

INTERNATIONAL ASSOCIATION OF MATHEMATICAL PHYSICS



IAMP NEWS BULLETIN

March 1988

OBITUARY

With great sadness we learnt of Michel Sirugue's death on November 11, 1987, and of Raphael Høegh-Krohn's death on January 24, 1988. Michel Sirugue, born in 1937, has been a staff member of the Centre de Physique Théorique of Marseille-Luminy for many years. Raphael Høegh-Krohn, born in 1938, was Professor of Mathematics at the University of Oslo and a member of the Norwegian Academy of Science.

Among their contributions in many fields of mathematical physics their work on stochastic methods will stand as a great achievement. They were also great teachers and because of their warm personality very dear friends to many of us.

Philippe Blanchard

INTERNATIONAL ASSOCIATION OF MATHEMATICAL PHYSICS



March 1988

Progress Report

- i. All IAMP members are invited to an IAMP general assembly.
Date: Thursday, July 21, 1988
Time: 8.00 p.m.
Place: IAMP Congress, Swansea (exact hall to be announced at the conference).
Agenda: 1. Progress report (President)
2. Financial report (Treasurer)
3. Other business
- ii. Interested parties who wish to suggest topics to be discussed under "other business" at the general assembly are urged to contact the IAMP secretary, Prof. Ph. Blanchard, at least one month prior to the assembly, i.e., by June 21, 1988.
- iii. The subsequent IAMP Conference is planned for 1991, and if possible, the IAMP Executive Committee would like to decide this matter at its meeting during the Swansea Conference. Proposals for this meeting are invited from interested groups. They should include data regarding:
 - place and possible dates for conference
 - facilities available:
 - lecture halls
 - dining facilities
 - accommodation
 - transportation

- plans for funding
- the names of at least two members of a proposed local organizing committee.

Recent IAMP Conferences have had circa 400 attendees and budgets of roughly usdlr 75,00.

- iv. The undersigned is changing institutions effective august 1988. Preprints sent for inclusion in the IAMP News Bulletin should be sent as usual to AT+T Bell Laboratories throughout July 1988, and beginning August 1988 to

Prof. John R. Klauder
IAMP NEWS BULLETIN
Department of Mathematics
Walker Hall
University of Florida
Gainesville, FL 32611, USA

Preprints must be identified (outside or inside the envelope) for the IAMP News Bulletin to be included.

- v. Those wishing to pay IAMP dues in usdlr may follow the instruction in iv.(omitting "IAMP News Bulletin" in the address).

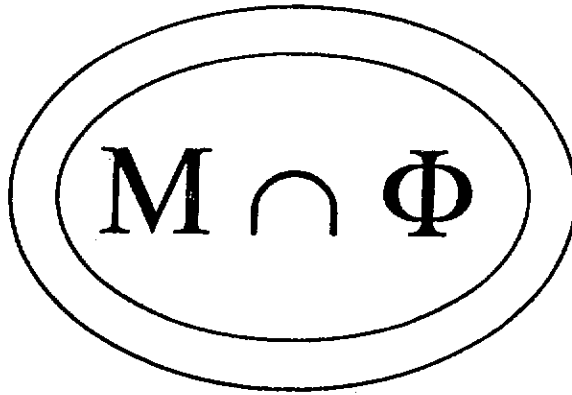
John R. Klauder

Open Position:

Director, School of Mathematics
Georgia Institute of Technology
beginning September, 1988

Address inquiries to:

Chairman, Director Search Committee
School of Mathematics
Georgia Institute of Technology
Atlanta GA 30332-0160
USA



International Association of Mathematical Physics
IXth Congress
Swansea, Wales, U.K., July 17 - 27, 1988

SPONSORED BY : Science and Engineering Research Council, International Union of Pure and Applied Physics, International Mathematical Union, International Association of Mathematical Physics, London Mathematical Society, British Institute of Physics

PLENARY SPEAKERS

J Bricmont
J Conlon
B Derrida
R L Dobrushin
S Donaldson
J Eckmann
P Goddard
M Jimbo *
V Jones
R Kotecky
S Kusuoka
I Manin
F Martinelli
Y Meyer
P A Meyer
H Narnhorfer
S Novikov
G Segal
S Shenker *
P Steinhardt *
M Virasoro

SESSIONS AND ORGANISERS

General Relativity : C Isham
Probabilistic Methods : E Carlen
String Theory : G Moore *
Non-Equilibrium Statistical Mechanics : E Presutti
Conformal Field Theories : W Nahm
Classical Mechanics : E Zehnder
Classical Field Theories : R Ward
Equilibrium Statistical Mechanics : C Newman, M Suhov
Analysis on Manifolds : E B Davies
Mathematical Problems in Condensed Matter Physics : J Avron
Operator Algebras : D E Evans
Disordered Systems : J Chayes, L Chayes
Constructive Quantum Field Theory : J Feldman
Non-Relativistic Quantum Mechanics : R Benguria
General Theory of Quantised Fields : D Buchholz
Dynamical Systems and Chaos : J Palis *
New Frontiers : B Simon

* : to be confirmed

SCIENTIFIC ORGANISING COMMITTEE

B Simon (Chairman), J T Lewis (Vice Chairman), M Atiyah, R L Dobrushin, D E Evans, J Frohlich, G Jona-Lasinio, D Olive, D Ruelle, L Streit, A Truman

FOR FURTHER INFORMATION CONTACT

IAMP Secretary, Department of Mathematics and Computer Science, University College of Swansea, Singleton Park, Swansea, SA2 8PP, Wales, U.K.,
Telephone (44) 0792 205678 x 5457
E-mail maian@uk.ac.swansea.pyramid

X SITGES CONFERENCE
=====

Sitges (Barcelona), Spain

June 06 - 10, 1988

FAR FROM EQUILIBRIUM PHASE TRANSITIONS

The Conference will be held at the Museum "Maricel" at Sitges. Among the lecturers that have accepted to speak, are:

- N. Abraham, Braunschweig
"Phase and frequency instabilities and dynamics in single mode lasers"
- P. Coullet, Nice
"The role of defects in the transition to space temporal chaos"
- M. Cross, Pasadena
"Principles of pattern formation in Physics, Chemistry and Biology"
- B. Derrida, Paris
"Dynamical phase transitions in spin models"
- E. Guyon, Paris
"Non linear physics of random patterns"
- K. Lindenberg, La Jolla
"Localmode transition in non linear systems"
- L. Lugiato, Milano
"Spatial and temporal structures in optical systems"
- D. Jasnow, Pittsburgh
"Scaling for an interfacial growth in stability"
- M. Lücke, Saarbrücken
"Convection in binary mixtures: properties and standing patterns"
- P. Mandel, Brussels
"Time-dependent phase transitions"
- G. Mazenko, Chicago
"Field theory of growth kinetics"
- H. Risken, Ulm
"Quantum treatment of dispersive optical bistability"
- M. San Miguel, Mallorca
"Fluctuations in the dynamics of nonlinear optical systems"
- D. Sherrington, London
"Dynamic response of quasicrystals and disordered magnets"
- H. Thomas, Basel
"Dynamic structures: formation, symmetry, stability"

Additional lecturers are being invited.

Applications should reach Prof. L. Garrido, Departamento de Física Fundamental, Diagona. 647, 08028 Barcelona, Spain, as early as possible. They will be answered as soon as circumstances permit. The Conference is directed to University Professors and Doctors with considerable research experience.

Sitges is a small charming summer resort on the Mediterranean coast 30km South of Barcelona with numerous sports facilities, such as swimming, sailing, tennis, golf, riding, etc. The average temperature during the month of June is 20°C.

Accommodation A limited number of rooms has been reserved for Conference participants at half the usual prices at Hotel "CALIPOLIS" ****. They are as follows:

Pesetas 2.800 per night for one bed in a double room

Pesetas 4.230 per night for a single room

All rooms have a private bath, terrace and TV by satellite receiving European and American stations. Breakfast is included.

Registration fee for the Conference is Pesetas 20.000. This fee includes a copy of the proceedings. The registration fee should be paid upon arrival.

X SITGES CONFERENCE

Sitges (Barcelona) , Spain

June 06 - 10, 1988

FAR FROM EQUILIBRIUM PHASE TRANSITIONS

Application Form

The Conference is directed to University Professors and
Doctors with considerable research experience

Name: _____

Present Academic Status: _____

Institution: _____

Address: _____

If you desire to speak*, please give the title of your contribution:

50 minutes
seminar:

Please indicate the references of your publications during the last
three years: (if space is insufficient, continue on separate page)

* Only a limited number of contributed papers can be included in the
proceedings. They will be selected by a scientific committee after the
end of the Conference.

(date)

(signature)

Please forward to:

Prof. L. Garrido
Departamento de Física Fundamental
Universidad de Barcelona
Diagonal 647
08028 Barcelona (Spain)
Tel: Barcelona 330.36.16

ERICE SCHOOL ON MATHEMATICAL PHYSICS

A NATO Advanced Study Institute

Title: Constructive Quantum Field Theory II

Date: 1- 15 July 1988

Location: Erice (Trapani), Italy

Expected lecturers include: T. Balaban, B. Durhuus, J. Fröhlich, G. Gallavotti, K. Gawedski, R. Haag, J. Harvey, A. Jaffe, L. Rosen, R. Seneor.

For information contact the organizers: G. Velo, Dipartimento di Fisica, Via Irnerio n° 46, 40126 Bologna (Italy) and A.S. Wightman, Department of Physics, Princeton University, Post Office Box 708, Princeton, NJ 08544 USA.

**NORDIC SUMMER SCHOOL
IN
MATHEMATICS
1988**

SCHRÖDINGER OPERATORS

at
Aarhus University Conference Center, Sandbjerg Slot, Denmark
August 1-12, 1988

There will be longer series of lectures by:

- R. CARMONA¹ (University of California, Irvine; Schrödinger operators with random potentials)
- W. HUNZIKER (ETH, Zürich; geometric methods for Schrödinger operators)
- T. KATO (University of California, Berkeley; the nonlinear Schrödinger equation)
- E. LIEB (Princeton University; Coulomb systems)
- I. SIGAL (University of Toronto; geometric methods, N-body operators).

The organizers expect that there will be shorter series of lectures by: S. Albeverio (Bochum), E. Balslev (Aarhus), F. Gesztesy (Caltech), B. Helffer (Nantes), R. Høegh-Krohn (Oslo), W. Kirsch (Bochum), A. Melin (Lund), P. Perry (Lexington), J. Sjöstrand (Orsay). Details will be announced later.

The school will accept students from all countries. However, a preference will be given to participants from the Nordic countries. The number of participants is limited. Application forms and detailed information on the prerequisites can be obtained from:

Nordic Summer School in Mathematics, att.: Arne Jensen, Matematisk Institut, Aarhus Universitet, Ny Munkegade, Bygning 530, DK-8000 AARHUS C, Denmark.

Application deadline May 1, 1988

The school is organized by R. Høegh-Krohn (Oslo), H. Holden (Trondheim), and A. Jensen (Aarhus). It is sponsored by Nordiska Forskarkurser.

¹not confirmed

XVIIIème ECOLE D'ETE DE CALCUL DES PROBABILITES

SAINT-FLOUR (Cantal)

21 Août - 7 Septembre 1988

CONFERENCIERS INVITES

- D. GEMAN, Professeur à l'Université du Massachusetts à AMHERST (U.S.A)
"Stochastic Methods in Image Analysis"
- E.J. HANNAN, Professeur émérite à l'Université Nationale de
CANBERRA (Australie)
"Linear Systems and their Statistical Treatment"
- N. IKEDA, Professeur à l'Université d'Osaka (Japon)
"Probabilistic Methods in the study of asymptotics"

XIXème ECOLE D'ETE DE CALCUL DES PROBABILITES

SAINT-FLOUR (Cantal)

20 Août - 6 Septembre 1989

CONFERENCIERS INVITES (sous réserve de confirmation)

- D.L. BURKHOLDER, Professeur à l'Université d'Illinois à
URBANA-CHAMPAIGN (U.S.A.)
- A.L. SZNITMAN, Chargé de recherche au C.N.R.S., PARIS
- M. ZAKAI, Professeur à l'Institut de Technologie de HAIFA (Israël)

INSCRIPTIONS et RENSEIGNEMENTS COMPLEMENTAIRES

P.L. HENNEQUIN

B.P. n° 45

F63170 AUBIERE

Tél. 73.26.41.10, poste 34-07



ETOPIM2 Secretary
Jacques LAFAIT
Laboratoire d'Optique des Solides
Université Pierre et Marie Curie
tour 13
4, place Jussieu
75252 Paris Cedex 05
FRANCE

CONFERENCE ORGANIZATION

INTERNATIONAL ADVISORY COMMITTEE

F. Abelès (Chairman, Paris),
D. Bergman (Tel Aviv), C.G. Granqvist (Göteborg),
E. Guyon (Paris), U. Kreibitz (Saarbrücken),
A.J. Sievers (Ithaca), B. Souillard (Palaiseau),
H.E. Stanley (Boston), T. Yamaguchi (Johoku).

PROGRAM COMMITTEE

J. Lafait (Paris) and D.B. Tanner (Gainesville)
(Co-chairmen)
B. Derrida (Saclay), G. Deutscher (Tel Aviv),
J.C. Garland (Columbus), O. Hunderi (Trondheim),
R. Maynard (Grenoble), P. Sen (Ridgefield),
D. Stroud (Columbus), D. Stauffer (Köln),
J. Vannimenus (Paris), J. Vlieger (Leiden).

LOCAL ORGANIZING COMMITTEE

S. Berthier, P. Gadenne, J. Lafait, M.L. Thèye.

IMPORTANT DATES 1988

March 12	deadline for abstract submission
May 5	notification of acceptance of abstracts, 2nd announcement
June 15	Last announcement (final program)
August 29	Submission of full-length manuscripts
	Beginning of the conference
September 2	End of the conference

LOCATION OF THE CONFERENCE

Ministère de la Recherche et de l'Enseignement
Supérieur on La Montagne Sainte Geneviève in
the center of the Quartier Latin. At walking distance
of Paris 6 and Paris 7 Universities, Ecole Normale,
ESPCI, Collège de France and Panthéon, Notre-
Dame, Sainte Chapelle, Jardins du Luxembourg...

CORRESPONDENCE AND INFORMATION

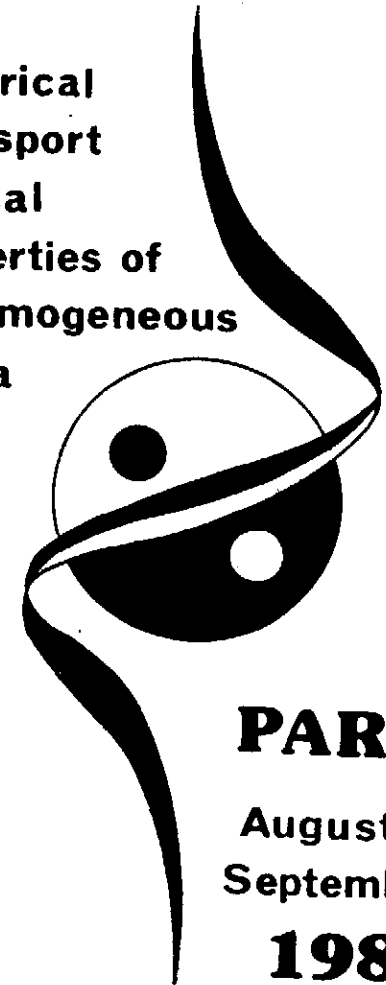
ETOPIM2 Secretary
Jacques LAFAIT
Laboratoire d'Optique des Solides
Université Pierre et Marie Curie
4, place Jussieu - 75252 Paris Cédex 05 - France.
Tél. : (1) 43 36 25 25 4353 or 3981
Telex : UPMCSIX 200145 F
Teletex : 933 - 146333527 = UPMCSIX
Bitnet : (IBM) LAFAIT AT FRCPN11.

First Announcement - Call For Papers

Second International Conference

ETOPIM2

Electrical
Transport
Optical
Properties of
Inhomogeneous
Media



PARIS

August 29
September 2

1988

Abstract Deadline: MARCH 12

GENERAL OBJECTIVES

This '88 conference is intended to be a follow up of the Conference on Electrical Transport and Optical Properties of Inhomogeneous Media (ETOPIM), held in Columbus in September 1977. Although the intervening years have seen conferences with closely related themes, there has been no direct successor to the '77 ETOPIM Conference. Moreover, the field of Inhomogeneous Media broadened significantly during these last ten years (electron and photon localization, new approaches of coherence, non linear effects, percolation, optical cross-over, thermal transport, relation to morphology, fractal and multifractal concepts, new materials...).

A principal aim of the conference will be to bring together persons working on different approaches: fundamental (theory and experiment) and applications in order to create a cross-fertilization of ideas. Invited presentations will particularly focus on the new subjects recently developed and review some important broader themes. Contributed papers on these new topics covering original unpublished work are particularly encouraged.

FORMAT

- 4 ½ days conference with one main topic per day :
- long invited (review) papers.
- a few selected short oral communications.
- a poster session followed by a round table (except on Friday).

There will be no parallel sessions.

English is the working language of the conference for oral and written contributions. No simultaneous translation will be provided.

SCOPE

- Theories of wave-propagation, Non linear waves, Coherence, Localization.
- Weak localization of light, backscattering.
- New approaches of the metal-insulator transition : electrical, optical, computer simulations.
- Non linear percolation.
- New effective medium theories, 3D and 2D.
- Interfacial effects.
- Transport properties of new inhomogeneous materials : superconductors, quasicrystals...
- New morphologies : multifractals, superlattices...
- Applications.
- No restriction will be put on material types and morphologies, provided that they are related to transport properties. Preparation techniques and morphological studies must also be presented in that line.

ABSTRACTS

Each author is requested to submit an original and two copies of a ONE PAGE ABSTRACT to be reproduced, if accepted, directly by photo offset and published in the conference digest.

