

PRACTICE 2 Exercise 3
COMPUTATIONAL STRUCTURAL MECHANICS AND DYNAMICS
Marcos Boniquet Aparicio

It's chosen a problem type: *3D_SOLIDS*

Material, without self weight condition, and constraints are settled.

$$E=3*10^{10} \text{ Pa}$$

$$\nu=0,2$$

$$P=40000N$$

Mesh Structured Hexahedral:

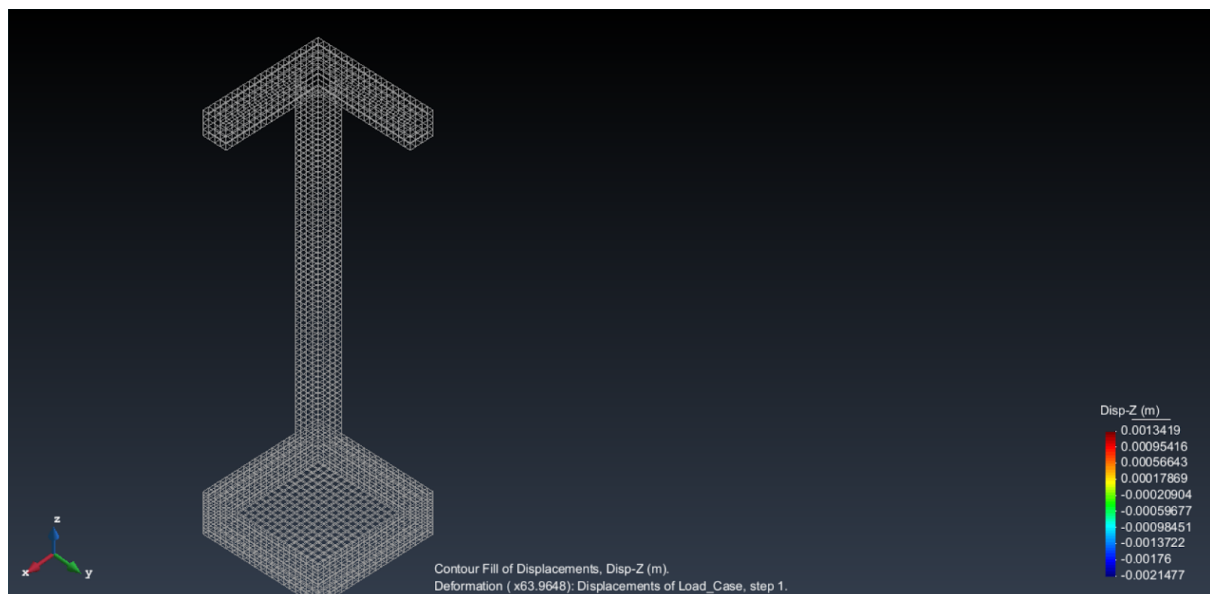
Num. of Hexahedra elements=6832

Num. of nodes=8724

Elastic constraints are settled at the base

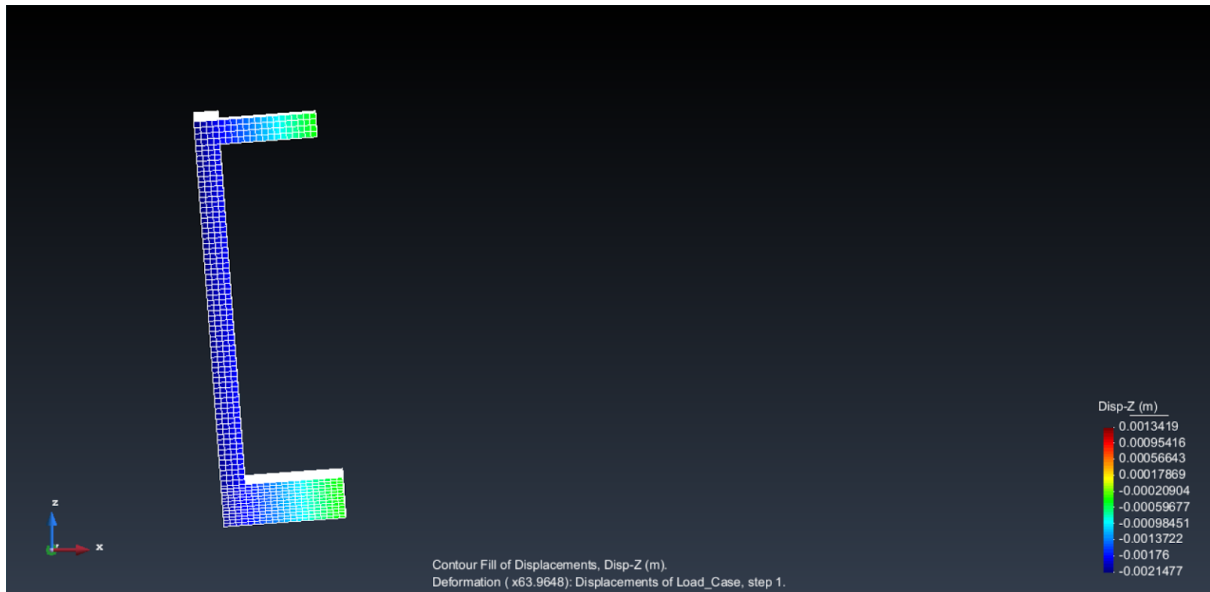
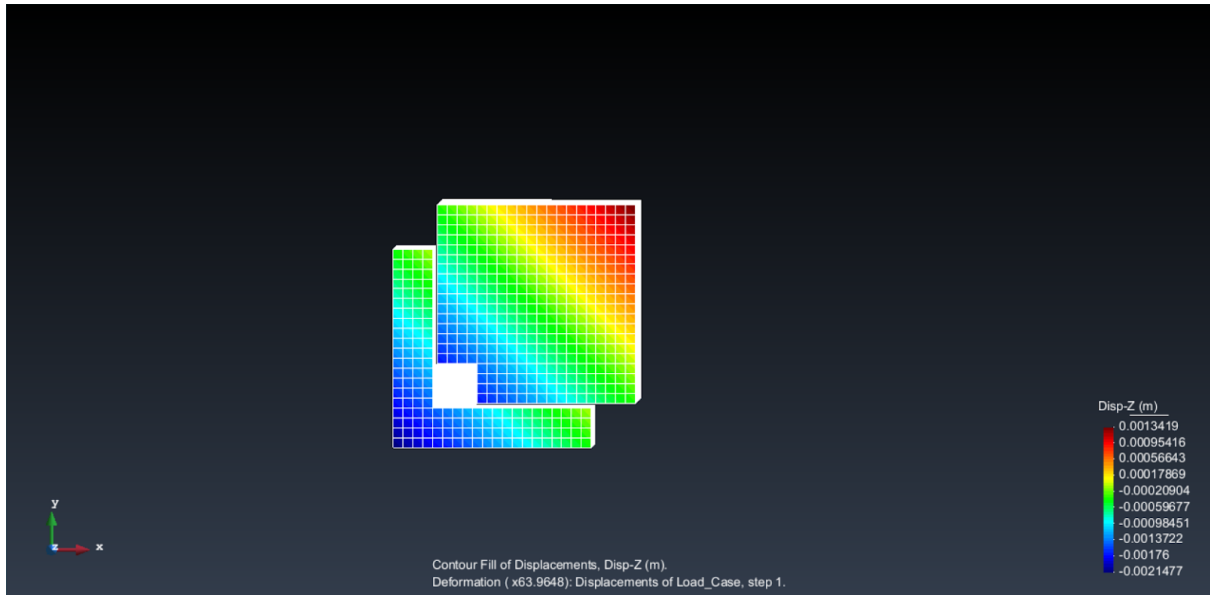
$$k_x=k_y=k_z=5*10^7 \text{ N/m}^3$$

And load and material applied.

