

**PROGRAMME OF MEETINGS**  
**NATO INTERNATIONAL SCIENTIFIC EXCHANGE PROGRAMME**  
**MATHEMATICAL AND PHYSICAL SCIENCES**

Advanced Study Institutes (ASIs) are tutorial courses of 10 days dealing with new and important topics for up to 100 research scientists and students. Pre- and post-doctoral researchers are invited to participate in these institutes. Some limited financial support is available for deserving participants.

Advanced Research Workshops (ARWs) are working meetings lasting 4-5 days which enable a restricted group of invited experts to review the state of the art and formulate recommendations for future research.

Interested scientists should contact the directors of the meetings directly.

**THE LARGE-SCALE ATMOSPHERIC TRANSPORT OF NATURAL AND CONTAMINANT SUBSTANCES FROM CONTINENT TO OCEAN AND CONTINENT TO CONTINENT**

ARW - St George's (Bermuda), January, 1988  
Contact Dr A H Knap  
Director, Bermuda Biological Research Station,  
17 Biological Station Lane  
Ferry Reach GE 01, Bermuda

**SQUEEZED AND NON-CLASSICAL LIGHT**

ARW - Cortina (Italy), January, 1988  
Contact Dr P Tombesi  
Dipartimento di Fisica, Università Roma LA  
SAPIENZA, Piazzale A Moro 2  
I-00185 Rome, Italy

**MODELLING THE OCEAN GENERAL CIRCULATION AND GEOCHEMICAL TRACER TRANSPORT**

ASI - Les Houches (France), February, 1988  
Contact Dr D Anderson  
Atmospheric Physics, Clarendon Laboratory,  
Parks Rd  
Oxford OX7 1JE, U K

**SIMPLE MOLECULAR SYSTEMS AT VERY HIGH DENSITY**

ARW - Les Houches (France), March, 1988  
Contact Dr A Polian  
Physique des Milieux Condenses, Université P & M Curie, 4 Place Jussieu  
F-75252 Paris Cedex 05, France

**TIMING NEUTRON STARS**

ASI - Izmir (Turkey), April, 1988  
Contact Professor H Ogelman  
Max-Planck Institut fuer Extraterrestrische Physik,  
D-8046 Garching, Germany

**BANDSTRUCTURE ENGINEERING IN SEMICONDUCTOR MICROSTRUCTURES**

ARW - Il Ciocco (Italy), April, 1988  
Contact Dr R A Abram  
Science Laboratories, University of Durham,  
South Road  
Durham DH1 3LE, U K

**PALAEOMAGNETISM AND GEOMAGNETISM**

ASI - Newcastle upon Tyne (U K), April, 1988  
Contact Professor S K Runcorn  
School of Physics, The University,  
Newcastle upon Tyne NE1 7RU, U K

**HETEROGENEOUS CATALYSTS FOR CARBON MONOXIDE CONVERSION**

ARW - Groppe (France), April, 1988  
Contact Professor P A Jacobs  
Lab Oppervlaktechemie, K U Leuven, Kard  
Mercuriaan 92  
B-3030 Leuven (Heverlee), Belgium

**NUMBER THEORY AND APPLICATION**

ASI - Banff / Alberta (Canada), April, 1988  
Contact Dr R A Mollin  
Mathematics Dept., University of Calgary,  
Calgary Alberta T2N 1N4, Canada

**HUMIDITY EXCHANGE OVER THE SEA (HEXOS) - ANALYSIS AND INTERPRETATION**

ARW - De Bilt (Netherlands), April, 1988  
Contact Dr W A Oost  
K N M I, P O Box 201  
NL-3730 AE De Bilt, The Netherlands

**PALEOMAGNETIC ROTATIONS AND CONTINENTAL DEFORMATION**

ARW - Loutra Edispos (Greece), May, 1988  
Contact Dr C Laj  
Centre des Faibles Radioactivites, B P 1  
F-91190 Gif-sur-Yvette, France

