

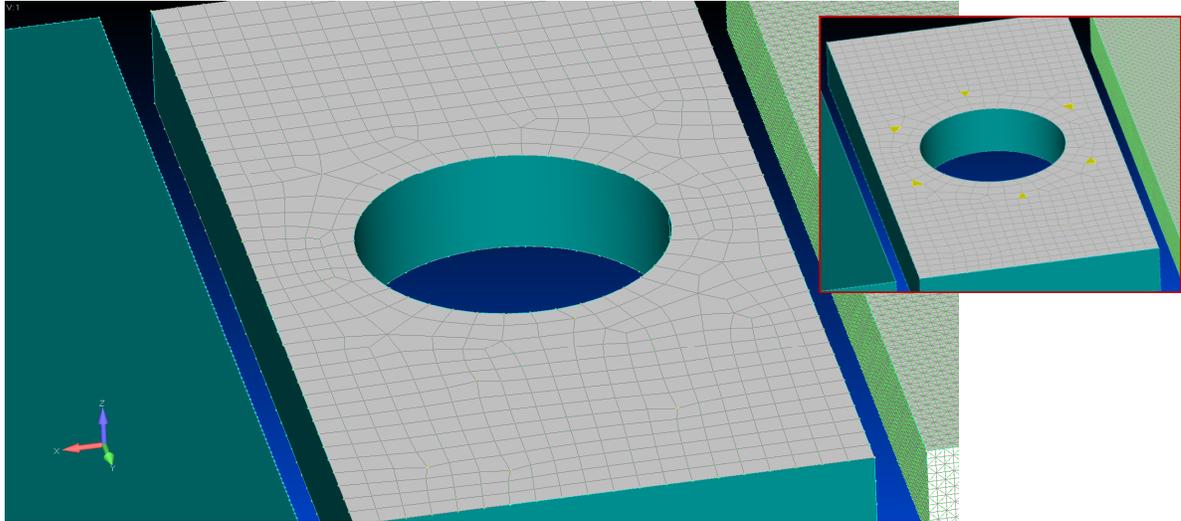
Femap 11.3 Features – Part 1

This Tech Tip looks some of the new features introduced in Femap 11.3.

1. **Max Quads option** in the Meshing Toolbox -> Mesh Surface section OR when meshing using the Mesh | Geometry | Surface command.

This command eliminates one of the very few differentiators where MSC.Patran could produce a better mesh with less elements compared to Femap.

This image shows the use of "Max Quads", plus Quad Layers = 2, and with some Mesh Points defined on the surface.



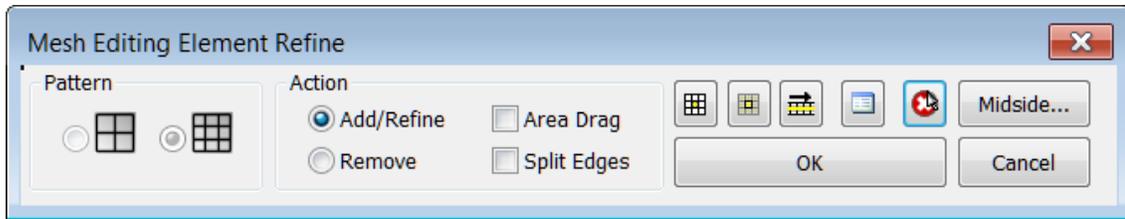
Note that without the Max Quad option and quite "easy" geometry, Femap still produces 6 triangular elements.

2. **Dynamic View enhancements** have been added to make navigating around complicated models much easier:

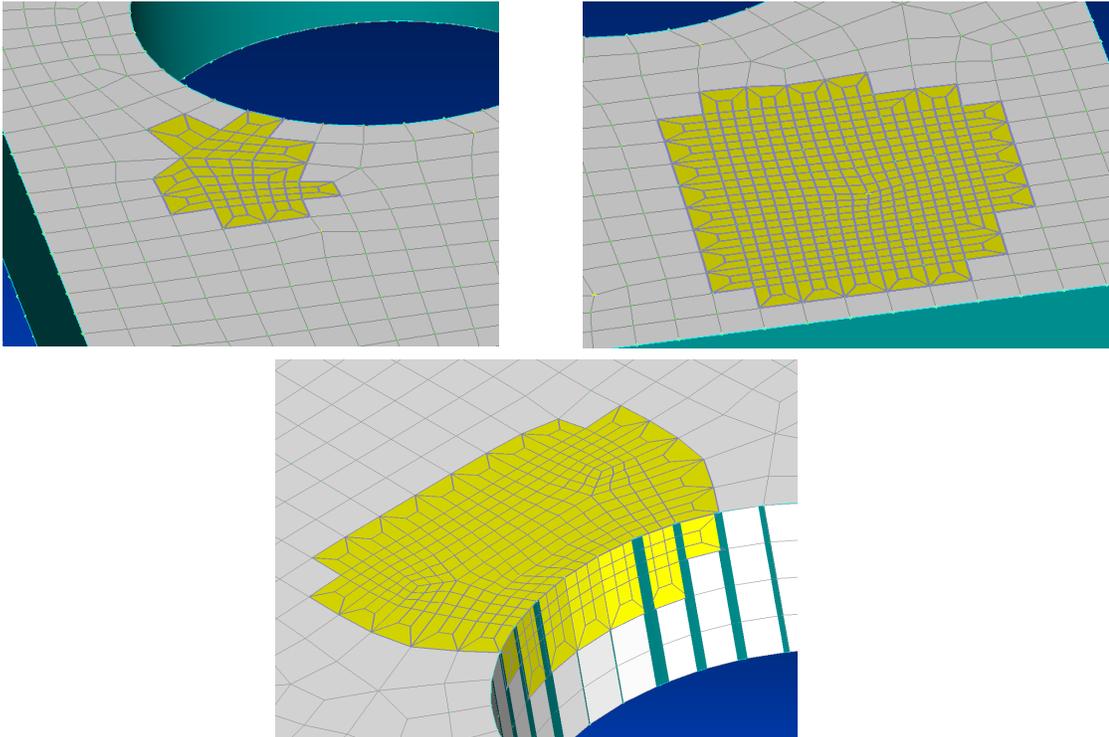
This happens via File | Preferences -> User Interface: Dynamic Zoom around Cursor Location and Dynamic Rotation Around Cursor Location.

