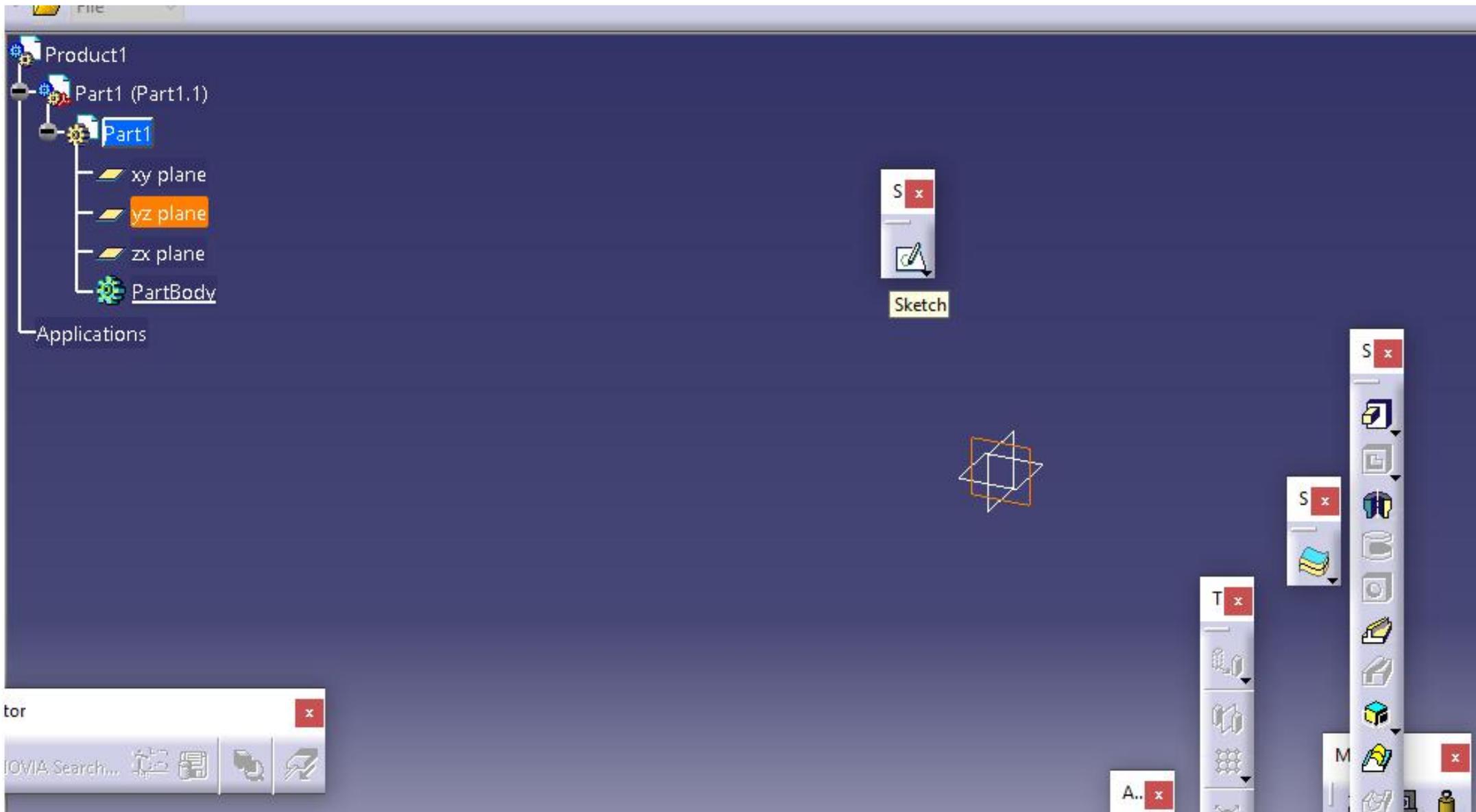
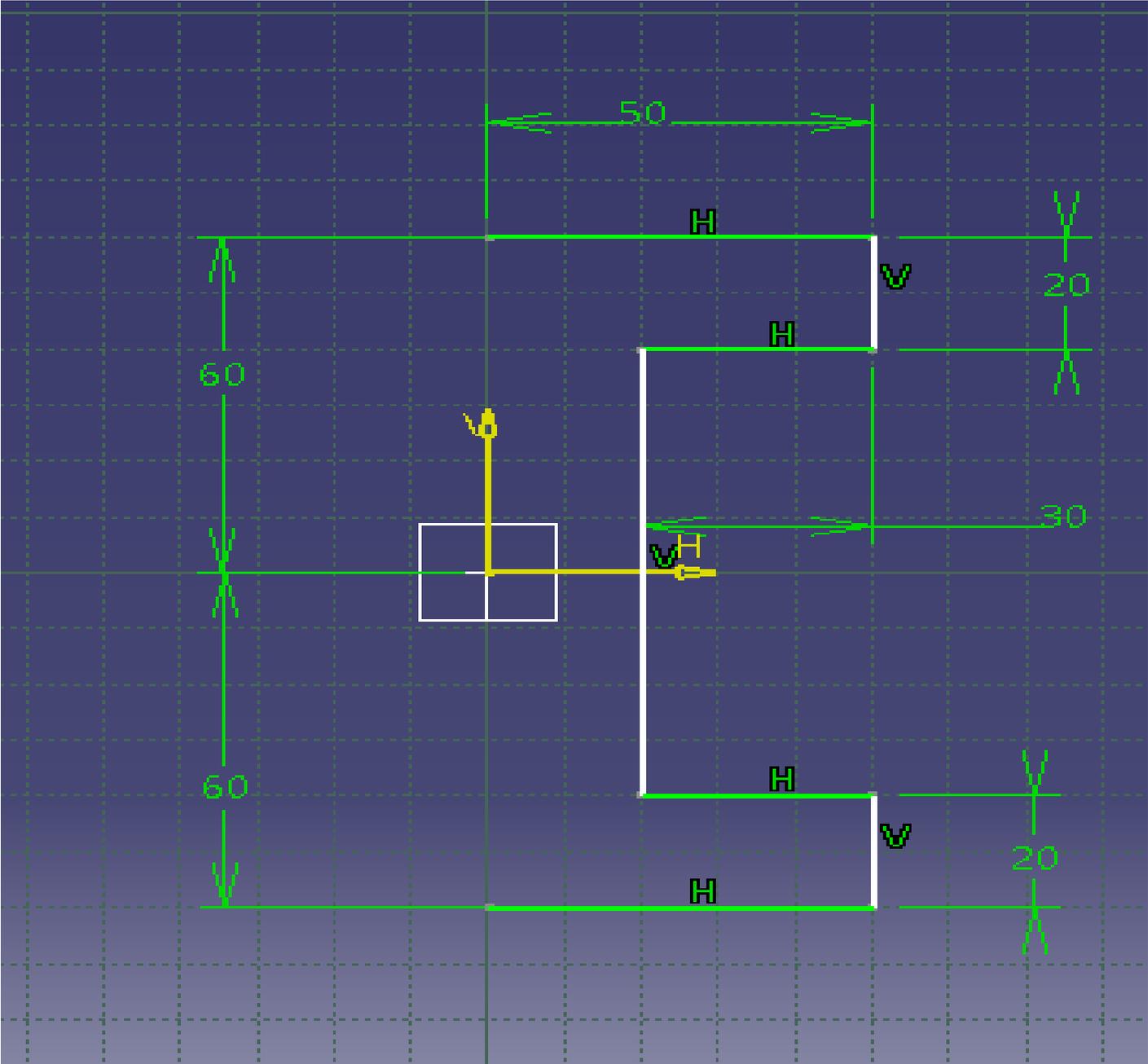


