



Fractional Derivatives and Their Applications to Fractional Diffusion Problems

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Message from the Guest Editors

Fractional calculus is an incredible tool for understanding the complex world. The significance of fractional calculus has been shown to be exceptionally compelling in various phenomena, such as diffusion processes, viscoelastics, long-range interactions, materials, and so on. It turns out that fractional calculus provides numerous advantageous features that offer interesting solutions to system modeling and control, optimization algorithm design, and machine learning. Fractional diffusion systems are fundamental mathematical systems for the evolution of probability densities.

The motivation behind this Special Issue is to introduce an assortment of articles showing recent developments and results that rely on the frame of fractional derivatives and their applications to fractional diffusion equations and other fractional differential equations. Topics that are invited for submission include (but are not limited to):

- Fractional order systems;
- Existence and Stability analysis of fractional order systems;
- Numerical methods for fractional diffusion equations;
- Analytical solutions of fractional diffusion equations;
- Modeling in the frame of fractional derivatives.

