

# INTERNATIONAL ASSOCIATION OF MATHEMATICAL PHYSICS

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CH-1211 Geneva, Switzerland

*January 1989*

## IAMP NEWS BULLETIN

*Season's Greetings and best Wishes  
for the New Year to all IAMP members!*

*J. Klauder*

*Ph. Blanchard*

Announcement:

Now there exists a L I R A A C C O U N T for IAMP:

No. 10203/0

Banco S. Spirito-Sportello Università

Ph Aldo Moro 2

I-00185 R o m a

(opened by Fabio Martinelli and G.F. Dell'Antonio)

## NEUVIEME RENCONTRE DE PHYSIQUE STATISTIQUE

Cher Collègue,

Nous organisons les Jeudi 26 et Vendredi 27 Janvier 1989, la Neuvième Rencontre de Physique Statistique de Paris.

Elle se tiendra à l'École Supérieure de Physique et Chimie Industrielles de Paris, 10 rue Vauquelin, Paris 5ème, bâtiment N, dernier étage, et nous remercions P.G. de Gennes et l'E.S.P.C.I. de nous y accueillir de nouveau cette année.

Comme les années précédentes, cette rencontre a principalement pour but de permettre aux différents courants de la physique statistique de se rencontrer et à chacun de se faire une idée des intérêts et tendances de la communauté. Nous espérons beaucoup la participation de tous les physiciens et mathématiciens dont les travaux se rapportent à :

la mécanique statistique de l'équilibre, la mécanique statistique du non-équilibre, les solides désordonnés, la turbulence et la stochasticté, les liquides, les plasmas, les polymères, les milieux aléatoires macroscopiques, les automates cellulaires, les sujets physiquement ou mathématiquement reliés.

La rencontre consistera principalement en de nombreuses communications courtes, de 5 minutes environ, selon le nombre de communications proposées, destinées à donner à chacun une idée de ce qui se fait actuellement dans les divers domaines de notre discipline, ainsi qu'en trois revues sur des sujets reliés à la Physique Statistique :

J.L. LEBOWITZ  
(Rutgers et IHES)

*Statistical mechanics of time dependant  
and stationary non-equilibrium systems.*

D. ROUX  
(Paul Pascal, Bordeaux)

*Phases lamellaires diluées et micro-émulsions :  
des exemples expérimentaux de surfaces fluctuantes.*

J.-B. ZUBER  
(Phys. Théor., Saclay)

*Invariance conforme et mécanique statistique.*

et d'une table ronde :

*Magnétisme à deux dimensions : Etat fondamental et excitations de basse énergie.*

Organisateur D. GREMPEL (ILL, Grenoble), modérateur J. VILLAIN (CENG, Grenoble).

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### NOTES IMPORTANTES :

\* Il n'y aura pas d'autre annonce de cette rencontre .

\* Nous vous serions reconnaissants de photocopier ce texte et de le distribuer à ceux de vos collègues qui ne l'auraient pas reçu.

## ORGANISATION DE LA RENCONTRE

Jeudi 26 janvier 1989

9h		Enregistrement et communications courtes
12h	à 14h	Déjeuner
14h	à 15h30	Communications courtes
15h 30	à 16h	Café
16h	à 16h30	Communications courtes
16h30	à 18h	Table ronde

Vendredi 27 janvier 1989

9h	à 10h	Revue
10h	à 12h	Communications courtes
12h	à 14h	Déjeuner
14h	à 15h	Revue
15h	à 16h 30	Communications courtes
16h 30	à 17h	Café
17h	à 18h	Revue.

## RENSEIGNEMENTS PRATIQUES

- 1) En raison du caractère volontairement informel de la rencontre, aucun soutien financier ne sera accordé.
- 2) Les langues recommandées sont *l'anglais et le français*.
- 3) Les auteurs des communications doivent être conscients qu'ils ne peuvent entrer dans les détails, et qu'ils s'adressent à un public non spécialisé. Il ne s'agit pas de convaincre les quelques experts qui connaissent déjà le sujet, mais de s'adresser clairement au reste de la communauté. Les auteurs doivent donc se préparer pour un "flash" de cinq minutes afin de poser clairement le problème, exposer leurs résultats, mentionner les problèmes ouverts.
- 4) La projection de deux transparents par communication sera tolérée pour présenter des graphiques de résultats numériques ou des schémas expérimentaux ; il est fermement déconseillé de présenter des formules ou des textes par transparents.
- 5) Une table servira de présentoir aux préprints apportés par les participants ou envoyés par les non participants.
- 6) Nous pouvons réserver des *chambres d'hôtel* (voir fiche ci-jointe).
- 7) Nous apprécierons beaucoup une réponse rapide selon la fiche ci-jointe et *au plus tard* le 11 Janvier.

En espérant vous voir les 26 et 27 Janvier,

J.L. Lebowitz	Rutgers University et IHES.
D. Levesque	Physique Théorique, Université d'Orsay.
R. Maynard	CRTBT, Grenoble.
Y. Pomeau	Groupe de Physique du Solide, ENS.
B. Souillard	Physique Théorique, Ecole Polytechnique.

## CONFERENCE ANNOUNCEMENT

Date: June 7–10, 1989

Title: Dynamics Days Düsseldorf

Location: Düsseldorf, FRG

Contact: G. Eilenberger

*IFF, KFA Jülich*

*Postfach 1913*

*D-5170 Jülich 1, FRG*

*Tel.: (+49) 2461-61 4073*

*Telex: 833556 kf d*

*Bitnet: IFF054 at DJUKFA11*

**First Announcement**

BiBoS announces:

**BIELEFELD ENCOUNTERS IN MATHEMATICS AND PHYSICS VI**

**White Noise Analysis**

**Mathematics and Applications**

at the

**Centre for Interdisciplinary Research**

**Bielefeld University**

**July 9 - 15**

**Preliminary list of speakers will include:**

S. Albeverio, L. Arnold, M. de Faria, M. Fukushima, T. Hida, K. Itô, I. Kubo,  
H.-H. Kuo, F. Oosawa, M. Röckner, K. Sato

**Organized by:**

T. Hida (Nagoya), H.-H. Kuo (Baton Rouge), J. Potthoff (Bielefeld), L. Streit (Bielefeld)

Participation is free and welcome. The Centre of Interdisciplinary Research regrets that no financial support can be offered.

**Contact:**

Ms. M. Hoffmann, ZIF - University of Bielefeld, D-4800 Bielefeld 1

Tel.: (521) 106-2768

J. Potthoff, BiBoS - University of Bielefeld, D-4800 Bielefeld 1,

Tel.: (521) 106-6194, BIT-NET: UPHYF150 @ DBIUNI11

XIXème ECOLE D'ETE DE CALCUL DES PROBABILITES

SAINT-FLOUR (Cantal)

16 Août - 2 Septembre 1989

CONFERENCIERS INVITES

- D.L. BURKHOLDER, Professeur à l'Université d'Illinois à Urbana-Champaign (U.S.A.)  
"Explorations in martingale theory and its applications"
- E. PARDOUX, Professeur à l'Université de Provence (Aix-Marseille I)  
"Filtrage non linéaire et équations aux dérivées partielles stochastiques associées"
- A.S. SZNITMAN, Professeur Associé au Courant Institute of Mathematical Sciences à New-York (U.S.A.)  
"Propagation du chaos"

XXème ECOLE D'ETE DE CALCUL DES PROBABILITES

SAINT-FLOUR (Cantal)

1er - 18 Juillet 1990

CONFERENCIERS INVITES

- D. DONOHO, Professeur de Statistique à Berkeley (U.S.A.)  
"Problèmes ouverts liés à des applications statistiques"
- M. FREIDLIN, Professeur à l'Université du Maryland (U.S.A.)  
"Large deviations and non linear differential equations"
- J.F. LEGALL, Professeur à l'Université de Paris VI  
"Théorie fine du Brownien"

INSCRIPTIONS et RENSEIGNEMENTS COMPLEMENTAIRES

P.L. HENNEQUIN  
Mathématiques Appliquées  
F63177 AUBIERE CEDEX  
Tél. 73.26.41.10, Poste 34-07

# DUBLIN institute for advanced studies

School of Theoretical Physics, 10 Burlington Road, Dublin 4, Ireland. Telephone 689746. Telegrams: DIAS DUBLIN. Telex: 31687 DIAS EI.

DOCUMENT LIST XXXI: January-April 1988

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-01: J. T. LEWIS, V. A. ZAGREBNOV, & J. V. PULÉ: The large deviation principle for the Kac distribution.

-02: T. C. DORLAS & A. C. van ENTER: Example of a renormalization group fixed point peculiarity.

-03: G. A. RAGGIO: The free energy of the full spin-boson model.

-04: N. GORMAN & T. D. SPEARMAN: Equivalence of stabilizing conditions for inverse problems. *Pub. Europhys. Lett.* 5 (1988), 191-194.

-05: S. SEN & M. P. TUIITE: A string motivated approach to the relativistic point particle.

-06: D. M. HEFFERNAN, J. O'GORMAN, J. McINERNEY, & P. PHELAN: Nonlinear dynamics of self-pulsing external cavity semiconductor injection lasers. *Pub. J. Opt. Soc. Am.* May 1988.

-07: J. McCONNELL: The theory of nuclear magnetic relaxation in liquids. *Pub. Camb. Univ. Pr.*, 1987.

-08: T. GARAVAGLIA: Finite temperature field theory and quantum noise in inductively coupled LRC circuits.

-09: \*M. van den BERG, T. C. DORLAS, J. T. LEWIS, & J. V. PULÉ: A perturbed mean field model of a boson gas and the large deviation principle.

-10: M. van den BERG, J. T. LEWIS, & J. V. PULÉ: The large deviation principle and some models of an interacting boson gas. *To appear in Commun. math. Phys.*

-11: \*J. BURZLAPP: The optical soliton contents of some spectral input pulses. *For SOCOS Conf.*

-12: \*V. P. BELAVKIN: Multiquantum systems and point processes. I.

-13: N. G. DUFFIELD & J. V. PULÉ: A new method for the thermodynamics of the B.C.S. model. *To appear in Commun. math. Phys.*

-14: A. MONTORSI, M. RASETTI, & A. I. SOLOMON: Self-consistency and supersymmetry in a many fermion system.

-15: \*N. G. DUFFIELD & J. V. PULÉ: Thermodynamics and phase transitions in the Overhauser model.

-16: Zh.-Qi MA & D. H. TCHRAKIAN: Dimensional reduction of higher-order topological invariants: the case  $CP^n$ .

-17: \*Zh.-Qi MA et al.: Gauge field systems on  $CP^n$

-18: J. McCONNELL: Further theoretical investigations on nuclear magnetic spin-rotational relaxation. *Abstract, Joint NATO ASI & 6th ENLG Conf. "Reactive and flexible molecules in liquids", Nauplia, 1988.*

-19: \*M. van den BERG & J. T. LEWIS: Convex optimization and condensation in the free boson gas.

-20: G. O'BRIEN & D. H. TCHRAKIAN: A spherically symmetric  $SO(4)$  instanton of a non-abelian Higgs model in 4-dimensions.

-21: \*T. N. SHERRY & D. H. TCHRAKIAN: On the classical properties of gaugefield-Higgs models descended from generalized Yang-Mills systems.

-22: \*J. T. LEWIS: Probabilistic aspects of statistical mechanics.

-23: E. BUFFET & J. V. PULÉ: Gelation: The diagonal case revisited.

-24: \*M. VANDYCK: On the problem of space-time symmetries in the theory of supergravity. Part III.

-25: N. GORMAN, L. O'RAIFEARTAIGH, D. WILLIAMS, & W. McGLINN: A unified approach to the computation of central terms in Kac-Moody and Virasoro algebras.

-26: \*B. GOLDSMITH: On endomorphism rings of non-separable Abelian p-groups.

-27: G. W. FORD, J. T. LEWIS, & R. F. O'CONNELL: The quantum Langevin equation. *To appear in Phys. Rev. A.*



PREPRINTS (RECEIVED IN DUBNA)

P.Exner, P.Šeba (Laboratory of Theoretical Physics, JINR, 141980 Dubna, USSR) :  
TRAPPING MODES IN A CURVED ELECTROMAGNETIC WAVEGUIDE WITH PERFECTLY CONDUCTING WALLS

V.V.Kostykin, A.A.Kvitsinsky, S.P.Merkuriev (Leningrad Branch of Steklov Institute (LOMI), 191011 Leningrad, USSR) :  
FADDEEV APPROACH TO THREE-BODY PROBLEM IN TOTAL ANGULAR MOMENTUM REPRESENTATION

V.V.Kostykin, S.P.Merkuriev (Leningrad Branch of Steklov Institute (LOMI), 191011 Leningrad, USSR) :  
TRACE FORMULA FOR THREE-BODY SYSTEM IN AN EXTERNAL ELECTRIC FIELD

Yu.A.Kuperin (Leningrad Branch of Steklov Institute (LOMI), 191011 Leningrad, USSR) :  
THE EXTENSION THEORY FOR THREE-BODY HAMILTONIANS (in Russian)

Yu.A.Kuperin (Leningrad Branch of Steklov Institute (LOMI), 191011 Leningrad, USSR) :  
CONSTRUCTION OF THE HAMILTONIAN RESOLVENT FOR A SYSTEM OF THREE COMPOSITE PARTICLES (in Russian)

Yu.A.Kuperin, K.A.Makarov, B.S.Pavlov (Physical Institute, Leningrad State University, 198804 Leningrad, USSR) :  
AN EXTENSIONS THEORY SETTING FOR SCATTERING BY BREATHING BAG

K.A.Makarov (Institut fuer Theorie der Elementarteilchen, FBW, Berlin (West)) :  
BOUNDARY-LAYER APPROXIMATION FOR "SMALL DIFFUSION" EQUATION

K.A.Makarov (Institut fuer Theorie der Elementarteilchen, FBW, Berlin (West)), Yu.A.Kuperin, B.S.Pavlov (Physical Institute, Leningrad State University, 198804 Leningrad, USSR), V.M.Dubovik, B.L.Markovski, S.I.Vinitsky (Joint Institute for Nuclear Research, 141980 Dubna, USSR) :  
A LOCAL ADIABATIC REPRESENTATION IN THE FEW-BODY QUANTUM SCATTERING PROBLEM

A.K.Motovilov (Department of Mathematics, Arkhangelsk Wood-Technical Institute, Arkhangelsk, USSR), Yu.A.Kuperin (the same address as above), A.A.Susko, S.I.Vinitsky (Laboratory of Theoretical Physics, JINR, 141980 Dubna, USSR) :  
FADDEEV EQUATIONS WITH EXTRA RESONANCE CHANNEL IN MUON CATALYSIS

E.P.Osipov (Department of Theoretical Physics, Institute of Mathematics, Universitetsky pr.4, 630090 Novosibirsk, USSR) :  
THE CENTRAL EXTENSIONS OF KAC-MOODY-MALCEV ALGEBRAS

E.P.Osipov (the same address as above) :  
SUGAWARA'S CONSTRUCTION FOR KAC-MOODY-MALCEV ALGEBRAS

S.I.Vinitsky, V.M.Dubovik, Yu.A.Kuperin, B.L.Markovsky,  
Yu.B.Melnikov (the addresses see above) :  
MICROSCOPIC ANALYSIS OF THE NUCLEAR REACTION  $d+t \rightarrow n+\alpha$  IN  
THE ADIABATIC REPRESENTATION FRAMEWORK (in Russian)

S.A.Vugalter, G.M.Zhislin (Radiophysical Research Institute  
(NIRFI)), Gorky, USSR) :  
THE DISCRETE SPECTRUM ASYMPTOTICS FOR AN N-PARTICLE  
SCHROEDINGER OPERATOR ON SUBSPACES OF A PRESCRIBED SYMMETRY  
(in Russian)

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

J. T. Chayes, L. Chayes, Department of Mathematics, University of  
California, Los Angeles, CA 90024, and S. A. Kivelson,  
Department of Physics, SUNY at Stony Brook, Stony Brook,  
NY 11794