Abstracts should be typed in English on white bond paper, inside a frame 16 x 24 cm, single spaced and should include title (capital letters, underlined), names of authors (capital letters), affiliation and complete return address. Figures, tables and drawings are allowed, but should suffer 0.71 reduction. Only ruled half tone photographs will be reproduced.

DEADLINE

The abstracts should reach the organizing secretary before March 12, 1988 and will be reviewed by the International and Program Committee members.

ACCEPTANCE

Authors will be notified of the acceptance of their communications by May 5, 1988 and required to deliver a FULL LENGTH MANUSCRIPT on the first day of the conference for refereeing during the conference.

PROCEEDINGS

Invited, oral and poster contributions will be edited. The proceedings will be mailed to the participants in January 1989.

CONFERENCE FEE

Complete details on the preparation of manuscript and the registration fee will be included in the second announcement (May 5, 1988) and sent to all conference registrants having filled and sent the attached preregistration card.

The amount of the registration fee will be around 1 700 FF (around 300 US \$ at present rate) with special rates for students.

PREREGISTRATION FORM

(Please block letters)

Family Name :

First Name :

Affiliation :

Full Address :

Phone :

Telex :

Teletex :

Bitnet code (IBM) :

Please send me the 2nd announcement

I plan to attend the symposium

I intend to submit abstracts

I demand a student bursary

I want accommodation :

in a hotel

in a student residence

Please indicate the address of persons who may be interested and may not have received this announcement.

Please return this form as soon as possible and in any case before March 12, 1988 (deadline for abstract submission).



continued/

Members might also be interested to learn of our new mathematical journals package. We are offering a significantly reduced combined subscription rate to Journal of Physics A: Mathematical and General, Classical and Quantum Gravity, Inverse Problems and Nonlinearity. It is now possible to subscribe to these four journals for just £884.00 - a saving of £156.00.

I do hope you will be able to mention Nonlinearity and this new journals package in the IAMP News Bulletin and, if you are able to, I would very much like to receive a copy.

Thank you so much for your help.

Yours sincerely,

Geraldine Pounsford (Mrs)
Sales Promotion Manager



GP/586

30 October 1987

Professor Dr Ph Blanchard
Facultat fur Physik
Universitat Bielefeld
Postfach 8640
D-4800 Bielefeld 1
FRG

IOP Publishing Ltd

Techno House
Redcliffe Way
Bristol BS1 6NX
England

Telex 449149
Telephone 0272 297481
Fax 0272 294318

Dear Professor Blanchard,

I am not sure whether you are still connected with the IAMP News Bulletin and I apologise for troubling you if you are not. I was wondering whether it would be possible for you to include a mention of a new international journal we are launching with The London Mathematical Society in February next year. The journal is called Nonlinearity and is aimed at bridging mathematics and physics to bring the reader the results of the latest research in nonlinear systems. I enclose a leaflet giving subscription details etc.

You might also be interested to know what articles are scheduled for the first few issues. These include

Renormalization of curlicues by M V Berry and J Goldberg

Dynamics of quadratic correspondence by S Bullett

The Malliavin derivative for functionals of diffusions on manifolds by M H A Davis

The gluing bifurcation: I. Symbolic dynamics of the closed curves by J M Gambaudo, P Glendinning and C Tresser

The recognition problem for equivariant singularities by I Melbourne

The Geroch group and non-Hausdorff twistor spaces by N M J Woodhouse and I J Mason

Stability of dynamical systems by E C Zeeman

Members of your Association can request a specimen copy of this new journal by writing to the Journals Marketing Department, IOP Publishing Ltd, Techno House, Redcliffe Way, Bristol BS1 6NX, UK.

Continued overleaf

● High standard of refereeing

When a paper is submitted for publication in *Nonlinearity*, it is subjected to a unique system of refereeing designed to ensure the highest standard of accepted material. Every paper is allocated to a member of the Editorial Board who suggests suitable referees and assesses the referees' reports before making a final recommendation to the Honorary Editors.

● Prompt publication times

● No page charges

There are no page charges, and 25 offprints of each article will be supplied free of charge to the principal author.

● Wide readership

Nonlinearity has a guaranteed initial circulation of over 2500. For the first year it is being sent free to all subscribers to *Journal of Physics A: Mathematical and General* and to The London Mathematical Society's group of journals.

● Attractive price

The subscription rate for Volume 1 is £110.00 (US\$195.00).

We would like to hear from you. Why not submit your paper to *Nonlinearity* – the journal with a guaranteed circulation of over 2500. The main criterion for acceptance is that the paper represents a significant contribution to the general mathematical and physical understanding of nonlinear systems. Send it to the Executive Editor at the address below or to an appropriate member of the Editorial Board today. The first issue of *Nonlinearity* is being published in February 1988. So if you would like to reserve a copy of the first issue, fill in the attached order form now.

ORDER FORM

To: Journals Marketing Department
IOP Publishing Ltd, Techno House, Redcliffe Way, Bristol BS1 6NX, UK
Telephone: 0272 297481 Telex: 449149 INSTP G Fax: 0272 294316

- Please send me a copy of the first issue of *Nonlinearity*
 Please send me detailed Notes for Authors

Name _____

Address _____

Signed _____

Date _____

Orders or requests for further information originating in the following countries should be directed to:

USA, Canada and Mexico
American Institute of Physics, Dept W/M,
35 East 45th Street, New York, NY 10017, USA.

Japan
Maruzen Co Ltd, 3-10 Nishinokoi 2-Chome, Chuo-Ku, Tokyo 103, Japan.
Telephone: 272 7211 Telex: 286516 MARUZEN

A brief guide for authors

Contributions may be in English, French or German, but an abstract, title and list of figure and table captions must be provided in English.

Contributions should be as concise as possible, and should include the following:

- 1 Three copies of the typescript, at least one of which must be single-sided
- 2 One further copy of the title and abstract
- 3 One set of four copies of line diagrams, suitable for reproduction, preferably with all lettering omitted
- 4 One set of good-quality glossy prints or half-tone photographs (not negatives)
- 5 A completed Assignment of Copyright form if possible.

Colour reproduction of illustrations is available, for which the author will be asked to pay the additional reproduction costs incurred.

References should be collected at the end of the paper using either the Harvard (alphabetical) or the numerical system. Titles of papers and final page numbers should be included if possible. Titles of journals should be abbreviated as in BS4148:1985.

NONLINEARITY

A journal of The Institute of Physics
and The London Mathematical Society

This new quarterly international journal is published jointly by The Institute of Physics and The London Mathematical Society. These prestigious, learned societies have been publishing journals and books for many years and are well known for their high-quality, long-established publications.

Nonlinearity is aimed at bridging mathematics and physics to bring you the results of the latest research in nonlinear systems.

● High quality papers

Nonlinearity covers a wide mathematical spectrum ranging from proofs of important theorems to papers presenting ideas, conjectures and numerical or physical experiments of significant physical and mathematical interest.

● Distinguished international Editorial Board

The coverage of *Nonlinearity* is wide and is indicated by the subject interests of the distinguished members of its international Editorial Board.

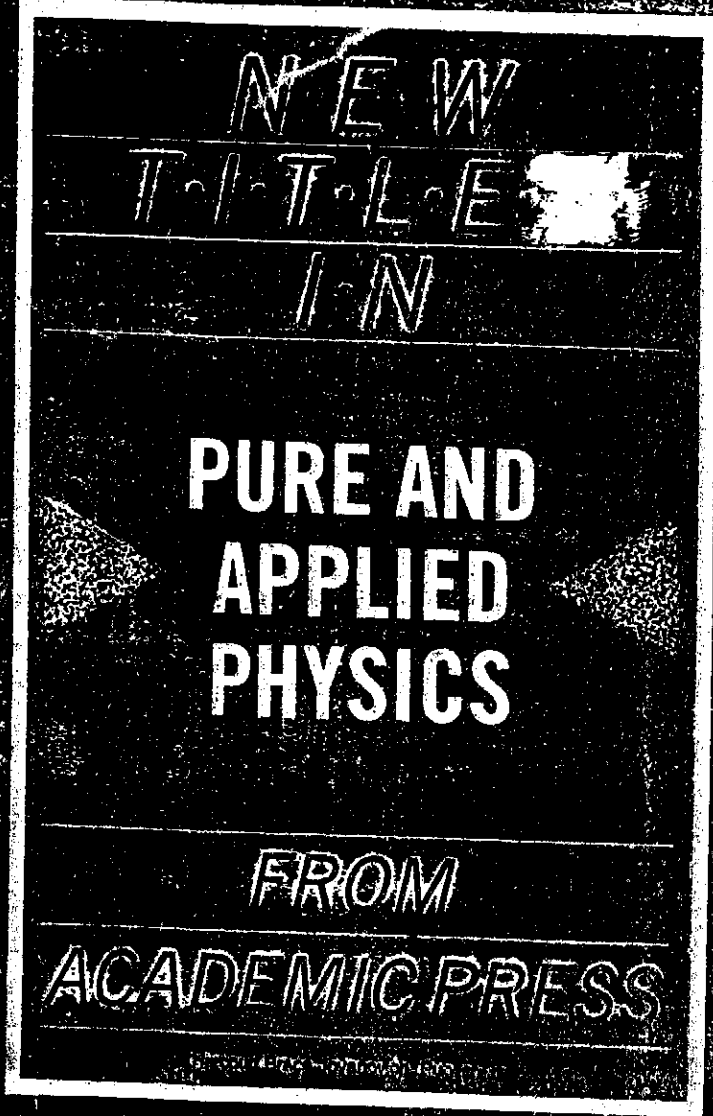
Honorary Editors

J D Gibbon (Imperial College, London – for the IOP) Integrable systems
D A Rand (Warwick University – for the LMS) Pure and applied dynamical systems

Editorial Board

L Arnold (Bremen) Stochastic dynamics
T B Benjamin (Oxford) Fluid mechanics and experiments
M V Berry (Bristol) Quantum chaos, geometrical methods in the physics of classical and quantum waves
D Campbell (Los Alamos) Nonlinear solid-state physics, field theory and integrable systems
S Donaldson (Oxford) Topological and geometrical methods in mathematics and mathematical physics
J D Farmer (Los Alamos) Nonlinear dynamics, adaptive systems and neural networks
A Fowler (Oxford) Fluid dynamics, mathematical biology, geophysics, convection, turbulence
C Isham (Imperial College, London) Quantum gravity

A Libchaber (Chicago) Fluid and condensed matter experiments
R MacKay (Warwick) Hamiltonian systems
J B McLeod (Oxford) PDEs
Y Manin (Steklov Institute, USSR) Geometry and integrable systems
I Nirenberg (Courant Institute, NYU) PDEs
D Olive (Imperial College, London) Gauge and string theories
J Palis (IMPA, Rio de Janeiro) Dynamical systems
R Penrose (Oxford) General relativity, twistors, geometrical physics, quasi-crystals
Y Pomeau (ENS, Paris) Fluid mechanics, turbulence, pattern formation
I Prigogine (Weizmann Institute) Condensed-matter physics, nonlinear dynamics and fractals
P Saffman (California Institute of Technology) Fluid mechanics
A C Scott (DTH Copenhagen & Arizona) Biophysics, applied integrable systems
J A Smoller (Michigan) Nonlinear PDEs
I Stewart (Warwick) Bifurcation theory and singularities
F Takens (Groningen) Bifurcations of dynamical systems, pure dynamical systems, data analysis
J Toland (Bath) Nonlinear PDEs and applications
C Tresler (Nice) Dynamical systems
H O Weiss (Cambridge) Astrophysics, convection and MSD
G Wilson (Imperial College, London) Integrable systems
E C Zeeman (Warwick) Catastrophe theory, singularity theory, pure and applied dynamical systems



* Quantum Scattering and Spectral Theory

D.B. Pearson
*Department of Applied Mathematics
University of Hull, England*

Scattering theory is a central area of mathematical physics having links in quantum theory, atomic and molecular theory, statistical physics and classical wave phenomena. The mathematical ideas and methods are applicable in many other fields and the theory is now established as a discipline in its own right – involving techniques such as functional analysis, operator theory, spectral analysis, differential equations and measure theory. In this work, the author presents a coherent and systematic account of the development of the subject, beginning with fundamental principles and proceeding to more advanced applications. No existing book in this field develops the theory in such a mathematically consistent way, whilst remaining accessible to the less mathematically qualified physicist. This book will be of interest to mathematicians seeking an introduction to this area; physicists, particularly those with a limited mathematical grounding in the subject, and to specialists requiring an up-to-date account of recent developments in the field.

CONTENTS: Introduction. Time-Dependent Scattering Theory – First Steps. The Structure of Wave Operators. The Free Hamiltonian and its Perturbations. The Schrodinger Operator. Spectral Analysis of the Schrodinger Operator.

Scattering by Central Potentials. Scattering in Three-Space Dimensions. Localisation. The Trace Method in Scattering Theory. Asymptotic Completeness and the Generator of Dilations. Bound States and Scattering States. Scattering Theory in Context.

Due February 1986, c.512pp.,
ISBN: 0.12.548260.4
Price to be announced. £48.00

PREPRINTS (RECEIVED IN MURRAY HILL)

B. Scarpellini, Mathematisches Institut, Univeristat Basel, Ch-4051 Basel, Switzerland and P. -A. Vuillermot, Mathematics Department, The University of Texas, Arlington, TX 76019
INVARIANT MANIFOLDS FOR SEMILINEAR WAVE EQUATIONS ON R^{**2} : ON THE EXISTENCE OF ALMOST-PERIODIC BREATHERS

VARIETES STABLES ET INSTABLES POUR CERTAINES EQUATIONS DES ONDES SEMILINEARIES DANS R^{**2}

R. Weder, Instituto de Investigaciones en Matematicas Aplicadas y en Sistemas, Universidad Nacional Autonoma de Mexico, Apdo, Postal 20-728, Admon. No. 20 Delegacion de Alvaro Obregon, 01000 Mexico, D. F.

THE LIMITING ABSORPTION PRINCIPLE AT THRESHOLDS ELECTROMAGNETIC CASE

E. P. Osipov, Dept. of Theoretical Physics, Institute of Mathematics, 630090, Novosibirsk, 90, USSR,

EUCLIDEAN MARKOV FIELDS FROM STOCHASTIC PARTIAL DIFFERENTIAL EQUATIONS IN EIGHT-DIMENSIONAL SPACE

M. B. Ruskai, Dept. of Mathematics, University of Lowell, Lowell, MA 08154
ENTROPY OF REDUCED DENSITY MATRICES

EXTREMAL PROPERTIES OF RELATIVE ENTROPY IN QUANTUM STATISTICAL MECHANICS

J. Miekisz, The Center for Transport Theory and Mathematical Physics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061

LOW TEMPERATURE EQUILIBRIUM STATES OF FERROMAGNETIC LATTICE SYSTEMS

HOW LOW TEMPERATURE CAUSES LONG RANGE ORDER

S. J. Summer, Dept. of Mathematics, University of Rochester, Rochester, NY 14627 and R. Werner, Fachbereich Physik, Universitat Osnabruck, D-4500 Osnabruck, BRD
MAXIMAL VIOLATION OF BELL'S INEQUALITIES FOR ALGEBRAS OF OBSERVABLES IN TANGENT SPACETIME REGION

P. Federbush, University of Michigan, Dept. of Mathematics, Ann Arbor, MI, 48109
ON THE QUANTUM YANG-MILLS FIELD THEORY

A PHASE CELL APPROACH TO YANG-MILLS THEORY III. LOCAL STABILITY, MODIFIED RENORMALIZATION GROUP TRANSFORMATION

A PHASE CELL APPROACH TO YANG-MILLS THEORY V. STABILITY

P. Federbush, University of Michigan, Dept. of Mathematics, Ann Arbor, MI, 48109 and C. Williamson, Dept. of Mathematics, University of Missouri, Columbia, MI, 65211
A PHASE CELL APPROACH TO YANG-MILLS THEORY II. ANALYSIS OF A MODE

J. Slawny and P. F. Zweifel, Center for Transport Theory and Mathematical Physics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061
A NOTE ON THE SINGULAR EIGENFUNCTION METHOD IN TRANSPORT THEORY

S. L. Pavari-Fontana, Dipartimento de Metodi e Modelli Matematici, Universita di Roma "La Sapienze" Via Scarpa 10, 00181 Roma, Italy and P. F. Zweifel, Center for Transport Theory and Mathematical Physics, Virginia Polytechnic Institute and State University, Blacksburgh, VA 25061

APPLICATION OF THE CLOSURE RELATION IN TRANSPORT THEORY

G. A. Hagedorn, Dept. of Mathematics and Center for Transport Theory and Mathematical Physics, Virginia Polytechnic Institute and State University, Blacksburgh, VA 24061

HIGH ORDER CORRECTIONS TO THE TIME-DEPENDENT BORN-OPPENHEIMER APPROXIMATION II: COULOMB SYSTEMS

J. Mickisz and C. Radin, Mathematics Dept., University of Texas, Austin, TX 78712

ARE SOLIDS REALLY CRYSTALLINE

DUBLIN Institute for advanced studies

School of Theoretical Physics, 10 Burlington Road, Dublin 4, Ireland. Telephone 650748. Telegrams: DIAS DUBLIN. Telex: 31687 DIAS EI.

DOCUMENT LIST XXIX: July-September 1987

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-87-27: *P. JENKINS & D. HEFFERNAN: Numerical investigation of chaos in the time-delay Ikeda laser-ring cavity. To appear in *Proc. Conf. on Instabilities and Chaos in Non-Linear Dynamical Systems, Lucca (Pisa), 8-10 July 1987*.

-28: *M. van den BERG, J. T. LEWIS, & J. V. PULÉ: Large deviations and the boson gas. To appear in *Proc. Conf. Swansea*.

-29: *J. BURZLAFF & L. O'RAIFEARTAIGH: On the construction of Higgs sectors. To appear in *Proc. Sympos. on Symmetry and Supersymmetry in Nuclear and Subnuclear Physics, Capri, May 1985*.

