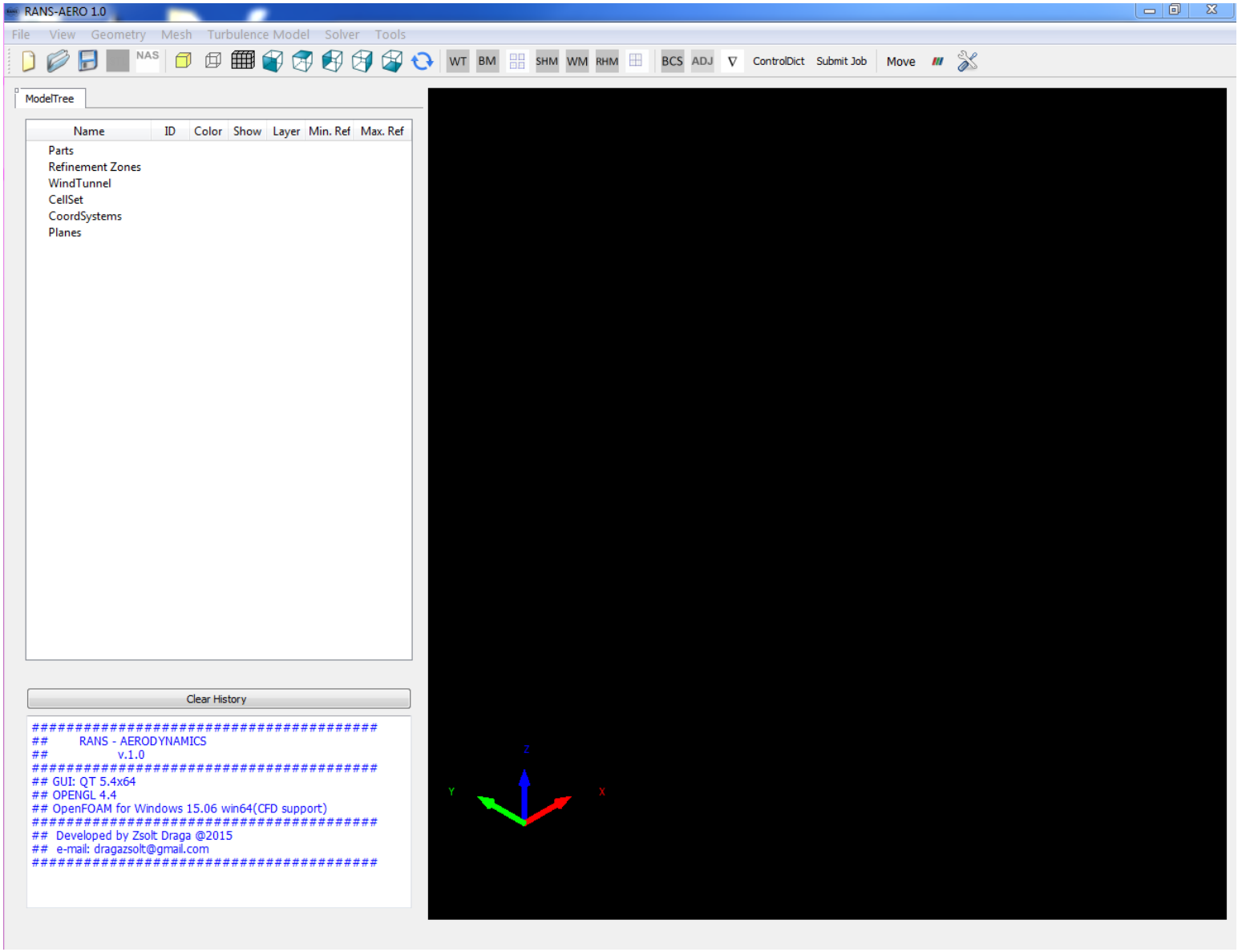
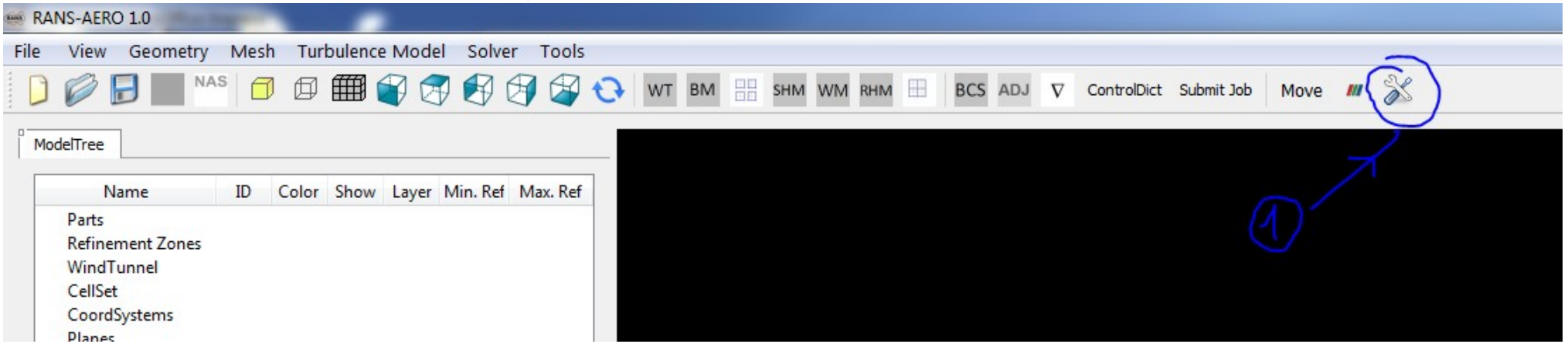
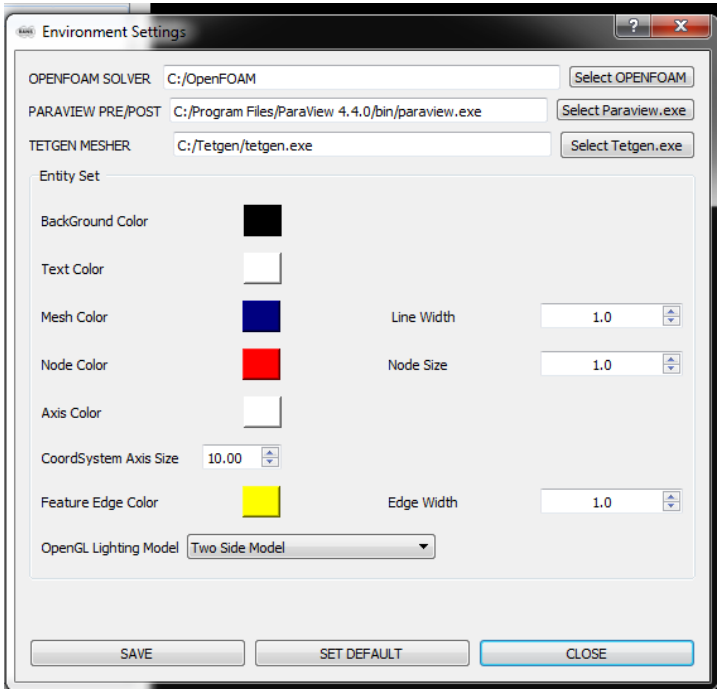
RANS AERO 1.0
32