VALENCE BOND GROUND STATES IN A FRUSTRATED TWO-DIMENSIONAL  
SPIN-1/2 HEISENBERG ANTIFERROMAGNET

J. T. Chayes, L. Chayes, Department of Mathematics, University of  
California, Los Angeles, CA 90024, Daniel S. Fisher,  
Department of Physics, Princeton University, Princeton,  
NJ 08544, and T. Spencer, The Institute for Advanced  
Study, Princeton, NJ 08540

CORRELATION LENGTH BOUNDS FOR DISORDERED ISING FERROMAGNETS

J. T. Chayes, L. Chayes, Department of Mathematics, University of  
California, Los Angeles, CA 90024, G. R. Grimmett, School  
of Mathematics, University of Bristol, Bristol, England, H.  
Kesten, Department of Mathematics, Cornell University,  
Ithaca, NY 14853 and R. H. Schonmann, Mathematical Sciences  
Institute, Cornell University, Ithaca, NY 14853

THE CORRELATION LENGTH FOR THE HIGH DENSITY PHASE OF  
BERNOULLI PERCOLATION

M. L. Lapidus, Department of Mathematics, The University of  
Georgia, Boyd Graduate Studies Research Center, Athens,  
GA 30602

FRACTAL DRUM, INVERSE SPECTRAL PROBLEMS FOR ELLIPTIC  
OPERATORS AND A PARTIAL RESOLUTION OF THE WEYL-BERRY  
CONJECTURE

D. David, D. D. Holm, M. V. Tratnik, Los Alamos National  
Laboratory, Los Alamos, NM 87545

HAMILTONIAN CHAOS IN NONLINEAR OPTICAL POLARIZATION  
DYNAMICS

A. Jaffe, A. Lesniewski, and C. Wieczerkowski, Harvard  
University, Cambridge, MA 02138

A PRIORI QUANTUM FIELD EQUATIONS

THE SPECTRAL CONDITION ON A CYLINDER

HEAT KERNEL REGULARIZATION OF QUANTUM FIELDS

- P. F. Zweifel and C. V. M. Van Der Mee, Center for Transport Theory and Mathematical Physics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061  
SINGULAR INTEGRAL EQUATIONS ON CLOSED CONTOURS: THE ORTHOGONALITY METHOD
- S. L. Pavveri-Fontana, Dipartimento di Metodi e Modelli Matematici Universita di Roma "La Sapienza" Via Scarpa 10, I-00161 Roma, Italy, C. V. M. Van Der Mee and P. F. Zweifel, Center for Transport Theory and Mathematical Physics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061  
A NEUTRAL GAS MODEL FOR ELECTRON SWARMS
- F. Bentosela, Faculte des Sciences de Luminy et Centre de Physique Theorique, Centre National de la Recherche Scientifique, Luminy Case 907, F-13288 Marseille Cedex 9, France, E. Caliceti V, Grecchi, M. Maioli and A. Sacchetti, Dipartimento di Matematica "G. Vitali", Universita degli Studi di Modena, I-41100 Modena, Italy  
ANALYTICITY AND ASYMPTOTICS FOR THE STARK-WANNIER STATES
- S. Giler, Institute of Physics, University of Lodz, Nowotki 149/152, 90 236 Lodz, Poland  
LOW ENERGY LEVELS AND MATRIX ELEMENTS IN THE LARGE-N (SMALL-h) ASYMPTOTIC REGION
- A. Soffer and M. I. Weinstein, Department of Mathematics, Princeton University, Princeton, NJ 08544,  
MULTICHANNEL NONLINEAR SCATTERING THEORY FOR NONINTEGRABLE EQUATIONS
- A. J. Dragt, F. Neri, and G. Rangarajan, Center for Theoretical Physics, University of Maryland, College Park, MD 20742; D. R. Douglas, Continuous Electron Beam Accelerator Facility, 12070 Jefferson Avenue, Newport News, VA 23606; L. M. Healy, Naval Research Laboratory, Code 8242, 4555 Overlook Avenue, Washington, DC 20375; R. D. Ryne, Lawrence Livermore National Laboratory, Post Office Box 808, L-626, Livermore, CA 94550  
LIE ALGEBRAIC TREATMENT OF LINEAR AND NONLINEAR BEAM DYNAMICS
- D. Zwanziger, Department of Physics, New York University, New York, New York 10003  
ACTION FROM THE GRIBOV HORIZON

Asao ARAI , Department of Mathematics, Hokkaido University, Sapporo, 060, Japan.,  
Supersymmetric embedding of a model of a quantum harmonic oscillator interacting with  
infinitely many bosons. (to appear in J. Math. Phys.)

Asao ARAI , Department of Mathematics, Hokkaido University, Sapporo, 060, Japan.,  
Perturbation of Embedded Eigenvalues in Fock Spaces: A General Class of Exactly Soluble  
Models.

Asao ARAI , Department of Mathematics, Hokkaido University, Sapporo, 060, Japan.,  
A Criterion for the Boundedness From Below with a Class of Symmetric Operators and its  
Applications. (to appear in J. Math. Anal. Appl.)

Asao ARAI , Department of Mathematics, Hokkaido University, Sapporo, 060, Japan.,  
Existence of infinitely many zero-energy states in a model of supersymmetric quantum me-  
chanics.

Asao ARAI , Department of Mathematics, Hokkaido University, Sapporo, 060, Japan.,  
Long-time behavior of two-point functions of a quantum harmonic oscillator interacting with  
bosons.

Asao ARAI , Department of Mathematics, Hokkaido University, Sapporo, 060, Japan.,  
Spectral Analysis of a Quantum Harmonic Oscillator Coupled to Infinitely Many Scalar Bosons.  
(to appear in J. Math. Anal. Appl.)

Akihiro TSUCHIYA , <sup>1</sup>Yasuhiko YAMADA , Department of Mathematics, Nagoya University, Nagoya 464,  
Japan,<sup>1</sup>National laboratory for High Energy Physics, Tsukuba, Ibaraki 305, Japan.,  
Conformal Field Theory on Moduli Family of Stable Curves with Gauge Symmetries.

Izumi OJIMA , Research Institute for Mathematical Sciences, Kyoto University, Kyoto, Japan.,  
Entropy Production and Nonequilibrium Stationarity in Quantum Dynamical Systems  
—Physical Meaning of van Hove Limit—

# Stochastic Processes Mathematics and Physics

Nr.	Author	Title
327	B. Apolloni C. Carvalho D. de Falco	Quantum stochastic optimization.
328	S. Albeverio Ph. Blanchard S. Kuosoka L. Streit	An enverse problem for stochastic differential equations.
329	S. Albeverio S. Kuosoka	Maximality of infinite dimensional Dirichlet forms and Høegh-Krohn model of quantum fields.
330	S. Albeverio T. Arede Z. Haba	On left invariant Brownian motions and heat kernel of Nil potent lie group.
331	J. Marion	Materials of an harmonic analysis on sobolev gauge groups.
332	J. Marion	Outline of harmonic analysis on groups of paths with values in a sobolev gauge group.
333	M. Carpio-Bernido Chr. Bernido	An exact solution of a ring-shaped oscillator plus $A (b \sec^2 \theta / 2)$ potential.
334	Chr. Bernido	On the modified Kaulza-Klein Ansatz: Gravity as a de sitter gauge theory.
335	M. Carpio-Bernido A. Inomata	Exact path intergral solution of a class of axially symmetric potentials.
336	G.F. Bolz	Simulation on random graphs of the epidemic dynamics of sexually transmitted diseases - A new model for the epidemiology of AIDS
337	Ph. Blanchard T. Krüger	Spread of AIDS-epidemics: A discrete stochastic model on random graphs I. Stationary analysis for graphs generated by indepent matchings.
338	Ph. Blanchard T. Krüger	Isomorphism between epidemic dynamical processes on random graph with rational transmission probability $\gamma < 1$ and transmission probability one.

Nr.	Author	Title
339	S. Albeverio	Some new developments concerning Dirichlet forms, Markov fields and quantum fields.
340	S. Albeverio R. Høegh-Krohn B. Zegarlinski	Uniqueness and global Markov property of Euclidean fields The case of general polynomial interactions.
341	J. Potthoff	Stochastic integration in Hida's White Noise Calculus.
342	S. Albeverio M. Röckner	Classical Dirichlet forms on topological vector spaces - the construction of the associated diffusion process
343	S. Albeverio R. Høegh-Krohn K. Iwata	Covariant markovian random fields in four space-time dimensions with nonlinear electromagnetic interaction.
344	S. Albeverio R. Høegh-Krohn H. Holden T. Kolsrud	Construction of quantised Higgs-like fields in two dimensions.
345	J. C. Varilly	The Stratonovien-Weyl correspondence: A general approach to Wigner functions.
346	Z. Haba	Current algebra of a non-compact cosed model
347	Z. Haba	Reflection positivity of WZW currents.
348	S. Albeverio R. Figari F. Gesztesy R. Høegh-Krohn H. Holden W. Kirsch	Point interaction Hamiltonians for crystals with random defects
349	S. Albeverio R. Høegh-Krohn H. Holden T. Kolsrud	Construction of quantised Higgs-like fields in two dimensions.

PREPRINTS RECEIVED IN BIELEFELD

C. Alcade\* and Daniel Sternheimer\*\*, Physique-Mathématique, Université de Bourgogne, BP 138, F-21004-Dijon Cedex, France, \*UCLA, Physics Dept. (TEP), Los Angeles, CA 90024 USA, \*\*UA 766 CNRS, Dépt. de Mécanique, Université de Paris 6, 4 Place Jussieu, 75252-Paris Cedex 05, France; (DIJUMP 1/88)

**Analytic Vectors, Anomalies and Star Representations**

G.F. De Angelis, Dipartimento di Matematica, Università di Roma "La Sapienza", Piazzale Aldo Moro, 2, 00185 Roma, Italy; n.8/88

**Stochastic Mechanics of a Relativistic Spinless Particle**

J. Balog\* and M. P. Tuite, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland, \*on leave from Central Research Institute for Physics, Budapest, Hungary; DIAS-STP-88-40

**The Failure of Atkin-Lehner Symmetry for Lattice Compactified Strings**

J. Balog\* and L. O'Raifeartaigh, address see above; DIAS-STP-88-41

**Covariant Light-Cone Algebra**

I.V. Barashenkov, T.L. Boyadjiev, I.V. Puzynin, T. Zhanlav, Joint Institute for Nuclear Research, Head Post Office P.O.Box 79, Dubna, 101000 Moskva, UdSSR, E5-88-547 (submitted to "Physics Letters A" and to the Conference "Mathematical Modelling: Nonlinear Problems and Computational Mathematics", Zvenigorod, November 1988)

**Stability of the Moving Bubbles in the System of Interacting Bosons**

V.P. Belavkin\*, School of Theoretical Physics, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland, \*on leave of absence from M.I.E.M., B. Vusovski Street 3/12, Moscow 109028, UdSSR; DIAS-STP-88-12

**Multiquantum Systems and Point Processes I. Generating functionals and Nonlinear Semigroups**



- J. Bijtebier, Theoretische Fysica, Vrije Universiteit Brussel, Brussels;  
VUB/TF/88/08  
**The Scattering of a Separable Relativistic Bound State by an External  
Perturbative Potential**
- J. Bijtebier, Theoretische Natuurkunde, Vrije Universiteit Brussel, Brussels;  
VUB/TF/88/09  
**Relativistic Two-Body Plus Potential Problem: Compatible Equations and  
Double Bound States Solutions (Spinless Case).**
- M. Boiti\*, J.J.P. Leon\*\*, L. Martina\*, F. Pempinelli\*, \*Dipartimento di Fisica  
dell'Università, and Sezione INFN di Lecce, 73100 Lecce, Italia, \*\*Laboratoire  
de Physique Mathématique, U.S.T.L., 34060 Montpellier Cedex, France; to  
appear in "Nonlinear Evolution Equations: Integrability and Spectral Methods",  
Ed. A. Degasperis, A.P. Fordy - Manchester Univ. Press (1989)), PM/88-40  
**Localized Solitons in the Plane**
- M. Boiti, J.J.P. Leon\*, F. Pempinelli, Dipartimento di Fisica dell'Università, 73100  
Lecce, Italia, \*Laboratoire de Physique Mathématique, U.S.T.L., 34060  
Montpellier cedex, France; PM/88-44  
**Multidimensional Solitons and their Spectral Transforms**
- Ph. Briet<sup>+</sup>, J.M. Combes<sup>+</sup>, P. Duclos<sup>+</sup>, Centre de Physique Théorique, CNRS -  
Luminy, Case 907, F-13288 Marseille Cedex 09, France, <sup>+</sup>et PHYMAT Université  
de Toulon et du Var, F-83130 La Garde, France; to appear in the proceedings  
of the conference on Partial Differential Equations, Holzgau (DDR), April 1988,  
Teubner-Texte zur Mathematik, CPT-88/P. 2133  
**Spectral Stability under Tunneling for Schrödinger Operators**
- D. Buchholz, G. Mack, I. Todorov\*, II. Institut f. Theoretische Physik, Universität  
Hamburg, \*Deutsches Elektronen-Synchrotron DESY, Hamburg and Inst. f.  
Nucl. Research & Nucl. Energy, Bulgarian Acad. Sci., Sofia; DESY 88-126  
**The Current Algebra on the Circle as a Germ of Local Field Theories**

W. Bulla, P. Falkensteiner\*, H. Grosse\*, Institut für Theoretische Physik,  
Technische Universität Graz, \*Institut für Theoretische Physik, Universität  
Wien; UWThPh-1988-31

**On the Calculation of the Berry Phase in a Solvable Model**

Jan A. van Casteren, M. Demuth\*, Dpt. Mathematics and Computer Science,  
University of Antwerp, UIA, Belgium, \*Akademie der Wissenschaften der DDR,  
Karl-Weierstrass Inst. für Mathematik, DDR-1086 Berlin; August 1988 - 88-18,  
Corrected Version

**On Differences of Heat Semigroups**

K. Chadan and M. Musette\*\*, Laboratoire de Physique Théorique et Hautes  
Energies, Université de Paris XI, F-91405 Orsay, France, \*\*on leave of absence  
from T.E.N.A., Vrije Universiteit, Brussel; LPTHE Orsay 88/09

**Inverse Problems in the Coupling Constant for the Schrödinger Equation**

Man-Duen Choi, George A. Elliott\*, Noriko Yui\*\*, Department of Mathematics,  
University of Toronto, \*Department of Mathematics, University of Toronto  
and Mathematics Institute, University of Copenhagen, \*\*Department of Mathe-  
matics, Queen's University of Kingston;

**Gauss polynomials and the Rotation Algebra**

A. Demuth, J.A. van Casteren\*, Akademie der Wissenschaften der DDR, Karl-  
Weierstrass Institut für Mathematik, DDR-1086 Berlin, Mohrenstr. 39, \*Dept.  
of Mathematics and Computer Science, University of Antwerp, UIA, Universi-  
teitsplein 1, Antwerp 2610, Belgium; June 1988 - 88-13, revised version

**On Spectral Theory for Feller Generators**

B.P. Dolan, Dept. 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; DIAS STP 88-35

**A Hamiltonian Formalism for Bosonic Membranes**

M.J. Donald, The Cavendish Laboratory, Madingley Road, Cambridge CB3 0HE, Great  
Britain; May 1988

**Quantum Theory and the Brain**

M.J. Donald, The Cavendish Laboratory, Madingley Road, Cambridge CB3 0HE, Great Britain; November 1988

**Relative Hamiltonians Which Are Not Bounded From Above**

T.C. Dorlas, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland; DIAS-STP-88-42

**The Statistical Mechanics of a Bethe Ansatz-Soluble Model**

T.C. Dorlas, J.T. Lewis, J.V. Pulé\*, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland, \*Dublin Institute for Advanced Studies and Department of Mathematical Physics, University College, Belfield, Dublin 4, Ireland; DIAS-STP-88-39, submitted to Communications in Mathematical Physics  
**The Yang-Yang Thermodynamic Formalism and Large Deviations**