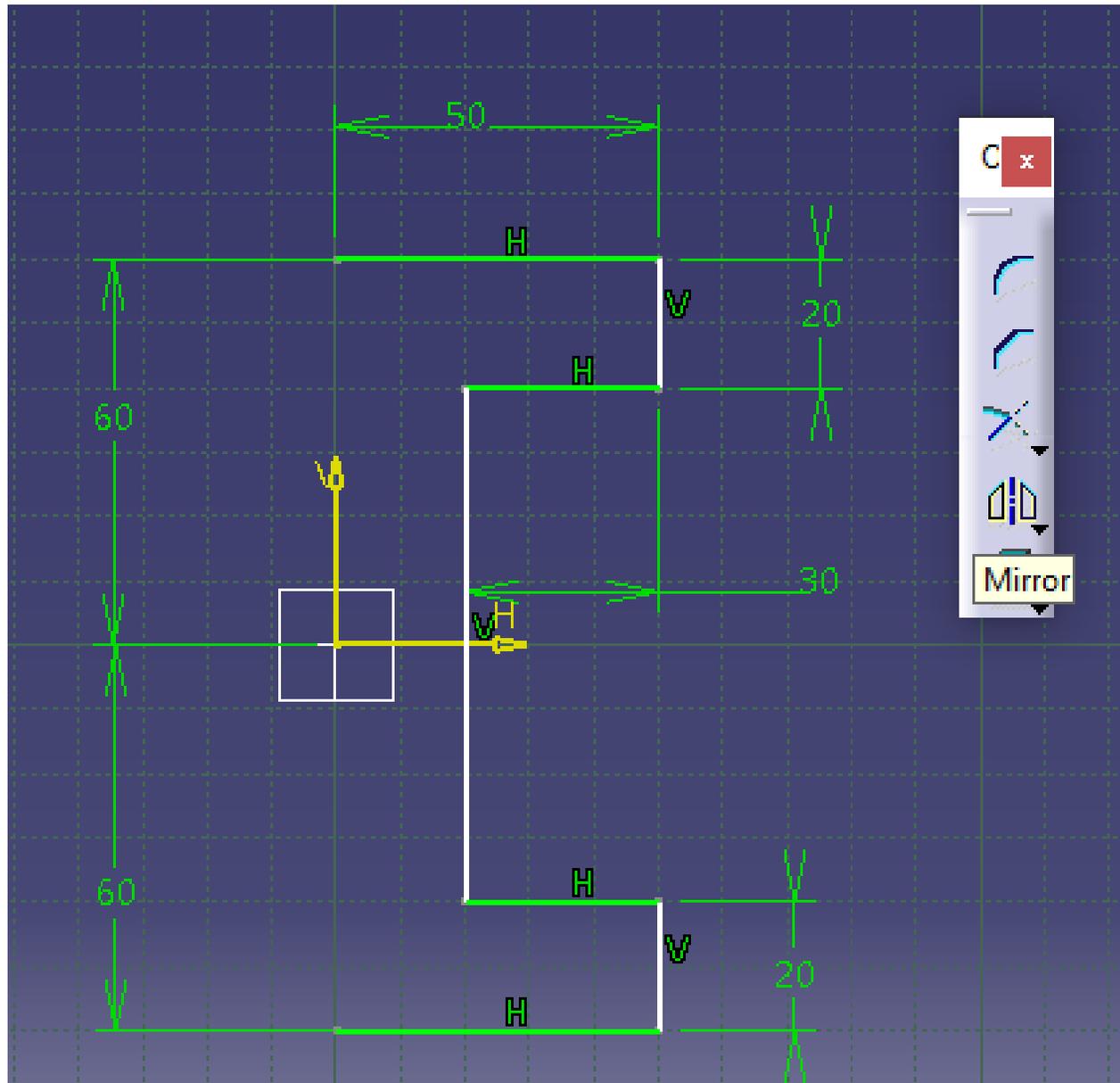
# المحاضرة الحادية عشرة

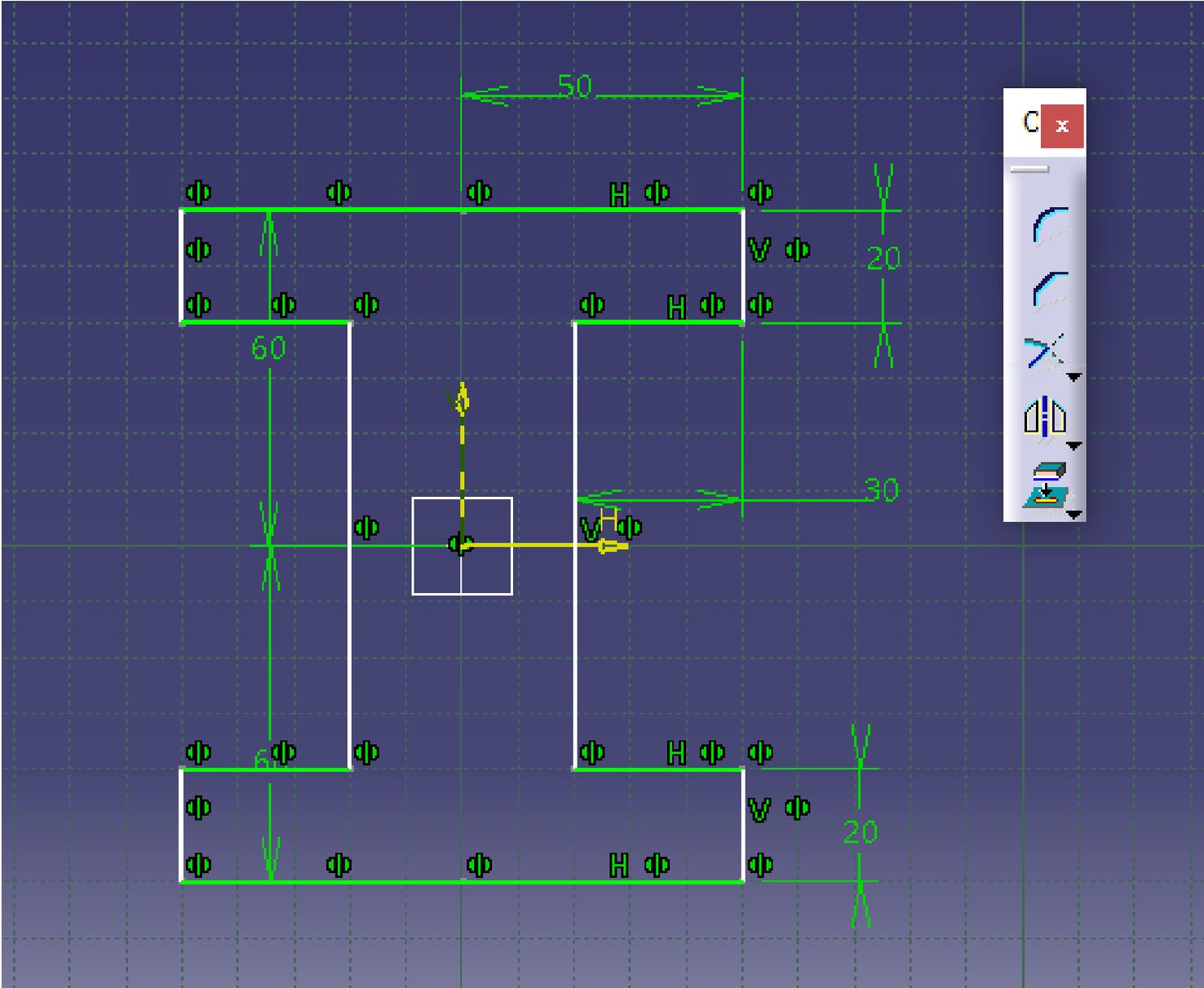
## التصميم و التصنيع بمساعدة الحاسب

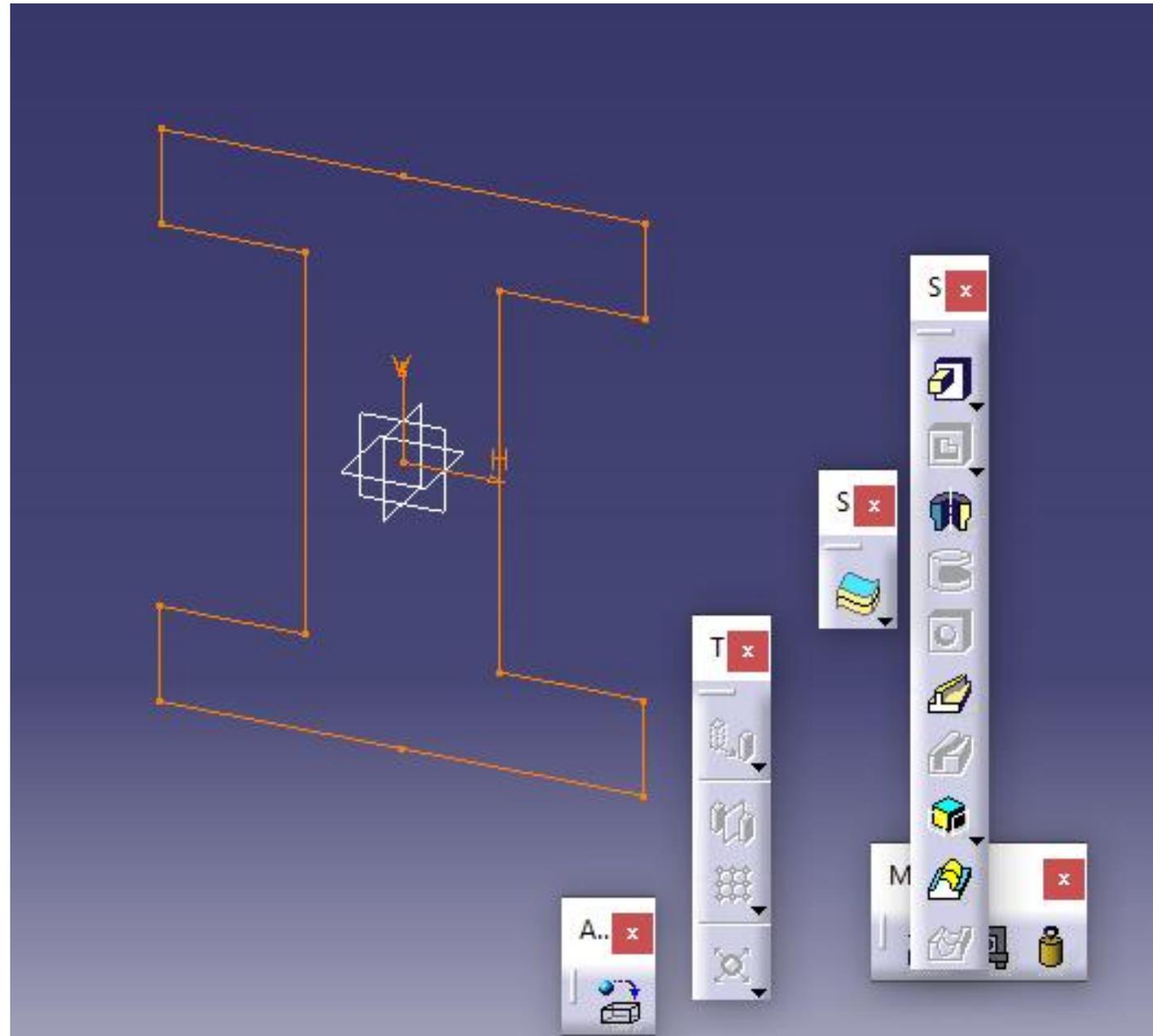


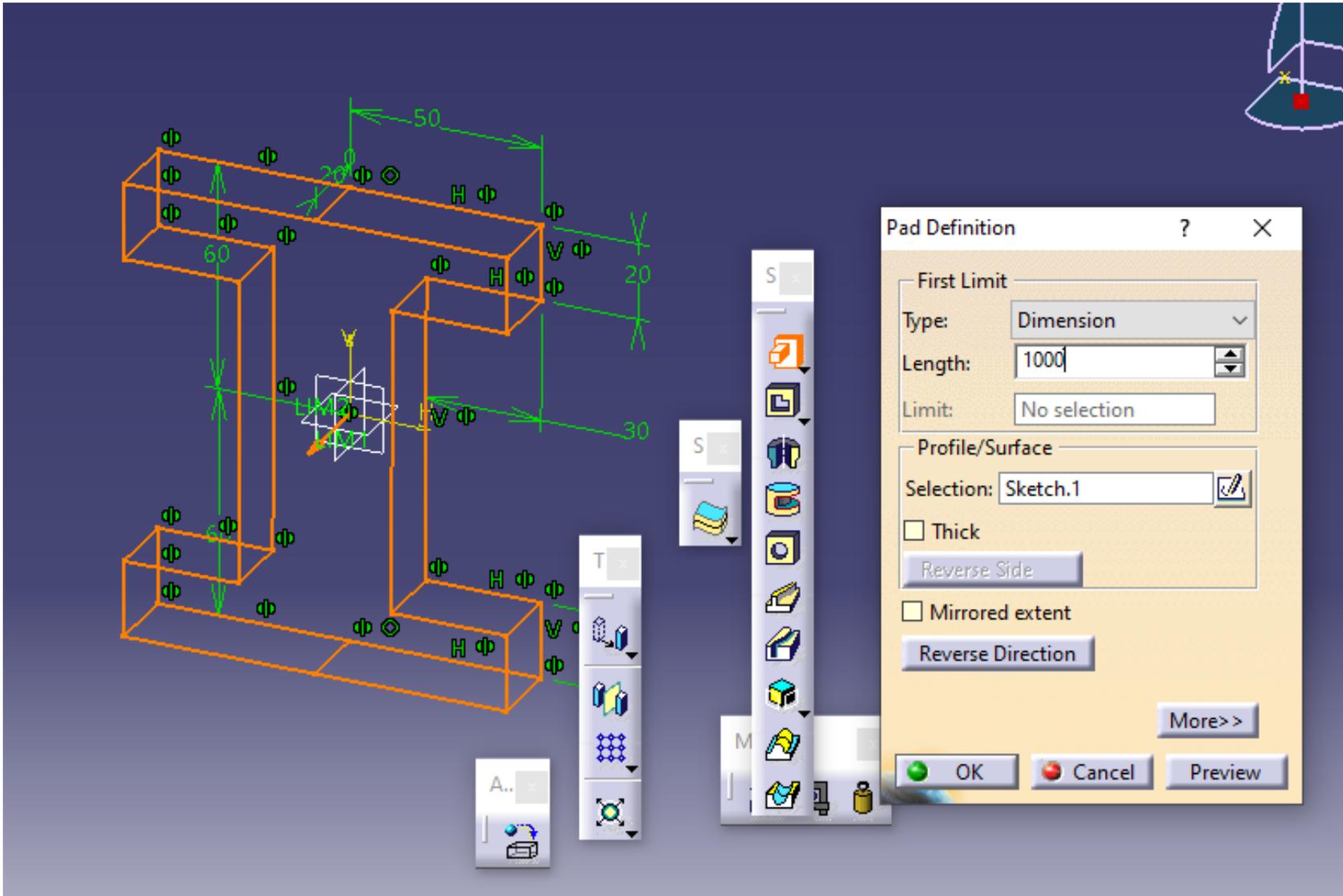


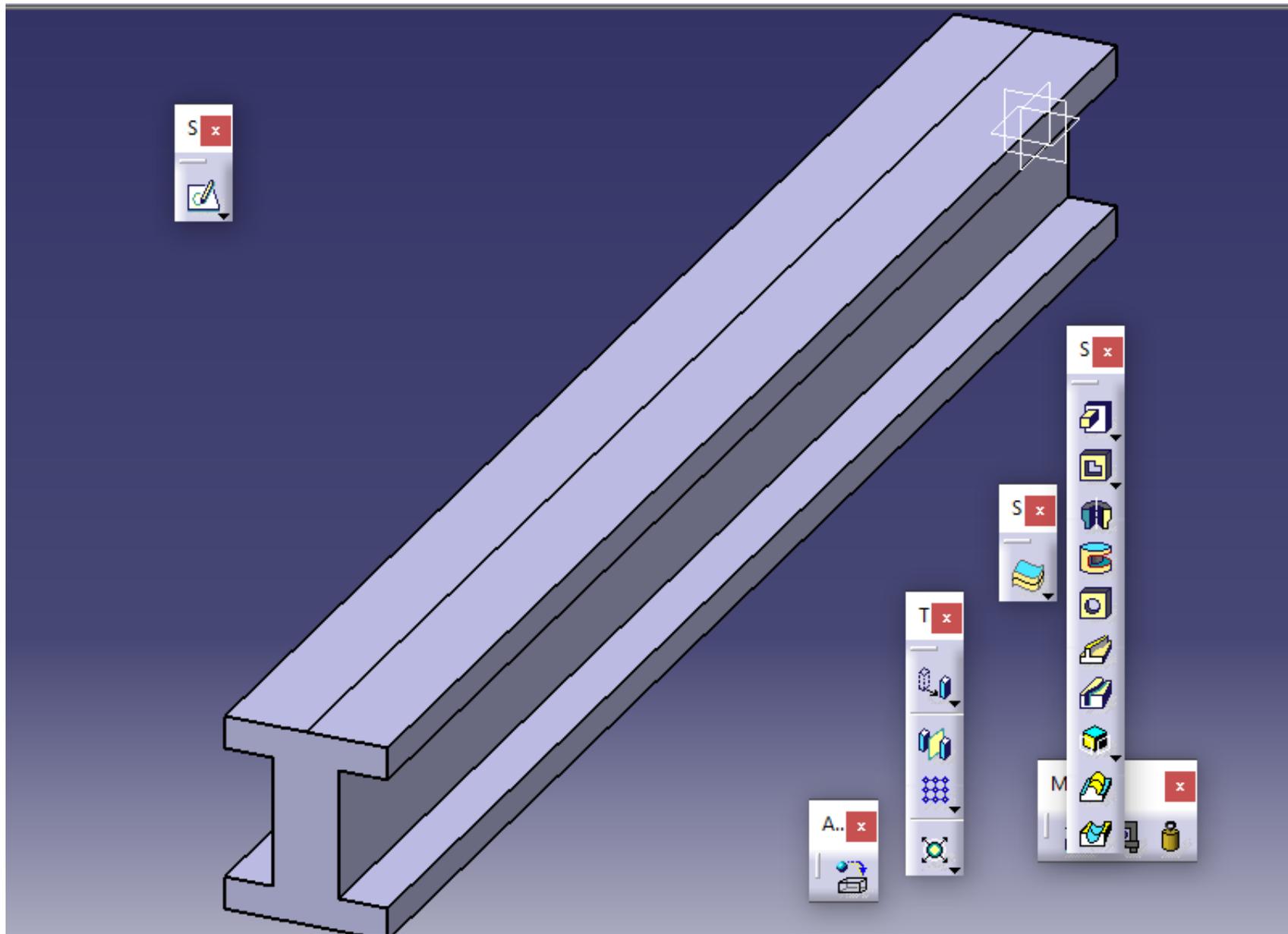


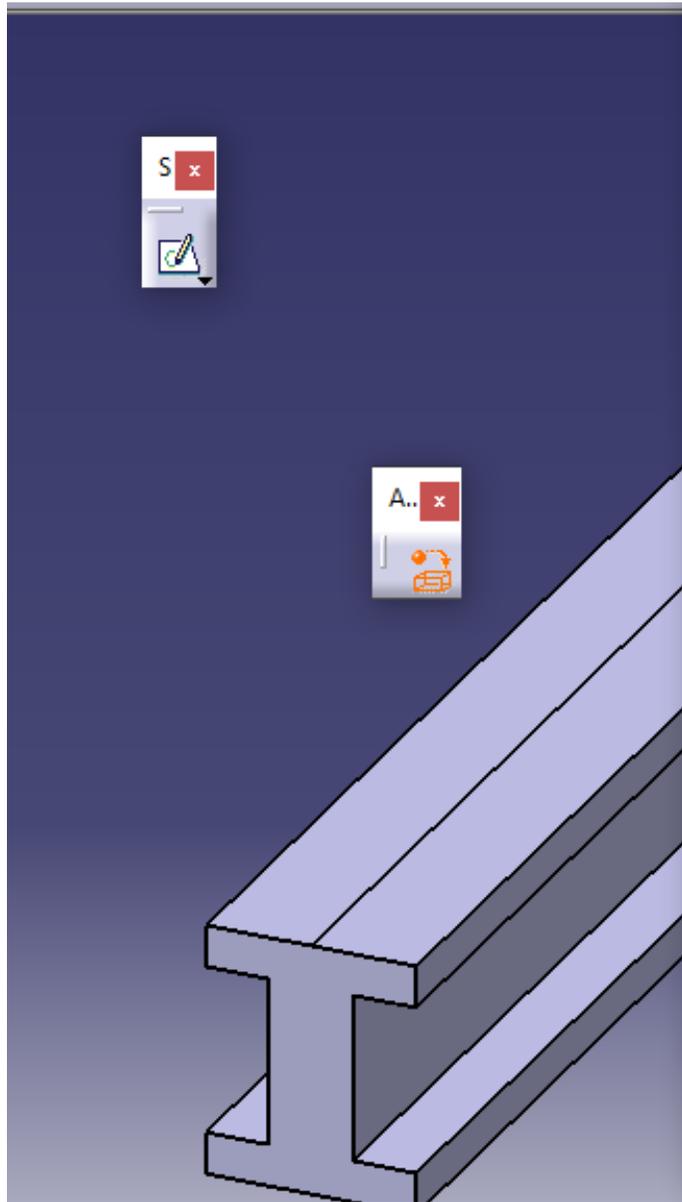












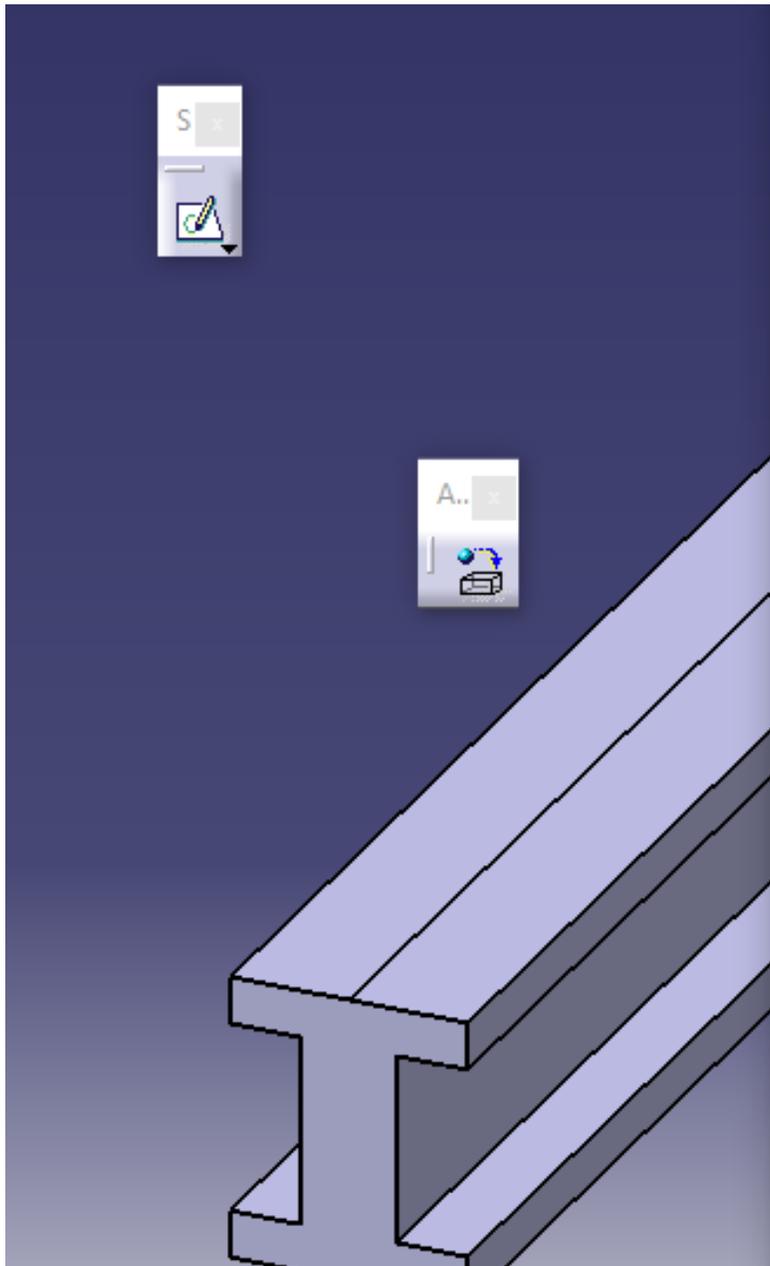
Default Material Catalog

Construction | Fabrics | Metal | Other | Painting | Shape Review | Stone | Wood

				
Aluminium	Brass	Bronze	Brushed metal 1	Brushed metal 2
				
Chroma	Copper	Eroded metal 1	Eroded metal 2	Gold
				
Iron	Lead	Magnesium	Nickel	Silver
				

Link to file

OK Apply Material Close



Default Material Catalog

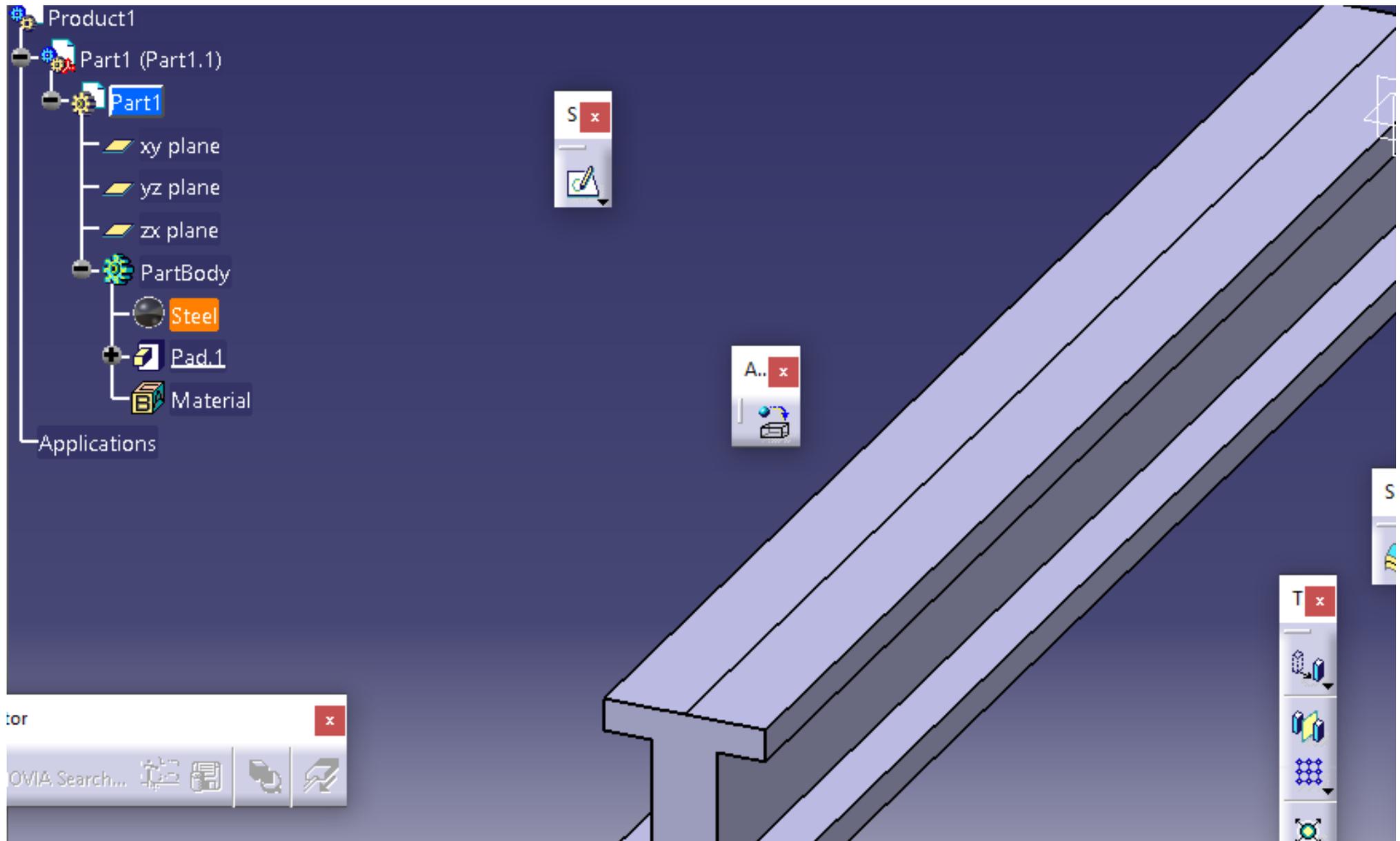
Construction | Fabrics | Metal | Other | Painting | Shape Review | Sto