-30: J. M. GOLDEN & G. A. C. GRAHAM: Energy balance criteria for viscoelastic fracture.

-31: J. L. BIRMAN & A. I. SOLOMON: Discrete symmetries and selection rules in unified SU(8) for superconductivity and density waves.

-32: A. MONTORSI, M. RASETTI, & A. I. SOLOMON: Dynamical superalgebra and supersymmetry for a many-fermion system.

-33: G. d'ARIANO, S. MOROSI, M. RASETTI, J. KATRIEL, & A. I. SOLOMON: Squeezing versus photon number fluctuations. *Phys. Rev. 36D (1987), 2399-2407*.

-34: J. KATRIEL, A. I. SOLOMON, G. d'ARIANO, & M. RASETTI: Multi-photon squeezed states.

-35: I. C. DORLAS: Renormalization and the continuum limit. *Mark Kac Seminar, Amsterdam*.

DIAS-STP-87-36: Zhong-Qi MA & Bo-Wei XU: The embedding SO(4) pseudoparticle solutions to the Yang-Mills equations. *J. Phys. A: Math. Gen.: 20 (1987), L1223-L1227*.

-37: *J. McCONNELL: Arthur William Conway: Mathematician, Physicist and University Administrator. To appear in *"Some People and Places in Irish Science and Technology, vol. II", Roy. Ir. Acad.*

-39: B. DOLAN & D. H. TCHRARIAN: Conformally invariant \mathcal{G} -models in 2n dimensions. *Phys. Lett. 198B (1987), 447-450*.

-40: D. H. TCHRARIAN: On the dimensional reduction of gravity with torsion. *Class. Quantum Grav. 4 (1987), L217-L224*.

-41: N. G. DUFFIELD & J. V. PULÉ: Thermodynamics of the BCS model through large deviations. *LMP 14 (1987), 329-331*.

-42: *P. J. HOUSTON: Geometrical aspects of operator ordering terms in gauge invariant quantum models.

-43: *J. McCONNELL: Schroedinger a Dublino. *Internat. Conf. "Erwin Schroedinger, Scientist and Philosopher", Venice, 11-12 December 1987*.

-44: W. CEGZA, J. T. LEWIS, & G. A. RAGGIO: The free energy of quantum spin systems and large deviations.

-45: *T. GARAVAGLIA: A quantum model for DNA.

-46: *M. VANDYCK: On the time evolution of some Robinson-Trautman line elements. To appear in *Proc. 2nd Hungarian Workshop on General Relativity, Budapest, 1-5 Sept. 1987*.

-47: B. P. DOLAN & D. H. TCHRARIAN: New Lagrangians for Bosonic m-branes with vanishing cosmological constant.

-48: A. C. D. van ENTER: One-dimensional spin-glasses, uniqueness and cluster properties.

DUBLIN INSTITUTE FOR ADVANCED STUDIES

School of Theoretical Physics, 10 Burlington Road, Dublin 4, Ireland. Telephone 680748, Telegrams: DIAS DUBLIN, Telex: 31687 DIAS EI

DOCUMENT LIST XXX: October-December 1987

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-87-49: J. L. BIRMAN & A. I. SOLOMON:
Dynamical SU(8) for phase-coexistence: Thermodynamics of the SO(4) x SO(4) submodel.

-50: A. MONTORSI, M. RASETTI, & A. I. SOLOMON:
Supersymmetry in a BCS-Umklapp model.

-51: J. T. LEWIS & G. A. RAGGIO: The equilibrium thermodynamics of a spin-boson model.

-52: W. CEGŁA & M. KLIMEK: Large deviation principle for product measures. Presented at Conf. on Quantum Probability and Applications, Rome 1987.

-53: *J. R. McCONNELL: Dublin Institute for Advanced Studies, School Theoretical Physics. To appear in "Some People and Places in Irish Science and Technology, vol. II", Roy. Ir. Acad.

-54: *L. O'RAIFEARTAIGH: The anomaly-flux-index identity and its Euclidean extension. Report on joint work with P. Forgacs, R. Musto, & A. Wipf. presented at 16th Internat. Coll. on Group Theoretical Methods in Physics, Varna, June 1987.

-55: T. DORLAS: Renormalization of a hierarchical Φ_3^4 model.

-56: W. I. SKRYPNIK: Integrable solutions of the hierarchy of the BBGKY-type for Brownian particles in the mean-field limit. To appear in Proc. Kiev Conf. on Nonlinear Phenomena, 1987.

DIAS-STP-87-57: J. M. BURNS & B. GOLDSMITH: On Abelian subgroups of symmetric groups.

-58: *L. O'RAIFEARTAIGH: Gravitation and the unification of the fundamental forces. Presented at Conf. for 60th Birthday of P. Wayman: to appear in Ir. Astrophys. J.

-59: B. DULAN: A group theoretical approach to black hole radiation.

-60: *M. VANDYCK: On the problem of space-time symmetries in the theory of supergravity, Part II.

PREPRINTS (RECEIVED IN BIELEFELD)

- C. Albanese and J. Fröhlich, Theoretische Physik, ETH-Hönggerberg,
CH-8093 Zürich, Switzerland,
PERIODIC SOLUTIONS OF SOME INFINITE-DIMENSIONAL HAMILTONIAN SYSTEMS
ASSOCIATED WITH NON-LINEAR PARTIAL DIFFERENCE EQUATIONS I.
- A. Amann, Laboratory of Physical Chemistry, ETH-Zentrum, CH-8092 Zürich,
Switzerland.
CHIRALITY AS A CLASSICAL OBSERVABLE IN ALGEBRAIC QUANTUM MECHANICS
- J.-P. Antoine and A. Inoue, Institut de Physique Théorique, Université
Catholique de Louvain, B-1348 Louvain-la-Neuve, Belgique and
Department of Applied Mathematics, Fukuoka University, Fukuoka,
Japan,
POSITIVE INVARIANT SESQUILINEAR FORMS ON PARTIAL*-ALGEBRAS
- J.-P. Antoine and A. Inoue, adress: see above,
UNBOUNDED GENERALIZATION OF VON NEUMANN ALGEBRAS BY PARTIAL Op*-
ALGEBRAS
- J. Apel und U. Petermann, Naturwissenschaftlich-Theoretisches Zentrum,
Karl-Marx-Universität, DDR-7010 Leipzig, und Sektion Mathematik,
COMPUTATION IN NON-COMMUTATIVE DOMAINS FROM THE VIEWPOINT OF ITS
IMPLEMENTATION
- J.C.A. Barata and K. Fredenhagen, II. Institut für Theoretische Physik
der Universität Hamburg, Luruper Chaussee 149, D-2000 Hamburg 50,
FRG, to appear in the Proceedings of the International Symposium on
Field Theory on the Lattice, Seillac 1987,
SCATTERING THEORY FOR EUCLIDEAN LATTICE FIELDS
- J. Beckers, Physique Théorique et Mathématique, Institut de Physique (B5)
Université de Liège, B-4000 Liège 1, Belgique, to be published in
the Proceedings of the "WORKSHOP" ON MATHEMATICAL PHYSICS -
Bujumbura 1987
SYMETRIES ET SUPERSYMETRIES DE L'OSCILLATEUR HARMONIQUE EN MECANIQUE
QUANTIQUE
- J. Beckers, D. Dehin and V. Hussin, adress: see above, to be published in
Journ. Phys. A (1988),
DYNAMICAL AND KINEMATICAL SUPERSYMETRIES OF THE QUANTUM HARMONIC
OSCILLATOR AND THE MOTION IN A CONSTANT MAGNETIC FIELD
- P. Beckmann and J. Stückrad, Naturwissenschaftlich-Theoretisches Zentrum
der Karl-Marx-Universität, DDR-7010 Leipzig und Sektion Mathematik,
THE CONCEPT OF GRÖBNER ALGEBRAS
- M. Boiti, J.Jp. Leon and F. Pempinelli, Dipartimento di Fisica dell'
Università, 73100 Lecce, Italia and Laboratoire de Physique Mathé-
matique, U.S.T.L. 34060 Montpellier Cedex, France,
SPECTRAL TRANSFORMS AND NON CANONICAL RECURSION OPERATORS IN MULTI-
DIMENSIONS
- D. Bollé, F. Gesztesy and C. Danneels, Instituut voor Theoretische Fysica,
Universiteit Leuven, B-3030 Leuven, Belgium and Mathematics Department
Caltech, Pasadena, California 91125, USA,
THRESHOLD SCATTERING IN TWO DIMENSIONS

- F. Bracks, D. Constaes, A. Ronveaux and H. Serras, Département de Physique, Facultés universitaires, Notre-Dame de la Paix, B 5000 Namur, Belgique,
ON THE HARMONIC AND MONOGENIC DECOMPOSITION OF POLYNOMIALS
- E. Brüning, Naturwissenschaftlich-Theoretisches Zentrum der Karl-Marx-Universität, DDR-7010 Leipzig
A NOTE ON SOLUTION OF TWO-DIMENSIONAL SEMILINEAR ELLIPTIC VECTOR-FIELD EQUATIONS WITH STRONG NONLINEARITY
- L. Dabrowski and J. Shabani, International School for Advanced Studies, 34100 Trieste, Italy,
FINITELY MANY SPHERE INTERACTIONS IN QUANTUM MECHANICS: NON SEPARATED BOUNDARY CONDITIONS
- F. Delyon, G. Deutscher, Y.-E. Lévy and B. Souillard, Centre de Physique Théorique, Ecole Polytechnique, F-91128 Palaiseau, France, Department of Physics and Astronomy, Tel Aviv University, Ramat Aviv, Tel Aviv, Israel,
RANDOM WALKS, SUPERLOCALIZATION AND HOPPING CONDUCTIVITY IN SOME DISORDERED SYSTEMS
- B.P. Dolan, 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,
A GROUP THEORETICAL APPROACH TO BLACK HOLE RADIATION
- T.C. Dorlas and A.C.D. van Enter, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland and Lady Davis Fellow, Department of Physics, Technion, 32000 Haifa, Israel,
EXAMPLE OF A RENORMALIZATION GROUP FIXED POINT PECULIARITY
- T.C. Dorlas, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland,
RENORMALIZATION OF A HIERARCHICAL ϕ_3^4 MODEL
- J. Dittrich and P. Exner, Preprint E2-87-599, Dubna 1987,
A NON-RELATIVISTIC MODEL OF TWO-PARTICLE DECAY
4. RELATION TO THE SCATTERING THEORY, SPECTRAL CONCENTRATION AND BOUND STATES
- J.-P. Eckmann, Département de Physique Théorique, Université de Genève, CH-1211 Geneva 4, Switzerland and C.E. Wayne, Department of Mathematics, Pennsylvania State University, University Park, Pa. 16802 USA,
LIAPUNOV SPECTRA FOR INFINITE CHAINS OF NONLINEAR OSCILLATORS
- G.A. Elliott, T. Natsume and R. Nest, Mathematics Institute, University of Copenhagen, Universitetsparken 5, DK-2100 Copenhagen, Denmark,
CYCLIC COHOMOLOGY FOR ONE-PARAMETER SMOOTH CROSSED PRODUCTS
- F. Embacher, Institut für Theoretische Physik, Universität Wien, Boltzmann-gasse 5, A-1090 Wien,
FREE BOSONIC STRING FIELD THEORY WITHOUT SUPPLEMENTARY FIELDS
- F. Embacher, adress: see above,
SOLITONS IN SUPERGRAVITY
- P. Exner, P. Seba and P. Stovicek, Preprint E2-87-707, Dubna 1987,
QUANTUM INTERFERENCE ON GRAPHS CONTROLLED BY AN EXTERNAL ELECTRIC FIELD

- M. Fannes, J.T. Lewis and A. Verbeure, Instituut voor Theoretische Fysica, Universiteit Leuven, B-3030 Leuven, Belgium, School of Theoretical Physics, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland,
SYMMETRIC STATES OF COMPOSITE SYSTEMS
- J. Friedrich, Naturwissenschaftlich-Theoretisches Zentrum der Karl-Marx-Universität, DDR-7010 Leipzig, und Sektion Mathematik,
INTEGRAL REPRESENTATION OF POSITIVE DEFINITE MATRIX-VALUED DISTRIBUTIONS ON CYLINDERS
- J. Fröhlich and P. Marchetti, Theoretical Physics, ETH-Hönggerberg, CH-8093 Zürich, Switzerland, Dipartimento di Fisica, Università di Padova, I.N.F.N., I-35131 Padova, Italy,
BOSONIZATION, TOPOLOGICAL SOLITONS AND FRACTIONAL CHARGES IN TWO-DIMENSIONAL QUANTUM FIELD THEORY
- J. Fröhlich, Theoretical Physics, ETH-Hönggerberg, CH-8093 Zürich,
STATISTICS OF FIELDS, THE YANG-BAXTER EQUATION AND THE THEORY OF KNOTS AND LINKS
- F. Gesztesy and B. Simon, Institute for Theoretical Physics, University of Graz, A-8010 Graz, Austria and Division of Physics, Mathematics and Astronomy, California Institute of Technology, Pasadena, CA 91125,
ON A THEOREM OF DEIFT AND HEMPEL
- J.M. Gracia-Bondía and J.C. Várilly, Escuela de Matemática, Universidad de Costa Rica, San José, Costa Rica,
NONNEGATIVE MIXED STATES IN WEYL-WIGNER-MOYAL THEORY
- H. Grosse and L. Pittner, Institut für Theoretische Physik, Universität Wien, Institut für Theoretische Physik, Universität Graz,
GROUPS OF AUTOMORPHISMS OF THE CANONICAL COMMUTATION AND ANTICOMMUTATION RELATIONS
- H. Grosse, Institut für Theoretische Physik, Universität Wien,
ON THE LEVEL ORDER FOR DIRAC OPERATORS
- C.J. Hamer, G.R.W. Quispel and M.T. Batchelor, Department of Theoretical Physics, Research School of Physical Sciences, Australian National University, Canberra, A.C.T. 2601 Australia,
CONFORMAL ANOMALY AND SURFACE ENERGY FOR POTTS AND ASHKIN-TELLER QUANTUM CHAINS
- W. Hunziker, Institut für Theoretische Physik, ETH Zürich,
NOTES ON ASYMPTOTIC PERTURBATION THEORY FOR SCHRÖDINGER EIGENVALUE PROBLEMS
- M. Karowski, Theoretical Physics, ETH-Hönggerberg, CH-8093 Zürich, Switzerland,
INTEGRABLE SYSTEMS AND CONFORMAL INVARIANCE
- W. Kirsch and B. Simon, Institut für Mathematik, Ruhr-Universität Bochum, D-4630 Bochum, FRG and Division of Physics, Mathematics and Astronomy, California Institute of Technology, Pasadena, CA 91125,
CORRECTIONS TO THE CLASSICAL BEHAVIOR OF THE NUMBER OF BOUND STATES OF SCHRÖDINGER OPERATORS

- S. Kotani and B. Simon, Department of Mathematics, Kyoto University, Kyoto, Japan and Division of Physics, Mathematics and Astronomy, California Institute of Technology, Pasadena, CA 91125,
STOCHASTIC SCHRÖDINGER OPERATORS AND JACOBI MATRICES ON THE STRIP
- F. Koukiou, D. Petritis and M. Zahradnik, Institut de Physique Théorique, Université de Lausanne, 1015 Lausanne, Switzerland and Department of Mathematics, Charles University, 18600 Prague, Czechoslovakia,
EXTENSION OF THE PIROGOV-SINAI THEORY TO A CLASS OF QUASIPERIODIC INTERACTIONS
- J. JP. Leon, Laboratoire de Physique Mathématique, U.S.T.L., 34060 Montpellier Cedex, France,
SPECTRAL TRANSFORM AND SOLITONS FOR GENERALIZED COUPLED BLOCH SYSTEMS
- J. JP. Leon, adress: see above,
SPECTRAL TRANSFORM AND BACKLUND TRANSFORMATIONS FOR EVOLUTIONS WITH SINGULAR DISPERSION RELATIONS
- J.T. Lewis, V.A. Zagrebnov, J.V. Pulé, Joint Institute for Nuclear Research, Dubna, U.S.S.R. and University College, Dublin, Ireland and Dublin Institute for Advanced Studies, Dublin, Ireland,
THE LARGE DEVIATION PRINCIPLE FOR THE KAC DISTRIBUTION
- J.T. Lewis and G.A. Raggio, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland,
THE EQUILIBRIUM THERMODYNAMICS OF A SPIN-BOSON MODEL
- E.H. Lieb, I.M. Sigal, B. Simon and W. Thirring, Depart. of Math. and Physics, Princeton University, Princeton, NJ 08544, Depart. of Mathematics, University of Toronto, Toronto, Canada M5S 1A1, Division of Physics, Mathematics and Astronomy, California Institute of Technology, Pasadena, CA 91125, Institute for Theor. Physics, University of Vienna, Vienna, Austria,
APPROXIMATE NEUTRALITY OF LARGE-Z IONS
- J. Löffelholz, NTZ und Sektion Physik, Karl-Marx-Universität, DDR-7010 Leipzig,
FARADAY'S LAW AND QUANTUM THEORY
- R. Longo, Dipartimento di Matematica, Seconda Università di Roma "Tor Vergata", Via Orazio Raimondo - 00173 Rome, Italy,
RESTRICTING A COMPACT ACTION TO AN INJECTIVE SUBFACTOR
- H. Narnhofer, W. Thirring and H. Wiklicky, Universität Wien, Vienna, Austria,
TRANSITIVITY AND ERGODICITY OF QUANTUM SYSTEMS
- H. Narnhofer and W. Thirring, Institut für Theoretische Physik, Universität Wien,
DYNAMICAL ENTROPY AND THE THIRD LAW OF THERMODYNAMICS
- L. O'RAIFEARTAIGH, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland,
THE ANOMALY-FLUX-INDEED IDENTITY AND ITS EUCLIDEAN EXTENSION
- E.P. Osipov, Department of Theoretical Physics, Institute for Mathematics, 630090 Novosibirsk, 90, USSR,
EUCLIDEAN GREEN FUNCTIONS FOR QUANTUM FAINBERG-IOFA FIELDS

