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@vtvml.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

INTERNATIONAL ASSOCIATION OF MATHEMATICAL PHYSICS

IAMP NEWS BULLETIN

MARCH 1994

IAMP EXECUTIVE COMMITTEE 1994/97

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

Result of IAMP Executive Committee Ballot 1994/97

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

Sheila Jones
Secretary to the
Secretary of IAMP
March 1994

Unesco - Sorbonne

Mailing address : ICMP-Paris, Service de Physique Théorique, CE-Saclay, F-91191 Gif-sur-Yvette Cedex, France
Fax : 33/1/69.08.81.20

Satellite conferences : July 25-28, 1994

Bulletin n°2

Revised version - January 1994

Dear Colleagues,

This bulletin, sent with our second poster, gives complementary informations 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

Contents

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*
Paris Committee (other members) : J.M. Bismut, J.P. Bourguignon, A. Boutet de Monvel, E. Brézin, P. Collet, M. Combescure, A. Connes, F. David, K. Gawedzki, J. Ginibre, J. Iliopoulos, C. Itzykson, B.Julia, G.Lebeau, Y. Meyer, P. Mitter, A. Neveu, V. Rivasseau, R. Sénéor, A. Voros
International Committee (other members) : J. Fröhlich (Zurich), D. Ruelle (IHES-Bures), Y. Sinai (Moscou)
IMU representative : L. Faddeev *UNESCO representative* : S. Raither
Local administration : F. Lefèvre

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

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 Etudes Scientifiques, Universités Cergy-Pontoise, Jussieu, Orsay. It benefits from the sponsorship and support of the Mayor of Paris, the french Ministères de l'Education 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 Natinal 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 de 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.

		morning (9.00-12.45)	*afternoon* (14.15-18.00)	*late afternoon* (18.00-20.00)
UNESCO	Monday	P_1 P_2	S_1 , S_2	
	Tuesday	P_3 s_1 s_2	S_3 , S_4	cocktail Hôtel de Ville
	Wednesday	P_4 P_5 P_6	bateau-mouche	$r_1,\ldots,r_4$
	Thursday	P_7 s_3 s_4	S_5 , S_6	round table
	Friday	P_8 P_9 P_{10}	S_7 , S_8	General Assembly of IAMP
Sorbonne (Grand Amphi)	Saturday	P_{11} P_{12}	public lectures 16.30	

A reception-cocktail in the beautiful salons of the Hotel 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 (Chateau de Versailles, Chateaux 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. Kadanoff (Chicago), M. Kontsevich (Bonn), A. Kupiainen (Helsinki), J. Magnen (Palaiseau), M. Viana (Rio de Janeiro), J. 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.

Dynamical systems (Y. Sinai, Moscow), *Operator algebras and quantization* (V. Jones, Berkeley), *Non-equilibrium statistical mechanics* (J. Lebowitz, Rutgers), *Equilibrium statistical mechanics, random media and disordered systems, constructive field theory methods, condensed matter* (M. Aizenman, Princeton ; J. Avron, Haifa ; T. Balaban, Zurich), *General field theory* (D. Buchholz, Hamburg), *Conformal field theories, topological theories, strings, quantum gravity* (C. Itzykson, Saclay), *Integrable systems* (T. Miwa, Kyoto), *Quantum mechanics* (E. Lieb, Princeton), *Quantum theory and chaos* (A. Voros, Saclay), *Relativity* (G.W. Gibbons, Cambridge, UK), *Fluid mechanics* (K. Moffat, Cambridge, UK).

Round Table : Physics and mathematics : close partners or not ? (contributions of physics to mathematics and conversely, 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), exhibition 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.

4. Satellite conferences and other scientific events

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 N^{os} 2 and 4 are given in separate posters, sent together with this bulletin or available from the organizers upon request. Announcements of N^{os} 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, Gay-Lussac, Ulm, Saint-Jacques ; this conference is open only to participants of the ICMP-Paris. Otherwise, an invitation of the organizers is needed.).

N°2 *Mathematical physics of disordered systems*, La Sorbonne, Paris, July 25-27, 1994
Committee : M. Aizenman, B. Derrida, G. Grimmett, F. Koukiou, L. Pastur
Information : koukiou@u-cergy.fr

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

N°4 *Constructive results in field theory, statistical mechanics and condensed matter*, Ecole Polytechnique, Palaiseau, July 25-27, 1994
Committee : T. Balaban, J. Imbrie, G. Mack, V. Rivasseau, R. Seneor
Information : rivass@orphee.polytechnique.fr

Other events

International Congress of Mathematicians - ZURICH (3-11 August 1994)
Information : ICM-94, ETH-Zentrum, CH-8092 ZURICH, Switzerland
16 plenary one-hour lectures and around 150 45-minute lectures in 19 topical sessions : Logic, Algebra, Number theory, Geometry, Topology, Algebraic geometry, Lie groups, Real and complex analysis, Functional analysis, Probability and statistics, Partial differential equations, Ordinary differential equations and dynamical systems, Mathematical physics, Combinatorics, Computer science, Numerical analysis, Applications of mathematics, Teaching of mathematics, History of mathematics.

Other events of possible interest to our participants include the : *Summer Institute of Theoretical Physics of Ecole Normale Supérieure*, Paris (following the satellite conference N°1) ; the *Symposium on Classical and Quantum Billiards*, Ascona, Switzerland (July 25-30, 1994), *information* : M. Cibils, 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 formality. 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 Ministères 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 transportations 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*).

① Cité Universitaire, nice surroundings. See costs inregistration form. Common kitchen facilities. Private bathroom for a small supplement (limited number).
② Student-type residences close to Quartier Latin (lower costs but often old), E4, D6, E6 on the map.
2-star ③ International **Hôtel ARCADE**, single 380, double 410, 5 minutes walk to UNESCO
3-star ④ **Hôtel WALLACE**, charm single 400, double 500, breakfast included, 8 minutes walk to UNESCO
⑤ **Hôtel TRIANON**, traditional, good appearance, single 420, double 500, breakfast included, in front of Sorbonne
⑥ **Résidence de SAXE**, very quiet, beautiful rooms, single or double 450, 5 minutes walk to UNESCO
⑦ **Hôtel du Baillí de SUFFREN**, charm, single or double 500, 2 minutes walk to UNESCO
⑧ **LATITUDES St-Germain**,very good hotel, in the heart of Saint-Germain-des-Prés, single 500, double 600
⑨ **Hôtel ADAGIO**, beautiful and excellent modern hotel, single or double 500, direct bus to UNESCO
4-star ⑩ **Hôtel LUTETIA**, beautiful and renowned, traditional french style, close to St-Germain-des-Prés, de luxe single room 850, double 900, including breakfast (a cost exceptional for the quality).

Apartments (with kitchen, bathroom, TV, phone, price in FF per day) :
- **Résidences Citadine Montparnasse** (1-room 350-400, 2 or 3 persons), **Plaisance** (1-room 350, 2 persons - 2-room 550, 4 persons ; modern and more beautiful but somewhat further : C6, Didot-Larousse on the map).
- **Résidence Pierre & Vacances** (2-room 450, 4 persons, Porte de Versailles, A6 on the map).
- **Locaflat** : ***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. 149525354) and contact hotels directly (examples : Hôtel des Académies, 15 rue de la Grande Chaumière, 75006 Paris, Montparnasse-Vavin, Tél.143266644 - Hôtel des Carmes, 5 rue des Carmes, 75005 PARIS, Maubert-Mutualité, Tél.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 Ruskai : *bruskai@cs.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. Borchers (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.)
- Particle structure. Various extensions of the notion of particle and of collision theory. Connections with models. Asymptotic completeness.
- 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.

TOPOLOGY, STRINGS, AND INTEGRABLE MODELS

a Satellite colloquium to the ICMP
Paris Conference (July 1994)
JULY 25-28th 1989 at Institut Henri Poincaré
11 rue Pierre et Marie Curie 75231 PARIS Cedex 05.

Organizing Committee[1]:
C. Bachas (École Polytechnique),
L. Baulieu (Université Paris VI-VII),
D. Bernard, P. Di Francesco, V. Pasquier, (CE Saclay),
J.-L. Gervais, (École Normale Supérieure).

Tentative list of invited speakers[2]:

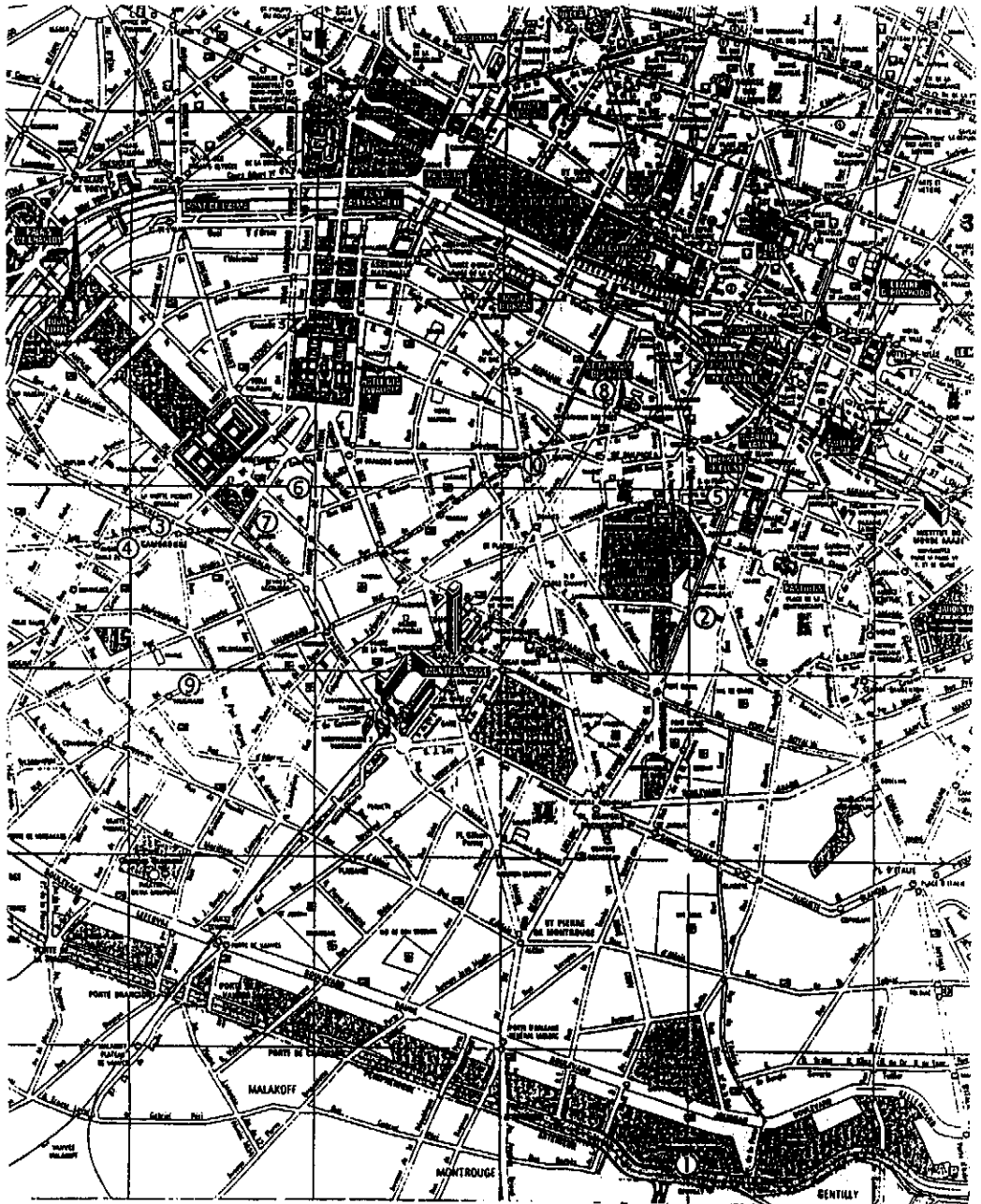
C. Callan,	I. Cherednik,	E. Corrigan,	L. Faddeev,
D. Gross,	A. Jevicki,	A. Leclair,	A. Migdal,
T. Miwa,	G. Moore,	D. Olive,	I. Ooguri,
H. Saleur,	A.S. Schwarz,	S. Shatashvili,	S. Shenker,
I. Singer,	F. Smirnov,	C. Vafa,	E. Verlinde,
H. Verlinde,	E. Witten,	A.A. Zamolodchikov.	