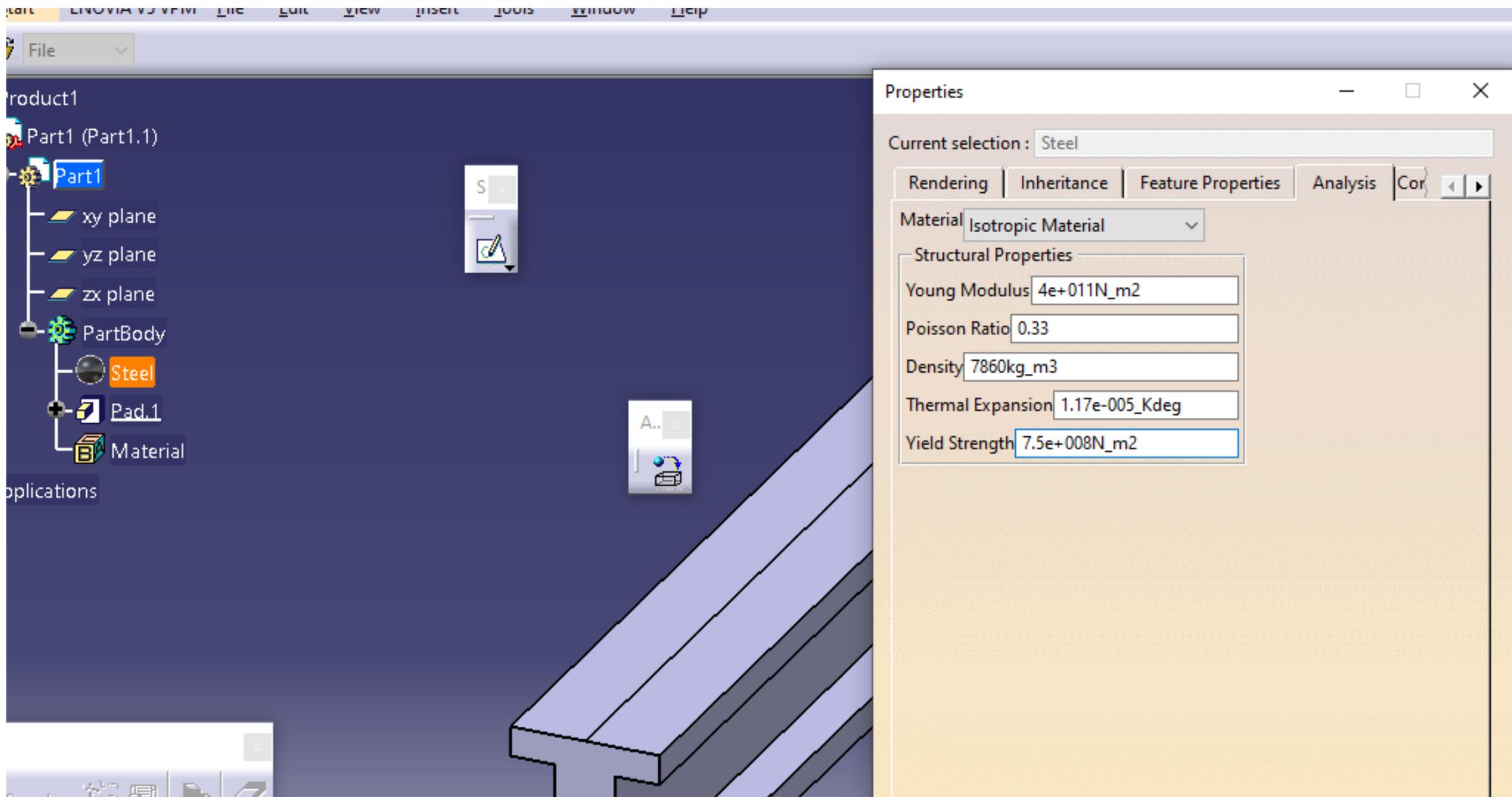
 Aluminium	 Brass	 Bronze	 Bri
 Chroma	 Copper	 Eroded metal 1	 Er
 Iron	 Lead	 Magnesium	
 Steel	 Titanium	 Tungsten	

<

Link to file

OK





Properties

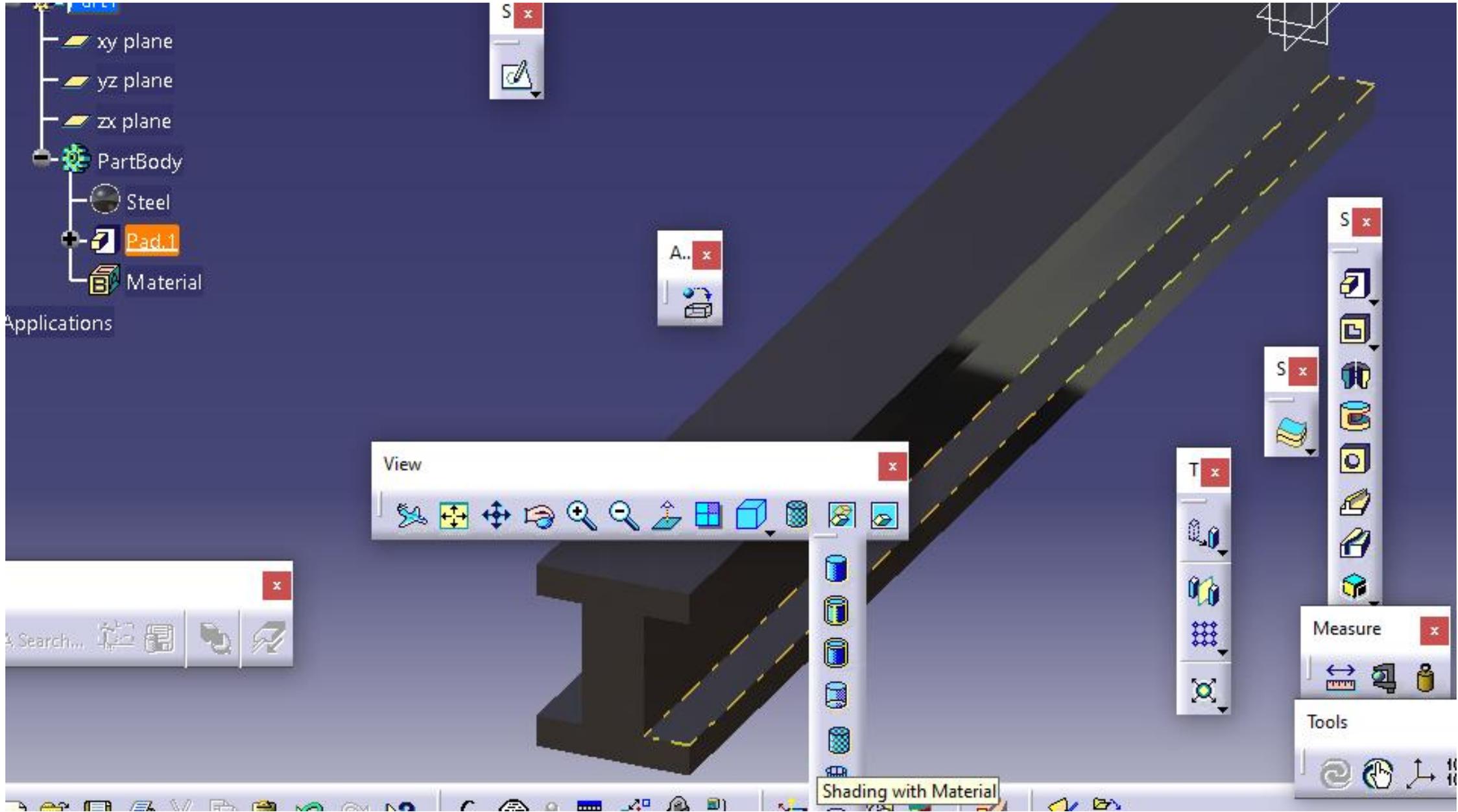
Current selection : Steel

- Rendering
- Inheritance
- Feature Properties
- Analysis
- Cor

Material Isotropic Material

Structural Properties

- Young Modulus 4e+011N\_m2
- Poisson Ratio 0.33
- Density 7860kg\_m3
- Thermal Expansion 1.17e-005\_Kdeg
- Yield Strength 7.5e+008N\_m2

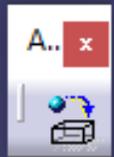
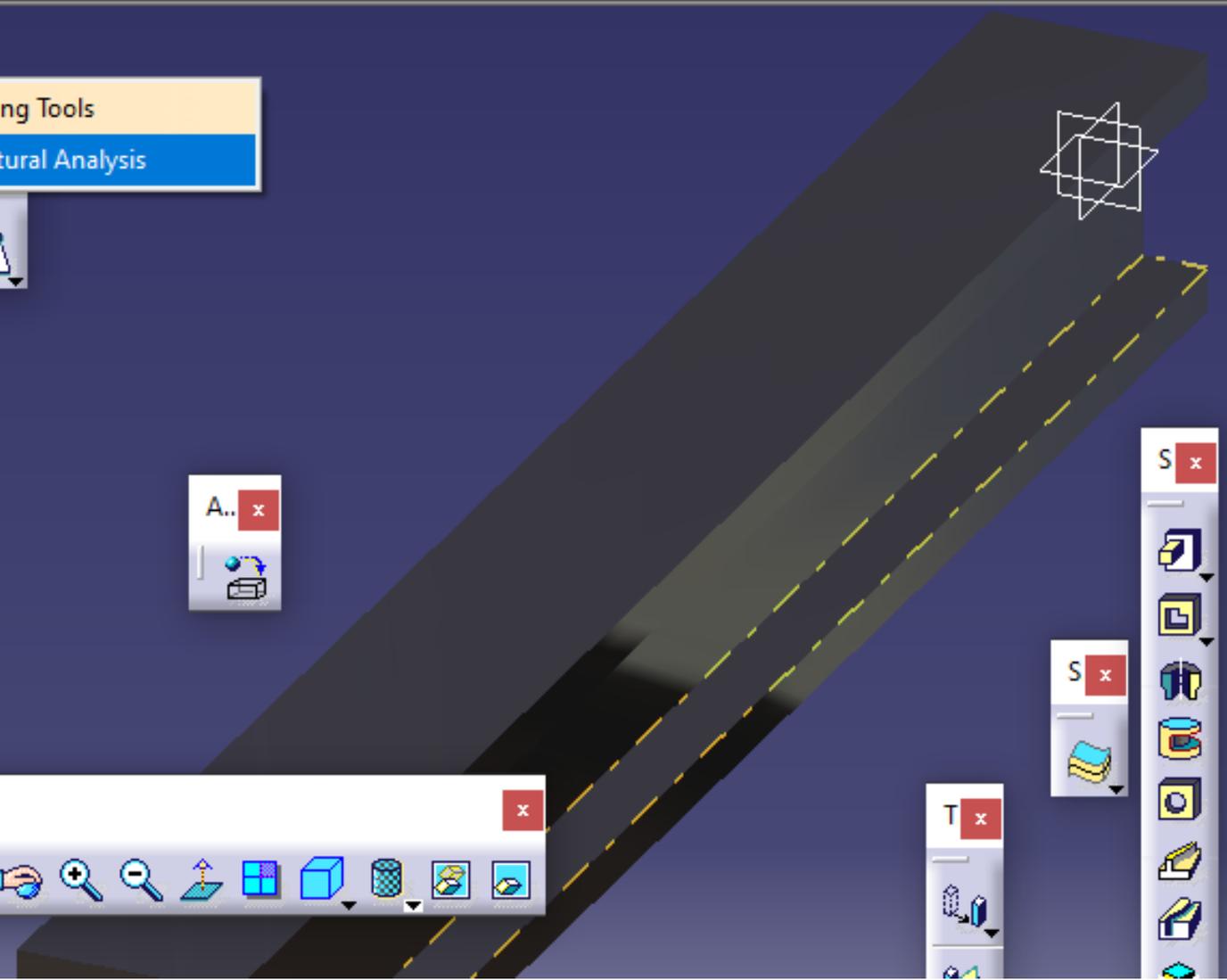


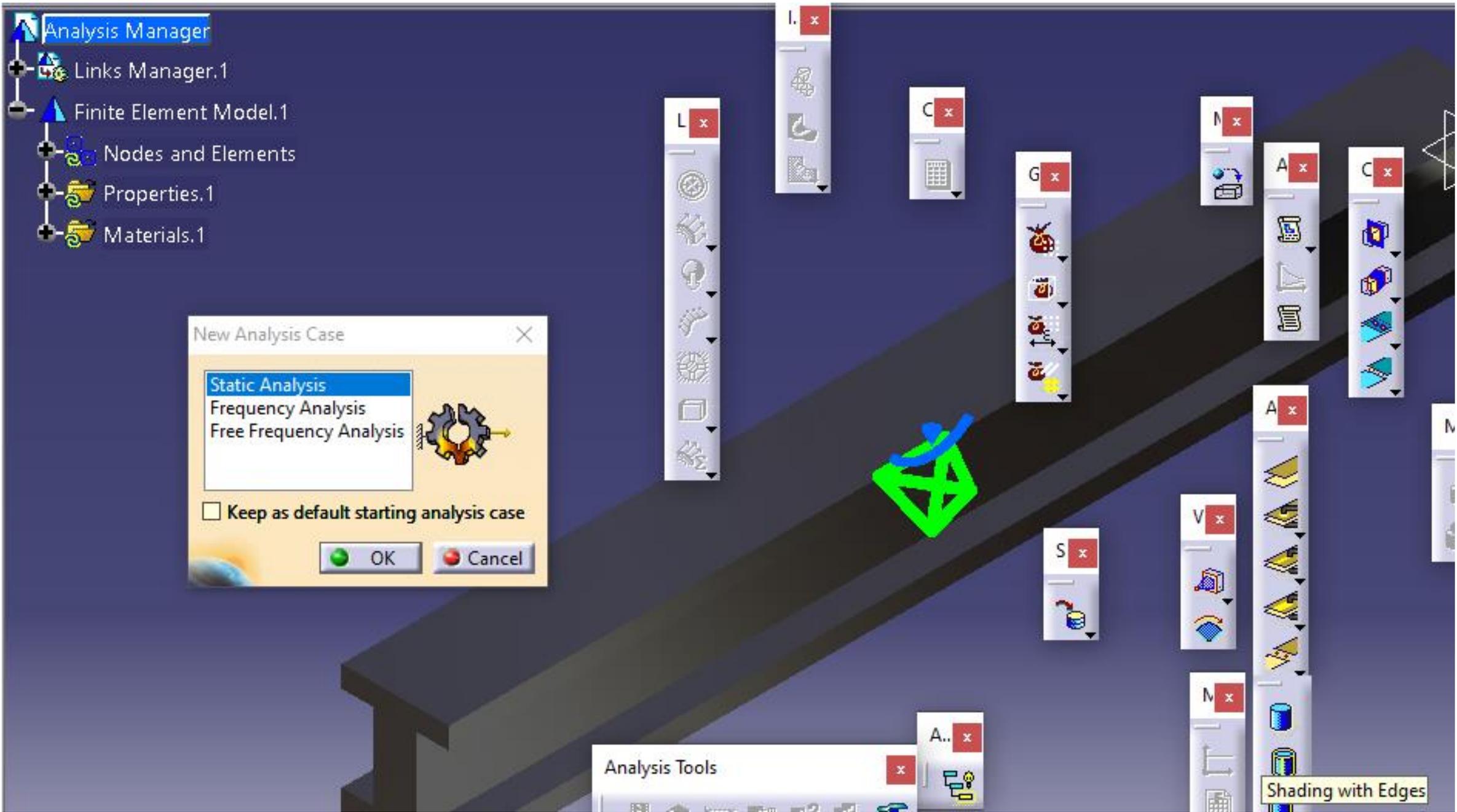
- Infrastructure
- Mechanical Design
- Shape
- Analysis & Simulation**
- AEC Plant
- Machining
- Digital Mockup
- Equipment & Systems
- Digital Process for Manufacturing
- Machining Simulation
- Ergonomics Design & Analysis
- Knowledgware
- ENOVIA V5 VPM

- Advanced Meshing Tools
- Generative Structural Analysis**

- 1 Product1
- 1 Part2.CATPart
- 2 part2.CATPart
- 3 second\_question.CATPart
- Exit

