£657.38</td>
</tr>
<tr>
<td>August 1993</td>
<td>£779.70</td>
</tr>
<tr>
<td>March 1994</td>
<td>£850.16</td>
</tr>
</tbody>
</table>

A breakdown of the cost of producing 612 IAMP News Bulletins in March 1994 is as follows. (March 1994 Bulletin consisted of approximately 66 sides of A5 pages - twice the length of the December 1991 issue. There are 604 paid-up members at Swansea mailing centre - 37 in the UK, 296 in EU countries, 271 in non-EU countries.)
Changing the format of News Bulletin to A5 size had helped to reduce the costs but increasing length of Bulletin was putting up the costs again. It was suggested that to hold down costs the practice of including extensive preprint lists be discontinued since most of these are available on the Austin Mathematical Physics File Server. Professor Raphael de la Llave and his colleagues were thanked for providing this service free of charge to IAMP members.

The Secretary's Report was accepted.

3. Report of the Treasurer

The President issued a proclamation of thanks to the former Treasurer, Professor Gérard Emch, for his long and distinguished record of service to the Association. He then invited the new Treasurer to give his report. The new Treasurer, Professor Huzihiro Araki, presented his detailed financial report which was based on figures provided by Professor Gérard Emch (see Reports attached to Official Minutes). The report showed that the overall financial position of the Association was sound but that there was an increasing problem due to the backlog of unpaid dues from some members of the Association. This problem had worsened since individual billing had been abandoned in the mid 1980s. It was agreed that it was necessary to take some firm action to deal with this problem by writing to individual members explaining their situation with regard to the payment of dues.

The Treasurer's Report was accepted.

4. Report by the President of the Meeting of the Executive Committee on 17th July 1994

(i) The President reported on the setting up of an Electronic Publications Committee by the Executive to investigate ways in which the Association could benefit from Electronic Publishing. The President asked for suggestions as to who should sit on this committee explaining that it was important that the committee consist of a committee of experts not interested amateurs.

(ii) The President reported on the changing situation on copyright and distribution rights for authors of scientific papers and the Association's involvement in this. Professor Elliot Lieb, as a former President, had prepared a draft statement on copyright affirming the Association's policy. This statement was read out to the General Assembly: "In the interest of maximal dissemination of scientific writing and in the interest of establishing the preeminence of scientists in the creation of scientific publications, the Executive Committee of the IAMP calls on all publishers to permit retention of copyright by authors, when requested, and to permit free duplication of scientific articles for non-commercial purposes." It was agreed to refer this item for approval to the meeting of the IAMP Executive later that evening.

(iii) The President also explained that in the interests of keeping official records for the Association it might be necessary to change some of the Association's By-Laws. The Executive were going to be asked to consider this once a plan for the best way forward had been agreed with all interested parties on the Executive, namely the President, Secretary and Treasurer. This item was still under discussion by the Executive.

(iv) The President reminded the General Assembly that there would be a new election to the Executive in 1996 and asked the General Assembly for any suggestions for membership. This would also be discussed later this evening at the Executive Committee Meeting.

(v) The President explained that the Executive would be setting up a committee to investigate the possibility of forming closer links between the Association and UNESCO. He asked the Assembly for suggestions for members.

5. Possible sites for 1997 Congress

The President gave a brief overview of the suggestions received to date for the 1997 IAMP Congress. In brief they were as follows:

1. Bid from Gu and Hu for Fudan University Shanghai.
2. Bid from Derek Robinson for Congress to be in Australia - Adelaide, Brisbane or Sydney.
3. Bid from Yau for Congress to be in Hong Kong with C.N. Yang as Chairman of Local Organising Committee.
4. Bid from Garrido for Congress to be held in Barcelona, with backing of 3 universities and modern facilities of Olympics available.
5. Possible bid from Phua for Congress to be held in Singapore.
6. Possible bid from Cambridge Massachusetts.
7. Possible bid from Lisbon.
8. Possible bid from Taiwan.
Brief presentations were made by S.T. Yau and Paul Pearce to the General Assembly for the above bids. From the floor of the Assembly the view was expressed that there had been too many recent Congresses in Europe and that a non-European venue should be given preference. The question of how to decide on the winning bid was discussed. It was resolved that the Executive Committee should ask for written bids by the end of October 1994. These would be considered by the Executive during the month of November. If the Executive was divided over the final choice of the winning bid, the opinion of membership should be sought.

6. Mathematical Physics in Eastern Europe and the FSU

Professor Zavilov reported on the state of Mathematical Physics in Russia and the Independent University of Moscow. Although Mathematical Physics was surviving in Russia, it was clear that the independent university needed some practical help e.g. with library and computer needs etc. It was hoped to organise a Summer School for some of the best students from the Independent University at Ph.D. level in the near future. IAMP would be asked to help with the organisation and backing of this project. In the meantime anyone able to offer practical help should contact Professor Zavilov.

7. The Meeting was closed at 19.30 hours.

A. Truman
22nd July 1994

( Treasurer's Report )

Financial Report

1. Account in Genève (Swiss Francs)
   Balance Dec. 31, 1990
   Dues collected 15.00
   Interest 160.30
   Expenses 69.40
   6,401.30

   Balance Dec. 31, 1991
   Dues collected 196.00
   Interest 164.95
   Expenses 73.95
   6,507.20

   Balance Dec. 31, 1992
   Dues collected 830.00
   Interest 189.10
   Expenses 83.50
   7,688.80

2. Account in Bielefeld (German Marks)
   Balance Dec. 31, 1990
   Dues collected 1,531.80
   Interest 124.74
   NSF Loan (Herbst Leipzig) 635.00
   Expenses
     Banking 92.50
     Goslar 918.00
     Leipzig 18,360.00
   Balance Dec. 31, 1991
   Dues collected 576.00
   Interest 178.23
   CMP 730.00
   Leipzig 21,818.98
   Expenses
     Banking 63.40
     Salamanca 829.55
     Office of Secretary 2,045.50
   Balance Dec. 31, 1992
   Dues collected 3,891.50
   Interest 172.21
   Expenses
     Banking 76.80
     Office of Secretary 5,135.50
     Phase Transitions (Prague) 858.85
   Balance Dec. 31, 1993

   33,907.77
3a. Account in Gainesville (US Dollars)