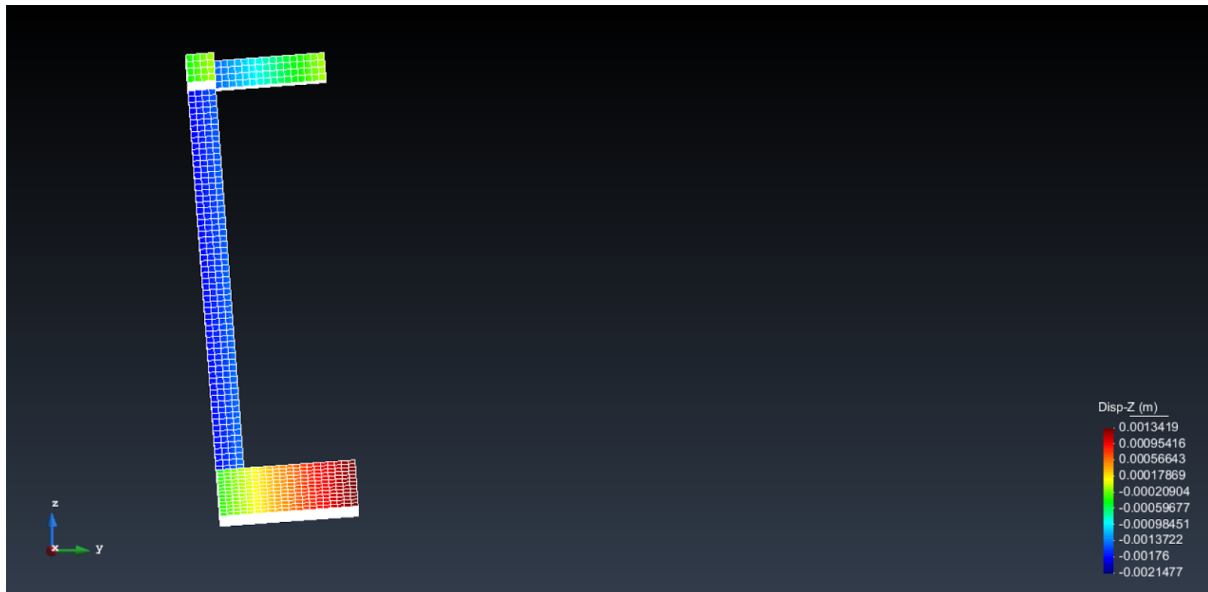


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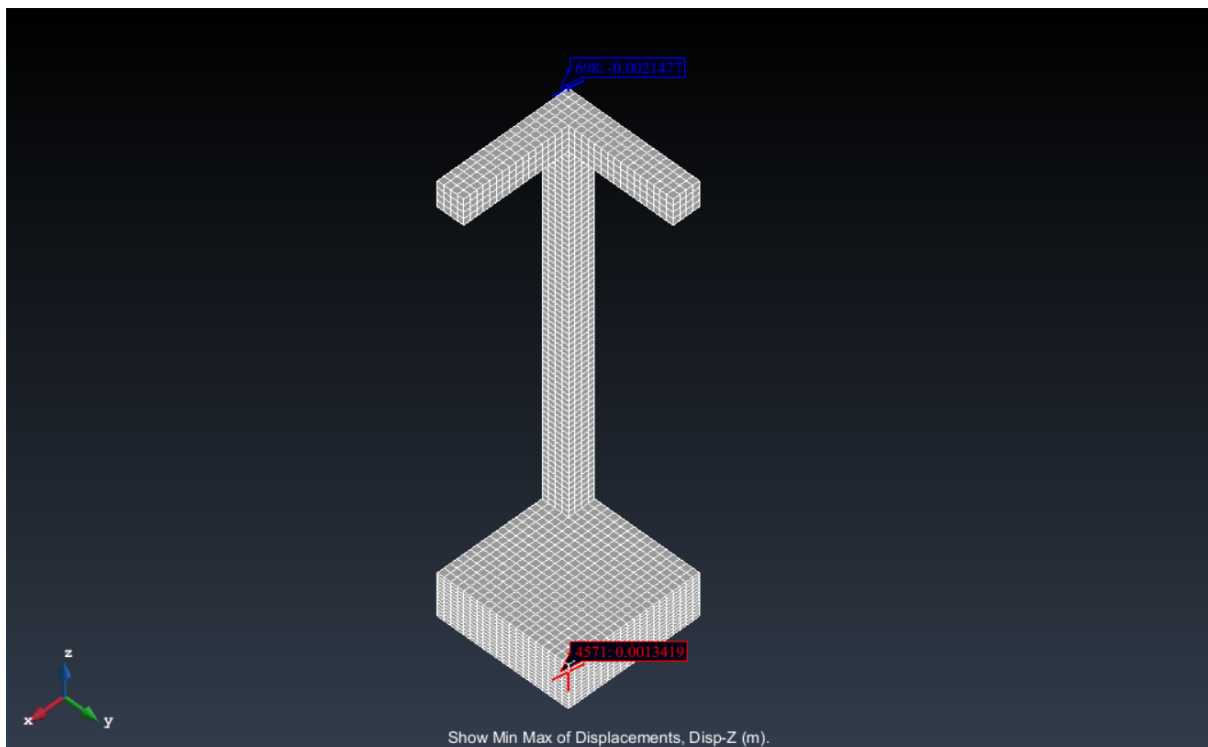
After calculation, displacements are measured:



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As expected, due to the ballast coefficient the slab has a positive maximum z-displacement at the opposite side of the column ($1,3419\text{ mm}$), while the maximum negative z-displacement appears at the top of the column ($2,1477\text{ mm}$), at the corner.



Notice that the displacement in x and y is symmetric within the diagonal.