

Create Geometry from Mesh



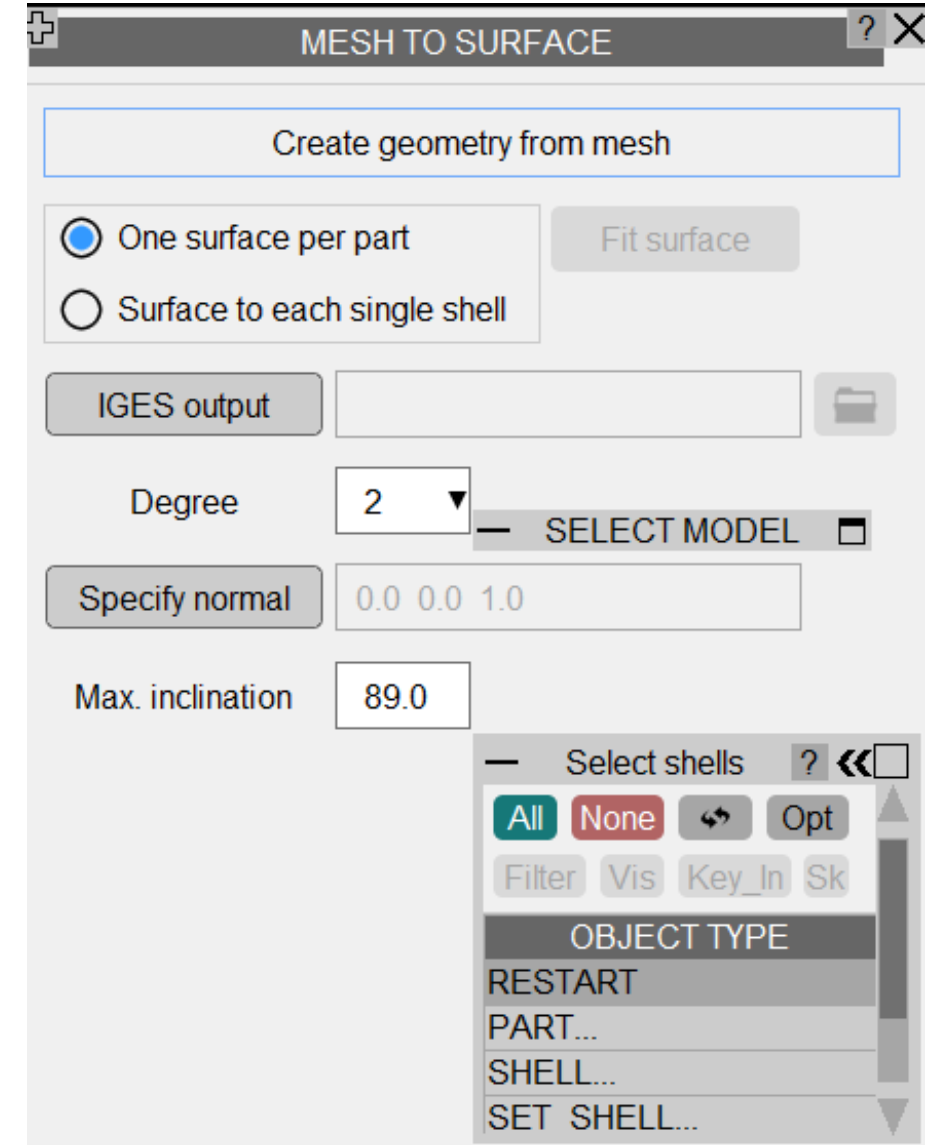
Create geometry from mesh

- The “create geometry from mesh” function allows a user to fit a geometry surface to a selection of shells.
- By default PRIMER tries to fit one surface to each part of the selection, this works well for most flat parts.
- If you are wishing to fit surfaces to curved parts like tyres or bumpers not projecting onto a reference plane, you need to split the part into several pieces. You can do this by explicitly specifying shells for each surface piece. An alternative method would be deciding to fit a linear surface to each single shell, which creates a large number of surfaces, but this is robust and requires less user interaction.



Create geometry from mesh – panel layout

- The toggle switch in the top of the panel that has the options of “One surface per part” or “Surface to each single shell” is where the user can specify how the surface will be fitted to the selected shells.
- If the “IGES output” option is toggled before clicking “Fit surface” an IGES file containing all surfaces created in this operation is written.
- All surfaces created by these functions will be NURB surfaces whose “Degree” can be set to 1 (linear), 2 (quadratic) or 3 (cubic) for both parametric coordinate directions.
- “Specify normal” is where the reference plane fitted by the principal component analysis is not optimal for the algorithm. If the result is unsatisfactory but you think that the shells do project onto a plane without overlap, you can use the “Specify normal” option and type the normal vector of the desired plane into the textbox.
- “Max. inclination” is where the user can specify the threshold for the inclination of a shell to the reference plane; this means the closer the angle specified for the max inclination is to 90 degrees, the fewer parts are rejected as too curved, but this may compromise the quality of the surfaces.



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