



Robust Parameter Region or Attraction Region Calculation for Control System Design

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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.





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