View





Analysis Manager

Links Manager.1

Finite Element Model.1

Nodes and Elements

Properties.1

Materials.1

New Analysis Case

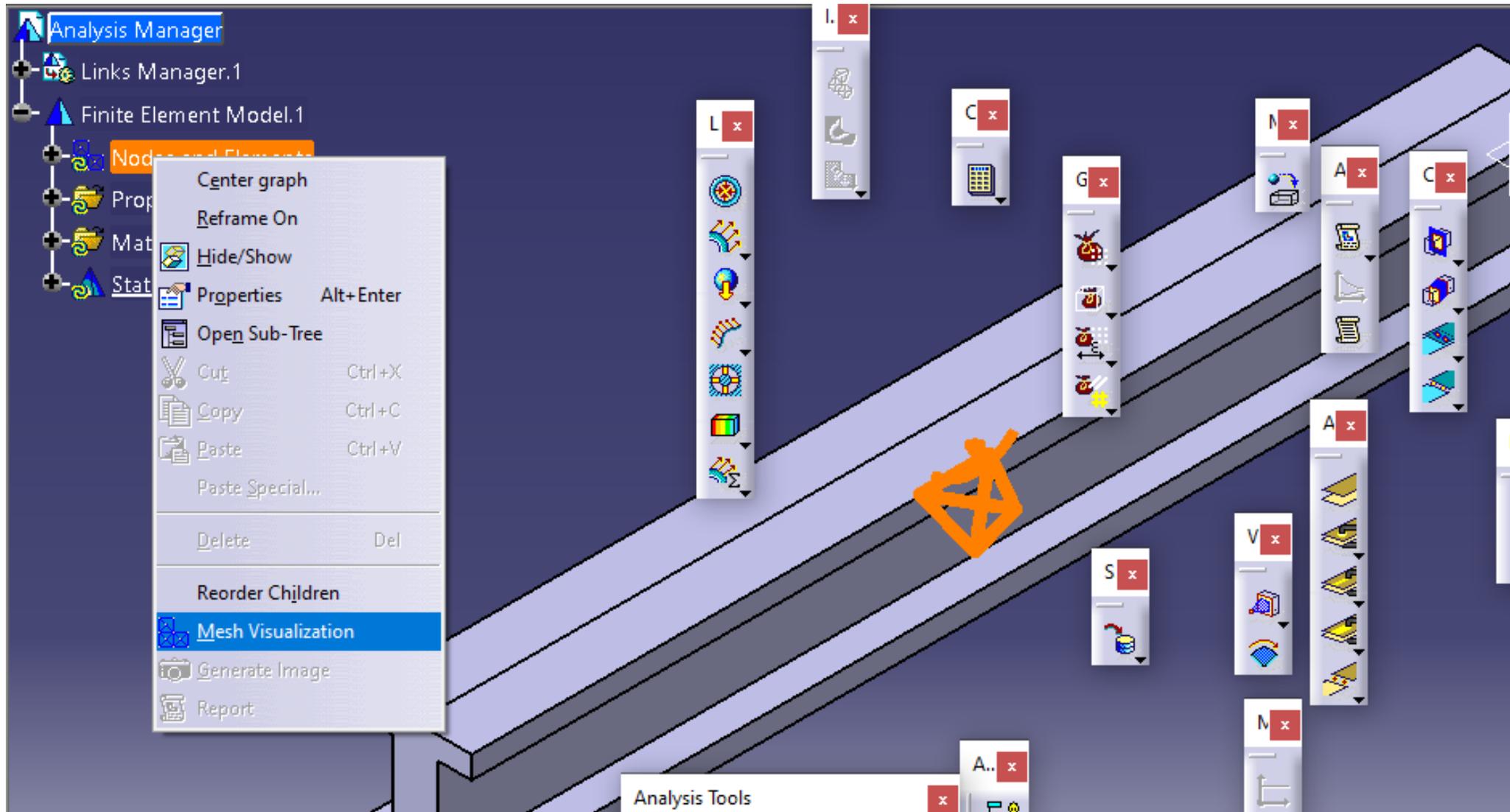
- Static Analysis
- Frequency Analysis
- Free Frequency Analysis

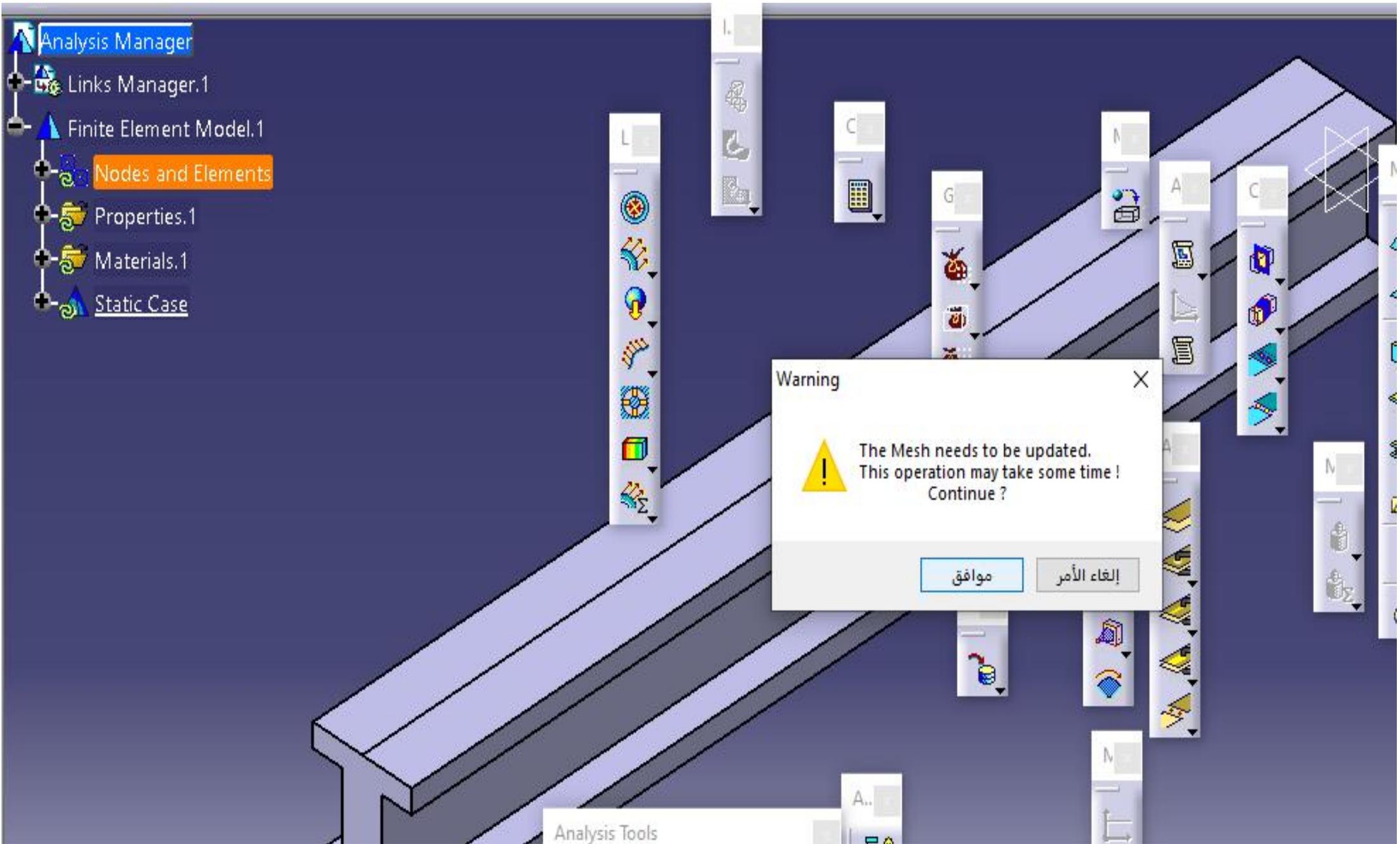
Keep as default starting analysis case

OK Cancel

Analysis Tools

Shading with Edges



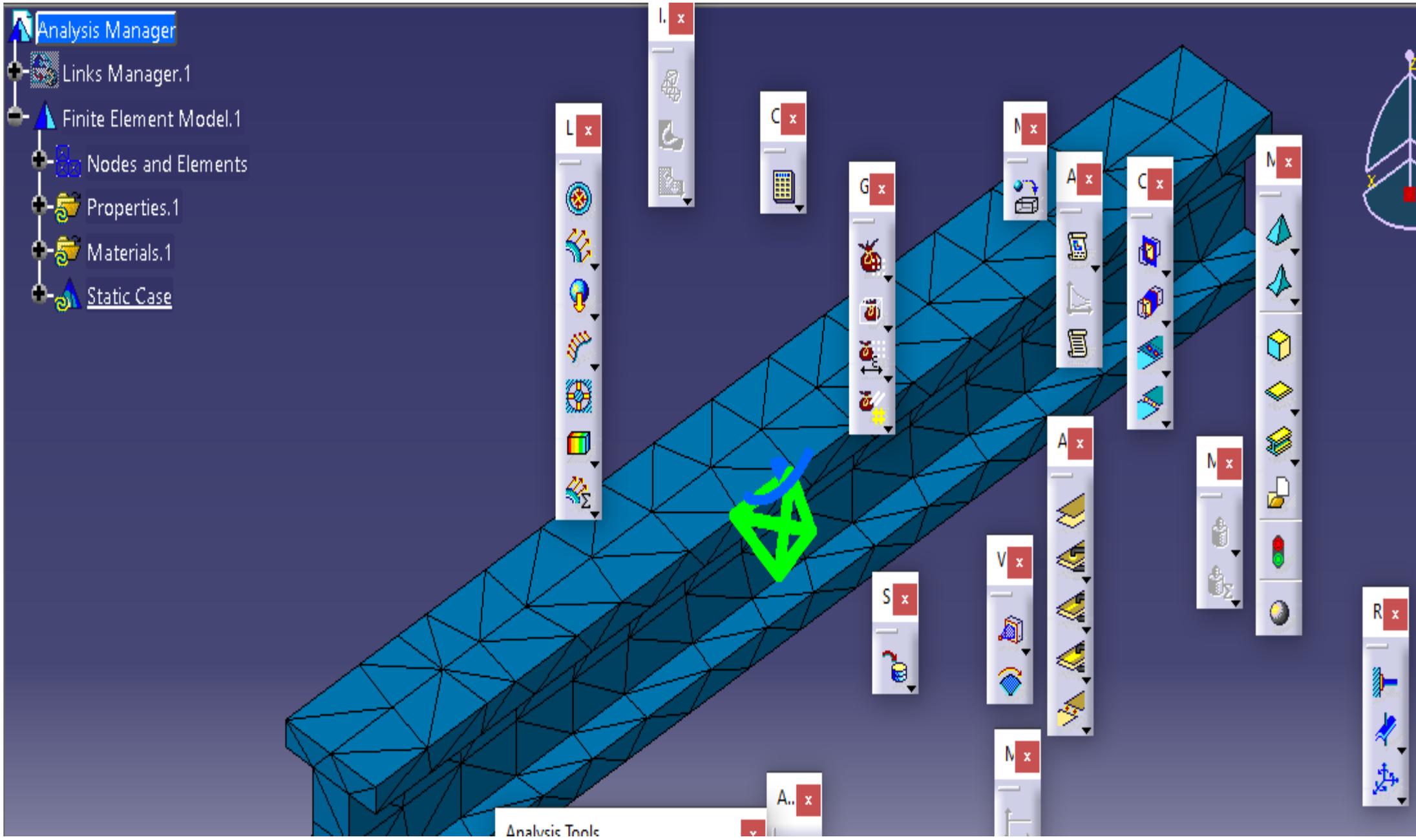


Warning

 The Mesh needs to be updated.  
This operation may take some time!  
Continue?

