Institute of Electrical Power Systems

Bachelor Thesis

Heating in cables through additional currents in the shield

Motivation

As a result of an earth fault, currents in the cable shield flow. In the case of a compensated network, these currents can flow for up to 2 hours. With the usual design of cables, however, only heating by the phase cable is taken into account, not the additional heating by the currents in the shields.

Research Topics

How long can a shielded MS cable with which current in the shield be operated at which preload?
Which initial parameters have to be used for such an analysis? (Initial temperature, current preload, thermal conductivity of the surrounding material)

Procedure/Methodology/Task definition

- literature research
- Simulation of heating using FEM
- Simulation of heating using analytical formulas

Organisational Issues

Start : immediately

Contact Person/Supervisor

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