

DESIGN AND SIMULATION OF ROTOR RESISTANCE CONTROL

ABSTRACT:

The induction machine, when operating from mains is essentially a constant speed machine. Many industrial drives, typically for fan or pump applications, have typically constant speed requirements and hence the induction machine is ideally suited for these. However, the induction machine, especially the squirrel cage type, is quite rugged and has a simple construction. Therefore it is good candidate for variable speed applications if it can be achieved.

But due to the changes in the load conditions it is bit complex to maintain the speed of the motor constant. Because of the above reason, it is necessary to control the speed of the induction motor to satisfy the various load conditions. Many methods are there to control the speed of the IM.

In this thesis we will be emphasizing on the rotor resistance control method. Two algorithms are developed (one for the theoretical analysis and second for practical analysis). Theoretical analysis describes about the characteristics plots for different voltages, whereas practical analysis gives characteristics curves for different rotor values.

This work presents the detailed comparison of the proposed scheme and presented both experimentally and simulation. The simulation results is obtained by using MATLAB/SIMULINK shows that the superior performance of the proposed scheme.