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 satellit@amoco.saclay.cea.fr
[2] not mentioning speakers from France



UNESCO	B4	St-Germain-des-Prés	D3		
SORBONNE	E4	Hôtel de Ville	E3/F3	Métro Cambronne	B4
Tour Eiffel	A2/A3	Opéra Garnier	D1	Métro Ségur	B4
Invalides	B3/C3	Champs-Elysées	A1-B1-C1-C2	Métro Vaugirard	B5
Notre-Dame	E3	Etoile - Arc de Triomphe	A1	Métro Saint-Jacques	D5
Louvre	D2	Place de la Concorde	C2	Cité Universitaire	D7/E7
Musée d'Orsay	D2	Office du Tourisme	A1/B1	Hôtels : encircled numbers	

PARIS, July 18 - 23, 1994

REGISTRATION FORM

Write in capital letters, type if possible, and return to :

ICMP-Paris, Service de Physique Théorique, CE-Saclay, F-91191 Gif-sur-Yvette Cedex, France - FAX : 33/1/69.08.81.20

Family name _____ First name _____ Nationality _____

Institution _____

Mailing address _____

_____

Postal code _____ Town _____ Country _____

Phone _____ 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.

PAYMENT : Registration fee to ICMP ***(to be always joined - otherwise your registration is provisional until payment))***

	Registration received	*before March 1st, 1994*	*after March 15, 1994*	
normal fee	IAMP members	700 FF	800 FF	= FF _____
	non IAMP members	800 FF	900 FF	= FF _____
	reduced fee *(students, other participants if needed)*	400 FF	500 FF	= FF _____

Other payments *(are optional and can be postponed. Cancellations and, if possible, modifications with no penalty upto 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) = FF _____

Afternoon tea on bateau-mouche (60 + accompanying persons 120 x .....) = FF _____

For participants and accompanying persons	Cocktail-buffet (250)	250 x	= FF _____
	5 lunches (July 18-22) next to UNESCO (200)	200 x	= FF _____
	4 lunches (July 18,19,21,22) " (160)	160 x	= FF _____
	Lunches at UNESCO, 90 or 180 each, specify the dates : _____	90 x	= FF _____
		180 x	= FF _____

Reservation at Cité Universitaire : July, Monday 18 - Saturday 23 morning (5 nights)

single 650 ☐ - in a double room 450 ☐ = FF _____

supplementary nights (specify) : 130 - 90 130 x ..... or 90 x ..... = FF _____

In case of double room reservation, I wish to share my room with :

Other reservations : single ☐ - double ☐ - apartment ☐

first choice : ..... second choice : ..... special wishes : .....

partial payment 650 FF (4-star hotels and apartments : 1000 FF) = FF _____

Date of arrival : ..... Date of departure : .....

Total FF _____

MODE OF PAYMENT : Personal cheque or Traveller cheque in French Francs (to the order of ICMP-Paris) ☐

Bank check ☐ - Visa card ☐ - American Express Card ☐ - Eurocard/Mastercard ☐

For credit cards : Card number : |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_| Card expiry date : _____

Amount FF : _____ Card holder's signature :

Card holder's name : *(capital letters)* Date :

Questionnaire *(optional)*

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 :

ACADEMY OF SCIENCES OF BELARUS, MINISTRY OF EDUCATION OF BELARUS

B.I. Stepanov Institute of Physics, University of Belarus

Quantum Systems: New Trends and Methods

May 23 - 29, 1994, Minsk, Belarus

Bulletin # 1

1. General information

The International Workshop "Quantum Systems: New Trends and Methods" will be held from 23 to 29 May 1994 in Minsk, Belarus under sponsorship of Academy of Sciences of Belarus and Ministry of Education of Belarus. It will take place in a holiday hotel "Isloch" situated in a picturesque Belarussian countryside about 30 km north-west from downtown Minsk area.

Participation is by invitation. Attendance to the Workshop will be limited to 150 participants. Those interested in attending the workshop may request an invitation by writing to the Organizing Committee (mail to the Secretary at the address given below).

2. Scientific Committees

International Advisory Committee: V. de Alfaro (*University of Torino, Italy*), A.Barut (*University of Colorado at Boulder, USA*), A.Balachandran (*University of Syracuse, USA*), V. S. Berezinsky (*LNGS, Italy*), F.I.Fedorov (*Institute of Physics, Belarus*), V. I. Man'ko (*P.N. Lebedev Institute, Russia*), M. Peshkin (*Argonne, USA*), R. Raczka (*University of Warszawa, Poland*), L. O'Raifeartaigh (*Dublin Institute for Advanced Studies, Ireland*), J. Sucher (*University of Maryland, USA*), K. Wali (*University of Syracuse, USA*).

Local Organizing Committee: A. A. Bogush (co-Chairman), L. I. Komarov (co-Chairman), L. M. Tomil'chik (co-Chairman), I.D.Feranchuk, A.Z.Gazizov, A.K.Gorbatsevich, V. I. Kuvshinov, V. S. Otchik, V. I. Strazev, Ya. M. Shnir (Scientific Secretary), E. A. Tolkachev.

3. Format and Purposes of the Workshop

The purpose of the workshop is to discuss both local and global geometrical and topological effects in quantum systems, also in consideration of the new methods of investigation. Emphasis will be put on the examination of hypothetical objects and phenomena (monopoles, anyons, cosmic strings etc.). The workshop will consist of invited review talks and discussion sessions dedicated to specific subjects. The morning sessions will be devoted to invited talks reviewing the various aspects of the main topics. Discussions and workshop sessions will follow in the afternoon.

4. Scientific program

The program will be devoted to 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 Torino, Italy) — *to be announced*
- ◇ Juergen Baacke (University of Dortmund, Germany) — *Quantum corrections to sphaleron and instanton transitions*
- ◇ A. Barut (University of Colorado at Boulder, USA) — *to be announced*
- ◇ Michael Berry (University of Bristol, UK) — *Some geometric phases*
- ◇ Vladimir Dobrev (Institute of Nuclear Research and Nuclear Energy, Bulgaria) — *Representations of quantum groups*
- ◇ Ludmil Hadjiivanov (Institute of Nuclear Research and Nuclear Energy, Bulgaria) — *Quantum groups and quantum oscillators*
- ◇ Sergey Kilin (Institute of Physics, Minsk) — *Quantum optics of single atom and traped molecule*
- ◇ Y. S. Kim (University of Maryland, USA) — *Squeezed states and relativistic quantum mechanics*
- ◇ Carlos Lousto (University of Barcelona, Spain) — *Classical and quantum effects in global monopole spacetimes*
- ◇ Vladimir Manko (P.N.Lebedev Institute, Russia) — *Deformations of particle distribution functions due to q-nonlinearity and nonstationary Casimir effect*
- ◇ Poul Olesen (Niels Bohr Institute, Denmark) — *On electroweak magnetism*
- ◇ Murray Peshkin (Argonne National Laboratory, USA) — *to be announced*
- ◇ David Saxon (University of Glasgow, UK) — *New types of detectors for future accelerators*
- ◇ Joseph Sucher (University of Maryland, USA) — *The concept of potential in quantum field theory*
- ◇ Peter Trower (Virginia Polytechnic Institute, USA) — *to be announced*
- ◇ Luc Vinet (University of Montreal, Canada) — *Advances in algebraic methods*

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 Ballet Theatre of Belarus 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 (railway 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,
F.Skaryna Avenue 70,
Minsk, 220072, Republic of Belarus

Phone: (7)(0172)394559
Fax: (7)(0172)393131
e-mail: *shnir@adonis.iasnet.com*
Telex: 252277 *nauka SU*
Institute of Physics

QS-94 APPLICATION FORM

Name _____ _____ _____
surname first name middle name

sex ☐ male ☐ female

year of birth

Institution

Address

Phone

Fax

Telex

e-mail

Certainty of participation

☐ certain ☐ probable ☐ not yet certain

The names of accompanying persons

I would like to present a talk, provisionally entitled:

_____

_____

_____

_____
signature

_____

Please fill in this form in block letters and send it to the Secretary of the Workshop

QS-94 Organizing Committee
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Institute of Physics
Academy of Sciences of Belarus,
F.Skaryna Avenue 70,
Minsk, 220072, Republic of Belarus

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Fax: (7)(0172)393131
e-mail: *shnir@adonis.iasnet.com*
Telex: 252277 *nauka SU*
Institute of Physics

INTERNATIONAL CONFERENCE

ON

NONLINEAR DYNAMICS

AND

PATTERN FORMATION

IN THE

NATURAL ENVIRONMENT

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 phenomenae 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 phenomenae. 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 applications.

