

Preface

For almost forty years the Institute for Theoretical Physics of the University of Wrocław has organized winter schools devoted to current problems in theoretical physics. The XXXV International Winter School on Theoretical Physics, “From Cosmology to Quantum Gravity”, was held in Polanica, a little town in south-west Poland, between 2nd and 11th February, 1999. The aim of the school was to gather together world-leading scientists working on the field of quantum gravity, along with a number of post-graduate students and young post-docs and to offer young scientists with diverse backgrounds in astrophysics and particle physics the opportunity to learn about recent developments in gravitational physics. The lectures covered macroscopic phenomena like relativistic binary star systems, gravitational waves, and black holes; and the quantum aspects, e.g., quantum space-time and the string theory approach.

This volume contains a collection of articles based on lectures presented during the School. They cover a wide spectrum of topics in classical relativity, quantum gravity, black hole physics and string theory. Unfortunately, some of the lecturers were not able to prepare their contributions, and for this reason I decided to entitle this volume “Towards Quantum Gravity”, the title which better reflects its contents.

I would like to thank all the lecturers for the excellent lectures they gave and for the unique atmosphere they created during the School. Thanks are due to Professor Jan Willem van Holten and Professor Jerzy Lukierski for their help in organizing the School and preparing its scientific programme. Dobromila Nowak worked very hard, carrying out virtually all administrative duties alone. I would also like to thank the Institute for Theoretical Physics of the University of Wrocław, the University of Wrocław, the Foundation for Karpacz Winter Schools, and the Polish Committee for Scientific Research (KBN) for their financial support.

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