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Editorial

Functional Differential and Difference Equations with Applications 2013

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This annual issue comes as a sequel to two special issues, *Recent Progress in Differential and Difference Equations* edited by the four members of the present team and *Functional Differential and Difference Equations with Applications* with the same editorial team, both published by the *Abstract and Applied Analysis* in 2011 and 2012, respectively.

In the call for papers prepared by the Guest Editors and posted on the journal's web page, we encouraged submission of state-of-the-art contributions on a wide spectrum of topics such as asymptotic behavior of solutions, boundedness and periodicity of solutions, nonoscillation and oscillation of solutions, representation of solutions, stability, numerical algorithms, and computational aspects, as well as applications to real-world phenomena. This invitation was warmly welcomed by the mathematical community; more than sixty manuscripts addressing important problems in the above-mentioned fields of qualitative theory of functional differential and difference equations were submitted to the Editorial Office and went through a thorough peer refereeing process. Twenty-seven carefully selected research articles collected in this special issue reflect modern trends and advances in functional differential and difference equations. Sixty-seven authors from fourteen countries (China, Czech Republic, Georgia, Hungary, Israel, Latvia, Norway, Portugal, Saudi Arabia, Serbia, Slovak Republic, Spain, Turkey, and Ukraine) have contributed to the success of this thematic collection of papers.

Questions related to the existence of periodic solutions and their stability properties traditionally attract attention of researchers working in the qualitative theory of differential, functional differential, and difference equations. In this issue, the reader will find results that relate periodicity of linear autonomous nonhomogeneous difference equations to the existence of equilibria. Systems of nonlinear difference equations whose all well-defined solutions are periodic are considered. For some classes of nonlinear systems with delay, it is shown that the presence of the time delay results in the existence of periodic solutions.

Existence of oscillating solutions for half-linear differential equations with delay and for even order damped equations with distributed deviating arguments is studied. Nonlinear oscillations in the context of saddle-center bifurcation in the dynamical system describing a singularly perturbed forced oscillator of Duffing's type with a nonlinear restoring and a nonperiodic external driving force are examined. Boundedness of solutions to a class of second-order periodic systems with singularities is considered as well.

Stability problems always attract interest of researchers, and this special issue is not an exception. The reader will find papers on the stability of impulsive stochastic functional differential equations with delayed impulses and stability of differential systems under permanently arising impulses, an application of moment equations in a model of the stable foreign currency exchange market in conditions of