

Homework 4: 2D Heat Conduction

Solve and plot the *temperature* field of the given wall-window detail using MATLAB/OCTAVE code from the lecture. Use the finite element discretization provided. Materials are defined by the following properties: $\lambda_{\text{insulation}} = 0.038 \text{ Wm}^{-1}\text{K}^{-1}$, $\lambda_{\text{wall}} = 0.330 \text{ Wm}^{-1}\text{K}^{-1}$, and $\lambda_{\text{window}} = 0.104 \text{ Wm}^{-1}\text{K}^{-1}$. Structure-exterior interface is denoted by blue line and the structure-interior interface by red line. Heat flux equals to 0 W/m^2 in the vertical edges of the most left and most right boundaries of the domain. Once finished, send the result to marek.tyburec@fsv.cvut.cz.

$$T_e = -10^\circ\text{C}, \alpha_e = 25 \text{ Wm}^{-2}\text{K}^{-1}$$

