# Special Issue

# Fractal and Fractional Order Modeling of Real-World Phenomena

### Message from the Guest Editor

The term ‘Real World’ is the totality of known and unknown systems existing in the Universe. A mathematical model is a mental construction and usually takes the form of a set of aggregated mathematical tools: geometry, topology, and equations describing a number of variables. We distinguish between continuous models, in which the variables vary continuously in space and time and discrete models whose variables varies discontinuously. Applied mathematicians have a procedure, almost a philosophy, that they apply when building models, for a system of interest that they want to describe or, more importantly, explain. Observations of the system lead, sometimes after a great deal of effort, to a hypothetical mechanism that can (verbally) explain the phenomenon. The purpose of a mathematical model is, then, to formulate a description of the mechanism in quantitative terms. To see more closely how a mathematical model is built, it is advisable to read the geometric model that is today called Mandelbrot's Fractals, the viscous fluid flow model built by Navier–Stokes, or simple electrical circuit models.

### 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.

### Editor-in-Chief

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