DE GRUYTER

SPECIAL ISSUE ON DECISION AND CONTROL IN NONLINEAR SYSTEMS AND INDUSTRIAL PROCESSES

GUEST EDITORS

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DESCRIPTION

Most technologies and processes exhibit non-linear behavior through their interactions, laws and dynamics. Despite linear simplifications, real industrial systems are often nonlinear and often very complex. Nonlinearities have a stronger impact as system complexity and dynamics increase. Under these circumstances, the role of nonlinear control in industrial processes is becoming more and more important. The analysis of nonlinear systems aims to discover their properties, and the design of appropriate control strategies enables practitioners to focus on this process. Therefore, efficient nonlinear control should consider various nonlinear aspects such as modeling, control system design, stability analysis and its evaluation and sustainability. In the last decades, great progress has been made in the development of design methods for the control of nonlinear systems and their applications with the aid of different mathematical tools. Although a considerable number of interesting and valuable results can be found in the literature, the synthesis of control strategies for a wider range of nonlinear systems and their applications is still challenging and open, especially for communication and computing due to Various complex control tasks arising from the increasing integration of emerging technologies in the field.

The special issue invites original works on topics related to system stability, control robustness, high computational performance and nonlinear system design, as well as issues arising in process utilization aimed at controlling and managing real time practical applications through advanced control methods, artificial intelligence or machine learning resources.

Topics of interest include but are not limited to:

- Modeling and simulation of nonlinear systems
- Robust control of nonlinear systems
- Model-based control design for linear and nonlinear processes
- Process control design for real-time applications
- Automation, mechatronics and robotics control
- Industrial applications for process control
- Optimal control of systems with parameter uncertainty
- Intelligent mechatronics, robotics, automation, and control systems

- Signal and image processing and pattern recognition in mechatronic systems
- Advanced control and robotic system in path planning
- Design of multiple Controller-Multiple Model (MCMM) configurations

HOW TO SUBMIT

Before submission authors should carefully read the Instructions for Authors.

For an initial submission, the authors are strongly advised to upload their entire manuscript, including tables and figures, as a single PDF file. All submissions to the Special Issue must be made electronically via the Editorial Manager submission and tracking review system: https://www.editorialmanager.com/nleng

All manuscripts will undergo the standard peer-review process (single blind, at least two independent reviewers). When entering your submission via online submission system please choose the option:

"SI Decision and Control in Nonlinear Systems"

For more details, please see Authors Statements and Data Sharing Policy documents available in the Supplementary Materials section at the journal website.

The deadline for submissions is **March 30th, 2024,** but individual papers will be reviewed and published online on an ongoing basis.