

Special Issue

Advances in the Analysis and Control of Nonlinear Dynamical Systems and Complex Phenomena

Message from the Guest Editors

The study and analysis of nonlinear dynamical systems is of high relevance in a vast area of science and engineering, due to its capacity to model complex phenomena in the real world. This Special Issue is dedicated to advances in the analysis and control of such systems, addressing both their theoretical foundations and practical applications. It includes contributions on nonlinear control techniques, mathematical modeling, complex network theory, machine learning strategies for dynamic systems, and control and prediction in nonlinear dynamical systems, such as weather patterns, biological systems, and power grids. Equally important, contributions exploring the emergence of complex phenomena—such as synchronization, bifurcations, and chaos—with the goal of enhancing control strategies and system design are also welcome. We consider this Special Issue a valuable opportunity to showcase and discuss innovative advancements in the analysis and control of nonlinear systems and complex dynamical phenomena, fostering collaboration and knowledge exchange among researchers in the field.

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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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