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance Dec. 31, 1980</td>
<td>6,115.79</td>
</tr>
<tr>
<td>Dues collected</td>
<td>2,434.29</td>
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<tr>
<td>Interest</td>
<td>283.84</td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
</tr>
<tr>
<td>Office of Treasurer</td>
<td>62.95</td>
</tr>
<tr>
<td>Mailing Center A</td>
<td>503.00</td>
</tr>
<tr>
<td>Reimburse. NSF (Herbst, Leipzig)</td>
<td>553.26</td>
</tr>
<tr>
<td>Balance Dec. 31, 1981</td>
<td>7,714.68</td>
</tr>
<tr>
<td>Dues collected</td>
<td>190.00</td>
</tr>
<tr>
<td>Interest</td>
<td>172.74</td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
</tr>
<tr>
<td>Mailing Center A</td>
<td>1,000.00</td>
</tr>
<tr>
<td>Mailing Center B2</td>
<td>500.00</td>
</tr>
<tr>
<td>Balance Dec. 31, 1992</td>
<td>6,587.42</td>
</tr>
<tr>
<td>Dues collected</td>
<td>4,750.83</td>
</tr>
<tr>
<td>Interest</td>
<td>88.81</td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
</tr>
<tr>
<td>Banking expense</td>
<td>42.50</td>
</tr>
<tr>
<td>Mailing center A</td>
<td>3,500.00</td>
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<tr>
<td>Office of the President</td>
<td>248.08</td>
</tr>
<tr>
<td>Office of the Treasurer</td>
<td>417.10</td>
</tr>
<tr>
<td>Copenhagen Conf. (Aizenman)</td>
<td>500.00</td>
</tr>
<tr>
<td>Balance Dec. 31, 1993</td>
<td>6,697.38</td>
</tr>
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</table>

3b. Account in Jacksonville (US Dollars)

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance Dec. 31, 1990</td>
<td>1,707.70</td>
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<tr>
<td>Interest</td>
<td>102.79</td>
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<tr>
<td>Balance Dec. 31, 1991</td>
<td>1,810.49</td>
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<tr>
<td>Interest</td>
<td>82.49</td>
</tr>
<tr>
<td>Balance Dec. 31, 1992</td>
<td>1,872.98</td>
</tr>
<tr>
<td>Interest</td>
<td>52.59</td>
</tr>
<tr>
<td>Balance Dec. 31, 1993</td>
<td>1,925.57</td>
</tr>
</tbody>
</table>

4. Account and cash in Kyoto (Japanese Yen)

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Regular Account</td>
<td></td>
</tr>
<tr>
<td>(b) Saving Account (Open March, 31 1992)</td>
<td></td>
</tr>
<tr>
<td>(c) Cash</td>
<td></td>
</tr>
<tr>
<td>Balance Dec. 31, 1990</td>
<td>599,639</td>
</tr>
<tr>
<td>Dues collected</td>
<td>462,000</td>
</tr>
<tr>
<td>Interest</td>
<td>9,717</td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
</tr>
<tr>
<td>Mailing Center B1</td>
<td>30,152</td>
</tr>
<tr>
<td>Returned dues</td>
<td>3,900</td>
</tr>
<tr>
<td>Expenses for above</td>
<td>482</td>
</tr>
</tbody>
</table>

5. Account in Gailard (French Francs)

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance Dec. 31, 1990</td>
<td>5,023.99</td>
</tr>
<tr>
<td>Dues collected</td>
<td>180.00</td>
</tr>
<tr>
<td>Interest</td>
<td>231.16</td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
</tr>
<tr>
<td>Balance Dec. 31, 1991</td>
<td>5,435.15</td>
</tr>
<tr>
<td>Dues collected</td>
<td>300.00</td>
</tr>
<tr>
<td>Interest</td>
<td>251.92</td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
</tr>
<tr>
<td>Balance Dec. 31, 1992</td>
<td>5,987.07</td>
</tr>
<tr>
<td>Dues collected</td>
<td>460.80</td>
</tr>
<tr>
<td>Interest</td>
<td>280.41</td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
</tr>
<tr>
<td>Balance Dec. 31, 1993</td>
<td>6,717.28</td>
</tr>
</tbody>
</table>

6. Account in London (British Pounds)

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance Dec. 31, 1990</td>
<td>727.59</td>
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<tr>
<td>Dues collected</td>
<td>42.00</td>
</tr>
<tr>
<td>Interest</td>
<td></td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
</tr>
<tr>
<td>Balance Dec. 31, 1991</td>
<td>769.59</td>
</tr>
<tr>
<td>Dues collected</td>
<td>30.00</td>
</tr>
<tr>
<td>Interest</td>
<td></td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
</tr>
<tr>
<td>Balance Dec. 31, 1992</td>
<td>799.59</td>
</tr>
</tbody>
</table>
Dues collected 402.50
Interest (est.) 25.53
Expenses
Balance Dec. 31, 1993 1317.92

Conversion in US dollars
(Rates used are as of June 22, 1994. No special significance for this date.)
1. Swiss Francs (rate 1.35)
Balance Dec. 31, 1993 7,698.80 5,702.22
2. German Marks (rate 1.00)
Balance Dec. 31, 1993 33,907.77 21,192.35
3a. US Dollars
Balance Dec. 31, 1993 6,697.38 6,697.38
3b. US Dollars
Balance Dec. 31, 1993 1,025.57 1,025.57
4. Japanese Yen (rate 102.)
Balance Dec. 31, 1993 1,341,568 13,153.61
5. French Francs (rate 5.47)
Balance Dec. 31, 1993 6,717.28 1,228.02
6. British Pounds (rate .65)
Balance Dec. 31, 1993 (est.) 1317.92 2,027.57
Total Balance Dec. 31, 1993 51,026.72

IAMP Budget for 1994 and 1995

<table>
<thead>
<tr>
<th>Expenditure</th>
<th>1994</th>
<th>1995</th>
</tr>
</thead>
<tbody>
<tr>
<td>IAMP News Bulletin</td>
<td>$6,500</td>
<td>$6,500</td>
</tr>
<tr>
<td>Conference Support</td>
<td>$17,000</td>
<td>$17,000</td>
</tr>
<tr>
<td>Other</td>
<td>$500</td>
<td>$500</td>
</tr>
<tr>
<td>Total</td>
<td>$24,000</td>
<td>$8,000</td>
</tr>
</tbody>
</table>

Income
1994 1995
Carried forward from preceding year $52,000 $42,400
Dues (700) $14,000 $14,000
Interests $400 $400
Total $66,400 $56,800

Carried forward to the next year $42,400 $48,800

Comments by Treasurer

(A) About Financial Report and Budget
1. The above Financial Report for the years 1991, 1992, 1993 and Budget for 1994, as approved by Executive Committee are printed here for distribution to all IAMP members in accordance with the Article 22 of the IAMP By-Laws.
2. About 17,000 dollars for the IAMP Congress and its satellites conferences and about 3,000 dollars for office expenses (mainly News Bulletin expenses) of President, Secretary and Treasurer have already been used out of 1994 Budget.
3. The Balance as of Dec. 31, 1993 contains 470 person year dues (9,450 dollars equivalent), which have been paid for years 1995 and later.
4. We should be setting aside a certain amount for the next IAMP Congress (to be held in 1997).
5. For an organization of 1000 members, already in existence for 17 years and quite active, the balance in our budget, after subtraction of items 2, 3 and 4 above, looks quite small.

