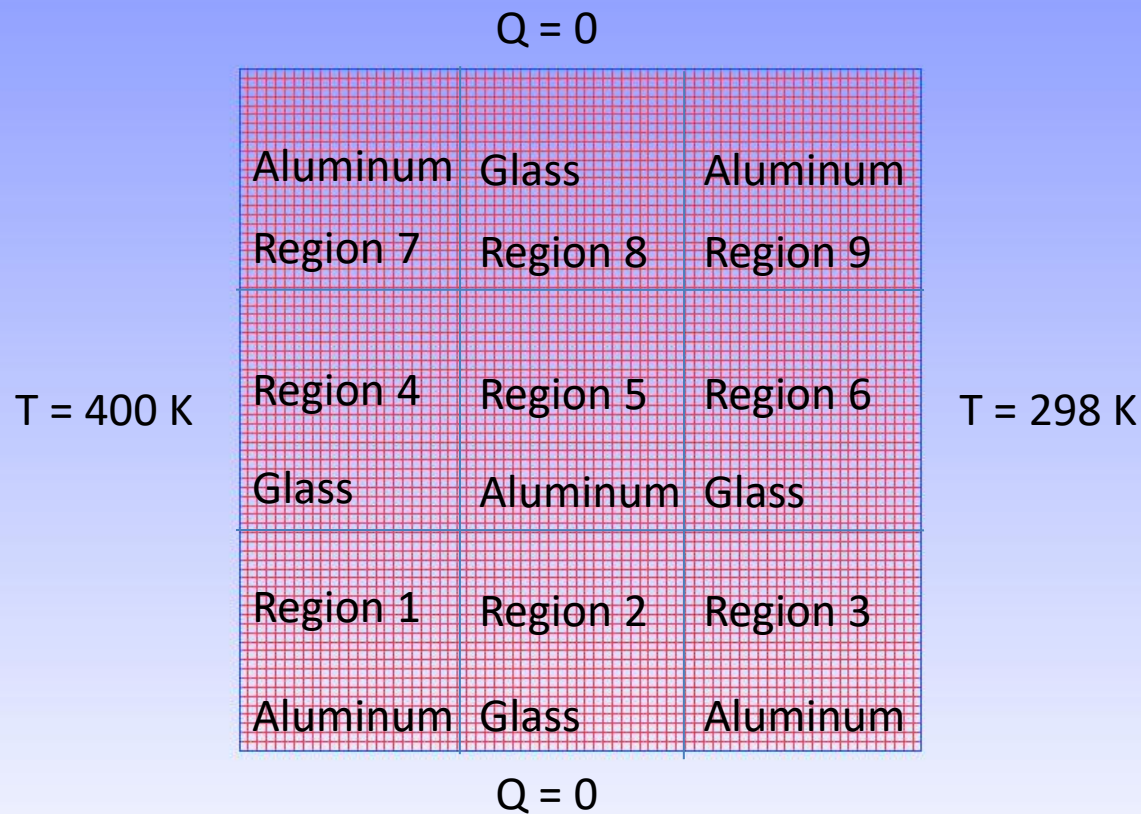


Transient Temperature Calculation



- For the heat or field equation, current GUI can not handle. User needs to go through the command mode.
- On the DOS prompt, go to esdc directory, then type “command_line” , this will setup the environmental variables.
- Then switch to the folder which contains files you want to run.
- Type “flusol”, then all file with .msh and .da files will show up in number.
- Type the number which represents the file you want to run

- First, select the.msh file to create finite element model file which will be named geo.h1 (the extension is based on the input file , under file = h1) under the same folder.
- Then rename the geo.h1 to h1.da
- For the heat equation, user needs to rename the solver = comp to solve = heat. This will tell program to run the heat equation solver.

Transient Temperature Calculation



Creating Finite Element Model to Solve Heat Equation-1

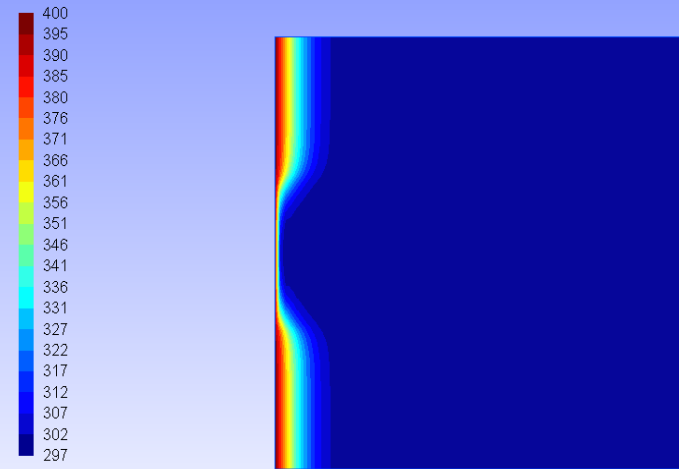
- Region 1 has two boundary conditions:
 - Side 1 has zero flux and side 4 has fixed temperature 400
 - Boundary 1 flux 0.0
 - Boundary 4 temp 400.0
- Region 2 :
 - Boundary 1 flux 0.0
- Region 3 :
 - Boundary 1 flux 0.0
 - Boundary 2 temp 298.0

