

Progress Report

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Numerical solution for 1D heat transfer

Forward time center in space (FTCS) method was used with the following formula:

$$T_i^{n+1} = T_i^n + \Delta t (\alpha \frac{\partial^2 T}{\partial x^2}) \quad (1)$$

A time step of 0.001 was utilized. Grid independence tests were run at $t = 3500$ and grid independence was achieved at 158 intervals. The steady state was achieved at almost $t = 3000$.

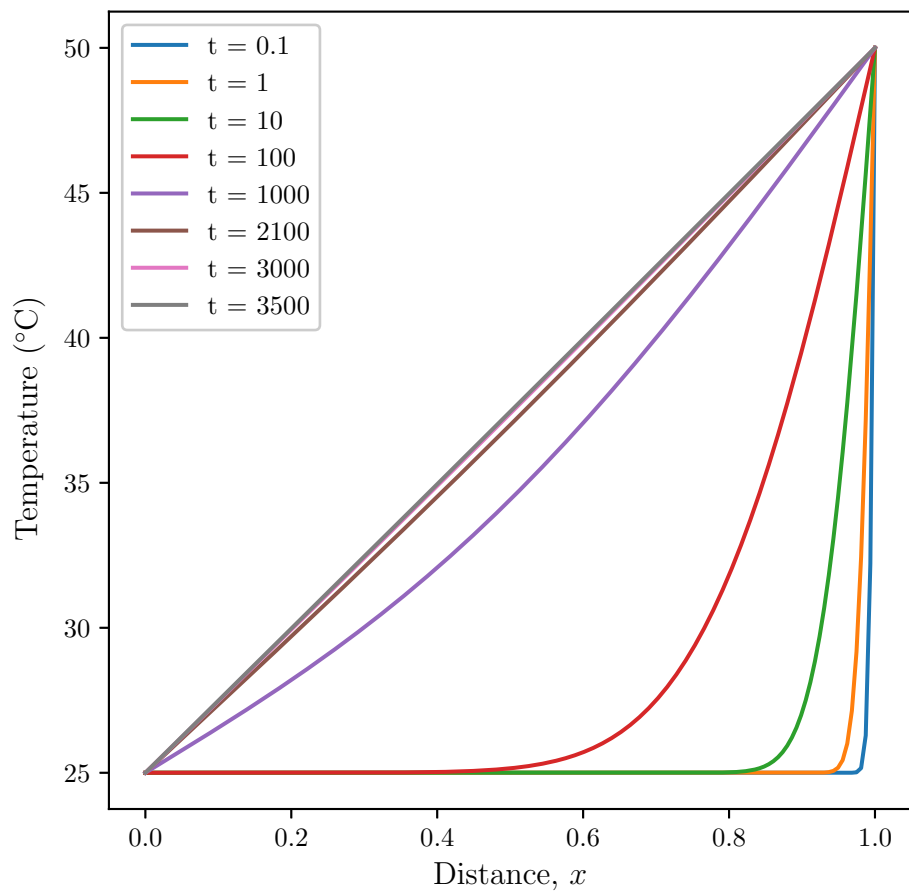


Figure 1: Plot with 190 intervals and time step of 0.001 for various values of time