PROGRAMME

The programme of the conference consists of plenary and parallel sessions. In the plenary sessions, a keynote speaker 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 (GUEST OF HONOUR)**
E Busse (Bayreuth)	: **Pattern formation far from criticality**
K. Kirchgaessner (Stuttgart)	: **Water waves and their long-time evolution**
B. Matkowsky (Northwestern)	: **Pattern formation and nonlinear dynamics in combustion**
A. Newell (Tucson)	: **Towards a universal theory of patterns**
L. Segel (Welzmann)	: **Some examples of biological pattern formation, in space and aspect**
G. Seminara (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 at a mini-symposium whether or not supplemented with contributed presentations. Scientists are invited to submit a proposal for a mini-symposium they would like to organise. Among others, the following mini-symposia are planned:

Nonlinear phenomena in the climate system
Organisers: T. Opsteegh (KNMI), A. Kattenberg (KNMI), K. Vreugdenhil (Utrecht)
The objective is to confront the theory of nonlinear systems (bifurcation analysis, multiple equilibria, periodic solutions and their stability, chaotic systems) with numerical experiments (using either simplified or high-resolution models) and observations of the climate system, with special emphasis on the role of the thermohaline circulation.

Spatio-temporal evolution of patterns in non-linear mechanics
Organiser: A. Doelman (Utrecht)
This mini-symposium is organised by the cooperating applied analysis groups of the universities of Heriot-Watt (Edinburgh), Nice, Stuttgart and Utrecht. New research results on the mathematical methods and theories for pattern formation shall 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
Organisers: R. Kuske (Utrecht), B. Matkowsy (Northwestern)
The focus of this minisymposium 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.

Organisers: P. Blondeaux (Genoa), H. de Swart (Utrecht)
The presentations in this mini-symposium will focus on the application of mathematical tools (stability theory, averaging) to understand the behaviour of waves and currents in rivers and coastal seas. There will also be the opportunity to discuss sediment transport and the interaction of water with bed forms.

Instabilities in two fluid flows
Organiser: Y.Y. Renardy (Virginia)
The study of flows involving two immiscible liquids is a challenging subject rich in interdisciplinary science and with industrial applications (e.g. oil in pipelines). The shape of the interface can be studied experimentally, and theoretically by deriving the appropriate amplitude equations (e.g. Kuramoto-Sivashinsky, generalisations of the Ginzburg-Landau equation). New developments will be discussed.

Coherent structures: decay and mixing properties
Organiser: G.J.F. van Heijst (Eindhoven)
This mini-symposium covers topics like self-organisation, vortices, (diffusive) decay of vortices and chaotic advection in (2-D) fluids.

Transport phenomena in porous media
Organiser: C.J. van Duijn (Delft)
Topics covered include transport of reactive solutes, displacement processes in reservoirs and fresh/salt groundwater flow.

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
asymptotic analysis
model reduction
modulation equations
stability and bifurcations
dynamical systems
attractors & chaos
variational principles & microstructure
computational methods
parameter identification
coherent structures

Pattern Formation
general fluid dynamics
oceanography
meteorology
reaction-diffusion problems
combustion
population dynamics
geophysical morphodynamics
biological morphodynamics
crystal growth
theory versus data

MINI-SYMPOSIA

- Researchers are invited to submit proposals for mini-symposia 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.

THE COMMITTEES

THE SCIENTIFIC ADVISORY COMMITTEE

J.M. Ball (Herlot-Watt)
P. Collet (Palaiseau)
W. Eckhaus (Utrecht)
P. Fife (Utah)
G.J.F. van Heijst (Eindhoven)
G. Iooss (Nice)
K. Kirchgässner (Stuttgart)
B. Matkowsky (Northwestern)
A. Mielke (Hannover)
A. Newell (Tucson)
F.T.M. Nieuwstadt (Delft)
L.A. Peletier (Leiden)
W.P.M. de Ruijter (Utrecht)
L. Segel (Weizmann)
G. Seminara (Genoa)
E Takens (Groningen)
J.T.F. Zimmerman (NIOZ)

THE PROGRAMME COMMITTEE

Henk Broer (Groningen)
Arjen Doelman (Utrecht)
Johan Grasman (Wageningen)
Brenny van Groessen (Twente)
Aart van Harten (Utrecht/Twente)
Arnold Heemink (Delft)
Theo Opsteegh (KNMI)
Huib de Swart (Utrecht)
Ferdinand Verhulst (Utrecht)
Kees Vreugenhil (Utrecht)
Huib de Vriend (Twente)

PARTICIPATION AND REGISTRATION

INSTRUCTIONS FOR SUBMISSION OF ABSTRACTS

- Abstracts may 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 programme it relates to.
- Authors are urged to send in their abstracts in two ways, both as a (LA)TEX-file by electronic mail to: conf-patterns@math.ruu.nl and as a hardcopy in twofold to the Conference Office.

CONFERENCE REGISTRATION

Registration will include attendence to 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. 435,- 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 presented. 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 not, participants will have to register and pay at the conference.

SCHEDULE

January 15, 1994: deadline submission abstracts/proposals mini-symposia
April 1, 1994: acceptance as oral/poster presentation; invitation of papers for the proceedings.
The conference organisers will respond as soon as possible to proposals for the organisation of mini-symposia.

ADDRESSES

Submission of abstracts, information, registration
Holland Organizing Centre (H.O.C.)
Parkstraat 29
2514 JD The Hague
The Netherlands
Telephone +70 365 78 50
fax +31 70 361 48 46
(Note new address!)

Scientific organisation
University of Utrecht
Mathematical Institute
attn. Arjen Doelman/Aart van Harten
P.O. Box 80010
3508 TA Utrecht
The Netherlands
fax +31 30 518394
email conf-patterns@math.ruu.nl

Conference Center:
Leeuwenhorst Congres Centrum
Langelaan 3
2211 XT Noordwijkerhout
The Netherlands

4-7 July 1994, Noordwijkerhout, The Netherlands

First name: _____ Surname: _____ ☐ Mr ☐ Ms
(please underline for alphabetical listing)

Affiliation: _____

Department: _____

Address: _____

Zip Code: _____ City: _____

Country: _____

Telephone number: _____ Fax number: _____

e-mail address: _____

SUBMISSION

☐ Submits an abstract

☐ Submits a proposal for a mini-symposium

FEES

		paid before 1 May	paid after 1 May
☐ Conference fee		Dfl. 435	Dfl. 495
☐ Dinner 4 July	* _____ x Dfl. 45 =	Dfl. _____	Dfl. _____
☐ Dinner 5 July	* _____ x Dfl. 45 =	Dfl. _____	Dfl. _____
☐ Dinner 7 July	* _____ x Dfl. 45 =	Dfl. _____	Dfl. _____

* Please indicate how many.

Total amount: Dfl. _____

HOTEL RESERVATION

Arrival date: _____

Departure date: _____

☐ Single room bath/toilet*	_____ nights x Dfl. 117 =	Dfl. _____
☐ Single room shower/toilet*	_____ nights x Dfl. 93 =	Dfl. _____
☐ Double room bath/toilet*	_____ nights x Dfl. 219 =	Dfl. _____
☐ Double room shower/toilet*	_____ nights x Dfl. 171 =	Dfl. _____

(including taxes and breakfast)
* Please indicate how many nights.

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

PLEASE TURN OVER AND FILL IN REST OF FORM.

REGISTRATION FORM CONTINUED

PAYMENT

Total amount fees Dfl. _____

Hotelreservation Dfl. _____

Total amount to be paid: Dfl. _____

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

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

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

☐ Master Card ☐ American Express ☐ Diners Club ☐ Visa Card

Charge my card number: _____

Expiry date: _____

This card is in the name of: _____

Signature: _____ Date: _____

CANCELLATION

Notification of cancellation has to be in writing, either by mail or by fax, to Holland Organizing Centre. Cancellations received before 1 May 1994 will receive a refund of the conference fee, excluding the administration fee of Dfl. 50 and excluding one night of the hotel reservation. Cancellations received after 1 May 1994, will not receive a refund.

PLEASE COPY AND MAIL OR FAX TO:

ICPF '94
c/o Holland Organizing Centre (H.O.C.)
Parkstraat 29
2514 JD The Hague
The Netherlands
Telephone: +31 70 365 78 50
Fax: + 31 70 361 48 46

REGISTRATION FORMS BY EMAIL CANNOT BE ACCEPTED.

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

CONFERENCIERS INVITES

- M. DOBRUSHIN, Professeur à l'Université de Moscou (Russie)
  "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
  "Isopérimétrie et analyse gaussienne"

INSCRIPTIONS et RENSEIGNEMENTS COMPLEMENTAIRES

P. BERNARD
Université Blaise Pascal
Mathématiques Appliquées

F63177 AUBIERE CEDEX

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

Preliminary announcement and call for papers

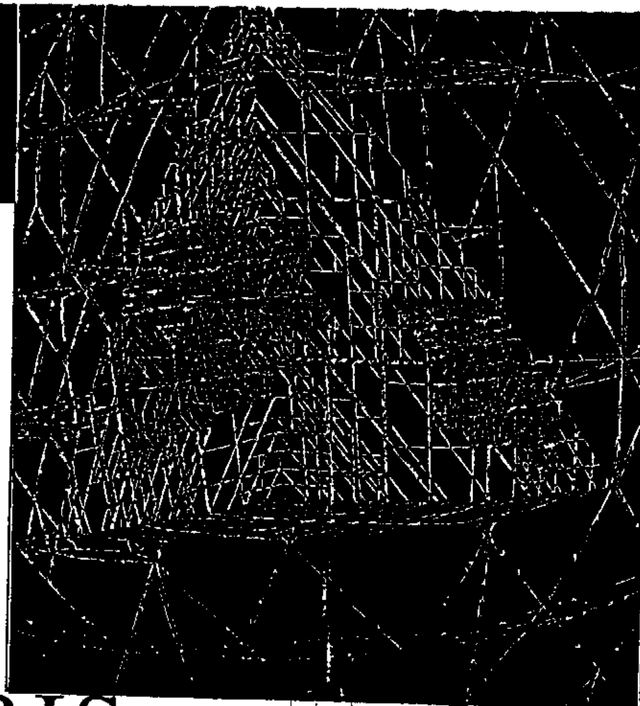
International Workshop on Quantum Communications and Measurement

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 futher information contact V P Belavkin:
Tel 0602 514954, Fax 0602 514951, E-mail qcm@maths.nott.ac.uk,
Mathematics Department, University of Nottingham, University Park, Nottingham NG7 2RD, UK.



