

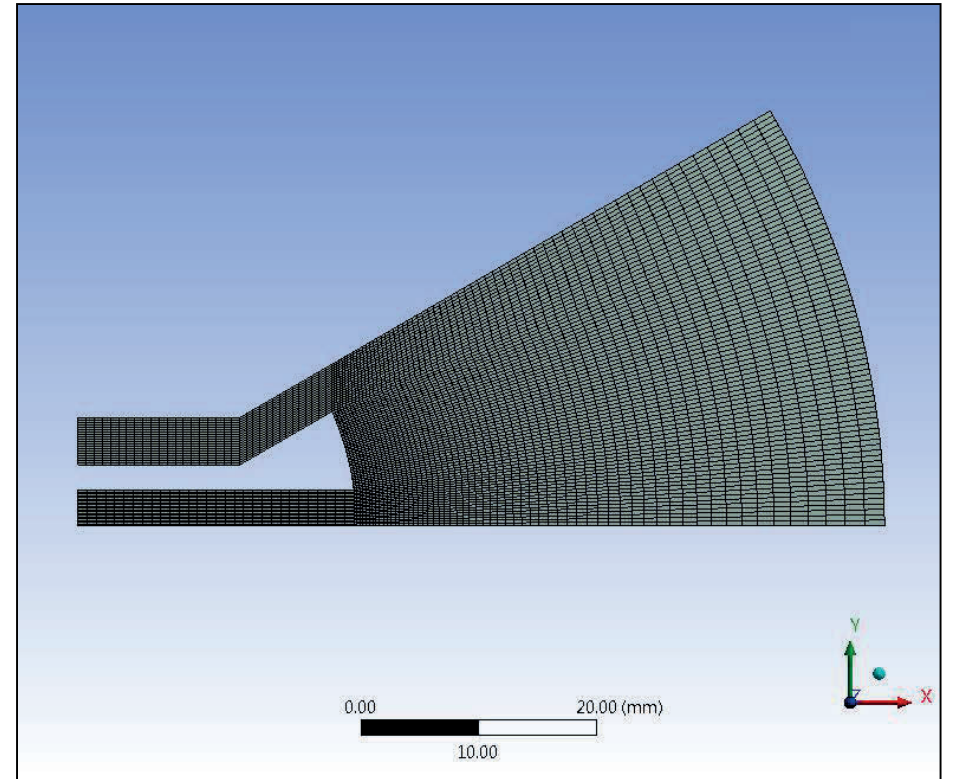
Introduction

Background

- This workshop will demonstrate the practical application of ANSYS Meshing to a 2d axisymmetric plate

