Abstract

One of the most problem of nonlinear mechanical system that limit the performance of the position and speed control is backlash, a controller used in this paper is applied to an induction motor includes a gear, the main purpose of this paper is to study the effect of backlash on the performance of the motor and the goal is tracking speed trajectory, the paper described a comparison of controlling three phase induction motor using PI controller and sliding mode control under the effect of backlash and load torque variations, the simulation is implemented using MATLAB/ SIMULINK, the performance of the system is illustrated via simulation.

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**Index Terms**

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Keywords

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