

Lessons learnt from network modelling in a low heat density district heating system

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This paper presents the lessons learnt during the development of a library for the modelling of district heating systems (DH systems), especially focusing on the distribution network. The library was built based on elements from the Modelica Standard Library (Modelica Association, 2012) and the NewThermal library (Lopez, del Hoyo, 2014).

The modelling strategy chosen is described. Furthermore, the requirements established by the DH networks are set out as well as the models created in response to these demands.

Finally, the artificial diffusion phenomenon, present in the simulation of this kind of thermo-fluid systems, is described.

References

- Modelica Association, (2012). A Unified Object-Oriented Language for Physical System Modeling, Modelica®
- Susana López, Itzal del Hoyo. Proposal for standardization of Heat Transfer Modelling in NewThermal Library. *10th International Modelica Conference (Lund)*, 2014.