Analysis of the consumer structure of the university's district heating network

Student assistant/Thesis
From now on

Motivation

The provision of heat in the building sector accounts for a significant share of global CO_2 emissions. Unlike the electricity sector, the use of renewable energy sources in this area is not yet widespread. Fossil fuel generators such as oil and gas heaters still cover 75% of the building heat demand in Germany. Modeling of district heating networks (DHNs) offers the possibility to identify influential parameters on network operation and estimate generator configurations for future networks. The basis of modeling is a thorough understanding of the system to be represented.

Task

For billing purposes, network-side data such as temperatures, heat flows, and mass/volume flows are usually collected at building meters in DHNs. The data from the university's DHN needs to be processed and analyzed. This includes cleaning raw data from measurement errors and identifying similarities in meter data among each other, allowing for potential classification in the future. Data processing will be carried out in MATLAB or Python, and existing work may be used as a foundation.

Requirements

- Programming skills are advantageous (MATLAB, Python, ...)
- Structured and independent work ethic
- Interest in thermodynamics

Are you interested or would you like to learn more? Feel free to contact me. Additional tasks are also possible if interested.

Contact

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