- E.P. Osipov, Department of Theoretical Physics, Institute for Mathematics,
630090 Novosibirsk, 90, USSR,
EUCLIDEAN GREEN FUNCTIONS FOR NONLOCALIZABLE FIELDS WITH EXPONENTIAL
GROWTH IN MOMENTUM SPACE
- D. Petz, Mathematical Institute of HAS, Reáltanoda u. 13 - 15, H-1364
Budapest, PF 127, Hungary,
A VARIATIONAL EXPRESSION FOR THE RELATIVE ENTROPY
- U. Quasthoff, Naturwissenschaftlich-Theoretisches Zentrum und Sektion
Mathematik, Karl-Marx-Universität, DDR-7010 Leipzig,
ON AUTOMORPHISMS OF FACTORS RELATED TO MEASURE SPACE TRANSFORMATIONS II
- G.R.W. Quispel, J.A.G. Roberts and C.J. Thompson, Research School of Physi-
cal Sciences, The Australian National University, Canberra, A.C.T. 2601
Australia and Mathematics Department, University of Melbourne, Park-
ville, Vic. 3052, Australia,
INTEGRABLE MAPPINGS AND SOLITON EQUATIONS
- G.R.W. Quispel, J.A.G. Roberts and C.J. Thompson, adress: see above
INTEGRABLE MAPPINGS AND SOLITON EQUATIONS II
- G.R.W. Quispel, Research School of Physical Sciences, The Australian
National University, Canberra, ACT 2600, Australia,
THE ANISOTROPIC HEISENBERG SPIN CHAIN AND THE DERIVATIVE NONLINEAR
SCHRÖDINGER EQUATION
- A. Ronveaux and F. Marcellan, Facultés Universitaires Notre-Dame de la Paix,
5000 Namur, Belgique, Departamento de Matematica Aplicada, E.T.S.
Ingenieros Industriales, Universidad Politecnica, 28006 Madrid, Espana,
DIFFERENTIAL EQUATION FOR CLASSICAL-TYPE ORTHOGONAL POLYNOMIALS
- G. Rudolph and I. Volobujev, Naturwissenschaftlich-Theoretisches Zentrum
Karl-Marx-Universität, DDR-7010 Leipzig und Sektion Physik,
SOME REMARKS ON DIMENSIONAL REDUCTION OF GAUGE THEORIES AND MODEL
BUILDING
- P.C. Sabatier and B. Dolveck-Guilpard, Laboratoire de Physique Mathématique,
Université des Sciences et Techniques du Languedoc, Place Eugène-
Bataillon, 34060 Montpellier Cédex, France,
ON MODELLING DISCONTINUOUS MEDIA. ONE-DIMENSIONAL APPROXIMATIONS
- A.K.A. Schierwagen, Naturwissenschaftlich-Theoretisches Zentrum, Karl-
Marx-Universität, DDR-7010 Leipzig, und Carl-Ludwig-Institut für Physio-
logie,
NEURONAL FORM-FUNCTION RELATIONSHIP, FRACTALS AND DIFFUSIVE GROWTH
MODELS
- P. Schwarzer, Hochschule für Verkehrswesen "Friedrich List", Postfach 103,
Dresden, DDR - 8072,
LYAPUNOV EXPONENTS AND POINT SPECTRUM FOR TWO-DIMENSIONAL CANONICAL
DIFFERENTIAL SYSTEMS
- J. Shabani, International Centre for Theoretical Physics, Trieste, Italy,
QUANTIZED FIELDS AND OPERATORS ON A PARTIAL INNER PRODUCT SPACE
- J. Shabani, adress: see above, on leave of absence from the Department of
Mathematics, University of Burundi, B.P. 2700, Bujumbura, Burundi,
SOME UNBOUNDED COMMUTANT OF A SET OF OPERATORS ON A PARTIAL INNER
PRODUCT SPACE

- J. Shabani, Université du Burundi, Département de Mathématiques, B.P. 2700,
Bujumbura, Burundi,
ON SOME CLASS OF TOPOLOGICAL QUASI * ALGEBRA
- W.I. Skrypnik, Dublin Institute for Advanced Studies, 10 Burlington Road,
Dublin 4, Ireland,
INTEGRABLE SOLUTIONS OF THE HIERARCHY OF THE BBGKY-TYPE FOR BROWNIAN
PARTICLES IN THE MEAN-FIELD LIMIT
- L. Slegers, Instituut voor Theoretische Fysica, Universiteit Leuven,
3030 Leuven, Belgium,
THE RESIDUAL ENTROPY FOR A CLASS OF ONE-DIMENSIONAL CLASSICAL LATTICE
MODELS
- J.C. Várilly and J.M. Gracia-Bondía, Escuela de Matemática, Universidad de
Costa Rica, San José, Costa Rica,
WEYL-WIGNER-MOYAL FORMULATION OF SPIN- $\frac{1}{2}$ PARTICLE THEORY
- S.L. Woronowicz, Instituut voor Theoretische Fysica, Universiteit Leuven,
B-3030 Leuven, Belgium,
TANAKA-KREIN DUALITY FOR COMPACT MATRIX PSEUDOGROUPS.
TWISTED SU(N) GROUPS.
- N. Macris, Ph.A. Martin and J.V. Pulé, Institut de Physique Théorique,
Ecole Polytechnique Fédérale de Lausanne, PHB-Ecublens, CH-1015 Lausanne,
Switzerland, Department of Mathematical Physics, University College,
Belfield, Dublin 4, Ireland
- J. Bricmont, A. Kupiainen, Physics Department, Princeton University,
P.O.Box 708, Princeton, NJ 08544, USA and Research Institute for
Theoretical Physics, Helsinki University, Helsinki 00170 Finland
THE HIERARCHICAL RANDOM FIELD ISING MODEL

Stochastic Processes Mathematics and Physics

Nr.	Name	Title
292	Si Si	Gaussian processes and conditional expectations.
293	R.F. Streater	The Boltzmann equation for discrete systems.
294	C.C. Bernido	A mass formula from higher dimensions.
295	Ph. Blanchard Zhiming Ma	Smooth measures and Schrödinger semigroup
296	P. Exner P. Šeba P. Štoviček	Global Aharonov-Bohm effect on graph-like microstructures.
297	P. Šeba	The complex scaling method for Dirac resonances.
298	P. Exner P. Šeba	Bound states in curved quantum waveguides.
299	R. Gielerak	On the DLR Equation for the $(\lambda : \phi^4 : + b : \phi^2 : + \mu \phi, \mu \neq 0)_2$ Euclidean quantum field theory. The uniqueness theorem.
300	S. Paycha	Quantization of bosonic closed strings and the Liouville model.

Nr.	Author	Title
301	D.C. Khandekar K.V. Bhagwat F.W. Wiegel	On a path integral with a topological constraint
302	D.C. Khandekar K.V. Bhagwat S.V. Lawande	Polaron effective mass
303	S.C. Lim	Quantisation of Abelian gauge field in teh temporal-like gauges based on stochastic mechanics.
304	G. Gong M. Qian	Singular pertubation, winding numer and symmetry of drifted Brownian motions.

INTERNATIONAL ASSOCIATION OF MATHEMATICAL PHYSICS



IAMP NEWS BULLETIN

June 1988

By all accounts the forthcoming Swansea Meeting promises to be a most successful event. Your cooperation in payment of past and present IAMP dues will help keep your society on a sound financial basis and in view of the decline in value of the US Dollar in recent years some thought is being given to raising the annual dues. However, if you pay for current dues and prepay for several years in the future at the current rate, then you will be exempt from any increase in dues for the period of your prepayment.

An account in pounds sterling has recently been opened in London for the convenience of those who prefer to pay in that currency. Details on how such payment is to be made appear elsewhere in this news bulletin.

John Klauder, President

ELECTRONIC MAIL LISTING FORM

Complete name: _____

Complete address: _____

Electronic Mail address: _____

Network, e.g. BITNET, ARPANET , HEPNET/DECNET: _____

Telefon: _____

Telefax: _____

Telex: _____

Please return to: Prof. Ph. Blanchard
IAMP-Secretary
Fakultät für Physik
Universität Bielefeld
Postfach 8640
D-4800 Bielefeld 1

Prof. Dr. K. Osterwalder

Mathematik
ETH-Zentrum
CH-8092 Zürich

0910

Durchwahlnummer 01 / 256 34 02/34 31
Telefonzentrale 01 / 256 22 11

IAMP-Bulletin

IMPORTANT

Recently bills for membership dues have been mailed to all members. The instructions for payment in US \$ have to be changed as follows:

Write a check payable to IAMP and send it to

Prof. John R. Klauder
Dept. of Mathematics
Walker Hall
University of Florida
Gainesville, FL 32611
USA

To the IAMP-Members in Britain

I would like to ask the British IAMP-Members to send their dues of 6 Pounds per year directly to

Prof. C.J. ISHAM
Imperial College of Science and
Technology
The Blackett Laboratory
Prince Consort Road
London SW7 2 BZ, Britain.

The closing date for requesting participation is :
30 July 1988.

Request for participation forms, which may be obtained from the University of Burundi, should be completed in full and forwarded to :

Dr. J. NZOTUNGICIMPAYE, Secretary
Scientific Committee
Workshop on Mathematical Analysis
University of Burundi
Faculty of Sciences
P.O. Box 2700 Bujumbura
BURUNDI.

Tel 2.55.58

Telex : 5181 UNIV BDI .

Place : UNIVERSITY OF BURUNDI
BUJUMBURA, BURUNDI

Date : 24 September - 3 October 1988

Organizing committee : J. SHABANI (Chairman),
J. NZOTUNGICIMPAYE (Secretary), J. NAVEZ,
J. BROSIUS.

AFRICAN MATHEMATICAL UNION
UNIVERSITY OF BURUNDI

WORKSHOP ON MATHEMATICAL ANALYSIS
AND ITS APPLICATIONS

BUJUMBURA, BURUNDI

24 September - 3 October 1988

The African mathematical Union (AMU), in collaboration with the University of Burundi will organize an International Workshop on Mathematical Analysis and its Applications in Theoretical Physics from 24 September to 3 October 1988. The Workshop is co-sponsored by the International Mathematical Union (IMU), the African Academy of Sciences (AAS) and the Committee on Science and Technology in Developing Countries (COSTED).

The programme will be conducted in French and English. It will include a series of lectures and some advanced seminars in Functional Analysis and Complex Analysis and their Applications in Theoretical Physics.

The preliminary list of main speakers includes : ANTOINE (Louvain la Neuve, Belgium), CALLEBAUT (Antwerpen, Belgium), BADJI (Dakar, Senegal), GAZEAU (Paris, France), GROSSMANN (Marseille, France), MSHIMBA (Dar-es-Salaam, Tanzania), RONVEAUX (Namur, Belgium), SHABANI (Bujumbura, Burundi), TRAPANI (Palermo, Italy).

Travel and subsistence expenses of participants should be covered by their home institutions. However, limited funds are available for some participants from Developing countries, but preference will be given to those who can obtain all or part of their fare from other sources.

Scientists from East and South Africa may also apply for travel grants to the COSTED by writing directly to Prof D. ODHIAMBO, Head of the Regional Office of the COSTED for East Africa and Vice-Chancellor of the Moi University, P.O.Box 630-56, Nairobi, Kenya.

.../...

Name and adress of person to notify in case of emergency-Relationship

SCIENTIFIC DATA

List your Scientific Publications, including books and articles :

Explain briefly your reasons for wishing to participate in the Workshop. Indicate clearly the relevance for your own Institution, and its particular needs.

AFRICAN MATHEMATICAL UNION
UNIVERSITY OF BURUNDI

WORKSHOP ON MATHEMATICAL ANALYSIS

BUJUMBURA - BURUNDI

24 SEPTEMBER - 3 OCTOBER 1988

APPLICATION FORM

Instructions

Each question must be answered clearly and completely. Type or print in ink. If more space is required, attach additional pages. This form should be sent to the University of Burundi, Faculty of Sciences, B.P. 2700 Bujumbura, Burundi before 30 July 1988.

PERSONAL DATA

Surname	First name	Middle name(s)	Sex
---------	------------	----------------	-----

Date of birth	Nationality at birth	Present nationality
---------------	----------------------	---------------------

Full adress of Institution	Tel.No. :
	Cable :
	Telex :

Indicate your specific field of interest :

APPLICABLE ONLY FOR CANDIDATES FROM DEVELOPING COUNTRIES

Please tick as appropriate :

- I can definitely find complete travel funds from local sources
- or
- I can definitely find half my travel funds from local sources

Therefore, I am requesting financial support from the organizers for :

- Half travel / Full travel and Subsistence

Signature

Are you interested in presenting a paper at the Workshop ? If so, give expected title and short summary of contents.

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities which would reflect unfavourably on the international status of the meeting. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my visit to Bujumbura. I understand that the University of Burundi, Faculty of Sciences and the host country shall not be held liable for compensation in the event of my death, injury or illness during my travel to and from Bujumbura or during my stay in Burundi.

.....
Signature of candidate

.....
Date

WORKSHOP '88

DYNAMICS AND STOCHASTIC PROCESSES

(Theory and applications)

LISBOA, PORTUGAL , OCTOBER 24 - 29, 1988

TOPICS INCLUDE: Dynamical problems of fusion plasmas, Chemical instabilities, Relaxation times in systems with many degrees of freedom, Fractional diffusion, Stability problems in astronomy, Learning algorithms, Random graphs in theory of epidemics, Simulated annealing, Stochastic perturbations of Hamiltonian systems, White noise analysis, Industrial applications of non-linear dynamics and the theory of stochastic processes

FORMAT: Two lectures in the morning starting at 10:00, and one lecture and two short seminars in the afternoon. Some of the participants will stay, for collaboration in research projects, in the week following the workshop

CONFIRMED SPEAKERS: S. Albeverio (Bochum), A. Arneodo (Bordeaux), J. Bernasconi, W. Schneider (Brown Boveri, Baden), Ph. Blanchard/G. Bolz (Bielefeld), M. Dubois (CEA, Cadarache), C. R. Hwang (Taipei), K. Karagiannis (München), F. Nave (JET), J. M. Petit (Observ. Nice), M. Pettini (Firenze), L. Streit (Bielefeld)

Participation is free and welcome. For informations or hotel reservations please contact the secretary of the meeting, Mrs. M. Fátima Loureiro

"CENTRO DE FISICA DA MATÉRIA CONDENSADA"
AV. GAMA PINTO, 2-1699 LISBOA CODEX - PORTUGAL
(PHONE 351 1-773325, 351 1-773338 TELEX 62593-IIFM P)

Organizing committee: R. LIMA, L. STREIT, R. VILELA MENDES

September 1989

4 - 8 Centenary workshop of Heun's Equation - Theory and applications

Tagungsstätte Schloß Ringberg
D-8183 Rottach-Egern am Tegernsee (Bavarian Alps, FRG)

Program Expository and research papers on all aspects of Heun's equation and confluent forms of Heun's equations. An important part of the workshop will be devoted to collect and review results from mathematics, physics, and engineering in order to propose canonical forms and standard notations for solutions.*

Participants The number of participants will be limited to not more than 60.

Call for papers Application for participation and submission of extended abstracts before January 31st, 1989.

Information A. Seeger, Max-Planck-Institut für Metallforschung, Heisenbergstraße 1, D-7000 Stuttgart 80, Fed. Rep. Germany

A. Ronveaux, Math. Phys., Facultés Universitaires, B-5000 Namur, Belgium

*The HEUN equation is the second order linear differential equation with FOUR regular singular points.

(First announcement: november 1987)

(Please post)

NEEDS '89

5th Workshop on Nonlinear Evolution Equations and Dynamical Systems
Kolymbari near Chania, Crete; July 2-16, 1989

The 5th Workshop on Nonlinear Evolution Equations and Dynamical Systems (NEEDS) will take place at the Orthodox Academy in Kolymbari near Chania, Crete, Greece, from Sunday July 2nd (arrival day) to Sunday July 16th (departure day), 1989. The first four Workshops of this series have been held in Kolymbari in 1980 and 1983, in Baia Verde near Gallipoli (South Italy) in 1985 and in Baraluc-les-Bains near Montpellier (France) in 1987; for reports on them see *Physica* **2D**, 545-548 (1981), **11D**, 389-391 (1984), **29D**, (1988), and *Inverse Problems* **3**, 775-780 (1987). The 5th Workshop will follow the same pattern, both in terms of scientific content and organizational structure. Hence it will be interdisciplinary in character; the topics covered will include integrable dynamical systems (nonlinear ODEs and PDEs), near integrable and non integrable model equations, applications in classical and quantal physics (elementary particles, solids, statistical mechanics, fluids, plasmas, etc.) and elsewhere (oceanography, biophysics, etc.). The techniques discussed will range from pure mathematics through numerical computations to applicable theory and experiments.

The Orthodox Academy, where the first two workshops of this series have already been held, is a modern building by the sea, within walking distance of the village of Kolymbari (23 km south of Chania). Some of the participants will be housed at the Academy itself (in double occupancy rooms with private facilities); others will be housed in hotels in Kolymbari. An all-inclusive flat rate covering food and accomodation, excursions and registration, is tentatively set at US\$ 500 for participants (of which US\$ 100 as registration fee), US\$ 350 for accompanying persons. We hope to be able to cover all local expenses for a limited number of invited participants from countries with non convertible currency.

The total number of participants will be limited to 80; acceptances will be on a first-come first-serve basis.

Please address all correspondence to: NEEDS '89, c/o F.Calogero, Dipartimento di Fisica, Università di Roma "La Sapienza", p.Aldo Moro 2, 00185 Roma (Italy), telex 613255 INFNRO, telefax 4957697, with copy to: NEEDS '89, c/o A.Verganelakis, N.R.C. Demokritos, P.O. Box 60228, 15310 Aghia Paraskevi, Attiki (Greece), telex 216199.

