Special Issue

Stochastic Processes and Partial Differential Equations in Industry

Message from the Guest Editors

In recent decades, stochastic differential equations (SDEs) and stochastic partial differential equations (SPDEs) have developed rapidly in both theory and application. More recently, SDEs and SPDEs have entered in the research of machine learning, for instance, many stochastic algorithms such as stochastic gradient descent (SGD) and stochastic variance reduced gradient converge to SDEs or delayed SDEs. Many stochastic methods in machine learning need tools in SDEs and SPDEs, for instance, Lyapunov function method and coupling method have become popular in analysing the convergence of stochastic algorithms. With the help of stochastic dynamical system theory, the higher-order parabolic SPDEs are widely used in the field of material science. Furthermore, the fractional SDEs and and SPDEs have received much attention, they have been applied to model various phenomena in risk management, statistical mechanics, electromagnetics and quantum mechanics, etc. We are pleased to invite you to submit your recent work to the Special Issue, which focuses on solving industrial problems with stochastic processes and partial differential equation.

Guest Editors

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Deadline for manuscript submissions

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Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

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