Description :

It is the continuation of previous problem but the error of the solution is compared for different thicknesses.

Material and Geometric data :

Table 1: Input Data

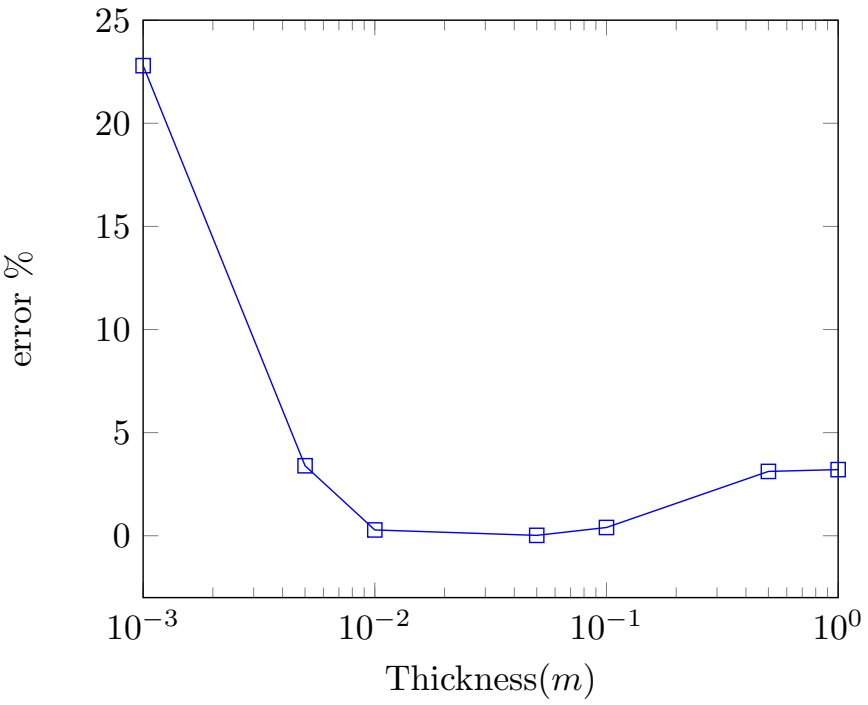
Material Property		Geometric Data		Loading Data	
Young's Modulus (E)	1E11 pa	Length (a)	1 m	N_2	$\frac{T}{t}$ N/m^2
Poission's Ratio (ν)	0.3	Breath (b)	40 m	Tension T	3E4 N/m
Density (ρ)	7810 Kg/m^3	Thickness(t)	{0.001,0.005,..,0.5,1} m		

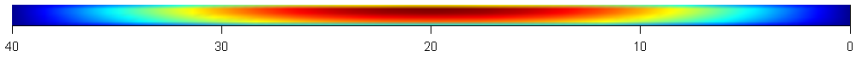
Mesh and boundary condition :

Table 2: FEM and Boundary condition data

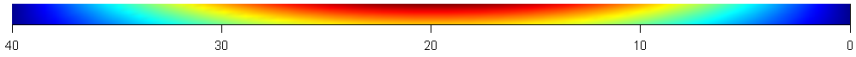
Direchlet Boundary				Loading Conditions	
Geo -Entity	w	θ_x	θ_y	Geo -Entity	N_2
line {1,3}	Fixed	Free	Free	line {1,3}	$\frac{T}{t}$ N/m^2

Result and error analysis :

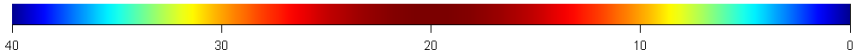




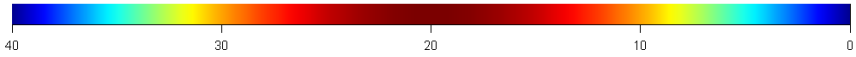
(a) Mode Shape 1 for thickness = 0.001 (m)



(b) Mode Shape 1 for thickness = 0.01 (m)



(c) Mode Shape 1 for thickness = 0.1 (m)



(d) Mode Shape 1 for thickness = 1 (m)

Figure 1: Natural Modes of a rectangular strip