**MARBLE IN ANCIENT GREECE AND ROME - GEOLOGY/SOURCES/COMMERCE AND ARTIFACTS**

ARW - Il Ciocco/Tuscany (Italy), May, 1988  
Contact Professor N Herz  
Dept of Geology, University of Georgia,  
Athens GA 30602, U S A

**DARK MATTER IN THE UNIVERSE**

ASI - Erice (Italy), May, 1988  
Contact Professor P Galeotti  
Ist do Cosmogeofisica del CNR, Università di  
Torino, Corso Fiume 4  
I-10133 Torino, Italy

**CAUSES AND EFFECTS OF EARTHQUAKES AT PASSIVE MARGINS AND AREAS WITH POSTGLACIAL REBOUND ON BOTH SIDES OF THE NORTH ATLANTIC**

ARW - Vordingborg (Denmark), May, 1988  
Contact: Dr S Gregersen  
Dept of Seismology, Geodetic Institute,  
Garnlevehale Alle 22  
DK-2920 Charlottenlund, Denmark

**HIGHLY REDUNDANT SENSING IN ROBOTIC SYSTEMS**

ARW - Il Ciocco (Italy), May, 1988  
Contact: Dr J Tou  
Center for Information Research, University of  
Florida, 314 CSE Building  
Gainesville FL 32611, U S A

**EUROPEAN NEOGENE MAMMAL CHRONOLOGY**

ARW - Schloss Reisenburg (Germany), May, 1988  
Contact Dr E Lindsay  
Dept of Geosciences, University of Arizona,  
Tucson AZ 85721, U S A

**SPECTROSCOPY OF INORGANIC BIOACTIVATORS**

ASI - Thessaloniki (Greece), May, 1988  
Contact Professor T Theophanides  
Dept de Chimie, Université de Montreal, C P  
6128 Succ A  
Montreal Quebec H3C 3J7, Canada

**ELECTROMAGNETIC COUPLING IN THE POLAR CLEFTS AND CAPS**

ARW - Sandefjord (Norway), May, 1988  
Contact Professor A Egeland  
Dept of Physics, University of Oslo, P O Box  
1048 - Blindern  
N-0316 Oslo 3, Norway

**COMMON TRENDS IN STATISTICAL PHYSICS AND FIELD THEORY**

ARW - Cargèse (France), May, 1988  
Contact Dr C Itzykson  
Service de Physique Theorique, CEN-Saclay,  
F-91191 Gif-Sur-Yvette Cedex, France

**ATOMS IN STRONG FIELDS**

ASI - Kos (Greece), May, 1988  
Contact Professor C A Nicolaidis  
Theor & Physical Chemistry Inst., Hellenic  
Research Foundation, 48 Vas' Constantinou Ave  
Athens 116/35, Greece

**NOISE AND NONLINEAR PHENOMENA IN NUCLEAR SYSTEMS**

ARW - Valencia (Spain), May, 1988  
Contact Professor J L Munoz-Cobo  
Ingenieria Quimica y Nuclear, Univ Polit de  
Valencia, Apdo 22012  
E-46071 Valencia, Spain

**FREE RADICAL IN SYNTHESIS AND BIOLOGY**

ARW - Gargnano (Italy), May, 1988  
Contact: Professor F Minisci  
Dipartimento di Chimica del Politecnico, Piazza  
L. da Vinci 32  
I-20133 Milan, Italy

**SELECTIVE EXCITATION AND ACTIVATION OF LANTHANIDE LEVELS IN MOLECULES**

ARW - Sophia Antipolis (France), June, 1988  
Contact: Dr P Caro  
Laboratoire de Bellevue, CNRS, 1 Place A. Briand  
F-92195 Meudon, France

**SOLID STATE BATTERIES**

ASI - Erice (Italy), July, 1988  
Contact: Dr J R Akridge  
Eveready Battery Company, P O Box 45055  
Westlake Ohio 44145, U S A

