Special Issue

Recent Advances in the Spatial and Temporal Discretizations of Fractional PDEs

Message from the Guest Editors

Fractional PDEs (FPDEs) generalize the classic (integer-order) calculus and PDEs to any differential form of fractional orders. However, the exact solutions of FPDEs cannot be explicitly expressed, thus numerical methods based on various spatial and temporal discretizations have become the mainstream tools for such FPDEs and have had a booming development over the past several decades. This Special Issue will provide a platform for the recent and original research results on efficient numerical methods for solving FPDEs. We invite authors to contribute original research articles for the Special Issue "Recent Advances in the Spatial and Temporal Discretizations of Fractional PDEs". The following potential topics include, but are not limited to:

- Finite difference, finite element, finite volume, spectral methods;
- Nonuniform and adaptive discretizations;
- Adaptive space–time methods;
- Numerical treatments of integro-differential equations;
- Parallel-in-time methods;
- Fast matrix computations arising from numerical methods of FPDEs;
- Nonlocal modeling and computation;
- Convolution quadrature;
- Modeling and simulations involving (fractional) PDEs.

Guest Editors

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Deadline for manuscript submissions

closed (31 July 2024)

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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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Author Benefits

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 19.9 days after submission; acceptance to publication is undertaken in 2.7 days (median values for papers published in this journal in the first half of 2025).