

Special Issue on
Fractional Differential Equations and Their Applications

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Fractional calculus gained great interest in the researchers' community due to its wide applications in several branches of applied mathematics and sciences. Due to the nonlocal nature of fractional derivative, many dynamical systems can be described in a more precise way by using fractional order differential equations. Hence, in many cases, such equations appear as important alternatives for integer order differential equations. Various natural systems in fields such as viscoelasticity, electrical circuits, and nonlinear oscillations of earthquake show an intermediate behavior which can only be modeled using fractional order differential equations.

This special issue is aimed at presenting the latest developments in fractional differential equations and their applications. Emphasis will be placed on the new computation method, advanced algorithm or scheme, applications of various kinds of fractional differential equations, fractional integrodifferential equations, and fractional partial differential equations.

Potential topics include but are not limited to the following:

- ▶ Fractional differential equations
- ▶ Fractional fuzzy differential equations
- ▶ Fractional integrodifferential equations
- ▶ Modeling and application of fractional differential equations
- ▶ Fractional order dynamical systems: chaos, synchronization, stability, and so on
- ▶ Numerical methods of fractional differential equations
- ▶ Convergence, consistency, and stability of numerical methods of fractional differential equations
- ▶ Multiplicity of solutions to fractional order differential equations
- ▶ Approximate analytical methods for fractional differential equations: adomian decomposition method, homotopy perturbation method, variational iteration method, and homotopy analysis method
- ▶ All above topics in fuzzy sets and systems

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/jmath/analysis/fdeta/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

Lead Guest Editor

Reza Ezzati, Islamic Azad University,
Tehran, Iran
reza_ezzati@yahoo.com

Guest Editors

Morteza Khodabin, Islamic Azad
University, Tehran, Iran
m-khodabin@kiaau.ac.ir

Hossein Behforooz, Utica College,
Utica, USA
hbehfor@utica.edu

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