



# Simulation-based optimization of the operation of large-scale heat pump systems

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## Motivation

- Increasing share of renewables and district heating
- Large-scale heat pumps are key components
- Optimal operation wrt. various services required



## Conditions

- Master's project (Possible to adjust to Bachelor's)
- Experienced supervisors at DTI
- Involvement in cutting-edge R&D projects
- Collaboration with manufacturers and customers possible



## Objectives

- Dynamic model for large-scale HP system
- Optimization of operating strategy
- Derivation of constructive modifications



## Methods

- Dynamic modelling
- Numerical optimization
- Control strategies