18-23 July 1994

PARIS

Unesco & Sorbonne

IAMP,
Scientific Institutions
of the Paris area

CEA,
CNRS,
Commission
of European
Communities,
IUPAP,
UNESCO,

Mairie de Paris,
Ministères
de l'Education
et de la Recherche

International Congress On Mathematical Physics

Plenary Lectures

I. Affleck, A. Connes, L. Kadanoff, M. Kontsevich, A. Kupiainen, J. Magnen, M. Viana, J. Wisdom, E. Witten, S.T. Yau, J. Yngvason, A. B. Zamolodchikov.
Public Lectures by M. Atiyah, T. Damour.

Sessions

- *Conformal field theories, topological theories, strings, quantum gravity (C. Itzykson)*
- *Dynamical Systems (Y. Sinai)*
- *Equilibrium statistical mechanics, disordered systems, constructive methods, condensed matter (M. Aizenman, J. Avron, T. Balaban)*
- *Fluid mechanics (K. Moffat)*
- *General field theory (D. Buchholz)*
- *Integrable models (T. Miwa)*
- *Non-equilibrium statistical mechanics (J. Lebowitz)*
- *Operator algebras and quantization (V. Jones)*
- *Quantum Mechanics (E. Lieb)*
- *Quantum theory and chaos (A. Voros)*
- *Relativity (G.W. Gibbons)*

- *Round table Physics and Mathematics*

Chairman D. Iagolnitzer
Co-chairman A. Jaffe

Paris Committee (see brochure)

International Committee :
J. Fröhlich
D. Iagolnitzer
A. Jaffe
D. Ruelle
Y. Sinai
IMU : L. Faddeev

Colloque satellite du
XI[e] Congrès International de Physique Mathématique

PHYSIQUE MATHÉMATIQUE DES SYSTÈMES DÉSORDONNÉS

Sorbonne, Paris, 25–27 juillet 1994

Comité scientifique

M Aizenman (Princeton)
B Derrida (Saclay)
G Grimmett (Cambridge)
F Koukiou (Cergy)
L Pastur (Kharkov)

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 Delyon (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.

Adresse : F Koukiou, Groupe de Physique Statistique, Université de Cergy-Pontoise, B.P. 8428, F-95806 Cergy Cedex
télécopie : (+33.1) 34249487, adresse électronique : koukiou@u-cergy.fr

Scientific Program
(subject to minor changes)

Plenary Lectures:
I. Affleck*, T. Balaban,
G. Benfatto, J. Bricmont*,
D. Brydges, C. de Calan,
F. Dunlop, T. Hurd, J. Feldman,
S. Golowich, D. Iagolnitzer*,
C. Kopper, D. Lehmann,
K. Osterwalder, A. Pordt.
** To be confirmed*

Sessions of contributed
Roundtable
on mathematical physics
of solid state

Accomodation
and registration:
Low-cost accomodation is available on the site. Access from Paris is through the RER subway (one-hour door-to-door trip). Registration can be made through IAMP Congress or independently. A limited number of grants will be available, mainly for participants from developing countries or Eastern Europe, applying before May 15.

Main organizer:
V. Rivasseau
rivass@orphee.polytechnique.fr

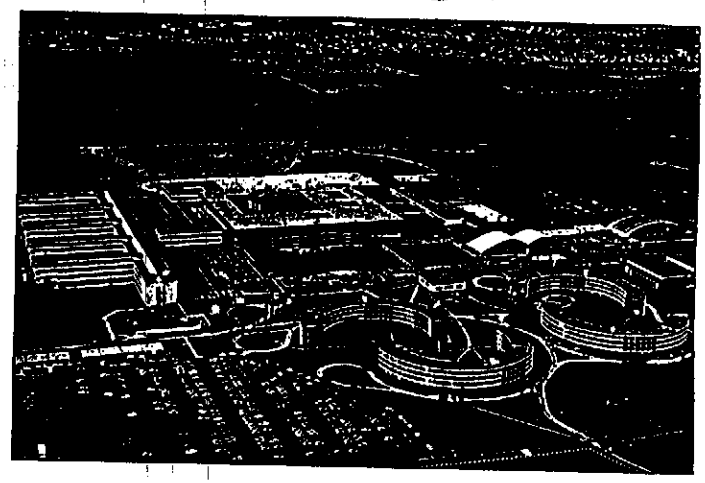
Scientific Committee:
T. Balaban, J. Imbrie, G. Mack,
V. Rivasseau, R. Sénéor

Mailing Address:
Ecole Polytechnique
Centre de Physique théorique
F128 Palaiseau Cedex, France Fax
(+33 1) 69 33 30 08

25 – 27 July 1994

Ecole Polytechnique Palaiseau

INTERNATIONAL WORKSHOP



Constructive Results in Field Theory, Statistical Mechanics and Condensed Matter Physics

-26-

Satellite colloquium of ICMP-Paris,
sponsored by Ecole Polytechnique and IAMP

Conception : J. MORICEAU / Photos J-L Dorval — Xanthémul - 91120 Palaiseau Cedex France

ELECTRONIC MATHEMATICAL PHYSICS ARCHIVE

Dear Colleague:

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

We append an update list of papers from 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-)Gibbsian 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 Solovej, 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, AmsTeX)

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, V\'eronique Gayrard
Rigorous results on the Hopfield model of neural networks
(155K, 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)

Institute for Advanced Studies

School of Theoretical Physics, 10 Burlington Road, Dublin 4, Ireland
Telephone: +353-1-680748. Telegrams: DIAS DUBLIN. Telex: 31687 DIAS EI. EIRMAIL (Dialcom) 74:EIM253
Fax: +353-1-680561. Email: PHYSICS@STP.DIAS.IE

DOCUMENT LIST 42: August - December 1993

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

DIAS-STP-93-

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

-15: D. Heffernan, & P. Jenkins: The formation and evolution of fractal structure within chaotic attractors. (To appear in *Inter. J. Theor. Phys.)*

-16: D. Heffernan, P. Jenkins, & M. Daly: F(α) 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.)*

-18: D. O'Connor, & C.R. Stephens: Effective critical exponents for dimensional crossover and quantum systems from an environmentally friendly renormalization group.

-19: D. O'Connor, & C.R. Stephens: Environmentally friendly renormalization.

-20: K. Arthur, & J. Burzlaff: Energy and momentum of an optical soliton.

-21: D. McMullan, & I. Tsutsui: BPST instanton and spin from inequivalent quantizations.

-22: C. Nash, & D. O'Connor: BRST quantisation and the product formula for the Ray-Singer torsion.

-23: F. Abdelwahid, & J. Burzlaff: Existence theorems for 90° vortex-vortex scattering.

-24: J.T. Lewis, C.-E. Pfister, & W.G. Sullivan: Large deviations and the thermodynamic formalism: a new proof of the equivalence of ensembles. (To appear in *Leuven Conference Proceedings)*

-25: M.A. van Eijck, D. O'Connor, & C.R. Stephens: Heating field theory the "environmentally friendly" way! *Proceedings of the 3rd. Workshop on Thermal Field Theories and their Applications, Banff, Canada 1993.*

-26: G.A.T.F. da Costa, & L. O'Raifeartaigh: Non-trivial non-canonical W-algebras from Kac-Moody reductions.

-27: D.H. Tchrakian: Skyrme-like models in gauge theory.

-28: J. Burzlaff, & D.H. Tchrakian: Non-self dual solutions of gauge field models in 2N dimensions.

-29: B. Piette, H.J.W. Müller-Kirsten, W.J. Zakrzewski, & D.H. Tchrakian: A modified Mottola-Wipf model with instanton and sphaleron fields.

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

-31: V.I. Gaiduk, V.V. Gaiduk, T.A. Novskova, & B.M. Tseitlin: 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.

-33: J.T. Lewis, & C.-E. Pfister: Thermodynamic probability theory: some aspects of large deviations. (To appear in *Theory of Probability and its Applications)*

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, V5A 1S6, Canada
POSITIVE DEFINITE GRAVITATIONAL ACTION, COSMOLOGICAL CONSTANT AND SUPERSTRING THEORY

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J.A.de Azcarraga and D.Ellinas

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* Presented at the International Symposium 'Coherent States: Past, Present and Future', Oak Ridge, June 14-17, 1993.

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

C. Callan[1*], I.R. Klebanov[2†], A.W.W. Ludwig[2*] and J.M. Maldacena[2♠]. [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: malda@puhep1.princeton.edu
Preprint No: PUPT-1450, IASSNS-HEP-94/15, hep-th/9402113.
Exact Solution of a Boundary Conformal Field Theory

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Preprint No: PM/93-42, November 1993. †Visiting professor, November 1993. ‡ On leave while serving as Secretary General, Pugwash Conferences on Science and World Affairs, Geneva London Roma.
A Class of C-integrable PDEs in Multidimensions

S. Carlip[1*] and C. Teitelboim[2†]. [1] Department of Physics, University of California, Davis, CA 95616, USA, E-mail: carlip@dirac.ucdavis.edu [2] Centro de Estudios Cientificos de Santiago, Casilla 16443, Santiago 9, Chile and Institute for Advanced Study, Olden Lane, Princeton, NJ 08540, U.S.A., E-mail: cecsphy@lascar.puc.cl
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The Off-Shell Black Hole

J.S.R. Chisholm[1] and R.S. Farwell[2]. [1] Institute of Mathematics and Statistics, University of Kent, Canterbury, Kent, U.K. [2] Faculty of Information Technology, University of Brighton, Brighton, East Sussex, U.K.
Preprint No: UKC/IMS/A93/9a, JSRC/RSF/15, October 1993.
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J.S.R. Chisholm[1] and R.S. Farwell[2]. [1] Institute of Mathematics and Statistics, University of Kent, Canterbury, Kent, U.K. [2] Faculty of Information Technology, University of Brighton, Brighton, East Sussex, U.K.
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Preprint No: PM94/02
Solution of 3 Waves Interaction Type Models with Non Trivial Asymptotic and Boundary Conditions

