

Sunday 22

22th-27th July 2012
Casa de Convalescència
Barcelona

ICDEA2012
18th International Conference on
Difference Equations and Applications



16:00—18:00
18:00—19:00

Lobby	
Registration & Help Desk	
	Welcome Cocktail

Monday 23

22th-27th July 2012
 Casa de Convalescència
 Barcelona

ICDEA2012
 18th International Conference on
 Difference Equations and Applications



08:30—09:00
09:00—09:30
09:30—10:00
10:00—10:30
10:30—11:00
11:00—11:30
11:30—12:00
12:00—12:30

Main Room (Aula Magna)
Open Ceremony
S. Elaydi (Chair: R. Sacker)
Coffee break ► Room 02, Ground Floor
V. Jiménez (Chair: J. Lopes)
R. Ortega (Chair: M. Misiurewicz)

14:30—15:00
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18:00—18:30
18:30—19:00

Main Room (Aula Magna)	Room 12+14 (Aula 12+14)	Room 10 (Aula 10)	Room 13 (Aula 13)			
Com (R. Ortega) P. Góra	CD (N. Fagella) P. Rippon	CLD (A. Conejero) R. Rudnicki	AB&P-DE (I. Györi) B. Garay			
B. Alarcón				G. Stallard	O. Došlý	
R. Laureano				J. Canela	F. Martínez- Giménez	M. Pituk
J. Šotola				D. Martí	H. Emamirad	S. Bodine
A. Reinfelds						
Coffee break ► Room 02, Ground Floor						
C&TD (S. Kolyada) F. Balibrea	CD (M. Moreno) M. Carrasco	CLD (R. Rudnicki) N. Bernardes	AB&P-DE (M. Pituk) L. Horváth			
J. Cánovas	X. Jarque	P. Miana	I. Györi			
			J. Diblík			



Monday, July 23rd

Main Room (Aula Magna)

08.45 – 09.00 Opening Ceremony

09.00 – 10.00 Application of singularity theory to the global dynamics of population models
Speaker: S.Elaydi (*Trinity University, USA*)

10.00 – 10.30 *Coffee break at Room 02, Ground Floor*

10.30 – 11.30 L.A.S. and negative Schwarzian derivative do not imply G.A.S. in Clark's equation
Speaker: V. Jiménez (*Universidad de Murcia, Spain*)

11.30 – 12.30 Translation arcs and Lyapunov stability in two dimensions
Speaker: R. Ortega (*Universidad de Granada, Spain*)

12.30 – 14.30 *Lunch*

14.30 – 15.00 W-maps and harmonic averages
Speaker: P. Góra (*Concordia University, Canada*)

15.00 – 15.30 Global Dynamics for Symmetric Planar Maps
Speaker: B. Alarcón (*University of Oviedo, Spain*)

15.30 – 16.00 Efficient synchronization of one-dimensional chaotic quadratic maps coupled without symmetry
Speaker: R. Laureano (*IBS — ISCTE IUL Business School, Portugal*)

16.00 – 16.30 An answer to some problems on self-similar sets and the open set condition
Speaker: J. Šotola (*Silesian University in Opava, Czech Republic*)

16.30 – 17.00 Decoupling and simplifying of difference equations in the neighbourhood of invariant manifold
Speaker: A. Reinfelds (*Institute of Mathematics and Computer Science, Latvia*)

17.00 – 17.30 *Coffee break at Room 02, Ground Floor*

17.30 – 18.00 Perturbations of autonomous systems and Lyapunov exponents in non-autonomous systems
Speaker: F. Balibrea (*Universidad de Murcia, Spain*)

18.00 – 18.30 On the dynamics of Cournot—Puu oligopoly
Speaker: J.S. Cánovas (*University of Cartagena, Spain*)



Monday, July 23rd

Room 12 + 14 (Aula 12 + 14)

15.00 – 15.30 Regularity and fast escaping points of entire functions
Speaker: P. Rippon (The Open University, UK)

15.30 – 16.00 Spiders web escaping sets
Speaker: G. Stallard (The Open University, UK)

16.00 – 16.30 On the Tongues of a Degree 4 Blaschke Product
Speaker: J. Canela (Universitat de Barcelona, Spain)

