

# Master Thesis

## Electromagnetic Twin of Three-Phase Power Transformers

### Initial situation and motivation

The Institute for Electrical Power Systems investigating power transformer behavior under the influence of low frequency currents. For that purpose, two 50 kVA distribution power transformers are available in the laboratory. In order to be able to scale the results from laboratory measurements, validated simulation models are needed. Therefore, an electromagnetic model for the power transformers should be developed and compared to the measurements.



Fig. 1: modified power transformer at IEAN

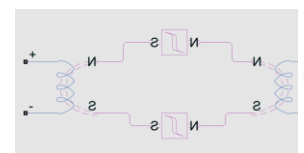


Fig. 2: duality representation in Simulink

### Research questions & Task

- Setup of an electromagnetic model for three-phase power transformers in Simulink
- Consideration of different core designs and core dimensions
- Consideration of the saturation effect
- Implementation of different switching groups
- Comparison and validation of the model with measurement results

### Organization matters

**Start immediately**

**Language: German or English**

**Thesis: LaTeX or Word**

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