G.A.T.F. da Costa and L. O'Raifeartaigh, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4.
Preprint No: DIAS-STP-93-26
Non-Trivial Non-Canonical W-Algebras from Kac-Moody Reductions

T. Damour[1] , S. Deser[2] and J. McCarthy[3]. [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.
Preprint No: IHES/P/93/56, BRX TH-353, IASSNS-HEP-93/67, ADP-93-221/M20, November 1993.
Nonsymmetric Gravity has Unacceptable Global Asymptotics

J.A. de Azcárraga, P.P. Kulish* and F. Ródenas. Departamento de Física Teórica and IFIC, Centro Mixto Universidad de Valencia-CSIC, 46100-Burjassot (Valencia), Spain. * On leave of absence from the St. Petersburg's Branch of the Steklov Mathematical Institute of the Russian Academy of Sciences.
Preprint No: FTUV 93-36, hep-th/9309036, August 1993.
Reflection Equations and q-Minkowski Space Algebras

K. Demeterfi[1] , I.R. Klebanov[1*] and G. Bhanot[2] . [1] Joseph Henry Laboratories, Princeton University, Princeton, New Jersey 08544. [2] School of Natural Sciences, Institute for Advanced Study, Princeton, NJ 08540, U.S.A. and Thinking Machines Corporation, 245 First Street, Cambridge, MA 02142. * On leave of absence from the Ruder Boskovic Institute, Zagreb, Croatia.
Preprint No: PUPT-1427, IASSNS-HEP-93/59, hep-th/9311015, November 1993.
Glueball Spectrum in a (1+1)-Dimensional Model for QCD

M. Demuth, 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. Demuth[1] , W. Kirsch[2] and I. McGillivray[3]. [1] Max-Planck-Arbeitsgruppe, FB Mathematik, Universität Potsdam, Am Neuen Palais 10, 0-1571 Potsdam, Germany. [2] Fakultät für Mathematik, Ruhr-Universität, D-4360 Bochum 1, Germany. [3] Fachbereich Mathematik, TU Berlin, SFB 288, 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. Demuth[1] and J.A. van Casteren[2]. [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. Demuth[1] and J.A. van Casteren[2]. [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.J. Donald, The Cavendish Laboratory, Madingley Road, Cambridge CB3 0HE.
A Mathematical Characterization of the Physical Structure of Observers

E. Eisenberg[1] and L.P. Horwitz[1,2]. [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
Preprint No: IASSNS-HEP-93/82, December 1993.
Light Fermion Masses in Superstring Derived Standard-like Models

L. Fehér[1*], L. O'Raifeartaigh[2] and I. Tsutsui[2]. [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.
Preprint No: BONN-HE-93-25,DIAS-STP-93-13,hep-th/9307190
The Vacuum Preserving Lie Algebra of a Classical w-Algebra

V.I. Gaiduk[1],V.V. Gaiduk[1] and J. McConnell[2]. [1]Institute of Radio Engineering and Electronics of the Russian Academy of Sciences, Vvedensky sq.1, Fryazino, Moscow Region, 141120, Russia. [2] School of Theoretical Physics, Dublin Institute for Advanced Studies, Dublin 4, Ireland.
Preprint No: DIAS-STP-93-10
Complex Susceptibility of Liquid Water as a Two-Potential System of Reorienting Polar Molecules

V.I. Gaiduk[1], V.V. Gaiduk[1], T.A. Novskova[1], B.M. Tseitlin[1] and J. McConnell[2]. [1] Institute of Radio Engineering and Electronics of the Russian Academy of Sciences, Vvedensky sq.1, Fryazino, Moscow Region, 141120, Russia. [2] School of Theoretical Physics, Dublin Institute for Advanced Studies, Dublin 4, Ireland. Preprint No: DIAS-STP-93-31

Dielectric Response and a Phenomenon of a Narrow Band Absorption for a Classical Rotor in a Double Well Potential

A.M. Gavrilik and A.U. Klimyk. Institute for Theoretical Physics, 252130 Kiev 130, Russia.

*q-Deformed Orthogonal and Pseudo-Orthogonal Algebras and Their Representations**

* Appeared in Letters in Mathematical Physics 21: 215-220, 1991.

A. Hanany[1], Y. Oz[2*] and M.R. Plesser[3†]. [1] Department of Particle Physics, Weizmann Institute of Science, 76100 Rehovot, Israel, email:ftami@weizmann.weizmann.ac.il [2] School of Physics and Astronomy, Raymond and Beverly Sackler Faculty of Exact Sciences, Tel-Aviv University, Ramat Aviv, Tel-Aviv 69978, Israel, email: yarono@ccsg.tau.ac.il. [3] School of Natural Sciences, Institute for Advanced Study, Olden Lane, Princeton, NJ 08540, U.S.A., email: plesser@guinness.ias.edu * Work supported in part by the US-Israel Binational Science Foundation, and the Israel Academy of Science. † Work supported in part by the National Science Foundation under grant NSF #PHY92-45317 and by the W.M. Keck Foundation.
Preprint No: IASSNS-HEP-94/1, TAUP-2130-93, WIS-93/123/Dec-PH, hep-th/9401030.

Topological Landau-Ginzburg Formulation and Integrable Structure of 2d String Theory

L.P. Horwitz*, School of Natural Sciences, Institute for Advanced Study, Princeton, NJ 08540, U.S.A. * 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: TAUP 2073-93, IASSNS 92/75, July 1993.

A Soluble Model for Scattering and Decay in Quaternionic Quantum Mechanics I: Decay

L.P. Horwitz*, School of Natural Sciences, Institute for Advanced Study, Princeton, NJ 08540, U.S.A. * 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 93/51, TAUP 2084-93, September 1993.

A Soluble Model for Scattering and Decay in Quaternionic Quantum Mechanics II: Scattering

P.E.T. Jørgensen and S. Pedersen.

*Harmonic Analysis of Fractal Measures**

* Research supported by the NSF

P.E.T. Jørgensen, L.M. Schmitt and R.F. Werner.

Positive Representations of General Commutation Relations Allowing Wick Ordering

P.E.T. Jørgensen[1*] and R.F. Werner[2]. [1] Department of Mathematics, University of Iowa, Iowa City, IA 52242, USA. [2] FB Physik, Universität Osnabrück, Postfach 4469, D-4500 Osnabrück, Germany, Email: reinwer@dosunil.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 nostromo.physik.Uni-Osnabrueck.DE § Submitted to CMP

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*Deformations of Gabor Frames**

* To appear in the Journal of Mathematical Physics

G. Kaiser, Department of Mathematical Sciences, Universityof Massachusetts at Lowell, Lowell, MA 01854, U.S.A. Email: kaiserg@woods.ulowell.edu

Wavelet Electrodynamics, Part II: Atomic Composition of Electromagnetic Waves

M. Kamionkowski[1] and D.N. Spergel[2]. [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
Preprint No: IASSNS-HEP-93/73, POP-545, December 1993.

*Large-Angle Cosmic Microwave Background Anisotropies in an Open Universe**

* Submitted to The Astrophysical Journal

M. Kamionkowski[1],D.N. Spergel[2] and N. Sugiyama[3]. [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@bkyast,berkeley.edu and Department of Physics, Faculty of Science, University of Tokyo, Tokyo 113, Japan.
Preprint No: IASSNS-HEP-93/91, POP-548, CfPA-94-01, UTAP-173.

*Small-Scale Cosmic Microwave Background Anisotropies as a Probe of the Geometry of the Universe**

* Submitted to The Astrophysical Journal Letters

P.P. Kulish*, Departamento de Física Teórica and IFIC, Centro Mixto Universidad de Valencia-CSIC, 46100 Burjassot (Valencia), Spain. * On leave of absence from St. Petersburg Branch of the Steklov Mathematical Institute of the Russian Academy of Sciences.
Preprint No: FTUV/93-54, IFIC/93-35, hep-th/9312139
Representations of q-Minkowski Space Algebra

M.C. Land[1], N. Shnerb[2] and L.P. Horwitz[1,2]. [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. Lavelle[1] and D. McMullan[2]. [1] Institut für Physik, Johannes Gutenberg-Universität, D-55099 Mainz, F.R. Germany, Email: lavelle@vipmza.physik.uni-mainz.de. [2] Dublin Institute for Advanced Studies, School of Theoretical Physics, 10 Burlington Road, Dublin 4, Ireland, Email: mcmullan@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. Lewis[1] and C.-E. Pfister[2]. [1] Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland. [2] Ecole 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. Lewis[1], C.-E. Pfister[2] and W.G. Sullivan[1,3] [1] Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland. [2] Ecole 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 theThermodynamic 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.
Preprint No: TRITA-TFY-93-9, December 1993.
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. McMullan[1] and I. Tsutsui[2*]. [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.
Preprint No: PLY-MS-93-04, DIAS-STP-93-21, October 1993.
BPST Instanton and Spin from Inequivalent Quantizations

D. McMullan* and I. Tsutsui, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland, Email: mcmullan@stp.dias.ie and tsutsui@stp.dias.ie.
Preprint No: DIAS-STP-93-14, August 1993.
On the Emergence of Gauge Structures and Generalized Spin when Quantizing on a Coset Space

P. Maslanka*, Department of Functional Analysis, Institute of Mathematics, University of Lódz, ul. St. Banacha 22, 90-238 Lódz, Poland.
Preprint No: 6/93
The Induced Representations of the k-Poincare Group. The Massive Case
* Supported by KBN grant 2 0218 91 01

P. Maslanka*, Department of Functional Analysis, Institute of Mathematics, University of Lódz, ul. St. Banacha 22, 90-238 Lódz, Poland.
Preprint No: 8/93
The Induced Representations of the k-Poincare Group. The Massless Case
* Supported by KBN grant 2 0218 91 01

P. Maslanka*, Department of Functional Analysis, Institute of Mathematics, University of Lódz, ul. St. Banacha 22, 90-238 Lódz, Poland.
Preprint No: 7/93
The n-Dimensional k-Poincare Algebra and Group
* Supported by KBN grant 2 0218 91 01

J. Messer, 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†

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† Work supported by BMFT, Bonn, Fed. Rep. Germany under project no.OEF 2019-3, part PM 5. The views expressed are those of the author.

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Preprint No: DIAS-STP-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, Burjassot-46100, Valencia, Spain.
Preprint No: FTUV/93-34, IFIC/93-34
*Quantum Cosmological Approach to 2d Dilaton Gravity**
* Work partially supported by the Comisión Interministerial de Ciencia y Tecnología and DGICYT.

