Contents

Part I  Main Speakers

Two-Term Perturbations in Half-Linear Oscillation Theory .................. 3
Ondřej Došlý and Simona Fišnarová

Capillary Forces on Partially Immersed Plates ................................. 13
Robert Finn

Singular Problems for Integro-differential Equations
in Dynamic Insurance Models .................................................. 27
Tatiana Belkina, Nadezhda Konyukhova, and Sergey Kurochkin

Oscillatory Properties of Solutions of Generalized
Emden–Fowler Equations ...................................................... 45
R. Koplatadze

On Conforming Tetrahedralisations of Prismatic Partitions ............... 63
Sergey Korotov and Michal Křížek

Swarm Dynamics and Positive Dynamical Systems ......................... 69
Ulrich Krause

Periodic Solutions of Differential and Difference Systems
with Pendulum-Type Nonlinearities: Variational Approaches ......... 83
Jean Mawhin

Two-Dimensional Differential Systems with Asymmetric
Principal Part ................................................................. 99
Felix Sadyrbaev

Hyperbolicity Radius of Time-Invariant Linear Systems ................. 113
T.S. Doan, A. Kalauch, and S. Siegmund
Oscillation Criteria for Delay and Advanced Difference Equations with Variable Arguments ........................................... 127
I.P. Stavroulakis

Positive Solutions of Nonlinear Equations with Explicit Dependence on the Independent Variable ........................................... 147
J.R.L. Webb

Existence Results for a System of Third-Order Right Focal Boundary Value Problems .......................................................... 165
Patricia J.Y. Wong

Forced Oscillation of Second-Order Impulsive Differential Equations with Mixed Nonlinearities ........................................... 183
A. Özbekler, and A. Zafer

From the Poincaré–Birkhoff Fixed Point Theorem to Linked Twist Maps: Some Applications to Planar Hamiltonian Systems .......... 197
Anna Pascoletti and Fabio Zanolin

Part II Contributions

Pullback Attractors for NonAutonomous Dynamical Systems .................. 217
María Anguiano, Tomás Caraballo, José Real, and José Valero

Uniform Estimates and Existence of Solutions with Prescribed Domain to Nonlinear Third-Order Differential Equation .................. 227
Irina Astashova

A Second-Order Difference Scheme for a Singularly Perturbed Reaction-Diffusion Problem ......................................................... 239
Basem S. Attili

Parametric Dependence of Boundary Trace Inequalities ....................... 249
Giles Auchmuty

On Properties of Third-Order Functional Differential Equations ........... 255
Blanka Baculíková and Jozef Džurina

On the Structure of Two-Layer Cellular Neural Networks ..................... 265
Jung-Chao Ban, Chih-Hung Chang, and Song-Sun Lin

Linear Integral Equations with Discontinuous Kernels and the Representation of Operators on Regulated Functions on Time Scales ...... 275
Luciano Barbanti, Berenice Camargo Damasceno, Geraldo Nunes Silva, and Marcia Cristina Anderson Braz Federson