موافق    إلغاء الأمر

Analysis Tools



Analysis Manager

Links Manager.1

Finite Element Model.1

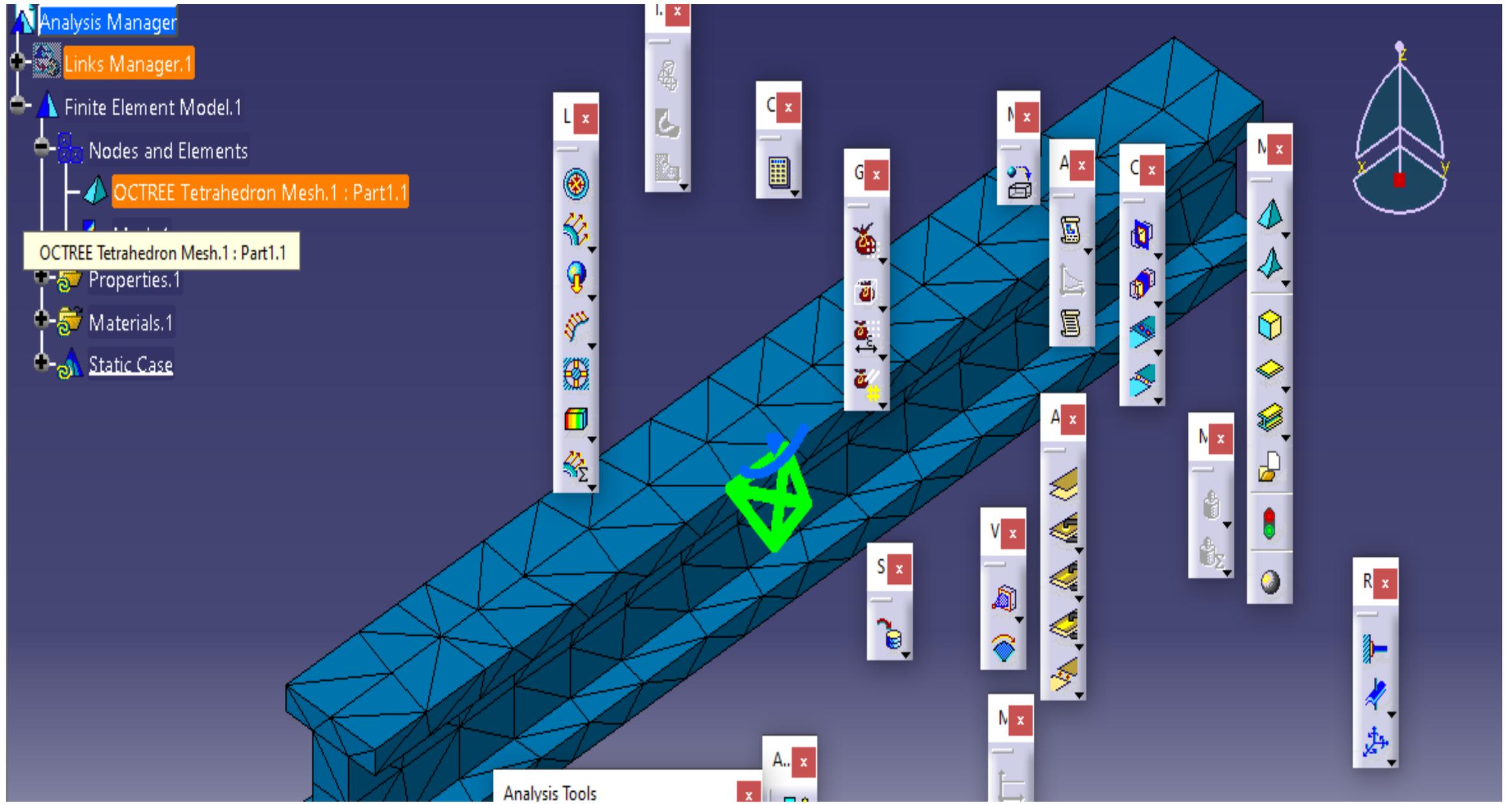
Nodes and Elements

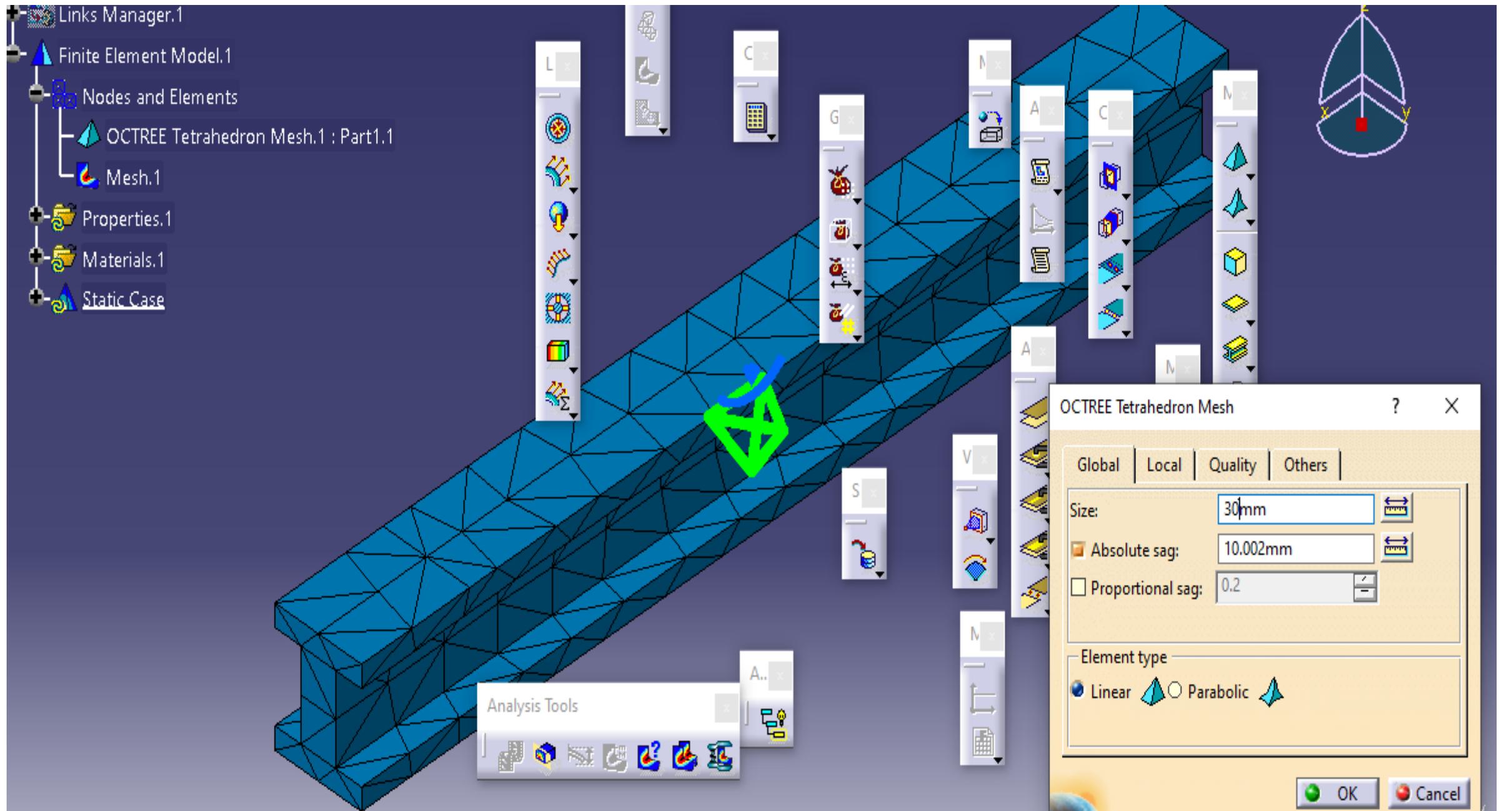
Properties.1

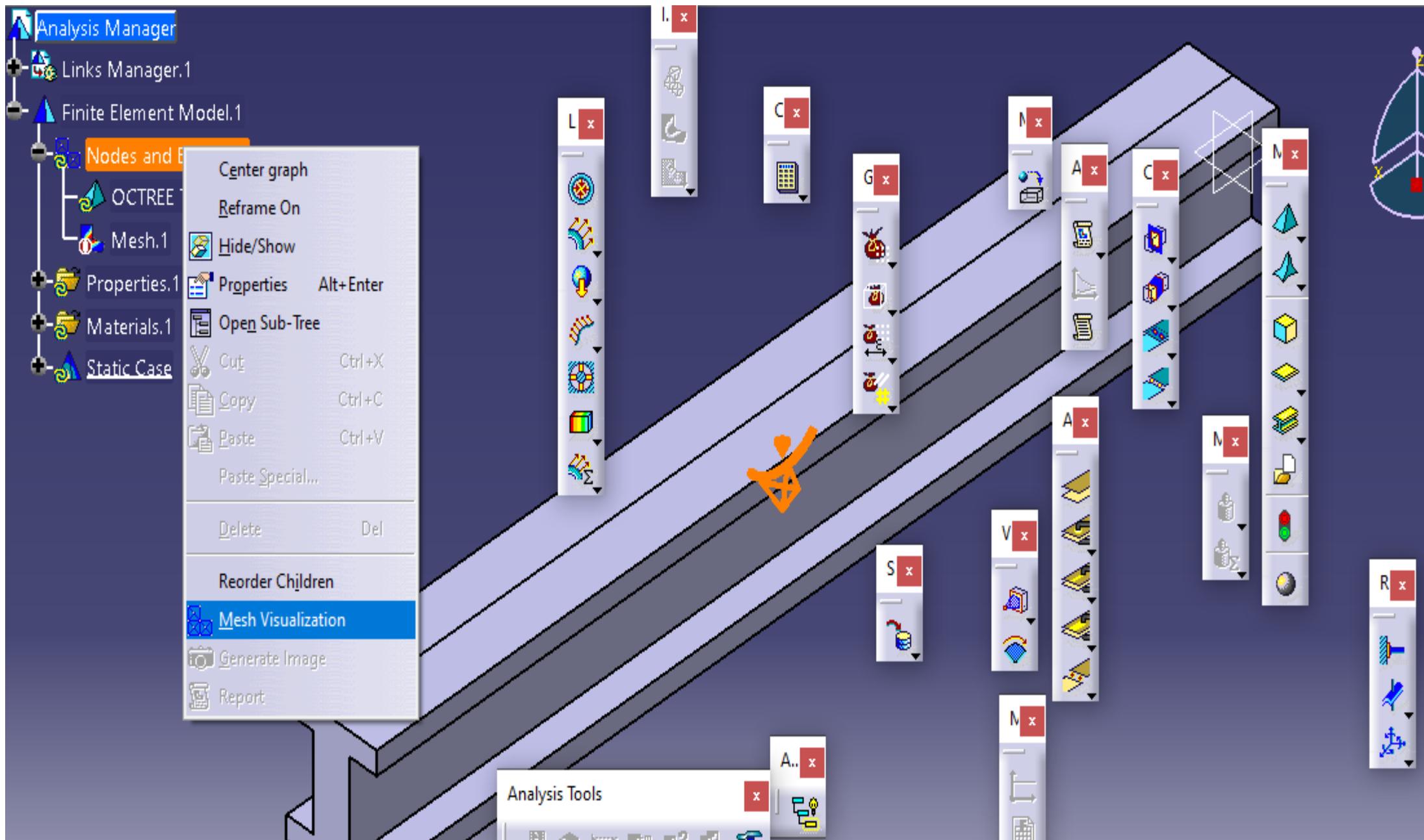
Materials.1

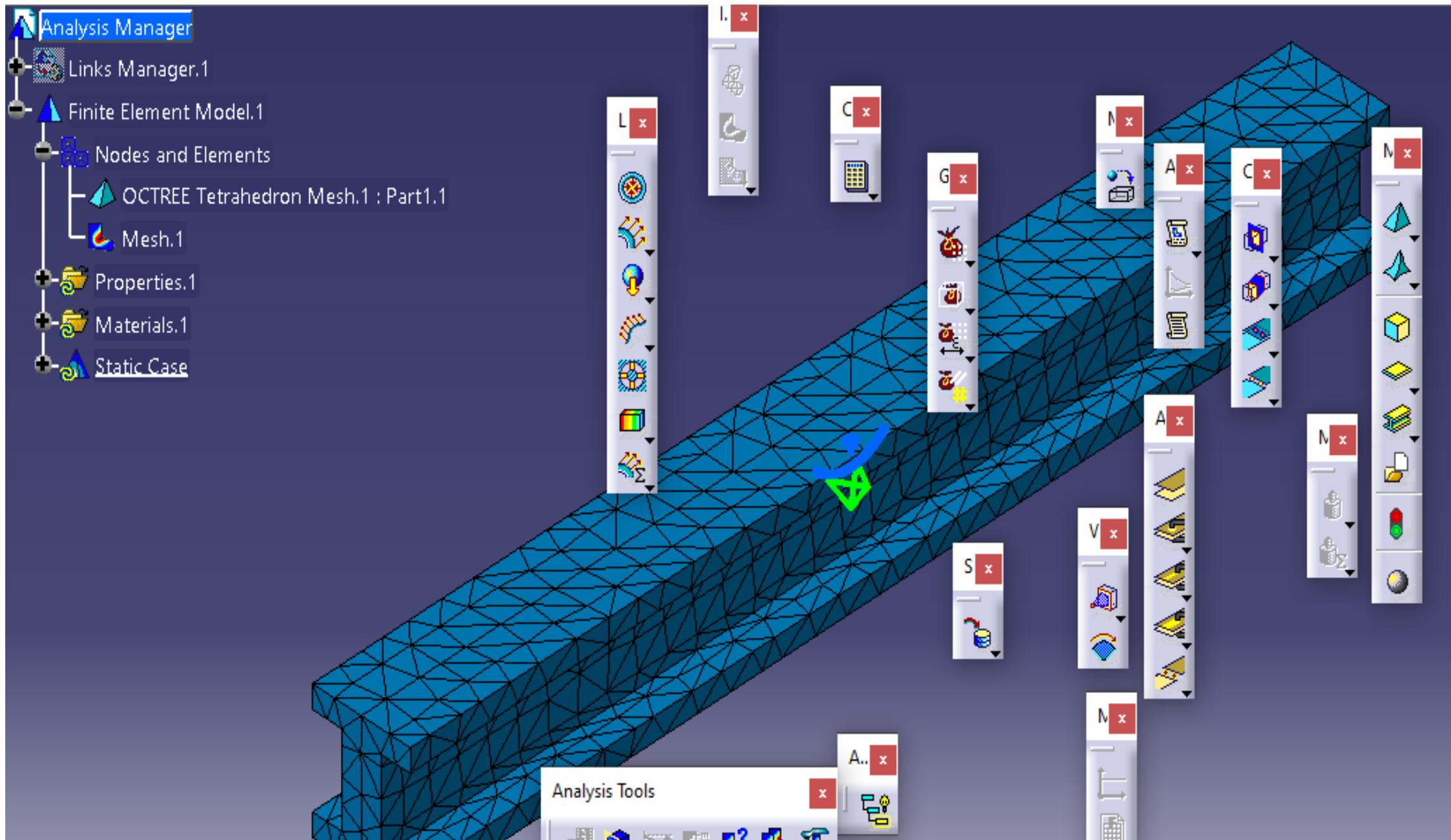
Static Case

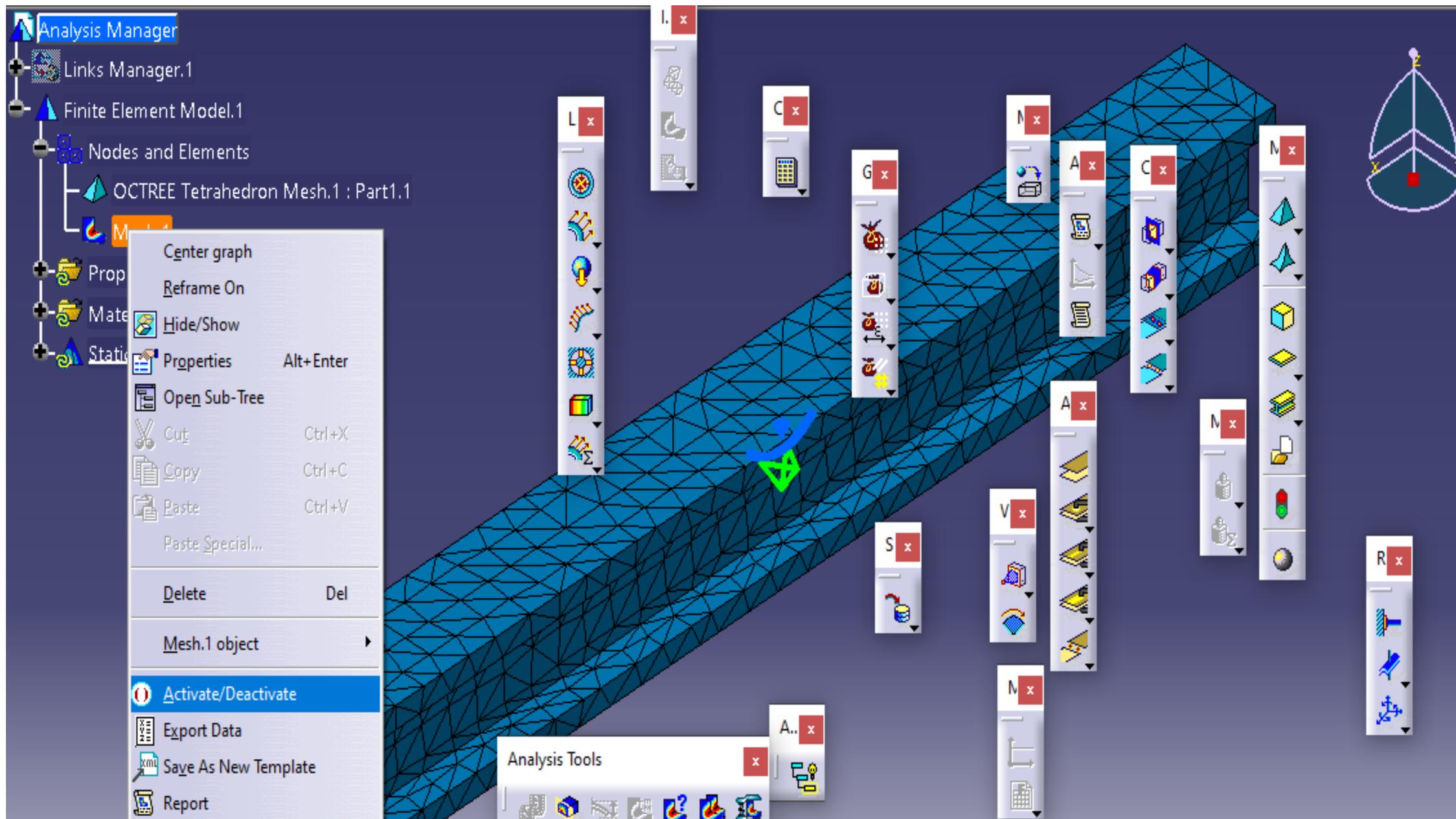
Analytic Tools











Analysis Manager

Links Manager.1

Finite Element Model.1

