عنوان مقاله:

On the global stabilization of perturbed nonlinear fuzzy control systems

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خلاصه مقاله:

In this paper, we deal with the global practical exponential stabilization of a class of perturbed Takagi-Sugeno fuzzy control systems. The terms of perturbations are supposed uniformly bounded by some known functions and in certain cases not necessarily smooth. We prove that the solution of the closed-loop system with a linear fuzzy controller convergeto a neighborhood of the origin. We use common quadratic Lyapunov function and parallel distributed compensation controller techniques to study the asymptotic behavior of the solutions of fuzzy system. Numerical simulations are given to validate the proposed approach.

کلمات کلیدی:

Takagi-Sugeno fuzzy systems, practical exponential stabilization, perturbations, PDC controller, quadratic Lyapunov function, linear matrix inequalities

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