

Special Issue

Advanced Filtering and Control Methods for Stochastic Systems

Message from the Guest Editors

This Special Issue on "**Advanced Filtering and Control Methods for Stochastic Systems**" calls for research that addresses emerging challenges in modeling, filtering, robust control, optimal estimation, fault detection, learning-based approaches, and real-time implementation for systems affected by stochastic disturbances. Topics of interest include, but are not limited to, the following:

- Kalman filtering and nonlinear filtering techniques;
- H-infinity and robust filtering under stochastic uncertainties;
- Data-driven filtering and estimation using machine learning;
- Distributed filtering and control in networked stochastic systems;
- Stochastic model predictive control and optimal control methods;
- Fault detection, isolation, and diagnosis for uncertain systems;
- Filtering and control of Markovian jump systems and time-delay systems;
- Applications in robotics, autonomous systems, aerospace, energy systems, financial engineering, and beyond.

We encourage submissions that combine rigorous mathematical analysis with practical relevance or demonstrate real-world implementations and simulations. Both theoretical and application-oriented contributions are welcome.

Guest Editors

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About the Journal

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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