

Abstract

Yasser Gaber A. Dessouky

Theory and analysis of three phase series connected parametric motors

This paper presents the steady-state performance of a three-phase wound-rotor parametric motor. This type of motor can be practically realized by the series connection of the stator and rotor phases of a conventional wound-rotor induction machine. The analysis is based on the d-q axes model, from which a phasor diagram is presented. The analysis is extended to include the magnetic saturation effect. Comparison between theoretical and experimental results showed a satisfactory agreement, proving the validity of the mathematical model as well as the magnetic saturation effect representation. Also, the motor stability is investigated.