Special Issue

Robust Parameter Region or Attraction Region Calculation for Control System Design

Message from the Guest Editors

In practice, the available operating region for an existing control design is quite essential for system evaluation. Two kinds of operating regions are appealing. The first one is the uncertain region of the characteristic parameters of the plant that can be robustly stabilized by a specific controller. In the classical control theory, the stability margin is such a physically insightful criterion; while in robust control, the μ singular value also has a similar meaning. On the other hand, the attraction region is the set confining the state to be reliably operated, which amounts to the feasible working space without stability violation. For the standard linear systems, there are mature tools for this evaluation. Especially, an explicitly graphical description of these regions is necessary and welcome. However, there were few such reports on the nonconventional linear systems, such as time-delay systems, switch systems, etc. The related analysis for these systems is difficult but urgently needed in many application problems. In the Special Issue, we are pleased to collect the results on the calculation of feasible regions for the challenging nonconventional physical.

Guest Editors

Prof. Dr. Mingwei Sun

Assoc. Prof. Dr. Jia Song

Dr. Jin Tao

Deadline for manuscript submissions

closed (30 June 2023)

Mathematics

an Open Access Journal by MDPI

Impact Factor 2.2
CiteScore 4.6

mdpi.com/si/114015

Mathematics
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
mathematics@mdpi.com

mdpi.com/journal/mathematics

Mathematics

an Open Access Journal by MDPI

Impact Factor 2.2
CiteScore 4.6

mdpi.com/journal/mathematics

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.

Editor-in-Chief

Prof. Dr. Francisco Chiclana
School of Computer Science and Informatics, De Montfort University, The Gateway, Leicester LE1 9BH, UK

Author Benefits

High Visibility:

indexed within Scopus, SCIE (Web of Science), RePEc, and other databases.

Journal Rank:

JCR - Q1 (Mathematics) / CiteScore - Q1 (General Mathematics)

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 18.4 days after submission; acceptance to publication is undertaken in 2.4 days (median values for papers published in this journal in the first half of 2025).

MDPI