

Helmholtz Call for Chinese Applicants Interested in Running for CSC 2021 Fellowship

Helmholtz Centre: Forschungszentrum Jülich GmbH – www.fz-juelich.de
Department/Institute: Institute of Energy and Climate Research - Energy Systems Engineering (IEK-10) https://www.fz-juelich.de/iek/iek-10/EN/Home/home_node.html
Supervising scientist: Prof. Dr.-Ing Andrea Benigni
University for registration or for a future degree: RWTH Aachen University
Research Field: Energy Systems
Position open for: PhD Student Sandwich PhD Student
Title of the research: Design of an Electricity and Gas Grid Simulation Platform for System Analysis

More description of research topic:

IEK-10 focuses on the development of models and algorithms for simulation and optimization of decentralized, integrated energy systems. Such systems are characterized by high spatial and temporal variability of energy supply and demand as well as by a high degree of interdependency of material and energy flows. Research at IEK-10 aims to provide scalable and faster than real-time capable methods and tools which enable the energy-optimal, cost-efficient and safe design and operation of future energy systems.

Your work will focus on the development and programming of a simulation platform that is able to capture the interaction between different energy grids faster than real-time using parallel computing infrastructures. You will also be responsible of the definition of interfaces to energy market models for the determination of distributed loads and feed-ins

Specific requirements:

M. Sc. degree in Electrical Engineering, Mechanical Engineering, Computer or Computational Engineering Science or a related field with good final grade
Strong mathematical background
Knowledge of modelling, preferably of energy systems
Very good knowledge and experience in programming (e.g. Python, Matlab, C, C++)
Ability to accurately handle big data
Experience with HPC infrastructures are welcome
Excellent ability for cooperative collaboration

Working Place: Forschungszentrum Jülich, Germany (near Cologne)

Earliest Start: September 2021

Language Requirement: Very good knowledge of English language, written and spoken. German language courses are organised in the context of our in-house training and are free of charge.

Name and Address of the Supervisor: Forschungszentrum Jülich, Institute of Energy and Climate Research (IEK-10), 52425 Jülich, Germany
Prof. Dr. Andrea Benigni (a.benigni@fz-juelich.de)