Creating Finite Element Model to Solve Heat Equation-2

- Region 4 :
 - Boundary 4 temp 400.0
- Region 5 :
 - No need to specified
- Region 6 :
 - Boundary 2 temp 298.0

Creating Finite Element Model to Solve Heat Equation-3

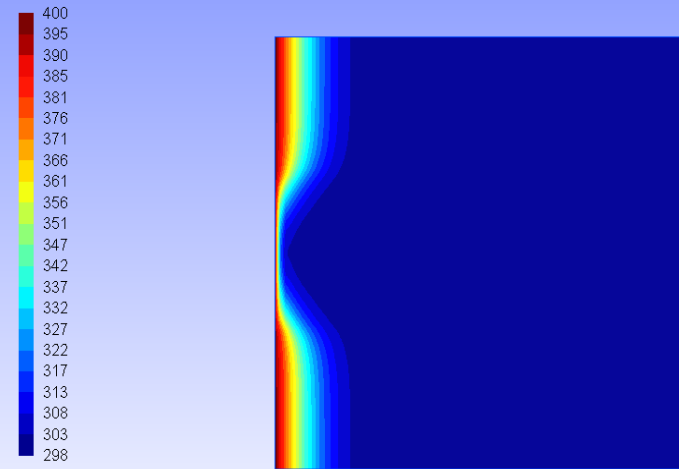
- Region 7 :
 - Boundary 4 temp 400.0
 - Boundary 3 flux 0.0
- Region 8 :
 - Boundary 3 flux 0.0
- Region 9 :
 - Boundary 2 temp 298.0
 - Boundary 3 flux 0.0



Temperature distribution after 1 minute

T = 1 minute

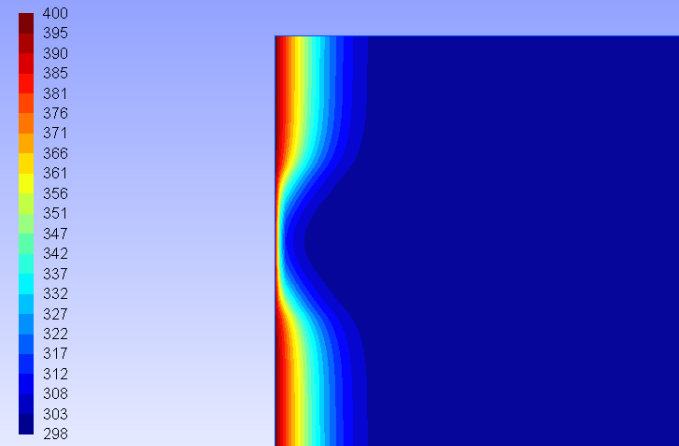
Y
|
Z_x



Temperature distribution after 2 minutes

T = 2 minute

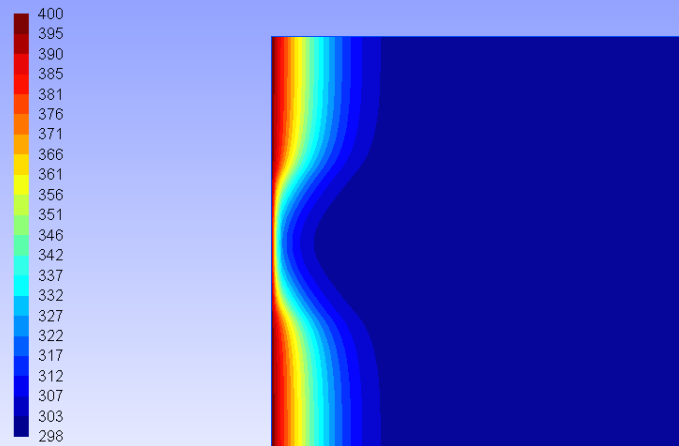
Y
|
Z_x



Temperature distribution after 3 minutes

T = 3 minute

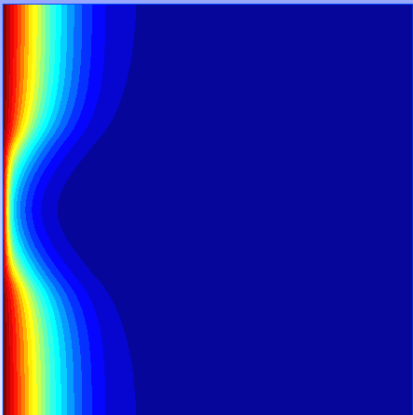
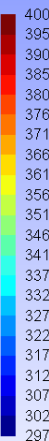
Y
|
Z_x