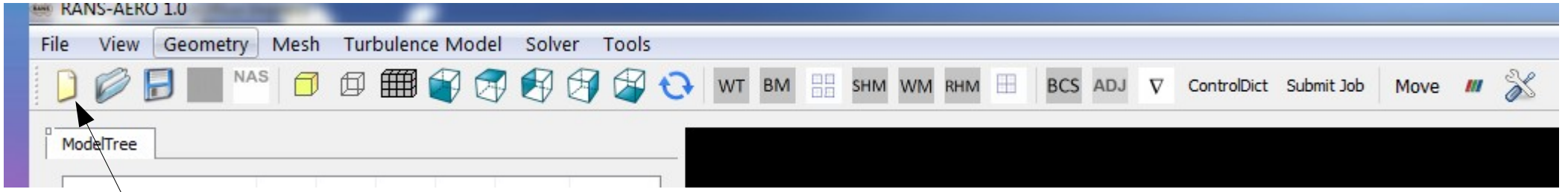
STEP1

- Environment Settings

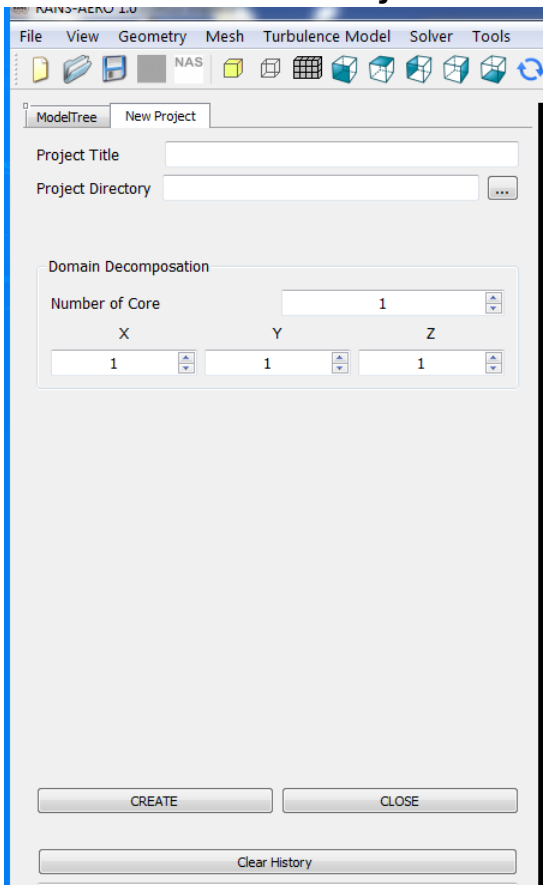




Step2 -Let start



New Project



1 .Set Project Name

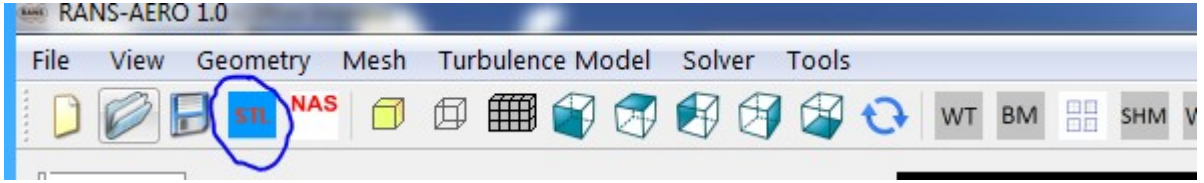
2 .Select Project Directory

3 .Select Number of CPU core (4, 6, 8)

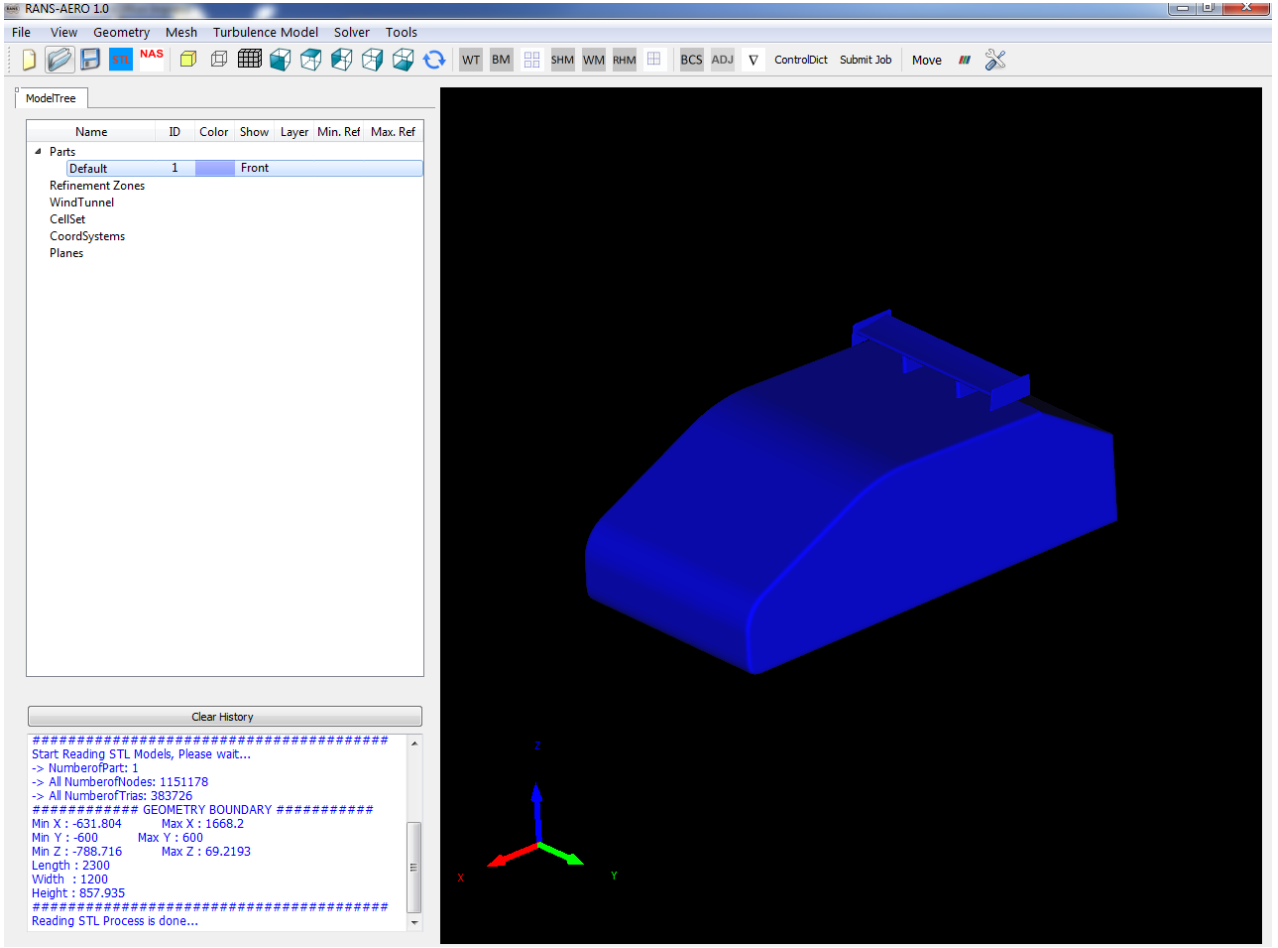
4 .Decomposition of the Domain in x, y, z direction
(x*y*z must be equal to Number of Core)
For Example: Number of Core: 8
X= 4 , Y=1, Z=2