J.-P. Eckmann, C.E. Wayne\*, Département de Physique Théorique, Université de Genève, CH-1211 Geneva 4, Switzerland, \*Department of Mathematics, Pennsylvania State University, University Park, Pa. 16802, USA;

**The Largest Liapunov Exponent for Random Matrices and Directed Polymers in a Random Environment**

V. Enss, Institut für Mathematik I, Freie Universität, Arnimallee 2-6, D-1000 Berlin 33, West Germany; to appear in the Proceedings, Teubner-Texte zur Mathematik, Leipzig, M. Demuth and B.-W. Schulze eds., ca. 1988/89, Preprint Nr. A-1988-20, Aug. 1988

**Two- and Three-Body Quantum Scattering: Completeness Revisited**

H. Figueroa, Escuela de Matemática, Universidad de Costa Rica, San José, Costa Rica;

**Function Algebras under the Twisted Product**

J. Fröhlich, Theoretical Physics, ETH - Hönggerberg, CH-8093 Zürich, Switzerland;

**On the Structure of (Unitary) Rational Conformal Field Theory**

M. Gadella\*, J. M. Gracia-Bondia<sup>†</sup>, L.M. Nieto\*, J.C. Varilly<sup>†</sup>, \*Depto. de Física Teórica, Atómica, Molecular y Nuclear, Universidad de Valladolid, 47011 Valladolid, Spain, <sup>†</sup>Escuela de Matemática, Universidad de Costa Rica, San José, Costa Rica;

**Quadratic Hamiltonians in Phase Space Quantum Mechanics**

A. Gadomski, Z.J. Grzywna, Institut for Physical and Polymer Chemistry, Department of Physical Chemistry Fundamentals, Silesian Technical University, 44-100 Gliwice, Poland;

**Structural Stability Analysis in Continuous DLA Models**

N. Gorman, L. O' Raifeartaigh, W. McGlenn\*, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland, \*University of Notre Dame, Indiana 46556, USA; DIAS-STP-88-43

**Cartan-Preserving automorphisms and the Weyl Group of Kac-Moody Algebras**

H. Grosse, Institut für Theoretische Physik, Universität Wien; UWThPh-1988-32

**The Symmetry of the Hubbard Model**

H. Grosse, L. Pittner\*, Institut für Theoretische Physik, Universität Wien, \*Institut für Theoretische Physik, Universität Graz; UWThPh-1988-33

**On the Superunitary Implementation of Supersymmetry**

J. Hietarinta, Department of Physical Sciences, University of Turku, SF-20500 Turku, Finland; TURKU-FTL-R150

**Recent Results from the Search for Bilinear Equations having Three-Soliton Solutions**

A. Jaffe, A. Lesniewski, Ch. Wiecezkowski, Harvard University, Cambridge, MA 02138, USA; HUTMP 88/B-223, Sept. 1., 1988

**The Spectral Condition on a Cylinder**

A. Jaffe, A. Lesniewski, Ch. Wiecezkowski, Harvard University, Cambridge, MA 02138, USA; HUTMP 88/B-224, Sept. 1, 1988

**Heat Kernel Regularization of Quantum Fields**

- A. Jaffe, A. Lesniewski, Ch. Wieczerkowski, Harvard University, Cambridge, MA 02138, USA; HUTMP B-225, Sept. 1, 1988  
**A Priori Quantum Field Equations**
- L. Jakobczyk, F. Strocchi, SISSA - Scuola Internazionale Superiore Di Studi Avanzati, Trieste, Strada Costiera 11, Italy; 59/87/FM.  
**Euclidean Formulation of Quantum Field Theory without Positivity**
- L. Jakobczyk, F. Strocchi, address see above; 72/87/FM  
**Krein Structures for Wightman and Schwinger Functions**
- M. Jaulent\*, M.A. Manna\*\*, L. Martinez Alonso \*\*\*, \*Lab. de Physique Mathématique, Université des Sciences et Techniques du Languedoc, 34060 Montpellier Cedex, France, \*\*Inst. de Fisica Teórica, Universidade Estadual Paulista, Rua Pamplona 145, 04105 Sao Paulo, Brasil, \*\*\*Dept. de Métodos Matemáticos de la Fisica, Facultad de Ciencias Fisicas, Universidad Complutense, 28040 Madrid, Spain; PM: 88/38  
**A Solvable Hierarchy of (N+1)-Dimensional Nonlinear Evolution Equations with Constraints**
- M. Jaulent, Miguel A. Manna, L. Martinez Alonso, address see above; PM: 88/23  
**Multi-Series Lie Groups and Asymptotic Modules for Characterizing and Solving Integrable Models**
- M. Jaulent, M.A. Manna, L. Martinez Alonso, address see above; PM: 88/19  
**Matrix-Bipolar Asymptotic Modules for Solving (2+1)-Dimensional Nonlinear Evolution Equations with Constraints**
- M. Jaulent, M.A. Manna, L. Martinez Alonso, address see above; PM: 88/50  
**Nonlinear (2+1)-Dimensional Systems Solvable Through Asymptotic Modules**
- G. Karner, Fakultät für Physik, Universität Bielefeld, D-4800 Bielefeld 1, FRG; BI-TP 88/26, to appear in Letters in Mathematical Physics  
**On the Quantum Fermi Accelerator and its Relevance to "Quantum Chaos"**

- B.S. Kay, Robert M. Wald\*, Institute for Theoretical Physics, University of Zurich, CH-8001, Zurich, Switzerland, \*Enrico Fermi Institute and Department of Physics, University of Chicago, Chicago II, 60637, USA;  
**Theorems on the Uniqueness and Thermal Properties of Stationary, Nonsingular, Quasi-free States on Spacetimes with a Bifurcate Killing Horizon**
- B.G. Konopelchenko\*, Dipartimento di Fisica, Università di Lecce, Lecce, Italy, permanent address: \*Institute of Nuclear Physics, Novosibirsk-90, 630090, USSR; Preprint of Lecce University, July, 1988  
**Operator Representation of the Integrable Equations**
- B.G. Konopelchenko, B.T. Matkarimov\*, address see above, \*Novosibirsk State University, Novosibirsk-90, USSR;  
**On the Inverse Scattering Transform for the Ishimori Equation**
- J.J.P. Leon, F. Pempinelli\*, Lab. de Physique Mathématique, U.S.T.L., 34060 Montpellier Cedex, France, \*Dipartimento di Fisica, Università di Lecce and I.N.F.N., 73100 Lecce, Italia; PM/88-39, to appear in "Nonlinear Evolution Equations: Integrability and Spectral Methods", Ed. A. Degasperis, A.P. Fordy, Manchester Univ. Press (1989)  
**Singular General Evolutions in 1+1 and 2+1 Dimensions**
- J.M. Lindsay\*, K.R. Parthasarathy, Indian Statistical Institute (Dehli Centre), 7, S.J.S. Sansanwal Marg, New Dehli - 110016, India, \*Department of Mathematics, King's College, London WC2R2LS, U.K.;  
**Cohomology of Power Sets with Applications in Quantum probability**
- R. Longo, Dipartimento di Matematica, Università di Roma II "Tor Vergata";  
**Inclusions of von Neumann Algebras and Quantum Field Theory**
- R. Longo, Dipartimento di Matematica, Università di Roma, I-00173 Roma, Italy;  
 November 1988  
**Index of Subfactors and Statistics of Quantum Fields**
- J. McConnell, Dublin Inst. for Advanced Studies, Dublin 4, Ireland; DIAS-STP-88-38  
**Erwin Schrödinger Austro-Irish Nobel Laureate**

A. Montorsi, M. Rasetti, A.I. Solomon, Dipartimento di Fisica del Politecnico, 10129 Torino, Italy and Faculty of Mathematics, The Open University, Milton Keynes, U.K.

**Superalgebraic Solution to the Mean-Field Hubbard Model**

G. Morchio, D. Pierotti, F. Strocchi, SISSA - Scuola Internazionale Superiore Di Studi Avanzati, Trieste, Strada Costiera 11, Italy;

**Infrared and Vacuum Structure in Two Dimensional Local Quantum Field Theory Models II. Fermion Bosonization**

G. Morchio, D. Pierotti\*, F. Strocchi\*\*, Dipartimento di Fisica dell'Università, Pisa, Italy, \*International School for Advanced Studies (ISAS), Trieste, Italy, \*\* ISAS and Istituto Nazionale di Fisica Nucleare, Sz. di Trieste, Trieste, Italy; SISSA Ref. 30 EP (mar 88)

**The Schwinger Model Revisited**

G. Morchio and F. Strocchi, SISSA - Scuola Internazionale Superiore di Studi Avanzati, Trieste, Strada Costiera 11, Italy; 81/87/EP.

**Effective Non Symmetric Hamiltonians and Goldstone Boson Spectrum**

H. Narnhofer, Institut für Theoretische Physk, Universität Wien; UWThPh-1988-27  
**Dynamical Entropy in Quantum Theory**

G.M. O'Brien, D.H. Tchrakian\*, School of Theoretical Physics, Dublin Inst. for Advanced Studies, Burlington Road, Dublin 4, Ireland, \*St. Patrick's College, Maynooth, Co. Kildare, Ireland; DIAS-STP 88-20 revised

**Spherically Symmetric SO(4) Instanton of a Non-Abelian Higgs Model in 4-Dimensions**

Y. Ohanjanian\*, J. Shabani\*\*, Université du Burundi, Bujumbura, Burundi, \*Institut Technique Supérieur, \*\*Département de Mathématiques;

**Application du Principe Topologique du Point Fixe de Schauder a Certaines Classes d'Equations Integrales Regulieres et Singulieres**

E.P. Osiov, Department of Theoretical Physics, Institute for Mathematics, 6300 90,  
Novosibirsk, 90, USSR; No. 20 (162), 1988

**The Central Extensions of Kac-Moody-Malcev Algebras**

E.P. Osipov, address see above; No. 22 (164), 1988

**Sugawara's Construction for Kac-Moody-Malcev Algebras**

D. Petz, Instituut voor Theoretische Fysica, Universiteit Leuven, B-3030 Leuven,  
Belgium, on leave of absence from the Mathematical Institute HAS, Budapest;  
Preprint KUL-TF-88/19

**On Certain Properties of the Relative Entropy of States of Operator Algebras**

G.R.W. Quispel, Department of Theoretical Physics, Research School of Physical  
Sciences, The Australian National University, G.P.O. Box 4, Canberra ACT  
2601, Australia;

**Introduction to Conformal Invariance**

G.R.W. Quispel, J.A.G. Roberts\*, Research School of Physical Sciences, The  
Australian National University, Canberra, ACT 2601, Australia, \*Mathematics  
Department, University of Melbourne, Parkville, Vic. 3052, Australia;

**Conservative and Dissipative Behaviour in Reversible Dynamical Systems**

G.R.W. Quispel, J.A.G. Roberts, address see above; to be published in Physics  
Letters A

**Reversible Mappings of the Plane**

A. Ronveaux, Facultes Universitaires N.D. de la Paix Namur, Facultes des Sciences,  
Physique Mathématique, Rue de Bruxelles 61, 5000 Namur, Belgique; Aout 1988

**Differential Equation for the Product of Classical Orthogonal Polynomials**

A. Ronveaux, address see above; Octobre 1988

**Some 4th Order Differential Equations Related to Classical Orthogonal  
Polynomials**



P.C. Sabatier, Laboratoire de Physique Mathématique, U.S.T.L., 34060 Montpellier Cedex, France; PM/87-56 July 1987, to appear in "Nonlinear Evolutions", Ed. J. Léon, World Scientific 1988

**For An Impedance Scattering Theory**

P.C. Sabatier, B. Dolveck-Guilpard, address see above; PM/87-31 June 1987

**On Modelling Discontinuous Media. One-Dimensional Approximations**

L. Smits, University of Antwerp (UIA), Departement Wiskunde & Informatica, Universiteitsplein 1, 2610 Wilrijk, Belgium; November 1988 - 88-29

**Schrödinger Operators as Relatively Compact Perturbations of the Laplacian in  $L^p$**

H. Spohn, Theoretische Physik, Ludwig-Maximilians-Universität, Theresienstr. 37, D-8000 München 2, Germany;

**Scaling Limits for Stochastic Particle Systems**

H. Spohn, address see above;

**Stretched Exponential Decay in a Kinetic Ising Model with Dynamical Constraint**

H. Spohn, Department of Physics, University of California, Santa Barbara, CA 93106, USA, permanent address see above;

**Ground State(s) of the Spin-Boson Hamiltonian**

O. Steinmann, Fakultät für Physik, Universität Bielefeld, D-4800 Bielefeld 1, FRG;

**Physical States in Gauge Theories**

F. Strocchi, SISSA - Scuola Internazionale Superiore di Studi Avanzati, Trieste, Strada Costiera 11, Italy; 101/87/EP.

**Long Range Dynamics and Spontaneous Symmetry Breaking in Many-Body Systems**

F. Strocchi, address see above; 34/87/FM

**Stability Properties of Non-Linear Field Equations. Hilbert Space Sectors and Electric Charge.**

F. Strocchi, address see above; Ref. SISSA 114 EP, March 87

**Non-Perturbative Approach to the Infrared Problem and Confinement. Breaking of the Poincare' Group**

J.C. Várilly, J.M. Gracia-Bondia, Escuela de Matemática, Universidad de Costa Rica, San José, Costa Rica to appear in *Anal. of Physics*

**The Moyal Representation for Spin**

R.F. Werner, Dublin Institut for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland; DIAS-STP-88-48, Nov. 21, 1988

**An Application of Bell's Inequalities to a Quantum State Extension Problem**

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*April 1989*

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BIELEFELD ENCOUNTERS IN MATHEMATICS AND PHYSICS VI

**WHITE NOISE ANALYSIS**

Mathematics and Applications

at the

Center for Interdisciplinary Research

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July 9 - 15

Among the topics there will be:

Abstract Wiener Spaces - Dirichlet Forms - Feynman Integral - Infinite Dimensional Rotation Group - Mathematical Biology - Nonlinear Filtering - Quantum Fields - Quantum Stochastic Processes - Stochastic Analysis - Stochastic Field Theory - Stochastic Interacting Particle Systems - Stochastic Mechanics - Stochastic Partial Differential Equations - White Noise Analysis

Preliminary List of Speakers:

S. Albeverio (Bochum), G. Ben Arous (Paris), E. Carlen (Princeton), P.L. Chow (Detroit), D. Dawson (Ottawa), D. de Falco (Milano), M. de Faria (Braga), H. Föllmer (Bonn), M. Fukushima (Osaka), L. Gross (Ithaca), M. Hazewinkel (Amsterdam), T. Hida (Nagoya), K. Itô (Kyoto), G. Kallianpur (Chapel-Hill), D.C. Khandekar (Bombay), P. Krée (Paris), I. Kubo (Hiroshima), H.-H. Kuo (Baton Rouge), S. Kusuoka (Kyoto), R. Leandre (Strasbourg), Y.J. Lee (Tainan), P.A. Meyer (Strasbourg), D. Nualart (Barcelona), D. Ocone (New Brunswick), F. Oosawa (Nagoya), P. Protter (West Lafayette), M. Redfern (Hattiesburg), L. Ricciardi (Napoli), M. Röckner (Edinburgh), K. Sato (Nagoya), N.R. Shieh (Taipei), W. Smolenski (Warsaw), A.S. Ustunel (Paris), J.A. Yan (Beijing), Y. Yokoi (Kumamoto)

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Participation is free and welcome. The Center for Interdisciplinary Research regrets that no financial support can be offered.