(B) Dues
1. According to the Article 21 of the IAMP By-Laws, "the membership dues for each fiscal year is payable by the end of the preceding fiscal year." ("The fiscal year of the Association shall be the calendar year" according to the Article 19.) Therefore each member is supposed to have paid the membership dues up to 1994 by the end of last year and should pay the dues for 1995 by Dec. 31, 1994 (this year).
2. We shall be sending to each member very soon a reminder for paying membership dues, with the label showing the year, up to which dues are paid. We hope that each member will kindly compute from that data the amount to be paid. The table in the next page lists places where you can pay dues in 6 different currencies. The table also shows the amount of yearly dues for each currency, which are fixed (and hence not at the current exchange rate).
3. If any member really needs a bill explicitly stating the amount to be paid, he or she should write to the Treasurer asking for such a bill and stating up to which future year the bill should cover. Please note that this will add up mailing expense of IAMP and use up Treasurer's time.
4. Mailing of an individual reminder for dues described in item 2 above costs more than 1,000 dollars for mailing and requires non-negligible secretarial time. For this reason, it was not done in preceding years. However, since the IAMP finance seems to be heading to disaster (not much dues are being paid), we are sending the individual reminder now. However we would like to restrict it to every 3 years (once for each new Executive Committee).
5. Because of this reason, we ask members to pay their dues up to 1997 (3 years covering 1995, 1996, 1997 if you are not behind in paying dues) at this time (unless you are sure not to forget to pay dues at the end of each year on your own initiative).
6. We draw your attention to lifetime membership announced below.
Lifetime Membership

(Announcement of new category of membership)

The Executive Committee of IAMP decided in its meeting in July, 1994 to introduce lifetime membership defined in the following rules.

Rules for Lifetime Membership

1. Lifetime membership is given to an IAMP Ordinary Member if he/she pays in a lump sum the larger of the following two:
   (a) The entire dues up to the year in which he/she becomes 65.
   (b) The entire dues up to 15 years later.

2. As a transition measure, lifetime membership will be given to an IAMP Ordinary Member if he/she is 65 years of age or older as of January 1, 1995 and if he/she pays in a lump sum by December 31, 1995 the entire dues up to the year in which he/she becomes 70.

3. The membership dues already paid for future years can be counted as a part of the lump sum payment.

4. A lifetime Ordinary member enjoys all the privileges of an Ordinary Member, being counted as a member who paid up annual dues for lifetime after the lump sum payment of dues according to the above rules 1 or 2.

Comments by Treasurer

1. Please note that one has to make an action to become a lifetime member. It is not automatic.

2. The basic idea is that any Ordinary member can become a Lifetime member by paying dues up to age 65 as a lump sum well in advance.

3. The term “well in advance” means 15 years in advance. A lump sum payment of 15 years will contribute to stabilization of the Association finances, although dues for each year are not intended to be used before that year.

4. If a member wants to become a lifetime member after passing age of 50, he or she is required to pay a lump sum of dues up to 15 years later.

5. For those who are over a certain age, there is a transition measure provided by Rule 2. Especially those who are already 70 or older can become a lifetime member by just writing us requesting that status, provided that they have paid all the dues up to 1994. (We do not have data for picking up those above a certain age.)

6. Those who have paid future dues should take into account Rule 3. Again we ask the person to write us about their situation in order to enjoy the benefit.

Treasurer's address:
Huzihiro ARAKI
Research Institute for Mathematical Sciences, Kyoto University,
Sakyoku, Kyoto 606, JAPAN

Associate Membership

The Executive Committee at their meeting of 22 July 1994 approved new guidelines for associate membership in the Association, as outlined in the following memorandum prepared by the Treasurer.

1. The amount of yearly dues for an Associate Member = (The amount of yearly dues for an Ordinary Member) x 10 = X.

2. Initial Payment

   An associate member is to pay the amount 3X when he/she joins IAMP. This payment will cover the dues for 2 years, the additional amount X being the fee for joining the Association.

   From the third year, the associate member is to pay the amount X per year, payable by the end of the preceding year.

3. Privilege

   An associate member is provided with a membership list each year and can put publication announcements (not more than one page) in the IAMP News Bulletin.

4. Qualification

   Associate membership is limited to publishers, academic institutions and the like to be approved by the President.

(see Article 9 of Statutes)

Further information on associate membership can be obtained by correspondence with the President.
BRISBANE PROPOSAL
with one detailed budget page omitted

THE UNIVERSITY OF QUEENSLAND
Brisbane Qld 4072 Australia
Telephone (07) 335 2373/2277
International +61 7 335 2373/2277
Facsimile (07) 370 2272
Telefac HQ 02 351 4213

7th November, 1994

Professor A M Jaffe
Chairman, IAMP
Department of Physics
Harvard University
Cambridge, Mass, 02138, USA

Dear Professor Jaffe,

We are pleased to present our proposal to hold the XIIIth Congress of the IAMP in Brisbane, Australia in July 1997. The local decision to nominate Brisbane has been arrived at after a wide cross-section of the Australian mathematics/physics/mathematical physics community has been contacted. The structure of our bid is as follows:

Date:
June 29 - July 4 or July 6 - July 11, 1997 (to be decided).

It is hoped to run the conference back-to-back with a one-week joint meeting of the Australian and New Zealand Mathematical Societies in Auckland, New Zealand, and it is likely that satellite meetings on specialized topics would also be organized within Australia and New Zealand. For example, the possibility of a meeting on relativity at The University of New England in Armidale, organized by R. Bartnik, and a statistical mechanics meeting at The University of Melbourne, organized by P. Pearce, have already been suggested.

Site:
On the campus of The University of Queensland at St Lucia, a suburb of Brisbane, which is the state capital of Queensland, Australia.

Brisbane is a modern, rapidly growing city with about 1 million inhabitants. It is situated on the East coast of Australia at Latitude 27° S (c.f. Miami, 26° N). July is mid-Winter in Brisbane, when the days are typically dry and sunny, and the nights cool. July temperatures typically range from a low of 10° C (50° F) to a high of 20° C (68° F). Site of the successful World Expo '88, Brisbane provides visitors with a wide variety of tourist attractions, and a wide variety of restaurants (European, Middle-Eastern, American, Asian) reflecting Australia's multicultural society. A new casino complex will open in the city centre in 1995. The city is situated about 80 kms north of the Gold Coast with its famous surf beaches, night clubs, theme parks etc., and a similar distance south of the equally spectacular beaches of the Sunshine Coast.

