Coskun, Ulas Cosar

From: Smith, Robin Lynn
Sent: Monday, December 2, 2024 4:12 PM
To: Coskun, Ulas Cosar
Subject: Fw: December 2, ECE 590I Seminar Abstract/Title DUE!

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From: Parag Bajaj <paragb2@illinois.edu>
Sent: Monday, December 2, 2024 8:31:25 AM
To: Smith, Robin Lynn <rsmth@illinois.edu>
Subject: Re: December 2, ECE 590I Seminar Abstract/Title DUE!

Hi Robin,

I'm sorry for not getting back to you sooner. Please find below the title and abstract for my seminar:

1) Title: Effects of Rotor Geometry on Equivalent Circuit Parameters of Variable-Pole Induction Machines
2) Abstract: Induction machines (IM) serve as a viable alternative to permanent magnet-based solutions for electric vehicle (EV) drivetrain applications, owing to their cost-effectiveness and reliability. The EV drive profile requires high torque to accelerate at low speeds and low torque to cruise at high speeds. A fixed pole IM sacrifices performance at partial loads and high speeds to meet the high torque requirement at low speeds. A variable-pole IM utilizes the pole count of the machine as an additional degree of freedom. The torque-speed curve of the IM is dependent on the machine's equivalent circuit parameters and is dominated by the leakage parameters of the rotor. These circuit parameters are determined by the slot geometry, and bar dimensions of the squirrel cage and vary with the pole count of the machine. This paper develops an analytical method to determine the equivalent circuit parameters from the machine geometry and explores the effect of varying pole counts.

Best,
Parag Bajaj

On Thu, Nov 21, 2024 at 3:05 PM Smith, Robin Lynn <rsmth@illinois.edu> wrote:

Please send me your abstract/title for the upcoming December 2 ECE 590I Seminar. Thanks.

Robin Smith

Office Manager

Electrical and Computer Engineering

The Grainger College of Engineering

4060 ECE Building

306 North Wright Street

Urbana, IL 61801

217.300.1601 | rsmth@illinois.edu