16.30 – 17.00 Dynamic Rays for Transcendental Holomorphic Self-maps of C^*
Speaker: D. Martí (Universitat de Barcelona, Spain)

17.00 – 17.30 *Coffee break at Room 02, Ground Floor*

17.30 – 18.00 Conformal dimension and combinatorial modulus: applications to rational maps
Speaker M. Carrasco (Université Aix-Marseille, France)

18.00 – 18.30 Connectivity of Julia sets of meromorphic maps with Baker domains
Speaker: X. Jarque (Universitat de Barcelona, Spain)

Room 10 (Aula 10)

15.30 – 16.00 Chaoticity and invariant measures for two population models
Speaker: R. Rudnicki (Polish Academy of Sciences, Poland)

16.00 – 16.30 Distributional chaos for operators with full scrambled sets
Speaker: F. Martínez-Giménez (Universitat Politècnica de València, Spain)

16.30 – 17.00 Chaotic solution for the Black-Scholes equation
Speaker: H. Emamirad (Institute for Research in Fundamental Sciences (IPM), France)

17.00 – 17.30 *Coffee break at Room 02, Ground Floor*

17.30 – 18.00 CLD-01 - Graph theoretic structure of maps of the Cantor space
Speaker: N. Bernardes (Universidade Federal do Rio de Janeiro, Brazil)

18.00 – 18.30 CLD-07 - Extension problem and fractional powers of generators
Speaker: P. Miana (Universidad de Zaragoza, Spain)

Monday, July 23rd

Room 13 (Aula 13)

15.00 - 15.30 Moving average network examples for asymptotically stable periodic orbits of strongly monotone maps

Speaker: B. Garay (Pázmány Péter Catholic University, Hungary)

15.30 – 16.00 Periodic symplectic difference systems

Speaker: O. Došlý (Masaryk University, Czech Republic)

16.00 – 16.30 A variant of the Krein-Rutman theorem for Poincaré difference equations

Speaker: M. Pituk (University of Pannonia, Hungary)

16.30 – 17.00 On Poincaré—Perron theorems for systems of linear difference equations

Speaker: S. Bodine (University of Puget Sound, USA)

17.00 – 17.30 *Coffee break at Room 02, Ground Floor*

17.30 – 18.00 Sharp algebraic periodicity conditions for linear higher order difference equations

Speaker: L. Horváth (University of Pannonia, Hungary)

18.00 - 18.30 Utilization of the circulant matrix theory in periodic higher order autonomous difference equations

Speaker: I. Györi (University of Pannonia, Hungary)

18.30 – 19.00 Positive and oscillating solutions of discrete linear equations with delay

Speaker: J. Diblík (Brno University of Technology, Czech Republic)

Tuesday 24

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Main Room (<i>Aula Magna</i>)
L'. Snoha (<i>Chair: V. Jiménez</i>)
Coffee break ► Room 02, Ground Floor
R. Devaney (<i>Chair: P. Rippon</i>)
E. Pujals (<i>Chair: A. Pinto</i>)

14:30—15:00
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18:30—19:00

	Main Room (<i>Aula Magna</i>)	Room 12+14 (<i>Aula 12+14</i>)	Room 10 (<i>Aula 10</i>)	Room 13 (<i>Aula 13</i>)
Com (<i>T. Hüls</i>)	K. Beeler			
	A. Nascimento	CD (<i>A. Benini</i>)	EDC (<i>R. Sacker</i>)	AB&P-DE (<i>O. Došlý</i>)
	A. Rodkina			
	R. Šimon Hilscher			
	D. Baptista			
	Coffee break ► Room 02, Ground Floor			
Com (<i>A. Rodrigues</i>)	E. Awwad	CD (<i>G. Stallard</i>)	CLD (<i>N. Bernardes</i>)	AB&P-DE (<i>R. Obaya</i>)
	P. Řehák			
	A. Lyapin			



Tuesday, July 24th

Main Room (Aula Magna)

09.00 – 10.00 Functional envelopes of dynamical systems — old and new results
Speaker: L. Snoha (Matej Bel University, Slovakia)

