



At the Climate Real-World Laboratory EKUS hoch I, we are conducting research into smart technologies for space heating and testing the control approaches we have developed in practice – live in our institute building.

A key aspect of our research in this area is **demand-driven** heating, with the goal to heat rooms only when the relevant office is actually in use.

Over the past few years, temperature and occupancy data have been collected across several measurement campaigns in a non-residential building, with the aim of enabling the prediction of user occupancy in individual offices in the future.

**As part of this project**, you will develop a forecasting system that can predict room occupancy in the building as accurately as possible based on data already collected. To achieve this, you will implement stochastic or machine learning approaches.

Your potential tasks will include, amongst other things:

- Conducting literature research on the state of the art in the field of presence prediction
- Assessing the results and selecting promising approaches
- Processing and categorizing sensor data
- Implementing, testing, validating and evaluating a selected approach

We expect you to meet the following requirements:

- Curiosity and an enthusiasm for tackling complex research questions
- An interest in the fields of machine learning, stochastics and intelligent operations management
- Knowledge of model-based working and the energy sector would be an advantage
- The ability to work independently, in an interdisciplinary manner and in a structured way
- Good proficiency of both German and English



Are you interested, or do you have any questions? If so, please feel free to contact Peter Lierhammer by email or phone. This role offers you the opportunity to play an active part in ensuring a sustainable energy supply for the university campus.

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Student research project/Master's thesis

## **Development of an approach to data-driven occupancy prediction in non-residential buildings**