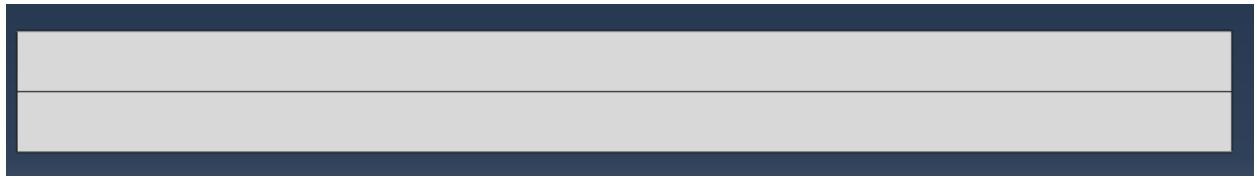Project 5: ABAQUS Thermo-mechanical Analysis: Bimetallic strip

Problem Statement: Model deformation due to thermal expansion in a bimetallic strip (Brass and iron).

Geometry:

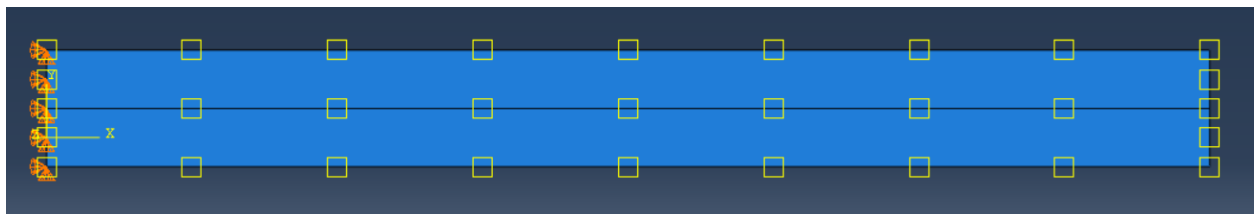Material Properties:

Iron:

Young's Modulus	Poisson's Ratio
200000	0.3

Expansion Coeff
12

Brass:

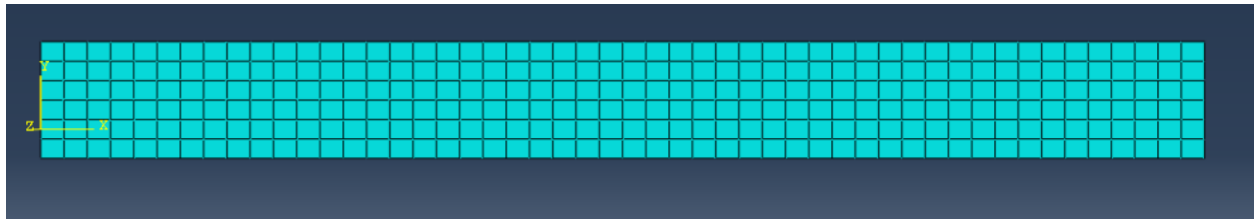| Young's Modulus	Poisson's Ratio
100000	0.33

Expansion Coeff
19

Loading and boundary conditions:

1) Temperature ramped from 300K to 600K.
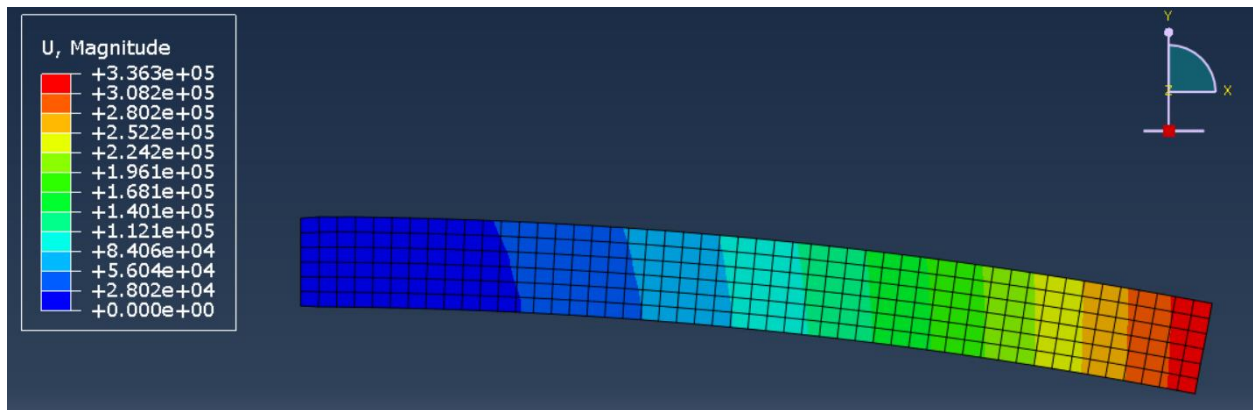2) Left edge is fixed.

Mesh: (coarse due to limitation of 1000 nodes in ABAQUS educational version).

Results:

Deformation:

Mises stress: