

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

In this project, sensorless speed control of induction motor using rotor flux based model reference adaptive system technique has been proposed. Sensorless control gives the benefits of vector control without using any shaft encoder. In this project the principle of vector control and sensorless speed control of induction motor are discussed. Simulation results of sensorless speed control of induction motor using rotor flux based model reference adaptive system technique were carried out by using MATLAB/SIMULINK software. From the simulation results, the following observations are made.

- (i) By using RF-MRAS we are estimating the speed, which is same as that of actual speed of induction motor.
- (ii) Rotor Flux MRAS method is usable to different speed ranges of induction machine.

Thus by using sensorless control we can get the same results as that of vector control without shaft encoder. Hence by using this proposed technique, we can reduce the cost of drive i.e. shaft encoder's cost.

5.2 Recommendations

The results of this project open some interesting and challenging problems of great importance. In what follows, we point out some of the possible future research directions:

1. It would be useful to further compare between RF-MRAS and power reactive based on MRAS. The comparison of the two schemes would be conducted based on complexity of the algorithm, high performance, and sensitivity to parameters variation.

2. It would be useful to further compare between MRAS techniques and other speed sensorless control schemes such as Kalman Filter.