The University of Queensland is situated at St Lucia on a bend of the Brisbane River, about 3 kms from the center of the city of Brisbane, on a large, attractive, modern campus. It is well-served by bus transport to the city center. A variety of student colleges (hostels) on the fringes of the campus provide single-room accommodation for some 2,000 of the University's 26,000 students. At the time proposed for the congress, the students will be on vacation.

Facilities:
The University is well-served with several large modern lecture theatres (up to 400 capacity) fitted out for multi-media presentations. If attendance were above 400, plenary sessions would be held in the University's attractive Mayne Hall, which seats 1200 people, and is suitable for OHP presentations, although not for for 35mm slides or chalk/white boards. A variety of smaller rooms equipped with OHP and blackboards would be available in the Department of Mathematics on the site. There is a Post Office on campus, and branches of several leading banks. FAX, email and photocopier facilities would be available to delegates. Meals will be available at the student colleges for those staying there. There are several dining halls for students on the campus, and also the Staff House of the University. There is a small shopping center ten minutes' walk from the campus where there are three or four eating places, and a major shopping center ten minutes away by bus (half way to the city).

Accommodation:
There will be ample student-style accommodation (single occupancy, shared bathroom and toilet facilities) available on the campus. In these student colleges there will also be a limited number of rooms (≈ 50) with their own facilities, and a smaller number of double rooms (≈ 20) with facilities. Cost of the single occupancy accommodation with shared facilities would be about AUS$50 (≈ US$37) per day, including breakfast, lunch and dinner, and about AUS$40 per day for bed and breakfast. There is a wide variety of hotels and motels downtown, ranging in cost up to AUS$200 per day (bed only) for a five-star hotel.

Attendance:
This is difficult to estimate from the pattern of previous Congresses, but we would expect the number of delegates to be in the range 300-600, and we have accordingly prepared two sets of preliminary budget figures corresponding to the two extremes of that range.

Travel Costs:

- Economy-class airfares in July are at present AUS$2,095 (Brisbane-Los Angeles), AUS$3,799 (Brisbane-Frankfurt), AUS$1,625 (Brisbane-Osaka) and AUS$2,050 (Brisbane-Beijing). However special, cheaper deals can often be negotiated, especially from outside Australia.
COMPLETE SHANGHAI PROPOSAL

From: guch@beq2.bep.ac.cn Tue Oct 25 04:10:34 1994
Received: by beq2 (MX V4.0-1 VAX) id 30217; Tue, 25 Oct 1994 16:21:23 -0800
Date: Tue, 25 Oct 1994 16:12:30 -0800
To: lamp@math

Department of Mathematical Physics
Harvard University
Cambridge, MA 02138

Dear Prof. A. Jaffe,

We are very pleased to make a proposal for the organization of the next International Congress of Mathematical Physics in Shanghai. After discussions with Prof. Yang Lo, the president of the Chinese Mathematical Society and Prof. Yang Fuja, the President of Fudan University we can be sure that the Chinese Mathematical Society, the Fudan University and the Institute of Mathematics of Fudan University will do everything possible to ensure the success of this conference, if the choice of Shanghai is confirmed.

a) The local committee. We are able to establish a local committee, containing high level scientists in mathematical physics, theoretical physics and mathematics in various parts of China. After the choice of Shanghai is confirmed we will make a suggestion on the members and Vice-chairpersons of the local organization committee. Prof. Gu Chaohao will be the chairman.

b) Site of the conference. There is a big conference hall at Fudan University with at least 800 seats and three smaller halls with 150-250 seats. There are air-conditioners in these halls. Many classrooms can be utilized, if necessary, since August is in the period of summer vacations.

c) Housing. There are 4 guest houses with different kinds of rooms on the Fudan campus. The conference can use about 20 suites and 100 double rooms (with bath or shower). The price of each suite is approximately 40-70 US dollars/night. The price of each double room is 30-50 US dollars/night. The foreign student dormitory is also available and the price of rooms is cheaper than the above mentioned rooms. Near the campus there are several hotels for foreign guests. The price is reasonable, a little higher than that of the guest houses on the campus. The facility is not luxurious, but suits the needs of various participants. The price may increase, since the exchange rate between Chinese Yuan and US dollars, and the inflation in China in three years is difficult to predict. In the central part of Shanghai, there are quite a few luxurious hotels. But we do not encourage participants to stay there, since the communication is complicated. The streets are very crowded, though the distance between the Fudan University and the central part of Shanghai is about 10-15 kilometers.

d) Meals. The guest house and some cafeterias will provide meals with the price 6-12 US dollars/day. In the student cafeterias the price is cheaper.

e) Supports. The conference will be supported by the State Commission of Science and Technology, the State Commission of Education, Chinese National Fund of Natural Science, the Chinese National Association of Science and Technology, the Chinese Mathematical Society,
the city government of Shanghai, the Mathematical Society of Shanghai, etc. Maybe some private foundations and companies will offer financial support. But for the time being we can not be sure how much can be obtained. The financial support of IUPAP, IMU, IAMP, etc. is necessary. We hope the support from outsiders of China and a part of registration fee will be enough to offer the international traveling expenses (using cheap tickets) of members of scientific committee and invited speakers (<20 persons in total). The fund from the Chinese side and part of registration fee will be used for local expenses of the above mentioned persons, rent of lecture halls, communications, receptions etc. The registration fee will not exceed that of the former conferences. Besides, we hope IMU will support some young scientists from Third World and participants from Russia and East Europe to take part in the Conference.

f) Social activities.

(1) Free of charge
   A big reception for all participants and family members.
   A sightseeing of Shanghai city.
   A banquet for organizers and the plenary lecturers.

(2) Charged (or partially charged)
   A banquet in a Chinese restaurant.
   A trip (one day) to a nearby city (Suzhou or Wuxi)
   Chinese opera, concert or acrobatic performance.
   Night boat trip.

g) Period. One week in the second half of August will be a good choice. The summer in Shanghai is very hot (30-38 C in daytime). The hottest month is July. In the second half of August the temperature can be a little bit lower, see appendix.

h) Visa. According to the open policy of China, scientists from all countries who desire to attend the Congress can obtain visas to China. Please contact us at any time for further information.

With best regards.

Gu Chaobao
Member Chinese Academy of Science
Director of the Institute of Mathematics, Fudan University
Head of the National Basic Research Project "Nonlinear Science"

Sincerely yours,

Hui Hezheng
Member Chinese Academy of Science
Vice-president of Chinese Mathematical Society
President of the Shanghai Mathematical Society

Appendix

Data of the Temperature in Shanghai in the Second Half of August During 90-94 Years
Average of the highest temperature: 30.7 C.
Average of the lowest temperature: 24.9 C.
The maximum of the highest temperature: 35.5 C.

