

Speed Control of Hybrid Stepper Motor by Using Adaptive Neuro-Fuzzy Controller

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Abstract : This paper presents an adaptive neuro-fuzzy interference system (ANFIS), which is applied to a hybrid stepper motor (HSM) to regulate its speed. The dynamic response of the HSM with the ANFIS controller is studied during the starting process and under different load disturbance. The effectiveness of the proposed controller is compared with that of the conventional PI controller. The proposed method solves the problem of nonlinearities and load changes of the HSM drives. The proposed controller ensures fast and precise dynamic response with an excellent steady state performance. Matlab/Simulink program is used for this dynamic simulation study.

Keywords : stepper motor, hybrid, ANFIS, speed control

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