Special Issue

Fractional Porous Medium Type and Related Equations

Message from the Guest Editor

Many diffusion processes in nature exhibit anomalous behavior and cannot be modeled by classical diffusion equations (e.g., the heat equation), the classical porous medium equation, or by the classical parabolic p-Laplacian equation.

Subdiffusion is an important special case of anomalous diffusive behavior. It has been experimentally observed in many diffusion processes (e.g., diffusion in amorphous semiconductors) that particles diffuse slower than in the classical case, which can be described by Brownian motion and which leads to the heat equation or some nonlinear version of this equation.

Time-fractional porous medium and related equations, however, are suitable to describe such subdiffusion processes.

They are also able to describe many other diffusion processes where memory effects play a substantial role. These include heat conduction in materials with memory or diffusion processes in porous media with memory effects.

The aim of this volume is to present recent results for fractional porous medium and related equations (possibly involving stochastic perturbation).

Guest Editor

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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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