Strong Solutions to Buoyancy-Driven Flows in Channel-Like Bounded Domains ............................................................... 283
Michal Beneš
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Fučík Spectrum: Exploring the Bridge Between Discrete and Continuous World</td>
<td>421</td>
</tr>
<tr>
<td>Gabriela Holubová and Petr Nečesal</td>
<td></td>
</tr>
<tr>
<td>The Displacement of a Sliding Bar Subject to Nonlinear Controllers</td>
<td>429</td>
</tr>
<tr>
<td>Gennaro Infante and Paolamaria Pietramala</td>
<td></td>
</tr>
<tr>
<td>Abstract Bifurcation Theorems and Applications to Dynamical Systems with Resonant Eigenvalues</td>
<td>439</td>
</tr>
<tr>
<td>Vladimir Jaćimović</td>
<td></td>
</tr>
<tr>
<td>Oscillation of Difference Equations with Impulses</td>
<td>449</td>
</tr>
<tr>
<td>Fatma Karakoç</td>
<td></td>
</tr>
<tr>
<td>On Estimates of the First Eigenvalue for the Sturm–Liouville Problem with Symmetric Boundary Conditions and Integral Condition</td>
<td>457</td>
</tr>
<tr>
<td>Elena Karulina</td>
<td></td>
</tr>
<tr>
<td>On Polyhedral Estimates for Trajectory Tubes of Differential Systems with a Bilinear Uncertainty</td>
<td>465</td>
</tr>
<tr>
<td>Elena K. Kostousova</td>
<td></td>
</tr>
<tr>
<td>Analysis and Computational Approximation of a Forward–Backward Equation Arising in Nerve Conduction</td>
<td>475</td>
</tr>
<tr>
<td>P.M. Lima, M.F. Teodoro, N.J. Ford, and P.M. Lumb</td>
<td></td>
</tr>
<tr>
<td>Multiple Solutions for a Class of Degenerate Quasilinear Elliptic Systems</td>
<td>485</td>
</tr>
<tr>
<td>G.A. Afrouzi and S. Mahdavi</td>
<td></td>
</tr>
<tr>
<td>A Symmetric Nörlund Sum with Application to Inequalities</td>
<td>495</td>
</tr>
<tr>
<td>Artur M.C. Brito da Cruz, Natália Martins and Delfim F.M. Torres</td>
<td></td>
</tr>
<tr>
<td>Numerical Range and Bifurcation Points of a Family of Rational Function</td>
<td>505</td>
</tr>
<tr>
<td>Helena Melo and João Cabral</td>
<td></td>
</tr>
<tr>
<td>Existence of Solutions for a Class of Semilinear Elliptic Systems via Variational Methods</td>
<td>517</td>
</tr>
<tr>
<td>G.A. Afrouzi and M. Mirzapour</td>
<td></td>
</tr>
<tr>
<td>Periodic Boundary Value Problems For Systems of First-Order Differential Equations with Impulses</td>
<td>525</td>
</tr>
<tr>
<td>M. Mohamed, H.S. Ahmad, and M.S.M. Noorani</td>
<td></td>
</tr>
<tr>
<td>Numerical Methods for Multi-term Fractional Boundary Value Problems</td>
<td>535</td>
</tr>
<tr>
<td>N.J. Ford and M.L. Morgado</td>
<td></td>
</tr>
</tbody>
</table>
Topological Structures for Studying Dynamic Equations on Time Scales  . 543
Bonita A. Lawrence and Ralph W. Oberste-Vorth

Existence of Nonoscillatory Solutions of the Discrete FitzHugh-Nagumo System ................................. 551
Ana Pedro and Pedro Lima

On Extinction Phenomena for Parabolic Systems ......................... 561
T. Gramchev, M. Marras, and S. Vernier–Piro

Conjugacy of Discrete Semidynamical Systems in the Neighbourhood of Invariant Manifold ................................. 571
Andrejs Reinfelds

Γ-Convergence of Multiscale Periodic Energies Depending on the Curl of Divergence-Free Fields ........................................ 579
Hélia Serrano

A Geometric Proof of the Existence of Two Solutions of the Bahri–Coron Problem .................................................... 589
Norimichi Hirano and Naoki Shioji

Period-Two Solutions to Some Systems of Rational Difference Equations ................................................................. 599
Walter S. Sizer

Effect of Roughness on the Flow of a Fluid Against Periodic and Nonperiodic Rough Boundaries ............................... 607
J. Casado-Díaz, M. Luna-Laynez, and F.J. Suárez-Grau

A Double Complex Construction and Discrete Bogomolny Equations…… 615
Volodymyr Sushch

Pseudo-Differential Equations on Manifolds with Non-smooth Boundaries ............................................................. 625
Vladimir B. Vasilyev

Positive Solutions for a Kind of Singular Nonlinear Fractional Differential Equations with Integral Boundary Conditions .......... 639
Junfang Zhao and Hairong Lian

Functional Aspects of the Hardy Inequality: Appearance of a Hidden Energy ......................................................... 653
J.L. Vázquez and N.B. Zographopoulos
Differential and Difference Equations with Applications
Contributions from the International Conference on
Differential & Difference Equations and Applications
Pinelas, S.; Chipot, M.; Došlá, Z. (Eds.)
2013, XI, 665 p. 67 illus., 37 illus. in color., Hardcover