

ARCAI 2024 Special Session “Sliding Mode Control of Nonlinear Systems and Its Applications”

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Call for Papers:

The disturbances, which encompass unmodeled dynamics, parameter perturbations, system uncertainties and external disturbances, are ubiquitous in practical systems. However, all the control engineering tasks have to face and handle the disturbances since they may generate adverse effects on control performance and even system stability. To suppress the disturbances and improve system robustness, many control methods have been proposed, among which the sliding mode control (SMC) is deemed to be a valid approach to the control of systems with disturbances owing to its attractive features including simple implementation, good transient performance and strong robustness. Therefore, the SMC have received considerable attention both from theory and application aspects.

Despite the extensive and successful development of SMC methods, their capabilities to handle discrete systems, higher-order systems, chattering problems and real implementations still need to be further strengthened. Meanwhile, with the high precision requirement of the industrial field, the SMC methods in industrial systems have already played a rather important role.

The objective of this Special Session is to highlight the latest theoretical and technological developments on the relevant topics on SMC, which could provide a platform for researchers to display their new results. The authors are invited to propose their new methods on SMC design and their applications. All the related papers on the theoretical methods and their application for SMC of linear or nonlinear systems are welcome, and the papers presenting newly emerging fields are especially welcome. Topics of interest include, but are not limited to:

- Terminal Sliding Mode Control and its Applications
- Higher-order Sliding Mode Control
- Discrete-time sliding mode control
- Sliding Mode Control of Mechatronic Systems
- Chattering-free Sliding Mode Control Theory
- Sliding Mode Control of flight control system
- Sliding Mode Observation Design
- Implementation methods of Sliding Mode Controller

Accepted and presented papers will be submitted and indexed by EI Compendex and Scopus. Selected papers will be invited to SCI Journal Special Issues.