**PROPERTIES AND APPLICATIONS OF 2D ORGANIC FILMS: LB FILMS AND RELATED STRUCTURES**

ARW - Gif sur Yvette (France), June, 1988  
Contact Dr A Barraud  
D P C/S C M, Centre d'Etudes Nucleaires  
Saclay,  
F-91191 Gif-sur-Yvette, France

**MORPHOLOGICAL IDENTIFICATION OF PLANT-PARASITIC NEMATODE GENERA**

ARW - Raleigh (U S A), June, 1988  
Contact Dr H Ferris  
Dept of Nematology, University of California,  
275 Mrak Hall - Office of Res  
Davis CA 95616, U S A

**ADVANCED INFORMATION TECHNOLOGY FOR INDUSTRIAL MATERIAL FLOW SYSTEMS**

ARW - Grenoble (France), June, 1988  
Contact Professor C L Moodie  
School of Industrial Engineering, Purdue  
University,  
W Lafayette IN 47907, U S A

**NON-SATURATED FLOW IN HYDROLOGIC MODELING**

ARW - Le Rouet (France), June, 1988  
Contact Professor H-J Morel-Seytoux  
Dept of Civil Engineering, Colorado State  
University,  
Fort Collins CO 80523, U S A

**PROGRAMME OF MEETINGS**  
**NATO INTERNATIONAL SCIENTIFIC EXCHANGE PROGRAMME**  
**MATHEMATICAL AND PHYSICAL SCIENCES**

Advanced Study Institutes (ASIs) are tutorial courses of 10 days dealing with new and important topics for up to 100 research scientists and students. Pre- and post-doctoral researchers are invited to participate in these institutes. Some limited financial support is available for deserving participants.

Advanced Research Workshops (ARWs) are working meetings lasting 4-5 days which enable a restricted group of invited experts to review the state of the art and formulate recommendations for future research.

Interested scientists should contact the directors of the meetings directly.

**NONLINEAR OPTICAL EFFECTS IN ORGANIC POLYMERS**

ARW - Sofia-Antipolis (France), June, 1988  
Contact Dr J Messier  
Lab de Phys Electron des Matériaux,  
CEN-Saclay, DEIN/LPEM  
F-91191 Gif-Sur-Yvette Cedex, France

**REDUCED THERMAL PROCESSING OF VLSI CIRCUITS**

ASI - Il Ciocco (Italy), June, 1988  
Contact Dr R A Levy  
A & AT Bell Laboratories,  
Murray Hill NJ 07974, U S A.

**SOLAR AND STELLAR GRANULATION**

ARW - Capri (Italy), June, 1988  
Contact Dr R J Rutten  
Utrecht Observatory, Zonnenburg 2  
NL-35123 NL Utrecht, The Netherlands

**THE MECHANISMS OF REACTIONS OF ORGANOMETALLIC COMPOUNDS WITH SURFACES**

ARW - St. Andrews (U K), June, 1988  
Contact Professor D J Cole-Hamilton  
Dept of Chemistry, University of St. Andrews,  
The Purdie Building  
St. Andrews Fife KY16 9ST, U K

**SUPERCONDUCTIVE ELECTRONICS**

ASI - Il Ciocco (Italy), June, 1988  
Contact Professor H Weinstock  
Air Force Office of Scientific Research,  
AFOSR/NE - Bolling AFB  
Washington DC 20332-6448, U S A

**FIELDS / STRINGS AND CRITICAL PHENOMENA**

ASI - Les Houches (France), June/July, 1988  
Contact Mr J Zinn-Justin  
Service de Physique Theorique, CEN Saclay,  
F-91191 Gif-sur-Yvette, France

**CONSTRUCTIVE QUANTUM FIELD THEORY II**

ASI - Erice (Italy), July, 1988  
Contact Professor G Velo  
Dipto di Fisica, Universita, Via Irnerio 46  
I-40126 Bologna, Italy

