Editorial

Recent Trends in Differential and Difference Equations

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This special issue *Recent Trends in Differential and Difference Equations* of the journal *Advances in Difference Equations* consists of one survey paper and twenty-eight research articles. Most papers are related to talks given in the special session [1].

The list of fifty-two contributors including very impressive mathematicians from thirteen different countries is as follows: R. P. Agarwal (USA), J. A. D. Appleby (Ireland), M. M. Asheghan (Iran), J. Baštinec (Czech Republic), M. H. Beheshti (Iran), L. Berezansky (Israel), A. Boichuk (Ukraine), W. Chen (China), V. Chrastinová (Czech Republic), J. Čermák (Czech Republic), S. S. Delshad (Iran), J. Diblík (Czech Republic), A. I. Domoshnitsky (Israel), J. Fang (China), Z. Han (China), L. Horváth (Hungary), Y. Guo (China), I. Györi (Hungary), F. Karakoç (Turkey), D. Ya. Khusainov (Ukraine), B. Krasznai (Hungary), M. Langerová (Slovak Republic), Lixiang Li (China), Tongxing Li (China), Xiaowen Li (China), Xudong Li (China), J. Lukáčová (Slovak Republic), J. J. Nieto (Spain), H. Peng (China), M. Pituk (Hungary), G. Pulverer (Austria), L. Rachůnek (Czech Republic), I. Rachůnková (Czech Republic), M. Růžičková (Slovak Republic), S. Staněk (Czech Republic), J. Stryja (Czech Republic), F. Sun (China), S. Sun (USA), J. Škoríková (Slovak Republic), Z. Šmarda (Czech Republic), Z. Šutá (Slovak Republic), Y. Tang (China, Hong Kong), C. C. Tisdell (Australia), J. Tomeček (Czech Republic), V. Tryhuk (Czech Republic), M. Ünal (Turkey), Y. Yan (China), A. Zafer (Turkey), Chao Zhang (China), Chenghui Zhang (China), P. Zhao (China), and E. Weinmüller (Austria).

The special issue is focused on differential and difference equations with emphasis on oscillation theory, nonoscillation theory, stability theory, boundedness of solutions, asymptotic behavior of solutions, control theory, and applications to real-world phenomena.

Among problems considered are the ones connected with second-order delay differential equations and integrodifferential equations with delay, oscillatory behavior of solutions of delay differential equations, as well as neutral differential equations, impulsive ordinary differential equations, discrete equations, and dynamic equations. Some topics on the control of oscillating systems, and oscillatory solutions of singular equations arising in hydrodynamics are studied as well.

Further problems considered in many papers are connected with asymptotic constancy and asymptotical convergence of solutions of delayed discrete and differential equations, the existence of monotone and positive solutions, and dead core solutions for various classes of equations (integrodifferential equations, Volterra equations, difference equations, differential equations, and delay equations) and initial and boundary-value problems.

The special issue also contains results on the exact controllability of impulsive differential equations, synchronization of complex networks, converse Lyapunov theorems, robust stabilization of fractional systems, parameter identification and synchronization of dynamical systems, and some special topics of automorphisms of submanifolds.

We hope that this special issue will reflect the recent trends in differential and difference equations and outline new ideas for future research in topics related to differential and difference equations.

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References

[1] A. Zafer, L. Berezansky, and J. Diblík, "V.5. functional differential and difference equations," in *Proceedings of the 7th ISAAC Congress*, Imperial College London, London, England, July 2009.