

Large Telescope Truss - Mesh

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[Problem Specification](#)

[1. Pre-Analysis & Start-Up](#)

[2. Geometry](#)

[3. Mesh](#)

[4. Physics Setup](#)

[5. Numerical Solution](#)

[6. Numerical Results](#)

[7. Verification & Validation](#)

[Exercises](#)

[Comments](#)

Mesh

The standard mesh for the geometry works pretty well for the geometry, we simply need to apply a refinement.

The first step is to attach a Static Structural model to the Geometry. Simply drag the option from the toolbox and drop it onto the Geometry. Open the model.

First, select Mesh and open up Sizing. Select Advanced Size Function, and change it to "On: Curvature."

[-]	Defaults
	Physics Preference Mechanical
	☐ Relevance 0
[-]	Sizing
	Use Advanced Size Function On: Curvature
	Relevance Center Coarse
	Initial Size Seed Active Assembly
	Smoothing Medium
	Transition Fast
	Span Angle Center Coarse
	☐ Curvature Normal Angle Default (30.0 °)
	☐ Min Size Default (5.0978e-003 m)
	☐ Max Face Size Default (2.5489e-002 m)
	☐ Max Size Default (2.5489e-002 m)
	☐ Growth Rate Default
	Minimum Edge Length 9.7511e-004 m
[+]	Inflation
[-]	Patch Conforming Options
	Triangle Surface Mesher Program Controlled
[+]	Advanced
[+]	Defeaturing
[+]	Statistics

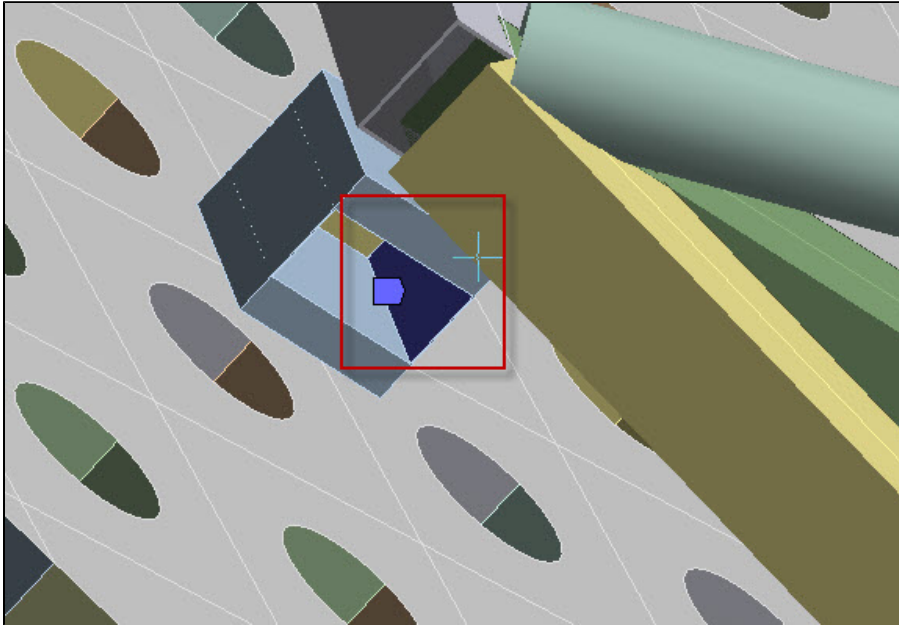
The defaults for the Curvature sizing work well.

Now, there are two types of sizing that should be applied. First off is the Sizing of the Base Mount Pad. The pad does not have much motion or deformation, so it does not need as many elements as the default setting.

Add a sizing, and apply the base mount pad as the geometry. Select the behavior as Hard, and the element size as .05m. This should reduce the number of elements on the base pad.