Objectives

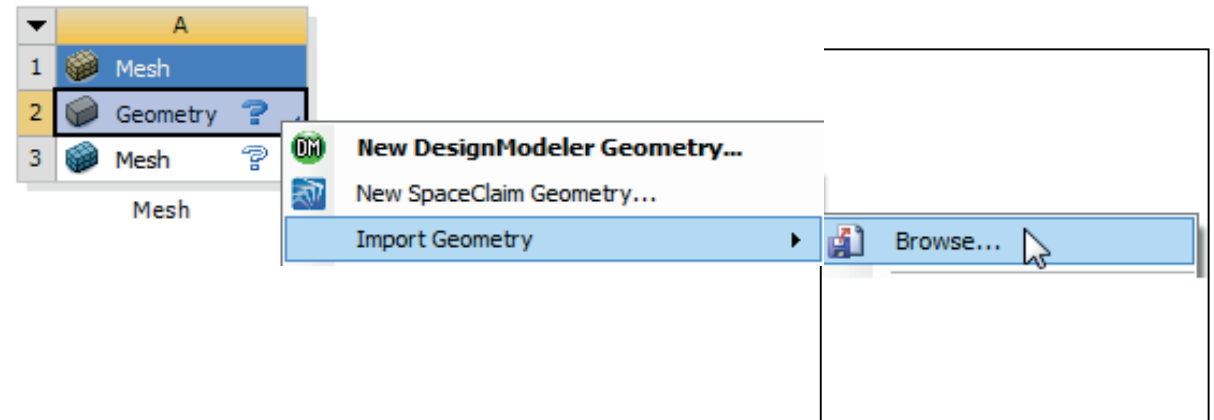
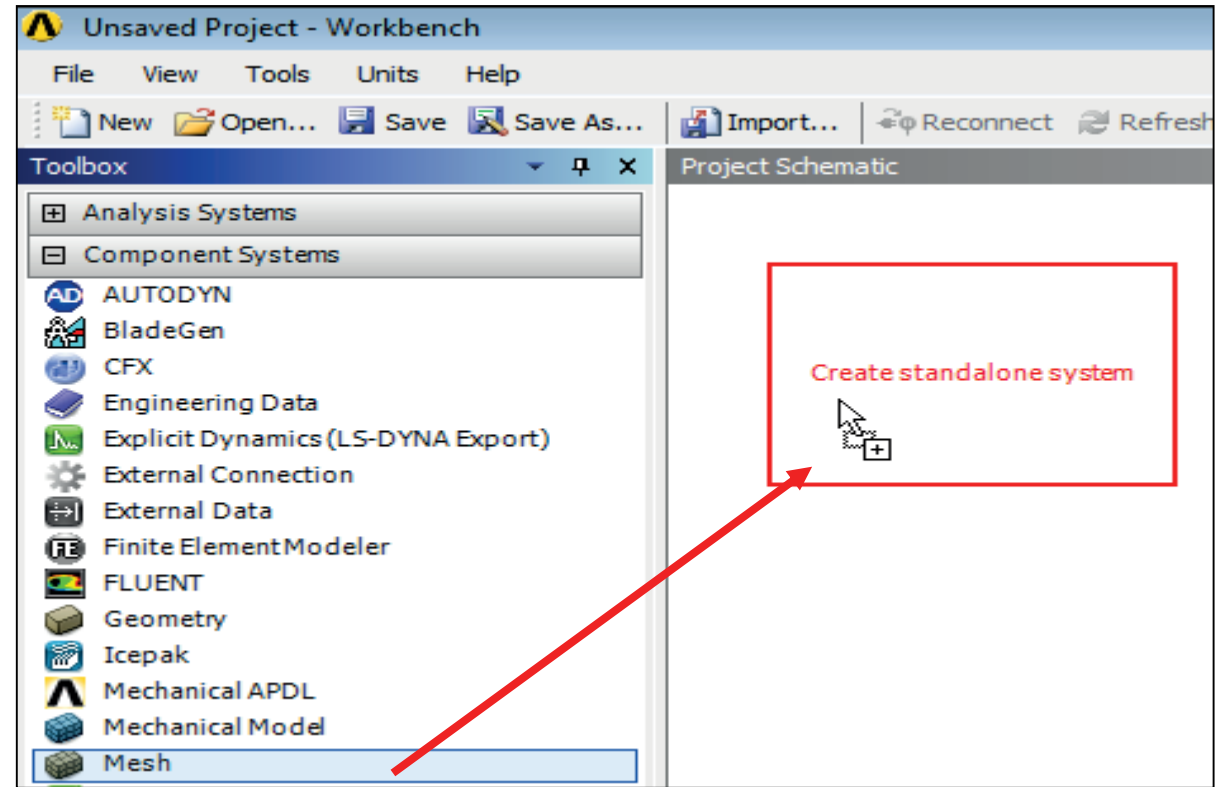
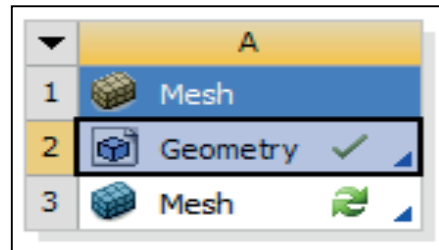
- Generating 2d Meshes
- 2d Inflation
- Generating Mapped Meshes
- Parameterizing Mesh Controls



Project Startup

Create the Project

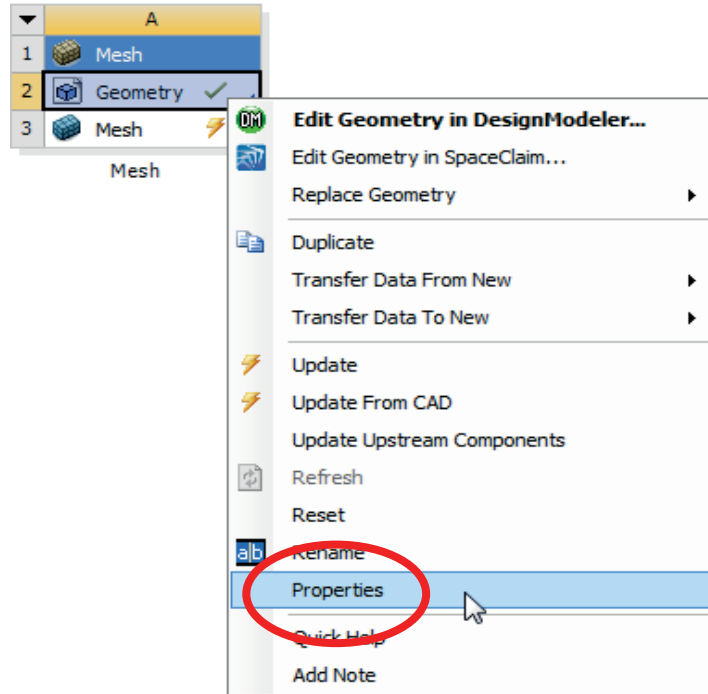
- Start Workbench
 - Start → All Programs → ANSYS 17.0 → Workbench 17.0
 - Drag and drop a Mesh Component System into the Project Schematic
- Right click on the Geometry cell (A2) and select Import Geometry → Browse
- Locate the file “conical-surf.igs” in the Meshing workshop input files (Module05) folder and select it. The geometry cell will show a check mark indicating it is up to date



