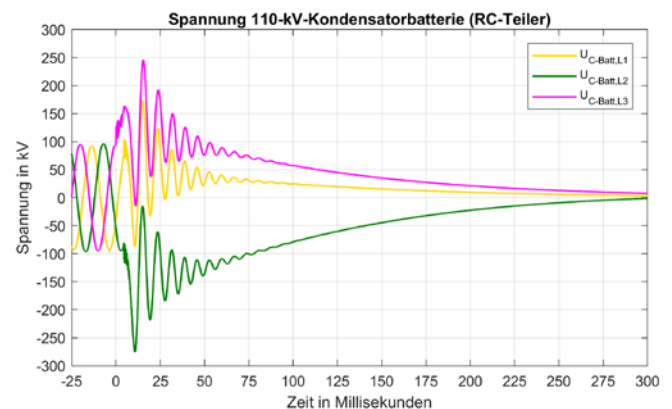


Master Thesis

Analysis of the switching voltages of a capacitor bank in EMTP

Motivation

During switching of a 110 kV capacitor bank in combination with an instrument transformer, resonances can occur during opening, which lead to switching voltages at the circuit breaker. These can subsequently lead to restrikes and consequently to damage to the circuit breaker. Existing measurement data with and without instrument transformers should be reproduced with the given data using transient simulations.



Research Topics

- What are the conditions under which resonant oscillations are excited with an inductive voltage divider?
- Under which circumstances do these switching voltages occur when a capacitor bank is switched?
- What measures/dimensioning guidelines would be necessary to reduce these overvoltages to a harmless level?

Procedure/Methodology/Task definition

Simulation of the relevant equipment in EMTP
 Investigation of different parameter constellations
 Design of damping devices

Organisational Issues

Begin immediately

Contact Person/Supervisor

Ass. Prof. Dr. Katrin Friedl
 DI Philipp Hackl