

Massachusetts Institute of Technology
Department of Electrical Engineering and Computer Science
6.061/6.690 Introduction to Power Systems

Problem Set 9

Issued April 10, 2011
Due April 20, 2011

Reading: From the text, Chapter 13

Problem 1: From the book: Chapter 9, Problem 5

For 6.960: Generate and plot a capability curve for this machine as a generator. Use the limits of part a of the problem.

Problem 2: For 6.690: Revisit Chapter 9, Problem 6 (from Problem set 8) and generate and plot a capability curve for this machine. Note the underexcited part of this capability curve is more interesting than for a round rotor machine.

Problem 3: A conventional three-phase, four pole winding is wound in a 48 slot stator (so the number of slots per pole per phase is $m = 4$). Calculate the winding factors for a winding that is:

1. Full Pitched,
2. Short-Pitched by one slot
3. Short-Pitched by two slots

Problem 4: From Chapter 13, Problems 2, 3 and 4

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