Design Of A Fuzzy Servo-Controller

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Summary

A design method of a fuzzy servo-controller for nonlinear plants has been presented. The proposed method is an error feedback scheme, where the controller also receives signals representing the plant operating points. Integrator is used in the control loop to ensure setpoint following, low-frequency disturbance rejection, and to enhance the robustness of the closed-loop system. A training scheme for the fuzzy controller is derived that minimizes the output error between a reference model and the plant. The training is conducted off-line for a class of setpoints conforming to the normal operating condition of the plant. Results of simulation studies are also presented.

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