

Special Issue

Fractional Control Systems and Estimation: Control, State Observers and Parameter Estimation

Message from the Guest Editors

The interest in using fractional order tools has increased rapidly over the last few decades, with solid results being obtained for the study of fractional order systems and signals for transient behavior, stability, convergence, and boundedness viewpoints, allowing for a comparison of these techniques with those based on integer order derivative and integral operators, expanding the horizons of these topics. The present Special Issue of interest include, but are not limited to, the following areas:

- Fractional order control (adaptive and non-adaptive) theory and practice;
- Fractional systems analysis and design;
- Fractional order observers and estimators;
- Fractional parameter estimation;
- Robust fractional order control;
- FO PID controllers;
- Fractional order sliding mode control and applications;
- Stability of fractional order differential equations and systems;
- Back-stepping fractional order control (adaptive and non-adaptive systems);
- Fractional differential or difference equations;
- Mathematical and numerical methods of fractional order control systems;
- Theory and applications of fractional order identification and control.

Guest Editors

Prof. Dr. Manuel A. Duarte-Mermoud

Facultad de Ingeniería y Arquitectura, Universidad Central de Chile, Av. Santa Isabel 1186, Santiago 8330601, Chile

Prof. Dr. Gustavo Ceballos-Benavides

Facultad de Ingeniería y Arquitectura, Universidad Central de Chile, Av. Santa Isabel 1186, Santiago 8330601, Chile

Deadline for manuscript submissions

15 December 2025



Fractal and Fractional

an Open Access Journal
by MDPI

Impact Factor 3.3
CiteScore 6.0



mdpi.com/si/230782

Fractal and Fractional
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
fractalfract@mdpi.com

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





Fractal and Fractional

an Open Access Journal
by MDPI

Impact Factor 3.3
CiteScore 6.0



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



About the Journal

Message from the Editor-in-Chief

Fractal and Fractional (*Fractal Fract.*) is a scholarly online journal which provides a forum for discussion on new original models and methods in fractals and fractional calculus both from theory and applications. It is a peer-reviewed, open access journal that publishes high quality original research articles, review papers and short communications.

Editor-in-Chief

Prof. Dr. Carlo Cattani

Engineering School (DEIM), University of Tuscia, Largo dell'Università,
01100 Viterbo, Italy

Author Benefits

High Visibility:

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

Journal Rank:

JCR - Q1 (Mathematics, Interdisciplinary Applications) /
CiteScore - Q1 (Analysis)

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 19.9 days after submission; acceptance to publication is undertaken in 2.7 days (median values for papers published in this journal in the first half of 2025).