5 .Create Button – Project Created

Step3 – Read Geometry
(STL (ascii) and Nastrain file, STL is preferred)

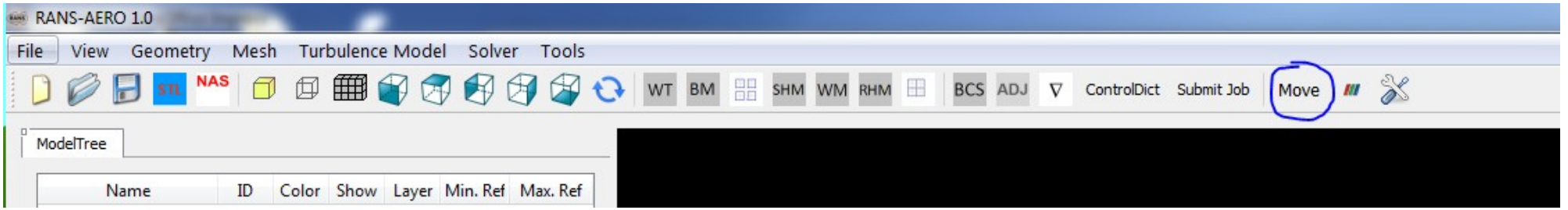


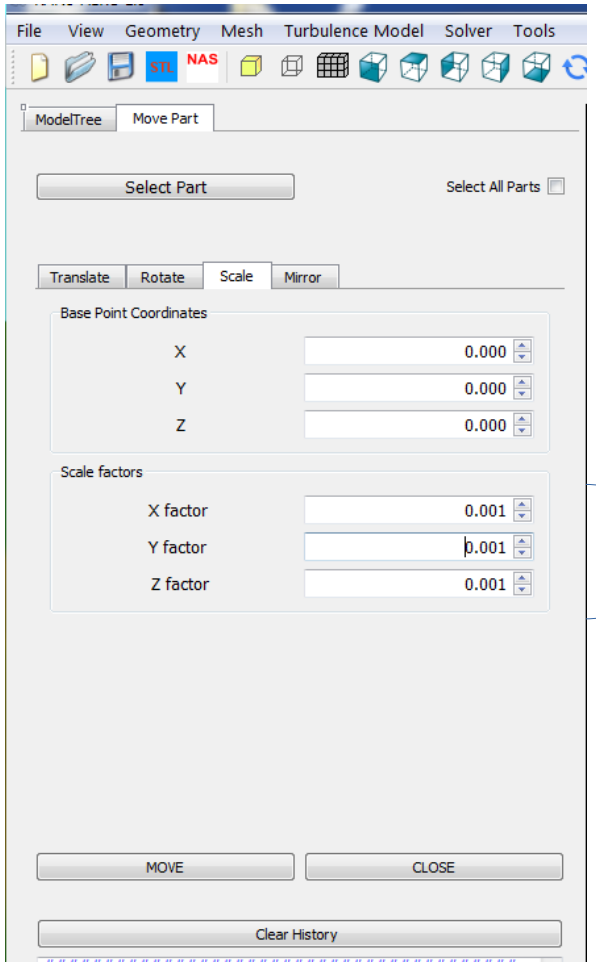
1. Multiply files can be selected



Select Part Name, Right Click . Change Part Name

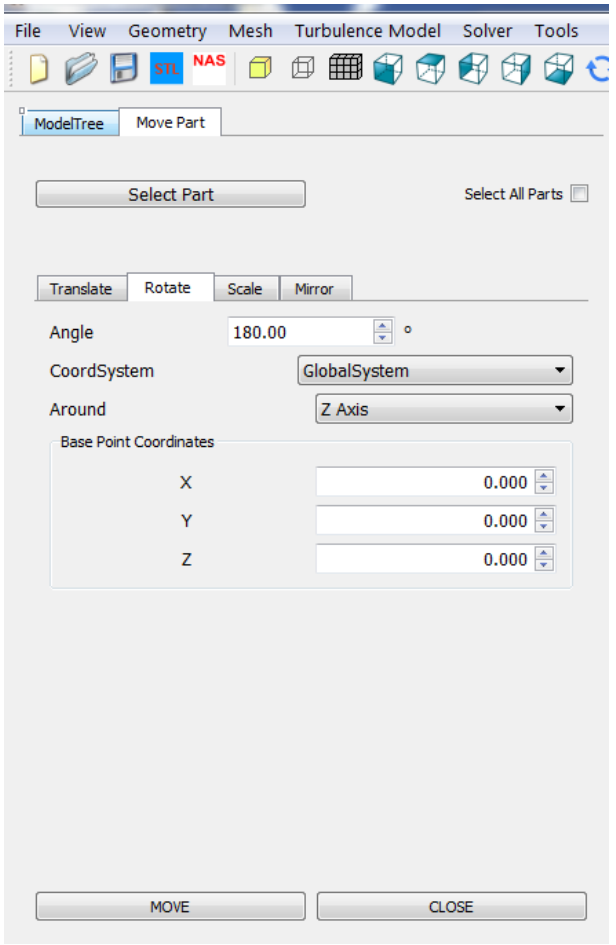
Step4 – Set correct unit system (OPENFOAM – meter, kg, Newton system)