10.00 – 10.30 *Coffee break at Room 02, Ground Floor*

10.30 – 11.30 Mandelpinski Necklaces for Singularly Perturbed Rational Maps
Speaker: R. Devaney (Boston University, USA)

11.30 – 12.30 The Evolutionary Robustness of Forgiveness and Cooperation
Speaker: E. Pujals (IMPA, Brazil)

12.30 – 14.30 *Lunch*

14.30 – 15.00 Discrete Dynamics on Grids with Choice
Speaker: K. Beeler (Wake Forest University, USA)

15.00 – 15.30 Properties of non-commuting cycles in matrix algebras iteration
Speaker: A. Nascimento (Polytechnic Institute of Leiria, Portugal)

15.30 – 16.00 Chaotic models stabilized by stochastic perturbations with nonzero expectation
Speaker: A. Rodkina (The University of the West Indies, Jamaica)

16.00 – 16.30 Oscillation theory of discrete symplectic systems with nonlinear dependence on the spectral parameter
Speaker: R. Šimon (Masaryk University, Czech Republic)

16.30 – 17.00 On the structure of Lozi maps kneading curves
Speaker: D. Baptista (Polytechnic Institute of Leiria, Portugal)

17.00 – 17.30 *Coffee break at Room 02, Ground Floor*

17.30 – 18.00 Nonlinear Volterra difference equations with time delays and their applications
Speaker: E. Awwad (University of Pannonia, Hungary)

18.00 – 18.30 Asymptotics for second-order linear q-difference equations
Speaker: P. Řehák (Academy of Sciences, Czech Republic)

18.30 – 19.00 On the generating function of the solution of a multidimensional difference equation
Speaker: A. Lyapun (Siberian Federal University, Russian Federation)



Tuesday, July 24th

Room 12 + 14 (Aula 12 + 14)

15.00 – 15.30 Perturbed Polynomial Maps with Small Perturbation
Speaker: D. Cuzzocreo (Boston University, USA)

15.30 – 16.00 Homeomorphisms between Julia Sets for Rational Maps
Speaker: E. Fitzgibbon (Boston University, USA)

16.00 – 16.30 Singular perturbations in the quadratic family
Speaker: E. Russell (Western New England University, USA)

16.30 – 17.00 A combinatorial invariant for escape time Sierpinski rational maps
Speaker: M. Moreno (Centro de Investigación en Matemáticas, México)

17.00 – 17.30 *Coffee break at Room 02, Ground Floor*

17.30 – 18.00 A family of rational maps with buried Julia components
Speaker: S. Godillon (Université de Cergy-Pontoise, France)

18.00 – 18.30 Rigidity for non-recurrent exponential maps
Speaker: A.M. Benini (Scuola Normale Superiore, Italy)

18.30 – 19.00 On the existence of absorbing domains in Baker domains
Speaker: N. Fagella (Universitat de Barcelona, Spain)

Room 10 (Aula 10)

15.00 – 15.30 Anosov diffeomorphisms on surfaces
Speaker: J. Almeida (Polytechnic Institute of Bragança, Portugal)

15.30 – 16.00 On the convergence to Walrasian prices in random matching Edgeworthian economies
Speaker: M. Ferreira (ESEIG-IPP & LIAAD-INESC TEC, Portugal)

16.00 – 16.30 Stability of the Cournot equilibrium for a Cournot oligopoly model with n competitors
Speaker: M. Lampart (VSB-Technical University of Ostrava, Czech Republic)

16.30 – 17.00 An economical model for dumping in a duopoly market
Speaker: J. Martins (Polytechnic Institute of Leiria, Portugal)

17.00 – 17.30 *Coffee break at Room 02, Ground Floor*

17.30 – 18.00 Li-Yorke and distributional chaos for linear operators
Speaker: A. Bonilla (Universidad de La Laguna, Spain)

18.00 – 18.30 Distributional chaos for the solutions of certain partial differential equations
Speaker: J.A. Conejero (Institut Universitari de Matemàtica Pura i Aplicada, Spain)

18.30 – 19.00 Hypercyclic and topologically mixing properties of certain classes of abstract time-fractional equations
Speaker: M. Kostić (Faculty of Technical Sciences, Serbia)



Tuesday, July 24th

Room 13 (Aula 13)

15.00 – 15.30 A continuous separation of tipe II. Applications to nonautonomous delay differential equations.