Contact:

At ZIF Ms. M. Hoffmann, ZIF - University of Bielefeld, D-4800 Bielefeld 1, Tel.: (521) 106-2768

At BiBoS J. Potthoff, BiBoS - University of Bielefeld, D-4800 Bielefeld 1, Tel.: (521) 106-6194,  
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# **DISSIPATIVE STRUCTURES IN TRANSPORT PROCESSES AND COMBUSTION**

**Bielefeld University, FRG  
17 - 21 July, 1989**

**TOPICS**

**Transition to Turbulence  
Fully Developed Turbulence  
Bifurcation Processes  
Dissipative Structures  
Convective Instabilities**

**Fundamentals of Combustion  
Turbulent Combustion  
Reduced Mechanisms  
Sensitivity Analysis**

**Oscillating Reactions  
Temporal Structures  
The Homogeneous Chemical Reactor (CSTR)  
Deterministic Chaos  
Cellular Automata  
Wave Processes in Excitable Media**

**General Dynamics of 1-dim. Fronts  
Instabilities and Pattern Formation in Flames  
Turbulence in Flames  
Flame Initiation and Extinction**

**PRINCIPAL SPEAKERS**

**S. Grossmann (Marburg)  
H. Haken / M. Bestehorn (Stuttgart)**

**K.N.C. Bray (Cambridge)  
N. Peters (Aachen)  
J. Warnatz (Stuttgart)**

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M. Markus (Dortmund)**

**G.I. Sivashinsky (Tel Aviv)  
P. Clavin (Marseille)  
G. Joulin (Poitiers)**

**The main lectures will be followed by discussion and shorter contributions. Facilities for presenting posters will be provided.**

**The number of posters and shorter contributions will be limited. Applicants wishing to present a contribution are invited to submit an abstract of some 200 words together with their registration.**

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## ANNOUNCEMENT

Symposium of the Göttingen Academy of Sciences

Date: August 28 - September 2, 1989

Title: New Problems of Quantum Field Theory

Location: Institut für Theoretische Physik  
der Universität Göttingen  
Bunsenstraße 9, 3400 Göttingen

Organizers: D. Buchholz, Hamburg  
J. Yngvason, Reykjavik  
H.J. Borchers, Göttingen

Contact: Prof. H.J. Borchers  
Institut für Theoretische Physik  
Bunsenstraße 9, 3400 Göttingen

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**TOPICS: \* GEOMETRIC QUANTIZATION \* SEMICLASSICAL LIMIT \***  
**STOCHASTIC METHODS IN QUANTUM MECHANICS \***  
**SCHRODINGER OPERATORS ON RIEMANNIAN MANIFOLDS \***  
**STABILITY OF MATTER AND STRUCTURE OF MATTER IN BULK \***  
**PERTURBATION BY ELECTRIC AND MAGNETIC FIELDS \***  
**RANDOM POTENTIALS \* SUPERSYMMETRIC QUANTUM MECHANICS**  
**\* SPECTRAL ANALYSIS AND SCATTERING THEORY FOR N-BODY**  
**HAMILTONIANS \***

**INVITED LECTURERS that have so far tentatively accepted:**

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<b>J.Bellisard - Luminy</b>	<b>G.Nenciu - Bucharest</b>
<b>F.Bentosela - Luminy</b>	<b>R.Seiler - Berlin</b>
<b>Anne Boutet de Monvel - Paris</b>	<b>I.M.Sigal - Toronto</b>
<b>L.Boutet de Monvel - Paris</b>	<b>J.Sjostrand - Paris</b>
<b>P.Cartier - Paris</b>	<b>B.Thaller - Graz</b>
<b>J.M.Combes - Toulon</b>	<b>A.Truman - Swansea</b>
<b>R.Froese - Vancouver</b>	<b>D.Yafaev - Leningrad</b>
<b>V.Georgescu - Bucharest</b>	<b>K.Yajima - Tokyo</b>
<b>H.Grosse - Vienna</b>	

**For further information please contact:**

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State University of New York at Stony Brook  
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**Functions of Markov Processes and Algebraic Measures**
- G. Felder<sup>1</sup>, J. Fröhlich, G. Keller, Theoretical Physics, ETH - Hönggerberg, CH-8093 Zürich, <sup>1</sup>The Institute for Advanced Study, Princeton, New Jersey 08540  
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September 1989

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28 June 1989

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As you may know, it is the policy of the Institute to offer reduced-rate subscriptions for its own journals to individual members of Affiliated Societies. This offer is limited to one subscription per person to each journal. The following is a list of Institute-owned journals, showing the member rates for 1990 which are available to individuals who are members of your Society, and, for your reference, the non-member rates.

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<i>Applied Physics Letters</i>	\$ 70.00	\$ 585.00	\$115.00	\$ 630.00
<i>Computers in Physics</i>	25.00	135.00	35.00	145.00
<i>Journal of Applied Physics</i>	115.00	950.00	165.00	1000.00
<i>The Journal of Chemical Physics</i>	135.00	1460.00	210.00	1535.00
<i>Journal of Mathematical Physics</i>	60.00	875.00	75.00	890.00
<i>Journal of Physical and Chemical Reference Data*</i>	70.00	325.00	85.00	340.00
<i>Physics of Fluids-A</i>	45.00	--	65.00	--
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<i>Physics of Fluids - Both</i>	75.00	830.00	115.00	870.00
<i>Physics Today</i>	30.00	85.00	45.00	100.00
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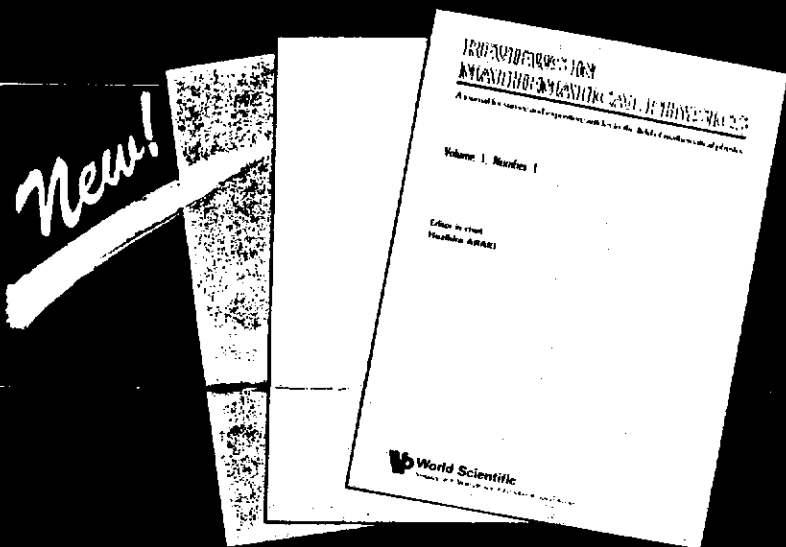
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# REVIEWS IN MATHEMATICAL PHYSICS



## AIMS AND SCOPE

REVIEWS IN MATHEMATICAL PHYSICS will fill the need for a review journal in the field. The review papers - introductory and survey papers - will be of interest not only to mathematical physicists but also to mathematicians and theoretical physicists interested in interdisciplinary topics. The topics that will be covered by this journal will include, among others, gauge fields, quantum field theory, statistical mechanics, dynamical systems, functional analysis, and interactions between theoretical physics and pure mathematics. The first issue of this quarterly journal will be published in August 1989.

## CALL FOR PAPERS

Manuscripts should be submitted in duplicate to the Chief Editor or any one of the Editors & Associate Editors.

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Singapore Office: World Scientific Publishing Co. (Pte.) Ltd., Farrer Road, P.O. Box 103, Singapore 9128. Telefax: 2737238. Tel: 2768125.

## SOME PAPERS

Bound States Between Two Particles in a Two or Three Dimensional Infinite Lattice with Attractive Kronecker  $\delta$ -function Interaction (S. J. Dong & C. N. Yang)

Regularization of General Multi-Dimensional Epstein Zeta-Functions (E. Elizalde & A. Romeo)

Equivalent Norm Inequalities to Lower-Heinz Theorem (T. F. H. Chung)

Jacobi Matrices with Random Potentials Taking Finitely Many Values (S. Kwapień)

Geometry of Universal Grassmann Manifold from Algebraic Point of View (K. Takasaki)

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# INVERSE PROBLEMS

Multicentennials Meeting

MONTPELLIER 1989

November 27th - December 1st

The annual "RCP 264" meeting is devoted to interdisciplinary aspects of inverse problems and their relations to modelling, signal processing, measurements design, inverse methods, and their applications to nonlinear evolution equations, in physics and related sciences. The 1989 meeting will be in honour of two major centennials: Foundation of Montpellier University 1289 and French Revolution 1789. Several lecturers have already accepted to review to their own work on inverse problems or inverse methods:

Professors M. BERTERO, W.-M. BOERNER, F. CALOGERO, G. CHAVENT, B. DeFACIO, A. DEGASPERIS, A. DE HOOP, Ch. De MOL, A. GRUNBAUM, J.-C. GUILLOT, A.K. LOUIS, J. McLAUGHLIN, F. NATTERER, R. NEWTON, E.R. PIKE, A.G. TIJHUIS, V.H. WESTON.

Organizer: P.C. SABATIER

Information: Laboratoire de Physique Mathématique - U.S.T.L. - 34060 Montpellier  
Cedex 01 (FRANCE)

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67.14.35.67

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# r.c.p. 264

November 27th - December 1st, Montpellier (FRANCE)

## rencontre interdisciplinaire problèmes inverses <sup>(\*\*)</sup>

(\*\*) partially sponsored by GDR

Dear colleagues,

The 1989 meeting of R.C.P.264 on interdisciplinary aspects of Inverse Problems will be held in Montpellier from Monday, November 27th to Friday, December 1st.

In this particular issue of a well-known Workshop, we expect a hundred of participants. The usual topics on inverse problems of electromagnetism, quantum mechanics, internal & external geophysics, acoustics, etc... those related with the control of partial differential equations, the inverse methods & its applications to nonlinear partial differential equations, solitons & related topics will be represented & any related topic will be welcome, in particular nonlinear excitations & nonlinear signal processing. A number of well-known contributors in the field will review their own work. A preliminary list is given in the poster here enclosed.

Proceedings will be published. They should be prepared to be given to the organizer during the Workshop. Technical instructions will be sent to you in due time. In any case the deadline will be December 31st, 1989.

With my best regards,

Professor P.C. SABATIER

P.S. If you plan to come, give as soon as possible to "R.C.P.264, Laboratoire de Physique Mathématique, U.S.T.L., 34080 Montpellier Cedex 01 (FRANCE)", the title of your lecture and the time you wish.

Latest news! Professors A. DAVIES, A. FORDY, J. JP. LEON and W. TABBARA will lecture too.

1203  
1789  
1989

# r.c.p. 264

MONTPELLIER (FRANCE) — November 27th-December 1st, 1989

## rencontre interdisciplinaire problèmes inverses

### REGISTRATION FORM

Applications should be sent as soon as possible to the address indicated below and should contain complete Email addresses (BITNET). Those who are interested in receiving further information on the Meeting are kindly requested to complete the questionnaire and return it by September 15th, 1989.

SURNAME: \_\_\_\_\_ First name: \_\_\_\_\_  
 Institutional affiliation: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Mailing address (if different from above): \_\_\_\_\_  
 Telephone: \_\_\_\_\_ Telex: \_\_\_\_\_  
 T'fax: \_\_\_\_\_ Email: \_\_\_\_\_

I am interested in the R.C.P.264 Meeting, to be held in Montpellier, Nov.27th-Dec.1st, 1989. I will participate and I am interested in presenting a : 1) SURVEY LECTURE  
 title: .....  
 time required: .....  
 2) CONTRIBUTION  
 title: .....  
 time required: .....  
 and I wish to receive further information.  
 I am interested in the R.C.P.264 Meeting, and I wish to receive further information.  
 I am not interested in the R.C.P.264 Meeting and I do not wish to receive further information.

This year, there will be a CONFERENCE REGISTRATION FEE of 300FF or US \$50

We look forward to seeing you in Montpellier in Nov.-Dec.!



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**MODERN QUANTUM FIELD THEORY**

**Bombay, India, January 8-14, 1990**

**First Announcement**

**TOPICS:**

- **Conformal Field Theory**
- **String Theory**
- **Random Surfaces**
- **Topological Properties of QFT**
- **The Cosmological Constant Problem**

**INVITED SPEAKERS INCLUDE:**

<b>I. Affleck</b> ( <i>Vancouver</i> )	<b>A. Jevicki</b> ( <i>Brown</i> )	<b>R. Rajaraman</b> ( <i>Bangalore</i> )
<b>F. Ardalan</b> ( <i>Tehran</i> )	<b>M. Jimbo</b> ( <i>Kyoto</i> )	<b>S.G. Rajeev</b> ( <i>Rochester</i> )
<b>B. Baaquie</b> ( <i>Singapore</i> )	<b>V. Kac</b> ( <i>MIT</i> )	<b>S. Randjbar-Daemi</b> ( <i>ICTP</i> )
<b>G. Baskaran</b> ( <i>Madras</i> )	<b>J. Maharana</b> ( <i>Bhubaneswar</i> )	<b>B. Sathiapalan</b> ( <i>UCLA</i> )
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<b>D. Gross</b> ( <i>Princeton</i> )	<b>K.S. Narain</b> ( <i>CERN/ICTP</i> )	<b>S. Wadia</b> ( <i>TIFR</i> )
<b>N.D. Hari Dass</b> ( <i>Madras</i> )	<b>V. Pasquier</b> ( <i>Saclay</i> )	<b>F. Wilczek</b> ( <i>Princeton</i> )

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**Participation by invitation only.**

For further information, contact  
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NATO Advanced Study Institute

LARGE - SCALE MOLECULAR SYSTEMS: QUANTUM  
AND STOCHASTIC ASPECTS. BEYOND THE SIMPLE  
MOLECULAR PICTURE

Acquafredda di Maratea / Italy

25 March - 7 April 1990

TOPICS

*Dynamics of polymers:* Reptation, relaxation dynamics, energy transfer

*Growth phenomena and reactions in disordered media:* Aggregation models, irreversible dynamics and transport processes, localization problems

*Quantum and classical aspects of large systems:* Macroscopic quantum phenomena, coupling of molecules to their environment, general quantum-statistical theory.

**Lecturers:** G. Jannink (CEN Saclay), J. Klafter (Univ. Tel Aviv), M. Kolb (Ecole Polytechnique, Palaiseau), A. MacKinnon (Imperial College, London), J. Noolandi (Xerox, Canada), P. Pfeifer (Univ. Missouri), P. Reineker (Univ. Ulm), A. Rieckers (Univ. Tübingen), G.L. Sewell (Queen Mary College, London), J.L. Skinner (Columbia Univ., N.Y.), A. Amann (ETH-Zürich), W. Gans (FU Berlin), R. Silbey (MIT), A. Blumen (Univ. Bayreuth).

**Organizing Committee:** A. Blumen (Director), A. Amann, W. Gans, R. Silbey.

Acquafredda di Maratea (Hotel Villa del Mare) is situated in the region of Basilicata, south of Naples, on the Golfo di Policastro.

The School will be open to 60 participants approximately. Application forms should reach us before **November 15<sup>th</sup>, 1989**, with a letter of recommendation. Participants are expected to cover their own travel expenses. A number of grants for living expenses may be awarded (see application form). Living expenses are Lit 69,000.- (double) or Lit. 85,000.- (single room) full board per day.

**Application forms may be obtained from / should be sent to:** Dr. Werner Gans, Freie Universität Berlin, Institut für Physikalische Chemie, Takustrasse 3, D-1000 Berlin 33, FRG. Telefax: (49) 30 8326561. Electronic Mail: GANS@KRISTALL.CHEMIE.FU-BERLIN.DBP.DE

**Application form (NATO ASI "Large Scale Molecular Systems"):**

Name: ..... First Name: .....  
Nationality: ..... Sex: ..... Date of birth: .....  
Address: .....  
.....  
Telephone: ..... Electronic mail: .....  
Number of persons accompanying you: .... University level: .....  
Research interests:.....  
Letter of recommendation from: .....  
.....  
Preferred accommodation:  enclosed  sent separately  
 single room (limited)  double room  
Preferred partner in a double room: .....  
The deposit is DM 200 (or for USA / Canada, US \$ 100; the deposit is refunded to non-accepted participants):  
 Cheque on DM 200 is enclosed (payable to W. Gans / NATO ASI)  
 The amount of DM 200 is transferred to the account 8102 8857 80  
(W. Gans / NATO ), Berliner Bank (Berlin), Bank Code 100 200 00  
Will your institute / own grant pay for your travel:  yes  no  
Will your institute / own grant pay for your stay:  yes  no  
Request for ASI-grant enclosed:  yes  no  
I want to present a poster / seminar:  yes  no  
Title: .....  
Date: ..... Signature: .....

