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Lluís Alsedà i Soler · Jim M. Cushing
Saber Elaydi · Alberto A. Pinto
Editors

Difference Equations, Discrete Dynamical Systems and Applications

ICDEA, Barcelona, Spain, July 2012

Editors

Lluís Alsedà i Soler
Departament de Matemàtiques
Universitat Autònoma de Barcelona
Cerdanyola del Vallès, Barcelona
Spain

Saber Elaydi
Department of Mathematics
Trinity University
San Antonio, TX
USA

Jim M. Cushing
Department of Mathematics
University of Arizona
Tucson, AZ
USA

Alberto A. Pinto
Faculty of Sciences, Department of
Mathematics,
University of Porto
Porto
Portugal

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Group picture of the participants of the ICDEA 2012 on the main stairs of Casa de Convalescència (venue of the meeting)

Preface

This volume contains the proceedings of the 18th International Conference on Difference Equations and Applications held in Barcelona (Catalonia, Spain) from July 23rd to 27th, 2012. The conference was organized by the Departament de Matemàtiques of the Universitat Autònoma de Barcelona (UAB), under the auspices of the International Society of Difference Equations (ISDE).

The purpose of the conference was to bring together experts and novices in the theory and applications of difference equations and discrete dynamical systems. The main theme of the meeting was the interplay between difference equations and dynamical systems.

The plenary speakers were experts chosen from many different areas of difference equations, *broadly defined*, and discrete dynamical systems and their interplay with nonlinear science.

There were 129 presentations which included 14 plenary talks (including the Special talk of the winner of the “Best JDEA paper” prize), 39 contributed talks, and 87 special sessions talks. The main topics of the meeting were represented by the six special sessions which were organized during the conference. They cover the theory of difference equations and discrete dynamical systems and their applications to biology and economics and are described below.

- *Combinatorial and Topological Dynamics* (14 talks organized by S. Kolyada and L'. Snoha);
- *Complex Dynamics* (23 talks organized by B. Devaney, N. Fagella and X. Jarque);
- *Applications of Difference Equations to Biology* (10 talks organized by J. Cushing, S. Elaydi and J. Li);
- *Asymptotic Behavior and Periodicity of Difference Equations* (20 talks organized by I. Györi and M. Pituk);
- *Chaotic Linear Dynamics* (9 talks organized by J.P. Bès, P. Oprocha and A. Peris); and
- *Economic Dynamics and Control* (11 talks organized by A.A. Pinto and A. Yannacopoulos).

There were 157 participants (120 male and 37 female) from Austria, Belarus, Belgium, Bosnia-Herzegovina, Brazil, Canada, Chile, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, India, Iran, Ireland, Israel, Italy, Jamaica, Japan, Latvia, Mexico, Oman, Poland, Portugal, Russia, Serbia, Slovakia, Spain, Sweden, Ukraine, United Kingdom, and USA.

We would like to acknowledge the financial support of the following institutions: Centro Internacional de Matemática, Institut de Matemàtiques de la Universitat de Barcelona, Centre de Recerca Matemàtica, Ministerio de Economía y Competitividad, Generalitat de Catalunya, Grup de Sistemes Dinàmics de la Universitat Autònoma de Barcelona. Also, we would like to thank the organizing committee that ensured a good organization and the success of the conference as well as the scientific committee that took care of the high scientific standards and the quality of the conference.

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

All participants of ICDEA2012 were invited to submit a contribution to these proceedings, and all papers that were accepted had to pass through a refereeing process appropriate for a mathematical research journal.

Cerdanyola del Vallès, Spain
Tucson, USA
San Antonio, USA
Porto, Portugal

Lluís Alsedà i Soler
Jim M. Cushing
Saber Elaydi
Alberto A. Pinto

Organization Committees

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