

# Special Issue

## Advances in Nonlinear Dynamical Systems of Mathematical Physics

### Message from the Guest Editor

Nonlinear dynamical systems have been a fundamental topic of study over the last few centuries due to the multiple advances in science originating from their vast and rigorous formulations of celestial mechanics, chaos dynamics, fractal geometry, emergence of complexity, neuroscience, and biological models, among others. In parallel to this progress, modern mathematical tools have been developed that provide bridges between measure theory, topology, functional analysis, group theory, and differential equations. This Special Issue invites authors to submit original works and new research results about nonlinear dynamical systems of mathematical physics. Submissions addressing mathematical features of nonlinear dynamical systems bringing novel connections with foundations of physical theories are especially welcome. Special topics include (but are not limited to) the following:

- Nonlinear dynamical systems;
- Ergodic hierarchy;
- Chaotic systems;
- Probabilistic description of dynamical systems;
- Fractal aspects of nonlinear dynamics;
- Complex systems;
- Numerical simulation of nonlinear dynamics.

### Guest Editor

Dr. Ignacio S. Gomez

Department of Exact and Natural Sciences, State University of Southwest Bahia, Itapetinga 45700-000, Brazil

### Deadline for manuscript submissions

closed (20 May 2025)



# Mathematics

an Open Access Journal  
by MDPI

Impact Factor 2.2  
CiteScore 4.6



[mdpi.com/si/214067](https://mdpi.com/si/214067)

*Mathematics*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[mathematics@mdpi.com](mailto:mathematics@mdpi.com)

[mdpi.com/journal/  
mathematics](https://mdpi.com/journal/mathematics)





# Mathematics

---

an Open Access Journal  
by MDPI

---

**Impact Factor 2.2**  
**CiteScore 4.6**



[mdpi.com/journal/  
mathematics](https://mdpi.com/journal/mathematics)



## About the Journal

### 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.

---

### Editor-in-Chief

Prof. Dr. Francisco Chiclana

School of Computer Science and Informatics, De Montfort University,  
The Gateway, Leicester LE1 9BH, UK

---

### Author Benefits

#### High Visibility:

indexed within Scopus, SCIE (Web of Science), RePEc, and other databases.

#### Journal Rank:

JCR - Q1 (Mathematics) / CiteScore - Q1 (General Mathematics)

#### Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 18.4 days after submission; acceptance to publication is undertaken in 2.4 days (median values for papers published in this journal in the first half of 2025).