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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.

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

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OBITUARY for Alfred Wehrl

It is with deep sorrow that we have to announce the sudden and unexpected death of Alfred Wehrl in January, 1994. We lost a friend and colleague whose scientific interests began with statistical mechanics and spread over wide areas of physics, mathematics and other natural sciences. He was especially noted for his many contributions to entropy theory. In addition to his research legacy, his students are grateful for his leading them to mathematical physics. He was a friend to many and we shall remember him with great affection.

Elliott Lieb
Department of Physics
Jadwin Hall
Princeton University
Princeton, NJ 08544
USA

Walter Thirring
Institut für Theoretische Physik
Universität Wien
Boltzmanngasse 5
A-1090 Wien
Austria
In tiefer Trauer geben wir Nachricht, daß unser lieber, unvergesslicher Gatte und Sohn, Herr

A. o. Univ.-Prof.

Dr. Alfred Wehrl


Der liebe Verstorbene wird auf dem Friedhof Baunfang aufgebahrt und Montag, den

Elisabeth Wehrl

Dr. Brigitta Wehrl-Novotny

Im Namen aller Verwandten und Freunde

Wien, den 2. Feber 1994
1140 Linz, Straße 160, 3. Stock 5/3

UNIVERSITÄT WIEN

Am Institut für Theoretische Physik der Formal- und Naturwissenschaftlichen Fakultät der Universität Wien ist die Planstelle eines/r

Ordentlichen Universitätsprofessors/in
für Theoretische Physik
Arbeitsrichtung Mathematische Physik
(Nachfolge Walter Thirring)

ab Wintersemester 1995/96 wiederzubesetzen.

Das Ordinariat muß Forschung und Lehre in Theoretischer Physik (insbesondere in Mathematischer Physik) im üblichen Ausmaß betreuen. Im Bereiche der Forschung wird enge Kooperation mit dem Internationalen Erwin Schrödinger Institut für Mathematische Physik in Wien erwartet.


Der Dekan:
Fleischhacker
ANNOUNCEMENT

The annual traditional meeting RCP 264 on interdisciplinary studies of inverse problems and inverse methods, will have for the 1994 session three particularities:

* First the scientific content will focus on:

NONLINEARITY AND INTEGRABILITY:
FROM MATHEMATICS TO PHYSICS

and will cover the mathematical aspects and the physical applications of both FINITE and INFINITE dimensional integrable systems.

* Second it will be co-organised by the two following groups of Montpellier:
  - Physique Mathématique et Théorique, CNRS-URA 788
  - Géométrie et Topologie Différentielle, CNRS-URA 1407;

* Last, it will be held during the month of February 1995...

If you are interested in participating, we kindly ask you to fill in the enclosed form and return it as soon as possible (not later than June 1994). All further information will then be sent via e-mail.

The scientific committee:

J. LEON and P.C. SABATIER (Physique Mathématique et Théorique)

J-P. DUFOUR and P. MOLINO (Géométrie et Topologie Différentielle)

Address for correspondence:

Odile ALBERNHÉ, Françoise DUCEAU
Physique Mathématique et Théorique
Université Montpellier II
34095 MONTPELLIER Cedex 05 (FRANCE)

Fax: (33) 67 54 48 50
e-mail: rcp@pm.univ-montp2.fr
Dear Madam or Sir,

On behalf of the Organizing Committee of the "34. Internationale Universitätswochen für Kern- und Teilchenphysik" we would like to ask you to include the following announcement in your calendar of meetings:

Title: 34. Internationale Universitätswochen für Kern- und Teilchenphysik

Topic: Low Dimensional Models in Statistical Physics and Quantum Field Theory

Date: March 4th to March 11th, 1995

Place: Schladming, Austria

Deadline for application: February 13th, 1995

Information:
Organizing Committee 34.IUKT
Institut für Theoretische Physik
Karl-Franzens-Universität Graz
Universitätsplatz 5
A-8010 Graz, AUSTRIA

Telephone: +43 (316) 380 5225
Telex: 311662
Telefax: +43 (316) 384091
E-Mail: ufp@edvz.kunigraz.ac.at

Thank you for your cooperation.

Yours sincerely,

L. Pittner

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NONLINEAR PHYSICS
THEORY AND EXPERIMENT

INTERDISCIPLINARY WORKSHOP ON NONLINEARITY
IN PHYSICAL SCIENCES

nature, structure and properties of nonlinear phenomena
in physics and applied mathematics

Gallipoli, Lecce (Italy)
June 29 – July 7, 1995

The topics will run from nonlinear optics to molecular dynamics, plasma waves, hydrodynamics, quantum electronics and solid state, and from inverse spectral transform methods to dynamical systems including integrability, turbulence and chaos, geometrical aspects and hamiltonian structures.

An emphasis will be made on both theory and experiments, the underlying objective being to propose a truly interdisciplinary workshop as all these domains have a lot to learn and teach one another.

The Workshop is open to qualified scientists (young researchers are welcome) who have contributed to the above topics. The members of the Scientific Advisory Committee are listed below. Each of them will be responsible for selecting (if ever necessary) the contributions in the field indicated. The Chairman of the Committee is Martin Kruskal.

The Workshop will take place from Wednesday June 28 (arrival day) to Saturday July 8 (departure day), 1995, at the Hotel Le Sirene in Baia Verde (Gallipoli) near Lecce, Italy, with all needed facilities as conference and lecture hall, by a sunny sandy beach.

An all-inclusive fee of Italian Lire 1,200,000 (1 US $ is now, October 1994, about Lire 1,550) will cover the cost of registration (Italian Lire 250,000), meals and lodging during the Workshop (in double occupancy rooms with private facilities) and the transportation from Lecce terminal to Brindisi International Airport to Gallipoli and back (which will be provided by the Organizing Committees for participants arriving on June 28 and leaving on July 8). The all-inclusive rate for accompanying persons is Italian Lire 90,000.

Persons interested in participating should apply as soon as possible (acceptance will be on a first-come first-served basis), and in any case before March 10, 1995, by contacting the Workshop Secretary.

Maria Concetta GERARDI, Dipartimento di Fisica, Università di Lecce, 73100 Lecce, Italy, tel. +39 832 320467, fax +39 832 320505, e-mail: gerardi@leccse.unifi.it, telex 860128 UNTIL I.

Messages sent by e-mail, if not confirmed in few days, should be sent again using telex, fax or ordinary mail.

