Our electrical power grid faces major changes in order to realize the energy transition towards renewable generation. For example, large central power plants are replaced by many widespread generators such as photovoltaics and wind turbines. This can cause issues with power quality and security of supply [1, 2].

This thesis aims to understand the behavior of PV inverters using simulations [3] and map it to observations in measurements. Special focus in our case are different frequency components in the inverter current and supply voltage. The measurements you will compare to are already available.

This sounds exciting? Then get in touch!

The proposed thesis consists of the following parts:
- You will focus on the simulation and only use measured data already available.
- Familiarization: Simulation soft- and hardware and inverter modeling.
- First simulations: How does a simple combination of standard simulation blocks behave? How much do they already agree with measurements?
- Improvement: Adapt the model in order to better reproduce the measured behavior.
- Extension for Master thesis: Behaviors under more than one grid condition.

We are happy to answer any questions you might have. Feel free to ask for an appointment or just give us a call!

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Die Arbeit darf natürlich auch in deutscher Sprache geschrieben werden.

References

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