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1. Introduction

1.1 Motivation

co2 blablabla

1.2 Research problem

There are two different type of method regarding Torque control of the motor, i.e. the offline and online method. Conventionally, offline methods are used, and the torque control of the motor is achieved with the use of predetermined data sets, which are obtained through test and measurements prior to operation.

[advantage and disadvantage, find literature]

The offline method advantage in terms of …

However, major drawbacks includes…

time consuming

equipment/test bench

variance in production

As a consequence, the objective of this thesis is to investigate the possibilities in using online technique for the torque control of the motor.

1.3 Research focus

This research focus of this Thesis is the Torque control in the field-weakening region of the Synchronous reluctance motor. The aim of this research is to develop a online torque control methods via feedback methods. Based on the feedback signals such as the consumed voltage and current, the control method should be able to calculate and generate the optimized current vector for the torque command given in real-time during motor operation. The control method avoid the use of Table data gathered offline in field-weakening region of the motor and prevent the problems of offline Torque control method presented in previous chapter.

Another aim of the research is to maximize the voltage usage during motor operation in the field-weakening region. The control methods should always maintain maximum voltage consumption in the field-weakening region to minimize copper lose and maximize energy efficiency.