Speaker: R. Obaya (Universidad de Valladolid, Spain)

15.30 – 16.00 Asymptotic formula for solutions of Volterra difference equations with infinite delay

Speaker: H. Matsunaga (Osaka Prefecture University, Japan)

16.00 – 16.30 Asymptotic behavior of nonlinear difference equations

Speaker: F. Hartung (University of Pannonia, Hungary)

16.30 – 17.00 Stability of difference equations with an infinite delay

Speaker: E. Braverman (University of Calgary, Canada)

17.00 – 17.30 Coffee break at Room 02, Ground Floor

17.30 – 18.00 New stability conditions for linear delay difference equations

Speaker: L. Berezensky (Ben-Gurion University of the Negev, Israel)

18.00 – 18.30 Asymptotic behavior and oscillation of fourth-order difference equations

Speaker: Z. Došlá (Masaryk University, Czech Republic)

18.30 – 19.00 Oscillation theorems for second-order nonlinear difference equations of Euler type

Speaker: N. Yamaoka (Osaka Prefecture University, Japan)

19.00 – 20.00 **ISDE** General Meeting

Wednesday 25

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15:00—

Main Room (<i>Aula Magna</i>)
J. Lopes (<i>Chair: E. Pujals</i>)
Coffee break ► Room 02, Ground Floor
A. Gasull (<i>Chair: C. Pötzsche</i>)
T. Hüls (<i>Chair: J. Cushing</i>)

Excursion

22nd-27th July 2012
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Wednesday, July 25th

Main Room (Aula Magna)

09.00 – 10.00 Hyperbolicity in dissipative polygonal billiards
Speaker: J. Lopes (Universidade Técnica de Lisboa, Portugal)

10.00 – 10.30 *Coffee break at Room 02, Ground Floor*

10.30 – 11.30 Different approaches to the global periodicity problem
Speaker: A. Gasull (Universitat Autònoma de Barcelona, Spain)

11.30 – 12.30 Homoclinic trajectories of non-autonomous maps
Speaker: T. Hüls (Bielefeld University, Germany)

Thursday 26

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Main Room (Aula Magna)	
S. Trofimchuk (Chair: L. Snoha)	
Coffee break ► Room 02, Ground Floor	
C. Pötzsche (Chair: S. Elaydi)	
A. Rodrigues (Chair: R. Devaney)	

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18:30—19:00

	Main Room (Aula Magna)	Room 12+14 (Aula 12+14)	Room 10 (Aula 10)	Room 13 (Aula 13)
	Com (E. Schmeidel)			
	G. Papaschinopoulos			A. Slavík
	C. Schinas	CD (E. Russell)	C&TD (L. Snoha)	AB&P-DE (F. Hartung)
	M. Avotina	A. Singh	S. Kolyada	M. Rogalsky
	Z. Kudlak	V. Timorin	Z. Kočan	J. Daniels
	A. Anisimova	J. Peter	N. Petrov	M. Radin
		P. Domínguez-Soto	J. Ferreira	Y. Yomdin
	Coffee break ► Room 02, Ground Floor			
	Com (A. Gasull)	CD (R. Devaney)	EDC (D. Mendes)	ADEB (S. Elaydi)
	S. Kalabušić		D. Mendes	R. Sacker
	E. Kita	A. Epstein	V. Mendes	Y. Hamaya
	D. Batenkov	P. Roesch	M. Guzowska	E. Balreira



Thursday, July 26th

Main Room (Aula Magna)

09.00 – 10.00 Monotone and slowly oscillating wavefronts of the KPP-Fisher differential-difference equation

Speaker: S. Trofimchuk (Universidad de Talca, Chile)

10.00 – 10.30 *Coffee break at Room 02, Ground Floor*

10.30 – 11.30 Discrete Dynamics and Spectral Theory

Speaker: C. Pötzsche (Alpen-Adria Universität Klagenfurt, Austria)

11.30 – 12.30 Double Standard Maps

Speaker: A. Rodrigues (Matematiska Institutionen, KTH, Sweden)