Nodes and Elements

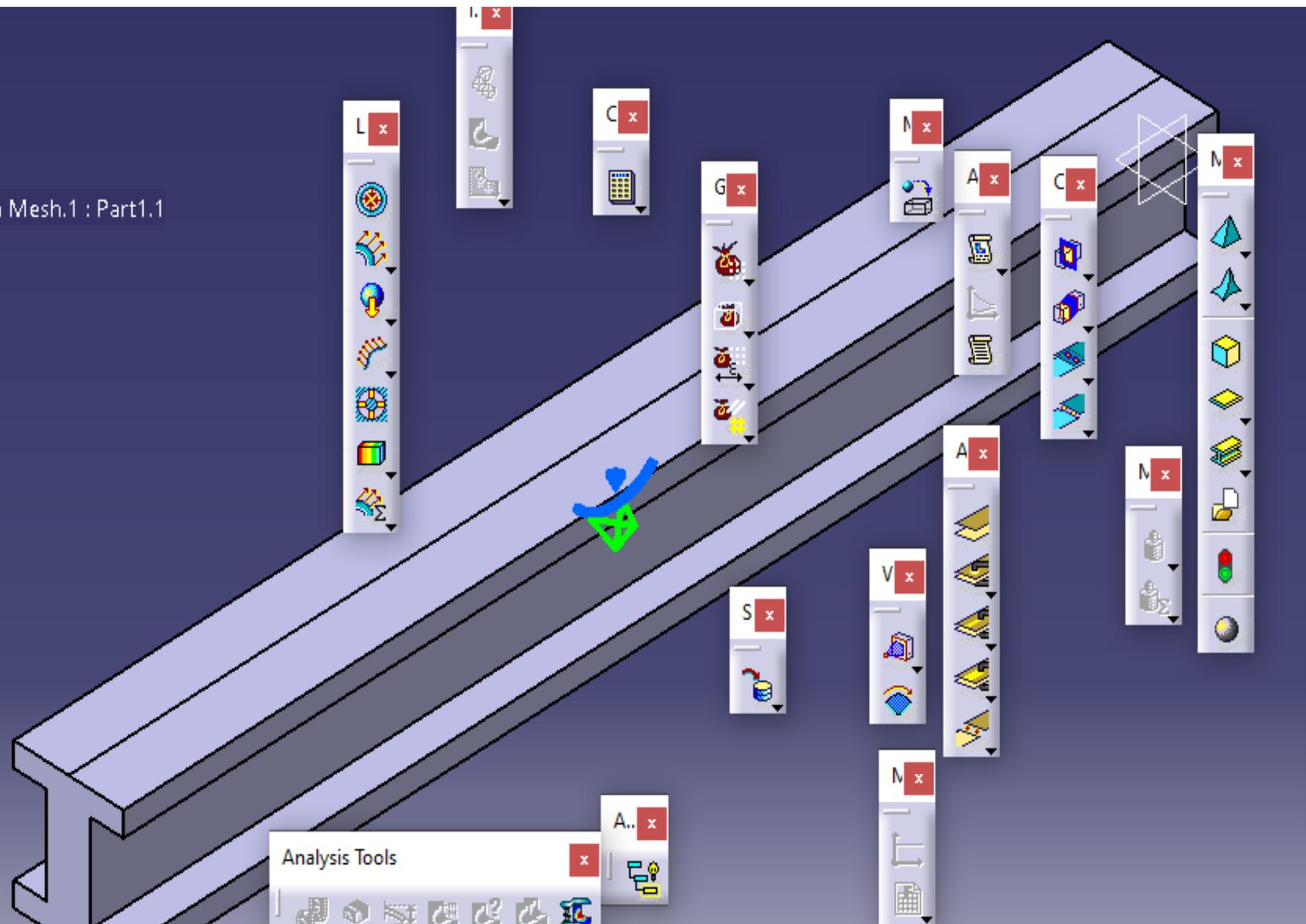
OCTREE Tetrahedron Mesh.1 : Part1.1

Mesh.1

Properties.1

Materials.1

Static Case



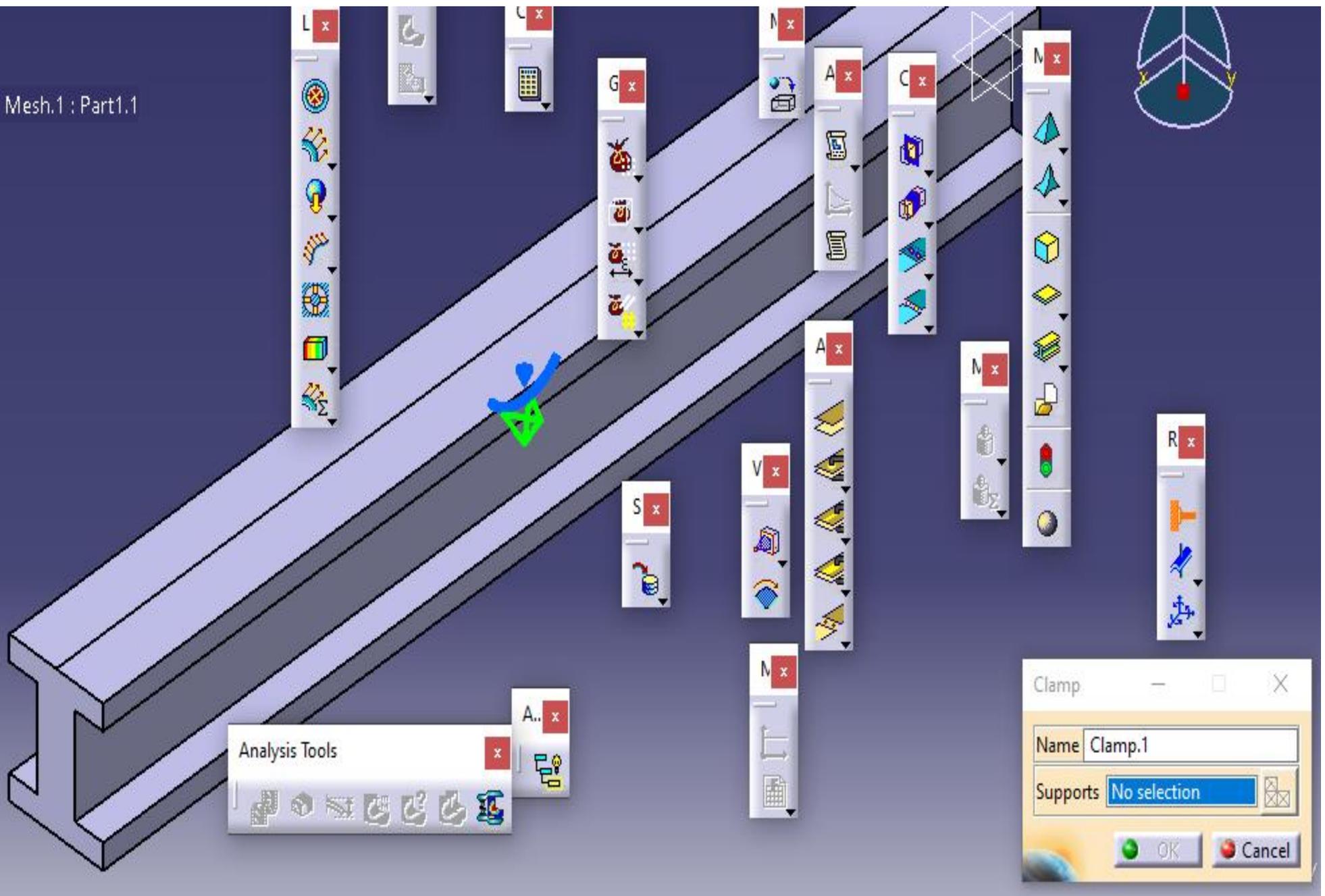
Analysis Tools

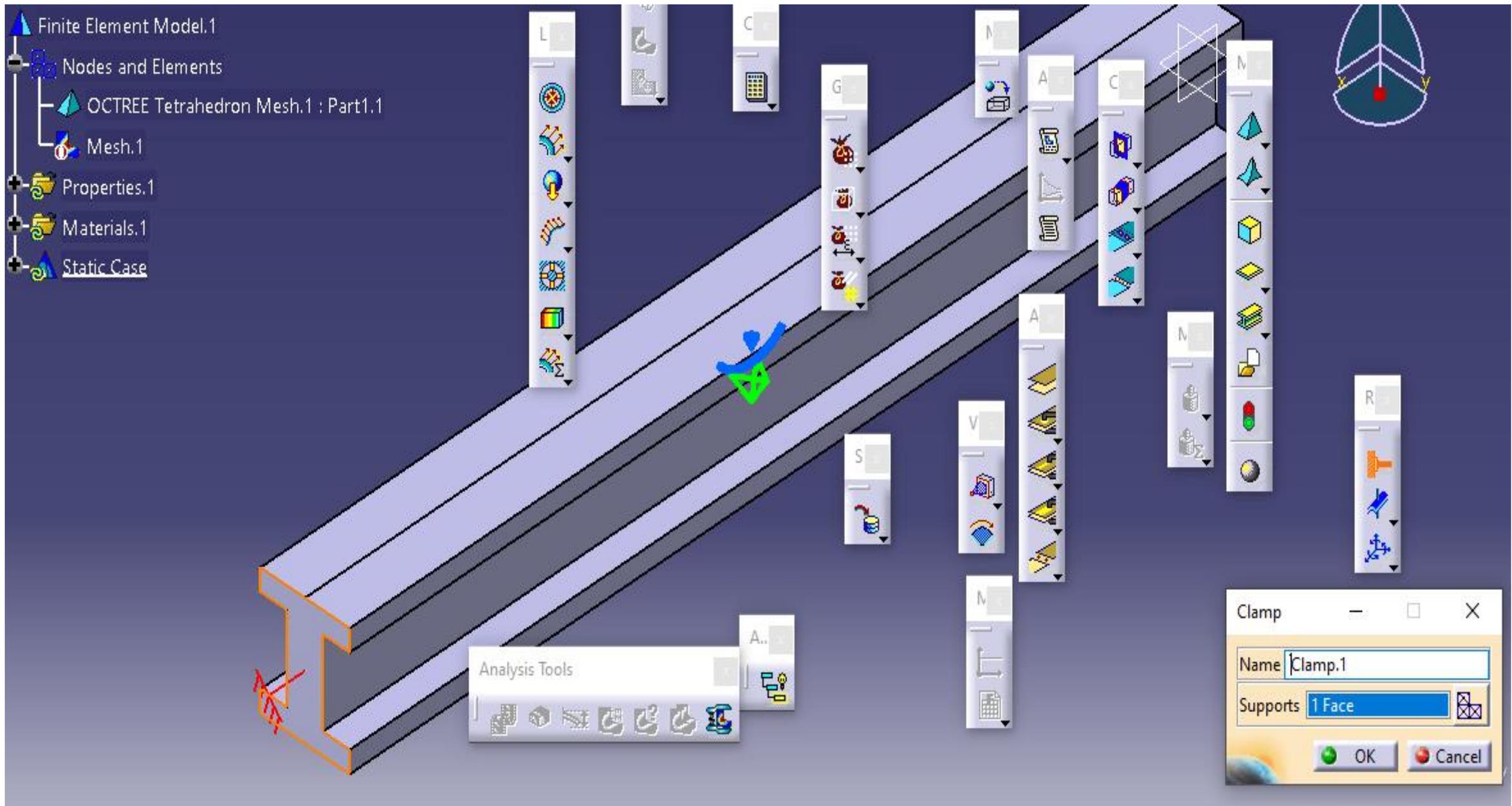
A horizontal toolbar titled "Analysis Tools" with a red close button. It contains several icons for analysis-related functions, including a cube, a cylinder, a sphere, a gear, a lightbulb, and a document.

