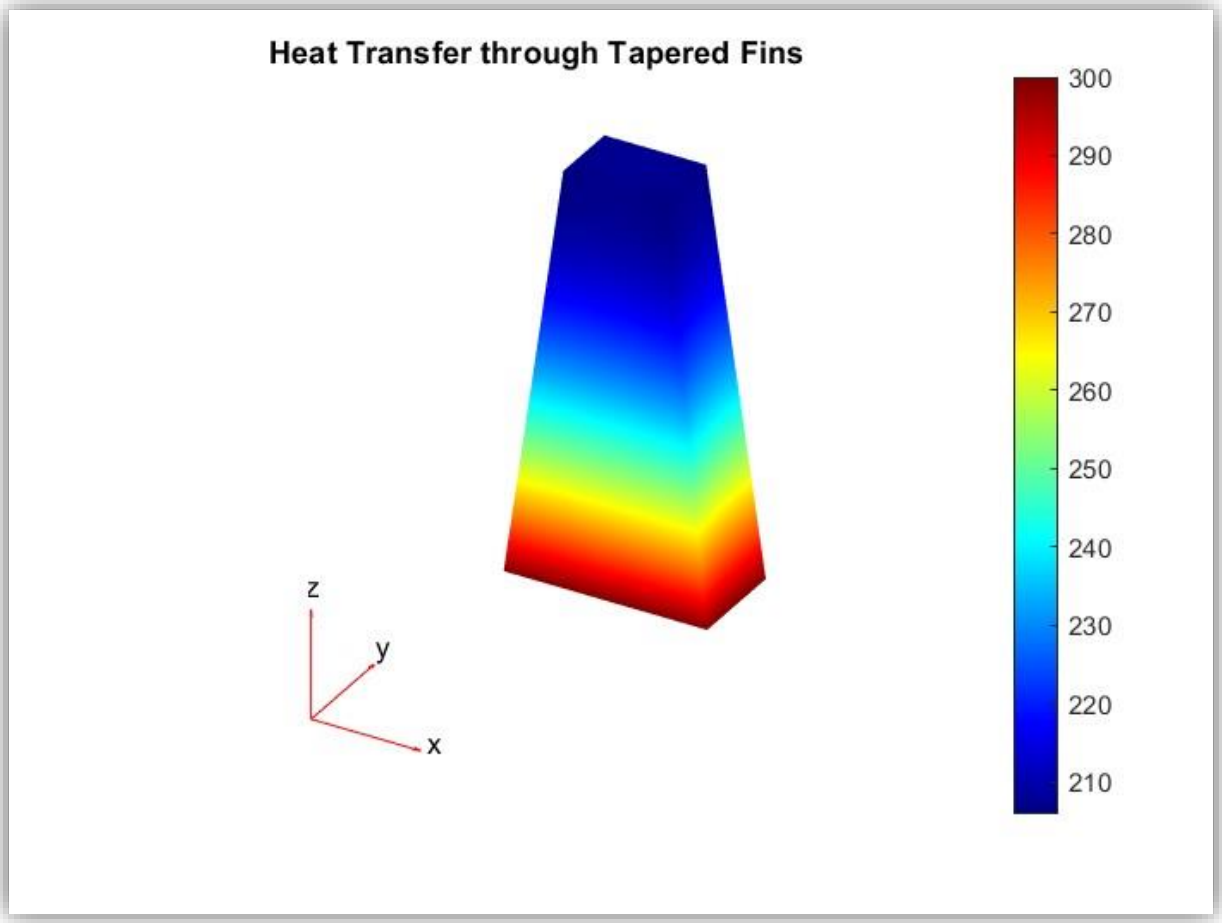
Heat Transfer through Tapered Fins
300
290
280
270
260
250
240
230
220
210
z
y
x

```
clear all;
clc;
close all;
% Assuming the model to be steady state
tmodel = createpde('thermal', 'steadystate');
% Importing CAD file
importGeometry(tmodel, 'Tapered Fin.stl');
% Naming the faces of the CAD model
pdegplot(tmodel, 'FaceLabels', 'on', 'FaceAlpha', 0.5);
% Generating Mesh of the model
msh = generateMesh(tmodel, 'Hmax', 1);
%Material Properties
kappa = 20000; % in W/m/K
% Defining thermalconductivity
thermalProperties(tmodel, 'ThermalConductivity', kappa);
% Defining Boundary Condition
thermalBC(tmodel, 'face', 1, 'Temperature', 300);
thermalBC(tmodel, 'face', 6, 'ConvectionCoefficient', 50, 'AmbientTemperature', 25);
thermalBC(tmodel, 'face', 3, 'ConvectionCoefficient', 30, 'AmbientTemperature', 25);
thermalBC(tmodel, 'face', [4 5], 'ConvectionCoefficient', 40, 'AmbientTemperature', 25);
% Solving the Model for given condition
Rt=solve(tmodel);
% Ploting the model with different countour
pdeplot3D(tmodel, 'ColorMapData', Rt.Temperature)
xlabel('X-Axis')
xlabel('Y-Axis')
xlabel('Z-Axis')
title('Heat Transfer through Tapered Fins')
```