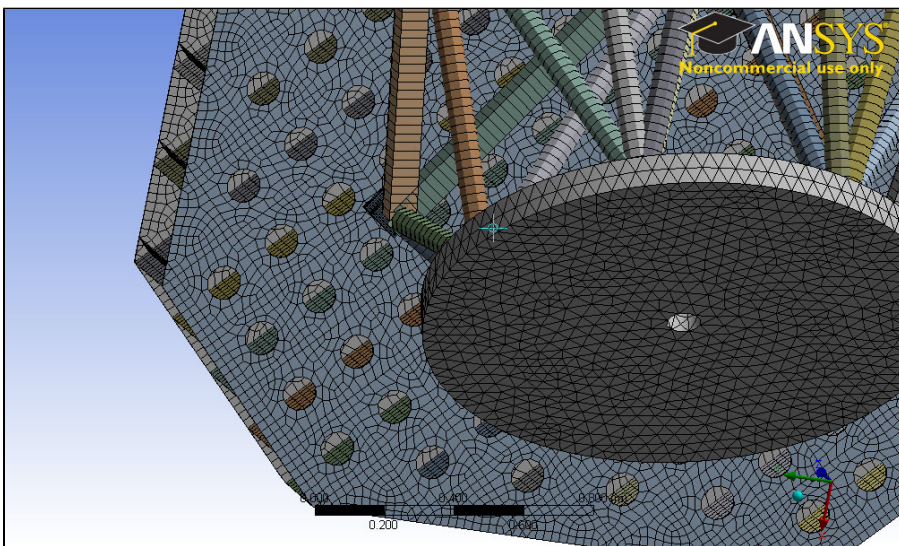
[-] Scope	
Scoping Method	Geometry Selection
Geometry	1 Body
[-] Definition	
Suppressed	No
Type	Element Size
☐ Element Size	5.e-002 m
Behavior	Hard

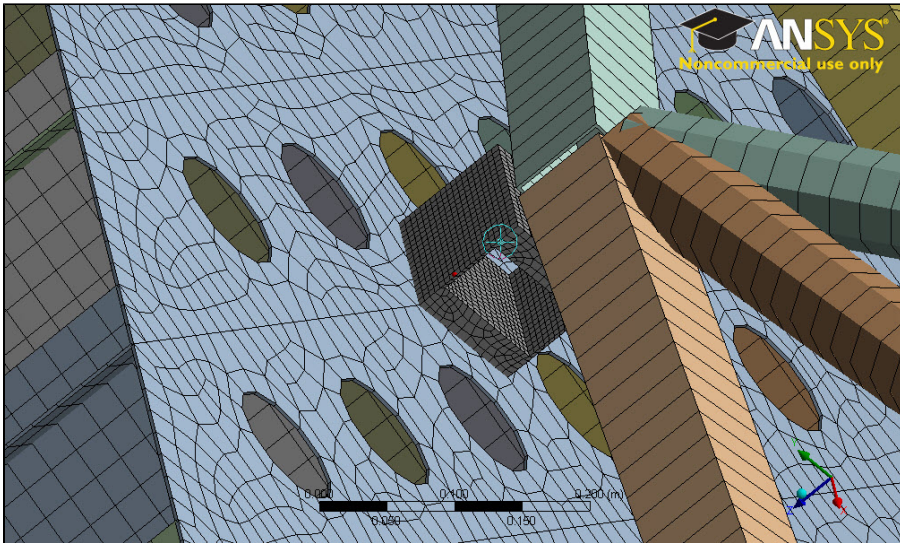
Now we need to refine the insides of the Flexure mounts. Currently, they do not have enough elements, since they deform greatly. Add a face sizing, and apply the face sizing to the two inside faces of the Flexure mounts.



Set the element size to 0.002m. Repeat to create a face sizing on all the Flexure Mounts.

Once applied, generate the mesh. After it is done, it should look somewhat like this:





[Go to Step 4: Physics Setup](#)

[Go to all ANSYS Learning Modules](#)