

### 1. Generate Nodes for Vega FEM solver

Run the code below :

“FSI\_Chengjun\LauderMembraneVibration\inputFiles\_v5\_membrane\_iteration\_forceCorrection\**generateNodesForMembrane.c**”

**generateNodes(1.0,0.02,0.6,51,2,31,&nNodes,&nodes3D); //**  
the length of x, y, z and the number of nodes in x, y, z.

**migrateNodes(1.5,0.99,1.0,nNodes,nodes3D); //** migrate all the nodes with distance in x, y, z direction.

The code will generate two important files: “test.bou” & “test.node”. “test.bou” store the fixed nodes of the model used for Vega FEM solver. Rename “test.bou” into “mesh.bou” for Vega FEM solver.

### 2. Generate tetrahedral mesh from “test.node”

Enter the command “tetgen.exe test.node” in windows command shell to get the tetrahedral mesh file “test.1.veg”. Rename “test.1.veg” into “mesh.veg” for Vega FEM solver.

### 3. Generate membrane mesh for IBM solver.

Run the code below:

“FSI\_Chengjun\LauderMembraneVibration\inputFiles\_v5\_membrane\_iteration\_forceCorrection\**generateUnstruc vegaSurfaceMesh forMembrane.c**”

Obtain “unstruck\_surface\_in.dat” for IBM solver and “vegaSurfaceMesh.dat” for Vega FEM solver.