Special Issue

Stability and Bifurcation in Discrete Dynamical Systems: Application to Population Dynamics

Message from the Guest Editor

This Special Issue focuses on the study of stability and bifurcation in discrete dynamical systems, with a particular emphasis on their applications to population dynamics since stability and bifurcation are key concepts for understanding how biological populations respond to environmental changes, species interactions, and other dynamic factors. Additionally, this Special Issue aims to explore the symmetric and asymmetric properties of autonomous or nonautonomous population models, with or without evolutionary dynamics. Research areas may include the following:

- Mathematical modeling of populations (development of discrete models to describe population dynamics and local and global stability analysis of equilibrium points or periodic orbits);
- Bifurcation (analysis of bifurcations in population models and their impact on dynamic behavior and classification of bifurcation types and their implications for population stability);
- Symmetric and asymmetric properties (study of symmetric and asymmetric dynamics in population models, exploration of how symmetry and asymmetry influence stability and bifurcation, and how these factors affect population dynamics).

Guest Editor

Prof. Dr. Rafael Luís

Department of Mathematics, University of Madeira, Campus Universitário da Penteada, 9020-105 Funchal, Portugal

Deadline for manuscript submissions

31 January 2026

Symmetry

an Open Access Journal by MDPI

Impact Factor 2.2
CiteScore 5.3

mdpi.com/si/215742

Symmetry
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
symmetry@mdpi.com

mdpi.com/journal/symmetry

Symmetry

an Open Access Journal by MDPI

Impact Factor 2.2
CiteScore 5.3

mdpi.com/journal/symmetry

About the Journal

Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

Editor-in-Chief

Prof. Dr. Sergei Odintsov
1. ICREA, 08010 Barcelona, Spain
2. Institute of Space Sciences (IEEC-CSIC), C. Can Magrans s/n, 08193 Barcelona, Spain

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within SCIE (Web of Science), Scopus, CAPlus / SciFinder, Inspec, Astrophysics Data System, and other databases.

Journal Rank:

JCR - Q2 (Multidisciplinary Sciences) / CiteScore - Q1 (General Mathematics)

MDPI