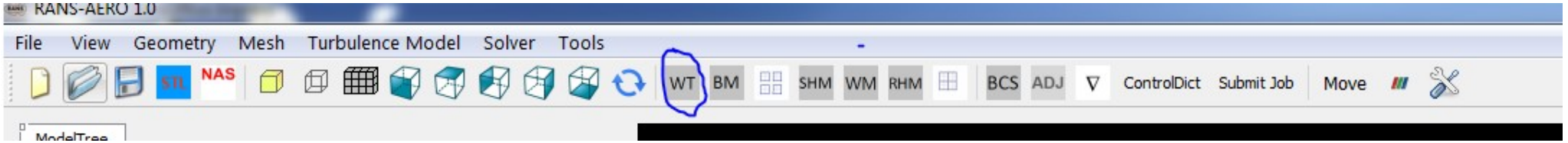


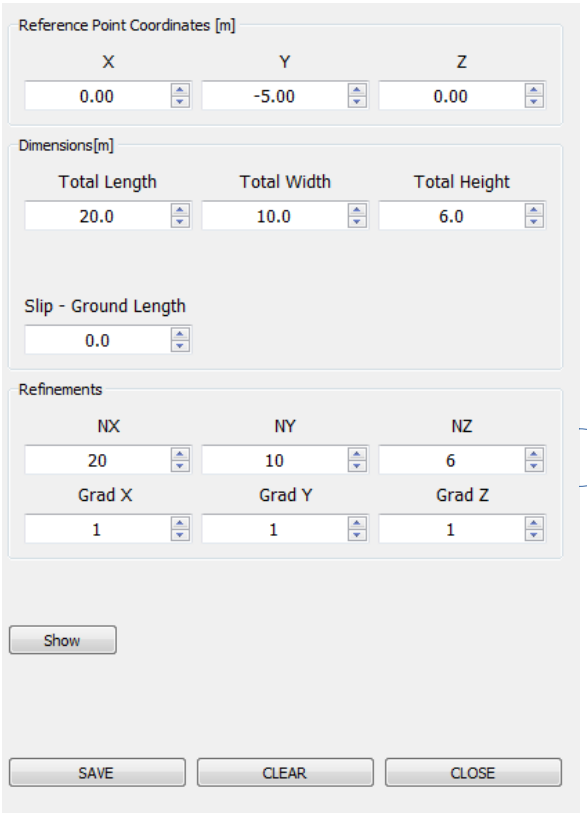
Scale mm to meter

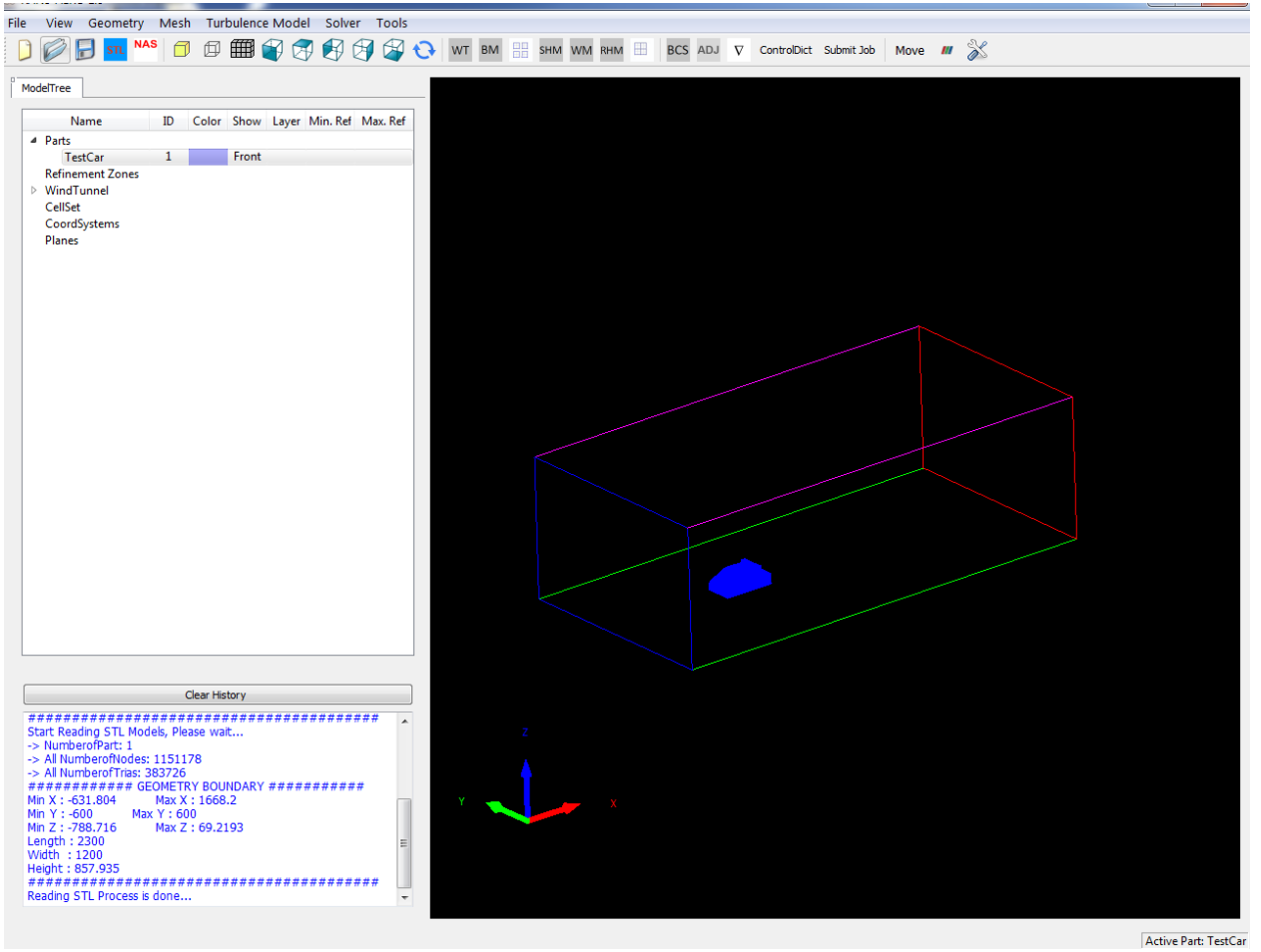
Rotate to right position



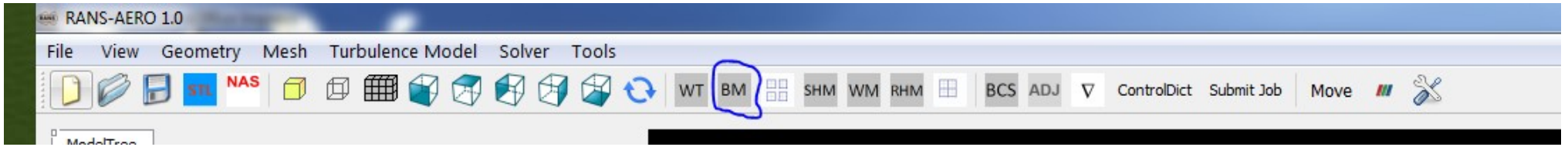
Step5 – Create Windtunnel