Participants will be notified about their admission by April 15, 1995, at the latest (please include in the application form fax, e-mail, telex or phone). They will then be provided with further information, and asked to confirm their participation by depositing a non-refundable advance of Italian Lire 250,000 (or US $ 160). The balance of the participation fee will be paid upon arrival.
ORGANIZERS

- Marco BOITI, Dipartimento di Fisica, Università di Lecce, 73100 Lecce (Italy), e-mail: boiti@lece.infn.it
- Jérôme LEON, Physique Mathématique, Université Montpellier II, 34095 Montpellier (France), e-mail: leon@pm.univ-montp2.fr
- Flora PEMPINEGLI, Dipartimento di Fisica, Università di Lecce, 73100 Lecce (Italy), e-mail: pempi@lece.infn.it

SCIENTIFIC ADVISORY COMMITTEE

- Martin KRUSKAL, Mathematics Department, Rutgers University, New Brunswick, NJ 08903 (USA)
  Chairman of the Committee
- Mariette BARTHES, GDPC, Université Montpellier II, 34095 Montpellier (France)
  Condensed Matter
- David CAMPBELL, Physics Department, University of Illinois, Urbana, IL 61801 (U.S.A.)
  Nonlinear Phenomena in Novel Electronic Materials
- Pierre COULLET, INLN, Valbonne, 06560 Sophia-Antipolis (France)
  Dissipative Nonlinear Waves and Structure Formation
- Akira HASEGAWA, Department Communication Engineering, Faculty of Engineering, Osaka University, Osaka (Japan)
  Nonlinear Fiber Optics
- Boris KONOPELENKO, Dipartimento di Fisica, Università di Lecce, 73100 Lecce (Italy)
  Nonlinear Integrable Evolution Equations
- Alfred OSBORNE, Istituto di Cosmogeofisica, C.N.R., 10133 Torino (Italy)
  Nonlinear Waves and Coherent Structures in Fluids and Oceanography
- Robert PARMENTIER, Dipartimento di Fisica, Università di Salerno, 84081 Baronissi, SA (Italy)
  Josephson Devices and Systems
- Pierre SABATIER, Physique Mathématique, Université Montpellier II, 34095 Montpellier (France)
  Nonlinear Inverse Problems
- Giulio SOLIANI, Dipartimento di Fisica, Università di Lecce, 73100 Lecce (Italy)
  Symmetries in Magnetic Systems
- Karl SPATZKE, Institute for Theoretical Physics 1, Düsseldorf (Germany)
  Optical Solitons and Nonlinear Radiation Transport

LOCAL ORGANIZING COMMITTEE

Eleonora ALFINITO, Mario LEO, Rosario Antonio LEO, Luigi MARTINA, Luigi SOLOMBRINO

(Please Post and Circulate)

NONLINEAR PHYSICS
THEORY AND EXPERIMENT
Interdisciplinary Workshop on Nonlinearity in Physical Sciences
Hotel "Le Sirenete", Baia Verde, Gallipoli, Lecce (Italy)
June 29 – July 7, 1995

Name ___________________________ First name ___________________________ Sex [ ]

Affiliation ___________________________

Mailing address ___________________________

Tel. ___________________________ Telex ___________________________ Fax ___________________________

E-mail ___________________________

Arrival day WEDNESDAY JUNE 28, 1995
Departure day SATURDAY JULY 8, 1995

Expected date and means of arrival ___________________________

Expected date and means of departure ___________________________

Accompanying persons (full name):

1) ___________________________ 2) ___________________________
3) ___________________________ 4) ___________________________

Discount available for children who share rooms with their parents:
from 0 to 4 (50%)
from 4 to 10 (20%)
from 10 to 18 (10%)

The all-inclusive fee (food and accommodation in double occupancy room) for participants (see poster for details) is Italian L. 1,200,000. The all-inclusive rate for accompanying persons is L. 850,000.

In case you prefer to share your room with a certain participant, please indicate the name:

Indicate if you prefer single room, but take into account that extremely few single rooms will be available at an extra cost of Lire 150,000: [ ]

Special requests concerning accommodation ___________________________
PREPRINTS (RECEIVED IN GAINESVILLE)

NOTE entries for this listing should be addressed to:

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

Zbigniew Oziwiec, Universidad Nacional Autónoma de México, Eugen Paal, University of Tallinn, Department of Mathematics, 5 Ehitajate tee, Tallinn EE20188, Estonia, and Jerzy Róźański, University of Wrocław, plac Mała Borna 9, 50394 Wrocław, Poland

COALGEBRAS, COCOMPOSITIONS AND COHOMOLOGY

A. Borowiec, Institute of Theoretical Physics, University of Wrocław, Poland; V. K. Kharchenko, Institute of Mathematics, Novosibirsk, Russia, and Z. Osiwiec, Universidad Nacional Autónoma de México, México

ON FREE DIFFERENTIALS ON ASSOCIATIVE ALGEBRAS

CALCULI ON CLIFFORD-WEYL AND EXTERIOR ALGEBRAS FOR HECKE BRAIDING

Zbigniew Oziwiec, Universidad Nacional Autónoma de México

CLASSICAL FIELD THEORY AND ANALOGY BETWEEN NEWTON'S AND MAXWELL'S EQUATIONS

Cayetano Di Bartolo, Departamento de Física, Universidad Simón Bolívar, Caracas, Venezuela, Rodolfo Gambini, Instituto de Física, Facultad de Ingeniería, Jorge Griego, Instituto de Física, Facultad de Ingeniería, J. Herrera y Reissig 565, Montevideo, Uruguay, and Jorge Pullin, Center for Gravitational Physics and Geometry, Pennsylvania State University, University Park, PA 16802

EXTENDED LOOPS: A NEW ARENA FOR NONPERTURBATIVE QUANTUM GRAVITY

Abhay Ashtekar, Center for Gravitational Physics and Geometry, Penn State University, University Park, PA 16802-6390

QUANTUM GRAVITY: A MATHEMATICAL PHYSICS PERSPECTIVE

OVERVIEW AND OUTLOOK

Renate Loll, Center for Gravitational Physics and Geometry, Pennsylvania State University, University Park, PA 16802-6390

GAUGE THEORY AND GRAVITY IN THE LOOP FORMULATION

Subenoy Chakraborty, Center for Gravitational Physics and Geometry, The Pennsylvania State University, University Park, PA 16802 and Peter Peldán, Department of Mathematics, Jadavpur University, Kolkata-700032, India

TOWARDS A UNIFICATION OF GRAVITY AND YANG–MILLS THEORY

GRAVITY AND YANG–MILLS THEORY: TWO FACES OF THE SAME THEORY?

