

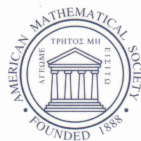
CONTEMPORARY MATHEMATICS

437

Prospects in Mathematical Physics

Young Researchers Symposium of the
14th International Congress on Mathematical Physics
July 25–26, 2003
Lisbon, Portugal

José C. Mourão
João P. Nunes
Roger Picken
Jean-Claude Zambrini
Editors



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Preface

The XIVth International Congress on Mathematical Physics (ICMP) was held in Lisbon, Portugal, from July 28 to August 2, 2003, at the Aula Magna of the University of Lisbon. For two days preceding the Congress, a Young Researchers Symposium (YRS), aimed mainly at the younger participants in ICMP, was held at the Instituto Superior Técnico. Most of the invited talks at the YRS, including two of the three Poincaré Prize Lectures (awarded during the ICMP), by Huzihiro Araki and Elliott Lieb, are collected here. They provide a stimulating overview of current prospects in Mathematical Physics.

It was still possible, 25 years ago, to do excellent mathematics without the slightest interest for theoretical physics, but nowadays few active mathematicians would defend this attitude. As the main historical source of mathematical ideas, theoretical physics and the innumerable challenges it provides are currently regarded as part of the cultural background of mathematics.

We hope that the contributions included in this volume will illustrate this evolution, which may well have worked in favour of the present Golden Age of Mathematics.

The book of ICMP 2003 was published in 2005 by World Scientific. We take this new opportunity to thank our sponsors and to list them: International Association of Mathematical Physics; European Commission, High-Level Scientific Conferences, contract HPCF-2002-00368; International Union of Pure and Applied Physics; International Mathematical Union; Clay Mathematics Institute; Portuguese Foundation for Science and Technology; Calouste Gulbenkian Foundation; Daniel Iagolnitzer Foundation; European Physical Society; Abdus Salam International Centre for Theoretical Physics; National Science Foundation USA; French Embassy in Portugal; Portuguese Mathematical Society; Luso-American Foundation; Portuguese Ministry of Education; Oriente Foundation; Nestlé Portugal; Lisbon's City Hall; Rectorship of the University of Lisbon; Group of Mathematical Physics of the University of Lisbon; Center for Mathematical Analysis, Geometry, and Dynamical Systems; Center for Mathematics and its Applications; Center for Mathematics and Fundamental Applications; Center for Linear Structures and Combinatorics; American Institute of Physics; Birkhäuser-Verlag; Cambridge University Press; Institute of Physics; Kluwer Academic Publishers; Oxford University Press; Springer-Verlag; World Scientific Publishers.

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This book includes papers presented at the Young Researchers Symposium of the 14th International Congress on Mathematical Physics, held in July 2003, in Lisbon, Portugal. The goal of the book is to illustrate various promising areas of mathematical physics in a way accessible to researchers at the beginning of their careers. Two of the three laureates of the Henri Poincaré Prizes, Huzihiro Araki and Elliott Lieb, also contributed to this volume. The book provides a good survey of some active areas of research in modern mathematical physics.

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