**POLYMER COLLOIDS III**

ASI - Strasbourg (France), July, 1988  
Contact Professor R H Ottewill  
School of Chemistry, University of Bristol,  
Cantocks Close  
Bristol BS8 1TS, U K

**EVOLUTIONARY PHENOMENA IN GALAXIES**

ASI - Tenerife (Spain), July, 1988  
Contact Dr J E Beckman  
Instituto de Astrofisica, de Canarias,  
38200 La Laguna / Tenerife, Spain

**RECENT ADVANCES IN THE MODELING OF HYDROLOGIC SYSTEMS**

ASI - Sintra (Portugal), July, 1988  
Contact Dr D S Bowles  
Utah Water Research Lab., Utah State University,  
Logan Utah 84322-8200, U S A

**RANDOM FLUCTUATIONS AND PATTERN GROWTH. EXPERIMENTS AND THEORY**

ASI - Cargèse/Corsica (France), July, 1988  
Contact Dr H E Stanley  
Center for Polymer Studies, Boston University,  
Boston MA 02215, U S A

**THE EPOCH OF GALAXY FORMATION**

ARW - Durham (U K), July, 1988  
Contact Dr C S Frenk  
Dept of Physics, University of Durham, South  
Road  
Durham DH1 3LE, U K

**CONSTRUCTIVE METHODS IN COMPUTING SCIENCE**

ASI - Marktoberdorf (Germany), July, 1988  
Contact Professor F L Bauer  
Inst. fur Informatik, Techn. Universitaet  
Munchen, Arcisstr. 21 - Postf. 20 2420  
D-8000 Munchen 2, Germany

**PHOTOCHEMICAL PROBES IN BIOCHEMISTRY**

ARW - Hansholm (Denmark), August, 1988  
Contact Dr P E Nielsen  
Department of Biochemistry, University of  
Copenhagen, Blegdamsvej 3  
DK-2200 Copenhagen, Denmark

**NUMERICAL LINEAR ALGEBRA / DIGITAL SIGNAL PROCESSING AND PARALLEL ALGORITHMS**

ASI - Leuven (Belgium), August, 1988  
Contact: Dr. P. Van Dooren  
Philips Research Laboratory, Av. Van Becelaere 2  
- Box 8  
B-1170 Brussels, Belgium

**NEW TRENDS IN NONLINEAR DYNAMICS AND PATTERNING PHENOMENA**

ARW - Cargèse (France), August, 1988  
Contact Dr P Coulet  
Laboratoire de Physique Theorique, Parc Valrose,  
F-06034 Nice CEDEX, France

**NEW ASPECTS OF NUCLEAR DYNAMICS**

ASI - Dronen (The Netherlands), August, 1988  
Contact Professor P K A. De Witt-Huberts  
Sectie-K, NIKHEF, Postbus 41 882  
NL-1009DB Amsterdam, The Netherlands

**TOMOGRAPHY IN GEOPHYSICS**

ASI - Les Houches (France), August, 1988  
Contact Mr J Zinn-Justin  
Service de Physique Theorique, CEN Saclay,  
F-91191 Gif-sur-Yvette, France

**GROWTH AND OPTICAL PROPERTIES OF WIDE-GAP II-VI'S LOW DIMENSIONAL SEMICONDUCTORS**

ARW - Regensburg (Germany), August, 1988  
Contact Professor T C McGill  
Applied Physics Dept., California Institute of  
Technology, MS 128-95  
Pasadena CA 91112, U S A

**MICROWAVE REMOTE SENSING FOR OCEANOGRAPHIC AND MARINE WEATHER-FORECAST MODELS**

ASI - Dundee (U K), August, 1988  
Contact Professor A P Cracknell  
Carnegie Laboratory of Physics, University of  
Dundee,  
Dundee DD1 4HN, U K

**ADVANCES IN THE THEORY OF FRECHET SPACES**

ARW - Istanbul (Turkey), August, 1988  
Contact Professor T Terzioglu  
Department of Mathematics, METU,  
Ankara, Turkey

