Special Issue

Recent Advances in Sliding Mode Control/Observer and Its Applications

Message from the Guest Editors

Sliding mode control (SMC) and sliding mode observation (SMO) provide effective ways for designing robust controllers and observers. This Special Issue covers recent advances in both sliding mode control and observation, which includes the following two categories: First, theoretical results on SMC and SMO, including novel design methods for controller and observer, and novel analysis results on the system dynamics of sliding mode systems, such as chattering analysis, discretization effects on the algorithms, frequency analysis, and so forth. The second part focuses on the applications of SMC or SMO in various systems, including power systems, mechatronics systems, power electronics, multiagent systems, underactuated systems, networked control systems, energy systems, and so on. The primary objective of this Special Issue is to provide a forum for researchers and practitioners to share their latest theoretical and technological achievements and to identify critical issues and challenges for future research on SMC/SMO. The submitted papers are expected to share original ideas and potential contributions for theory and application.

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Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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