- (a) Zoom centre is based on where the cursor sits in the View - whether using the scroll wheel or Shift + Middle Mouse Button Drag
- (b) Rotation centre based on where the cursor sits in the View when rotating using the Middle Mouse Button Drag

3. Mesh | Editing | Element Refine



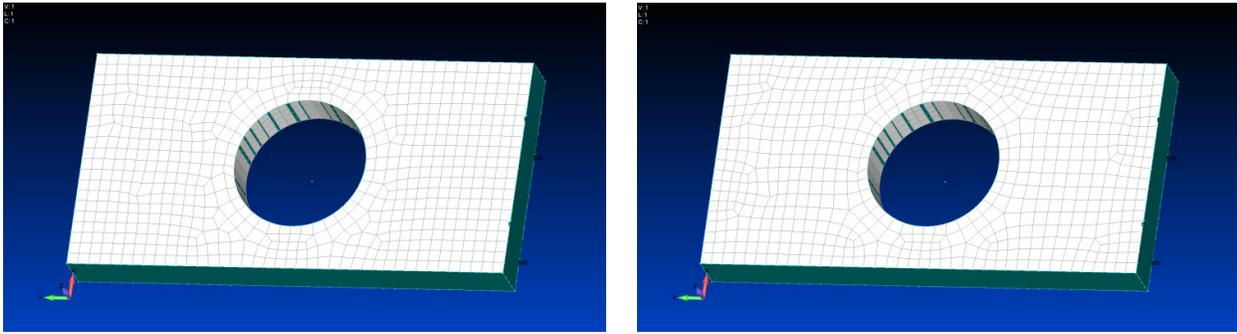
Choose a refinement pattern and drag the mouse through a collection of elements, and see the refinement and automatic transition:



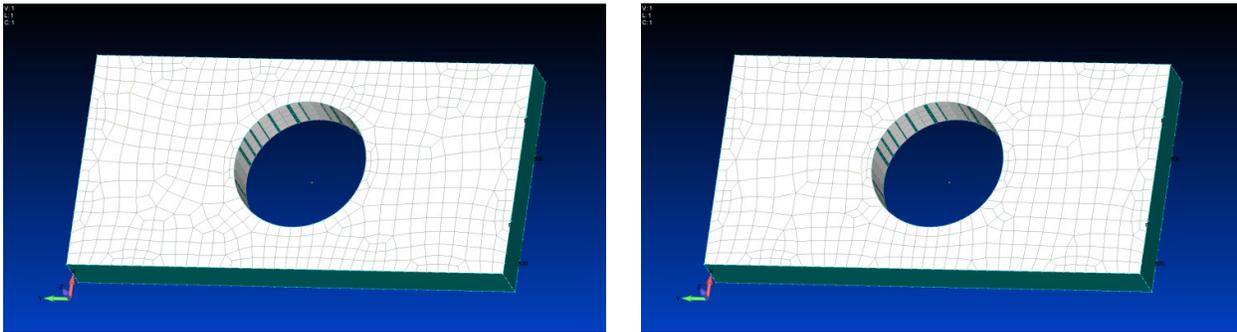
Note the preservation of assigned Mesh Points, and refinement across connected edges.

4. Meshing Toolbox -> Mesh Surface -> Surface Growth Factor

Now makes a difference to quad mesh interior mesh size.



680 elements vs 617 when Surface Growth set to 2.0. (Quad/Tri Layers = 2 for both)



If Surface Growth = 2.0 and Quad/Tri Layers = 0, then 508 elements. If Max Quads is off, then 486 Elements, but note the less attractive mesh style and triangular elements.

5. Femap 11.3 now includes a Connection Editor dockable pane. This provides a single efficient user interface to review, highlight and edit the connections in a model.

CSys for Box Coordinates Show/Hide Columns Select Entities to Filter Rows Show Visible Rows

Reload from Model Save to a File Filter Rows Clear Filter Show When Selected

ID	Status	Title	Property	Master(Target)	Slave(Source)	X Center	Y Center	Z Center
1	<input checked="" type="checkbox"/>	Region 1-2	1..Region 1-2	1..Untitled	2..Untitled	0.5	0.	0.5
2	<input checked="" type="checkbox"/>	Region 3-4	2..Region 3-4	3..Untitled	4..Untitled	0.	0.5	0.5
3	<input checked="" type="checkbox"/>	Region 5-6	3..Region 5-6	5..Untitled	6..Untitled	0.	0.	0.

Copy to Clipboard Show/Hide Group Header Collapse/Expand All Groups Update Selection to Visible Rows