

Local time stepping scheme for district heating networks

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As an effective and sustainable alternative to conventional heating systems, district heating has a huge potential, especially in urban areas. In order to optimally control the use of resources, a fast and accurate forward simulation is important.

In this talk we want to present a new solver for simulations of district heating networks. The numerical method applies the local time stepping that was introduced in [1] and used for blood flow models in [2] to networks of linear advection equations. Numerical diffusion as well as the computational effort on each edge is reduced significantly. In combination with a high order coupling approach an accurate and very efficient scheme is developed. In several numerical test cases we illustrate the efficiency of the method for simulations of district heating networks.

References

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