C. Nayak[1*] and F. Wilczek[2†]. [1] Department of Physics, Joseph Henry Laboratories, Princeton University, Princeton, N.J. 08544, Email: nayak@puhep1.princeton.edu [2] School of Natural Sciences, Institute for Advanced Study, Olden Lane, Princeton, N.J. 08540, Email: WILCZEK@IASSNS.BITNET * Research supported in part by a Fannie and John Hertz Foundation fellowship. † Research supported in part by DOE grant DE-FG02-90ER40542.
Preprint No: PUPT 1438, IASSNS 93/89, cond-mat/9312086, December 1993.
Non-Fermi Liquid Fixed Point in 2+1 Dimensions

D. O'Connor [1] and C.R. Stephens [2]. [1] School of Theoretical Physics, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland. [2] Institute for Theoretical Physics, Rijksuniversiteit Utrecht, Princetonplein 5, 3508TA Utrecht, Netherlands.
Preprint No: THU-93/18, DIAS-STP-93-18, August 1993.
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-STP-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.
Preprint No: UNIGRAZ-UTP, 15th December 1993.
*Duals of Quasitriangular 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 8916-PHY.

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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 Superposed Cricket Balls. An Approach to Quantum Decoherence within the Framework of Statistical Mechanics of Phase Transitions

N. Yu. Reshetikhin, L.A. Takhtajan, L.D. Faddeev, V.A. Steklov Mathematical Institute, Leningrad Branch, Russia.
Quantization of Lie Groups and Lie Algebras * †
† Preprint in Russian
* Appeared in Leningrad Math.J. 1 (1990), 193-225.

D. Ryter, 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

D. Ryter, Ascom Tech AG, CH-3018 Bern, and Institute for Communication Technology, ETH Zentrum, CH-8092 Zürich, Switzerland.
Mean First Exit Times Along Boundaries Crossing a Separatrix

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. Shnerb[1] and L.P. Horwitz[2*]. [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. Shnerb[1] and L.P. Horwitz[2*]. [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 Axiomatic 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

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-STP-93-09, May 1993.
On the Relationship between Monstrous Moonshine and the Uniqueness of the Moonshine Module

M.A. Vandyck, 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 Eijck[1], D. O'Connor[2] and C.R. Stephens[2]. [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! *
* To be published in "Proceedings of the 3rd Workshop on Thermal Field Theories and their Applications", Banff, Canada 1993.

A.C.D. van Enter[1*], R. Fernández[2] and A.D. Sokal[3]. [1] Instituut voor Theoretische Natuurkunde, Rijksuniversiteit Groningen, Nijenborgh 4, NL 9747 AG Groningen, The Netherlands. [2] Institut de Physique Théorique, EPF Lausanne, PHB Ecublens, CH 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 Enter[1], R. Fernández[2*] and A.D. Sokal[3]. [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, PHB Ecublens, CH 1015 Lausanne, Switzerland, E-mail: Fernandez@eldp.epfl.ch [3] Department of Physics, New York University, 4 Washington Place, New York, NY 10003, USA, E-mail: Sokal@acf4.nyu.edu * Speaker at the Conference.
Renormalization Transformations: Source of Examples and Problems in Probability and Statistics†
† Invited talk at the V CLAPEM, Sao Paulo, 28 June - 3 July 1993.

A. Verbeure* and V.A. Zagrebnov†. Instituut voor Theoretische Fysica, Universiteit Leuven, B-3001 Leuven, Belgium. * E-mail: Verbeure%tf%fys@cc3.kuleuven.ac.be †Present address: Ecole Nationale Supérieure des Télécommunications-IMA, 46 Rue Barrault, 75634 Paris Cedex 13, France (E-mail: zagrebnov@ima.enst.fr). On leave of absence from Laboratory of Theoretical Physics, JINR-Dubna, Dubna 141980, CIS-Russia.
Preprint No: KUL-TF-93/14
Gaussian, Non-Gaussian Critical Fluctuations in the Curie-Weiss Model

F. Wilczek*, School of Natural Sciences, Institute for Advanced Study, Olden Lane, Princeton, N.J. 08540. * Research supported in part by DOE grant DE-FG02-90ER40542.
Preprint No: IASSNS-HEP-93/69, hep-ph/9311302
Status of QCD†

† Invited talk given at the Cornell Lepton-Photon conference, Ithaca, N.Y., August 1993.

Leuven Notes in Mathematical and Theoretical Physics

Volume 5

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QUASICRYSTALS
Microscopic models of nonperiodic structures

Jacek Miękisz

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October 1994 / JJL

INTERNATIONAL ASSOCIATION OF MATHEMATICAL PHYSICS

IAMP NEWS BULLETIN

NOVEMBER 1994

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 grounds provided an excellent place for walks 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,

W.Hearst, H. Koch, R. Kotecky, O. Lanford and R. de la Llave with E. Wayne (wayne@math.psu.edu) as Chair.

The purpose of the UNESCO Committee is to expand on our very successful relationship which we have built up with UNESCO and which came into play at the Paris meeting. We plan to formulate a way to continue this association, and I believe that this committee too will play an important role in the future of our Association. I received a number of recommendations in Paris for members of this committee, which I have not yet appointed. I hope that this committee will increase the visibility of IAMP within the communities of mathematics and physics and will also play an important role in the evolution of our Association.

The Executive Committee also acted on two recommendations about membership. On the one hand, the Executive Committee approved the category of life membership, the details of which can be found later in this Bulletin. I encourage you to consider this option. Secondly, the Executive Committee decided to resume Associate Membership (limited to publishers, academic institutions and the like, to be approved by the President). I am in the process of preparing a letter to solicit Associate Members, and I would appreciate any input that regular members can give. In particular, do you know of publishers or societies in your own country which may wish to have Associate Membership in IAMP? If you do, send to me the name and address of a person to contact.

With Paris behind us, we are now planning the 1997 Congress. I have received two proposals, one from Professors Gu and Hu in Shanghai, and a second from Professor Bracken in Brisbane. Major parts of these proposals appear in this issue of the Bulletin, and I would welcome your comments on the proposed sites; I will forward them to the Executive Committee for their consideration. Over the coming weeks the Executive Committee will discuss which of these proposals to recommend. I expect that in my column in the next newsletter I can let you know their decision.

I hope that you will all have a productive year!

Arthur Jaffe

P.S. I can be reached by e-mail at iamp@math.harvard.edu or by regular mail at Department of Physics, Harvard University, Cambridge, MA 02138, USA.

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:-

Date	Cost
December 1991	£584.68
May 1992	£583.02
October 1992	£696.94
March 1993	£657.38
August 1993	£779.70
March 1994	£850.16

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).

	£
Coordinating, typing, lay-out etc.	200.00
Postage	389.42
Photocopies	212.74
Envelopes	28.00
Fax and telephone	20.00
TOTAL	**£850.16**

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 Massacussetts.
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 Zaviliov 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 Zaviliov.

7. The Meeting was closed at 19.30 hours.

A. Truman
22nd July 1994

⟨ Treasurer's Report ⟩

Financial Report

1. Account in Geneve (Swiss Francs)

Balance Dec. 31, 1990		6,401.30
Dues collected	15.00	
Interest	160.30	
Expenses	69.40	
Balance Dec. 31, 1991		6,507.20
Dues collected	195.00	
Interest	164.95	
Expenses	73.95	
Balance Dec. 31, 1992		6,793.20
Dues collected	830.00	
Interest	159.10	
Expenses	83.50	
Balance Dec. 31, 1993		7,698.80

2. Account in Bielefeld (German Marks)

Balance Dec. 31, 1990		32,833.41
Dues collected	1,931.80	
Interest	124.74	
NSF Loan (Herbst Leipzig)	935.00	
Expenses		
Banking	92.50	
Goslar	918.00	
Leipzig	18,360.00	
Balance Dec. 31, 1991		16,454.45
Dues collected	576.00	
Interest	178.23	
CMP	730.00	
Leipzig	21,818.98	
Expenses		
Banking	63.40	
Salamanca	829.55	
Office of Secretary	2,945.50	
Balance Dec. 31, 1992		35,919.21
Dues collected	3,891.50	
Interest	172.21	
Expenses		
Banking	70.80	
Office of Secretary	5,135.50	
Phase Transitions (Prague)	868.85	
Balance Dec. 31, 1993		33,907.77

3a. Account in Gainesville (US Dollars)

Balance Dec. 31, 1990			6,115.79
Dues collected	2,434.–		
Interest	283.84		
Expenses			
Office of Treasurer	62.95		
Mailing Center A	503.–		
Reimburs. NSF (Herbst, Leipzig)	553.–		
Balance Dec. 31, 1991			7,714.68
Dues collected	180.–		
Interest	172.74		
Expenses			
Mailing Center A	1,000.–		
Mailing Center B2	500.–		
Balance Dec. 31, 1992			6,567.42
Dues collected	4,750.83		
Interest	86.81		
Expenses			
Banking expense	42.50		
Mailing center A	3,500.–		
Office of the President	248.08		
Office of the Treasurer	417.10		
Copenhagen Conf. (Aizenman)	500.–		
Balance Dec. 31, 1993			6,697.38

3b. Account in Jacksonville (US Dollars)

Balance Dec. 31, 1990			1,707.70
Interest	102.79		
Balance Dec. 31, 1991			1,810.49
Interest	62.49		
Balance Dec. 31, 1992			1,872.98
Interest	52.59		
Balance Dec. 31, 1993			1,925.57

4. Account and cash in Kyoto (Japanese Yen)

(a) Regular Account
(b) Saving Account (Open March, 31 1992)
(c) Cash

Balance Dec. 31, 1990		(a)	599,639
Dues collected	462,900		
Interest	9,717		
Expenses			
Mailing Center B1	30,152		
Returned dues	3,900		
Expenses for above	452		

Balance Dec. 31, 1991		(a)	1,037,752
Dues collected	59,800		
Interest	6,613		
Expenses			
Mailing Center B1	26,349		
Balance Dec. 31, 1992	(a) 152,300		
	(b) 900,000		
	(c) 25,516		
	(total)		1,077,816
Dues collected	301,600		
Interest(*)	452		
Expenses			
Mailing Center B1	36,700		
Bank fee	1,500		
Balance Dec. 31, 1993	(a) 433,552		
	(b) 900,000		
	(c) 8,116		
	(total)		1,341,668

