

19J022 – Internship Proposal

Title: *Urban modelling review on location factor in international perspective*

EIFER/ Europäisches Institut für Energieforschung EDF-KIT EWIV was established in 2001 as collaboration between the Karlsruhe Institute of Technology (KIT) and Electricité de France (EDF). EIFER aims at developing or improving innovative clean energy technologies as well as approaches for the sustainable development of cities, territories and industries.

CONTEXT

For several centuries, cities and local authorities have been translating, through their master plan, the objectives to be followed for their territory: quality of life, population growth, economic growth etc. Today, the situation is changing; in order to fight climate change, it's necessary for them to reduce greenhouse gas emissions, air pollution and the use of fossil resources.

However, the location factors and the resulting choices are linked to individualized criteria. The questions that arise are as follows. Are these factors consistent with the overall objectives? And if so, to what extent? Are individual location choices today influenced by the imperatives of climate change and energy transition? In this context, can a model of a resilient city be defined?

WORK PLAN

I – Literature and cases review

The main objective is to define the variables that usually influence the location decisions of a type of urban activity (residences, businesses, amenities etc.). These should also be prioritized and documented.

The student will have to propose a critical analysis of the literature and desk research on the following points:

- Further development of urban patterns according location factors and location choices
- Development and verification of evolving urban planning and design models
- Scenario development based urban patterns and objectives of sustainable development and energy transition

II – Model development depending on the duration

- Review of different modelling technics and assessment of implementation
- Develop a generic model location choice, using reviews done before
- Scenario impact assessment according to KPI on environment in terms of CO2 emissions, air pollution, quality of life etc.

REQUIRED QUALIFICATIONS / SKILLS / INTERESTS

The position is aiming at students in urban planning and/or human sciences or transport engineering.

- Knowledge associated to GIS and/or Agent Based model would be an added value
- Interest in urban structural analysis/transformation, urban economy, modelling
- Interested in the field of energy and environment
- Fluent in English

CONDITIONS

- Duration: 3 - 6 months depending on individual availability
 - Start: as soon as possible
 - Working hours: 39.5 hours per week
 - Compensation: 450€
- Working Location: EIFER, Emmy-Noether-Str. 11, 76131 Karlsruhe, Technologiepark Karlsruhe (TPK)

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 and cover letter) to jobs@eifer.org. **Please refer to the offer number 19J022.**

For additional information concerning the work please contact: Marie Sevenet: sevenet@eifer.org, Tel. +49 (0) 721/6105-1490.