Application of Fractal Processes and Fractional Derivatives in Finance

Guest Editor:

Dr. Leung Lung Chan

School of Mathematics and Statistics, University of New South Wales, Sydney, NSW 2052, Australia

Deadline for manuscript submissions:
closed (15 August 2023)

Message from the Guest Editor

Over the past four decades, the fractional calculus has represented a rapidly growing research area, both in the theory and applications to practical problems arising in various fields such as econophysics as well as mathematical finance, in which self-similar processes, such as the Brownian motion, the Levy stable process and the fractional Brownian motion, are used. The applications in finance bring about some new stochastic analysis problems. The fractional diffusion processes are also used to model dynamics of underlying assets. The option price under the fractional diffusion setting induces the fractional partial differential equations involving the fractional derivatives with respect to the time. Some closed-form solutions might be found via transform methods in some cases of applications, and numerical methods to solve fractional partial differential equations are developing.

Special Issue