

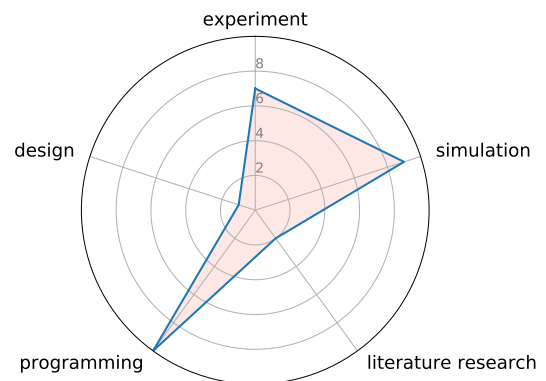
Master's Thesis:

Prototype Deployment of a Model Predictive Controller for Heat Pump Systems

The building energy sector is responsible for an outstandingly high ratio of a country's total energy consumption. One technology approach with remarkable energy saving potential is Model Predictive Control (MPC). Currently, MPC is not state of the art. However, a lot of research is performed towards this promising technology. In cooperation with an industry partner, you are part of prototype development of such a simulation based controller for a heat pump.

Tasks:

You improve an existing MPC framework. Additionally, you calibrate a model of a heat pump, which is the device under test. Afterwards, you connect the worlds of virtual controller part and real hardware of this heat generation system. The MPC framework is written in the programming language Python, while the simulation model is using the Modelica language.



Institute's Profile:

The E.ON Energy Research Center at RWTH Aachen University deals with sustainable energy supply concepts that take account of technical feasibility as well as social and economic aspects. The reduction of primary energy consumption in buildings and an increase of indoor comfort are among the research tasks of the institute.

Contact:

Philipp Mehrfeld, M.Sc.
Room 20.31
T +49 241 80-49776
pmehrfeld@eonerc.rwth-aachen.de

RWTH Aachen University
E.ON Energy Research Center
Energy Efficient Buildings
and Indoor Climate | EBC
www.eonerc.rwth-aachen.de

Mathieustrasse 10
52074 Aachen