**General Information**

The ASI will be held in the Hotel "Villa del Mare", Acquafredda di Maratea, situated in the south of Naples on the coast of the Tyrrhenian Sea , starting on March 25<sup>th</sup>, 1990, in the evening. Date of departure is April 7<sup>th</sup>, 1990. Participants are expected to stay for the entire period of the ASI.

*Prices* : Lire 69,000 per day (double room), Lire 85,000 per day (single room) for full board including the use of hotel facilities (approximately US \$ 50.- and 62.-, resp.). *Partial Funding* for living expenses is possible for participants *from NATO countries* .

Participants are encouraged to contribute with results of their own research. *Posters* and a limited number of *seminars* in connection with the topics of the School can be presented. The Proceedings of the ASI will be published by Plenum Press, participants are entitled to receive a free copy.

Please note that there will be *no health or accident insurance* provided by NATO or the Organizers; such an insurance is an individual responsibility.

Acquafredda di Maratea can be reached by train (use the station Sapri, where the Hotel bus will pick you up). The nearest international airport is *Naples*. It takes about two hours by train from Naples to Sapri.

# RIGOROUS RESULTS IN QUANTUM DYNAMICS

a conference on mathematical physics

Liblice Castle, Czechoslovakia, June 11-15, 1990

---

The following topics will be discussed

- solvable models in non-relativistic and relativistic quantum mechanics
- scattering theory, resonances
- spectral properties of quantum Hamiltonians
- quantum mechanics on graphs and surfaces, quantum waveguides
- geometrical aspects of quantum dynamics
- perturbation expansions and asymptotic series
- inverse problems
- time-dependent Hamiltonians, quantum chaos

The list of invited lectures includes, in particular

- S.Albeverio (Bochum) : Quantum theory and diffusions - asymptotics, inverse problems, geometry
- E.Balslev (Charlottesville) : Resonances of two-body Schroedinger operators
- J.Bellissard (Marseille) : to be specified
- M.S.Birman (Leningrad) : Schroedinger operator : discrete spectrum in gaps
- R.K.Bullough (Manchester) : Quantum and classical statistical mechanics of integrable models
- J.-M.Combes (Toulon) : Dynamical behaviour of some multi-well Schroedinger operators
- A.Jensen (Aalborg) : Commutator method applied to Schroedinger operators
- V.P.Maslov (Moscow) : to be specified
- B.S.Pavlov (Leningrad) : Waveguide effects in many-body lattice problems
- L.A.Pastur (Kharkov) : to be specified

The conference is organized by

Nuclear Physics Institute, Czechoslovak Academy of Sciences, Řež  
near Prague

in collaboration with

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Faculty of Nuclear Science and Physical Engineering, Czech  
Technical University, Prague

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	L. Hlavatý	

Postal addresses : J. Dittrich, Nuclear Physics Institute, Czechoslovak Academy of Sciences, 25068 Řež near Prague, Czechoslovakia  
phone (42-2) 849951/Ext. 2452  
telex 122626 uju rez

P. Exner, Laboratory of Theoretical Physics, Joint Institute for Nuclear Research, 141980 Dubna, USSR  
phone (7-221) 63242  
telex 412621 dubna su

The conference will take place at the Liblice Castle, some 40 km north to Prague. Transport from Prague for the participants will be organized on Sunday, June 10. The capacity of the castle is limited, but there is also a possibility of hotel accommodation in the nearby town of Mělník with a shuttle transport to the conference site.

The participants will be requested to pay *conference fee* of \$180 which covers the board and lodging expenses. The fee for an accompanying person is \$140.

The participants who want to spend some time before or after the conference in Prague should be warned that a great sporting event is scheduled for that time so that hotel reservation might not be easy ; we recommend you to consult your travel agency well in advance.

**DEADLINE FOR APPLICATIONS : March 31, 1990**

# NSF/CBMS REGIONAL CONFERENCE

on

## WAVELETS

University of Lowell, Massachusetts

June 11 – 15, 1990

Principal Lecturer: **Dr. Ingrid Daubechies**  
of AT&T Bell Laboratories

Dr. Daubechies will present a series of 10 lectures on *Wavelets and their applications in mathematics, physics, and engineering.*

Additional speakers to be announced. A limited amount of support for travel and subsistence is expected to be available.\*

For further information contact:

Prof. M. B. Ruskai  
Department of Mathematics  
University of Lowell  
Lowell, MA 01854

508-452-5000 x2520

[ruskaim@elm.ulowell.edu](mailto:ruskaim@elm.ulowell.edu)

\* This is a preliminary announcement, contingent upon funding by NSF.

## CONFERENCE ANNOUNCEMENT

Date: June 20-23, 1990

Title: Dynamics Days Düsseldorf, 11th workshop

Location: Düsseldorf, FRG

Contact: G. Eilenberger

*IFF, KFA Jülich*

*Postfach 1913*

*D-5170 Jülich 1, FRG*

*Tel.: (+49) 2461-61 4073*

*Telex: 833556-0 kf d*

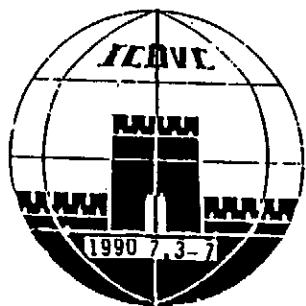
*Bitnet: IFF054 at DJUKFA11*

Deadline: Application + Abstracts: April 30, 1990

Language: English

Conference Fee: 50,- DM

INTERNATIONAL CONFERENCE  
ON DYNAMICS  
VIBRATION AND CONTROL



July, 3-7, 1990  
Beijing, China

Sponsored by

The Chinese Society of Theoretical  
and Applied Mechanics

The American Astronautical Society

Organized by

The Chinese Society of Theoretical  
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In Cooperation with

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China International Conference  
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Zhu Zhaoxuan (CHINA)  
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#### IMPORTANT ANNOUNCEMENT

The first circular has received positive response from many countries, including Belgium, Canada, France, FRG, Japan, Netherland, PRC, UK, USA, USSR, etc., meanwhile a lot of scientists, professors and engineers in Dynamics, Vibration & Control can not attend this conference because there will be the same kinds of conferences on Mechanics in Europe and in Beijing dated just on the same date as this conference 1989 although they want to Beijing on this conference and some of them address the possibility of changing the date of the conference.

Considering these requests the Steering Committee decided to postpone the conference to July 3-7, 1990.

The final date for receipt of abstracts will be postponed to November 30, 1989. Notification of acceptance will be forwarded to authors by December 31, 1989.

The date for receipt of manuscripts for publication will be postponed to February 15, 1990.

All papers whose abstracts have been reviewed and accepted for presentation are still valid and their authors will be invited to attend this conference.

#### FURTHER CALL FOR PAPERS

The International Conference on Dynamics, Vibration and Control sponsored by the Chinese Society of Theoretical and Applied Mechanics (CSTAM) and the American Astronautical (AAS) will be held on July 3-7, 1990 in Beijing. The purpose of the conference is to provide an opportunity for scientists and engineers in Dynamics, Vibration and Control from various parts of the world to meet one another and to exchange recent advances in various branches of interest. We believe the setting of the conference and the post-conference tours will further enhance the academic and friendly atmosphere of the conference.

Contributions are still welcome in all areas stated in the first circular, i.e.,

1. Dynamics and Control
2. Vibration Theory and Applications
3. Stability of Motion, Bifurcations and Chaos
4. Analytical Mechanics
5. Structural Mechanics
6. Modeling of Structures
7. System Identification
8. Spacecraft Dynamics and Control
9. Robotics
10. Multi-Body System Dynamics
11. Computational Techniques
12. Experimental Techniques
13. Others

#### PARTICIPATION

Please submit an abstract of 500-1000 words of the paper by November 30, 1989.

Notification of acceptance or non-acceptance will be forwarded to authors by December 31, 1989.

If the abstracts are selected, the author will be asked to submit the paper manuscripts for publication in the Conference Proceeding by February 15, 1990. Authors will be provided instructions for the preparation of the manuscript.

#### COLLECTION OF ABSTRACTS

For the convenience of applicants form outside China, the 500-1000



words abstracts can be sent to one of the following representatives:

- Prof. Wei, Jinduo  
The Chinese Society of Theoretical and Applied Mechanics, No.15 Zhong Guancun Street, Beijing, China  
Tel: 284107 Telex: 222554 MEHAS CN
- Prof. L.Meirovitch  
Dept. of Engineering Science and Mechanics  
Virginia Polytechnic Institute and State University  
BlackBurg, Virginia 24061 USA.
- Prof. W.Schiehlen  
Institut B für Mechanik  
Pfaffenwaldring 9. 7000 Stuttgart 80  
West Germany
- Prof. Taro Shimogo  
Keio University  
Yokohama, Japan

Meanwhile please send a simple letter to inform Wei, Jinduo so that the necessary information about the conference will be sent to authors.

#### INVITED LECTURES

A number of invited lectures will be delivered at the conference by well-known scientists, such as professors T.R.Kane, L.Meirovitch, F.Pfeiffer, V.V. Rumjantsev, W.Schiehlen,

Taro Shimogo, Zhaolin, Wang and others.

#### SIGHT-SEEING TOURS

Post-conference tours will be arranged and announced in detail in next circular.

#### LANGUAGE

English is the language used at the conference.

#### IMPORTANT DATES

- Returning the Application Form before September 30, 1989.
- Final date for receipt of Abstracts November 30, 1989.
- Notice of Acceptance and non-acceptance December 31, 1989.
- Final date for receipt of Manuscripts February 15, 1990.

Application Form  
INTERNATIONAL CONFERENCE ON DYNAMICS, VIBRATION AND CONTROL  
Beijing, China July 3-7, 1990

Name: (First name) \_\_\_\_\_  
(Title) \_\_\_\_\_

(Middle name) \_\_\_\_\_

(Last name) \_\_\_\_\_

Mailing address: \_\_\_\_\_

I would like to attend the conference Yes No

I intend to present a paper Yes No

If yes, provisional title: \_\_\_\_\_

I intend to attend the post-conference optional travel Yes No

For counting the number of applicants and sending your further information, be sure of returning this card before September 30, 1989 to

Prof. Wei, Jinduo

The Chinese Society of Theoretical and Applied Mechanics,

No. 15, street Zhong Guancun, Beijing China Tel: 284107, Telex: 222554 MEHAS CN

Please return the card before September 30, 1989

DUBLIN 2  
Institute for  
advanced  
studies

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

Telephone 680748. Telegrams: DIAS DUBLIN. Telex 31687 DIAS EI. AIRMAIL (Dialcom) 74: EIM252

353-1-

(or 265871 (uk) ref EIM252)

DOCUMENT LIST 33: Jan.-July 1989

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-89-01: M. van den BERG, T.C. DORLAS, J.T. LEWIS, & J.V. PULÉ: A perturbed mean field model of an interacting boson gas and the large deviation principle.
- 02: N. GORMAN, L. O'RAIFEARTAIGH, & W. McGLINN: Cartan-preserving automorphisms of twisted and untwisted Kac-Moody algebras.
- 03: D.M. HEFFERNAN, J. O'GORMAN, B.J. HAWDON & J. HEGARTY: Feedback induced instabilities in external cavity injection lasers. *To appear in Electronics Lett.*
- 04: D.M. HEFFERNAN, J. O'GORMAN, B.J. HAWDON, & J. HEGARTY: Frequency locking and quasiperiodicity in a modulated external cavity injection laser. *To appear in J. appl. Phys.*
- 05: J.R. McCONNELL: The Poley absorption problem.
- 07: M. van den BERG, T.C. DORLAS, J.T. LEWIS, & J.V. PULÉ: The pressure in the Huang-Yang-Luttinger model of an interacting boson gas.
- 08: B.P. DOLAN: Explicit evaluation of the BRST operator for Ashtekar's chiral gravity.
- 09: G.A. RAGGIO & R.F. WERNER: Minimizing the relative entropy in a face.
- 10: G.A. RAGGIO & R.F. WERNER: The Gibbs variational principle for general BCS-type models. *To appear in Europhys. Lett.*
- 11: R.F. WERNER: Quantum states with EPR-correlations admitting a hidden-variable model.
- 12: R.F. WERNER: Dilations of symmetric operators shifted by a unitary group.
- 13: N. GORMAN, L. O'RAIFEARTAIGH, & W. McGLINN: A streamlined highest weight derivation of the bilinear Virasoro centre.
- 14: L.G. FÉHER, P.A. HORVÁTHY, & L. O'RAIFEARTAIGH: Applications of chiral supersymmetry for spin fields in self-dual backgrounds. *To appear in Inter. J. mod. Phys. A.*
- 15: E. BUFFET & J.V. PULÉ: On Lushnikov's model of gelation.
- 16: B. DOLAN: The generating function for Ashtekar's canonical transformation in the presence of torsion.
- 17: P. FORGÁCS, A. WIPP, J. BALOG, L. FÉHER, & L. O'RAIFEARTAIGH: Liouville and Toda theories as conformally reduced WZNW theories. *To appear in Phys. Lett. B.*
- 18: A.A. TSEYTLIN: On the renormalization group approach to string equations of motion.
- 19: R.F. WERNER: Remarks on a quantum state extension problem.
- 20: L. FÉHER, P.A. HORVÁTHY, & L. O'RAIFEARTAIGH: Separating the dyon system. *To appear in Phys. Rev. D.*
- 21: B. DOLAN: The extension of chiral gravity to  $SL(2, C)$ .
- 22: M. FANNES, B. NACHTERGAELE, & R.F. WERNER: Exact antiferromagnetic ground states of quantum spin chains.
- 23: G. RAGGIO & R.F. WERNER: The Gibbs variational principle for inhomogeneous mean-field systems.