**A METHODOLOGICAL APPROACH TO MULTINUCLEAR NMR IN LIQUIDS AND SOLIDS - CHEMICAL APPLICATIONS**

ASI - Maratea (Italy), August, 1988  
Contact Professor P Granger  
Laboratoire de RMN, Institut de Chimie, B P  
296/R8  
F-67008 Strasbourg Cedex, France

**METALISATION AND METAL SEMICONDUCTOR INTERFACES**

ARW - Essex (U.K.), August, 1988  
Contact: Dr. I.P. Batra  
IBM Almaden Research Center, 650 Harry Road  
K33/B01  
San Jose CA 95120-6099, U.S.A.

**STRAIN AND ITS IMPLICATION IN ORGANIC CHEMISTRY**

ARW - Ratzeburg (Germany), August, 1988  
Contact Professor A De Meijere  
Institute for Organic Chemistry, University of  
Hamburg, Martin-Luther-King Platz 6  
D-2000 Hamburg 13, Germany

**SUPERCOMPUTER ALGORITHMS FOR REACTIVITY DYNAMICS AND KINETICS OF SMALL MOLECULES**

ARW - Perugia (Italy), August, 1988  
Contact Professor A. Legnani  
Dipto. di Chimica, Universita di Perugia, Via Elce  
di Sotto 8  
I-06100 Perugia, Italy

**ROLE OF FLUIDS IN SEDIMENT ACCRETION DEFORMATION DIAGENESIS AND METAMORPHISM AT SUBDUCTION ZONES**

ARW - Il Ciocco/Tuscany (Italy) 7, September, 1988  
Contact Dr. M.G. Langseth  
Lamont-Doherty Geolog. Observatory,  
Palisades N.Y. 10964, U S A

**GEOLOGIC HISTORY OF THE POLAR OCEANS - ARCTIC VERSUS ANTARCTIC**

ARW - Braunlage (Germany), September, 1988  
Contact Professor U Bleil  
Fachbereich Geowissenschaften, Universitaet  
Bremen,  
D-2800 Bremen 33, Germany

**THEORETICAL MODELS FOR CELL TO CELL SIGNALING**

ARW - Knokke (Belgium), September, 1988  
Contact Dr. A Goldbeter  
Service de Chimie Physique II, U L B / Fac des  
Sciences, Campus Plaine / C P 213  
B-1050 Bruxelles, Belgium

**ADVANCED METHODS OF DETERMINATION OF CROSSLINKING AND SCISSION IN POLYMERS AND THEIR EFFECT ON MECHANICAL PROPERTIES**

ASI - Antalya (Turkey), September, 1988  
Contact Professor O Guven  
Dept of Chemistry, Hacettepe University,  
Beytepe  
Ankara 06532, Turkey

**PROGRAMME OF MEETINGS  
NATO INTERNATIONAL SCIENTIFIC EXCHANGE PROGRAMME  
MATHEMATICAL AND PHYSICAL SCIENCES**

Advanced Study Institutes (ASIs) are tutorial courses of 10 days dealing with new and important topics for up to 100 research scientists and students. Pre- and post-doctoral researchers are invited to participate in these institutes. Some limited financial support is available for deserving participants.

Advanced Research Workshops (ARWs) are working meetings lasting 4-5 days which enable a restricted group of invited experts to review the state of the art and formulate recommendations for future research.

Interested scientists should contact the directors of the meetings directly.

