

22J020 – Internship Proposal

Development of urban freight simulation – methodological architecture and implementation for sustainable assessment

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. With its applied research orientation EIFER is bridging the gap between science and industry since more than 20 years. In the context of the European energy transition, EIFER provides research-based innovative energy solutions for the sustainable growth of cities, local communities and industries. The team *Climate Neutral Communities* is looking for a student (f/m/d) who would be interested in working on the development of a method to assess urban freight mobility, at local scale.

Internship description

Responsible for many GES emissions, mobility is a key sector to decarbonate for reaching the CO2 neutral objective in future. EIFER has developed a traffic framework to simulate individual mobility, and its evolution according to local transport policies for future. Nevertheless, this remains only about 50% of the overall mobility, which means the results of scenarios do not highlight evolutions on freight-oriented territories and masks the usefulness of certain local policies. The other 50% of mobility relies on (Urban) freight transport, contributing to economics dynamic as well as its negative effects such as traffic congestion, energy consumption, air and noise pollution. Including this aspect into modelling is an urgent requirement, to understand the global impact of spreading low carbon technologies into fleet as well as local policies impacts, on the environmental assessments. The student will contribute to benchmark the existing tools or methods in the field of freight mobility, and how they can be taken advantage of, in cooperation to the EIFER passenger traffic framework. The definition of data requirements and first tests for development are also expected.

The assigned tasks involve

The student will be involved in the conception of the architecture, the data preparation, the tool development and the documentation writing.

- Literature review and scientific watch upon tools and methods for freight simulation
- Test and comparison on existing tools and use case identification
- Specifications of logistic module for traffic framework
- Participation to the development of urban freight method for MATSIM (requirements, mock-up, tests, etc.)

Required qualifications / skills

- Student in scientific/research field: Urban planning, engineering, IT or similar
- Knowledge of Microsoft Office suite, especially Excel and Word
- GIS / spatial analysis knowledge
- Data management abilities and Java skills
- A first experience in mobility field would be highly appreciated
- Good skills in French and English

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
- A contribution to the key challenge of our era: fight against climate change through the decarbonation of the energy supply

Conditions

- Duration: 6 months
- Working hours: 39.5 hours
- Starting: As soon as possible
- Location: EIFER, Emmy-Noether-Str. 11, 76131 Karlsruhe, Germany
- Compensation: 450€ per month

Contact

If you want to join our motivated team, please forward your electronic application with one single PDF of max. 5MB to jobs@eifer.org (cover letter + curriculum vitae). Please refer to the offer number **22J020**.

For additional information concerning the work, please contact Elise Nimal (elise.nimal@eifer.org), Tel.: +49 721 6105 1709.