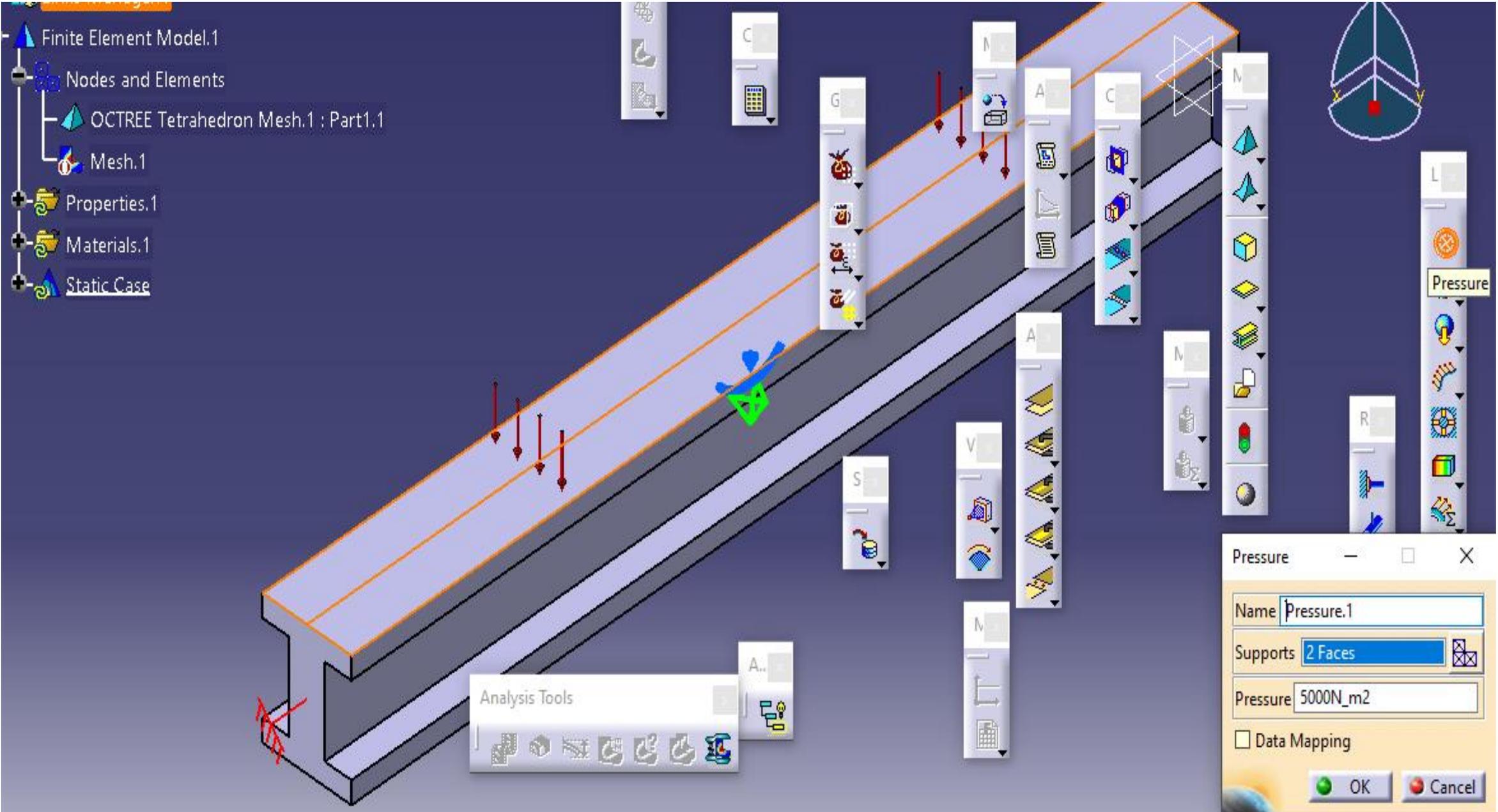
Model.1

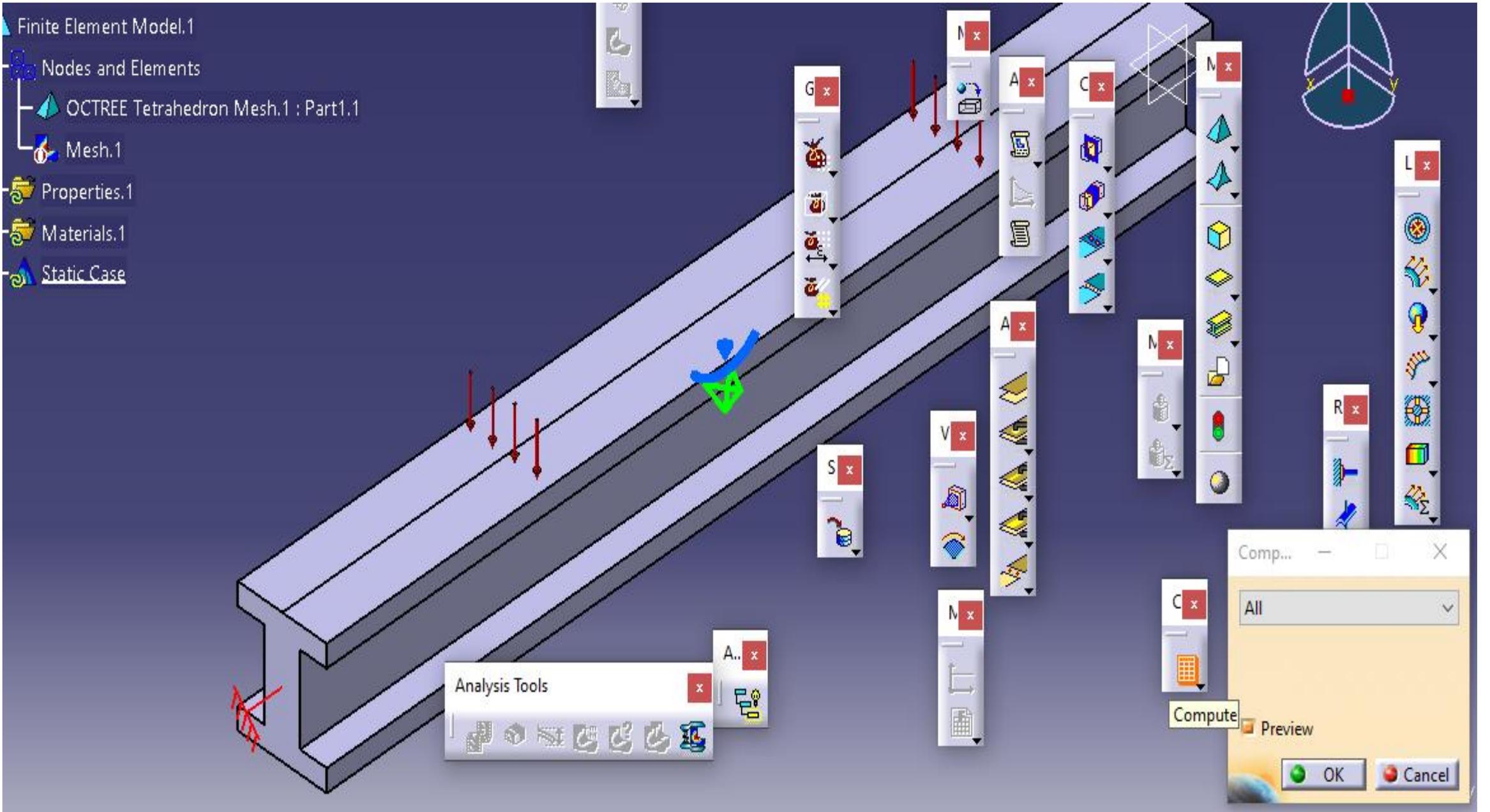
Elements

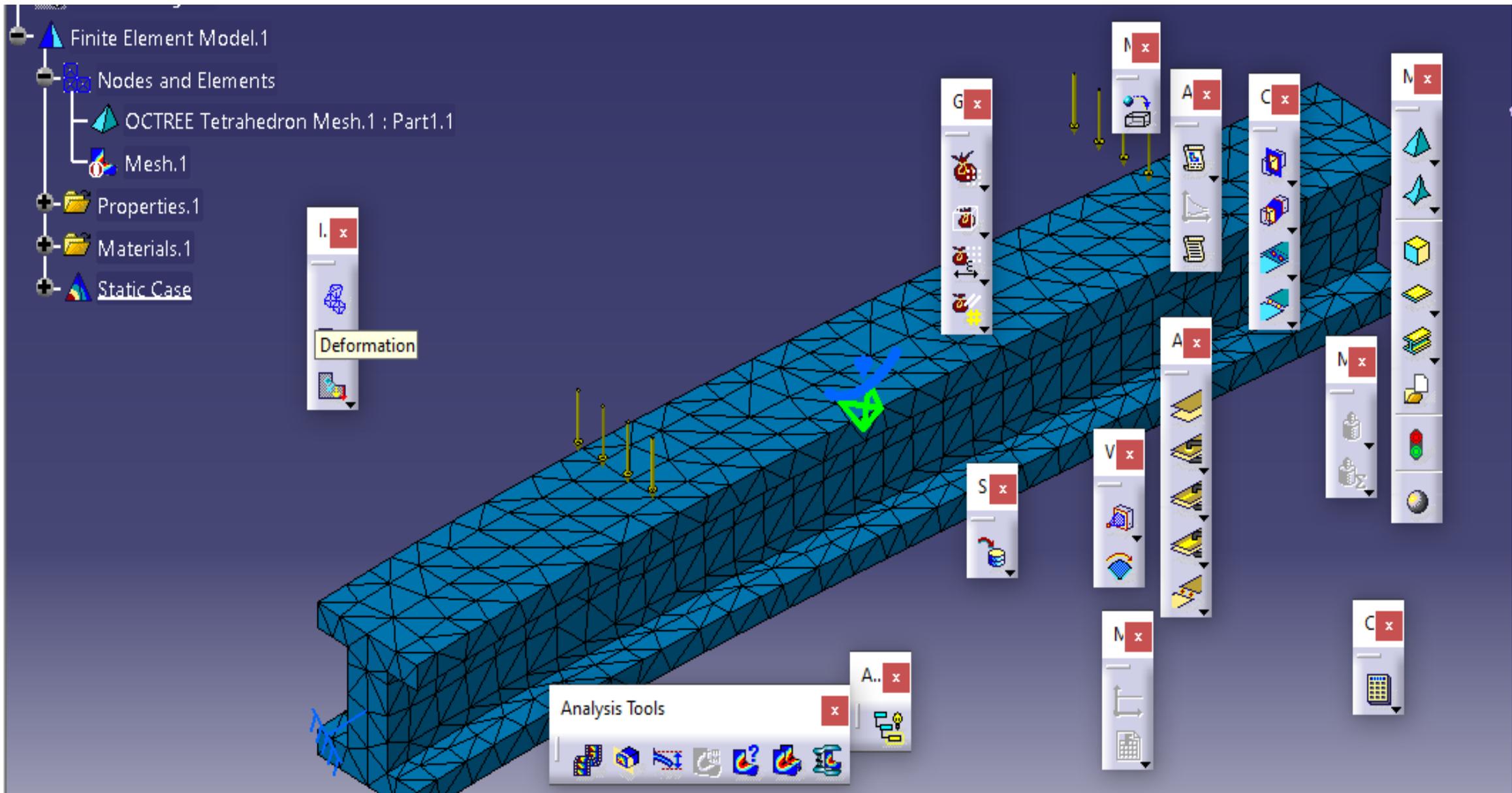
Tetrahedron Mesh.1 : Part1.1

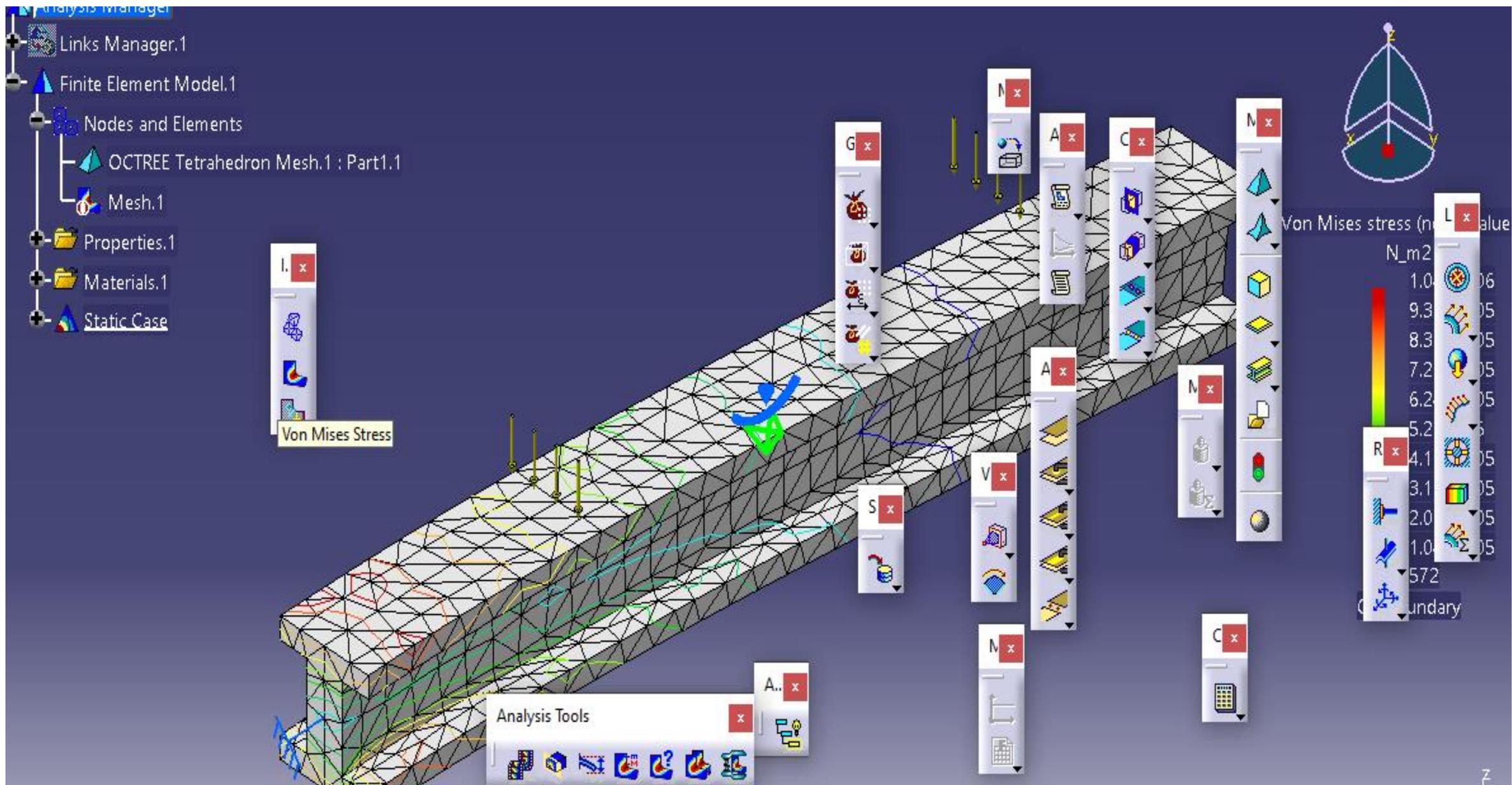












Nodes and Elements

OCTREE Tetrahedron Mesh.1 : Part1.1

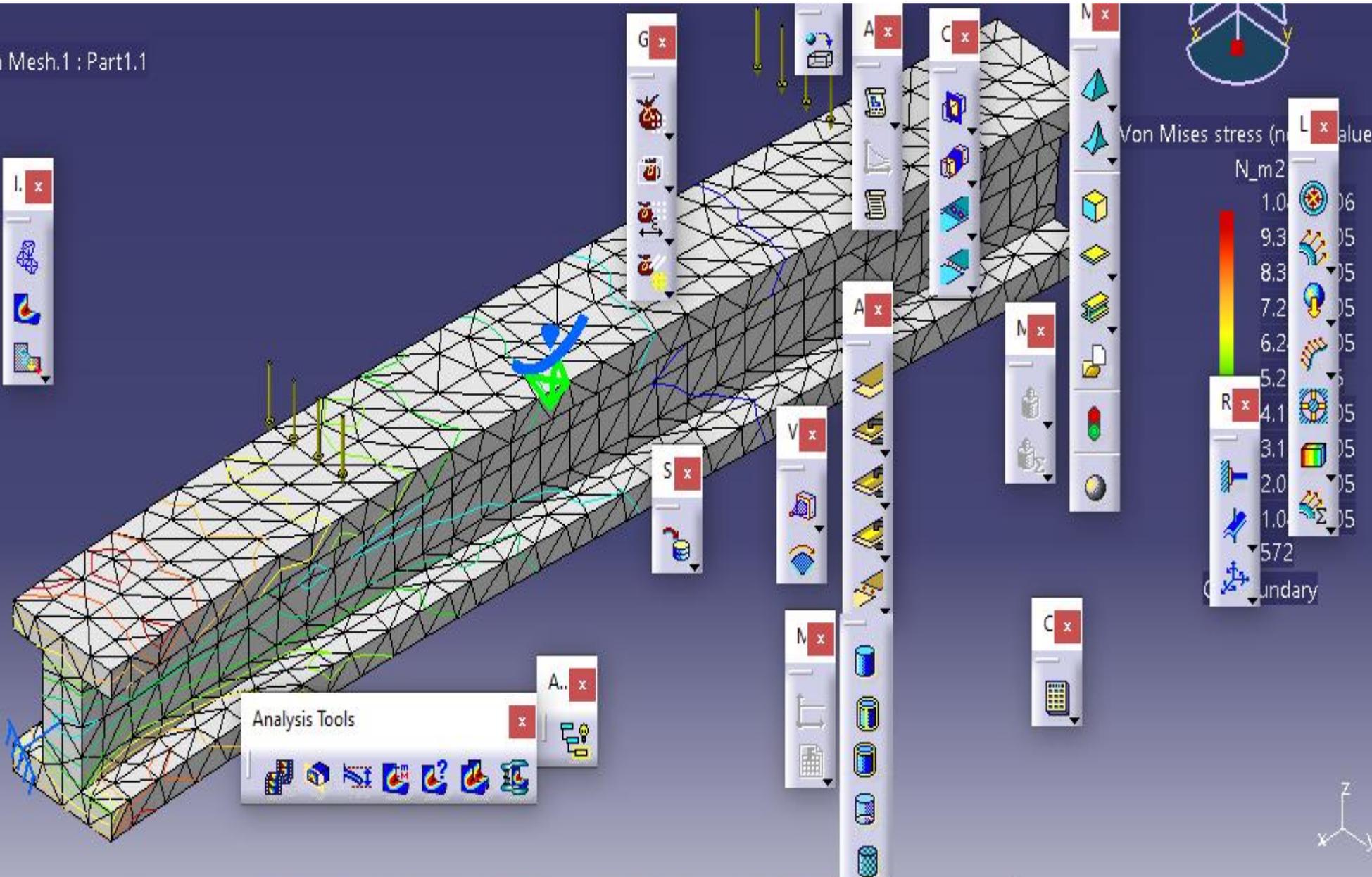
Mesh.1

Properties.1

Materials.1

Static Case

Panel with icons for meshing and analysis.

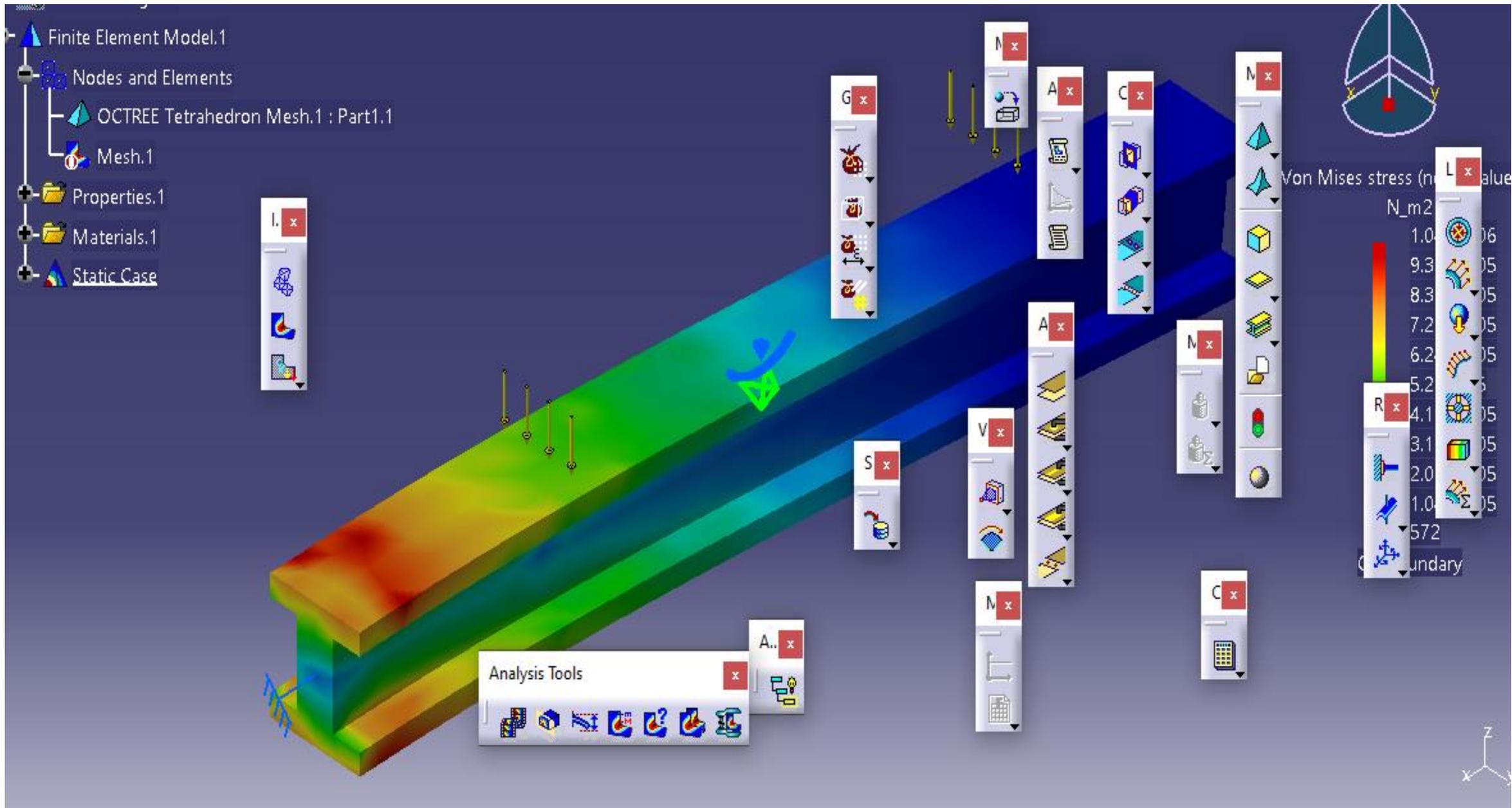


Von Mises stress (N/m<sup>2</sup>)



Analysis Tools panel with various icons for analysis and visualization.

Shading with Material



Links Manager.1

Finite Element Model.1

Nodes and Elements

OCTREE Tetrahedron Mesh.1 : Part1.1

Mesh.1

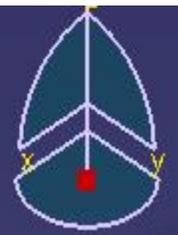
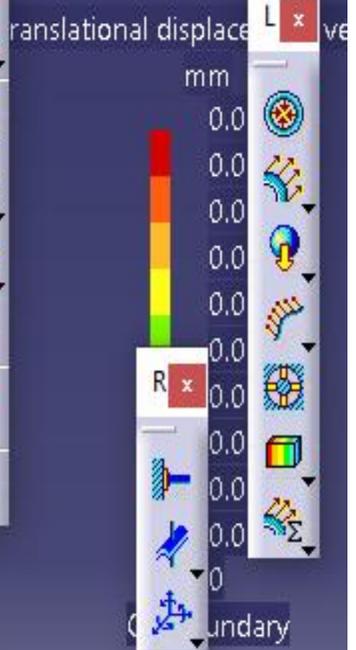
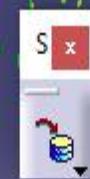
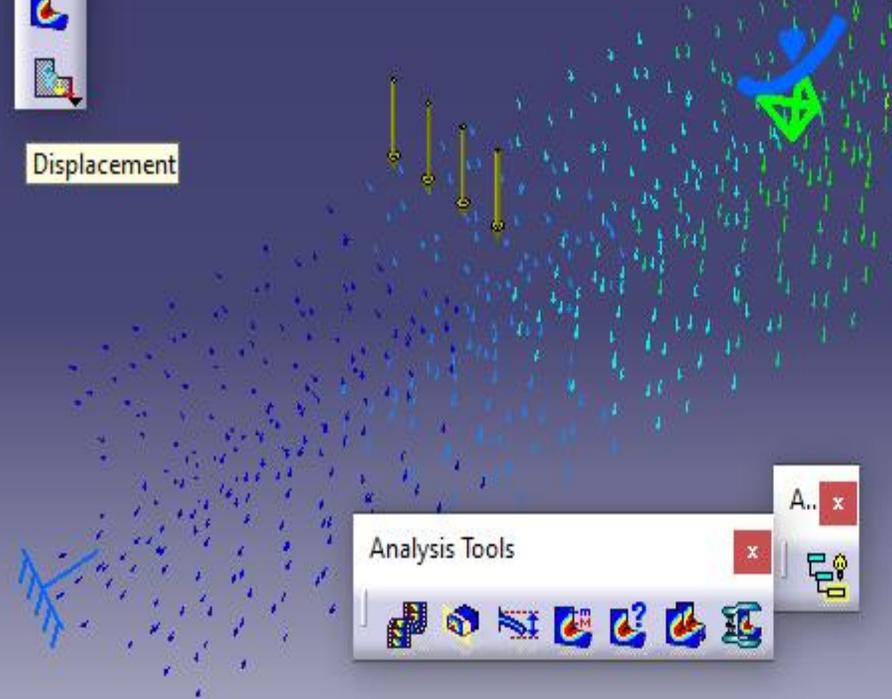
Properties.1

Materials.1

Static Case



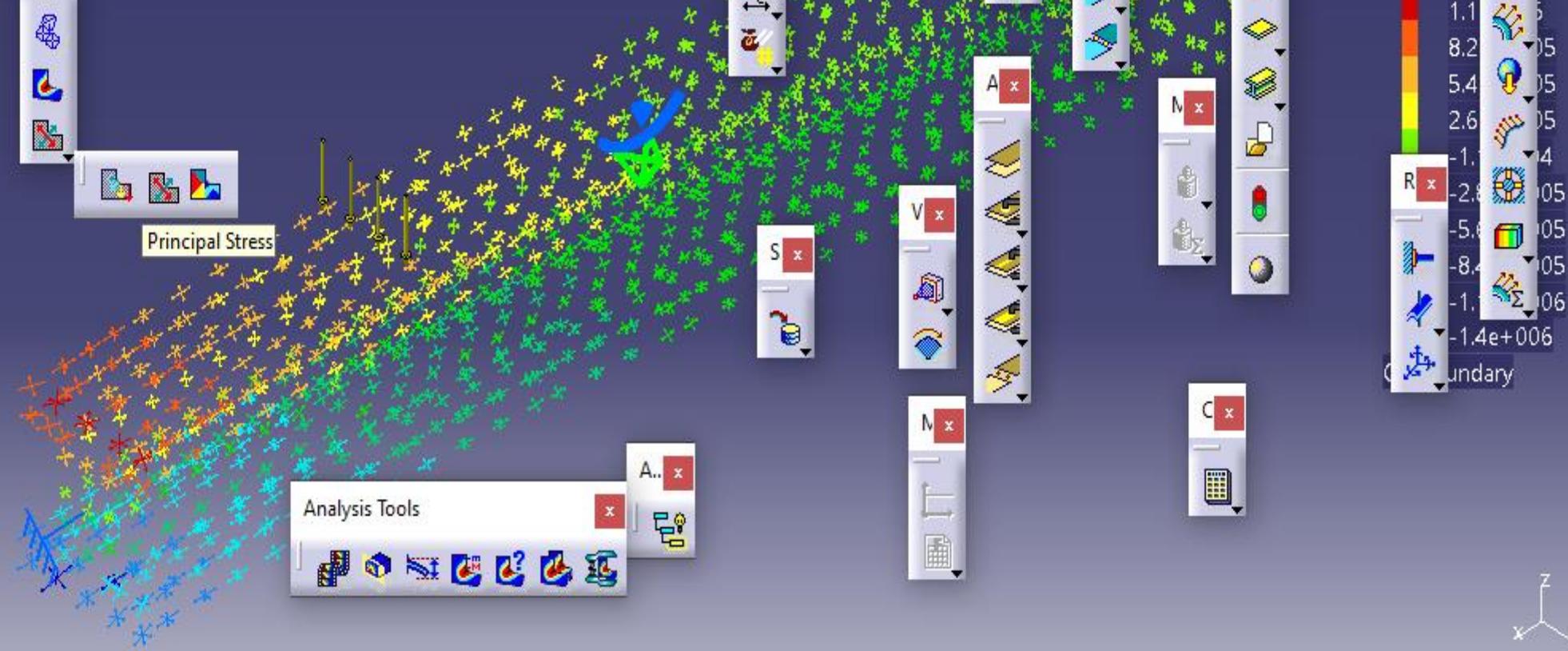
Displacement



Finite Element Model.1

- Nodes and Elements
  - OCTREE Tetrahedron Mesh.1 : Part1.1
  - Mesh.1
- Properties.1
- Materials.1
- Static Case