12.30 – 14.30 *Lunch*

14.30 – 15.00 Existence, uniqueness and attractivity of prime period two solution for a difference equation of exponential form

Speaker: G. Papaschinopoulos (Democritus University of Thrace, Greece)

15.00 – 15.30 On the dynamics of two exponential type systems of difference equations

Speaker: C.J. Schinas (Democritus University of Thrace, Greece)

15.30 – 16.00 Initial Condition Problems for Second Order Rational Difference Equations

Speaker: M. Avotina (University of Latvia, Latvia)

16.00 – 16.30 On Rational Difference Equations with Periodic Coefficients

Speaker: Z. Kudlak (Mount Saint Mary College, USA)

16.30 – 17.00 On the Second Order Rational Difference Equation $x_{n+1} = \beta + 1/(x_n x_{n-1})$

Speaker: A. Anisimova (University of Latvia, Latvia)

17.00 – 17.30 *Coffee break at Room 02, Ground Floor*

17.30 – 18.00 Global Dynamics of Anti-Competitive Systems in the Plane

Speaker: S. Kalabušić (University of Sarajevo, Bosnia-Herzegovina)

18.00 – 18.30 Study of Velocity Control Algorithm of Vehicle Platoon

Speaker: E. Kita (Nagoya University, Japan)

18.30 – 19.00 P-recursive moment sequences of piecewise D-finite functions and Prony-type algebraic systems

Speaker: D. Batenkov (Weizmann Institute of Science, Israel)



Thursday, July 26th

Room 12 + 14 (Aula 12 + 14)

- 15.00 – 15.30 Some applications of approximation theory to complex dynamics
Speaker: A. Singh (Central University of Rajasthan, India)
- 15.30 – 16.00 Regluing and topological models for quadratic rational functions
Speaker: V. Timorin (National Research University Higher School of Economics, Russian Federation)
- 16.00 – 16.30 Some results on the size of escaping sets
Speaker: J. Peter (Christian-Albrechts-Universität zu Kiel, Germany)
- 16.30 – 17.00 Dynamics of different classes of meromorphic functions with a finite set of singular values
Speaker: P. Domínguez-Soto (Universidad Autónoma de Puebla, México)

17.00 – 17.30 Coffee break at Room 02, Ground Floor

- 17.30 – 18.00 Convergence of Rational Rays in Hyperbolic Components
Speaker: A. Deniz (Roskilde University, Denmark)
- 18.00 – 18.30 Quadratic Mating Discontinuity
Speaker: A. Epstein (University of Warwick, UK)
- 18.30 – 19.00 About rigidity
Speaker: P. Roesch (Institut of Matematics of Toulouse, France)

Room 10 (Aula 10)

- 15.00 – 15.30 On sensitivity and some classes of induced maps
Speaker: S. Kolyada (Institute of Mathematics, NAS of Ukraine, Ukraine)
- 15.30 – 16.00 On some properties of discrete dynamical systems on dendrites
Speaker: Z. Kočan (Silesian University in Opava, Czech Republic)
- 16.00 – 16.30 Combination of scaling exponents and geometry of the action of renormalization operators
Speaker: N. Petrov (University of Oklahoma, USA)
- 16.30 – 17.00 Zeta functions and periodic entropy of nonautonomous dynamical systems
Speaker: J. Ferreira (Instituto Superior Técnico, TUL, Portugal)

17.00 – 17.30 Coffee break at Room 02, Ground Floor

- 17.30 – 18.00 Cournot duopoly games with heterogeneous players
Speaker: D. Mendes (Instituto Universitário de Lisboa and BRU-IUL, Portugal)
- 18.00 – 18.30 Rational Bubbles and Economic Policy
Speaker: V. Mendes (Instituto Universitário de Lisboa and BRU-IUL, Portugal)
- 18.30 – 19.00 Neimark-Sacker bifurcation in a discrete-time Goodwin model
Speaker: M. Guzowska (University of Szczecin, Poland)



Thursday, July 26th

Room 13 (Aula 13)

