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Advances in Stability and Control Theory for Uncertain Dynamical Systems

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This volume presents the latest investigations in stability and control theory for uncertain dynamical systems, incorporating the main engineering applications. The volume consists of 16 chapters containing the results of theoretical research and engineering applications of some uncertain systems and provides new trends for future promising researches. Some issues covered in the volume include:

- stability and control in uncertain systems: optimal design of robust control, generalization of direct Lyapunov method, robust output feedback stabilization and optimization of control systems, optimal control of nonlinear systems over an infinite horizon;
- stability and stabilization in discrete-time systems: stability conditions for discrete-time positive switched systems with delay, quadratic stabilization for nonlinear perturbed discrete time-delay systems, robust output feedback stabilization and optimization of discrete-time control systems, stability of singularly perturbed nonlinear Lur'e discrete-time systems;
- synchronization in dynamical systems: function projective dual synchronization of chaotic systems with uncertain parameters, anti-synchronization and hybrid synchronization of 3D discrete generalized Hénon map, adaptive hybrid function projective synchronization;
- engineering applications: attitude stabilization of a rigid body, adaptive control of continuous bioreactors, wavelet adaptive tracking control, adaptive fuzzy control of nonlinear systems, robust active control for structural systems with structured uncertainties.

The **Advances in Stability and Control Theory for Uncertain Dynamical Systems** may be useful for graduate students and researchers in applied mathematics and physics, control, nonlinear science, and engineering.

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