Principal Stress



Analysis Tools

G x

S x

V x

M x

A x

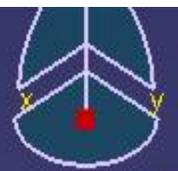
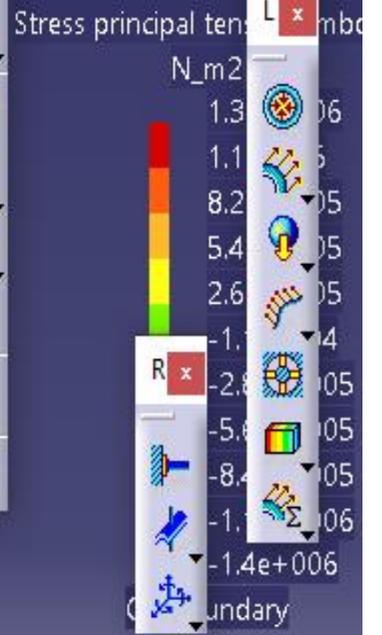
A x

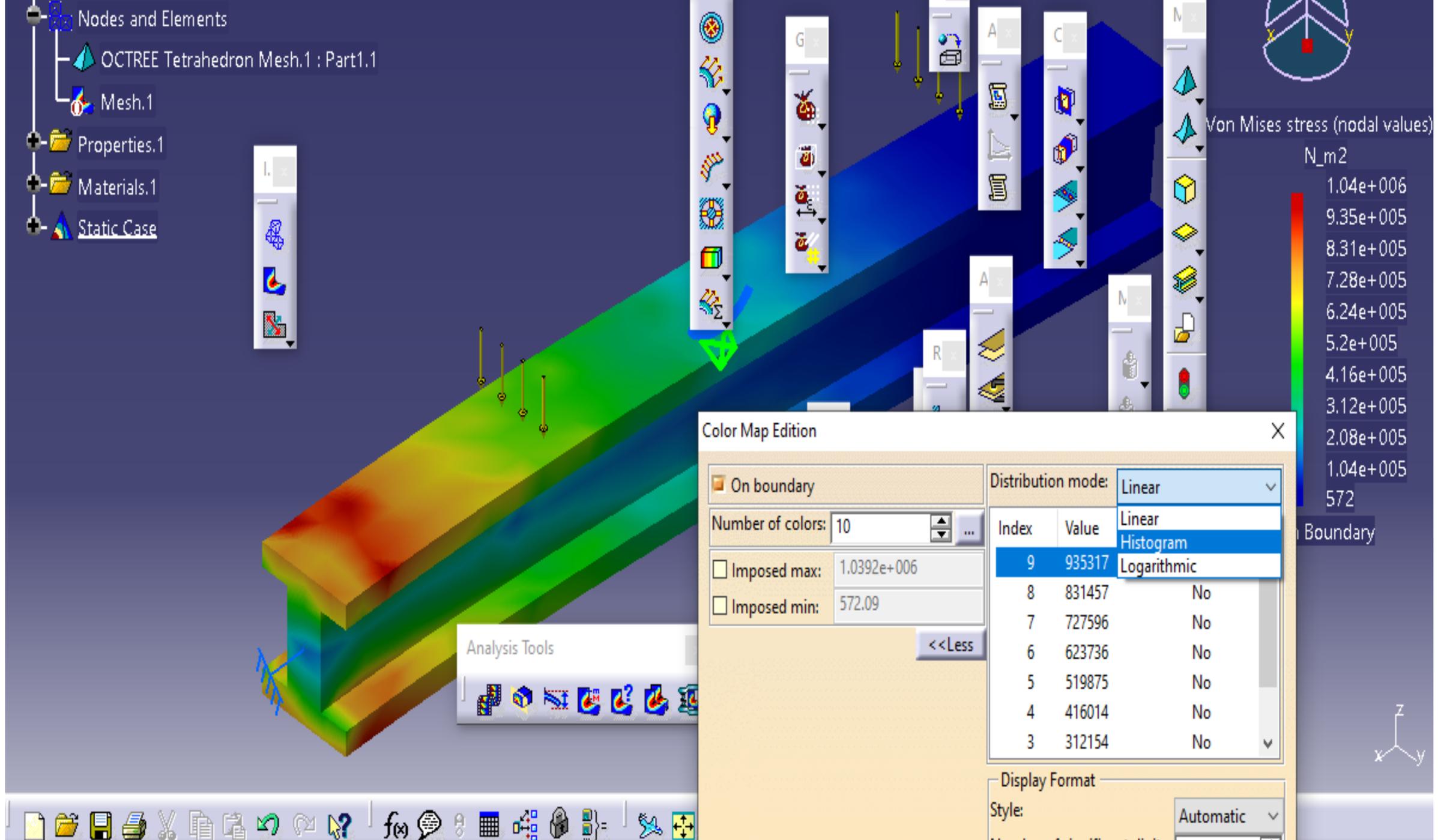
C x

M x

M x

C x





- Nodes and Elements
  - OCTREE Tetrahedron Mesh.1 : Part1.1
  - Mesh.1
- Properties.1
- Materials.1
- Static Case

### Color Map Edition

On boundary

Number of colors: 10

Imposed max: 1.0392e+006

Imposed min: 572.09

Distribution mode: Linear

Index	Value	
9	935317	Linear
8	831457	No
7	727596	No
6	623736	No
5	519875	No
4	416014	No
3	312154	No

Von Mises stress (nodal values)

N\_m2

1.04e+006

9.35e+005

8.31e+005

7.28e+005

6.24e+005

5.2e+005

4.16e+005

3.12e+005

2.08e+005

1.04e+005

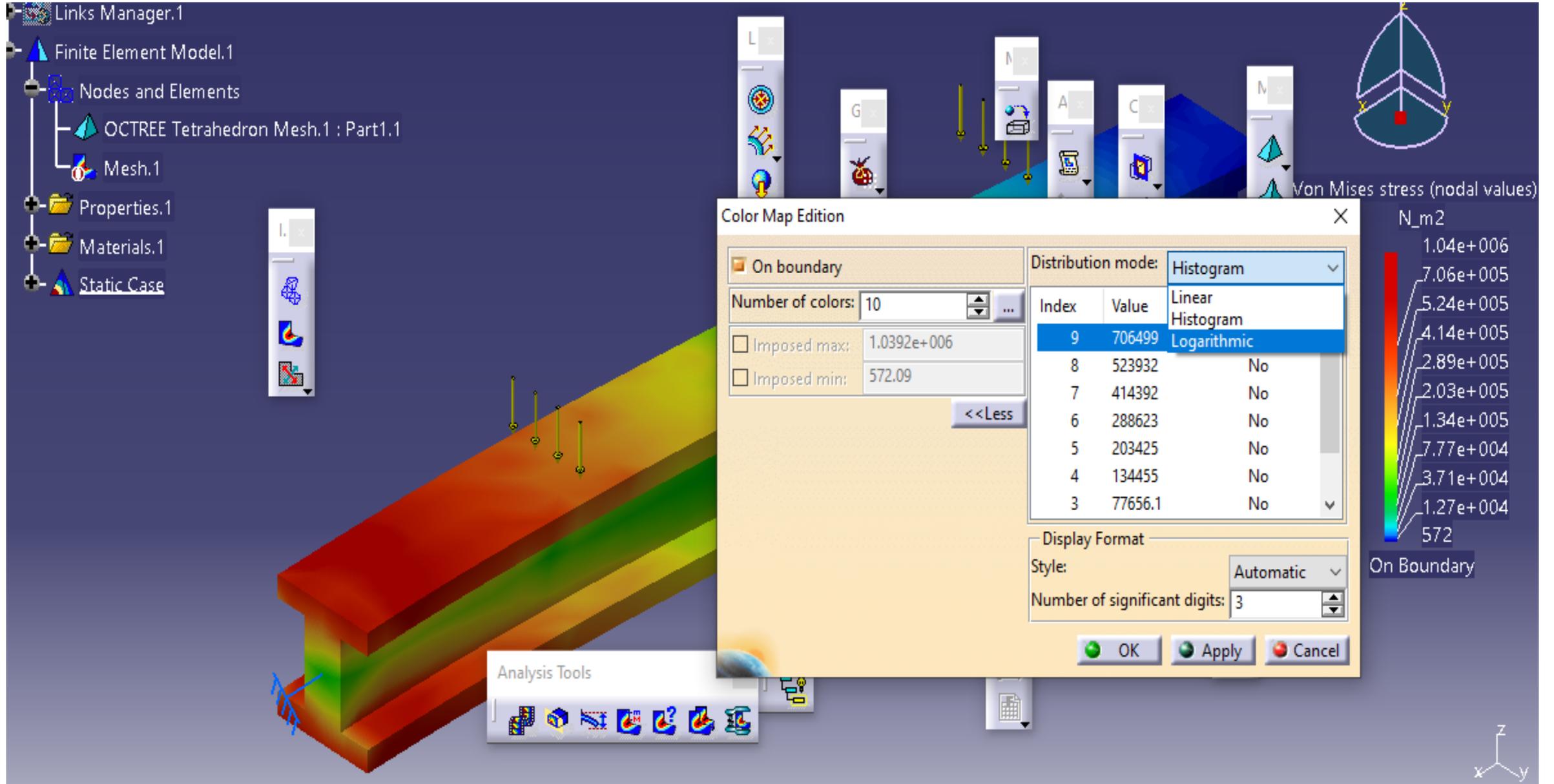
572

Boundary

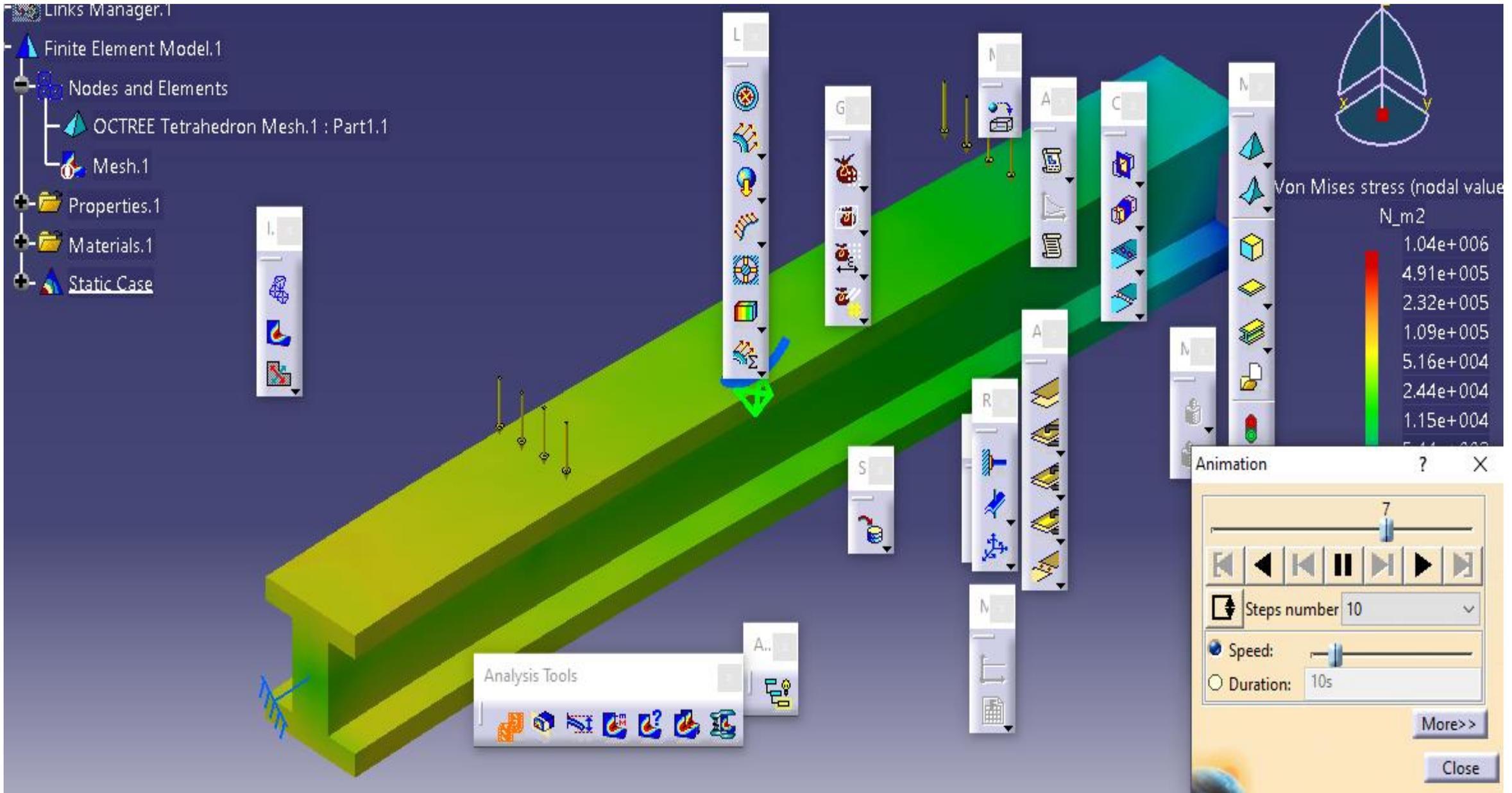
Analysis Tools

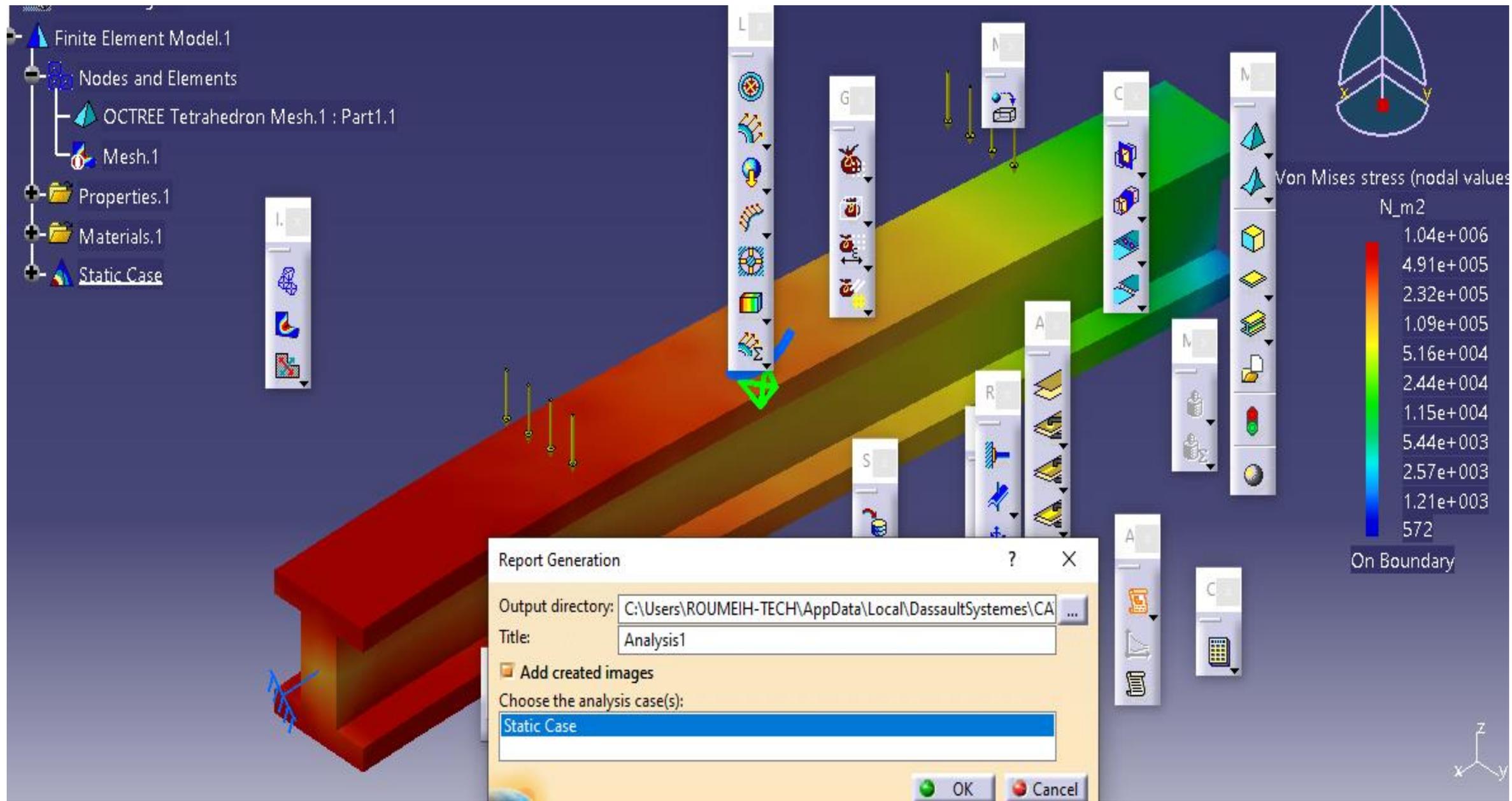












## Analysis1

### MESH:

Entity	Size
Nodes	1075
Elements	3204

### ELEMENT TYPE:

Connectivity	Statistics
TE4	3204 ( 100.00% )

### ELEMENT QUALITY:

Criterion	Good	Poor	Bad	Worst	Average
Stretch	3204 ( 100.00% )	0 ( 0.00% )	0 ( 0.00% )	0.397	0.630