Analysis Type

Set Analysis Type

- Right click on the Geometry Cell in the Mesh System and select properties from the Context Menu



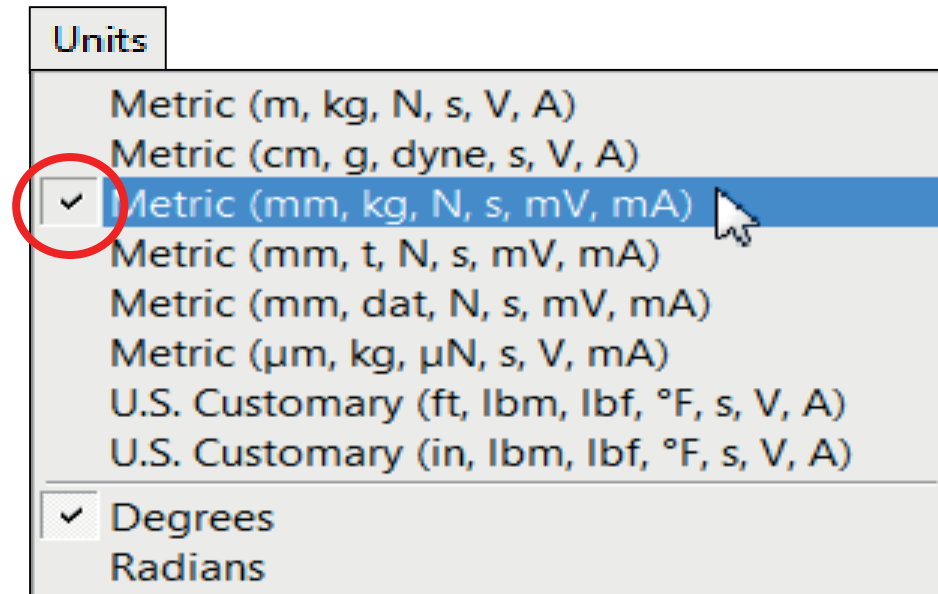
- In the Properties Schematic set Analysis Type to 2D
- Double Click on the Mesh cell to start up Meshing

Properties of Schematic A2: Geometry		
	A	B
1	Property	Value
8	Last Update Used Licenses	
9	Geometry Source	
10	Geometry File Name	C:\Users\mboulos\Desktop\Meshing_Introduction_17.0_v1\workshop_input_files\Module05\conical-surf.igs
11	Basic Geometry Options	
12	Solid Bodies	<input checked="" type="checkbox"/>
13	Surface Bodies	<input checked="" type="checkbox"/>
14	Line Bodies	<input type="checkbox"/>
15	Parameters	<input checked="" type="checkbox"/>
16	Parameter Key	
17	Attributes	<input type="checkbox"/>
18	Named Selections	<input checked="" type="checkbox"/>
19	Named Selection Key	
20	Material Properties	<input type="checkbox"/>
21	Advanced Geometry Options	
22	Analysis Type	2D
23	Use Associativity	<input checked="" type="checkbox"/>
24	Import Coordinate Systems	<input type="checkbox"/>
25	Import Work Points	<input type="checkbox"/>
26	Reader Mode Saves Updated File	<input type="checkbox"/>
27	Import Using Instances	<input checked="" type="checkbox"/>
28	Smart CAD Update	<input checked="" type="checkbox"/>
29	Compare Parts On Update	No

