

عنوان مقاله:

Speed Controller based on Adaptive Neuro- Fuzzy Inference System and Internal Model Control for Permanent Magnet DC Motor

محل انتشار:

اولین کنفرانس بین المللی دستاوردهای نوین پژوهشی در مهندسی برق و کامپیوتر (سال: 1395)

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خلاصه مقاله:

The Permanent Magnet Direct Current (PMDC) motors that are used in many industrial applications can be controlled by different control methods. One of intelligent methods that is called Adaptive Neuro-Fuzzy Inference System (ANFIS), uses combinations of neural network and fuzzy methods. On the other hand, PID controller can be used to control PMDC motor. One of conventional PID control methods that is called Internal Method Control (IMC), uses single tuning parameter for achieving better performance. In this paper, combination of ANFIS and IMC methods are used to achieve the desired performance characteristics. The smaller rule base ANFIS controller adds appropriate values with IMC PID coefficients to achieve more acceptable motor's performance. The simulation results show that proposed controller can significantly improve performance characteristics of PMDC motor in various operational conditions.

کلمات کلیدی:

Speed Control; ANFIS; IMC; PID; PMDC Motor

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