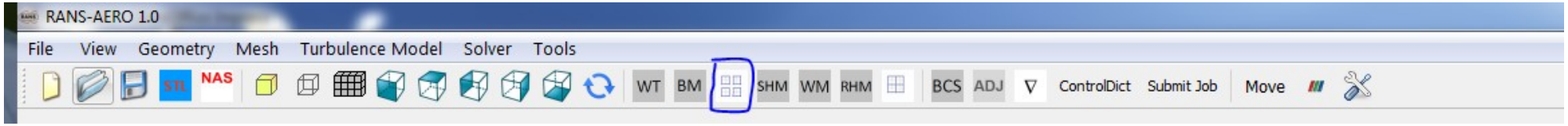




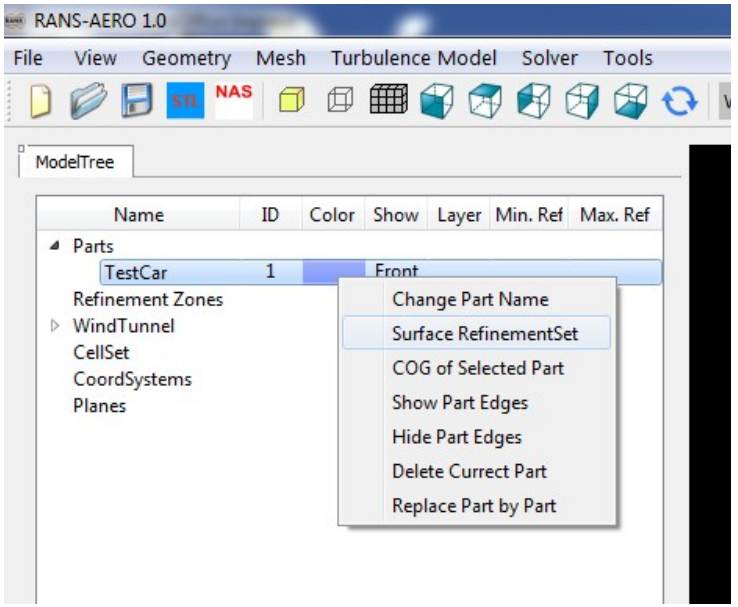
Step6 – BlockMesh
(Base Mesh for Octree based snappyhexmesh)

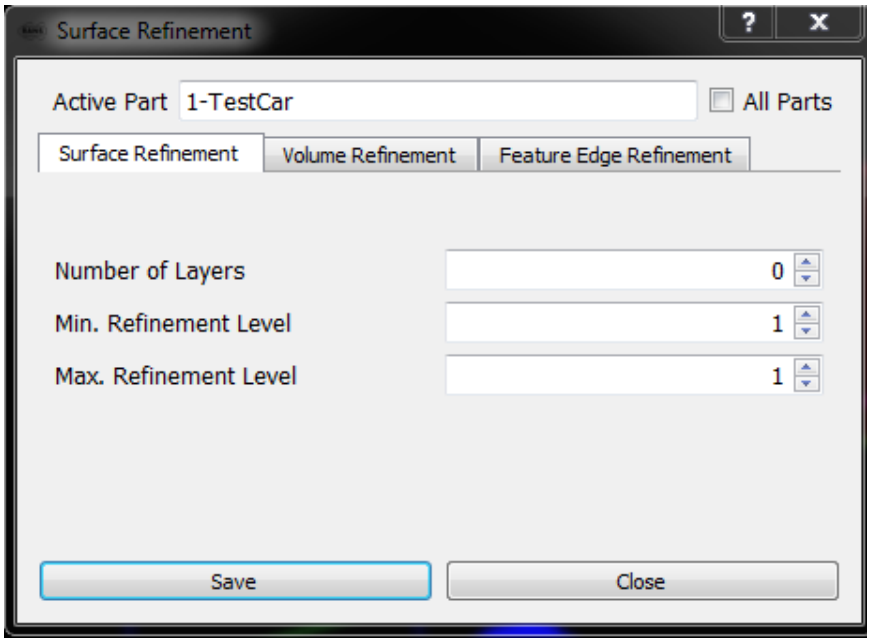


Step7 – Domain decomposition
(Distribute Mesh for parallel meshing)