(Please circulate to interested persons)

INTERNATIONAL ASSOCIATION OF MATHEMATICAL PHYSICS



"Good News for Mathematical Physicists"

The "Méthodes nouvelles de la Mécanique Céleste" by Henri Poincaré, which had been reprinted many years ago by Dover and were out of print, have been printed again by Gauthier Villars, in the collection "Bibliothèque Scientifique", Albert Blanchard.

Mathematical physics journals from The Institute of Physics

NEW

Nonlinearity

Published jointly with the London Mathematical Society, this quarterly journal bridges mathematics and physics to provide the results of the latest research in nonlinear systems.

Honorary Editors: J D Gibbon (Imperial College, London)
D A Rand (Warwick University)

Classical and Quantum Gravity

Papers and letters on field theories, supergravity and cosmology are published in this monthly international journal.

Editor: M A H MacCallum (Queen Mary College, London)

Journal of Physics A: Mathematical and General

Now published twice monthly, this journal covers mathematical and numerical methods in physics; classical mechanics; chaotic systems; fluid dynamics; quantum mechanics of particles and fields; statistical physics and thermodynamics; electromagnetism.

Editor: D S Gaunt (King's College, London)

Inverse Problems

Four times a year, this journal combines theoretical and mathematical papers on inverse problems with numerical and practical approaches to their solution

Editor: P C Sabatier (Université des Sciences et Techniques du Languedoc, Montpellier, France)

Specially reduced combined subscription rate

Make sure your library knows about our new Mathematical Journals Package. We are offering a significantly reduced combined subscription rate to these four journals.

For further details of this new package or for your free specimen copy of any (or all) of these journals, write to: Journals Marketing Department, IOP Publishing Ltd, Techno House, Redcliffe Way, Bristol BS1 6NX, UK.

Forthcoming books of related interest

On Functions and Functional Equations

Jaroslav Smítal, *Department of Mathematics, University of Bratislava*

Translated from the Czech by J Dravecky
Consultant editor Professor R Streater

An introductory survey for undergraduates of mathematics, physics, biology, chemistry, electronics and mechanical engineering of the main topics in iteration

theory and the theory of functional equations.

Contents: Functions. Functional equations in several variables. Iterations. Applications of iterations. Functional equations in one variable. Concluding remarks. References. Index.

1988 c194pp hard illus 0 85274 418 8
£12.50

Hilbert Space Methods in Science and Engineering

L Máté

1988 c200pp illus hard 0 85274 293 2

Fuzzy Sets and their Applications

V Novák

1989 c190pp illus hard 0 85274 583 4

Order form

Please order from your local bookseller or from Adam Hilger at the address below.
Please send me

£

I enclose cheque for £ _____ in Sterling payable to IOP Publishing Ltd

Please charge to my Access/Misa/AmEx/Diners Club card no

_____ Expiry date _____

Name _____

Signature _____

Address _____

* Overseas orders only, please add 10% P&P, orders over £50.00 add £5.00

+P&P£

Total £

Date _____



Adam Hilger
IOP Publishing Ltd, Techno House, Redcliffe Way, Bristol, BS1 6NX, UK
Telephone (0272) 276693 Telex 449149 INSTP G



A selection of titles from

Adam Hilger



$$= \int d^4x \left\{ \frac{e}{2\kappa^2} R - \frac{1}{2} \psi_\mu R^\mu \right\}$$

in Applied Mathematics
and Mathematical
Physics

NEW

An Introduction to Spinors and Geometry with Applications in Physics

I M Benn, *Faculty of Science, University College of the Northern Territory, Australia* and
R W Tucker, *Department of Physics, University of Lancaster*

Consultant editor Professor R F Streater

Introduces theoretical physicists, of graduate student level upwards, to the methods of differential geometry and Clifford algebras in classical field theory. Recent developments in particle physics have elevated the notion of spinor fields to considerable prominence, so that many new ideas require considerable knowledge of their properties and expertise in their manipulation. It is also widely appreciated that differential geometry has an important role to play in unification schemes which include gravity

All the important prerequisite results of group theory, linear algebra, real and complex vector spaces are discussed. Spinors are approached from the viewpoint of Clifford algebras, giving a systematic way of studying their properties in all dimensions and signatures. Importance is also placed on making contact with the traditional component oriented approach. The basic ideas of differential geometry are introduced emphasizing tensor, rather than component, methods.

This book will be of great interest to postgraduate students in theoretical physics and to mathematicians interested in applications of differential geometry in physics.

Contents: Tensor algebra, Clifford algebra and spinors. Pure spinors and twifity. Manifolds. Applications in physics. Connections. Gravitation. Clifford calculus on manifolds. Spinor fields. Spinor field equations. Appendix. Bibliography. References. Index.

March 1988 368pp illus hard
0 85274 169 3 £50.00

Quantum Field Theory and Quantum Statistics Essays in Honour of the Sixtieth Birthday of E S Fradkin Volume 1: Quantum Statistics and Methods of Field Theory Volume 2: Models of Field Theory

I A Batalin, *Lebedev Physical Institute, Moscow*, C J Isham, *Imperial College, London* and
G A Vilkovisky, *Lebedev Physical Institute, Moscow*

Two volumes containing 64 essays on quantum field theory and quantum statistical physics, forming an encyclopaedia of modern high-energy theoretical physics. Of great interest to researchers, postgraduate students and those interested in the modern status of quantum field theory and statistical physics, as well as the paths of their newest development.

Contents: Volume 1: The contributions of E S Fradkin to quantum field theory and statistics. Quantisation of dynamical systems. Effective action and radiative corrections. Conformal field theory. Many-body theory and statistics. New approaches. Volume 2: Historical and biographical papers. Vector gauge theory and problems of unification. Quantum gravity. Supersymmetry and supergravity. Quantum anomalies. (Super)string theory. Index.

Contributors: S L Adler, V de Alencar, A B Bakhtshvili, A Barchin, I A Batalin, I Belyak-Shkly, D G Bessmer, I Birk, A Cahn, E Candelas, D Chang, L Chang, H Cheng, S M Chakraverty, S Chao, S S DeWitt, S D Durr, M J Duff, S Edwards, G V Elinas, U Espinoza, V Yu Falitsky, E Farberg, S Ferrara, P H Fleischmann, H M Frenkel, E P Hühner, G Poles, A Rajeev, I M Gelfand, J L Gervais, V L Girshchik, D M Gitman, Yu A Golfand, M S Green, M T Grisard, J B Hartle, S W Hawking, H Henneaux, C H Johnson, S Jansen, R Jantzen, D R T Jones, M Kato, O K Mielke, R E Kallosh, D A Kirilishvili, J R Klauder, H Lindley, F E Low, R Marzban, R A Minas, R N Moshinsky, Y Nambu, Y Nozumi, A Nopoulos, R von Neumann, K Nishijima, V Ogievetsky, M Otonari de Ota, M Yu Pashchik, G Poulis, L Pomeroy, J Preussmann, S Ponzetti-Quarati, V I Ritus, S Saha, A Salam, K Saitoh, A S Schwarz, A E Shabat, O M Shtrikman, E S Shvarts, K B Shtein, J Sjöstrand, J S Taylor, G Takahashi, M Taronna, J T Todorov, E T Tomboulis, D J Ternstam, P K Townsend, A A Tseytlin, Yu S Tyutin, I V Tyutin, M A Vanh, G A Vilkovisky, J Wess, P C West, S DeWitt, V N Zelnik, A Zee, S C Zhang.

Vol 1 1987 720pp illus hard
0 85274 573 7 £100.00
Vol 2 1987 624pp illus hard
0 85274 574 5 £100.00
Two vol set 0 85284 525 7 £175.00

Basic Methods of Tomography and Inverse Problems

Malvern Physics Series

Series editor Professor E R Pike

Edited by P C Sabatier, *Université des Sciences et Techniques de Languedoc, France* with contributions by G T Herman, H K Tuy, K Langenberg, and P C Sabatier

Foreword by R Dautray

Based on lectures given at a Summer School on Inverse Problems and their Applications, aimed primarily at undergraduate or graduate students and researchers in physics, applied mathematics and engineering who are interested in the fundamental problem of extracting useful information from physical data. The methods described are applicable to a multitude of research fields, including medical imaging, astronomy, geophysics, civil engineering, radar sounding and non-destructive testing. The four contributors are undoubtedly amongst the world's leading experts in the study of tomography and inverse problems, and their collaboration has produced a volume that will prove to be indispensable as an introduction to this ever-expanding field.

Contents: Image reconstruction from projections - an approach from mathematical analysis (Garbor T Herman and Heng K Tuy). Applied inverse problems for acoustic, electromagnetic and elastic wave scattering (Karl J Langenberg). Basic concepts and methods of inverse problems (Flem C Sabatier). Appendix - problems and exercises.

1987 688pp illus hard 0 85274 475 7
£39.50

Inverse Problems in Astronomy

A guide to inversion strategies for remotely sensed data

J D Craig, *University of Waikato, New Zealand* and J C Brown, *University of Glasgow*

Consultant editor Professor A J Meadows, *University of Loughborough*

The first book to cover all aspects of the topic from formulating the inverse problem through to its practical treatment. As such it will be primarily of interest to postgraduate and research astronomers and applied mathematicians. Other workers in observational studies such as meteorology and sociology will find the chapters on theory and strategy useful.

Contents: Introduction. Some linear integral equations and their occurrence in astronomy - Fredholm equations and Volterra equations. Mathematical aspects of the inversion problem. Classical methods of numerical inversion. Non-classical inversion and stabilisation techniques. Numerical examples. Discussion, conclusions and recommended strategy.

1988 180pp illus hard 0 85274 369 6 £21.50

An Introduction to the Mechanics and Physics of Solids

E W Billington, *Scientific Civil Service*

Consultant editor A E De Barr

Describes a totally new approach to observing the mechanical responses of 'real' materials, whereby many problems can be resolved. Dr Billington takes a realistic view of the parameters involved, acknowledging that strain has to be considered and materials of interest do not always satisfy von Mises yield criterion. Primarily aimed at mechanical engineers and applied mathematicians of undergraduate level upward, although parts will also be of interest to solid state physicists and materials scientists.

Contents: Conventions and notation. Mathematical preliminaries. Physical principles. Initial yield. Purely elastic materials. Elastic-plastic materials. Universal solutions for a class of deformable solids. Material response in the spatial description. Purely elastic materials in the referential description. Material response in the referential description. Index.

1986 356pp illus hard 0 85274 491 9 £37.50

Modelling under Uncertainty 1986

Proceedings of the First International Conference on Modelling Under Uncertainty held at the Fulmer Research Institute, Stoke Poges, Slough, April 1986

Edited by S B Jones and D G S Davies

Institute of Physics Conference Series 80

This conference brought together mathematical modellers, statisticians and decision makers from a variety of backgrounds to discuss the ways in which mathematical modellers can represent uncertain situations. The topics covered give a thorough review of current expertise in this important field.

1986 344pp illus hard 0 85496 171 3 £31.50

Discrete Fourier Transforms and their Applications

V Čížek

Consultant editor Professor R F Streater

A practical handbook on the evaluation and application of one of the major techniques for discrete signal processing. Knowledge of the discrete Fourier transform and the ability to construct algorithms based on the techniques of fast Fourier analysis are essential prerequisites for electrical, electronic, communications and cybernetics engineers. These methods are also of inestimable value to applied scientists in many other fields. Aimed specifically at experimentalists and practitioners, and including only such mathematical development as is necessary to give a feel for the significance of the methods, and to promote proficiency in its use.

Contents: Introduction. Fourier series. Practical methods of computing Fourier transforms. Discrete Fourier transforms. Other properties of discrete Fourier transforms and their use in computing Fourier transforms. Methods of computation of discrete Fourier transforms. Some applications of discrete Fourier transforms. Discrete Hilbert transforms. Bibliography. Index.

1986 141pp illus hard 0 85274 800 0 £16.50

Hamiltonian Dynamical Systems

A reprint selection

Compiled and introduced by R S MacKay, *University of Warwick* and J D Meiss, *University of Texas, Austin*

Presents a selection of some of the most significant papers in Hamiltonian dynamics published during the last 60 years. A worthy introduction for anyone with an undergraduate background in physics or mathematics, and an indispensable reference work for researchers and graduate students interested in any aspect of classical mechanics.

Contents: Introduction. Equilibria and periodic orbits. Quasiperiodic orbits. Breakup of invariant tori. Chaotic behaviour. Mixed systems. Applications. Bibliography. References.

1987 800pp hard 0 85274 205 3 £49.50
paper 0 85274 216 9 £20.00

Computational Techniques in Physics

P K MacKeown and D J Newman, *University of Hong Kong*

Describes some of the computational techniques increasingly used in physics and shows how they can be applied to the solution of a wide range of problems.

The level of material is appropriate for final year undergraduates in the British system and graduate physics students in the American system.

Contents: Introduction. Linear fitting and interpolation using transformation and least square methods. Applications of least square fitting. The finite difference method. The matrix eigenvalue problem and its applications to molecular orbital theory. Energy levels as eigenvalues. The finite element method. Monte Carlo methods. Applications of the Monte Carlo method. References. Exercises. Appendix.

1987 240pp illus
hard 0 85274 537 0 £30.00
paper 0 85274 546 6 £12.95
IBM PC software 0 85274 429 3 £15.00

Chaos, Noise and Fractals

Edited by E R Pike, *RSRE, Malvern* and L A Lugliato, *University of Milan, Italy*

MaVem Physics Series

Series editor Professor E R Pike, *RSRE, Malvern*

Invited contributions presented at a seminar on Chaos, Noise and Fractals, held in Italy in September 1986. The separate contributions represent a balanced overview of current developments in the field. Of interest to researchers and students of applied mathematics, mathematical physics, atomic and molecular physics, condensed matter physics, optics and fluid mechanics interested in any of the varied - and sometimes bizarre - aspects of this intriguing subject.

Contents: Hyperchaos and 1/f spectra in nonlinear dynamics (F Arecchi). Singular system analysis with application to dynamical systems (D Broomhead, R Jones, G King and E Pike). A review of progress in the locked rotator problem (G Casati). Fractals in quantum mechanics (B Eckhardt). Ergodic semi-classical quantum mechanics (M Feingold). Cantori and quantum mechanics (T Geisel, G Radons and J Rubner). Influence of phase noise in chaos and driven optical systems (L A Lugliato, M Brambilla, G Strini and L Narducci). Chaos in the micromaser (P Maystre and E Wright). Chaos in a driven quantum spin system (H Mieske and H Frahm). Fixed points and chaotic dynamics in an infinite dimensional map (J V Moloney, H Adachiwara, D McLaughlin and A C Newell). The arithmetic of chaos (F Vivaldi). Limitations of the Pöschl model in Rydberg transitions (P L Knight and S J D Phoenix). Quasi-probability distributions in stable dissipative systems (J Satchel, S Sarkar and H J Carmichael).

1987 284 pp illus hard 0 85274 364 5 £19.50

Universality in Chaos

Edited and introduced by Predrag Cvitanović, *Nordic Institute for Theoretical Atomic Physics, Copenhagen*

This unique collection of 41 carefully selected articles provides an introduction to the chaotic behaviour of deterministic systems. It brings together some of the most significant and representative papers to offer a broader perspective of the subject to researchers and graduate students.

Contents: Introductory articles: Experiments. Fluid mechanics. Chemical systems. Optical experiments. Electronic experiments. Biological experiments. Theory: Qualitative universality in one dimension. Quantitative universality for one-dimensional period-doublings. Subharmonic spectrum. Noise: Deterministic noise. External noise. Intermittency: Period-doubling in higher dimensions. Beyond the one-dimensional theory. References.

1984 526pp illus
paper 0 85274 766 9 £12.95

How to Write and Publish a Scientific Paper

Second edition

Robert A Day

Professional Writing Series

A guide to help improve the chances of getting scientific papers published. The author draws on 20 years of experience as a scientific editor to offer advice on every aspect of the publication process.

1983 187pp hard 0 89495 021 6 £10.00
paper 0 89495 022 3 £10.00

Presenting Science to the Public

Barbara Gastel

An informative guide helping scientists, engineers and physicians learn how to present highly technical information to the general public.

1983 146pp hard 0 89495 028 2 £15.00
paper 0 89495 029 0 £10.50

How to Edit a Scientific Journal

Claude T Bishop

An excellent handbook for both new and experienced editors of scientific journals, providing information on a range of issues.

1985 136pp hard 0 89495 031 0 £10.00

Supersymmetry, Superfields and Supergravity: An Introduction

Prem P Srivastava, *Centro Brasileiro de Pesquisas Fisicas, Rio de Janeiro, Brazil*

Graduate Student Series in Physics

Series editor Professor D F Brewer, *University of Sussex*

A self-contained introduction to the subject of supersymmetry for graduate students, advanced undergraduates and research staff in mathematical, theoretical and high energy physics and related disciplines. Emphasis is placed on developing a physical understanding of the mathematical formalism and numerous problems are included to help develop the reader's understanding.

Contents: Supersymmetry. Realizations of supersymmetry. Superspace and superfields. Chiral superfield. Gauge superfield - Abelian case. Spontaneous supersymmetry breaking. Non-Abelian supersymmetric gauge theory. Integration over Grassmann variables - supermatrices. Superfield propagators. Superfield perturbation theory. Supergravity. References. Index.

1986 172pp illus
hard 0 85274 571 0 £25.00
paper 0 85274 573 3 £12.50

How to Copyedit Scientific Books and Journals

Mavis O'Connor, *Secretary and Treasurer for the European Association of Science Editors*

Containing everything a copy editor needs to know and of equal value to managing editors, authors and training managers. It is the first copyediting manual to look exclusively at the sciences and belongs on the bookshelf of every scientific editorial office.

1985 150pp hard 0 89495 070 3 £10.00
paper 0 89495 064 9 £10.50

Graduate Research: A Guide for Students in the Sciences

Robert V Smith, *Vice Provost for Research and Dean of the Graduate School, Washington State University*

A succinct and practical guide, designed to develop and improve research skills for graduate students and introduce them to the world of graduate education.