(*) Interest on saving account will show up in 1995 after maturity of 3 year period

5. Account in Gaillard (French Francs)

Balance Dec. 31, 1990		5,023.99
Dues collected	180.00	
Interest	231.16	
Expenses	-	
Balance Dec. 31, 1991		5,435.15
Dues collected	300.00	
Interest	251.92	
Expenses	-	
Balance Dec. 31, 1992		5,987.07
Dues collected	460.80	
Interest	269.41	
Expenses	-	
Balance Dec. 31, 1993		6,717.28

6. Account in London (British Pounds)

Balance Dec. 31, 1990		727.59
Dues collected	42.00	
Interest	(see 1993)	
Expenses	-	
Balance Dec. 31, 1991		769.59
Dues collected	30.00	
Interest	(see 1993)	
Expenses	-	
Balance Dec. 31, 1992		799.59

Dues collected	492.50	
Interest (est.)	25.83	
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 1.60)		
Balance Dec. 31, 1933	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	1,925.57	1,925.57
4. Japanese Yens (rate 102.)		
Balance Dec. 31, 1993	1,341,668	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		51,926.72

IAMP Budget for 1994 and 1995

Expenditure

	1994	1995
IAMP News Bulletin	$ 6,500	$ 6,500
Conference Support	$ 17,000	$ 17,000
Other	$ 500	$ 500
Total	$ 24,000	$ 8,000

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 (9,490 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 56 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 priviledge 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 finance, 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
Reserach 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) 365 2673/3277
International +61 7 365 2673/3277
Facsimile (07) 870 2272
Telex UNIVQLD AA 40315

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 XIIth 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:

Dates:

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 5 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 times 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 photocopying 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 ($\approx$ 50) with their own facilities, and a smaller number of double rooms ($\approx$ 20) with facilities. Cost of the single occupancy accommodation with shared facilities would be about AUS$50 ($\approx$ 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 lie 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$2,799 (Brisbane–Frankfurt), AUS$1,525 (Brisbane–Osaka) and AUS$2,050 (Brisbane–Beijing). However special, cheaper deals can often be negotiated, especially from outside Australia.

Provisional Management Committee

M Barber (University of Western Australia)
R Bartnik (University of New England)
R Baxter (Australian National University)
V Baahanov (Australian National University)
A Bracken (University of Queensland)
A Carey (University of Adelaide)
P Davies (University of Adelaide)
M Gould (University of Queensland)
A Hurst (University of Adelaide)
A Guttmann (University of Melbourne)
E Kalnins (University of Waikato, New Zealand)
B McKellar (University of Melbourne)
A Mees (University of Western Australia)
P Pearce (University of Melbourne)
I Raeburn (University of Newcastle)
D Robinson (Australian National University)
I Sloan (University of New South Wales)
A Thomas (University of Adelaide)
G Thompson (University of Melbourne)
N Trudinger (Australian National University).

These people have all been approached to consider acting as members of a provisional committee; it is envisaged that a subset of more workable size will contribute to the development of final plans for the Congress. The local committee in Brisbane will be built up around A J Bracken and M D Gould.

Social Activities

We envisage a cocktail party on the opening night of the Congress, in an attractive location such as the new Brisbane Convention Centre in the South Bank area of Brisbane. A mid-week Congress dinner with a suitably Australian theme could also be offered, probably as an optional extra for delegates and associates. Half-day or full-day excursions to various local attractions will be available.

Many prospective delegates will welcome the opportunity to visit the Asia-Pacific region for the first time, and combine the Congress with tourism. For example, we imagine many delegates entering or leaving Australia through Cairns in order to visit the Great Barrier Reef.

Some promotional material with information about Brisbane and The University of Queensland is enclosed. We hope that the executive will consider our proposal favourably, and look forward to hearing of your decision.

Best regards,

for

A J Bracken (The University of Queensland)
C A Hurst (The University of Adelaide)
P A Pearce (The University of Melbourne)
D W Robinson (Australian National University)

Encl:

COMPLETE SHANGHAI PROPOSAL

From guch@bepc2.ihep.ac.cn Tue Oct 25 04:10:34 1994
Received: by bepc2 (MX V4.0-1 VAX) id 30217; tue, 25 Oct 1994 16:212:32 +0800
Date: Tue, 25 Oct 1994 16:12:30 +0800
To: iamp@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 Fujia, 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 outside 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 (<30 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.

Sincerely yours,

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

Hu Hesheng
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.

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
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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

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

Die Sonne schied,
noch eh' es Abend wurde.

In tiefer Trauer geben wir Nachricht, daß unser lieber, unvergeßlicher Gatte und Sohn, Herr

A. o. Univ.-Prof.

Dr. Alfred Wehrl

Sonntag, den 16. Jänner 1994, im 53. Lebensjahr plötzlich und unerwartet von uns gegangen ist.

Der liebe Verstorbene wird auf dem Friedhof Baumgarten aufgebahrt und Montag, den 14. Feber 1994, um 14.15 Uhr, nach erfolgter Trauerfeier im Familiengrab zur Ruhe gebettet.

Elisabeth Wehrl
Mutter

Dr. Brigitta Wehrl-Novotny
Gattin

Im Namen aller Verwandten und Freunde

Wien, den 2. Feber 1994
1140 Linzer Straße 160, Stiege 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.

Bewerbungen sind bis längstens 31. Oktober 1994 an den Dekan der Formal- und Naturwissenschaftlichen Fakultät der Universität Wien, Dr. Karl Lueger Ring 1, A-1010 Wien, zu richten.

Der Dekan:
Fleischhacker

R.C.P. 264

Université Montpellier II

February 21 - 24 (1 9 9 5)

INTERDISCIPLINARY MEETING ON INTEGRABLE SYSTEMS

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-organized by the two following groups of Montpellier:
- *Physique Mathématique et Théorique*, CNRS-URA 768
- *Géométrie et Toplogie 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 ALBERNHE, Françoise DUCEAU
Physique Mathématique et Théorique
Université Montpellier II
34095 MONTPELLIER Cedex 05 (FRANCE)

Fax: (33) 67 54 48 50
e-mail: rcp@lpm.univ-montp2.fr

R.C.P. 264

Université Montpellier II

February 21 - 24 (1 9 9 5)

NONLINEARITY AND INTEGRABILITY: FROM MATHEMATICS TO PHYSICS

REGISTRATION

Name.....

e-mail.....

Institution.....

.....

.....

Phone..... Fax.....

Need an invitation letter: yes □ no □

Intend to present a contribution: yes □ no □

To return BEFORE JUNE 30 to

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

Fax: (33) 67 54 48 50
e-mail: rcp@lpm.univ-montp2.fr

KARL-FRANZENS-UNIVERSITÄT GRAZ

34. Internationale Universitätswochen für Kern- und Teilchenphysik
Schladming, March 4 - March 11, 1995

'Low-Dimensional Models in
Statistical Physics and Quantum Field Theory'

Graz, 03.06.1994

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: 311 662
Telefax: +43 (316) 384091
E-Mail : utp@edvz.kfunigraz.ac.at

Thank you for your cooperation

Yours sincerely,

L. Pittner

L. Pittner

INSTITUT FÜR THEORETISCHE PHYSIK
KARL-FRANZENS-UNIVERSITÄT GRAZ
Universitätsplatz 5, A-8010 Graz, AUSTRIA
Tel.: (316) 380-5225, 5230 Fax: (316) 384091
E-Mail: utp@edvz.kfunigraz.ac.at

Directors of the School: Prof. H. Grosse
Doz. L. Pittner

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 Sirenuse* 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 or Brindisi International Airport to Gallipoli and back (which will be provided by the Organizing Committee for participants arriving on June 28 and leaving on July 8). The all-inclusive rate for accompanying persons is Italian Lire 950,000.

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@lecce.infn.it, telex 860128 UNSTLE 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 admittance 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@lecce.infn.it
- Jérôme LEON, Physique Mathématique, Université Montpellier II, 34095 Montpellier (France), e-mail: leon@lpm.univ-montp2.fr
- Flora PEMPINELLI, Dipartimento di Fisica, Università di Lecce, 73100 Lecce (Italy), e-mail: pempi@lecce.infn.it

Scientific Advisory Committee

- Martin KRUSKAL, Mathematics Department, Rutgers University, New Brunswick, NJ 08903 (USA)
  Chairman of the Committee
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- 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 KONOPELCHENKO, Dipartimento di Fisica, Università di Lecce, 73100 Lecce (Italy)
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- 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 SPATSHEK, 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 Sirenuse", Baia Verde, Gallipoli, Lecce (Italy)
June 29 - July 7, 1995

Registration Form

Name _____ First name _____ Sex [ ]

Affiliation _____

_____

Mailing address _____

_____

Tel. _____ Telex _____ Fax _____

E-mail _____ Network _____

_____

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 16 (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. 950,000.

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 _____

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I would like to present: LECTURE [ ] POSTER [ ]

Enclose title and one-page abstract, suitable for direct reproduction, for any lecture or poster you intend present.

Title _____

_____

Remark (if any) _____

_____

Indicate the member of the Scientific Advisory Committee who could (if ever necessary) referee your cont. bution:

_____

Please enclose a one-page (suitable for direct reproduction) biographical presentation, to be distributed Workshop participants; it should include the following data: name (clearly marked on top), profession affiliation, complete address, scientific interests (past and present), titles of recent published papers and/ preprints, other interests (scientific or otherwise).

Date _____

Signature _____

This form should be sent before March 10, 1995, to:
Mrs Maria Concetta Gerardi
NONLINEAR PHYSICS
Dipartimento di Fisica, Universita' di Lecce
Via Arnesano, 73100 LECCE (Italy)

E-mail gerardi@lecce.infn.it
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Phone +39 832 320467
Fax +39 832 320505

Bank Account:
Banca di Roma
Via Roma
73014 GALLIPOLI, Lecce (Italy)
Account No. 650051/31 (NONLINEAR PHYSICS)

Please note: *We cannot accept credit card payments for the registration fee and accommodation expens however, credit card payments will be accepted by the Hotel for extra expenses (if any).*

Mathematical Physics Towards the 21st Century

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AN EXAMPLE OF LOOP QUANTIZATION

WILSON LOOP COORDINATES FOR 2 + 1 GRAVITY

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Ola Boström, Institute of Theoretical Physics, Chalmers University of Technology, S-412 96 Göteborg, Sweden, Mark Miller, Department of Physics, Syracuse University, Syracuse, NY 13244, and Lee Smolin, Center for Gravitational Physics and Geometry, Department of Physics, Pennsylvania State University, University Park, PA 16802-6300
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Preprint No. 230, July 1994.
Brownian Survival in a Clusterized Trapping Medium

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Preprint No. 227, May 1994.
Asymptotic Quantization for Solution Manifolds of Some Infinite Dimensional Hamiltonian Systems

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Preprint No. 231, July 1994.
Dirichlet Operators as Elements of the Algebra of Pseudodifferential Operators. The Perturbed Gaussian Case.

