

A mathematical view of sliding mode control

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Abstract

Sliding mode control is a method which allows to solve several classical control problems by sending and keeping the state variable on a prescribed manifold in order to fulfill the given control aims.

Main motivations for using this approach are its inherent robustness, reliability, and good performance under uncertainty conditions, one of the important issues today in mathematical control theories and applied control.

Some mathematical aspects of sliding mode control will be presented for the control of both ordinary and partial differential equations, and some new results will be described.