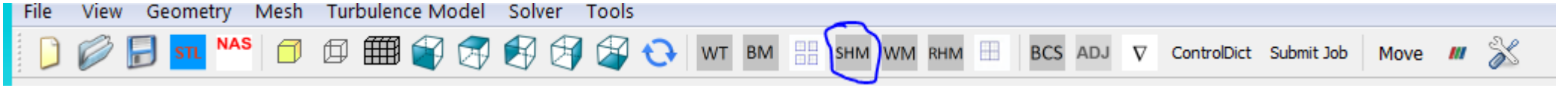
Step8 – Surface RefinementSet

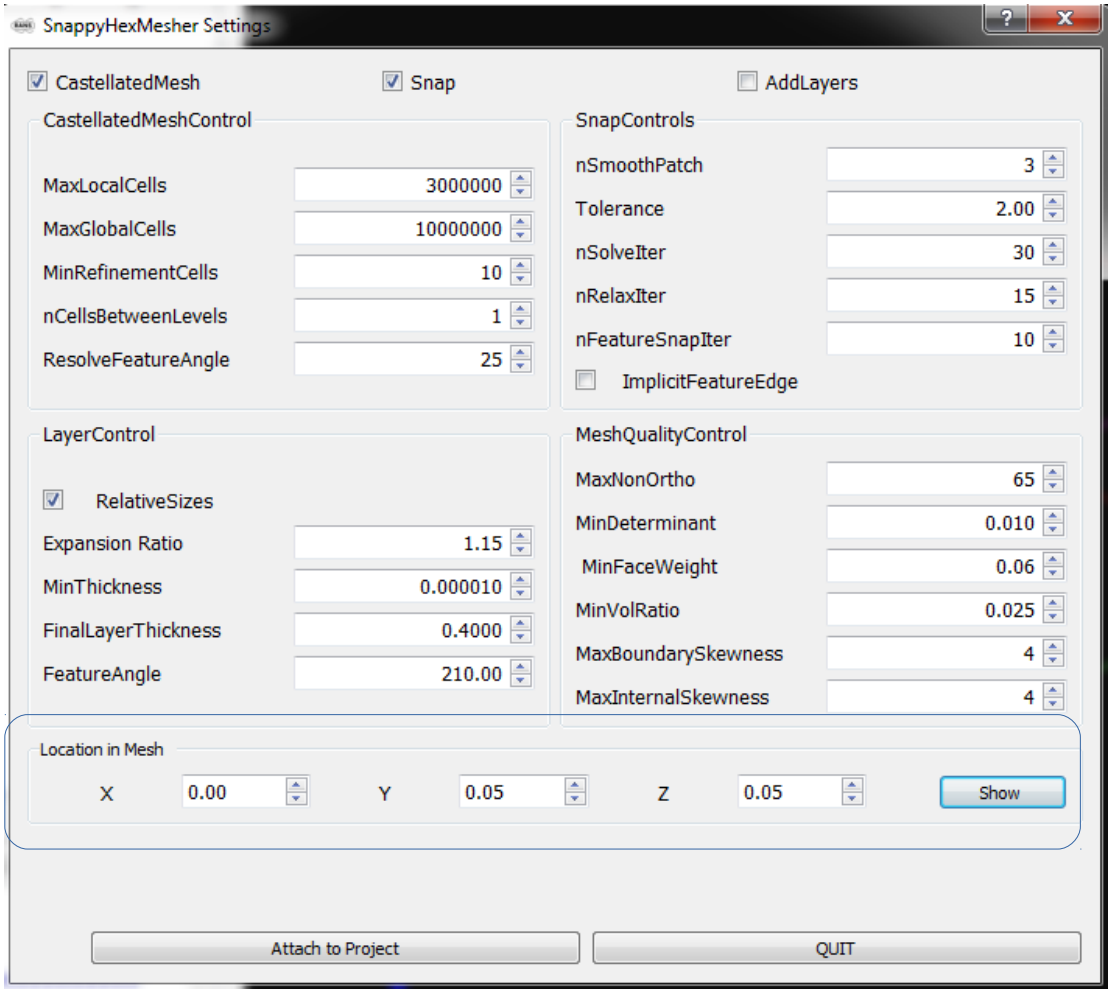




2refinemen t

Step9 – SnappyHexmeh (Volume Mesh)

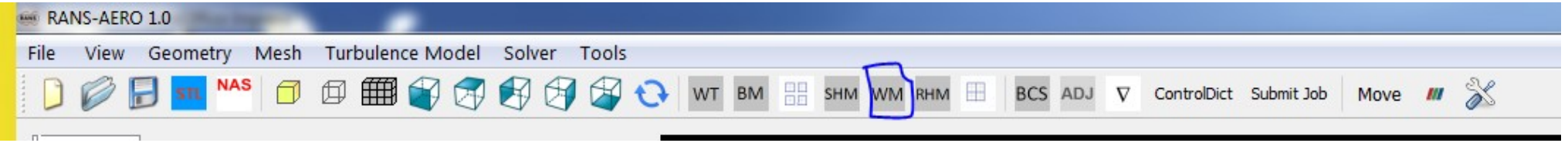




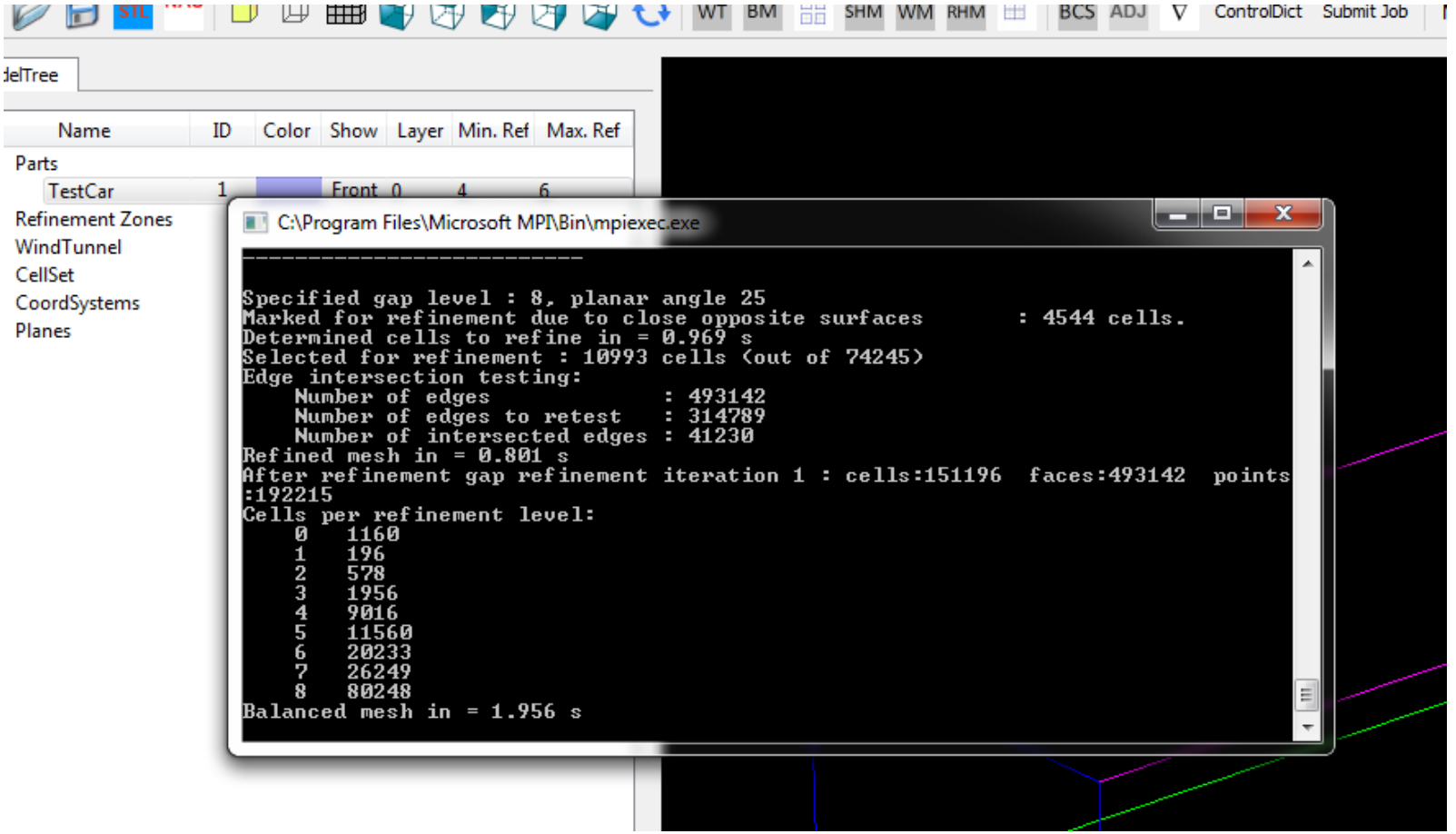
ImplicitFeature Edge should be on

Point must be inside of Windtunnel and outside from object (external aerodynamics)

