



Applied Mathematics and Fractional Calculus II

Guest Editors:

**Dr. Francisco Martínez
González**

Departamento de Matemática
Aplicada y Estadística,
Universidad Politécnica de
Cartagena, Cartagena, Spain

Dr. Mohammed K. A. Kaabar

Institute of Mathematical
Sciences, Faculty of Science,
Universiti Malaya, Kuala Lumpur
50603, Malaysia

Deadline for manuscript
submissions:

closed (31 July 2023)

Message from the Guest Editors

Dear Colleagues,

In the last three decades, fractional calculus has broken into the field of mathematical analysis, both at the theoretical level and at the level of its applications. In essence, the fractional calculus theory is a mathematical analysis tool applied to the study of integrals and derivatives of arbitrary order, which unifies and generalizes the classical notions of differentiation and integration. These fractional and derivative integrals, which until not many years ago had been used in purely mathematical contexts, have been revealed as instruments with great potential to model problems in various scientific fields, such as: fluid mechanics, viscoelasticity, physics, biology, chemistry, dynamical systems, signal processing or entropy theory. Since the differential and integral operators of fractional order are nonlinear operators, fractional calculus theory provides a tool for modeling physical processes, which in many cases is more useful than classical formulations. That is why the application of fractional calculus theory has become a focus of international academic research.





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Editor-in-Chief

Prof. Dr. Sergei D. Odintsov

ICREA, P. Lluis Companys 23,
08010 Barcelona and Institute of
Space Sciences (IEEC-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.

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Symmetry Editorial Office
MDPI, St. Alban-Anlage 66
4052 Basel, Switzerland

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