Abstract

In the recent decades the design of electrical motors has imposed more and more strict requirements. One of these requirements is the minimization of the torque ripple. Every manufacturer must take it into account to stay competitive in the design of electrical motors. In electrical steering systems the BLDC motor (*Brushless Direct Current Motor*) that provides the required torque for the servo mechanism fills a key part. The torque ripple compensation is an important aspect in the design because it can produce unacceptable vibration and acoustic noise and in extreme cases it can lead to the instability of the steering gear. The presence of unwanted harmonics plays a important role in the creation of the torque ripple. In my thesis I will work on the compensation of the torque ripple caused by the sixth electrical harmonic. Introducing an active cancellation signal the acoustic properties of the motor can greatly increase, especially at low speeds. The goal of my thesis is to estimate and design the optimal parameters of the cancellation signal.