1984 182pp hard 0 89495 037 1 £10.00
paper 0 89495 036 X £12.95

ISI Press books are now available in UK, Europe, Middle East and Africa from Adam Hilger.

Supersymmetry: A Decade of Development

Edited by Peter C West, *King's College, London*

Consultant editor Professor R F Streater, *King's College, London*

Leading developments in supersymmetry are explained by many of the subject's pioneers. Primarily intended for students and researchers in theoretical physics, mathematical physics and high energy physics as an introduction to supersymmetric theories, but also of interest to experienced researchers in supersymmetry.

Contents: On $N=1$ supersymmetry algebra and simple models (Yu A Golfand and E P Lifshitz). Supergraphs (M T Grisaru and D Zanon). Theories of extended rigid supersymmetry and their finiteness properties (P C West). Conformal supergravities as Poincaré supergravity in $d=4$, Chern-Simons terms in $d=3$ and spinning strings in $d=2$ (P van Nieuwenhuizen). Superstrings (M B Green and J H Schwarz). Tensor calculus and the breaking of local supersymmetry (S Ferrara). Superspace of $N=1$ supergravity (W Siegel). Extended supergravities in component formalism (W Gaiotto). Extended supergravity in superspace (P S Howe). Realistic models of supersymmetry (G G Ross). Supersymmetry and cosmology (S Paby). Supersymmetry and mathematics (L Alvarez-Gaumé). Index.

1985 496pp hard 0 85274 572 9 £26.50

Nonlinear Theory of Sound Beams

Edited by N S Bakhvalov, Ya M Zhileikin and E A Zabolotakaya

Translated by Robert T Beyer

Contents: Basic information from the theory of acoustic waves. Derivation of the approximate equation and discussion of asymptotic solutions. Quasiplane waves of finite amplitude in ideal media. Focusing of a beam of finite amplitude. Nonlinear propagation of sound beams in dissipative media. Harmonic analysis of the shape of a disturbance in sound beams of finite amplitudes. Self-action of an acoustic wave. Appendix. Numerical solution of the equation of non-linear acoustics of bounded beams.

1987 184pp hard 0 88318 520 2 £35.50

American Institute of Physics titles are now available from Adam Hilger in all areas outside of North America.

Preprint Received in Tokyo (Received in the fall of 1987)

- H. Iwashita, Graduate School of Sci. and Tech., Niigata Univ.,
950-21 Japan
Spectral theory for symmetric systems in an exterior domain, II
- A. Arai, Dept. Math. Hokkaido Univ., Sapporo, 060 Japan
Path integral representation of the index of Kähler-Dirac
operators on an infinite dimensional manifold
- Y. Tsutsumi, Fac. Integrated Arts and Sci. Hiroshima Univ., Naka-ku,
Hiroshima 730 Japan
The Cauchy problem of the Korteweg-de Vries equation with
measures as initial data
- T. Ichinose and H. Tamura, Dept. Math. Kanazawa Univ., Kanazawa,
920 Japan
Path integral approach to relativistic quantum mechanics:
two-dimensional Dirac equation
- The Zitterbewegung of a Dirac particle in two-dimensional
space-time
- Y. Shibata, Inst. Math. Univ. of Tsukuba, Ibaraki, 305 Japan, and
H. Soga, Fac. of Educ. Ibaraki Univ., Ibaraki, 310 Japan
Scattering theory for the elastic wave equation
- N. Hayashi, Hongo 2-39-6, Bunkyo-ku, Tokyo, 113 Japan and
T. Ozawa, Res. Inst. Math. Sci., Kyoto Univ., Kyoto, 606 Japan
Scattering theory in the weighted $L^2(\mathbb{R}^n)$ spaces for some
Schrödinger equations
- Smoothing effect for some Schrödinger equations
- Time decay for some Schrödinger equations
- H. Isozaki, Dept. Math. Osaka Univ., Osaka 560 Japan
Singular limits for the compressible Euler equation in an
exterior domain, II — bodies in a uniform flow
- E. P. Osipov, Dept. Theoretical Phys., Inst. for Math., 630090,
Novosibirsk, 90, USSR
Euclidean Markov fields from stochastic partial differential
equations in eight-dimensional space
- M. Nagase, Dept. Math. Coll. of General Educ. Osaka Univ.
T. Umeda, Dept. Math. Osaka Univ., Osaka 560 Japan
On the essential self-adjointness of quantum Hamiltonians of
relativistic particles in magnetic fields
- A. Inoue, Dept. Math. Tokyo Inst. Tech., Ohokayama, Tokyo 152 Japan
Y. Maeda, Dept. Math. Fac. of Sci. and Techn., Hiyoshi, Yokohama,
223 Japan
Super oscillatory integrals and a path integral corresponding
to particle spin dynamics, I: a general scheme

- A. Jensen, Mat. Inst. Aarhus Univ., Aarhus C, DK8000 Denmark
- H. Kitada, Inst. Math. Coll. Arts and Sci., Univ. Tokyo, Komaba,
Tokyo, 153 Japan
Fundamental solutions and eigenfunction expansions for
Schrodinger operators, I. Fundamental solutions;
II. Eigenfunction expansions
- D. Robert, Dept. Math. Univ. Nantes, 44072 Nantes Cedex, France
- H. Tamura, Dept. Appl. Phys. Nagoya Univ., Nagoya 464 Japan
Asymptotic behavior of scattering amplitudes in semi-classical
and low energy limits
- O. Yamada, Dept. Math. Ritsumeikan Univ., Kita-ku, Kyoto, 603 Japan
Spectral theory of magnetic Schrödinger operators with
exploding potentials
- E.P.Osipov, Dept.Theoret.Phys., Inst. for Math., 630090, Novosibirsk 90, USSR
Euclidean Green Functions for Quantum Fainberg-Iofa Fields

PREPRINTS (RECEIVED IN MURRAY HILL)

- C. Beattie, Dept. of Mathematics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061 and M. B. Ruskai, Dept. of Mathematics, University of Lowell, Lowell, MA 01854
LOCATION OF ESSENTIAL SPECTRUM OF INTERMEDIATE HAMILTONIANS RESTRICTED TO SYMMETRY SUBSPACES
- M. B. Ruskai, Dept. of Mathematics, University of Lowell, Lowell, MA 01854
ENTROPY OF REDUCED DENSITY MATRICES

EXTREMAL PROPERTIES OF RELATIVE ENTROPY IN QUANTUM STATISTICAL MECHANICS
- E. P. Osipov, Dept. of Theoretical Physics, Institute for Mathematics, 630090, Novosibirsk, 90, USSR
EUCLIDEAN GREEN FUNCTIONS FOR NONLOCALIZABLE FIELDS WITH EXPONENTIAL GROWTH IN MOMENTUM SPACE

EUCLIDEAN GREEN FUNCTIONS FOR QUANTUM FAINBERG-IOFA FIELDS
- L. Gagnon, Centre de Recherches Mathematiques, Universite de Montreal, C. P. 6128, succursale A, Montreal (Quebec) H3C 3J7
CONTINUOUS SUBGROUPS OF THE GALILEI AND GALILEI-SIMILITUDE GROUPS
- L. Gagnon and P. Winternitz, Centre de Recherches Mathematiques, Universite de Montreal, C. P. 6128, succursale A, Montreal (Quebec) H3C 3J7
LIE SYMMETRIES OF A GENERALIZED NONLIENAR SCHRODINGER EUQATION I - THE SYMMETRY GROUP AND IT SUBGROUPS
- L. Gagnon and P. Winternitz, Centre de Recherches Mathematiques, Universite de Montreal, C. P. 6128, succursale A, Montreal (Quebec), H3C 3J7 and V. Hussin, Physique Theorique et Mathematique, Universite de Liege, Institut de Physique au Sart Timan, B5, B-4000, Liege 1, Belgique
NONLINEAR EQUATIONS WITH SUPERPOSITION FORMULAS AND THE EXCEPTIONAL GROUP $G \text{ SUB } 2$. III. THE SUPERPOSITION FORMULAS
- D. Levi, Centre de Recherches Mathematiques, Universite de Montreal, C. P. 6128, succursale A, Montreal (Quebec) H3C 3J7
HIERARCHIES OF NONLINEAR INTEGRABLE EVOLUTION EQUATIONS WITH VARIABLE COEFFICIENTS
- L. Martina, Centre de Recherches Mathematiques, Universite de Montreal, C. P. 6128, succursale A, Montreal (Quebec), H3C 3J7
FINITE AMPLITUDE ELECTROSTATIC WAVES IN MAGNETO-ACTIVE PLASMAS
- B. Champagne and P. Winternitz, Centre de Recherches Mathematiques, Universite de Montreal, C. P. 6128, succursale A, Montreal (Quebec) H3C 3J7
ON THE FINITE DIMENSIONAL SYMMETRY GROUP OF THE DAVEY-STEWARTSON EQUATIONS
- D. David, D. Levi, and P. Winternitz, Centre de Recherches Mathematiques, Universite de Montreal, C. P. 6128, succursale A, Montreal (Quebec), H3C 3J7
EQUATIONS INVARIANT UNDER THE SYMMETRY GROUP OF THE

KADOMSTEV-PETVIASHVILI EQUATION

- D. Levi and P. Winternitz, Centre de Recherches Mathematiques, Universite de Montreal, C. P. 6128, succursale A, Montreal (Quebec), H3C 3J7
THE CYLINDRICAL KADOMTSEV-PETVIASHVILI EQUATION; ITS KAC-MOODY-VIRASORO ALGEBRA AND RELATION TO KP EQUATION
- A. Jaffe, A. Lesniewski and J. Weitsman, Harvard University, Dept. of Physics, Cambridge, MA 02138
THE LOOP SPACE $S^{**1} \rightarrow R$ AND SUPERSYMMETRIC QUANTUM FIELDS
- A. Jaffe, Harvard University, Dept. of Physics, Cambridge, MA 02138
HEAT KERNEL REGULARIZATION AND INFINITE DIMENSIONAL ANALYSIS
- M. E. Inchiosa and S. A. Janowsky, Harvard University, Dept. of Physics, Cambridge, MA 02138
A PARALLEL ALGORITHM FOR DETERMINING THE GROUND STATE OF SOME FERROMAGNETIC SPIN SYSTEMS
- A. Jaffe and A. Lesniewski, Harvard University, Dept. of Physics, Cambridge, MA 02138
SUPERSYMMETRIC QUANTUM FIELDS AND INFINITE DIMENSIONAL ANALYSIS
- J. S. Geronimo and E. M. Harrell, School of Mathematics, Georgia Institute of Technology, Atlanta, GA 30332-0160 and W. van Assche, Dept. Wiskunde, Katholieke Universiteit Leuven, Celestijnenlaan 200B, B-3030 Heverlee, Belgium
ON THE ASYMPTOTIC DISTRIBUTION OF EIGENVALUES OF BANDED MATRICES
- E. M. Harrell, School of Mathematics, Georgia Institute of Technology, Atlanta, GA 30332-0160
GENERAL BOUNDS FOR THE EIGENVALUES OF SCHRODINGER OPERATORS
- A. Jaffe, A. Lesniewski, and J. Weitsman, Harvard University, Dept. of Physics, Cambridge, MA 02138
PFAFFIANS ON HILBERT SPACE
- THE TWO-DIMENSIONAL, $N = 2$ WESS-ZUMINO MODEL ON A CYLINDER
- A. Jaffe and A. Lesniewski, Harvard University, Dept. of Physics, Cambridge, MA 02138
A PRIORI ESTIMATES FOR $N = 2$ WESS-ZUMINO MODELS ON A CYLINDER
- A. Jaffe, A. Lesniewski and K. Osterwalder, Harvard University, Cambridge, MA 02138
ON CONVERGENCE OF INVERSE FUNCTIONS OF OPERATORS
- J. E. Avron 114-36 Caltech and Dept. of Physic, Technion, Haifa 32000, ISRAEL and R. K. P. Zia, Center for Transport Theory and Mathematical Physics, Dept. of Physics, Virginia Polytechnic Institute and State University, Blackburg, VA 24061
TRANSMUTATION OF THE VICINAL SURFACE EXPONENT DUE TO GRAVITY
- M. L. Lapidus, Dept. of Mathematics, Boyd Graduate Studies Research Center, The University of Georgia, Athens, GA 30602
THE FEYNMAN INTEGRAL, THE FEYNMAN-KAC FORMULA WITH A LEBESGUE-STIELTJES MEASURE AND FEYNMAN'S OPERATIONAL CALCULUS
- G. W. Johnson, Dept. of Mathematics and Statistics, The University of Nebraska, Lincoln, NE 68588-0323 and M. L. Lapidus, Dept. of Mathematics, Boyd Graduate Studies Research

Center, The University of Georgia, Athens, GA 30602
NONCOMMUTATIVE OPERATIONS ON WIENER FUNCTIONALS AND
FEYNMAN'S OPERATIONAL CALCULUS

J. R. Klauder, AT&T Bell Laboratories, Murray Hill, NJ 07974
QUANTIZATION IS GEOMETRY, AFTER ALL

PREPRINTS (RECEIVED IN BIELEFELD)

- Ch. Beattie and M.B. Ruskai, Virginia Polytechnic Institute and State University, Department of Mathematics, Blacksburg, VA 24061, USA, and Department of Mathematics, University of Lowell, Lowell, MA 08154, USA,
LOCATION OF ESSENTIAL SPECTRUM OF INTERMEDIATE HAMILTONIANS RESTRICTED TO SYMMETRY SUBSPACES
- G. Benettin, J. Fröhlich, A. Giorgilli, Dipartimento di Fisica dell'Università di Padova, Via Marzolo 8, 35131 Padova, Italy and Theoretical Physics, ETH-Hönggerberg, CH-8093 Zürich, Switzerland and Dipartimento di Fisica dell'Università di Milano, Via Celoria 16, 20133 Milano, Italy,
A NEKHOROSHEV-TYPE THEOREM FOR HAMILTONIAN SYSTEMS WITH INFINITELY MANY DEGREES OF FREEDOM
- M. Boiti, J. JP. Leon, L. Martina, F. Pempinelli, Laboratoire de Physique Mathématique, U.S.T.L., 34060 Montpellier, France, Dipartimento di Fisica dell'Università and Sezione I.N.F.N. di Lecce, 73100 Lecce, Italia,
SCATTERING OF LOCALIZED SOLITONS IN THE PLANE
- M. Boiti, J. JP. Leon, L. Martina, F. Pempinelli, address: see above
INTEGRABLE NONLINEAR EVOLUTIONS IN 2+1 DIMENSIONS WITH NON ANALYTIC DISPERSION RELATIONS
- Ph. Briet, J.M. Combes, P. Duclos, Centre de Physique Théorique, CNRS - Luminy, Case 907, F-13288, Marseille Cedex 09 (France)
SPECTRAL STABILITY UNDER TUNNELING
- B. Broda, R. Raczka, Institute of Physics, University of Łódź, Nowotki 149/153, PL-90236 Łódź Poland and Département de Physique Théorique, Université de Genève, 1211 Genève 4 and Institute for Nuclear Studies, Hoza 69, PL-00681 Warsaw, Poland,
A NONPERTURBATIVE STABILITY ANALYSIS OF QUANTUM FIELD THEORY MODELS
- D. Buchholz, C. D'Antoni, R. Longo, II. Institut für Theoretische Physik, Universität Hamburg, D-2000 Hamburg 50, FRG, and Dipartimento di Matematica, Università di Roma "La Sapienza" - P.le A. Moro 5, I-00185 Roma, Italy, and Dipartimento di Matematica, Università di Roma "Tor Vergate" - Via O. Raimondo, I-00173 Roma, Italy,
NUCLEAR MAPS AND MODULAR STRUCTURES I: GENERAL PROPERTIES
- P. Budinich, A. Trautman, International School for Advanced Studies - 34014 Trieste, Italy, and Instytut Fizyki Teoretycznej, Uniwersytet Warszawski - 00681 Warszawa, Poland,
AN INTRODUCTION TO THE SPINORIAL CHESSBOARD
- E. Buffet and J.V. Pulé, School of Mathematical Sciences, NIHE, Dublin 9, School of Theoretical Physics, DIAS, 10 Burlington Road, Dublin 4, Department of Mathematical Physics, UCD, Belfield, Dublin 4,
GELATION: THE DIAGONAL CASE REVISITED

