

# Special Issue

## Bifurcation Theory and Qualitative Analysis of Dynamical Systems

### Message from the Guest Editor

Bifurcation theory and qualitative analysis of dynamical systems together constitute a robust methodological framework for addressing nonlinear problems, especially when integrated with emerging interdisciplinary fields such as physics, control theory, biology, biomedical science, engineering, economics, information science and artificial intelligence.

Many natural laws and phenomena can be described as continuous or discrete dynamical systems, which typically lack explicit solutions and often exhibit intricate dynamical behavior. Through qualitative analysis methods we can systematically characterize the long-term behavior of their solutions, examine recurrence properties, and identify abrupt changes caused by parameter variations within the system.

This Special Issue seeks to compile the latest research advances in the fields of dynamical systems and bifurcation theory. We welcome submissions of original research articles and comprehensive review papers covering topics including, but not limited to, the following areas: local and global bifurcation, Hilbert's 16th problem, qualitative analysis, applications to physics and artificial intelligence, ecosystems and biomathematics.

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### Guest Editor

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### Deadline for manuscript submissions

31 August 2026



## Mathematics

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### Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

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### Editor-in-Chief

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