**COMPUTER SIMULATION OF FLUIDS /  
POLYMERS AND SOLIDS**

ASI - Bath (U K), September, 1988  
Contact Dr C R A Catlow  
Dept of Chemistry, Keele University,  
Keele Staffs ST5 5BG, U K

**PETROLOGY AND GEOCHEMISTRY OF  
GRANULITES**

ARW - Clermont-Ferrand (France), September,  
1988  
Contact Dr D Vielzeuf  
Dept de Geologie, Universite, 5 Rue Kessler  
F-63000 Clermont-Ferrand Cedex, France

**VIBRONIC PROCESSES IN INORGANIC  
CHEMISTRY**

ASI - Pugnochiuso (Italy), September, 1988  
Contact Professor C D Flint  
Dept of Chemistry, Birkbeck College, Malet  
Street  
London WC1E 7HX, U K.

**DIFFRACTION-LIMITED IMAGING AT VERY  
LARGE TELESCOPES**

ASI - Cargese/Corsica (France), September,  
1988  
Contact Dr D Allouin  
Observatoire de Paris/Meudon,  
F-92195 Meudon-Principal Cedex, France

**THE TECHNIQUES AND APPLICATIONS OF  
VERY LONG BASELINE INTERFEROMETRY**

ASI - Bologna (Italy), September, 1988  
Contact Dr M Felli  
Osservatorio Astrofisico, Largo E Fermi 5  
I-50125 Firenze, Italy

**THE EVALUATION OF ADVANCED  
SEMICONDUCTOR MATERIALS BY ELECTRON  
MICROSCOPY**

ARW - Bristol (U K), September, 1988  
Contact Dr D Cherns  
Physics Laboratory, University of Bristol, Tyndall  
Avenue  
Bristol BS8 1TL, U K

**THE FORMATION PROCESSING AND  
EVALUATION OF MEDICAL IMAGES**

ASI - Portugal, September, 1988  
Contact Dr A E Todd-Pokropek  
Dept of Medical Physics, University College of  
London, Gower Street  
London WC1E 6BT, U K

**MECHANICS AND RELATED PROCESSES IN  
STRUCTURED AGRICULTURAL SOILS**

ARW - St Paul / Minnesota (U S A),  
September, 1988  
Contact Professor W E Larson  
Head - Department of Soil Science, University of  
Minnesota, 1931 Upper Buford Circle  
St Paul MN 55108, U S A

**DIRECT AND INVERSE METHODS IN RADAR  
POLARIMETRY**

ARW - Bad Windsheim (Germany), September,  
1988  
Contact Professor W -M. Boerner  
Director, UIC-EECS Communication Laboratory,  
P O Box 4348 (M/C 154)  
Chicago ILL 60680, U S A.

**EXPOSED CROSS-SECTIONS OF THE  
CONTINENTAL CRUST**

ASI - Killarney / Ont. (Canada), September,  
1988  
Contact Dr M H. Salisbury  
Dept of Geology, Dalhousie University, Centre  
for Marine Geology  
Halifax N S B3H 3J5, Canada

**REACTIVE AND FLEXIBLE MOLECULES IN  
LIQUIDS**

ASI - Chaloniki (Greece), September, 1988  
Contact Professor Th. Dorfmueller  
Dept. of Chemistry, University of Bielefeld,  
D-4800 Bielefeld, Germany

**TRANSITION-METAL CARBENE COMPLEXES**

ARW - Wildbad Kreuth (Germany), September,  
1988  
Contact Professor U Schubert  
Institute for Anorganic Chemistry, University of  
Wurzburg, Am Hubland  
D-8700 Wurzburg, Germany

**OCEAN-CLIMATE INTERACTION - IMPACT OF  
TEMPORAL AND SPATIAL VARIABILITY ON  
DEEP WATER FORMATION**

ARW - Oxford (U K), September, 1988  
Contact Professor M E Schlesinger  
Dept Atmospher. Sc & Climate Res., Oregon  
State University,  
Corvallis OR 97331, U S A

**SELECTIVITIES IN LEWIS ACID-PROMOTED  
REACTIONS**

ARW - Athens (Greece), October, 1988  
Contact Dr D Schinzer  
Institute for Organic Chemistry, University of  
Hannover, Schneiderberg 1 B  
D-3000 Hannover, Germany