- W. Cegła, M. Klimek, Dublin Institute for Advanced Studies, School of Theoretical Physics, 10 Burlington Road, Dublin 4, Ireland and Department of Mathematics, University College Dublin, Belfield, Dublin 4, Ireland,
LARGE DEVIATION PRINCIPLE FOR PRODUCT MEASURES
- H. Dabrowski, W. Tybor, Institute of Physics, University of Łódź, ul. Nowotki 149/153, 90-236 Łódź, Poland,
 $m = 0$ LIMIT OF NONMINIMAL DESCRIPTION OF SPIN $3/2$
- P. Di Francesco, H. Saleur and J.-B. Zuber, Institut de Recherche Fondamentale, Service de Physique Théorique, CEA-CEN Saclay, 91191 Gif-sur-Yvette Cedex, France,
GENERALIZED COULOMB GAS FORMALISM FOR TWO DIMENSIONAL CRITICAL MODELS BASED ON $SU(2)$ COSET CONSTRUCTION
- H. Englisch, Naturwiss.-Theoretisches Zentrum, Karl-Marx-Universität, DDR-7010 Leipzig, und Sektion Mathematik,
THE CIRCUMPOLYGON WITH MAXIMAL AREA
- H. Englisch, M. Schroder, W. Kirsch and B. Simon, NTZ der Karl-Marx Universität, Karl-Marx-Platz 10, Leipzig, DDR-7010, GDR, Mathematics Institute, Ruhr University of Bochum, D-4630 Bochum, FRG, Division of Physics, Mathematics and Astronomy, California Institute of Technology, Pasadena, CA 91125,
THE DENSITY OF SURFACE STATES IN DISCRETE MODELS
- P. Falkensteiner and H. Grosse, Institut für Theoretische Physik, Universität Wien,
FERMIONS IN INTERACTION WITH TIME DEPENDENT FIELDS
- M. Fannes, B. Nachtergaele, Instituut voor Theoretische Fysica Universiteit Leuven, B-3030 Leuven, Belgium,
TRANSLATING THE SPIN-BOSON MODEL INTO A CLASSICAL SYSTEM
- J. Fröhlich and P.-A. Marchetti, Theoretical Physics, ETH-Hönggerberg, CH-8093 Zürich, Switzerland, Dipartimento di Fisica dell'Università di Padova, I.N.F.N. Sezione di Padova, I-35131 Padova, Italy,
QUANTUM FIELD THEORY OF ANYONS
- T. Garavaglia, Institiúid Ard-Léighinn Bhaile Atha Cliath, Baile Atha Cliath 4, Eire,
FINITE TEMPERATURE FIELD THEORY AND QUANTUM NOISE IN INDUCTIVELY COUPLED LRC CIRCUITS
- F. Gesztesy, D. Gurarie, H. Holden, M. Klaus, L. Sadun, B. Simon, P. Vogl, Division of Physics, Mathematics and Astronomy, California Institute of Technology, Pasadena, CA 91125, USA, and Institute of Mathematics University of Trondheim, N-7034 Trondheim-NTH, Norway, and Department of Mathematics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061, USA, and Institute for Theoretical Physics, University of Graz, A-8010 Graz, Austria,
TRAPPING AND CASCADING OF EIGENVALUES IN THE LARGE COUPLING LIMIT
- N. Gisin, Alpatronix Lab. SA, 111, Pont du Centenaire, 1228 Plan-Les-Quates, Switzerland,
STOCHASTIC QUANTUM DYNAMICS AND RELATIVITY

- D. Goderis, A. Verbeure, P. Vets, Instituut voor Theoretische Fysica, Universiteit Leuven, D-3030 Leuven, Belgium,
THEORY OF FLUCTUATIONS AND SMALL OSCILLATIONS FOR QUANTUM LATTICE SYSTEMS
- D. Goderis, A. Verbeure, P. Vets, address: see above,
NON-COMMUTATIVE CENTRAL LIMITS
- N. Gorman, L. O'Raifeartaigh, D. Williams, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland, and W. McGlinn, University of Notre Dame, Indiana 46556, USA,
A UNIFIED APPROACH TO THE COMPUTATION OF CENTRAL TERMS IN KAC-MOODY AND VIRASORO ALGEBRAS
- H.P.W. Gottlieb, School of Science, Griffith University, Nathan, Queensland, 4111, Australia,
WAKE-FREE CYLINDRICAL AND SPHERICAL WAVES IN INHOMOGENEOUS MEDIA AND THE HADAMARD CONJECTURE
- G. Hegerfeldt and H. Schulze, Institut für Theoretische Physik, Universität Göttingen, Göttingen, W. Germany,
NONCOMMUTATIVE CUMULANTS FOR STOCHASTIC DIFFERENTIAL EQUATIONS AND FOR GENERALIZED DYSON SERIES
- G.C. Hegerfeldt and H. Schulze, address: see above,
QUANTUM SHOT NOISE: EXPANSIONS IN POWERS OF THE PULSE DENSITY
- B. Helfer and J. Sjostrand, Université de Paris-Sud, Mathématiques, Bâtiment 425, 91405 Orsay, France,
SEMI CLASSICAL ANALYSIS FOR HARPER'S EQUATION III
CANTOR STRUCTURE OF THE SPECTRUM
- M. Herrmann, Naturwiss.-Theoretisches Zentrum, Karl-Marx-Universität, Karl-Marx-Platz, DDR-7010 Leipzig, und Sektion Mathematik
A RELATIVISTIC METHOD FOR THE NON-RELATIVISTIC GAP PROBLEM
- G. Hoffmann, Naturwiss.-Theoretisches Zentrum, Karl-Marx Universität, DDR-7010 Leipzig, und Sektion Mathematik,
TOPOLOGIES ON TENSOR PRODUCTS
- M. Jaulent, M. A. Manna, L.M. Alonso, Laboratoire de Physique Mathématique, Université des Sciences et Techniques du Languedoc, 34060 Montpellier Cedex, France, and Instituto de Física Teórica, Universidade Estadual Paulista, Rua Pamplona 145, 01405 Sao Paulo, Brasil, and Departamento de Métodos Matemáticos de la Física, Facultad de Ciencias Físicas, Universidad Complutense, 28040 Madrid, Spain,
AN INTEGRABLE (2+1)-DIMENSIONAL GENERALIZATION OF THE VOLTERRA MODEL
- M. Jaulent, M.A. Manna and L.M. Alonso, address: see above,
SCALAR-BIPOLAR ASYMPTOTIC MODULES FOR SOLVING A HIERARCHY OF NON-LINEAR DIFFERENTIAL EQUATIONS IN (2+1)-DIMENSIONS
- S. Kotani and B. Simon, Department of Mathematics, University of Tokyo, Tokyo, Japan, and Division of Physics, Mathematics and Astronomy, California Institute of Technology, Pasadena, CA 91125, USA
STOCHASTIC SCHRÖDINGER OPERATORS AND JACOBI MATRICES ON THE STRIP

- A. Krämli, N. Simányi and D. Szasz, Mathematical Institute of the Hungarian Academy of Sciences, Budapest, Reáltanoda U. 13-15., H-1053,
ERGODIC PROPERTIES OF SEMI-DISPERSING BILLIARDS I.
TWO CYLINDRIC SCATTERERS IN THE 3-D TORUS
- A. Krämli, N. Simányi and D. Szasz, Computer and Automation Institute, Hungarian Academy of Sciences, Budapest and Mathematical Institute, HAS, Budapest, 1364, POB 127, Hungary
DISPERSING BILLIARDS WITHOUT FOCAL POINTS ON SURFACES ARE ERGODIC
- J. J.P. Leon, Laboratoire de Physique Mathématique, U.S.T.L. 34060 - Montpellier Cedex, France,
DISCONTINUOUS SOLITON-LIKE SOLUTION TO THE SELF-INDUCED-TRANSPARENCY EQUATIONS
- J. J.P. Leon, address: see above
ON THE NONLINEAR EVOLUTION EQUATIONS HAVING NON-ANALYTIC DISPERSION RELATIONS
- J. McConnell, Dublin Institute for Advanced Studies, Dublin 4, Ireland,
THEORY OF NUCLEAR MAGNETIC SPIN-ROTATIONAL RELAXATION FOR ASYMMETRIC MOLECULES
- G.M. O'Brien and D.H. Tchrakian, School of Theoretical Physics, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4, Ireland, and Department of Mathematical Physics, St. Patrick's College, Maynooth, Ireland,
A SPHERICALLY SYMMETRIC $SO(4)$ INSTANTON OF A NON-ABELIAN HIGGS MODEL IN 4-DIMENSIONS
- U. Petermann, Naturwiss.-Theoretisches Zentrum, Karl-Marx-Universität, DDR-7010 Leipzig, und Sektion Mathematik,
PARTIAL STRUCTURES AS MODELS OF ALGORITHMIC THEORIES
- U. Petermann, J. Apfel, address: see above,
A PROGRAM FOR ALGEBRAIC COMPUTATIONS IN QUOTIENT SKEW FIELDS OF ENVELOPING ALGEBRAS OF LIE ALGEBRAS - AN APPLICATION OF LOGLAN 82 TO SYMBOLIC COMPUTATION
- C. Piron, Université de Genève, Département de Physique Théorique, 24 quai. E. Ansermet, CH-1211 Geneve 4,
LE MONDE QUANTIQUE
- H.-J. Pohle, Naturwiss.-Theoretisches Zentrum der Karl-Marx-Universität, DDR-7010 Leipzig, und der Sektion Physik,
THE GAUSSIAN APPROXIMATION OF ϕ^4 THEORY IN 3+1 DIMENSIONAL SPATIALLY FLAT ROBERTSON-WALKER-SPACE
- E. Prugovečki, Department of Mathematics, University of Toronto, Toronto, Canada M5S 1A1,
ON STRING-LIKE HICITONS IN THE GEOMETRO-STOCHASTIC QUANTIZATION OF GRAVITY
- E. Prugovečki, address: see above,
GEOMETRO-STOCHASTIC QUANTIZATION OF GRAVITY

- E. Prugovečki, address: see above,
GEOMETRO-STOCHASTIC QUANTIZATION OF GAUGE FIELDS IN CURVED SPACE-
TIME
- E. Prugovečki and S. Warlow, address: see above,
ON GEOMETRO-STOCHASTIC DIRAC FIELDS IN CURVED SPACETIME
- G.A. Raggio, Dublin Institute for Advanced Studies, 10 Burlington Road,
Dublin 4, Ireland,
THE FREE ENERGY OF THE FULL SPIN-BOSON MODEL
- A. Ronveaux, Facultes Universitaires N.D. de la Paix Namur, Facultes des
Sciences, Department de Physique, Rue de Bruxelles 61, 5000 Namur,
Belgique,
NUMERATOR POLYNOMIALS AND 4TH ORDER DIFFERENTIAL EQUATIONS
- A. Ronveaux and G. Thiry, address: see above,
DIFFERENTIAL EQUATIONS OF SOME ORTHOGONAL FAMILIES IN REDUCE
- M.B. Ruskai, Department of Mathematics, University of Lowell, Lowell, MA
01854, USA,
ENTROPY OF REDUCED DENSITY MATRICES
- M.B. Ruskai, address: see above,
EXTREMAL PROPERTIES OF RELATIVE ENTROPY IN QUANTUM STATISTICAL
MECHANICS
- S. Sen, M.P. Tuite, School of Mathematics, Trinity College, Dublin 2, Ire-
land, and Dublin Institute for Advanced Studies, 10 Burlington Road,
Dublin 4, Ireland,
A STRING MOTIVATED APPROACH TO THE RELATIVISTIC POINT PARTICLE
- M. van den Berg, J.T. Lewis, J.V. Pulé, Department of Mathematics, Heriot-
Watt University, Riccarton, Edinburgh, EH14 4AS, U.K., and Dublin
Institute for Advanced Studies, Dublin 4, 10 Burlington Road, Ire-
land, and Department of Mathematical Physics, University College,
Dublin 4, Ireland,
THE LARGE DEVIATION PRINCIPLE AND SOME MODELS OF AN INTERACTING
BOSON GAS
- Zhong-Qi Ma and D.H. Tchrakian, Institute of High Energy Physics, Academia
Sinica, P.O.Box 918, Beihing, P.R. China, and Department of Mathema-
tical Physics, St. Patrick's College, Maynooth, Ireland,
DIMENSIONAL REDUCTION OF HIGHER-ORDER
TOPOLOGICAL INVARIANTS: THE CASE CP^n
- D. Buchholz and P. Junglas, II. Institut für Theoretische Physik, Universität
Hamburg, Institut für Theoretische Physik, Universität Göttingen
ON THE EXISTENCE OF EQUILIBRIUM STATES IN LOCAL QUANTUM FIELD THEORY
- D. Cangemi, M. Makowka and G. Wanders, Institut de physique théorique,
Université de Lausanne, Lausanne (Switzerland),
THE FERMION DETERMINANT IN TWO DIMENSIONAL MINKOWSKI SPACE:
ZEROS AND RELATED PROPERTIES

621404

- H. Ewen and H.-J. Schmidt, Fachbereich Physik, Universität Osnabrück,
Postfach 4469, D-4500 Osnabrück,
GEOMETRY OF FREE FALL AND SIMULTANEITY
- F. Figliolini and D. Guido, Dipartimento di Matematica, Dottorato di
ricerca, Università di Roma "La Sapienza", P.le Aldo Moro 2,
00185 Roma, Italia,
THE TOMITA OPERATOR FOR THE FREE SCALAR FIELD
- D. Cangemi, M. Makowka and G. Wanders, Institut de physique théorique,
Université de Lausanne, Lausanne (Switzerland),
THE TWO DIMENSIONAL MINKOWSKI SPACE FERMION DETERMINANT BY
EXAMPLE
- J. De Coninck, F. Dunlop and V. Rivasseau, Centre de Physique Théorique
(CNRS - LP 14), Ecole Polytechnique, 91128 Palaiseau Cedex France,
ON THE MICROSCOPIC VALIDITY OF THE WULFF CONSTRUCTION AND OF THE
GENERALIZED YOUNG EQUATION

Stochastic Processes Mathematics and Physics

- | | | |
|-----|-------------------------------------|---|
| 305 | J.P. Antoine
W. Karwowski | Commuting Normal operators
in partical op^* -algebras |
| 306 | T. Hida
J. Potthoff
L. Streit | White Noise Analysis and
Applications,
to appear in "Math. + Physics"
Vol. 3, World Scientific |
| 307 | J. Stubbe | Stability of Ground States
in Nonlinear Classical Field
Theories. |
| 308 | Ph. Blanchard
Zhiming Ma | New Results on the Schrödinger
Semigroups with Potentials
by Signed Smooth Measures. |
| 309 | Z. Haba | Correlation functions of
σ -fields with values in
a hyperbolic space. |
| 310 | S. Albeverio
A.B. Cruzeiro | Global flows with invariant (Gibbs)
measures for Euler and Navier-
Stokes two dimensional fluids. |
| 311 | Ph. Blanchard | A stochastic growth model on
random graphs to understand the
dynamics of AIDS-epidemic. |
| 312 | S. Albeverio
M. Röckner | Classical Dirichlet forms on
topological vector spaces -
closability and a Cameron-
Martin formula |
| 313 | Yu.A. Rozanov | Some boundary value problems
for generalized PDE. |
| 314 | V.D. Koshmanenko | Singular perturbations defined
by forms. |
| 315 | J.M. Gracia-Bondia | A new class of algebras under
twisted product. |

- 316 J. Asch
J. Potthoff Itô's Lemma without
non-anticipatory conditions.
- 317 S. Albeverio
M. Röckner Dirichlet forms, quantum
fields and stochastic
quantisation.
- 318 S. Albeverio
R. Høegh-Krohn
H. Holden
T. Kolsrud
M. Mebkhout A remark on the formation
of crystals at zero
temperature.
- 319 D.C. Khandekar
Distribution of the area
enclosed by a plane random
walk.

INTERNATIONAL ASSOCIATION OF MATHEMATICAL PHYSICS



IAMP NEWS BULLETIN

September 1988

I A M P extends the list of places where preprints are collected. In addition to Bielefeld, Gainesville and Kyoto, you may send preprints marked clearly "For the IAMP News Bulletin" to

P. Exner
Laboratory of Theoretical Physics,
J I N R,
141980 D u b n a , U S S R .

While aimed primarily to make access to the bulletin easier for people from some Soviet institutes, this collection point is certainly open to all who find it suitable.

President: Prof. John R. Klauder, Dept. of Mathematics, Walker Hall
University of Florida, Gainesville, FL 32611, USA
Vice-President: Prof. S. Novikov, Steklov Institute of Mathematics,
Vavilova St. 42, Moscow V-333, USSR
Secretary: Prof. Ph. Blanchard, Fakultät für Physik, Universität Bielefeld,
Postfach 8640, 4800 Bielefeld 1, FRG
Treasurer: Prof. J.P. Eckmann, Sect. Phys. Theor., 32 Bvd. D'Yvoy,
CH-1211 Geneve, Switzerland

R.C.P. 264

Montpellier (FRANCE) - December 5-9, 1988

rencontre interdisciplinaire^(**) problèmes inverses

(**) partially sponsored by GDR

Dear colleague,

The 1988 meeting of R.C.P.264 on interdisciplinary aspects of Inverse Problems will be held in Montpellier from Monday, December 5th to Friday, December 9th.

This well-known Workshop on I.P. has room for 70 participants at most. The usual topics on inverse problems of electromagnetism, quantum mechanics, internal and external geophysics, acoustics, etc...those related with the control of partial differential equations, the inverse method and its applications to nonlinear partial differential equations, solitons and related topics will be represented and any related topic will be welcome, in particular nonlinear excitations and nonlinear signal processing.

We expect in particular the presence of Professors Bertero, Calogero, Chavent, DeFacio, Degasperis, DeNol, Fokas, Grünbaum, Pike, Tabbara, Zolesio, Boerner.

We suggest the participants to prepare lectures giving either good reviews (of their own works or others) or new results. For this 1988 meeting, there will not be Proceedings. We ask all participants to bring with them an (extended) abstract of their lecture with a reference list. These documents will be copied and distributed to participants.

Next year (1989) will be particularly important for our University since it is in 1289 that the former Ecole de Médecine officially became the "University of Montpellier". For this opportunity, we are planning to enlarge our annual meeting; we already encourage people willing to prepare review lectures and we shall publish the Proceedings of the 1989 meeting through a great scientific european publisher.

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, Lab. de Physique Mathématique - 34060 Montpellier Cedex 1, France", the title of your lecture and the time you wish.

R.C.P. 264

rencontre interdisciplinaire problèmes inverses

MONTPELLIER (France) , December 5 - 9, 1988

FORMULAIRE D'INSCRIPTION

=====

à renvoyer au "Secrétariat, Laboratoire de Physique Mathématique, U.S.T.L., Place E. Bataillon, 34060 Montpellier Cedex 1 (France)", avant le 30 septembre 1988.

NOM Prénom

Institution

Adresse

.....

.....

Téléphone Telex

Telefax Cable

Pensez-vous assister à la Rencontre R.C.P.264 du 5 au 9 décembre 1988 à Montpellier ?