Seth Major and Lee Smolin, Center for Gravitational Physics and Geometry, The Pennsylvania State University, University Park, Pennsylvania, 16802-6360

COSMOLOGICAL HISTORIES FOR THE NEW VARIABLES

Guillermo A. Mena Marugán, Center for Gravitational Physics and Geometry, Pennsylvania State University, 104 Davey Laboratory, University Park, PA 16802

IS THE EXPONENTIAL OF THE CHERN–SIMONS ACTION A NORMALIZABLE PHYSICAL STATE?

Richard H. Price, Department of Physics, University of Utah, Salt Lake City, UT 84112 and Jorge Pullin, Center for Gravitational Physics and Geometry, The Pennsylvania State University, University Park, PA 16802

COLLIDING BLACK HOLES: THE CLOSE LIMIT

L. Pittner and P. Urey, Institut für Theoretische Physik, Karl Franzens-Universität Graz

DUALS OF QUASITRIANGULAR $\mathbb{Z}_2$–GRADED HOPF ALGEBRAS AND THE CLASSICAL LIMIT

Paul Federbush, Department of Mathematics, University of Michigan, Ann Arbor, MI 48109

CONSTRUCTIVE QUANTUM FIELD THEORY, FROM $\phi^4$ TO QUANTUM GRAVITY
PREPRINTS (RECEIVED IN GAINESVILLE) (continued)

NOTE entries for this listing should be addressed to:

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

Abhay Ashtekar, Center for Gravitational Physics and Geometry, Physics Department, Pennsylvania State University, University Park, PA 16802-6300 and Ranjeet S. Tate, Department of Physics, University of California, Santa Barbara, CA 93106-9530

AN ALGEBRAIC EXTENSION OF DIRAC QUANTIZATION: EXAMPLES

Lay Nam Chang, Institute for High Energy Physics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061-0435 and Chopping Soo, Center for Gravitational Physics and Geometry, Department of Physics, Pennsylvania State University, University Park, PA 16802-6300

THE STANDARD MODEL WITH GRAVITY COUPLINGS

Abhay Ashtekar, Center for Gravitational Physics and Geometry, Physics Department, Pennsylvania State University, University Park, PA 16802-6300 and Madhavan Varadarajan, Isaac Newton Institute for Mathematical Sciences, University of Cambridge, Cambridge CB3 0EH

A STRIKING PROPERTY OF THE GRAVITATIONAL HAMILTONIAN

R. Loll, Center for Gravitational Physics and Geometry, Department of Physics, Pennsylvania State University, University Park, PA 16802-6300

INDEPENDENT LOOP INVARIANTS FOR 2 + 1 GRAVITY

AN EXAMPLE OF LOOP QUANTIZATION

WILSON LOOP COORDINATES FOR 2 + 1 GRAVITY

Abhay Ashtekar, Donald Marolf, Thomas Thiemann, Center for Gravitational Physics and Geometry, Department of Physics, Pennsylvania State University, University Park, PA 16802-6300, Jerzy Lewandowski, Institute of Theoretical Physics, Warsaw University, ul Hoża 69, 00-681 Warsaw, Poland, and José Mourão, Dept. of Mathematics and Statistics, University of Cyprus, P.O. Box 537, Nicosia, Cyprus

A MANIFESTLY GAUGE-INvariant APPROACH TO QUANTUM THEORIES OF GAUGE FIELDS

G. Hofmann, Universität Leipzig, Fakultät für Mathematik und Informatik, Mathematisches Institut, Augustusplatz 10, 04109 Leipzig, Germany

ON ALGEBRAIC #–CONES IN TOPOLOGICAL TENSOR ALGEBRAS

II. CLOSED HULLS AND EXTREMAL RAYS

Michael Aizenman, Departments of Physics and Mathematics, Princeton University, Jadwin Hall, P.O. Box 708, Princeton, New Jersey 08544-0708

ON THE SLOW DECAY OF O(2) CORRELATIONS IN THE ABSENCE OF TOPOLOGICAL EXCITATIONS; REMARK ON THE PATRASCIOIU – SELBER MODEL

R. Loll and J. M. Mourão, Center for Gravitational Physics and Geometry, Physics Department, Pennsylvania State University, University Park, PA 16802-6300 and J. N. Tavares, Dep. Matemática Pura, Faculdade de Ciências, Univ Porto, 4000 Porto, Portugal

GENERALIZED COORDINATES ON THE PHASE SPACE OF YANG–MILLS THEORY

Rodolfo Gambini, Instituto de Física, Facultad de Ingeniería, J. Herrera y Reissig 565, C. C. 30 Moncvilleo, Uruguay, Alcides Garay, Instituto de Física, Facultad de Ingeniería, J. Herrera y Reissig 565, C. C. 30 Montevideo, Uruguay, and Jorge Pullin, Center for Gravitational Physics and Geometry, Department of Physics, Pennsylvania State University, University Park, PA 16802-6300

THE CONSTRAINT ALGEBRA OF QUANTUM GRAVITY IN THE LOOP REPRESENTATION

Guillermo A. Mena Marugán, Center for Gravitational Physics and Geometry, Physics Department, Pennsylvania State University, University Park, PA 16802-6300

BASES OF WORMHOLES IN QUANTUM COSMOLOGY

WORMHOLES AS BASIS FOR THE HILBERT SPACE IN LORENTZIAN GRAVITY

Donald M. Marolf, Center for Gravitational Physics and Geometry, Physics Department, Pennsylvania State University, University Park, PA 16802-6300

QUANTUM OBSERVABLES AND RECOLLAPSING DYNAMICS

Lee Smolin and Chopin Soo, Center for Gravitational Physics and Geometry, Department of Physics, Pennsylvania State University, University Park, PA 16802-6300

THE CHERN–SIMONS INVARIANT AS THE NATURAL TIME VARIABLE FOR CLASSICAL AND QUANTUM COSMOLOGY

Peter Feldén, Center for Gravitational Physics and Geometry, Department of Physics, Pennsylvania State University, University Park, PA 16802-6300

REAL FORMULATIONS OF COMPLEX GRAVITY AND A COMPLEX FORMULATION OF REAL GRAVITY
PREPRINTS RECEIVED IN SWANSEA

S. Albeverio$^{1}$ and L.V. Bogachev$^{2}$, Fakultät für Mathematik, Ruhr-Universität Bochum, D-44780 Bochum, Germany SFB 237 (Bochum-Essen-Düsseldorf); BiBoS Research Centre (Bielefeld); CERFIM (Locarno).
1 Faculty of Mechanics and Mathematics, Moscow State University, 119999 Moscow, Russia.
Brownian Survival in a Clusterized Trapping Medium

