MODELING AND FUZZY CONTROL OF A BRUSHLESS DC MOTOR SPEED CONTROL SYSTEM USING FUZZY LOGIC

BY

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Abstract. A fuzzy logic approach to design a robust brushless DC motor controller for variable speed is proposed. We try to develop a low cost speed control system with high level of accuracy and fast response time, with various kind of load, using an 8-bit micro-controller. To acquire an accurate fuzzy control algorithm a simulation with MATLAB/SIMULINK has been made. The inputs for the controller (based on performance we choose a PD fuzzy controller) are error e(t) and change in error de(t) (first derivative of error) with a single output: voltage.

Fuzzy control offers an alternative approach for many conventional systems, especially for nonlinear systems, with high degree of uncertainty. In this paper we describe the design principle of fuzzy controller and demonstrate that it can be tunned to provide superior performance, flexibility, time response compared with conventional systems.

Key words: fuzzy logic, brushless, control systems, matlab/simulink model.

ACQUIRING VOCAL SIGNALS USING PCM CODEC IN FIXED DATA RATE OPERATION MODE

ΒY

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Abstract. This paper describes the hardware structure of an acquisition system for vocal messages, consisting of a specific interface, a development system equipped with microcontroller I80C451 and a high capacity memory module. The vocal signals acquisition system is based on TCM29C13 codec that uses pulse code modulation, but also a command logical structure that delivers the required signals. The system is used for acquiring and playing vocal signals in order to transmit vocal information messages in various user applications.

Key words: vocal signals acquisition, pulse code modulated encoder and decoder, pulse code modulated line filter, I80C451 microcontroller, memory.