Advances and Applications in Sliding Mode Control systems [

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Engineering **Artificial intelligence** **Computational Intelligence** **Control and Systems Theory** **Artificial Intelligence**

Monografía

This book describes the advances and applications in Sliding mode control (SMC) which is widely used as a powerful method to tackle uncertain nonlinear systems. The book is organized into 21 chapters which have been organised by the editors to reflect the various themes of sliding mode control. The book provides the reader with a broad range of material from first principles up to the current state of the art in the area of SMC and observation presented in a clear, matter-of-fact style. As such it is appropriate for graduate students with a basic knowledge of classical control theory and some knowledge of state-space methods and nonlinear systems. The resulting design procedures are emphasized using Matlab/Simulink software.   .

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Contenido: Adaptive Sliding mode control of the Furuta pendulum -- Optimal Sliding and Decoupled Sliding Mode Tracking Control by Multi-objective Particle Swarm Optimization and Genetic Algorithms -- Robust Control of Robot Arms via Quasi Sliding Modes and Neural Networks -- A robust adaptive self-tuning sliding mode control for a hybrid actuator in camless internal combustion engines -- Sliding mode control of class of linear uncertain saturated systems -- Sliding mode control scheme of variable speed wind energy conversion system based on the PMSG for utility network connection -- Super-twisting Air/Fuel ratio control for spark ignition engines -- Robust Output Feedback Stabilization of a Magnetic Levitation System Using Higher Order Sliding Mode Control Strategy

-- Design and Application of Discrete Sliding Mode Controller for TITO Process Control Systems -- Dynamic fuzzy sliding mode control of underwater vehicles -- An Indirect Adaptive Fuzzy Sliding Mode Power System Stabilizer for Single and Multi-Machine Power Systems -- Higher Order Sliding Mode Control of Uncertain Robot Manipulators -- Generalized H2 sliding mode control for a class of (TS) fuzzy descriptor systems with time-varying delay and nonlinear perturbations -- Rigid spacecraft fault-tolerant control using adaptive fast terminal sliding mode -- Sliding Modes for Fault Tolerant Control -- Transient Stability Enhancement of Power Systems using Observer-based Sliding Mode Control -- Switching Function Optimization of Sliding Mode Control to a Photovoltaic Pumping System -- Contribution to study Performance of the Induction Motor by Sliding Mode Control and Field Oriented Control.- Anti-Synchronization of Identical Chaotic Systems using Sliding Mode Control and an Application to Vaidyanathan-Madhavan Chaotic Systems -- Hybrid Synchronization of Identical Chaotic Systems using Sliding Mode Control and an Application to Vaidyanathan Chaotic Systems -- Global Chaos Control of a Novel Nine-Term Chaotic System via Sliding Mode Control

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