S. Albeverio[1], J. Feng[2] and M. Qian[3]. [1]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. Preprint No. 235, August 1994.
The Role of Noises in Neural Networks

S. Albeverio[1,2], Y.G. Kondratiev[2,3] and M. Röckner[4]. [1]Fakultät für Mathematik, Ruhr-Universität Bochum, D-44780 Bochum, Germany SFB 237 (Bochum-Essen-Düsseldorf). [2]BiBoS Research Centre, D33615 Bielefeld, Germany. [3] On leave of absence from Institute of Mathematics, Kiev (Ukraine). [4] Mathematisches Institut, Universität Bonn.
Preprint No.222, May 1994.
Infinite Dimensional Diffusions, Markov Fields, Quantum Fields and Stochastic Quantization

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Preprint No.219, April 1994.
Uniqueness of the Stochastic Dynamics for Continuous Spin Systems on a Lattice

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Preprint No.229, June 1994.
Abelian Chern-Simons Theory and Linking Numbers via Oscillatory Integrals

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Preprint No. 214, February 1994.
A Mathematical Flat Integral Realization and a Large Deviation Result for the Free Euclidean Field

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Preprint No. 233, July 1994.
On the Lattice Approximation for Certain Generalized Vector Markov Fields in Four Space-Time Dimensions

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Preprint No. 232, July 1994.
Stochastic Anticipative Calculus for Functionals of a Gaussian Generalized Random Field

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Preprint No.213, February 1994.
A Renormalization Result for the Intersection Local Time of Lattice Random Walk in High Dimensions

D. Applebaum, Department of Mathematics, Statistics and Operational Research, The Nottingham Trent University, Burton Street, Nottingham, England, NG1 4BU.
Fermion Stochastic Calculus

J.A. De Azcárraga[1], P.P. Kulish[1*] and F. Rodenas[1,2]. [1]Departamento de Física Teórica and IFIC, Centro Mixto Universidad de Valencia CSIC, E-46100-Burjassot (Valencia), Spain. [2]Departamento de Matemática Aplicada, Universidad Politécnica de Valencia, E-46071 Valencia, Spain. * On leave of absence from the St. Petersburg Branch of the Steklov Mathematical Institute of the Russian Academy of Sciences.
Preprint No. FTUV 94-21, IFIC 94-19, hep-th/9405161, April 1994.
Quantum Groups and Deformed Special Relativity

J. Beckers[1], N. Debergh[1*] and A.G. Nikitin[2]. [1]Theoretical and Mathematical Physics, Institute of Physics (B.5), University of Liège, B-4000 Liège 1, Belgium. [2]Institute of Mathematics, Academy of Sciences, Repin Street, 3, Kiev 4, Ukraine. * Chercheur Institut Interuniversitaire des Sciences Nucléaires, Bruxelles.
On Parasupersymmetries and Relativistic Descriptions for Spin One Particles: I. The Free Context[†]
[†] 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[†]
[†]To be published in Fortschritte der Physik - Progress of Physics 43, no.2 (1995).

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Preprint No. VUB/TENA/94/01
On a Three-Dimensional Reduction of the Bethe-Salpeter Equation

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Preprint No. TAUP-2136-94.
Galilean Limit of Equilibrium Relativistic Mass Distribution for Indistinguishable Events

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

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Preprint No: DIAS-STP-94-05, February 1994.
Co-variant Derivatives and the Renormalisation Group Equation*
* Work partly supported by an Alexander von Humboldt research stipendium.

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Preprint No: DIAS-STP-94-21, June 1994.
Symplectic Geometry and Hamiltonian Flow of the Renormalisation Group Equation

S. Doplicher[1], K. Fredenhagen[2] and J.E. Roberts[3]. [1]Dipartimento di Matematica, Università di Roma "La Sapienza", I-00185 Roma, Italy. [2] II Institut für Theoretische Physik der Universität, Hamburg, D-22761 Hamburg, Germany. [3] Dipartimento di Matematica, Università di Roma "Tor Vergata", I-00133 Roma, Italy.
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-STP-94-02.
The Finite-Temperature Renormalization Group Applied to $\lambda\phi 4$ Theory and QCD

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Preprint No: FTUV/94-30, hep-th/9406114, June 1994.
Quantum Heisenberg Group and Algebra: Contraction, Left and Right Regular Representations

D.F. Escande[1,2], S. Zekri[1] and Y. Elskens[1]. [1]Equipe Turbulence Plasma de l'URA 773 CNRS - Université de Provence, Institut Méditerranéen de Technologie, F-13451 Marseille cedex 20, France. [2]Association Euratom-CEA, CEN Cadarache, BP no.1, F-13108 Saint-Paul les Durance cedex, France.
Preprint No: TP 94.01.
Microscopic Description of Langmuir Waves Revisited Through Classical Mechanics

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Cedex 9, France: email: kotecky@cpt.univ-mrs.fr. * Address from October 1, 1994: FAMAF, Universidad Nacional de Córdoba, Ciudad Universitaria, 5000 Córdoba, Argentina: email: mafcor!fernandez@uunet.uu.net. †On leave from Center for Theoretical Study, Charles University, Jilská 1, 110 00 Praha 1, Czech Republic. email: kotecky@aci.cvut.cz.
Pathological Behavior of Renormalization-Group Maps at High Fields and Above the Transition Temperature

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Preprint No: KUL-TF-94/8.
Quantum Spin Chains with Quantum Group Symmetry

P. Fernández de Córdoba[1], E. Oset[2] and M.J. Vicente-Vacas[2]. [1]Departamento de Matemática Aplicada, Universidad Politécnica de Valencia, 46022 Valencia (Spain). [2] Departamento de Física Teórica and IFIC Centro Mixto Universitat de Valencia CSIC, 46100 Burjassot (Valencia), Spain.
Inclusive (^{3}He, t) Reaction on Nuclei

K. Fredenhagen[1], M.R. Gaberdiel[2*] and S.M. Rüger[3]. [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] Informatik, Sekr. FR 5-9, Tu Berlin, D 10587 Berlin. * Partly supported by 'Studienstiftung des deutschen Volkes'.
Preprint No: DAMTP-94-90.
Scattering States of Plektons (Particles with Braid Group Statistics) in 2 + 1 Dimensional Quantum Field Theory

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Absolute 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.

F. Gesztesy[1], H. Holden[2], B. Simon[3] and Z. Zhao[1]. [1] Department of Mathematics, University of Missouri, Columbia, MO 65211: email for FG: mathfg@mizzou1.missouri.edu, email for ZZ: mathzz@mizzou1.missouri.edu. [2]Department of Mathematical Sciences, The Norwegian Institute of Technology, University of Trondheim, N-7034 Trondheim, Norway: email: holden@imf.unit.no. [3]Division of Physics, Mathematics and Astronomy, California Institute of Technology, 253-37 Pasadena, CA 91125.
A Trace Formula for Multidimensional Schrödinger Operators*
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Higher Order Trace Relations for Schrödinger Operators*
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Rank One Perturbations at Infinite Coupling*
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The XI Function*
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Preprint No. CLNS-93/1253, IASSNS-HEP-94/2, YCTP-P31-92.
Mirror Manifolds in Higher Dimension

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Preprint No: PUPT 1454, IASSNS 93/88, hep-th/9403108, March 1994.
Geometric and Renormalized Entropy in Conformal Field Theory

M. Hübner and H. Spohn. Theoretische Physik, Ludwig-Maximilians-Universität, Theresienstrasse 37, D-80333 München, Germany; email: spohn@stat.physik.uni-muenchen.de.
Radiative Decay: Nonperturbative Approaches

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Spectral Properties of the Spin-Boson Hamiltonian

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Preprint No: DIAS-STP-94-11
On the Concepts of Lie- and Covariant Derivatives of Spinors (Part I)

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Operators with Singular Continuous Spectrum: III. Almost Periodic Schrödinger Operators†
† To appear in Commun. Math. Phys.

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Preprint No: IASSNS-HEP-94/8.
Indirect Detection of Wimps*
* To appear in Particle Astrophysics, Atomic Physics, and Gravitation, proceedings of the XIVth Moriond Workshop, Villars sur Ollon, Switzerland, Jan. 22-29, 1994.

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Preprint No: IASSNS-HEP-94/14, CWRU-P3-94, February 1994.
Implications of Recent Nucleon Spin Structure Measurements for Neutralino Dark Matter Detection

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The Bianchi IX (Mixmaster) Cosmological Model is not Integrable

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Detailed Balance and Quantum Dynamical Semigroups

J. Navarro-Salas[1,2], M. Navarro[2,3,4], C.F. Talavera[1,2] and V. Aldaya[2,4]. [1]Departamento de Física Teórica, Burjassot-46100, Valencia, Spain. [2]IFIC, Centro Mixto Universidad de Valencia-CSIC, Burjassot-46100, Valencia, Spain. [3]The Blackett Laboratory, Imperial College, London, SW7 2BZ, U.K. [4]Instituto Carlos I de Física Teórica y Computacional, Facultad de Ciencias, Universidad de Granada, Campus de Fuentenueva, 18002 Granada, Spain.
Preprint No: FTUV/93-15, IFIC/93-10, Imperial-TP/93-94/18.
On the Reduced Canonical Quantization of the Induced 2D-Gravity*
* Work partially supported by the C.I.C.Y.T. and the D.G.I.C.Y.T.

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*
* To appear in C.R. Acad. Sci. Paris Sér. I Math. (in press).

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Operators with Singular Continuous Spectrum: II. Rank One Operators[‡]
‡ To appear in Commun. Math. Phys.

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Preprint No: FTUV/94-34
A Novel Kind of Neutrino Oscillation Experiment

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Spectral Analysis of Rank One Perturbations and Applications

R. Zuccante, Università di Roma "La Sapienza", Dipartimento di Matematica, I-00185 Roma, Italy.
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