Temperature distribution after 4 minutes

T = 4 minute

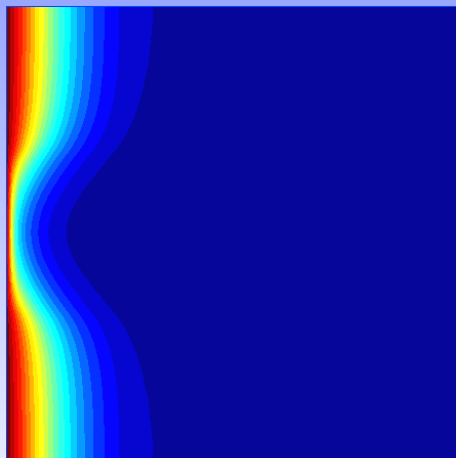
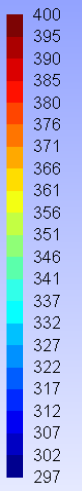
Y
|
Z_x



Temperature plot



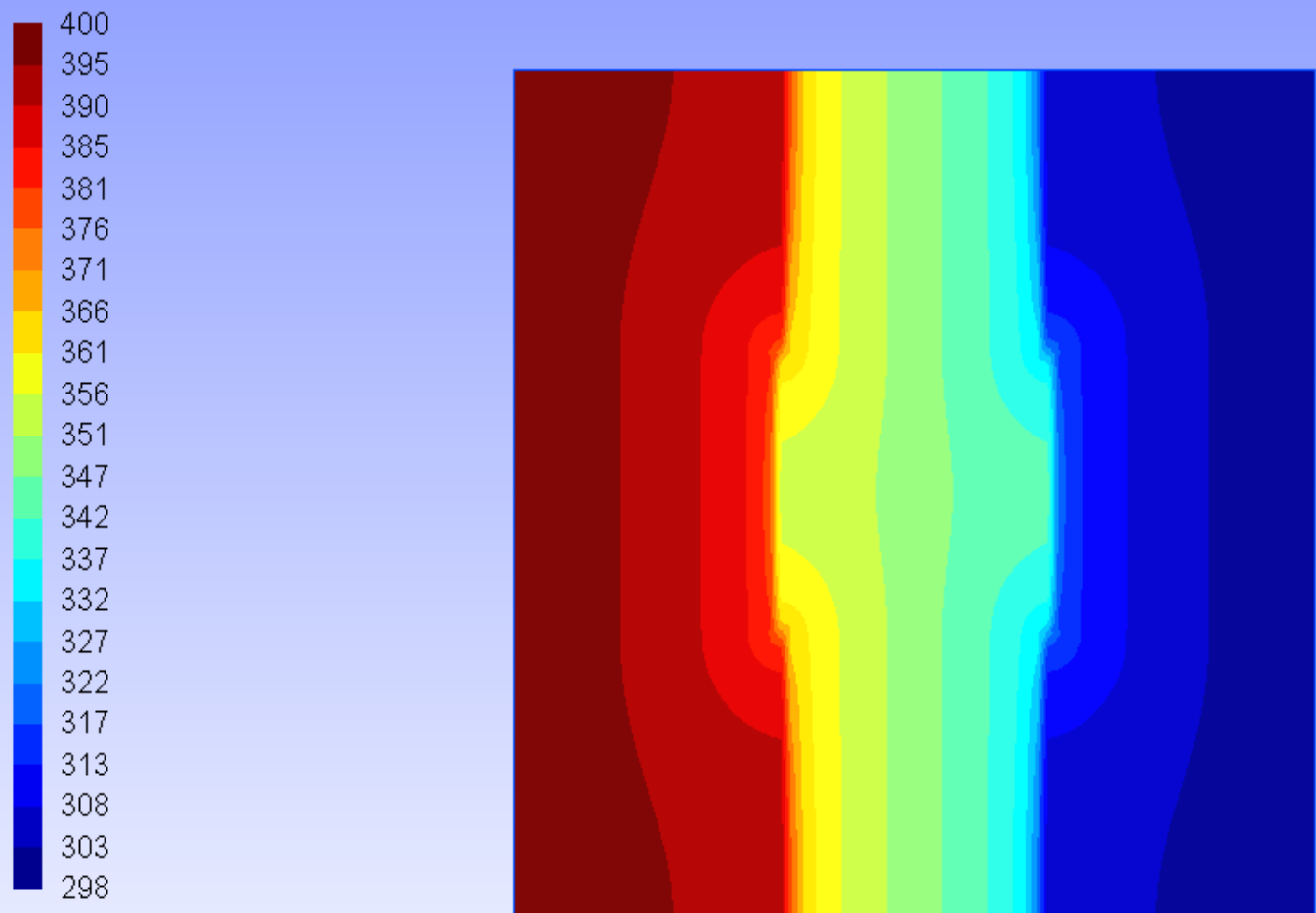
T = 5 minutes



Temperature plot

T = 6 minutes





Steady state temperature plot

Steady state temperature distribution

