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Artificial Neural Network Speed Controller for Excited DC Motor

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Abstract : This paper introduces the new ability of Artificial Neural Networks (ANNs) in estimating speed and controlling the separately excited DC motor. The neural control scheme consists of two parts. One is the neural estimator which is used to estimate the motor speed. The other is the neural controller which is used to generate a control signal for a converter. These two neutrals are training by Levenberg-Marquardt back-propagation algorithm. ANNs are the standard three layers feed-forward neural network with sigmoid activation functions in the input and hidden layers and purelin in the output layer. Simulation results are presented to demonstrate the effectiveness of this neural and advantage of the control system DC motor with ANNs in comparison with the conventional scheme without ANNs.

Keywords : Artificial Neural Network (ANNs), excited DC motor, convenional controller, speed Controller
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