

Bachelor's Thesis

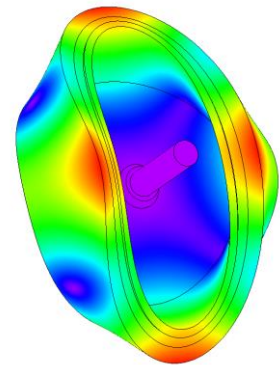
Experimental Modal Analysis of Small Drives

Motivation

One of the important acoustic and vibration analyses carried out on electrical machines is experimental modal analysis, which is essential to predict the resonance of electromagnetic forces and mechanical structure. Some well-known methods for this measurement are using an impulse hammer and shaker, but these approaches are hardly implementable in small sub-fractional horse-power drives, nevertheless, there are some other modal analysis techniques which could be implemented for small drives, like self-electromagnetic excitation.

Research Questions

- Which conventional experimental modal analysis could be implemented in small machines?
- What are the challenges of self-electromagnetic excitation modal analysis in small permanent magnet machines?



Tasks

- Investigation of the state-of-the-art of experimental modal analysis of electrical drives.
- Investigation of the modal analysis methods which could be implemented in small drives.
- Evaluation of selected modal analysis method in example case small drive.

Further Information

- Start: asap.
- Research questions and tasks may be changed ad libitum, adding simulation and/or experimental work. Special interests, strengths, and experience of the student will be considered.

Contact

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