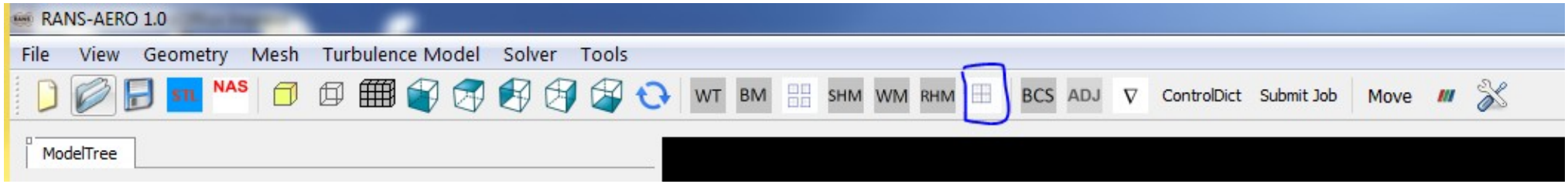
Step10 – Write Snappyfile out



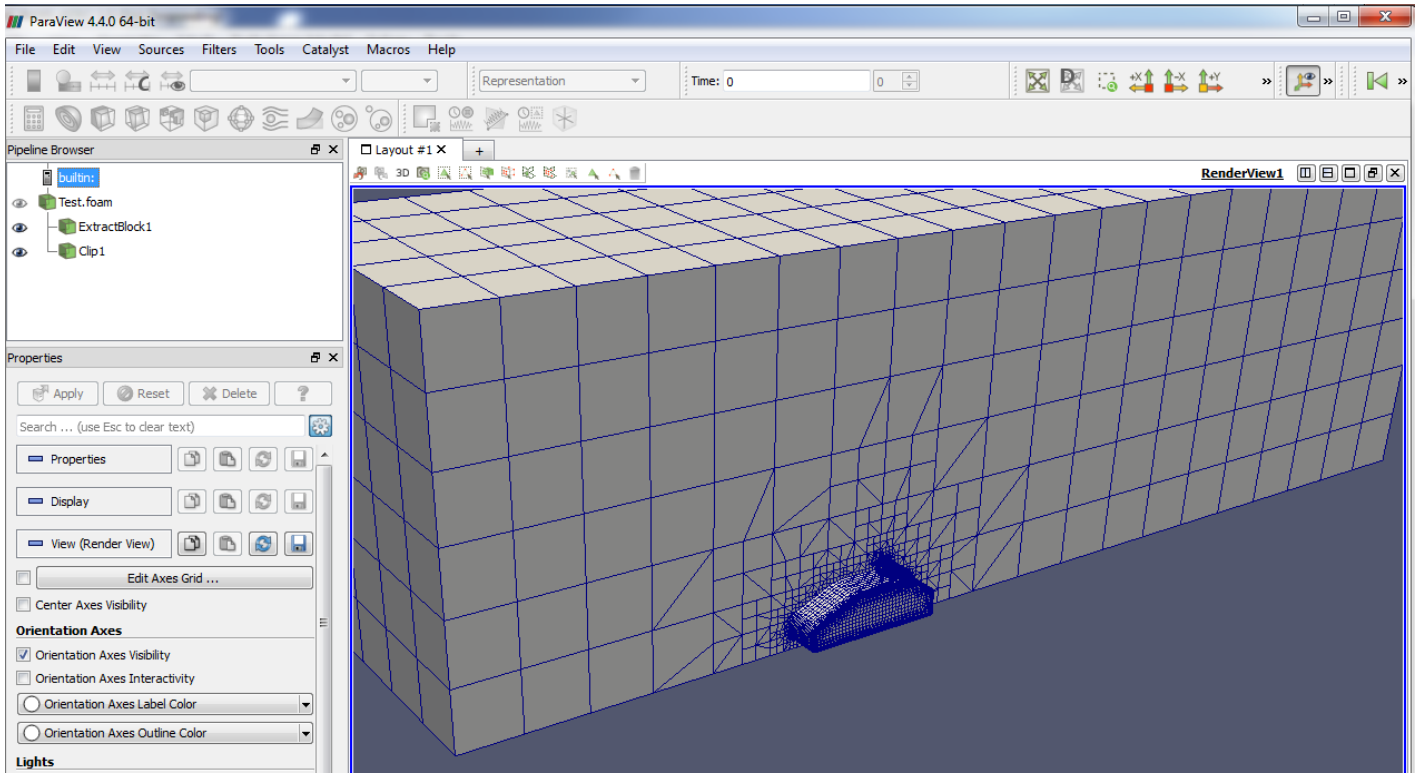
Step11 – Run HexaMesher
(it takes from minutes to days)
(1.5 million elements 1 GB RAM)