PREPRINTS (RECEIVED IN DUBNA)

- J.Blank (Nuclear Centre, Charles University, V Holešovičkách 2, 18000 Praha, Czechoslovakia), M.Havlíček (Department of Mathematics, Czech Technical University, Trojanova 13, 12000 Praha, Czechoslovakia) ;  
 THE TENSOR PRODUCT OF DIRAC SINGLETONS CAN BE EXTENDED TO A REPRESENTATION OF THE CONFORMAL SYMMETRY USING THE SUPERALGEBRA  $osp(1,4)$
- P.M.Bleher, N.M.Zueva (Institute of Applied Mathematics, Miusskaya Sq.4, Moscow A-47, USSR) ;  
 NUMERICAL MODELLING OF MAGNETIC ISLANDS STOCHASTIZATION (in Russian)
- P.M.Bleher, N.M.Zueva, M.S.Mikhailova (the same address as above) ;  
 MATHEMATICAL MODELLING OF NONLINEAR INTERACTION OF MAGNETIC ISLAND CHAINS (in Russian)
- P.M.Bleher, N.M.Zueva, M.S.Mikhailova (the same address as above) ;  
 NUMERICAL MODELLING OF MAGNETIC ISLANDS BIFURCATIONS (in Russian)
- P.Exner (Laboratory of Theoretical Physics, JINR, 141980 Dubna, USSR)  
 A MODEL OF RESONANCE SCATTERING ON CURVED QUANTUM WIRES
- B.G.Konopelchenko (C.E.N.Saclay, Service de Physique Theorique, 91191 Gif-sur-Yvette Cedex, France), B.T.Matkarimov (Novosibirsk State University, 630090 Novosibirsk, USSR) ;  
 INVERSE SPECTRAL TRANSFORM FOR THE ISHIMORI EQUATION. I. INITIAL VALUE PROBLEM
- B.G.Konopelchenko (Dipartimento di Fisica, Universita di Lecce, Lecce, Italy, and Institute of Nuclear Physics, 630090 Novosibirsk, USSR) ;  
 OPERATOR REPRESENTATION OF THE INTEGRABLE EQUATIONS
- Yu.A.Kuperin (Istituto Nazionale di Fisica Nucleare, Sezione Sannita, viale regina Elena 299, 00161 Rome, Italy), K.A.Makarov, E.A.Yarevsky (Institute of Physics, Leningrad State University, 198904 Leningrad, USSR) ;  
 $U(1)$ -CURRENTS INVARIANCE AND THE EXTENSIONS THEORY
- A.Moroz (Institute of Physics, Czechoslovak Academy of Sciences, Na Slovance 2, 18040 Prague 8, Czechoslovakia) ;  
 NOVEL SUMMABILITY METHODS GENERALIZING THE BOREL ONE. I. REGULAR CASE
- E.P.Osipov (Department of Theoretical Physics, Institute for Mathematics, 630090 Novosibirsk, USSR) ;  
 ALGEBRAS OF KAC-MOODY-MALCEV TYPE ON GENUS  $g$  RIEMANN SURFACES
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 GREEN'S FUNCTION FOR THE TWO-SOLENOID AHARONOV-BOHM EFFECT

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 ON LAX EQUATIONS WITH A SELF-CONSISTENT SOURCE (in Russian)
- A.Moroz (Institute of Physics, Czech.Acad.Sci., Na Slovance 2, 18040 Prague, Czechoslovakia) ;  
 STRING ASYMPTOTIC CONDITION FOR HORN-SHAPED REGIONS
- S.I.Vinitsky, V.M.Dubovik, B.L.Markovsky (Laboratory of Theoretical Physics, JINR, 141980 Dubna, USSR), V.L.Derbov (Saratov State University, Saratov, USSR), Yu.P.Stepanovsky (Institute of Physics and Technics, Ukrainian Academy of Sciences, Kharkov, USSR) ;  
 VLADIMIRSKY-BERRY TOPOLOGICAL PHASE IN OPTICAL POLARIZATION EXPERIMENTS (in Russian)
- S.I.Vinitsky, V.M.Dubovik, B.L.Markovsky (the same address as above), A.A.Suzko (Heat- and Mass-Transfer Institute, Byelorussian Academy of Sciences, Minsk, USSR) ;  
 SCATTERING PROBLEM FOR FADDEEV EQUATIONS IN THE ADIABATIC REPRESENTATION (in Russian)
- E.P.Osipov (Institute for Mathematics, 630090 Novosibirsk, USSR) ;  
 MARKOV PROPERTIES OF SOLUTIONS OF STOCHASTIC PARTIAL DIFFERENTIAL EQUATIONS IN A FINITE VOLUME

NOTE entries for this listing should be addressed to:

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

Frederick J. Almgren, Jr., and Elliot H. Lieb, Department of  
Mathematics, Princeton University, Princeton, NJ 08544  
SYMMETRIC DECREASING REARRANGEMENT IS SOMETIMES CONTINUOUS

Abhay Ashtekar, Viqar Husain, Physics Department, Syracuse  
University, Syracuse, NY 13244-1130, Carlo Rovelli, INFN  
Sezione di Roma, Università di Roma, Roma, Italy 00185,  
Joseph Samuel, Physics Department, University of Utah, Salt  
Lake City, Utah 84112, and Lee Smolin, Physics Department,  
Syracuse University, Syracuse, NY 13244-1130  
2 + 1 QUANTUM GRAVITY AS A TOY MODEL FOR THE 3 + 1 THEORY

Abhay Ashtekar and Joseph D. Romano, Physics Department, Syracuse  
University, Syracuse, NY 13244-1130  
CHERN-SIMONS AND PALATINI ACTIONS AND (2 + 1)-GRAVITY

Helen Au-Yang and Jacques H. H. Perk, Department of Physics,  
Oklahoma State University, Stillwater, Oklahoma 74078-0444  
ONSAGER'S STAR-TRIANGLE EQUATION: MASTER KEY TO  
INTEGRABILITY

J. Dimock, Department of Mathematics, SUNY at Buffalo, Buffalo,  
NY 14214  
A CLUSTER EXPANSION FOR STOCHASTIC LATTICE FIELDS

THE KOSTERLITZ-THOULESS PHASE IN A HIERARCHICAL MODEL

Paul Federbush, Department of Mathematics, University of  
Michigan, Ann Arbor, MI 48109  
A NOTE ON THE ULTIMATE TREE GRAPH INEQUALITY

Claudio Fernandez, Facultad de Matematicas, Pontificia  
Universidad Catolica de Chile, Casilla 6177, Santiago,  
Chile, and Richard Lavine, Department of Mathematics,  
University of Rochester, Rochester, NY 14627  
LOWER BOUNDS FOR RESONANCE WIDTHS IN POTENTIAL AND OBSTACLE  
SCATTERING

S. Giler, Institute of Physics, University of Łódź, Nowotki  
149/153, 90 236 Łódź, Poland  
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David Gurarie, Department of Mathematics and Statistics, Case  
Western University, Cleveland, OH 44106  
ASYMPTOTIC INVERSE SPECTRAL PROBLEM FOR ANHARMONIC  
OSCILLATORS WITH ODD POTENTIALS

2-SPHERE SCHRÖDINGER OPERATORS WITH ODD POTENTIALS

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SPECTRAL PROBLEM AND RIGIDITY

George A. Hagedorn, Department of Mathematics and Center for  
Transport Theory and Mathematical Physics, Virginia  
Polytechnic Institute and State University, Blacksburg,  
VA 24061-0123  
ADIABATIC EXPANSIONS NEAR EIGENVALUE CROSSINGS

V. Hussin, P. Winternitz, Centre de recherches mathématiques,  
Université de Montréal, C.P. 6128, Succursale A,  
Montréal (Québec), H3C 3J7, Canada, and H. Zassenhaus,  
Department of Mathematics, Ohio State University, Columbus,  
OH 43210  
MAXIMAL ABELIAN SUBALGEBRAS OF COMPLEX ORTHOGONAL LIE  
ALGEBRAS

John R. Klauder, Departments of Physics and Mathematics,  
University of Florida, Gainesville, FL 32611  
COVARIANT PSEUDOFREE SCALAR QUANTUM FIELDS FOR ALL SPACE-  
TIME DIMENSIONS  $N > 3$

N. P. Landsman, Institute for Theoretical Physics, University of  
Amsterdam, Valckenierstraat 65, 1018 XE Amsterdam, The  
Netherlands  
C\*-ALGEBRAIC QUANTIZATION AND THE ORIGIN OF TOPOLOGICAL  
QUANTUM EFFECTS

Michel L. Lapidus, Department of Mathematics, The University of  
Georgia, Boyd Graduate Studies Research Center, Athens,  
Georgia 30602  
CAN ONE HEAR THE SHAPE OF A FRACTAL DRUM? PARTIAL  
RESOLUTION OF THE WEYL-BERRY CONJECTURE

D. Levi, Dipartimento di Fisica, Università de Roma "La  
Sapienza", 00185, Roma, Italy, M. C. Bucci, Dipartimento di  
Matematica, Università di Perugia, Perugia, Italy,  
C. Rogers, Department of Applied Mathematics, University of  
Waterloo, Ontario, Canada, and P. Winternitz, Centre de  
recherches mathématiques, Université de Montréal, C.P.  
6128-A, Montréal, Québec (H3C 3J7), Canada.  
GROUP THEORETICAL ANALYSIS OF A ROTATING SHALLOW LIQUID IN  
A RIGID CONTAINER

D. Levi, Dipartimento di Fisica, Università de Roma "La Sapienza", 00185, Roma, Italia, and P. Winternitz, Centre de recherches mathématiques, Université de Montréal, C.P. 6128-A, Montréal, Québec (H3C 3J7), Canada.  
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Elliot H. Lieb, Department of Mathematics, Princeton University, Princeton, NJ 08544  
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ANALYSIS AND APPLICATIONS OF THE SUMMETRY GROUP OF THE MULTIDIMENSIONAL THREE WAVE RESONANT INTERACTION PROBLEM

Edward P. Osipov, Department of Theoretical Physics, Institute for Mathematics, 630090, Novosibirsk, 90, USSR  
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Antonio F. Ranada, Departamento de Fisica Teórica, Universidad Complutense, 28040 Madrid, Spain  
A TOPOLOGICAL THEORY OF THE ELECTROMAGNETIC FIELD

Mary Beth Ruskai, Department of Mathematics, University of Lowell, Lowell, MA 01854  
LIMIT ON THE EXCESS NEGATIVE CHARGE OF A DYNAMIC DIATOMIC MOLECULE

M. V. Saveliev, International Centre for Theoretical Physics, Trieste, Italy, and A. M. Vershik, Leningrad State University, Leningrad, USSR  
CONTINUUM ANALOGUES OF CONTRAGREDIENT LIE ALGEBRAS (LIE ALGEBRAS WITH A CARTAN OPERATOR AND NONLINEAR DYNAMICAL SYSTEMS)

P. Winternitz, Centre de recherches mathématiques, Université de Montréal, C.P. 6128-A, Montréal, Québec (H3C 3J7), Canada  
SYMMETRY GROUPS OF MULTIDIMENSIONAL INTEGRABLE NONLINEAR SYSTEMS

NOTE entries for this listing should be addressed to:

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

Michael Aizenman, Courant Institute of Mathematical Sciences, New  
York University, 251 Mercer Street, New York, NY 10012,  
and Roberto Fernandez, Department of Mathematics,  
University of Texas at Austin, Austin, TX 78712  
CRITICAL EXPONENTS FOR LONG-RANGE INTERACTIONS

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and J. L. Lebowitz, Departments of Mathematics and Physics,  
Rutgers University, New Brunswick, NJ 08903  
METASTABILITY EFFECTS IN BOOTSTRAP PERCOLATION

Michael Aizenman, Courant Institute of Mathematical Sciences, New  
York University, 251 Mercer Street, New York, NY 10012,  
and Jan Wehr, Department of Mathematics, Rutgers  
University, New Brunswick, NJ 08903  
ROUNDING OF FIRST-ORDER PHASE TRANSITIONS IN SYSTEMS WITH  
QUENCHED DISORDER

K. Alexander, Department of Mathematics, University of Southern  
California, Los Angeles, CA 90089, and J. T. Chayes, and  
L. Chayes, Department of Mathematics, University of  
California, Los Angeles, CA 90024  
THE WULFF CONSTRUCTION AND ASYMPTOTICS OF THE FINITE  
CLUSTER DISTRIBUTION FOR TWO-DIMENSIONAL BERNOULLI  
PERCOLATION

Abhay Ashtekar, Physics Department, Syracuse University,  
Syracuse, NY 13244-1130  
OLD PROBLEMS IN THE LIGHT OF NEW VARIABLES

RECENT DEVELOPMENTS IN QUANTUM GRAVITY

Abhay Ashtekar, A. P. Balachandran, and Sang Jo, Physics  
Department, Syracuse University, Syracuse, NY 13244-1130  
THE CP PROBLEM IN QUANTUM GRAVITY

Abhay Ashtekar and Joseph D. Romano, Physics Department, Syracuse  
University, Syracuse, NY 13244-1130  
KEY (3+1)-EQUATIONS IN TERMS OF NEW VARIABLES (FOR  
NUMERICAL RELATIVITY)

Abhay Ashtekar, Joseph D. Romano, and Ranjeet S. Tate, Physics  
Department, Syracuse University, Syracuse, NY 13244-1130  
NEW VARIABLES FOR GRAVITY: INCLUSION OF MATTER

D. J. Barsky, Department of Mathematics, University of Arizona,  
Tucson, AZ 85721, and Michael Aizenman, Courant Institute  
of Mathematical Sciences, New York University, 251 Mercer  
Street, New York, NY 10012  
PERCOLATION CRITICAL EXPONENTS UNDER THE TRIANGLE CONDITON

David Brydges, Department of Mathematics, Mathematics and  
Astronomy Building, University of Virginia,  
Charlottesville, VA 22903, and Horng-Tzer Yau, Courant  
Institute of Mathematical Sciences, 251 Mercer Street, New  
York, NY 10012  
GRAD  $\delta$  PERTURBATIONS OF MASSLESS GAUSSIAN FIELDS

Massimo Campanino, Istituto Matematico, Universita della  
Basilicata Potenza, Italy, and J. T. Chayes, and L. Chayes,  
Department of Mathematics, University of California, Los  
Angeles, CA 90024  
GAUSSIAN FLUCTUATIONS OF CONNECTIVITIES IN THE SUBCRITICAL  
REGIME OF PERCOLATION

J. T. Chayes, and L. Chayes, Department of Mathematics,  
University of California, Los Angeles, CA 90024  
THE LARGE-N LIMIT OF THE THRESHOLD VALUES IN MANDELBROT'S  
FRACTAL PERCOLATION PROCESS

A. C. D. van Enter and R. Fernandez, Department of Mathematics,  
University of Texas at Austin, Austin, TX 78712  
A REMARK ON DIFFERENT NORMS AND ANALYTICITY FOR MANY-  
PARTICLE INTERACTIONS

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- J. Fröhlich<sup>1</sup>, C. King<sup>2</sup>, <sup>1</sup>Theoretical Physics, ETH-Hönggerberg, CH-8093 Zürich, Switzerland, <sup>2</sup>Department of Mathematics, Cornell University, Ithaca, NY 14853, USA, ETH-TH/89-9  
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- Giovanni Frosali<sup>1</sup>, Cornelis V.M. van der Meer<sup>2</sup>, Stefano L. Paveri-Fontana<sup>3</sup>, <sup>1</sup>Ist. di Matematica, Università di Ancona, I-60100 Ancona, Italy, <sup>2</sup>Dept. of Math. Sciences, University of Delaware, Newark, Delaware, 19716, USA, <sup>3</sup>Dipartimento di Metodi e Modelli Matematici, Università di Roma "La Sapienza", Via Scarpa 10, I-00161 Roma, Italy, to appear: J. Math. Physics  
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Dynamics of fluctuations for quantum lattice systems

Simon Golin, Fachbereich Mathematik, TU Berlin, Straße des 17. Juni 136, D-1000 Berlin 12, FRG and Dipartimento di Fisica and INFN, Università di Bologna, Via Irnerio 46, I-40126 Bologna, Italy  
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W<sup>+</sup>W<sup>-</sup>Production in e<sup>+</sup>e<sup>-</sup>-Colliders: A Test of a Strongly Interacting Higgs Sector

Arthur Jaffe, Andrzej Lesniewski, Harvard University, Cambridge, MA 02138, USA, HUTMP 89/B236  
An Index Theorem for Super Derivations

Arthur Jaffe, Slawomir Klimek, Andrzej Lesniewski, Harvard University, Cambridge, MA 02138, USA, HUTMP 89/B239  
Representations of the Heisenberg Algebra on a Riemann Surface

M. Karowski, Theoretical Physics, ETH-Hönggerberg, CH-8093 Zürich, Switzerland, ETH-TH/89-13  
Yang-Baxter Algebra - Integrable Systems - Conformal Quantum Field Theories

D. Kheshechenko, P.B. Wiegmann, Landau Institute for Theoretical Physics, Kosygina 2, 117940 Moscow, Inst. des Hautes Etudes Scientifiques, 35, route de Chartres, 91440 Bures-sur-Yvette, France, IHES/P/89/20  
Effective Action of Antiferromagnetism in Two-Dimensions: Parity Violating Ground State and Hall Effect

D.V. Khveshchenko, P.B. Wiegmann, address see above, IHES/P/89/22  
Gauge Theory of Antiferromagnetism in Two Dimensions for Large Rank Symmetry Group

Slawomir Klimek, Andrzej Lesniewski, Harvard University, Cambridge, MA 02138, USA, HUTMP B234  
Global Laurent Expansions on Riemann Surfaces