**KNOWLEDGE BASED ROBOTIC CONTROL**

ARW - Chateau de Bonas (France), October,  
1988  
Contact Professor G N Sandis  
Electrical Computer & Systems Eng., Rensselaer  
Polytechnic Institute,  
Troy N Y 12181, U S A

**COMPUTATIONAL ALGORITHMS AND VLSI  
ARCHITECTURES FOR SENSOR-BASED  
ROBOT MANIPULATORS**

ARW - Bonas (France), October, 1988  
Contact Dr. C.S.G. Lee  
Dept. of Electrical Eng., Purdue University,  
West Lafayette IN 47907, U.S.A.

**OPTICAL SWITCHING IN LOW DIMENSIONAL  
SYSTEMS**

ARW - Marbella (Spain), October, 1988  
Contact: Dr. H. Haug  
Institute for Theoretical Physics, University of  
Frankfurt, Robert-Mayer-Strasse 8  
D-6000 Frankfurt, Germany

Established scientists interested in organizing either an Advanced Research Workshop or an Advanced Study Institute should request information and application forms from the NATO Science Division, B-1110 Brussels, Belgium (TEL.(0032)-2-241.00.40).

The results of the above meetings are usually published in the NATO ASI SERIES. The official publishers are: MARTINUS NIJHOFF PUBLISHERS, PLENUM PUBLISHING CORPORATION, D. REIDEL PUBLISHING COMPANY and SPRINGER VERLAG.

A bibliographical data base on the NATO ASI SERIES covering many years of activity can now be consulted online through the ESA-IRS Information Retrieval Service ("NATO-PCO" - FILE 128). Contact ESRIN, Via Galileo Galilei, I-00044 Frascati (Rome), Italy (TEL.(0039)-6-94.011) for more information.

---

# *Recent Titles in Mathematical Physics*

---

- **C. Canuto, M. Y. Hussaini, A. Quarteroni, T. A. Zang**  
**Spectral Methods in Fluid Dynamics**  
1988. 88 figures, XV, 557 pages. (Springer Series in Computational Physics). Hard cover DM 162,-. ISBN 3-540-17371-4
  
- **B. D. Coleman, M. Feinberg, J. Serrin (Eds.)**  
**Analysis and Thermomechanics**  
**A Collection of Papers Dedicated to W. Noll on His Sixtieth Birthday**  
1987. 24 figures. VIII, 542 pages. Soft cover DM 120,-. ISBN 3-540-18125-3
  
- **M. M. Stanišić**  
**The Mathematical Theory of Turbulence**  
2nd edition. 1988. 86 figures. XVIII, 501 pages. Soft cover DM 88,-. ISBN 3-540-96685-4
  
- **M. Lakshmanan (Ed.)**  
**Solitons**  
**Introduction and Applications**  
Proceedings of the Winter School, Bharathidasan University, Tiruchirapalli, South India, January 5-17, 1987  
1988. 29 figures. IX, 367 pages. (Springer Series in Nonlinear Dynamics). Hard cover DM 98,-. ISBN 3-540-18588-7
  
- **S. A. Albeverio, F. Gesztesy, R. Høegh-Krohn, H. Holden**  
**Solvable Models in Quantum Mechanics**  
1988. 51 figures. XIV, 452 pages. (Texts and Monographs in Physics). Hard cover DM 158,-. ISBN 3-540-17841-4
  
- **H. L. Cycon, R. G. Froese, W. Kirsch, B. Simon**  
**Schrödinger Operators**  
**with Application to Quantum Mechanics and Global Geometry**  
1987. 2 figures. IX, 319 pages. (Texts and Monographs in Physics). Soft cover DM 56,-. ISBN 3-540-16758-7

Springer-Verlag Berlin Heidelberg New York London Paris Tokyo

Heidelberger Platz 3, D-1000 Berlin 33 175 Fifth Ave., New York, NY 10010, USA 28, Lurke Street, Bedford MK40 3HU, England 26, rue des Carmes, F-75005 Paris 37-3, Hongo 3-chome, Bunkyo-ku, Tokyo 113, Japan - Room 1603, Citicorp Centre, 18 Whitfield Road, Causeway Bay, Hong Kong