Unit

Set Units

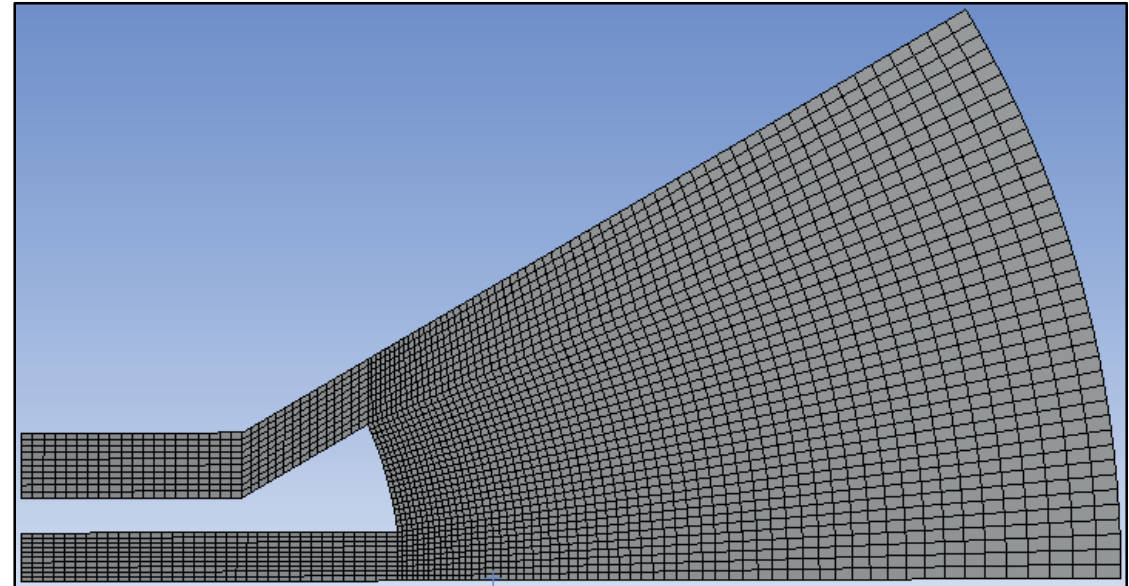
- From the main menu select Units and, if it is not already set, specify Metric (mm...)



Preparation

Planning

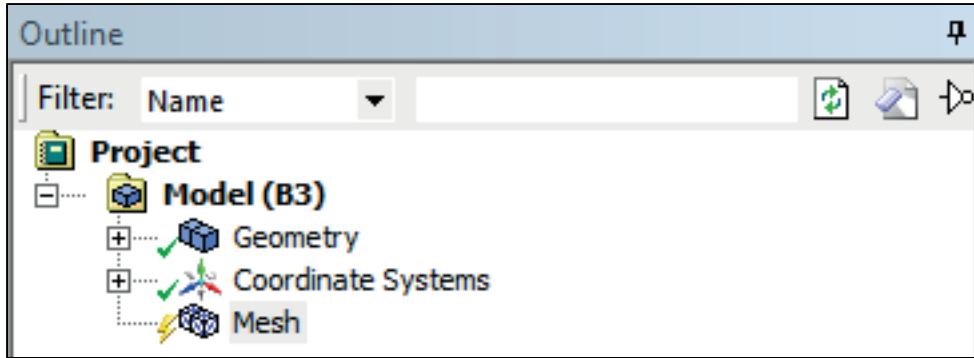
- **This geometry contains a 2d axisymmetric model representing a simple combustion chamber**
- **Initially we will demonstrate simple 2d meshing methods on the model**
- **The final mesh will use a mapped control to create a fully structured high quality mapped mesh over the entire surface using Local Edge Size Controls to define the level of mesh refinement**
- **Local Mesh Controls will be parameterized to enable quick adjustment from the Workbench interface**



Global Mesh Controls

Mesh

- In the Outline, select the Mesh object to display Details of “Mesh”



- In Details of “Mesh”, set the following under Defaults:
 - Physics Preference: Mechanical
 - Shape Checking: Standard Mechanical
- Set Size Function to Proximity
- Set Relevance Center to Fine
- Set Max Face Size to 1.5 mm

Details of "Mesh"	
Display	
Display Style	Body Color
Defaults	
Physics Preference	Mechanical
<input type="checkbox"/> Relevance	0
Shape Checking	Standard Mechanical
Element Midside Nodes	Program Controlled
Sizing	
Size Function	Proximity
Relevance Center	Fine
Initial Size Seed	Active Assembly
Smoothing	Medium
Span Angle Center	Coarse
<input type="checkbox"/> Num Cells Across Gap	Default (3)
Proximity Size Function Sources	Faces and Edges
<input type="checkbox"/> Proximity Min Size	Default (0.893590 mm)
<input type="checkbox"/> Max Face Size	1.50 mm
<input type="checkbox"/> Growth Rate	Default
Automatic Mesh Based Defeaturing	On
<input type="checkbox"/> Defeaturing Tolerance	Default (0.670190 mm)
Minimum Edge Length	3.0 mm
Inflation	
Advanced	
Statistics	

以上内容仅为本文档的试下载部分，为可阅读页数的一半内容。如要下载或阅读全文，请访问：<https://d.book118.com/638140135110006106>