1. Record Nr.            UNINA9910451238303321

   Titolo               XIVth International Congress on Mathematical Physics : Lisbon, 28 July -
                        2 August 2003 / / edited by Jean-Claude Zambrini

   Pubbl/distr/stampa   Hackensack, New Jersey : , : World Scientific, , c2005

   ISBN                 981-270-401-9

   Descrizione fisica   1 online resource : illustrations

   Soggetti             Mathematical physics
                        Physics

   Lingua di pubblicazione   Inglese

   Formato              Materiale a stampa

   Livello bibliografico   Monografia

   Note generali        Bibliographic Level Mode of Issuance: Monograph

   Nota di bibliografia   Includes bibliographical references.

   Nota di contenuto    Plenary talks. On the relation between the Master equation and the
                        Boltzmann Equation in kinetic theory / Eric Carlen (Georgia Tech).
                        Symmetries and "simple" solutions of the classical n-body problem /
                        Alain Chenciner (U. Paris 7). Dirac-Fock models for atoms and
                        molecules and related topics / Maria J. Esteban, Eric Sere (U. Paris IX-
                        Dauphine). Locally covariant quantum field theory / Klaus Fredenhagen
                        (ITP, Hamburg). Simple models of turbulent transport / Krzysztof
                        Gawedzki (ENS Lyon). Algebraic versus Liouville integrability of the
                        soliton systems / Igor Krichever (Columbia U.). Mathematical
                        quasicrystals : a tale of two topologies / Robert V. Moody (U. Alberta).
                        Strings through the microscope / Volker Schomerus (SPhT Saclay).
                        Critical percolation and conformal invariance / Stanislav Smirnov (Royal
                        Inst, of Technology, Stockholm). The energy of charged matter / Jan
                        Philip Solovej (Princeton). Entropy production and convergence to
                        equilibrium for the Boltzmann equation / Cedric Villani (ENS Lyon).
                        Aspects of free probability / Dan Voiculescu (U. California at Berkeley)
                        -- Condensed matter physics. Adiabatic transport, Kubo formula and
                        Anderson localization in some lattice and continuum models / A. Elgart
                        (Courant Institute). Transport in adiabatic quantum pumps / G. M. Graf
                        (ETH Zurich) ... [et al.]. One-dimensional behavior of dilute Bose gases
                        in traps / Robert Seiringer, Elliott H. Lieb (Princeton), Jakob Yngvason
                        (U. Wien). Semiclassical dynamics of an electron moving in a slowly
                        perturbed periodic potential / Stefan Teufel, Gianluca Panati (Tech. U.

Munchen) -- Dynamical systems. Linear quasi-periodic systems - reducibility and almost reducibility / L. H. Eliasson (U. Paris 7). On discrete Schrodinger operators with stochastic potentials / W. Schlag (Caltech). Non-zero random Lyapunov exponents versus mean deterministic exponents for a twist like family of diffeomorphisms of the two sphere / Michael Shub (U. Toronto) -- Equilibrium statistical mechanics. Dimensional reduction for isotropic and directed branched polymers / John Z. Imbrie (U. Virginia). Random path representation and Ornstein-Zernike theory of fluctuations / Dmitry Ioffe (Technion, Haifa). Construction of a 2-d Fermi Liquid / Horst Knorrer (ETH-Zentrum, Zurich), Joel Feldman (U. of British Columbia), Eugene Trubowitz (ETH-Zentrum, Zurich). The restriction property for conformally covariant measures / Gregory F. Lawler (Cornell) -- Fluid dynamics and nonlinear PDEs. Birkhoff normal form for some quasilinear Hamiltonian PDEs / Dario Bambusi (U. Milano). Coupling stochastic PDEs / Martin Hairer (U. Warwick). Long time behaviour of periodic stochastic flows / V. Kaloshin (Caltech), D. Dolgopyat (Maryland), L. Koralov (Princeton). Local in time and space nonlinear stability of pulses in an unstable medium / Guido Schneider (U. Karlsruhe), Robert L. Pego (Maryland), Hannes Uecker (U. Karlsruhe). Some mathematical problems of statistical hydrodynamics / Armen Shirikyan (U. Paris-Sud XI).
General relativity. Formation of singularities in Yang-Mills equations / Piotr Bizon (Jagellonian U., Krakow). A family of quasi-local mass functionals with monotone flows / Hubert L. Bray (Columbia U.). On a wave map equation arising in general relativity / Hans Ringstrom (MPI, Golm) -- Integrable systems and random matrix theory. Limiting distribution of last passage percolation models / Jinho Baik (U. Michigan). Differential equations and the Bethe ansatz / Patrick Dorey (U. Durham). Correlation functions of the XXZ spin-1/2 chain : recent progress / Jean-Michel Maillet (ENS Lyon). Applications of a complete expansion for the partition function of random matrix theory / Kenneth D. T.-R. Mclaughin (U. of North Carolina at Chapel Hill). Complete solutions to form factor equations of SU(2) invariant Thirring model / Atsushi Nakayashiki (Kyushu U.). The uses of random partitions / Andrei Okounkov (Princeton). Stochastic growth in one dimension and Gaussian multi-matrix models / Herbert Spohn, Patrik L. Ferrari, Michael Prahofer (Tech. U., Munchen) -- Nonequilibrium statistical mechanics. Poincare recurrence : old and new / Luis Barreira (IST, Lisbon). Analysis of Lyapunov modes for hard-disk fluids / Christina Forster, Robin Hirschl, Harald A. Posch (U. Vienna). The fractality of the hydrodynamic modes of diffusion / Pierre Gaspard (U. Libre de Bruxelles). On the statistics of free-path lengths for the periodic Lorentz gas / Francois Golse (U. Paris 7). Nonequilibrium statistical mechanics of open classical systems / Luc Rey-Bellet (U. Massachusetts) -- Operator algebras and quantum information. Quantum dynamical entropies and quantum algorithmic complexities / Fabio Benatti (U. Trieste). Modular invariant partition functions in statistical mechanics, conformal field theory and their realisation by subfactors / David E. Evans (U. Wales). Classification of operator algebraic conformal field theories in dimensions one and two / Yasuyuki Kawahigashi (U, Tokyo). An application of the Lieb-Thirring inequality in quantum information theory / Christopher King (Northeastern U., Boston) -- Path integrals and stochastic analysis. Connes-Hida calculus in index theory / Remi Leandre (U. Nancy I). Wilson loops and spin networks / Thierry Levy (ENS Paris). Some new developments in Feynman path integrals and applications / S. Mazzucchi (U. Trento). Super-diffusion and its collapse in a quenched