**Springer**



*new from de Gruyter*

Volume 1 · 1989

## Forum Mathematicum

An international journal devoted to pure and applied  
mathematics as well as mathematical physics

### Editorial Board:

- M. Brin (College Park, USA) · F. R. Cohen (Lexington, USA)  
V. Enss (Berlin, FRG) · R. Fintushel (East Lansing, USA)  
M. Fliess (Gif-sur-Yvette, France) · M. Fukushima (Osaka, Japan)  
G. Gallavotti (Rome, Italy) · R. Göbel (Essen, FRG)  
K. H. Hofmann (Darmstadt, FRG) · J. Lindenstrauss (Jerusalem, Israel)  
D. H. Phong (New York, USA) · D. Ramakrishnan (Ithaca, USA)  
A. Ranicki (Edinburgh, GB) · P.-A. Raviart (Palaiseau, France)  
D. S. Scott (Pittsburgh, USA) · D. Segal (Oxford, GB)  
B. Shiffman (Baltimore, USA) · F. Skof (Torino, Italy)  
K. Strambach (Erlangen, FRG) · G. Talenti (Florence, Italy)  
H. Triebel (Jena, GDR) · R. B. Warfield, Jr. (Seattle, USA)

Authors may submit original research articles for publication  
directly to one of the editors or to:

Forum Mathematicum, Mathematisches Institut der Universität,  
Bismarckstrasse 1 1/2, D-8520 Erlangen, FRG

### Subscription Information:

Forum Mathematicum ISSN 0933-7741

1989, Volume 1 (4 issues): DM 240,-/approx. US \$140.00 plus carriage charges  
Subscriptions and sample copies may be ordered through your local bookseller or  
directly from the publisher.

**de Gruyter · Berlin · New York**

Walter de Gruyter & Co., Genthiner Str. 13, D-1000 Berlin 30, FRG, Phone (030) 2 60 05-0 · Telex 1 84 027  
Telefax (030) 2 60 05-251

Walter de Gruyter, Inc., 200 Saw Mill River Road, Hawthorne, NY 10532, USA, Phone (914) 747-0110  
Telex 6 46 677 · Telefax (914) 747-1326

Communications in  
**Mathematical  
Physics**

Chief Editor A. Jaffe, Cambridge, MA

Editorial Board M. Aizenman, New York, NY  
L. Alvarez-Gaumé, Genève  
H. Araki, Kyoto  
A. Connes, Bures-sur-Yvette  
J.-P. Eckmann, Genève  
M. E. Fisher, College Park, MD  
J. Fröhlich, Zürich  
K. Gawedzki, Bures-sur-Yvette  
J. L. Lebowitz, New Brunswick, NJ  
J. Mather, Princeton, NJ  
G. Parisi, Roma  
B. Simon, Pasadena, CA  
Ya. G. Sinai, Moscow  
T. Spencer, Princeton, NJ  
S.-T. Yau, Cambridge, MA

Advisory Board M. F. Atiyah, Oxford  
F. Hirzebruch, Bonn  
G. 't Hooft, Utrecht  
R. Schrieffer, Santa Barbara, CA  
I. Singer, Cambridge, MA  
C. N. Yang, Stony Brook, NY

Responsible for Advertisements  
Springer-Verlag  
Printers  
Printed in Germany

E. Lückermann, M. Stresow, Heidelberger Platz 3, D-1000 Berlin 33  
Telephone: (030) 8207-0, Telex 01-85411  
Berlin Heidelberg New York Tokyo  
Brühlsche Universitätsdruckerei, Giessen  
© Springer-Verlag Berlin Heidelberg 1988  
Springer-Verlag GmbH & Co KG, D-1000 Berlin 33