
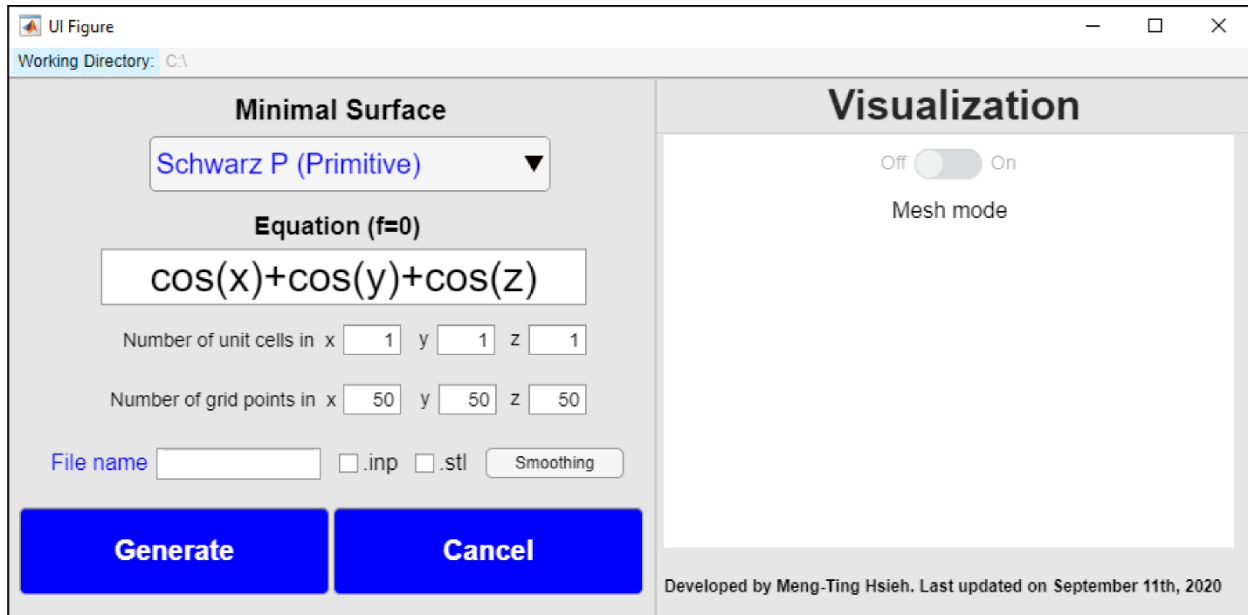


***Please run MiniSurf.exe as administrator.**

This open-source software MiniSurf provides an easy tool to generate common minimal surface CAD files in .inp for finite element analyses through Abaqus (3ds.com) and .stl for 3D printing.

Upon clicking on the executable , a GUI panel appears.

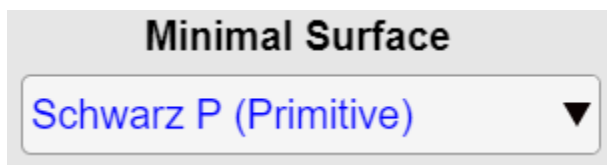


The left panel requires the user to input desired parameters while the right panel shows the visualization.

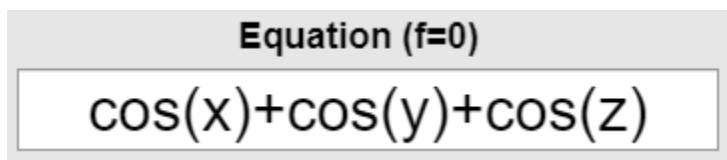
Left panel (input parameters):

1. Minimal surface dropdown allows the users to select the minimal surface in our library.

Users can use the custom level-set equation to produce minimal surfaces that are not in our library.



2. The level-set equation representing the selected minimal surface is displayed under the equation (f=0) window.



This is also where users can type in their custom equation.

Equation ($f=0$)

3. Number of unit cells allows users to put input the number of repetitive minimal surfaces in x, y and z-direction.

Number of unit cells in x y z

4. Number of elements allows users to increase or decrease mesh intensity of the final surfaces. Note, number of elements represents the initial mesh grid in a cubic volume. It does not represent the number of elements in the final surface.

Number of mesh elements in x y z

5. Users can choose to only see visualization (leave anything blank; faster) or generate the CAD files (by inputting a file name and ticking on the box before .inp or .stl or both). Users can also smooth the generated mesh with the smooth push-button.

File name ☐ .inp ☐ .stl

6. The generate button generates the visualization and/or CAD files in .inp and/or .stl while the cancel button stops and kills the generation process.

Right panel:

It shows the visualization of the selected minimal surface. Mesh mode can be turned on by using the mesh mode switch.

Off ☐ On
Mesh mode