

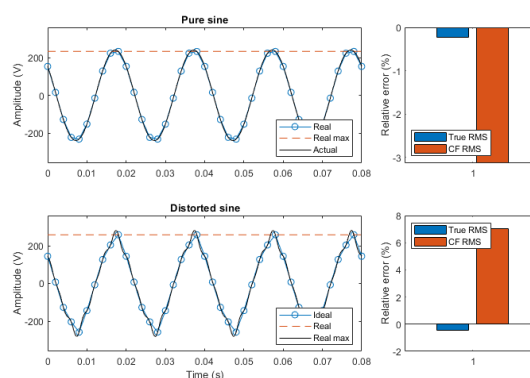
## Hiwi Position:

### Simulation scenarios for evaluation of measurements in modern power systems

#### Context:

The understanding of the measurements and its role of modern power systems requires the understanding of the representation of grid dynamics such as the components, the uncertainty and the quantification that happens with the digitalization and the scenarios and challenges presented by the new communication possibilities.

To enable large-scale simulations with highest possible accuracy, the *Institute for Automation of Complex Power Systems* develops a power system simulator named *DPsim*. The power system simulator allows for electromagnetic transient simulations as well as for the application of a new simulation approach based on dynamic phasor models. This simulation engine can be interfaced using Python (e.g. Jupyter Notebook or similar), to provide easily extendable and modifiable scenarios that represents situations that can help students at ACS to have a an understanding and to experiment the effect of parameters that define metrological characteristics, data acquisition and communication.



#### Tasks:

The key elements of the work will be:

- Create simulation scenarios to give practical examples in a hands-on virtual-lab approach using the existing simulator

- The preparation of material consisting in easily extendable and modifiable exercises (e.g. Jupyter Notebook + DPsim, or similar) for use cases related to measurements in power systems
- Assessment of the different scenarios and preparation of templates that allow reusability by students and as course material
- Prepare high level documentation regarding the developed simulation scenarios

Basic knowledge of C++ and Python is mandatory. Experience in power system modeling and simulation is desired.

If you have interest in the position, please send an email to the contact below stating your motivations. Please include as an attachment your CV and current grades.

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