

**HiWi job position**  
**(Studentische Hilfskraft)**

Sensitivity Analysis for power systems: a didactic tutorial

**Your profile:**

We are looking for a student assistant with the following qualifications:

- RWTH student of Electrical Engineering (but students coming from other RWTH faculties are welcome to apply)
- Above-average academic performance, quick comprehension and self-reliable way of working
- General knowledge of basic statistical concepts (e.g., variance, probability density function)
- Strong programming knowledge (MatLab, Python or R)
- General knowledge of power systems and related analysis tools (e.g., MatPower, Pandapower) is a plus

**Your tasks:**

The student assistant will be involved in supporting the preparation of a ready-to-use didactic tutorial for running Sensitivity Analysis of simple power system use cases (e.g., small electrical grid with distributed generation and load, implementing a simple voltage control or state-estimation algorithm) by using state-of-the-art Global Sensitivity Analysis techniques (e.g., Chapter 4 of [1]). The tutorial is expected to include the creation of a simple Graphical User Interface for the students' interactivity and/or the usage of Jupiter Notebook interfaced with DPSim or other power system analysis tools. In addition, the coding/translation of numerical routines and the validation of the generated tutorial are also envisaged.

**Our offer:**

The position, to be filled as soon as possible, is limited to 3 months, with possibility of extension based on the student assistant's performance. The regular weekly working time is 8 hours.

**Notes:**

The supervision will be done in English. If you are interested in the advertised position, please send your application documents including motivation letter, CV and current grades.

**References:**

[1] Ginocchi, Mirko, Ferdinanda Ponci, and Antonello Monti. 2021. "Sensitivity Analysis and Power Systems: Can We Bridge the Gap? A Review and a Guide to Getting Started" *Energies* 14, no. 24: 8274. <https://doi.org/10.3390/en14248274>

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