

PREFACE

The present volume contains the reprints of the papers that appeared in two special issues, i.e., volumes 5 and 6 of the *Journal of Geometry and Symmetry in Physics*, devoted to the Proceedings of the XXIVth Workshop on Geometric Methods in Physics, held in Białowieża, Poland, from June 26–July 2, 2005. As one of the most well-established series of workshops in mathematics and theoretical physics, these meetings are held annually at the beginning of July in the beautiful and inspiring forest resort of Białowieża. Following a long tradition, within the broad theme of the workshop, the 2005 meeting focused on a number of special areas: coherent state methods, infinite dimensional Lie groups and Lie algebras, integrable systems, noncommutative geometries, Poisson and symplectic geometry, quantum gravity, quantum groups, and random matrices.

Over the last several years the trend of these workshops has been toward ever closer interaction between physicists and mathematicians, addressing questions at the leading edge of modern mathematical physics, and including unusual and imaginative investigations. There has been a partial shift from the earlier, mainly classical flavour of the talks, to an emphasis on more current – and in a sense, more “state of the art” – topics. Graduate students and younger researchers participate actively, and indeed, a significant number of talks in 2005 were given by students discussing their doctoral work. We include in the present volume 23 papers, reflecting a subset of about 40 longer and shorter talks presented at the Workshop. As is frequently the case, not all of the speakers were able to prepare papers for publication in the Proceedings, but we feel that we have obtained a representative and worthwhile cross-section. The published articles have all been refereed for JGSP.

We have sought to group together contributions by the subject. First we put together the papers that are mainly geometric or Lie theoretic in theme. We include here articles on Lie algebras, their extensions and deformations, by K.-H. Neeb, by H. Glöckner, and by M. Schlichenmaier and also the paper by J. Hrivnak and P. Novotny. We have papers pertaining to complex, holomorphic, and pseudoholomorphic structures and methods, by D. Radnell and E. Schippers, by Ch. Wockel,

by S. Berceanu, and by A. Sergeev. We include articles applying geometric and topological methods, by K. Marathe, R. Ferreiro Pérez and J. Muñoz Masqué, and A. Enciso and D. Peralta-Salas. Next comes a set of papers pertaining to noncommutative geometry, noncommutative solitons, and noncommutative field theory, by V. Mathai (with R. Carey and K. C. Hannabuss), by R.J. Szabo, and by M.N. Hounkonnou, F. Massamba and J. Ben Geloun, and one on deformed quantum mechanics by C. Pita and S.B. Sontz. And we offer important contributions on several other topics, including harmonic polynomials, solvable Calogero models, and quantum gravity, by P. Kramer, by M. Lorente, by S. Stepin, by R. Leandre, by G. Svetlichny, by L. Balkova, by Č. Burdík, O. Navrátil and S. Pošta, and by F. Bagarello.

The XXIV Workshop continued the tradition of its predecessors: the collegial and congenial atmosphere, the easy interaction between participants, the spirit of academic exchange and, of course, the uniquely intimate social ambiance.

We appreciate the opportunity to make the Proceedings available through the Journal of Geometry and Symmetry in Physics and also by this special volume of the reprints. As editors it is our hope and expectation that they have captured for our readers, in some small way, a part of the richness that is the Białowieża experience. We also trust that the papers in this volume convey some of the intellectual excitement and lively exchange of ideas that took place at the Workshop, in the timeless atmosphere of primeval Białowieża forest.

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