- 14.30 – 15.00 Averaging theorems for dynamic equations on time scales
Speaker: A. Slavík (Charles University, Czech Republic)
- 15.00 – 15.30 A QRT-system of two order one homographic difference equations:
conjugation to rotations, periods of periodic solutions, sensitiveness to initial
conditions
Speaker: M. Rogalski (Laboratoire Paul Painlevé, France)
- 15.30 – 16.00 Admissibility of linear stochastic discrete Volterra operators applied to an
affine stochastic convolution equation
Speaker: J. Daniels (Dublin City University, Ireland)
- 16.00 – 16.30 Boundedness Character of solutions, Monotonic Character of solutions and
Existence of Periodic Solutions of a Non-Autonomous Rational Difference
Equation
Speaker: M. Radin (Rochester Institute of Technology, USA)
- 16.30 – 17.00 Turan-type inequalities and Taylor domination for solutions of linear ODE's
Speaker: Y. Yomdin (Weizmann Institute of Science, Israel)
- 17.00 – 17.30 *Coffee break at Room 02, Ground Floor*
- 17.30 – 18.00 Phase as determined by Correlation is irrelevant for Resonance versus
Attenuation in the Beverton-Holt model
Speaker: R. Sacker (University of Southern California, USA)
- 18.00 – 18.30 Global asymptotically stable of a generalized discrete Lotka-Volterra
competition system
Speaker: Y. Hamaya (Okayama University of Science, Japan)
- 18.30 – 19.00 Geometric methods for global stability in the Ricker competition model
Speaker: E. Balreira (Trinity University, USA)

Friday 27

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Main Room (Aula Magna)
J. Llibre (<i>Chair: S. Trofimchuk</i>)
Coffee break ► Room 02, Ground Floor

10:30—11:00
11:00—11:30
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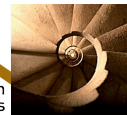
Main Room (Aula Magna)	Room 12+14 (Aula 12+14)	Room 10 (Aula 10)	Room 13 (Aula 13)
COM (P. Kloeden) G. Manjunath	EDC (B. Oliveira) B. Oliveira	ADEB (J. Cushing) R. Luís	C&TD (Z. Kočan) M. Gonchenko
I. Bula	A. Pinto	Z. AlSharawi	P. Maličský
S. Zafar	R. Soeiro	J. Cushing	R. Hric
J. Krejčová	P. Stehlík	S. Elaydi	A. Cascales

14:30—15:00
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Main Room (Aula Magna)	Room 12+14 (Aula 12+14)	Room 10 (Aula 10)	Room 13 (Aula 13)
Com (A. Vanderbauwhede) V. Mañosa	COM (E. Liz) A. Ruiz-Herrera		C&TD (R. Hric) V. Špitalský
P. Stehlík			P. Oprocha
P. Kloeden	E. Schmeidel		Z. Ulična
G. Högnäs	K. Gajda		P. G. Barrientos
S. Gonzalez			
Coffee break ► Room 02, Ground Floor			

17:30—18:00
18:00—18:30

Main Room (Aula Magna)
M. Misiurewicz (<i>Chair: Ll. Alsedà</i>)



Friday, July 27th

Main Room (Aula Magna)

09.00 – 10.00 Periodic point free continuous self—maps on graphs and surfaces
Speaker: J. Llibre (Universitat Autònoma de Barcelona, Spain)

10.00 – 10.30 *Coffee break at Room 02, Ground Floor*

10.30 – 11.00 Attractivity in Nonautonomous Periodic and Random Difference Equations on Compact Spaces
Speaker: G. Manjunath (Jacobs University Bremen, Germany)

11.00 – 11.30 On the Second Order Quadratic Rational Difference Equation
Speaker: I. Bula (University of Latvia, Latvia)

11.30 – 12.00 Dynamical Classification of a family of Birational Maps via Dynamical Degree
$$x_{n+1} = \alpha / ((1+x_n)x_{n-1})$$

Speaker: S. Zafar (Universitat Autònoma de Barcelona, Spain)

12.00 – 12.30 Emden-Fowler type difference equations of the fourth-order
Speaker: J. Krejčová (Masaryk University, Czech Republic)

12.30 – 14.30 *Lunch*

14.30 – 15.00 On periodic solutions of 2—periodic Lyness difference equations
Speaker: V. Mañosa (Universitat Politècnica de Catalunya, Spain)

