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Parameter Estimation of Induction Motors by PSO Algorithm

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Abstract : After emergent of alternative current networks and their popularity, asynchronous motors became more widespread than other kinds of industrial motors. In order to control and run these motors efficiently, an accurate estimation of motor parameters is needed. There are different methods to obtain these parameters such as rotor locked test, no load test, DC test, analytical methods, and so on. The most common drawback of these methods is their inaccuracy in estimation of some motor parameters. In order to remove this concern, a novel method for parameter estimation of induction motors using particle swarm optimization (PSO) algorithm is proposed. In the proposed method, transient state of motor is used for parameter estimation. Comparison of the simulation results purtuined to the PSO algorithm with other available methods justifies the effectiveness of the proposed method.

Keywords : induction motor, motor parameter estimation, PSO algorithm, analytical method
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