

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, Computer Engineering, or related fields
- 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
- 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 work to make the web app under development fully running is connected to:

- development, i.e., coding/translating of an already available set of functions into the back end and preparation of the front end, potentially with some Graphical User Interface to enhance students' interactivity;
- validation, i.e., once the web app has been put in place, it has to be validated to check the coherency of the results with all the possible combinations of inputs as well as to check the correctness of the mapping between back end and front end.

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>

Contact:

Mirko Ginocchi
Tel. +49 241 80 49586
mirko.ginocchi@eonerc.rwth-aachen.de

ACS | Institute for Automation of Complex Power Systems
ERC | E.ON Energy Research Center
RWTH Aachen University
Mathieustr. 30, 52074 Aachen, Germany