



# Development of a procedure to develop grey-box models for large-scale heat pump systems

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## Motivation

- Increasing share of renewables and district heating
- Large-scale heat pumps are key components
- Operation optimizations require fast models



## 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 HP system
- Methods for reducing numerical complexity without compromising content
- Application of grey-box models for control optimization



## Methods

- Detailed dynamic modelling and grey-box modelling
- Numerical optimization
- Control optimization