Special Issue

Nonlinear Control Systems for Robotics and Automation

Message from the Guest Editors

This Special Issue focuses on advancements in nonlinear control systems applied to robotics and automation. Nonlinear dynamics are integral to robotic systems, enabling precise and adaptive control in complex, real-world environments. This Special Issue aims to explore the innovative methodologies, algorithms, and applications of nonlinear control in diverse robotic domains such as surgical robotics, industrial automation, autonomous vehicles, humanoid robots, and any other possible applications. Key topics include, but are not limited to, the following:

- Nonlinear control design for high-precision tasks;
- AI-driven control and data-driven control hybrid systems;
- Adaptive and robust control strategies for uncertain systems;
- Advanced observer design for state and parameter estimation;
- Sliding mode control, backstepping, and predictive control methods;
- Applications in collaborative robotics and swarm systems;
- Applications in energy-efficient and sustainable systems;
- Real-time implementation and optimization of nonlinear controllers.

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Mathematics

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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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