

The state variables in steady-state models of DH grids include node-bound variables such as fluid temperature

Figure 1: The state variables in steady-state models of DH grids include node-bound variables such as fluid temperatures  $T_i$  and pressures  $p_i$ . The sign of the edge-bound mass flows  $\dot{m}_{ij}$  depends on the orientation with respect to the edge orientation (indicated by the thick arrow). The localization of the temperatures at the inlet  $T^{start}$  and outlet  $T^{end}$  of the pipe depends on the sign of  $\dot{m}_{ij}$  (for positive mass flows see above the thick arrow, otherwise below).