



State variables in steady-state models of DH grids include node-bound variables such as fluid temperatures and pressures. The sign of the edge-bound mass flows \dot{m}_{ij} depends on the orientation with respect to the edge of the pipe. 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 flow, the inlet is at T^{start} and the outlet is at T^{end}).