

## Special Issue on **Controlling Chaos and Bifurcations in Discrete-Time Population Models**

# CALL FOR PAPERS

The theory of discrete dynamical systems has many applications in almost all branches of the applied sciences. We can understand the nonlinear phenomena and complexity by studying the qualitative behavior of discrete dynamical systems. To a certain extent, the growing interest in difference equations may be also attributed to their simplicity. Although only quite simple computational and graphical representation tools are necessary to study the behavior of the solutions of difference equations and their bifurcations for varying specific parameters within suitable intervals, it is possible to appreciate the complicated and surprisingly diverse dynamics of difference equations. Discrete-time models can be used to study the population dynamics in which time is taken from one generation to next. These discrete-time population models are suitable for nonoverlapping generations and are appropriate to describe the nonlinear dynamics and their chaotic behavior. Controlling chaos and bifurcations refers to the task of designing a controller to modify the chaotic behaviors and bifurcation properties of a given nonlinear system and thereby achieving some desirable dynamical behaviors.

The main objective of this special issue is to provide an opportunity to study the developments like novel chaos and bifurcations control schemes, analytical insights, sensitivity to initial conditions of chaos in discrete-time population models, controlling different type of bifurcations in discrete-time systems, and determination of chaotic behavior through Lyapunov exponents.

We invite authors and researchers to contribute their original research articles as well as review articles.

Potential topics include but are not limited to the following:

- ▶ Development and applications of novel controlling schemes for chaotic behavior and bifurcations in discrete-time models
- ▶ Applications of chaos control and bifurcations in discrete-time models such as host-parasitoid, prey-predator, and Lotka-Volterra type systems
- ▶ Controlling chaos and bifurcations in discrete-time fractional models
- ▶ Chaos control in discrete-time epidemic models
- ▶ Optimal control and synchronization of discrete-time models

Authors can submit their manuscripts through the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/ddns/dcbdt/>.

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