Mehmet Koca, Institut des Hautes Etudes Scientifiques, 35, route de Chartres, 91440 Bures-sur-Yvette, France, IHES/P/89/05  
 $E_6$  Lattice with Icosians and  $Z_6$  Symmetry

I.M. Krichever, S.P. Novikov, Inst. des Hautes Etudes Scientifiques, 35, route de Chartres, 91440 Bures-sur-Yvette, France, IHES/P/89/26  
Riemann surfaces, operator fields, strings. Analogues of the Fourier-Laurent bases

Miguel Lorente, Departamento de Fisica, Facultad de Ciencias, Universidad de Oviedo, 33007, Spain  
On Some integrable One Dimensional Quantum Systems

Rainer Matthes, NTZ, Karl-Marx-Universität, DDR-7010 Leipzig and Inst. für Mechanik der AdW der DDR, Karl-Marx-Stadt, KMU-NTZ-89-03  
A General Approach to Connections: Algebra and Geometry

Louis Michel, Jan Mozrzykas, Institut des Hautes Etudes Scientifiques, 35, route de Chartres, 91440 Bures-sur-Yvette, France, IHES/P/88/58  
Les Concepts Fondamentaux de la Cristallographie

Shigeru Ohkuro, Dept. of Mathematics, Hachinohe Inst. of Technology, Myo, Hachinohe, 031 Japan  
A Note on a Fibre Metric in a Tangent Bundle: On a generalization of the Riemannian space

Edward P. Ozipov, Department of Theoretical Physics, Institute for Mathematics, 630090, Novosibirsk, 90, USSR, No. 19 (161)  
Octavic Markov Cosurface and Relativistic Quantum Fields in Eight-Dimensional Space-Time

Edward P. Ozipov, address see above, No. 1 (167)  
Markov properties of solutions of stochastic partial differential equations in a finite volume

- C. Piron, Département de Physique Théorique, Université de Genève, 1211 Genève 4, Switzerland, UGVA-DPT 1989/03-606  
New Dialogue on a New Science between F. Salviati, G. Sagredo and Simplicio
- J. Potthoff, M. Röckner, BiBoS, Fakultät für Physik, Universität Bielefeld, D-4800 Bielefeld 1, FRG  
On the contraction property of energy forms on infinite dimensional space
- J. Potthoff, J.A. Yan, address see above  
Some results about test and generalized functionals of white noise
- G.A. Raggio, R.F. Werner, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland, DIAS-STP-89-10  
The Gibbs Variational Principle for General BCS-Type Models
- A.K. Raina, Theoretical Physics Group, Tata Institute of Fundamental Research, Homi Bhabha Road, Bombay 400 005, India, TIFR/TH/89-23  
Fey's Trisecant Identity and Wick's Theorem: An Algebraic Geometry Viewpoint
- David Ruelle, Inst. des Hautes Etudes Scientifiques, 35, route de Chartres, 91440 Bures-sur-Yvette, France, IHES/P/89/38  
An Extension of the Theory of Fredholm Determinants
- David Ruelle, address see above, IHES/P/89/08  
The Thermodynamical Formalism for Expanding Maps
- J. Shabani, Département de Mathématiques, Université du Burundi, Bujumbura, Burundi  
Finitely Many Sphere Interactions in Quantum Mechanics: Approximation by Momentum Cut-Off Hamiltonians
- Barry Simon<sup>1</sup>, Thomas Spencer<sup>2</sup>, <sup>1</sup>Division of Physics, Mathematics and Astronomy, California Inst. of Technology, 253-37, Pasadena, CA 91125, <sup>2</sup>Inst. for Advanced Study, Princeton, NJ 80309, USA, to appear in Commun. in Math. Physics  
Trace Class Perturbations and the Absence of Absolutely Continuous Spectra
- Bernard Souillard, Centre de Physique Théorique, Ecole Polytechnique, F-91128 Palaiseau, France  
Fractals and Localization
- Ivan T. Todorov, Inst. des Hautes Etudes Scientifiques, 35, route de Chartres, 91440 Bures-sur-Yvette, France, IHES/P/89/30  
Rational conformal theories involving a  $U(1)$  current algebra
- IV. Aldaya<sup>1</sup>, J.N. Navarro-Salas<sup>2</sup>, <sup>1</sup>The Blackett Laboratory, Imperial College, London SW7 2BZ, U.K., on leave of absence from 2, <sup>2</sup>Departamento de Física Teórica, Facultad de Físicas, Universidad de Valencia, Burjassot, 46100-Valencia, Spain and IFIC (centro mixto Universidad de Valencia-C.S.I.C.), Spain, Imperial TP/87-88/26, revised version FTUV/89/19  
Quantization on the Virasoro Group
- F. Benatti and H. Narnhofer, Institut für Theoretische Physik, Universität Wien, UWThPh-1989-34  
Strong Asymptotic Abelianess for Entropic K-Systems
- J. Bijtebier, Theoretische Natuurkunde, Fakulteit der Wetenschappen, Vrije Universiteit Brussel, Pleinlaan 2, 1050 Brussel, Belgium, VUB/TENA/89/06  
Separable Bound State Equations for Three Relativistic Fermions
- H.J. Borchers<sup>1</sup>, J. Yngvason<sup>2</sup>, <sup>1</sup>Institut für Theoretische Physik, Universität Göttingen, <sup>2</sup>Department of Physics, University of Iceland  
Positivity of Wightman Functionals and the Existence of Local Nets
- H.J. Borchers, J. Yngvason, address see above  
Partially Commutative Moment Problems
- B.P. Doian, 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, DIAS STP 89-21  
The Extension Of Chiral Gravity To  $SL(2, \mathbb{C})$
- S. Doplicher, J.E. Roberts, Dipartimento di Matematica, Università di Roma "La Sapienza", I-00185 Roma, Italy, Fachbereich Physik, Universität Osnabrück, D-4500 Osnabrück, FRG, June 1989  
Why there is a field algebra with a compact gauge group describing the superselection structure in particle physics
- M. Fannes<sup>1</sup>, B. Nachtergaele<sup>2</sup>, R.F. Werner<sup>3</sup>, <sup>1</sup>Inst. Theor. Fysica, Universiteit Leuven, Leuven, Belgium, <sup>2</sup>Dep. de Física, Universidad de Chile, Santiago, Chile, <sup>3</sup>Dublin Inst. for Adv. Studies, Dublin, Ireland, DIAS-STP-89-22  
Exact Antiferromagnetic Ground States of Quantum Spin Chains
- J. Fröhlich<sup>1</sup>, P.A. Marchetti<sup>2</sup>, <sup>1</sup>Theoretical Physics, ETH-Hönggerberg, CH-8093 Zürich, Switzerland, <sup>2</sup>Dipartimento di Fisica, Università di Padova, I.N.F.N. - Sezione di Padova, I-35100 Padova, Italy, DFPD/89/TH/34  
Quantum Skyrmions
- J. Fröhlich<sup>1</sup>, F. Gabbiani<sup>2</sup>, P.-A. Marchetti<sup>3</sup>, <sup>1</sup>Theor. Physics, ETH-Hönggerberg, CH-8093 Zürich, Schweiz, <sup>2</sup>Mathematics, ETH-Zentrum, CH-8092 Zürich, <sup>3</sup>Dip. di Fisica dell'Università di Padova, INFN Sezione di Padova, I-35131 Padova, Italy, ETH-TH/89-22  
Superselection Structure and Statistics in Three-Dimensional Local Quantum Theory
- G. Gaeta, Institut des Hautes Etudes Scientifiques, 35, route de Chartres, 91440 Bures sur Yvette, France, Avril 1989, IHES/P/89/28  
Bifurcation and Symmetry Breaking

- N. Gorman<sup>1</sup>, L.O' Raifeartaigh<sup>1</sup>, W.M'Glinn<sup>2</sup>, <sup>1</sup>Dublin Inst. for Adv. Studies, 10 Burlington Road, Dublin 4, Ireland, <sup>2</sup>Physics Department, University of Notre Dame, Notre Dame, Indiana 46556, USA  
**A Streamlined Highest Weight Derivation of the Bilinear Virasoro Centre**
- Th. Hudetz, Institut für Theoretische Physik, Universität Wien, UWThPh-1989-28  
**Non-Linear Entropy Functionals and a Characteristic Invariant of Symmetry Group Actions on Infinite Quantum Systems**
- G. Karner, Fakultät für Physik, Universität Bielefeld, D-4800 Bielefeld, FRG, BI-TP 89/22  
**Dynamics of Periodically Kicked Particles - Chaos on the Line versus Stability on the Circle**
- R. Longo, Dipartimento di Matematica, University di Roma "Tor Vergata", Via Fontanile di Carcaricola, 00133 Roma, Italy, June 1989  
**Index of Subfactors and Statistics of Quantum Fields**
- A. Mikelić<sup>1</sup>, A. Suhadolc<sup>2</sup>, K. Veselić<sup>3</sup>, <sup>1</sup>Institute "Rudjer Boskovic", Zagreb, <sup>2</sup>Inst. of Mathematics, University of Ljubljana, <sup>3</sup>Lehrgr. Mathematische Physik, Fernuniversität - GHS - Hagen, Postfach 940, D-5800 Hagen, FRG, Dec. 1988, AMS Subj. Class. (1980): 35K60, 76B99  
**On the Potential Flow of an Ideal Incompressible Fluid Through a Porous Boundary**
- H. Narnhofer, A. Pflug und W. Thirring, Institut für Theoretische Physik, Universität Wien, UWThPh-1989-27  
**Mixing and Entropy Increase in Quantum Systems**
- H. Narnhofer, W. Thirring, address see above, UWThPh-1989-17  
**Algebraic K-Systems**
- G.A. Raggio, R.F. Werner, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland, DIAS-STP-89-23  
**The Gibbs Variational Principle for Inhomogeneous Mean-Field Systems**
- R.N. Sen, Department of Mathematics and Computer Science, Ben Gurion University, P.O.Box 653, Beer Sheva 84105, Israel  
**Is It Possible To Do Canonical Quantum Field Theory Rigorously?**
- R.F. Werner, Dublin Institute for Adv. Studies, 10 Burlington Road, Dublin 4, Ireland  
**Remarks on a Quantum State Extension Problem**

# INTERNATIONAL ASSOCIATION OF MATHEMATICAL PHYSICS

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December 1989

## I A M P N E W S B U L L E T I N

Season's Greetings and best Wishes  
for the New Year to all IAMP members.

J. Klauder

Ph. Blanchard



**MINHOMAT COLOQUIO NO. 1**  
**WHITE NOISE ANALYSIS    MATHEMATICS + PHYSICS**

Braga, 8.-12. Jan. 1990

Topics: White Noise Analysis - Dirichlet Forms - Quantum Fields - Stochastic Processes

Tentative List of Participants: S. Albeverio ( Bochum ) - A. P. Amorim ( Braga ) - T. Arede ( Porto )  
- A. Cruzeiro ( Lisboa ) - Eric Carlen ( Princeton ) - M. de Faria ( Braga ) - M. Fukushima ( Osaka )  
- Z. Haba ( Wroclaw ) - T. Hida ( Nagoya ) - Z. Ma ( Beijing ) - R. Vilela Mendes ( Lisboa ) - N.  
Obata ( Nagoya, Tuebingen ) - J. Rezende ( Lisboa ) - M. Roeckner ( Edinburgh ) - L. Santos ( Braga )  
- R. Severino ( Braga ) - L. Streit ( Bielefeld, Braga ) - L. Vazquez ( Madrid ) - J. C. Zambrini  
( Lisboa ).

Participation is free and welcome, although financial support cannot be offered. Applications should be addressed in advance to the organizers.

Organizer:    M. de Faria

Secretary:    Luisa Pinto

UM - Area de Matematica  
Largo Carlos Amarante  
P 4700 BRAGA

Tel.: 00351-53-72710

FAX: 00351-53-77936

EARNET: STREIT@PTIFM

## DIXIEME RENCONTRE DE PHYSIQUE STATISTIQUE

Cher Collègue,

Nous organisons les Jeudi 25 et Vendredi 26 Janvier 1990, la Dixième Rencontre de Physique Statistique de Paris.

Elle se tiendra à l'*Ecole Supérieure de Physique et Chimie Industrielles de Paris, 10 rue Vauquelin, Paris 5ème*, bâtiment N, dernier étage, et nous remercions P.G. de Gennes et l'E.S.P.C.I. de nous y accueillir de nouveau cette année.

Comme les années précédentes, cette rencontre a principalement pour but de permettre aux différents courants de la physique statistique de se rencontrer et à chacun de se faire une idée des intérêts et tendances de la communauté. Nous espérons beaucoup la participation de tous les physiciens et mathématiciens dont les travaux se rapportent à :

la mécanique statistique de l'équilibre, la mécanique statistique du non-équilibre, les solides désordonnés, la turbulence et la stochasticité, les liquides, les plasmas, les polymères, les milieux aléatoires macroscopiques, les automates cellulaires, les sujets physiquement ou mathématiquement reliés.

---

NOTES IMPORTANTES : \* Il n'y aura pas d'autre annonce de cette rencontre .

\* Nous vous serions reconnaissants de photocopier ce texte et de le distribuer à ceux de vos collègues qui ne l'auraient pas reçu.

La rencontre consistera principalement en de nombreuses communications courtes, de 5 minutes environ, selon le nombre de communications proposées, destinées à donner à chacun une idée de ce qui se fait actuellement dans les divers domaines de notre discipline, ainsi qu'en quatre revues sur des sujets reliés à la Physique Statistique :

J. FRIEDEL *Physique des petits agrégats.*  
(Orsay)

G. JANNINK *Etude de polymères par diffusion de neutrons.*  
(Léon Brillouin, CEA)

M. NAUENBERG *Quantum coherent wave packets on Kepler elliptic orbits.*  
(University of Santa Cruz, et Spectro. Hertz., ENS)

J.L. PICHARD *Systèmes mésoscopiques, statistique de conductances et matrices aléatoires.*  
(SPSRM, CEA)

## ORGANISATION DE LA RENCONTRE

Judi 25 janvier 1990

9h		Enregistrement et communications courtes
12h	à 14h	Déjeuner.
14h	à 15h30	Communications courtes
15h 30	à 16h	Café
16h	à 17h	Communications courtes
17h00	à 18h	Revue

Vendredi 26 janvier 1990

9h	à 10h	Revue
10h	à 12h	Communications courtes
12h	à 14h	Déjeuner
14h	à 15h	Revue
15h	à 16h 30	Communications courtes
16h 30	à 17h	Café
17h	à 18h	Revue.

## RENSEIGNEMENTS PRATIQUES

- 1) En raison du caractère volontairement informel de la rencontre, aucun soutien financier ne sera accordé.
- 2) Les langues recommandées sont l'anglais et le français.
- 3) Les auteurs des communications doivent être conscients qu'ils ne peuvent entrer dans les détails, et qu'ils s'adressent à un public non spécialisé. Il ne s'agit pas de convaincre les quelques experts qui connaissent déjà le sujet, mais de s'adresser clairement au reste de la communauté. Les auteurs doivent donc se préparer pour un "flash" de cinq minutes afin de poser clairement le problème, exposer leurs résultats, mentionner les problèmes ouverts.
- 4) La projection de deux transparents par communication sera tolérée pour présenter des graphiques de résultats numériques ou des schémas expérimentaux ; il est fermement déconseillé de présenter des formules ou des textes par transparents.
- 5) Une table servira de présentoir aux préprints apportés par les participants ou envoyés par les non participants.
- 6) Nous pouvons réserver des chambres d'hôtel (voir fiche ci-jointe).
- 7) Nous apprécierons beaucoup une réponse rapide selon la fiche ci-jointe et au plus tard le 11 Janvier.

En espérant vous voir les 25 et 26 Janvier.

D. Levesque	Physique Théorique, Université d'Orsay.
R. Maynard	CRTBT, Grenoble.
Y. Pomeau	Groupe de Physique du Solide, ENS.
B. Souillard	Physique Théorique, Ecole Polytechnique.