OUI

NON

Pouvez-vous présenter

1. un exposé de revue temps souhaité
titre
2. un exposé complet du sujet que vous traitez en ce moment
temps souhaité titre
3. une contribution temps souhaité
titre
4. une "question" pour laquelle la discussion avec les gens de la RCP vous semble utile
temps souhaité titre

DANS TOUS LES CAS, nous serions heureux que vous teniez compte du caractère "interdisciplinaire" de l'auditoire en faisant une bonne introduction pédagogique au sujet traité.



laboratoire de physique mathématique

CABLE : LPMONT at FRMOP11

Téléfax: 67.54.30.79

UNIVERSITÉ DES SCIENCES & TECHNIQUES DU LANGUEDOC

Place Eugène - Bataillon - 34060 MONTPELLIER CEDEX

☎ 67 63 91 44 ou 67 54 48 50 - Télex USTMONT 490 944 F

THE UNIVERSITY OF ADELAIDE

invites applications from both women and men for the following position:

PROFESSOR OF MATHEMATICAL PHYSICS (Tenurable)

(Ref. 1516) in the DEPARTMENT OF PHYSICS AND MATHEMATICAL PHYSICS. The appointment follows the retirement of Professors H.S. Green, F.A.A. and C.A. Hurst, F.A.A. and is available from June 1989. The Department was formed from the Departments of Physics and Mathematical Physics by the amalgamation of the two Departments on 1 January 1988. The new Department is responsible for teaching of physics and theoretical physics in the Faculty of Science and mathematical physics in the Faculty of Mathematical Sciences. The Department teaches undergraduate physics subjects to physics majors and Honours students and has a substantial responsibility for teaching physics to the professional faculties and to other Departments in the Faculties of Science and Mathematical Sciences. The current research interests of the Department are atmospheric physics, cosmic rays and high energy astrophysics, mathematical physics, physical archaeometry, theoretical nuclear and particle physics and ultra-violet physics. There are two other Professors in the Department, Professors J. R. Prescott and A. W. Thomas. The new professor will be expected to contribute to the academic leadership of the whole Department but will have a particular responsibility for teaching subjects in the discipline of mathematical physics in second, third and Honours year, leading to degrees in the Faculty of Mathematical Sciences. The new professor will be expected to promote and extend a strong programme of research and postgraduate studies within the new Department, and in co-operation with other Departments, particularly in the Faculty of Mathematical Sciences. A commitment to excellence in teaching and research is expected.

Further information concerning the duties of the position may be obtained from Dr L. R. Dodd, telephone (08) 228 5113.

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

INFORMATION about the general conditions of appointment may be obtained from the Senior Assistant Registrar (Personnel) at the University.

SALARY: \$59,183 per annum (subject to second tier wage increase).

APPLICATIONS, IN DUPLICATE, quoting reference number 1516 and giving full personal particulars (including whether candidates hold Australian permanent residency status), details of academic qualifications and names and addresses of three referees should reach the Senior Assistant Registrar (Personnel) at the University of Adelaide, G.P.O. Box 498, Adelaide, South Australia 5001, Telex UNIVAD AA 89141/FAX No. (08) 224 0464 not later than 30 September 1988.

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

THE UNIVERSITY OF ADELAIDE IS AN EQUAL OPPORTUNITY EMPLOYER

Available from June 1989!

Enquiries to:

Dr. L.R. Dodd, Chairman,
Department of Physics
and Mathematical Physics
University of Adelaide,
Adelaide,
South Australia 5001,
Australia.

Edward P. Osipov , Department of Theoretical Physics, Institute for Mathematics, 630090 Novosibirsk, 90, USSR,
Euclidean Green Functions for Nonlocalizable Fields with Exponential Growth in Momentum Space.

Hideki Kosaki , Department of Mathematics, College of General Education, Kyushu University, Fukuoka, 810, Japan,
Characterization of Crossed Product (Properly Infinite Case)

Hiroshi Takai , Department of Mathematics, Tokyo Metropolitan University, Fukazawa, Setagaya, Tokyo, Japan,
 C^* -algebras of Anosov foliations II

Hiroshi Takai ,
Baum-Connes Conjectures and Their Applications

S. T. Kuroda , ¹Toshio Suzuki , Department of Mathematics, Gakushuin University, Tokyo, Japan,
¹Department of Mathematics, Faculty of Liberal Arts and Education, Yamanashi University, Yamanashi, Japan,
A Time-dependent Method for Computing Eigenfunctions and Eigenvalues of Schrödinger Operators

Toshitaro Hamachi , Hideki Kosaki , Department of Mathematics, College of General Education, Kyushu University, Fukuoka, 810, Japan,
Inclusion of Type III Factors Constructed from Ergodic Flows

Shin-ichi Nakamura , ¹Hideo Soga , Department of Mathematics, School of Science and Engineering, Waseda University, Shinjuku-ku, Tokyo 160, JAPAN, ²Department of Mathematics, Faculty of Education, Ibaraki University, Mito Ibaraki, 310 JAPAN,
Singularities of the scattering kernel for two balls. (To appear in J. Math. Soc. Japan)

Hideo Soga,
On the Representation of the Scattering Kernel for the Elastic Wave Equation. (To Appear in Proc. Japan Acad.)

Yoshihiro Shibata , Hideo Soga ,
Scattering Theory for the Elastic Wave Equation.

Mitsuo ABE , Noboru NAKANISHI , Research Institute for Mathematical Sciences, Kyoto University, Kyoto 606, Japan,
Supercurvature in the $OSP(N, 2; C)$ Extension of Local Lorentz Symmetry

Mitsuo ABE , Noboru NAKANISHI ,
Supersymmetric Extension of the Three-Dimensional Local Lorentz Symmetry and the Chern-Simon Term.

Noboru NAKANISHI,
ASYMPTOTIC COMPLETENESS AND THE THREE-DIMENSIONAL GAUGE THEORY HAVING THE CHERN-SIMON TERM

T. Masuda , ¹K. Mimachi , ²Y. Nakagami , ³M. Noumi , ⁴K. Ueno , Res. Inst. for Math. Sci, Kyoto University, Kyoto 606, Japan, ¹Dept. of Math, Nagoya University, Furou-Cho, Chikusa-Ku, Nagoya 464, Japan, ²Dept. of Math, Yokohama City Univ, Seto 22-2, Kanazawa-Ku, Yokohama 236, Japan, ³Dept. of Math, Sophia Univ, Kioi-Cho 7, Chiyoda-Ku, Tokyo 102, Japan, ⁴Dept. of Math, Waseda Univ, Ohkubo 3, Shinjuku-Ku, Tokyo 160, Japan,
Representations of Quantum Groups and a q -Analogue of Orthogonal Polynomials

R. Fukuda , Department of Physics, Faculty of Science and Technology, Keio University, Yokohama 223, Japan,

Implications of the Proposed Theory of measurement

Masanao Ozawa , Department of Mathematics, College of General Education, FUROCHO, CHIKUSA-KU, NAGOYA 464, Japan,

REALIZATION OF MEASUREMENT AND THE STANDARD QUANTUM LIMIT

MASANORI OHYA , Department of Information Sciences, Science University of Tokyo, Noda City, Chiba 278, Japan,

A MATHEMATICAL FORMULATION OF QUANTUM INFORMATION THEORY AND ITS APPLICATION TO IRREVERSIBLE PROCESSES—seen from some aspects of quantum entropy theory—

Yasuyuki Kawahigashi , University of California, Los Angeles, California 90024, USA

One-parameter automorphism groups of the hyperfinite type II_1 factor.

Hideki Kosaki , Department of Mathematics, College of General Education, Kyushu University, Fukuoka, 810, Japan,

INDEX THEORY FOR TYPE III FACTORS

Shigeru YAMAGAMI, Dept. of Math, Faculty of General Education, Tohoku University, Sendai 980, Japan
On the Ideal Structure of C^* -Algebras over Locally Compact Groupoids.

Jun Ichi Fujii , Masatoshi Fujii , Department of Mathematics, Osaka Kyoiku University, Osaka 543, Japan,
On Operator Inequalities.

Tetsuo Deguchi , Miki Wadati , ¹Yasuhiro Akutsu , Institute of Physics, College of Arts and Sciences, University of Tokyo, Komaba, Meguro-ku, Tokyo 153, Japan, ¹Institute of Physics, Kanagawa University, Rokkakubashi, Kanagawa-ku, Yokohama 221, Japan

Link Polynomials constructed from Solvable Models in Statistical Mechanics.

PEPRINTS (RECEIVED IN BIELEFELD)

- C. Albanese, J. Fröhlich and Th. Spencer, Theoretical Physics, ETH-Hönggerberg, CH-8093 Zürich, Switzerland and The Institute for Advanced Study, Princeton, NJ 08540, USA,
PERIODIC SOLUTION OF SOME INFINITE-DIMENSIONAL HAMILTONIAN SYSTEMS ASSOCIATED WITH NON LINEAR PARTIAL DIFFERENCE EQUATIONS II.
- S. Twareque Ali and J.-P. Antoine, Department of Mathematics, Concordia University, Montréal, Canada H4B 1R6 and Institut de Physique Théorique, Université Catholique de Louvain, B-1348 Louvain-la-Neuve, Belgium,
COHORENT STATES OF THE 1+1 DIMENSIONAL POINCARÉ GROUP: SQUARE INTEGRABILITY AND A RELATIVISTIC WEYL TRANSFORM
- J.-P. Antoine, D. Lambert, J.-A. Sepulchre, Institut de Physique Théorique, Université Catholique de Louvain, B-1348 Louvain-la-Neuve, Belgium,
CLASSICAL YANG-MILLS FIELDS WITH CONFORMAL INVARIANCE: FROM EXACT SOLUTIONS TO QUALITATIVE ANALYSIS
- F. Benatti, N. Narnhofer, Institut für Theoretische Physik, Universität Wien and SISSA, Trieste
ENTROPIC DIMENSION FOR COMPLETELY POSITIVE MAPS
- F. Benatte and H. Narnhofer, SISSA - Scuola Internazionale Superiore di Studi Avanzati, Trieste, Strada Costiera 11, Italy
ENTROPY BEHAVIOUR UNDER COMPLETELY POSITIVE MAPS
- D. Buchholz, G. Mack, I. Todorov, II. Institut f. Theoretische Physik, Universität Hamburg and Deutsches Elektronen-Synchrotron DESY, Hamburg and Inst. f. Nucl. Research & Nucl. Energy, Bulgarian Acad. Sci., Sofia,
THE CURRENT ALGEBRA ON THE CIRCLE AS A GERM OF LOCAL FIELDS THEORIES
- D. Buchholz, P. Junglas, II. Institut für Theoretische Physik, Universität Hamburg, Institut für Theoretische Physik, Universität Göttingen, FRG
ON THE EXISTENCE OF EQUILIBRIUM STATES IN LOCAL QUANTUM FIELD THEORY
- R. Coquereaux and D. Kastler, Centre de Physique Théorique, CNRS - Luminy, Case 907, F-13288 Marseille Cedex 09, France
REMARKS ON THE DIFFERENTIAL ENVELOPES OF ASSOCIATIVE ALGEBRAS
Dedicated to the memory of Henry Dye
- J. Dini, P. Maroni, A. Ronveaux, Faculty Universitaires N.D. de la Paix Namur, Facultes des Sciences, Department de Physique, Rue de Bruxelles 61, 5000 Namur, Belgique
SUR UNE PERTURBATION DE LA RECURRENCE VERIFIÉE PAR UNE SUITE DE POLYNOMES ORTHOGONAUX

- L. Dooms and Ph. de Smedt, Instituut voor Theoretische Fysica,
Universiteit Leuven, Celestijnenlaan 200D, 3030 Leuven, Belgium,
A STUDY OF LIQUIDS WITH INTERNAL QUANTUM STATES IN THE MSA, EXP,
AND LINEXP approximations
- S. Doplicher and John E. Roberts, Dipartimento di Matematica, Università
di Roma "La Sapienza", Roma, I-00185, Italia, Fachbereich Physik,
Universität Osnabrück, D-4500 Osnabrück, FRG,
MONOIDAL C*-CATEGORIES AND A NEW DUALITY THEORY FOR COMPACT GROUPS
- R. Estrada, J.M. Gracia-Bonida and J. C. Varilly, Escuela de Matemática,
Universidad de Costa Rica, San José, Costa Rica,
A NOTE ON ASYMPTOTIC EXPANSIONS OF TWISTED PRODUCTS
- J. Friedrich, Naturwissenschaftlich-Theoretisches Zentrum, Karl-Marx-
Universität, DDR-7010 Leipzig, und Sektion Mathematik,
OPERATOR MOMENT PROBLEMS
- J. Fröhlich and B. Zegarlinski, Theoretical Physics, ETH-Hönggerberg,
CH-8093 Zürich,
SPIN GLASSES AND OTHER LATTICE SYSTEMS WITH LONG RANGE INTERACTIONS
- D. Goderis, P. Vets, Instituut voor Theoretische Fysica, Universiteit
Leuven, B-3030 Leuven, Belgium,
CENTRAL LIMIT THEOREM FOR MIXING QUANTUM SYSTEMS AND THE CCR-
ALGEBRA OF FLUCTUATIONS
- S. Golin and S. Marmi, Fachbereich Mathematik, Technische Universität
Berlin, Straße des 17. Juni 136, D-1000 Berlin 12, FRG,
Fachbereich Mathematik, Freie Universität Berlin, Arnimallee 2-6,
D-1000 Berlin 33, FRG and Dipartimento di Fisica and I.N.F.N.
-Sezione di Bologna, Università di Bologna, Via Irnerio 46,
Bologna, Italy,
SYMMETRIES, HANNAY ANGLES, AND PRECESSION OF ORBITS
- S. Golin, A. Knauf, S. Marmi, address: see above,
THE HANNAY ANGLES: GEOMETRY, ADIABATICITY, AND AN EXAMPLE
- S. Golin, A. Knauf, S. Marmi, address: see above,
HANNAY ANGLES: EXISTENCE AND GEOMETRICAL INTERPRETATION
- G.C. Hegerfeldt and H. Schulze, Institut für Theoretische Physik, Uni-
versität Göttingen, Göttingen, FRG and Robert-Bosch GmbH,
D-3200 Hildesheim, FRG,
DENSITY EXPANSIONS FOR THE AUTOCORRELATION FUNCTION OF SPECTRAL-
LINE PROFILES
- G.C. Hegerfeldt, Institut für Theoretische Physik, Universität
Göttingen, Göttingen, FRG,
DIFFICULTIES WITH CAUSALITY IN PARTICLE LOCALIZATION
- A. Jadczyk and D. Kastler, Institute of Theoretical Physics, University
of Wrocław, Cybulskiego 36-50-205 Wrocław, Poland, CPT-CNRS
Luminy, Case 907, F-13288 Marseille Cedex 9
GRADED LIE CARTAN PAIRS II, THE FERMIONIC DIFFERENTIAL CALCULUS

- D. Kastler, Centre de Physique Théorique, CNRS - Luminy, Case 907,
F-13288 Marseille Cedex 09, France,
INTRODUCTION TO ENTIRE CYCLIC COHOMOLOGY
(OF $Z/2$ -GRADED BANACH ALGEBRAS)
- M.A. Kon, L.A. Raphael, Columbia University and Boston University,
Howard University,
SOME NEGATIVE LP RESULTS FOR EIGENFUNCTION EXPANSIONS
ASSOCIATED WITH SCATTERING THEORY
- M.A. Kon, Columbia University and Boston University,
SEMIGROUP SMOOTHING BY HIGHLY SINGULAR OPERATORS
- M.A. Kon, Columbia University and Boston University,
INTEGRALS OF PURELY RANDOM FIELDS I
- M.A. Kon, Columbia University and Boston University,
INTEGRALS OF PURELY RANDOM FIELDS II
- F. Koukiou, J. Pasche, D. Petritis, Institut de Physique théorique,
Université de Lausanne, 1015 Lausanne, Schweiz,
THE HAUSDORFF DIMENSION OF THE TWO-DIMENSIONAL EDWARD'S RANDOM WALK
- R. Longo, Dipartimento di Matematica, Università di Roma II "Tor Vergata"
MAXIMAL ABELIAN SUBALGEBRAS WITH SIMPLE NORMALIZER
- A. Martin, CERN - Geneva, Schweiz,
COLLAPSE OF SYSTEMS OF RELATIVISTIC PARTICLES
- H. Narnhofer and W. Thirring, Institut für Theoretische Physik, Uni-
versität Wien,
MIXING PROPERTIES OF QUANTUM SYSTEMS
- D. Petz, G.A. Raggio, A. Verbeure, Instituut voor Theoretische Fysika,
Katholieke Universiteit Leuven, B-3030 Leuven, Belgium,
ASYMPTOTICS OF VARADHAN-TYPE AND THE GIBBS VARIATIONAL PRINCIPLE
- A. Ronveaux, G. Thiry, Facultes Universitaires N.D. de la Paix Namur,
Facultes des Sciences, Departement de Physique, Rue de Bruxelles 61,
5000 Namur, Belgique,
POLYNAMIAL SOLUTION OF RECURRENCE RELATION AND DIFFERENTIAL EQUATION
- H. Siedentop, R. Weikard, and an appendix by A.M. Klaus Müller, Institut
für Mathematische Physik, Carolo-Wilhelmina, Mendelssohnstraße 3,
3300 Braunschweig, FRG,
ON "AN ATOMIC ENERGY LOWER BOUND THAT GIVES SCOTT'S CORRECTION"
OF HUGHES

Stochastic Processes Mathematics and Physics

PUBLICATIONS

Nr.	Author	Title
320	Ph. Blanchard E.A. Carlen G.F. Dell'Antonio	Particles and 'bumps' in quantum field configurations.
321	J. Marion	Materials for an harmonic analysis on sobolev gauge groups.
322	S. Albeverio T. Hida J. Potthoff L. Streit	The vacuum of the Høegh-Krohn model as a generalized White Noise functional.
323	S. Albeverio M. Röckner	Dirichlet forms, quantum fields and stochastic quantisation.
324	B. Apolloni N. Cesa-Bianchi D. de Falco	A numerical implementation of "quantum annealing"
325	S. Albeverio R. Høegh-Krohn B. Zegarlinski	Uniqueness of Gibbs states for general $P(\varphi)_2$ - weak coupling models by cluster expansion.
326	T. Kolsrud	Gaussian random fields, infinite dimensional Ornstein-Uhlenbeck processes, and symmetric Markov processes.