

23J008 - Internship proposal

Title: Improvement of an automatic network drawing algorithm in the context of utility networks (e.g. electric, fluid)

Are you interested in working on computational modelling and automatic design of utility networks?

The European Institute for Energy Research EDF-KIT EWIV (EIFER) is looking for a

Trainee (f/m/d)

in the research group “Climate Neutral Communities”.

EIFER is involved in a large project on the topic of utility networks in cities, specifically in the context of modelling utilities networks. We are seeking a master student in the field of electrical network engineering **or** fluid network modelling to improve an existing algorithm that automatically draws networks by making it able to support creating networks with loops. To do so, the student will use the existing open-source Python libraries “pandapipes” and “pandapower”. The student can also use this task in the context of a master thesis. This work presents an opportunity to apply their theoretical engineering knowledge to solve a real computational challenge, and get experience in programming.

The European Institute for Energy Research was founded by EDF and the KIT in 2002 aiming at enhancing collaboration through joint projects applied to industrial issues and utilities’ needs. With its applied research orientation EIFER is bridging the gap between science and industry for more than 20 years. In the context of the European energy transition, EIFER provides research-based innovative energy solutions for the sustainable development of cities, communities, territories and economic activities.

The assigned tasks involve

- Writing code for representing the outputs of an automatic network drawing algorithm in one of these libraries (pandapipes, pandapower)
- Applying the provided optimization algorithms on the networks
- Developing (with guidance) a methodology for modifying the output networks to create loops that are well-suited to optimization of the network operation

Required qualifications / skills / interests

The position is aimed at Master-students in Electrical network engineering **or** fluid dynamic engineering. The student should have the following qualifications:

- An understanding of the challenges associated with modelling either electrical or fluid networks
- Basic programming experience (preferably in Python)
- Good level in English, both written and spoken (German and/or French basics would be an asset)

What you can expect

- A stimulating, multicultural and multidisciplinary environment
- An institute at the intersection between academic research and one of the largest energy utilities in Europe
- If the opportunity arises: participation in conferences, involvement in scientific publications

Conditions

- Duration: 6 months
- Starting date: 01.05.2023 (at the earliest, or later)
- Location: EIfER, Emmy-Noether-Str. 11, 76131 Karlsruhe, Germany
- Working hours: 39.5 hours per week
- Monthly compensation: 520 € for a compulsory internship

Contact

If you want to join a highly motivated research group, please forward your electronic application with one single pdf of max. 5MB including all relevant information (curriculum vitae, cover letter and certificates) to jobs@eifer.org. **Please refer to the offer number 23J008.**

For additional information concerning the work, please contact:

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