15.00 – 15.30 Transport Equation on Semidiscrete Domains
Speaker: P. Stehlík (University of West Bohemia, Czech Republic)

15.30 – 16.00 Asymptotic behaviour of random tridiagonal Markov chains in biological applications
Speaker: P. Kloeden (Goethe university, Germany)

16.00 – 16.30 On some stochastic competition models
Speaker: G. Högnäs (Åbo Akademi University, Finland)

16.30 – 17.00 Continuous Limit in Dynamics with Choice
Speaker: S. Gonzalez (Barry University, USA)

17.00 – 17.30 *Coffee break at Room 02, Ground Floor*

17.00 – 18.00 Random homeomorphisms of an interval
Speaker: M. Misiurewicz (Department of Mathematical Sciences, IUPUI, USA)



Friday, July 27th

Room 12 + 14 (Aula 12 + 14)

10.30 – 11.00 Strategic optimization in R&D Investment
Speaker: B. Oliveira (FNAUP - UP & LIAAD-INESC TEC Porto Lab, Lisboa)

11.00 – 11.30 Resort Pricing and Bankruptcy
Speaker: A. Pinto (FCUP - UP & LIAAD-INESC TEC Porto Lab, Lisboa)

11.30 – 12.00 Dynamics of Human decisions
Speaker: R. Soeiro (University of Porto, Portugal)

12.00 – 12.30 Timing structures in economics and games
Speaker: P. Stehlík (University of West Bohemia, Czech Republic)

12.30 – 15.00 *Lunch*

15.00 – 15.30 Chaos in discrete structured population models
Speaker: A. Ruiz-Herrera (Universidad de Granada, Spain)

15.30 – 16.00 Global bifurcation analysis and applications of a Liénard polynomial system
Speaker: V. Gaiko (National Academy of Sciences of Belarus, Republic of Belarus)

16.00 – 16.30 Existence of a bounded solution of Volterra difference equations via Darbo's fixed point theorem
Speaker: E. Schmeidel (University of Białystok, Poland)

16.30 – 17.00 On the existence of a weighted asymptotically constant solutions of Volterra difference equations of nonconvolution type
Speaker: K. Gajda (Poznań University of Technology, Poland)

Room 10 (Aula 10)

10.30 – 11.00 Local stability implies global stability in the Ricker competition model
Speaker: R. Luís (Technical University of Lisbon, Portugal)

11.00 – 11.30 The dynamics of some contest-competition population models with the effect of harvesting and stocking
Speaker: Z. AlSharawi (Sultan Qaboos University, Oman)

11:30 – 12:00 Difference equations arising in evolutionary population dynamics
Speaker: J. Cushing (The University of Arizona, USA)

12:00 – 12:30 Allee effect in two interacting species
Speaker: S. Elaydi (Trinity University, USA)



Friday, July 27th

Room 13 (Aula 13)

- 10.30 – 11.00 On cascades of elliptic periodic points in area-preserving maps with homoclinic tangencies
Speaker: M. Gonchenko (Universitat Politècnica de Catalunya, Spain)
- 11.00 – 11.30 Modified Lotka-Volterra maps and their interior periodic points
Speaker: P. Maličký (Matej Bel University, Slovakia)
- 11.30 – 12.00 Dense orbits of flows and maps — misunderstandings and new results
Speaker: R. Hric (Matej Bel University, Slovakia)
- 12.00 – 12.30 Snap-back repellers in rational difference equations
Speaker: A. Cascales (Departamento de Matemáticas, Campus de Espinardo, Spain)
- 12.30 – 15.00 *Lunch*
- 15.00 – 15.30 Asymptotic recurrence quantification analysis
Speaker: V. Špitalský (Matej Bel University, Slovakia)
- 15.30 – 16.00 Average shadowing properties: a few sufficient conditions
Speaker: P. Oprocha (Polish Academy of Sciences, Poland)
- 16.00 – 16.30 Minimal sets and free intervals
Speaker: Z. Ulična (Matej Bel University, Slovakia)
- 16.30 – 17.00 Iterated function systems on the circle
Speaker: P. G. Barrientos (Universidad de Oviedo, Spain)