

## Special Issue

# Novel Numerical Solutions of Fractional PDEs

### Message from the Guest Editors

During the past few decades, fractional partial differential equations (PDEs) have been widely used in biology, materials science, molecular dynamics and many other fields. In particular, time fractional PDEs, which are able to accurately describe the state or evolution with historical memory, have attracted much research interest in both theoretical and numerical aspects. Due to the non-local property of fractional derivatives, the development of numerical algorithms for the fractional PDEs faces new challenges and opportunities: (1) Analysis and numerical treatment of the weak singularity of solutions; (2) Fast and parallel algorithms; (3) Applications and simulations for real-world models. In this Special Issue, of particular interest are the following subtopics:

- Fractional ordinary differential equations;
- Fractional PDEs;
- Nonlocal modeling and computation;
- Integro-differential equations;
- Fast and parallel methods;
- Convolution quadrature;
- Finite element methods;

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### Guest Editors

Prof. Dr. Xiaoping Xie

Dr. Xian-Ming Gu

Dr. Maohua Ran

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### Deadline for manuscript submissions

closed (31 July 2022)



## Fractal and Fractional

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## About the Journal

### Message from the Editor-in-Chief

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#### Editor-in-Chief

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