

## [2008-0882]Adaptive Fuzzy Control for Unknown Nonlinear Systems with Perturbed Dead-Zone Inputs

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摘要

关键词

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## [2008-0882]Adaptive Fuzzy Control for Unknown Nonlinear Systems with Perturbed Dead-Zone Inputs

LI Ping, YANG Guang-Hong

Abstract

Adaptive fuzzy control is used to control a class of unknown nonlinear systems with perturbed dead-zone inputs in this paper. A new dead-zone actuator model which contains time-varying and perturbed actuation gain is proposed. The dead-zone nonlinearity is treated as a linear-like term, a nonlinear term and a disturbance-like term, by which the robustness of the system can be obtained by less control efforts. Backstepping technique is employed to get the adaptive fuzzy controller for the considered unknown nonlinear system with triangular structure. Nonlinearly parameterized fuzzy logic systems are used to design the control scheme which ensures the stability of the closed-loop system and satisfactory tracking of the output to the given reference signal. A numerical example is included to show the effectiveness of the approach.

Key words [Adaptive control](#) [fuzzy systems](#) [dead-zone](#) [time-varying gain](#) [perturbation](#) [backstepping technique](#) [nonlinear systems](#)

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