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Introduction

In this volume we present the proceedings of the conference "New Trends in Dynamical Systems" held in Salou, Catalonia, from October 1st to 5th, 2012. This international event was devoted to celebrate Jaume Llibre's 60th birthday.

The meeting was organized by the Dynamical Systems Group of the Universitat Autònoma de Barcelona, that is leaded by Jaume Llibre and has members distributed over most of the Catalonian universities.

The main topics of the conference were Celestial Mechanics, Discrete Dynamical Systems, and Qualitative Theory of Differential Equations with emphasis on the n-body problem, central configurations, integrability, surface diffeomorphisms, topological, complex, combinatorial, and chaotic dynamics, 16th Hilbert's problem, periodic orbits, perturbation theory, period function, and the Jacobian conjecture. All these subjects were distributed in 9 plenary talks, 22 contributed talks, and 50 posters.

We gathered together 144 experts in Dynamical Systems from Algeria, Austria, Belgium, Brazil, Canada, Chile, Czech Republic, Egypt, France, Germany, Iran, Israel, Italy, Mexico, Nigeria, Norway, Poland, Portugal, P. R. China, Romania, Russia, Spain, Sweden, UK, United Arab Emirates, and USA.

We would like to acknowledge the financial support of the following institutions: Ministerio de Economía y Competitividad, Generalitat de Catalunya, Grup de Sistemes Dinàmics de la UAB, Universitat Autònoma de Barcelona, Universitat de Barcelona, Universitat Politècnica de Catalunya, Centre de Recerca Matemàtica, Institut de Matemàtiques de la UB, Societat Catalana de Matemàtiques, Real Sociedad Matemática Española, and Sociedad Española de Matemática Aplicada.

We also would like to thank Publicacions Matemàtiques for accepting the burden of editing this proceedings, the authors for contributing with their work and the referees for the invaluable help in assuring the quality of this volume.

Finally we warmly thank all the speakers and participants of the meeting for their contributions and helping to create a wonderful, friendly, and fruitful atmosphere.

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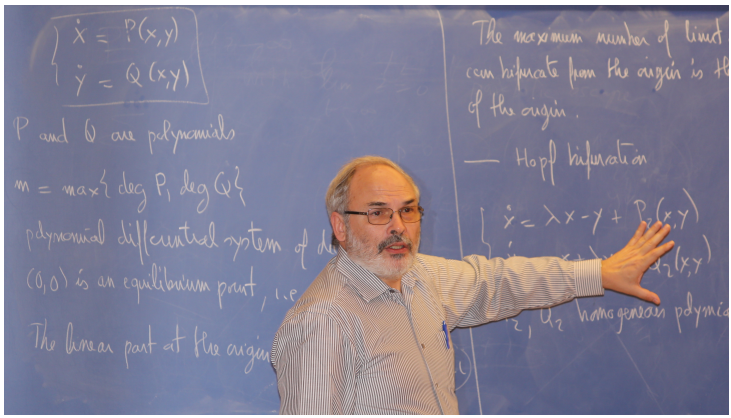
Jaume's Glossary



Jaume Llibre obtained his degree in Mathematics at the Universitat de Barcelona in 1974 and earned his Ph.D. in Mathematics in 1979 at the Universitat Autònoma de Barcelona. At the age of 33 he got a full professor position at the Universitat Autònoma de Barcelona. Jaume's extensive, constant, and valuable mathematical activity includes, among others, the supervision of twenty-seven Ph.D. theses, five books, more than five-hundred research papers, and two-hundred coauthors from twenty-five countries.

Jaume's significant contributions to Dynamical Systems started in the field of Celestial Mechanics in the late 70's, through a series of works on the final motion in the restricted three body problem. Central configurations and periodic orbits have been other topics of his interest.

Due to his versatility, his contributions have covered from the very beginning a very wide range of subjects in Dynamical Systems.

In the field of Discrete Dynamical Systems he has extended Sharkovskii's Theorem and contributed to the study of the periodic structure to other spaces, including the implications concerning topological entropy and the combinatorial dynamics.

About the integrability of differential equations he has refined and generalized Darboux's classical results and related them to the centre problem.

He also has been constantly interested in limit cycles and the Qualitative Theory of Differential Equations, specially in the 16th Hilbert's Problem. For this study he has used averaging and bifurcation theories as tools, while contributing to them. Lately, he has extended the study to piecewise differential equations.

We thank Jaume for making his trip a launching port for many others.