

## Special Issue

# Fractional Calculus in the Design, Control and Implementation of Complex Systems

### Message from the Guest Editors

Fractional calculus studies the generalization of the differentiation operator in the case where the order is permitted to be any real or complex number. Particularly, fractional derivatives are considered non-local operators because they provide the memory effect in temporary applications. The ability to describe the hereditary characteristics of a system and its memory is the most fundamental advantage of fractional calculus over integer calculus. If the fractional differential operator is introduced into a system, the system can produce new complex dynamic behaviors. Complex systems are of great significance in practical applications such as encryption, secure communication, random sequence, key design, signal processing, and signal detection. As such, it would be significant and necessary to control and analyze the complexity of these systems. This Special Issue aims to introduce and discuss new results and new methods related to fractional calculus applications, and new results for control and analysis of nonlinear complex systems.

### Guest Editors

Dr. Miguel A. Platas-Garza  
Dr. Cornelio Posadas-Castillo  
Dr. Ernesto Zambrano-Serrano

### Deadline for manuscript submissions

closed (26 September 2024)



## Fractal and Fractional

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## 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.

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### Editor-in-Chief

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