S. Albeverio$^{1}$ and A. Daletskii$^{2}$, Fakultät für Mathematik, Ruhr-Universität Bochum, D-44780 Bochum, Germany SFB 237 (Bochum-Essen-Düsseldorf); BiBoS Research Centre (Bielefeld); CERFIM (Locarno).
2 Fakultät für Mathematik, Ruhr-Universität Bochum, D-44780 Bochum, Germany SFB 237 (Bochum-Essen-Düsseldorf); Institute of Mathematics, Kiev, Ukraine; A. von Humbold research fellow.
Asymptotic Quantization for Solution Manifolds of Some Infinite Dimensional Hamiltonian Systems

S. Albeverio$^{1}$ and A. Daletskii$^{2}$, Fakultät für Mathematik, Ruhr-Universität Bochum, D-44780 Bochum, Germany SFB 237 (Bochum-Essen-Düsseldorf); BiBoS Research Centre (Bielefeld); CERFIM (Locarno).
2 Fakultät für Mathematik, Ruhr-Universität Bochum, D-44780 Bochum, Germany SFB 237 (Bochum-Essen-Düsseldorf); Institute of Mathematics, Kiev, Ukraine; A. von Humbold research fellow.
Dirichlet Operators as Elements of the Algebra of Pseudodifferential Operators. The Perturbed Gaussian Case.

S. Albeverio$^{1}$, J. Feng$^{2}$ and M. Qian$^{3}$, Fakultät für Mathematik, Ruhr-Universität Bochum, D-44780 Bochum, Germany SFB 237 (Bochum-Essen-Düsseldorf); BiBoS Research Centre (Bielefeld); CERFIM (Locarno).
2 Mathematisches Institut, Universität Tübingen, Germany. (On leave from National Research Center for Intelligent Computing Systems, Department of Probability and Statistics, Peking University, Beijing 100871). 3 Department of Probability and Statistics, Peking University, Beijing 100871.
The Role of Noises in Neural Networks

S. Albeverio$^{1}$, Y.G. Kondratiev$^{2,3}$ and M. Röckner$^{4}$, Fakultät für Mathematik, Ruhr-Universität Bochum, D-44780 Bochum, Germany SFB 237 (Bochum-Essen-Düsseldorf); BiBoS Research Centre, D33615 Bielefeld, Germany. 1 On leave of absence from Institute of Mathematics, Kiev (Ukraine). 2,3 Mathematisches Institut, Universität Bonn.
Infinite Dimensional Diffusions, Markov Fields, Quantum Fields and Stochastic Quantization
S. Albeverio$^{1,2}$, Y.G. Kondratiev$^{3,4}$ and M. Röckner$^{4,5}$

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Uniqueness of the Stochastic Dynamics for Continuous Spin Systems on a Lattice

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Abelian Chern-Simons Theory and Linking Numbers via Oscillatory Integrals

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A Mathematical Flat Integral Realization and a Large Deviation Result for the Free Euclidean Field

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On the Lattice Approximation for Certain Generalized Vector Markov Fields in Four Space-Time Dimensions

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Stochastic Anticipative Calculus for Functionals of a Gaussian Generalized Random Field

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A Renormalization Result for the Intersection Local Time of Lattice Random Walk in High Dimensions

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Fermion Stochastic Calculus

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Quantum Groups and Deformed Special Relativity

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On Parasupersymmetries and Relativistic Descriptions for Spin One Particles: I. The Free Context$^1,$

$^1$ To be published in Fortschritte der Physik - Progress of Physics 43, no.2 (1995).

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On Parasupersymmetries and Relativistic Descriptions for Spin One Particles: II. The Interacting Context with (Electro)Magnetic Fields$^1,$

$^1$ To be published in Fortschritte der Physik - Progress of Physics 43, no.2 (1995).
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† Researcher at the Inter-University Institute for Nuclear Sciences (Belgium).
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On a Three-Dimensional Reduction of the Bethe-Salpeter Equation

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Galilean Limit of Equilibrium Relativistic Mass Distribution for Indistinguishable Events

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Relativistic Mass Distribution in Event-Anti-Event System and 'Realistic' Equation of State for Hot Hadronic Matter

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Preprint No: FM 94-16.
Theory of Pump Depletion and Spike Formation in Stimulated Raman Scattering*
* To appear in Physical Review Letters

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Co-variant Derivatives and the Renormalisation Group Equation*
* Work partly supported by an Alexander von Humboldt research stipendium.

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Symplectic Geometry and Hamiltonian Flow of the Renormalisation Group Equation

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Preprint No. 94/6, March.
The Quantum Structure of Spacetime at the Planck Scale and Quantum Fields

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Quantum Mechanical Evolution of Relativistic Particles

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Preprint No: DIAS-STR-94-02.
The Finite-Temperature Renormalization Group Applied to λφ⁴ Theory and QCD

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Quantum Heisenberg Group and Algebra: Contraction, Left and Right Regular Representations

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Microscopic Description of Langmuir Waves Revisited Through Classical Mechanics

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Pathological Behavior of Renormalization-Group Maps at High Fields and Above the Transition Temperature

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Quantum Spin Chains with Quantum Group Symmetry

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K. Fredenhagen1, M.R. Gaberdiel2, and S.M. Rüger3. 1 II. Institut für Theoretische Physik, Universität Hamburg, D 22761 Hamburg. 2 Department of Applied Mathematics and Theoretical Physics, University of Cambridge, Silver Street, Cambridge, CB3 9EW. 3 Institut für Mathematik, Forschungszentrum Jülich, D 52425 Jülich, Germany. * Parity supported by 'Studienstiftung des deutschen Volkes'.

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Scattering States of Plektons (Particles with Braid Group Statistics) in 2 + 1 Dimensional Quantum Field Theory

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Abstract Summability of the Trace Relation for Certain Schrödinger Operators* + 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. To be submitted to Commun.Math.Phys.
M. Kamionkowski. School of Natural Sciences, Institute for Advanced Study, Princeton, NJ 08540; email: kamion@guinness.ias.edu. Preprint No: IASSNS-HEP-94/18. Indirect Detection of Wimps*.


The Bianchi IX (Mixmaster) Cosmological Model is not Integrable.


A.K. Raina, Theoretical Physics Group, Tata Institute of Fundamental Research, Homi Bhabha Road, Bombay 400 005, India: email: raina@theory.tifr.res.in
Preprint No: TIFR/TH/94-10
An Algebraic Geometry View of Currents in a Model Quantum Field Theory on a Curve

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3This material is based upon work supported by the National Science Foundation under Grant No.DMS-9207071. The Government has certain rights in this material.
Operators with Singular Continuous Spectrum: II. Rank One Operators

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A Novel Kind of Neutrino Oscillation Experiment

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Spectral Analysis of Rank One Perturbations and Applications

R. Zucchini, Università di Roma "La Sapienza", Dipartimento di Matematica, I-00185 Roma, Italy.
Completely Positive Maps of the Cuntz Algebras

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