

# Bachelor Thesis

## Measurement errors in distributed magnetic field measurements on overhead lines

### Motivation

If the electric and magnetic field is measured with a measuring device at several points of an overhead line, various influences lead to measuring errors or inaccuracies.

These influences can be, for example:

- Fluctuations in current and voltage, taking harmonics into account.
- Inaccurate positioning of the measuring device
- Changes in the conductor arrangement (temperature, solar radiation, etc.)
- Background fields from the environment



With the help of a calculation, these influences are to be simulated and analyzed.

### Research questions

- How can the influences during the measurement be reduced as far as possible?
- How high can the individual measurement inaccuracies be estimated?

### Procedure/Methodology/Task definition

- Analytical calculation of the measurement inaccuracies with suitable software (e.g. MATLAB®)

### Organisational Issues

Start Immediately. Language: German or English

### Contact Person/Supervisor

Benjamin Jauk | [benjamin.jauk@tugraz.at](mailto:benjamin.jauk@tugraz.at) | +43 316 873 7554  
Katrin Friedl | [katrin.friedl@tugraz.at](mailto:katrin.friedl@tugraz.at) | +43 316 873 7552