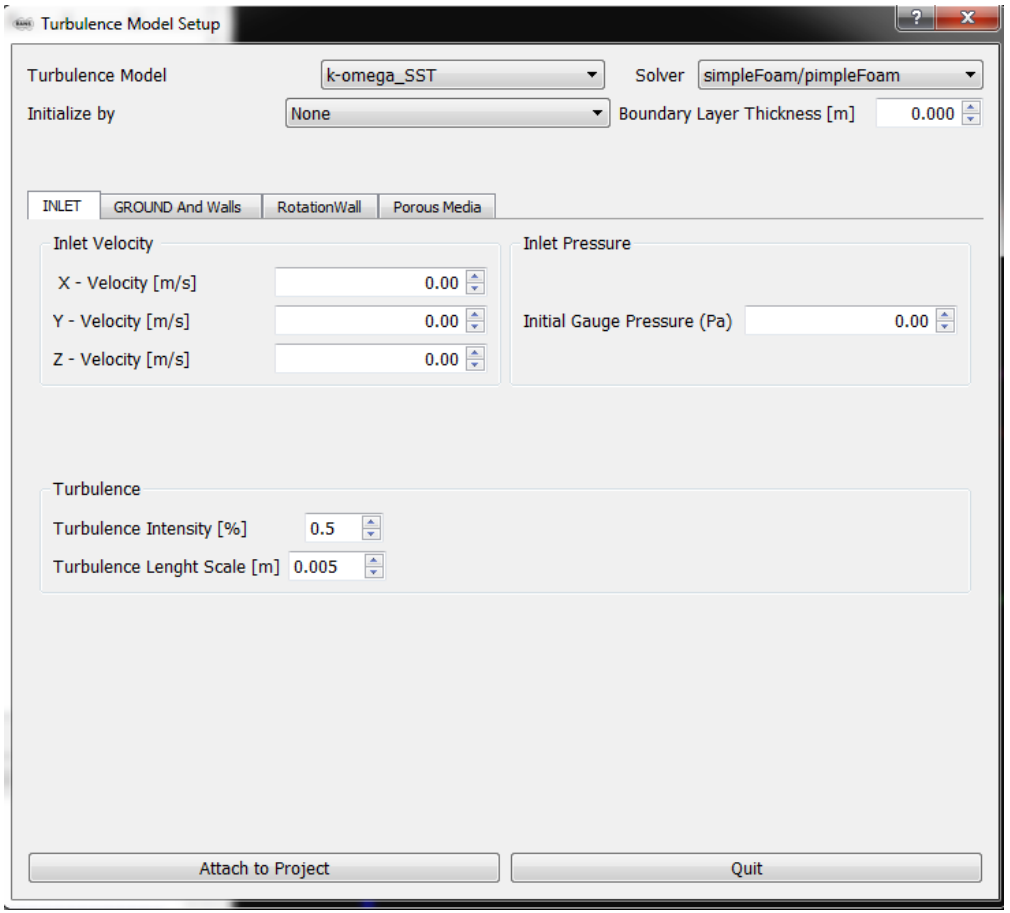
Step12 – Recombine the mesh

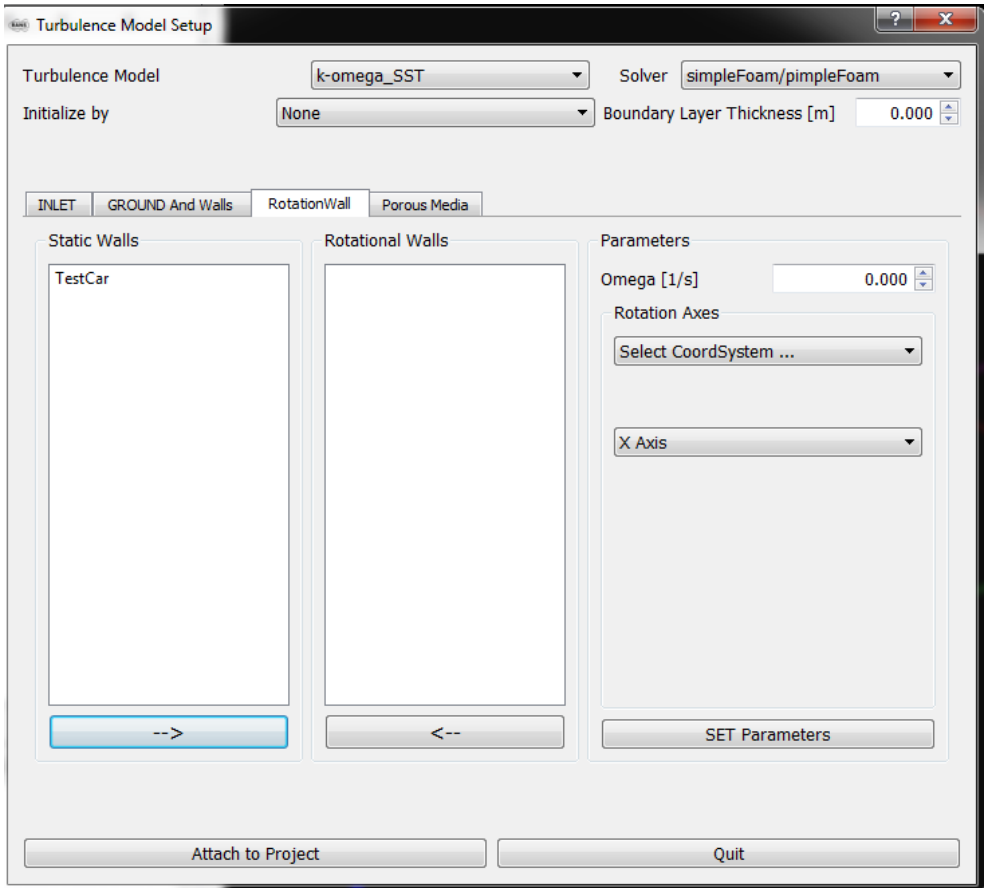


Step13 – Check Mesh – Open Paraview

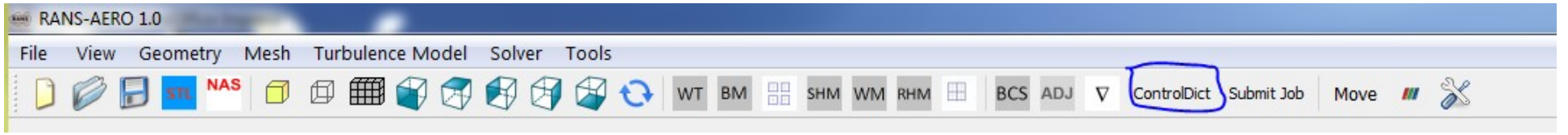


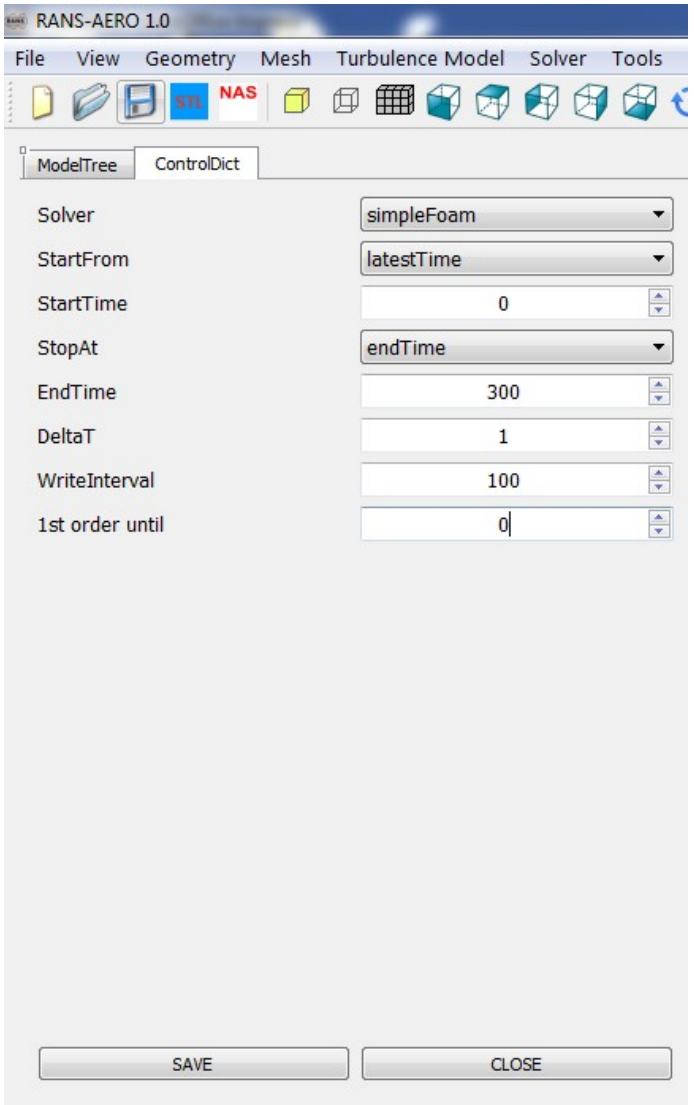
Step13 – Set Turbulence Model



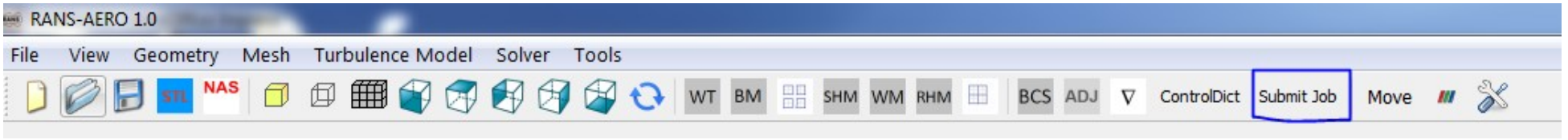


Step14 – ControlDict Settings





Step14 – Run Simulation



Step15 – Check Convergence