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Spectral Methods for Fractional Functional Models

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Message from the Guest Editors

It is a well-established fact that many powerful tools, such as partial differential equations, integral equations, and integro-differential equations, have been used to model a wide variety of nonlinear phenomena, ranging from nonlinear optics to plasma physics, circuit theory, and biology. Today, such tools, combined with fractional operators, provide effective methods for describing nonlinear phenomena, which have been the subject of much research. Such problems can be handled with a wide range of useful methods including finite difference methods, radial basis function methods, and spectral methods (collocation, Galerkin, and Tau). The key goal of the current Special Issue is to present the latest research on the solutions to the above problems involving fractional operators using spectral methods. Potential topics include, but are not limited to, the following areas:

- Spectral Methods for Fractional Partial Differential Equations
- Spectral Methods for Fractional Integral Equations
- Spectral Methods for Integro-Differential Equations Involving Fractional Operators
- Spectral Methods for Systems of Fractional Differential Equations