

Dissertation Project

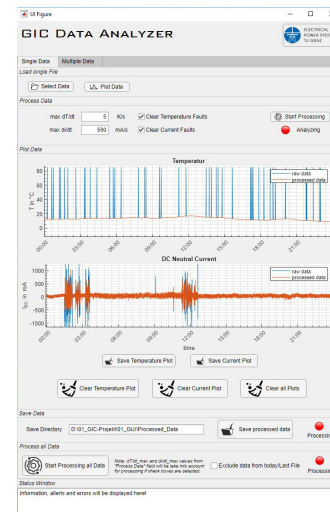
Low-Frequency Currents in Electrical Power Systems

Induced low-frequency currents in electrical energy systems, especially in the transmission network, can negatively affect its stability. Induced currents are caused by geomagnetic influences or e. g. by other electrical systems such as DC railways.

A major problem with the superimposed DC component is the associated saturation of transformers. This can be the trigger of a chain reaction and lead to shutdowns in the network.

Building on a completed already work are the goals of this dissertation:

- to identify other low-frequency current sources
- structural and technical measures to reduce the effects or impacts
- continuation of star point current measurements in the Austrian transmission network
- analysis of measured induced currents (*Geomagnetic Induced Currents*)
- verification and creation of simulation models for the distribution of low-frequency currents in the network



Measurement Analysis

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