

Foreword

A workshop entitled “Asymptotic Series, Differential Algebra and Finiteness Problems in Nonlinear Dynamical Systems” was held at the Centre de recherches mathématiques (CRM) at the Université de Montréal from June 19 to July 7, 2000. This workshop was organized by Luc Bélair and myself. To enlarge our vision, a number of mathematicians working in model theory or working on finiteness problems in Diophantine geometry were invited to participate in this workshop. The diverse interests of the participants, the variety of methods used, as well as the format of the workshop (which allowed ample time for discussions) resulted in interesting scientific exchanges and also led to new results in this area of research.

The present monograph is based on four of the main series of lectures at this workshop and it also contains further research done after the workshop took place and which in some cases was stimulated by the scientific discussions which occurred at, or as a result of, the workshop.

An overview of the material in the monograph is given in the first chapter. It is meant to indicate how the four other chapters form a general picture of finiteness problems in differential equations and Diophantine geometry highlighting relations among these chapters.

This workshop was made possible by partial support by the following organizations: National Science and Engineering Council of Canada (NSERC), ministère de l'Éducation du Québec, Association des Universités partiellement ou entièrement de langue française (AUPELF). We would like to thank the director at that time of the CRM, Jacques Hurtubise, who gave his full support for the workshop and Louis Pelletier and Josée Laferrière for their splendid organization of the workshop. We would also like to thank Dr. Arthur Greenspoon who read the entire manuscript and made suggestions to improve the text. Many thanks are also due to Jean Le-Tourneux for overseeing the final work in the preparation of the manuscript and to Ina Lindemann for her advice. Special thanks are due to André Montpetit for the very fine work he has done in formatting it in this final form and of course to my colleague Luc Bélair for a wonderful cooperation in the organization of this workshop.

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October 2004