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Mathematical Methods and Models in Robust Nonlinear Control

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Deadline for manuscript submissions:
closed (20 December 2023)

Message from the Guest Editor

The design of a control system should be based on the mathematical model of the controlled object but, strictly speaking, it is impossible to be completely accurate when modeling any controlled object, and there must be a degree of uncertainty. Such uncertainties include parameter uncertainty, structural uncertainty and various disturbances. These uncertainties may exist at the beginning of modeling, or may change continuously during system operation. Due to the existence of uncertainties, the designed feedback control system must be able to deal with these uncertainties, so that they will not have too great an influence on the dynamic performance of the system, which requires the control system to be robust. Therefore, robust control has become an important research topic in feedback control theory.

This Special Issue aims to encourage the development of analysis and design techniques for uncertain linear and nonlinear systems. Papers that demonstrate the potential for robust or nonlinear controllers in applications are welcome. We also welcome papers on non-optimal methods of improving the robustness of uncertain systems, such as QFT design methods.

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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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