multi scale passive transport model / Houman Owhadi (Caltech). An analytic approach to Kolmogorov's equations in infinite dimensions and probabilistic consequences / Michael Rockner (U. Bielefeld). A functional integral applied to topology and algebra / Ambar N. Sengupta (Louisiana State U.) -- Quantum field theory. Conformal field theories in random domains and Stochastic Loewner evolutions / Denis Bernard (SPhT Saclay). Local string field theory / J. Dimock (SUNY at Buffalo). Energy inequalities in quantum field theory / Christopher J. Fewster (U. York). Loop quantum gravity / Thomas Thiemann (Perimeter Inst. Theor. Phys. and U. Waterloo) -- Quantum mechanics and spectral theory. Long-time dynamics and localization lengths for the 3-d Anderson model at weak disorders / Thomas Chen (Courant Institute). Leaky quantum wire and dots : a resonance model / Pavel Exner (Academy of Sciences, Prague), Sylwia Kondej (U. Zielona Gora). Product formula for quantum Zeno dynamics / Takashi Ichinose (Kanazawa U.), Pavel Exner (Academy of Sciences, Prague). The adiabatic theorem of quantum mechanics and the Riccati equation / Vadim Kostrykin (Praunhofer Inst, fur Lasertechnik), Konstantin A. Makarov (U. Missouri). Zero energy asymptotics of the resolvent in the long range case / E. Skibsted (U. Aarhus), S. Founais (U. Paris-Sud). Fractional moment methods for Anderson localization in the continuum / Gunter Stolz (U. Alabama at Birmingham) ... [et al.]. A particle in the Bio-Savart-Laplace magnetic field : explicit solutions / D. R. Yafaev (U. Rennes-1). Trotter-Kato product formula : some recent results / V. A. Zagrebnov (U. de la Mediterranee (Aix-Marseille II) and CNRS, Luminy) -- String and M theory. Localizing gauge theories / Nikita A. Nekrasov (Inst, des Hautes Etudes Scientifiques, Bures-sur-Yvette). Cosmic acceleration and M-theory / Paul K. Townsend (Cambridge).

| Sommario/riassunto | In 2003 the XIV International Congress on Mathematical Physics (ICMP) was held in Lisbon with more than 500 participants. Twelve plenary talks were given in various fields of Mathematical Physics : E Carlen "On the relation between the Master equation and the Boltzmann Equation in Kinetic Theory"; A Chenciner "Symmetries and "simple" solutions of the classical n-body problem"; M J Esteban "Relativistic models in atomic and molecular physics"; K Fredenhagen "Locally covariant quantum field theory" K Gawedzki "Simple models of turbulent transport"; I Krichever "Algebraic versus Liouville integrability of the soliton systems"; R V Moody "Long-range order and diffraction in mathematical quasicrystals"; S Smirnov "Critical percolation and conformal invariance"; J P Solovej "The energy of charged matter"; V Schomerus "Strings through the microscope"; C Villani "Entropy production and convergence to equilibrium for the Boltzmann equation"; D Voiculescu "Aspects of free probability". The book collects as well carefully selected invited Session Talks in : Dynamical Systems, Integrable Systems and Random Matrix Theory, Condensed Matter Physics, Equilibrium Statistical Mechanics, Quantum Field Theory, Operator Algebras and Quantum Information, String and M Theory, Fluid Dynamics and Nonlinear PDE, General Relativity, Nonequilibrium Statistical Mechanics, Quantum Mechanics and Spectral Theory, Path Integrals and Stochastic Analysis. |