

# Special Issue

## Fractional Calculus and Nonlinear Systems

### Message from the Guest Editor

Complex models may be nonlinear (and integer), may have fractional-order derivatives (and be linear), or may involve both nonlinearities and fractional calculus. This Special Issue is dedicated to the latter case, which has received increased attention in recent years, where fractional derivatives and nonlinearities interact.

Some of the related subjects that deserve to be studied and deepened are as follows:

Study of properties of fractional-order nonlinear systems  
Identification techniques for fractional order nonlinear systems  
Applications of fractional-order nonlinear systems in science and engineering  
Fractional impulsive systems  
Stochastic fractional order nonlinear systems  
Approximations of nonlinearities using fractional derivatives  
Approximations of fractional derivatives using nonlinearities  
Design of fractional order controllers for nonlinear plants  
Design of nonlinear controllers for fractional order plants  
Fractional reset control  
Fractional sliding mode control

---

### Guest Editor

Dr. Duarte Valério

Instituto de Engenharia Mecânica (IDMEC), Instituto Superior Técnico, Universidade de Lisboa, 1049-001 Lisboa, Portugal

---

### Deadline for manuscript submissions

closed (15 October 2022)



## Mathematics

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.2  
CiteScore 4.6



[mdpi.com/si/61117](https://mdpi.com/si/61117)

*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 17.3 days after submission; acceptance to publication is undertaken in 2.8 days (median values for papers published in this journal in the second half of 2025).