Symmetry in Computational and Mathematical Methods of Fractional Calculus

Guest Editor:

Prof. Dr. Jorge E. Macías Díaz
1. Department of Mathematics, School of Digital Technologies, Tallinn University, 10120 Tallinn, Estonia
2. Department of Mathematics and Physics, Autonomous University of Aguascalientes, Aguascalientes 20131, Mexico

Deadline for manuscript submissions:
closed (31 October 2023)

Message from the Guest Editor

The purpose of this Special Issue is to provide a means to communicate recent progresses in the field of fractional-order integro-differential operators and some of its most important symmetry properties. We invite researchers in this area to submit high-quality papers which stress the development of new computational and mathematical methods in fractional calculus. Applications of those methods to the analysis of the existence, uniqueness, symmetry, and regularity of the solutions of systems consisting of fractional integro-differential equations is an important topic considered in this work. The development and rigorous analysis of numerical methods to approximate solutions of systems of fractional-order equations is also a relevant topic in this Special Issue. Among others, optimization problems where the objective or the constraints are described in terms of fractional derivatives, the derivations of exact analytic solutions of systems of partial integro-differential equations, and the determination of new conservation and symmetry laws of these systems are all topics which are considered in this work.

Special Issue

Editor-in-Chief

Prof. Dr. Sergei Odintsov
1. Institució Catalana de Recerca i Estudis Avançats (ICREA), Passeig Luis Companys, 23, 08010 Barcelona, Spain
2. Institute of Space Sciences (ICE-CSIC), C. Can Magrans s/n, 08193 Barcelona, Spain

Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

Author Benefits

Open Access: free for readers, with article processing charges (APC) paid by authors or their institutions.
High Visibility: indexed within SCIE (Web of Science), Scopus, CAPlus / SciFinder, Inspec, Astrophysics Data System, and other databases.
Journal Rank: JCR - Q2 (*Multidisciplinary Sciences*) / CiteScore - Q1 (General Mathematics)

Contact Us