EE595S Lab 10
Induction Machine
Indirect Field Oriented Control
Fall 2005

Objective

- Determine the effect of parameter sensitivity on field oriented control

Procedure

- The parameters you obtained from lab 9 will be considered ‘estimated’ parameters which you will use in your indirect field oriented control.
- In this lab, run the machine for 2 hr at 1800 rpm and full load. The repeat the lab 9 experiment to obtain the parameters. These will be considered the ‘actual’ parameters you will use in your induction motor model

Lab 10 A: Effect Of Parameter Error On Steady-State Torque Production

- FOR OFF CAMPUS STUDENTS ONLY
- Assume a speed of 1800 rpm
- Plot torque versus torque command assuming q- and d-axis current injection and slip calculation based on “estimated” parameters but machine model based on “actual” parameters

Lab 10 B: Effect Of Parameter Error On Steady-State Torque Production

- FOR ON CAMPUS STUDENTS ONLY
- Assess importance of parameter variation
- Possibilities to investigate include effects of parameter variation on
  - Operation as torque transducer
  - Speed control
  - Steady – state behavior and requirements

Lab 10 B: Effect Of Parameter Error On Steady-State Torque Production

- FOR ON CAMPUS STUDENTS ONLY
- Deliverable
  - Televised Oral / Powerpoint presentation on Dec 7th and Dec 9th
  - Group Reports: 2 or 3 per group
  - Your presentation has maximum duration of 15 minutes (hard limit)
  - Powerpoint presentation will be posted on the web. This needs to be to me by 9 am on the 7th. Send via e-mail so I can post / print for class.