## FICHE D'INSCRIPTION ET DE RESERVATION

A renvoyer à :           Rencontre de Physique Statistique  
                                   Madame Andalo  
                                   Centre de Physique Théorique  
                                   Ecole Polytechnique  
                                   91128 Palaiseau Cedex - France

avant le 11 Janvier 1990. L'inscription des communications et les réservations d'hôtel après cette date ne sont pas garanties.

NOM .....  
 PRENOM .....  
 LABORATOIRE .....  
 ADRESSE - TELEPHONE .....  
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 ADRESSE ELECTRONIQUE .....

		oui	non
J'assisterai à la Conférence	le 25 Janvier 1990	<input type="checkbox"/>	<input type="checkbox"/>
	le 26 Janvier 1990	<input type="checkbox"/>	<input type="checkbox"/>
Je ferai une communication		<input type="checkbox"/>	<input type="checkbox"/>

Titre de la communication : .....  
 (Prière d'indiquer un titre explicite).  
 .....  
 .....  
 Mots clefs : .....

Je souhaite que l'on me réserve une chambre (les prix sont approximativement, petit déjeuner compris, de 200 à 250F pour une chambre avec cabinet de toilette, de 250 à 390F pour une chambre avec douche et W.C. ; les hôtels sont situés dans le "quartier latin", proche du lieu de la conférence ; le nom et l'adresse de l'hôtel vous seront communiqués par lettre dès que la réservation aura été faite).

	1 pers.	couple
• pour le mercredi 24 au soir	<input type="checkbox"/>	<input type="checkbox"/>
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• pour le vendredi 26 au soir	<input type="checkbox"/>	<input type="checkbox"/>
• pour le samedi 27 au soir	<input type="checkbox"/>	<input type="checkbox"/>
• pour le dimanche 28 au soir	<input type="checkbox"/>	<input type="checkbox"/>

Dans la mesure du possible, je préfère :

• une chambre simple avec cabinet de toilette	<input type="checkbox"/>	<input type="checkbox"/>
• une chambre avec douche ou bain et W.C.	<input type="checkbox"/>	<input type="checkbox"/>

Vous êtes priés de décommander vos éventuelles réservations si vous ne pouvez pas venir.

Je suggère d'envoyer aussi les informations concernant la Rencontre de Physique Statistique à :

NOMS	ADRESSES
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PLEASE POST

# HYPERBOLIC BEHAVIOURS OF DYNAMICAL SYSTEMS

In the context of the Année Spéciale Systèmes Dynamiques of the CNRS, we are pleased to announce a workshop to be held in Paris on February 28, March 1-2 1990.

Invited speakers:

W.Ballmann, M.Benedicks, D.Epstein\*, P.Foulon, Y.Guivarch,  
P. de la Harpe, V.Kaimanovich, G.Keller, Y.Kifer, T.Nowicki\*,  
W.Parry\*, M.Pollicott, F.Przytycki, M.Rees, D.Ruelle,  
D.Sullivan, D.Szasz, W.Szlenk\*, P.Thieullen, S.Van Strien\*,  
P.Walters\*, M.Wojtkovski, J.C.Yoccoz.

Local organizing committee P.Collet, F.Ledrappier.

Interested participants should write before November 30<sup>th</sup> to

P.COLLET

Centre de Physique Théorique

Ecole Polytechnique

F-91128 Palaiseau Cedex (FRANCE)

in order to receive the second announcement and information about accommodations.

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\* To be confirmed

# INTERNATIONAL SCHOOL OF MATHEMATICS «G. STAMPACCHIA»

*3rd Inter. Symposium on: «ORTHOGONAL POLYNOMIALS AND THEIR APPLICATIONS»*

**ERICE-SICILY: 31 MAY - 9 JUNE 1990**

Sponsored by the: IBM Italy

Inter. Assoc. for Mathematics and Computers in Simulation (IMACS)  
Italian Ministry of Education  
Italian Ministry of Scientific and Technological Research  
National Research Council  
Sicilian Regional Government  
University of Rome «La Sapienza»

**PROGRAMME AND LECTURERS**

**INTERNATIONAL PROGRAMME COMMITTEE**

C. BREZINSKI, Univ. of Lille, France  
L. GORI, Univ. of Rome «La Sapienza», Italy  
A. LAFORGIA, Univ. of Palermo, Italy  
C. MASTROIANNI, Univ. of Basilicata, Italy  
G. MONEGATO, Technical Univ. of Turin, Italy  
P. NEVAJ, Ohio State Univ., Columbus, OH, USA  
A. RONVEAUX, Univ. of Namur, Belgium

**TOPICS**

Orthogonal Polynomials and their Applications in Approximation Theory; Combinatorics; Functional Analysis Aspects; Nuclear Physics; Numerical Analysis; Padé Approximation; Potential Theory; Rational Approximation; Signal Process; Special Functions and Symbolic Computer Algebra.

**LECTURERS**

R. ASKBY, Univ. of Wisconsin, Madison, WI, USA  
T.S. CHIHARA, Purdue Univ., Hammond, IN, USA  
W.N. EVERITT, University of Birmingham, UK  
L. GATTESCHI, Univ. of Turin, Italy  
W. GAUTSCHI, Purdue Univ., West Lafayette, IN, USA  
T.H. KOORNWINDER, Cen. for Math., Amsterdam, The Netherlands  
D.S. LUBINSKY, NRIMS, Pretoria, South Africa  
A. MAGNUS, Cath. Univ. of Louvain, Louvain-La-Neuve, Belgium  
F. MARCELLAN, E.T.S. de Ingen. Indust., Madrid, Spain  
P. MARONI, Univ. P. et M. Curie, Paris, France  
E.B. SAFF, Univ. of South Florida, Tampa, FL, USA  
H. STAHL, Technical Univ. - Berlin-Fed., FRG  
S.K. SUSLOV, Kurchatov Inst. of Atomic Energy, Moscow, USSR  
V. TOTIK, Józef Attila Univ. of Szeged, Hungary  
W. VAN ASSCHE, Catholic Univ. of Leuven, Belgium

**PURPOSE OF THE SYMPOSIUM**

The Symposium aims to give a perspective of the Status-of-the-Art and of research trends in the field of Orthogonal Polynomials.

The Symposium will be structured with invited lectures concerning fundamental aspects of Orthogonal Polynomials and their applications along with contributed lectures.

**POETIC TOUCH**

According to legend, Erice, son of Venus, founded a small town on top of a mountain (750 metres above sea level) more than three thousand years ago. The great historian Thucydides (~500 B.C.) said that the Elymi - founders of Erice - were survivors of the destruction of Troy. Ancient historians agreed that Erice was the oldest city of Europe.

Homer (~1000 B.C.), Theocritus (~300 B.C.), Polybius (~200 B.C.), Virgil (~50 B.C.), Horace (~20 B.C.), and others, have celebrated this magnificent spot in Sicily in their poems. In Erice you can admire the Castle of Venus, the Cyclopean Walls (~800 B.C.) and the Gothic Cathedral (~1300 A.D.). Erice is at present a mixture of ancient and medieval architecture.

Other masterpieces of ancient civilization, such as Motya (Phoenician), Segesta (Elymian), and Selinunte (Greek), are to be found in the neighbourhood. In the Aegean Islands - theatre of the decisive naval battle of the first Punic War (264-241 B.C.) - there are prehistoric murals in Levanzo and palaeolithic grottoes in Favignana.

Splendid beaches are at San Vito Lo Capo, Scopello, and Cornino; wild beaches around Monte Cofano, all at less than one hour drive from Erice.

**GENERAL INFORMATION**

Persons wishing to attend the Symposium should write to:

• Prof. Laura GORI  
Dipartimento di Metodi e Modelli Matematici  
Università di Roma «La Sapienza»  
Via A. Scarpa, 10  
00161 Roma - Italy  
Telephone 39-6 - 492846 / 4456698 / 4957647  
Telefax 39-6 - 4957647  
Electronic Mail: SYMORPOL. AT IRMUNISA

They should specify: 1) arrival and departure days; 2) the number of accompanying persons; 3) whether or not they intend to present a short communication and, in the positive case, a tentative title; 4) whether or not they accept to share a room and if possible, the name of the colleague.

Deadline for short communications: Nov. 30, 1989.

Notification for acceptance of papers: Feb. 1st, 1990.

Applications must be done within February 1990. No special application form is required.

The total fee, including full board and lodging (arranged by the School), is US \$ 630.

Participants should arrive in Erice on May 31 and leave on June 9.

Date of Symposium: June 1st, 9.30 a.m. - June 8th, 5 p.m.

Busses will pick-up participants at Palermo or Trapani airports or railways stations on May 31.

The weather is generally warm. Since Erice is on top of a mountain, in the night a pullover is sometimes suitable.

L. GORI - A. LAFORGIA - G. MASTROIANNI - G. MONEGATO  
ORGANIZING COMMITTEE

F. GIANNESSE  
DIRECTOR OF THE SCHOOL

A. ZICHICH  
DIRECTOR OF THE CENTRE

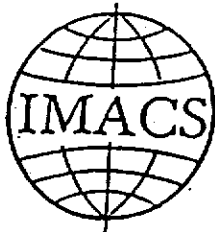
**Special Announcement**

Information about the Schools and the activities of the CENTRE can be found in the official Journal of the CENTRE:



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**IMACS 1<sup>st</sup> INTERNATIONAL CONFERENCE ON  
COMPUTATIONAL PHYSICS  
UNIVERSITY OF COLORADO, BOULDER, CO 80309-0425**

**FIRST ANNOUNCEMENT AND CALL FOR CONTRIBUTIONS**

**JUNE 11-16, 1990**

- Contributions in all areas of computational physics are welcomed. Emerging topical groupings will be given in the second announcement.
- Approximately 10 plenary lectures are planned. Special sessions of 5 contributions each, invited by session organizers, will be encouraged. Individual contributed paper sessions will be arranged.
- Proceedings will be given to all attendees at the Conference. Interested contributors are invited to submit a preliminary manuscript or extended abstract as soon as possible. Instructions may be obtained from the Conference Secretary (see below).
- Pending suitable publication arrangements, the plenary lectures and a selection of refereed longer papers will be published shortly after the conference in journal/book form and made available to all conference participants. Details will be given in the second announcement.

•All communications regarding the scientific program should be addressed to:

Professor Karl Gustafson  
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•For registration materials, housing information, and all other conference matters, please contact:

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# INTERNATIONAL CONGRESS OF MATHEMATICIANS

Kyoto, JAPAN

August 21-29, 1990

## FIRST ANNOUNCEMENT

The Organizing Committee is pleased to announce that the next International Congress of Mathematicians will be held at the Kyoto International Conference Hall, from Tuesday, August 21 through Wednesday, August 29, 1990. It will be held under the auspices of the International Mathematical Union and under the sponsorship of the Science Council of Japan, the Mathematical Society of Japan, the Japan Society of Mathematical Education, The History of Science Society of Japan, The Institute of Actuaries of Japan, the Japan Society for Software Science and Technology, The Japan Statistical Society, and The Operations Research Society of Japan.

### Mathematical Program

There will be about 16 invited one-hour expository addresses covering recent developments in major areas of mathematics, and approximately 140 invited 45-minute lectures divided into the following 18 sections:

1. Mathematical logic and foundations
2. Algebra
3. Number theory
4. Geometry
5. Topology
6. Algebraic geometry
7. Lie groups and representations
8. Real and complex analysis
9. Operator algebras and functional analysis
10. Probability theory and mathematical statistics
11. Partial differential equations
12. Ordinary differential equations and dynamical systems
13. Mathematical physics
14. Combinatorics
15. Mathematical aspects of computer science
16. Computational methods
17. Applications of mathematics to the sciences
18. History, teaching and the nature of mathematics

The International Commission on Mathematical Instruction will have several invited lectures.

All Ordinary Members of the Congress will have an opportunity to present ten-minute short communications; informal mathematical seminars may be organized on participant's initiative.

All invited lectures will be published in the Proceedings of ICM-90. A complimentary copy will be sent to each Ordinary Member after the Congress. Abstracts of the short communications will be distributed to Ordinary Members at the Congress free of charge.

English, French, German and Russian will be the official languages of the Congress.

### Social Events

The Organizing Committee will arrange a reception on Tuesday, August 21; a traditional art performance theater in the late afternoon of Saturday, August 25; and a banquet on Wednesday, August 29. These events will be free to all registered Ordinary and Accompanying Members. Excursions and (pre- and post-Congress) tours will be arranged by Japan Travel Bureau, Inc. Sunday, August 26 will be set aside for optional excursions and no lectures will be scheduled on this day. Further details concerning these activities will appear in the Second Announcement.

### Location of the Conference

The Kyoto International Conference Hall is located in the northern part of Kyoto City. The closest airport to Kyoto is Osaka International Airport, which is about 55 minutes from Kyoto by the limousine bus service. The buses leave the airport every 20 minutes between the hours of 7:55 a.m. to 9:30 p.m.

Kyoto is located 500km west of Tokyo. A rapid train service (Shinkansen) from Tokyo to Kyoto is available with about a 10 ~ 30 minutes interval between each train from the hours of 6 a.m. to 9 p.m. It takes about 2 hours and 45 minutes, and the current price is ¥12,970 one way.

Kyoto, surrounded by gracefully wooded hills, was the capital of Japan from 794 A.D. to 1868 A.D. Besides two magnificent Imperial Villas, Kyoto has about 400 Shinto shrines and 1,650 Buddhist temples which dot the entire city. Kyoto offers the innumerable cultural treasures and traditional crafts and attracts visitors from throughout the world as well as from within Japan. The city of Nara, which is an ancient capital and another renowned sightseeing center of old Japanese culture, can be reached within 30 minutes from Kyoto by an express train and makes an excellent one-day excursion.

### The Official Carrier

Japan Air Lines (JAL) is the official carrier for the Congress. Please contact the nearest JAL overseas office for the appropriate air schedules.

### The Official Travel Agent (Group Flights)

Japan Travel Bureau, Inc. (JTB) Kyoto Office has been appointed as the official travel agent for the Congress and will handle all travel arrangements related to the Congress including hotel accommodations and group flights. All inquiries should be addressed to the following:

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Telex: J24418TOURIST (attn. KYOTO)

### Accommodations

For participants and their accompanying members, a sufficient number of rooms have been reserved in Kyoto at various prices by Japan Travel Bureau, Inc., Kyoto. More precise information along with the hotel reservation form will be included in the Second Announcement.

### Hotels in Kyoto

The specially discounted room rates (in yen), which includes the tax and service charges (but no meals), are as follows:

Class	Single with bath	Twin with bath
A	¥9,000 - ¥20,000	¥13,000 - ¥22,000
B	¥7,000 - ¥8,000	¥11,000 - ¥13,000
C	¥5,500 - ¥7,000	¥9,000 - ¥11,000
D	¥4,000 - ¥5,500	¥7,000 - ¥9,000
*E	4 beds in 1 room without bath ¥2,500 - ¥4,000/person	
Youth Hostel	4-8 beds in 1 room without bath ¥2,100 - ¥2,450/person	

\*If you wish to book a room of Class E, please find 3 other people with whom you can share a room, and include their names on the application form in the Second Announcement.

### Climate and Clothing

In late August, the average temperature in Kyoto is approximately 28°C (82°F) and the humidity is somewhat high. Light summer clothing is recommended. The Congress Hall and hotels are all well air-conditioned. No formal dress will be required on any occasion during the congress.

### Second Announcement

The Second Announcement of ICM-90 will describe all the activities of the Congress in detail and provide instructions on how to complete the pre-registration process and obtain accommodations. It will provide more, although not complete, information on the scientific program, and give instructions regarding the submission of abstracts of short communications and the organization of informal seminars. The Second Announcement will also include advice on how to reach Kyoto and will be accompanied by a brochure describing the day trips and tours organized by Japan Travel Bureau.

If you wish to receive the Second Announcement, please PRINT your name and address on the reverse of the detachable postcard below and mail it to

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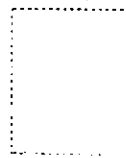
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