

# Autodesk Simulation CFD – Jet Fans

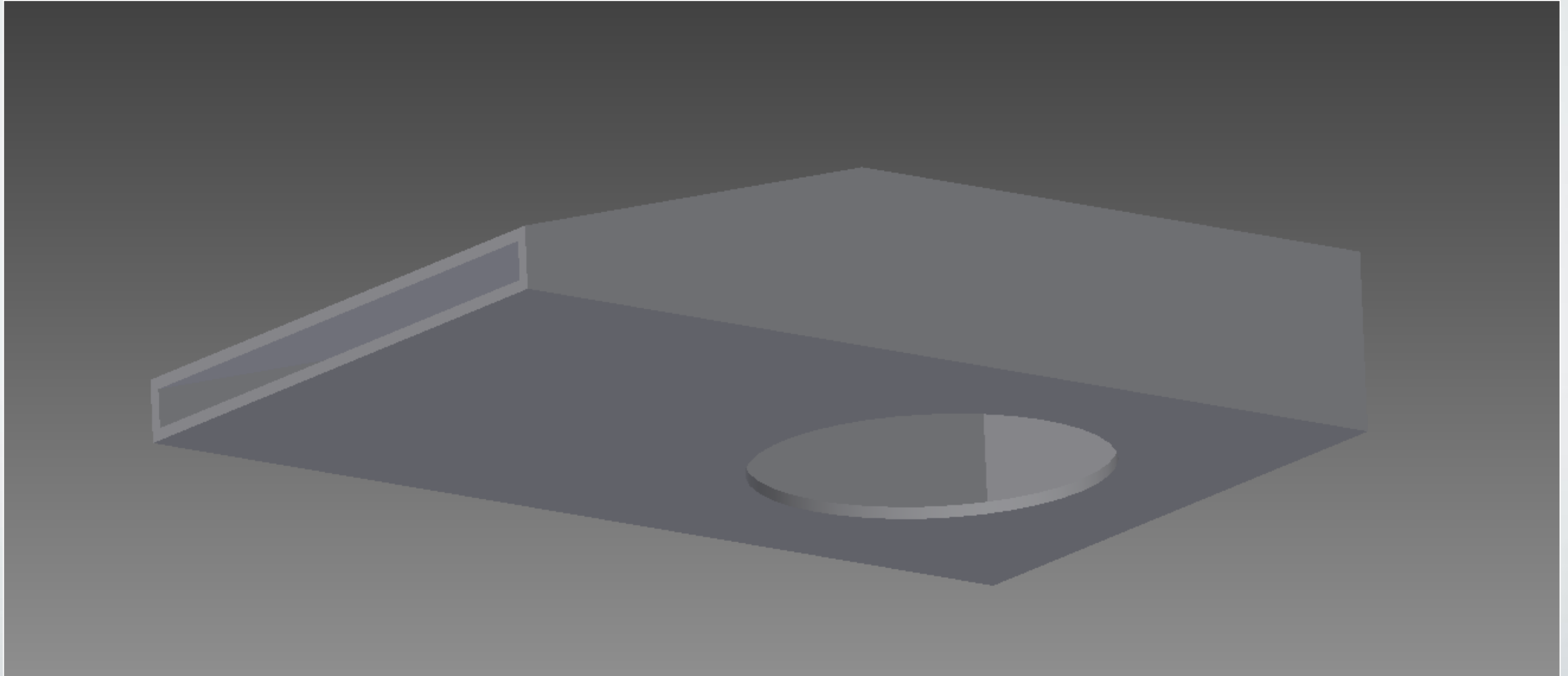
Jon Wilde  
Product Support Specialist



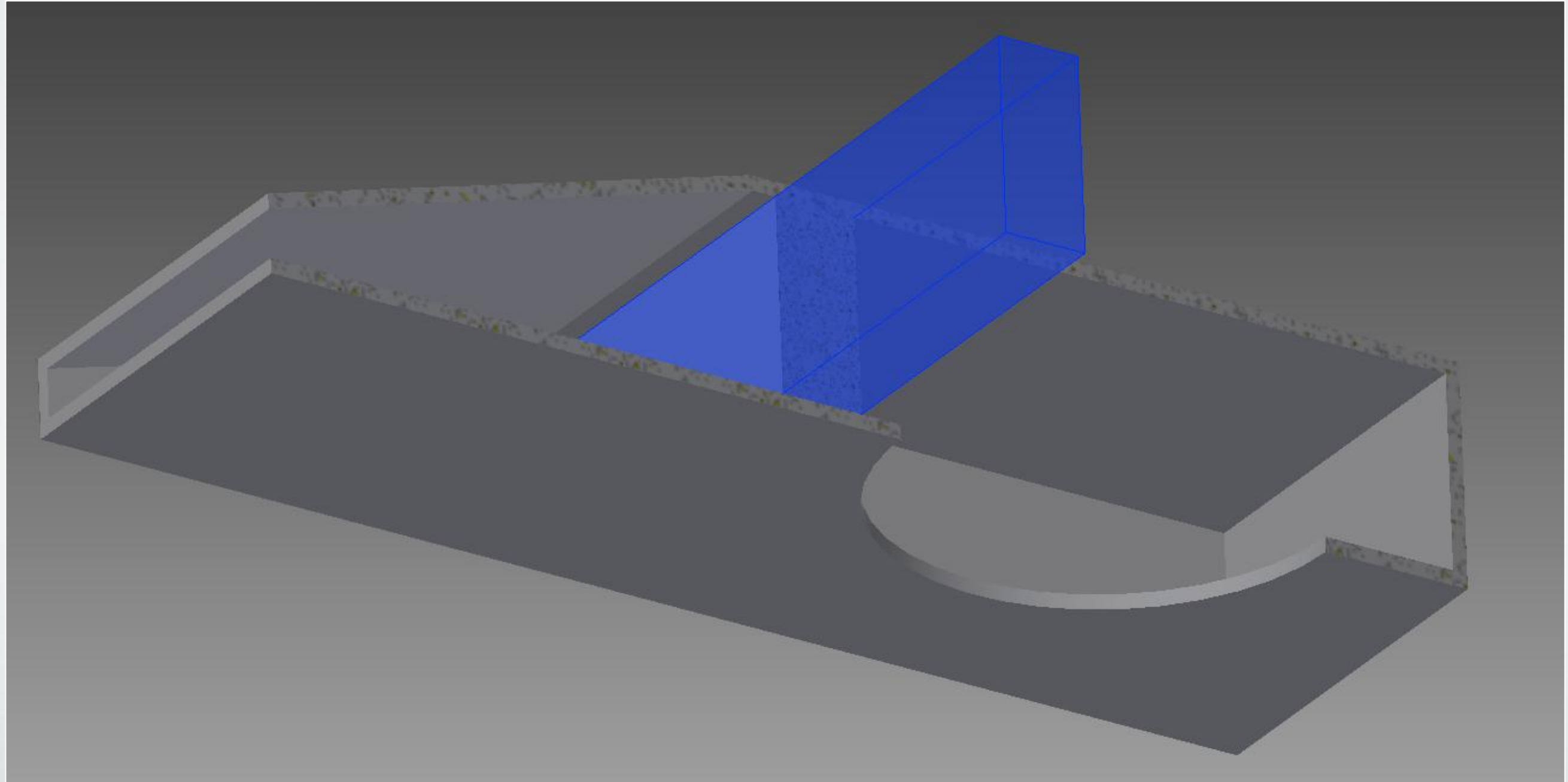
Image courtesy of AutoHorizons Foundation and Delineate



# Jet Fan Casing



# Fan Location



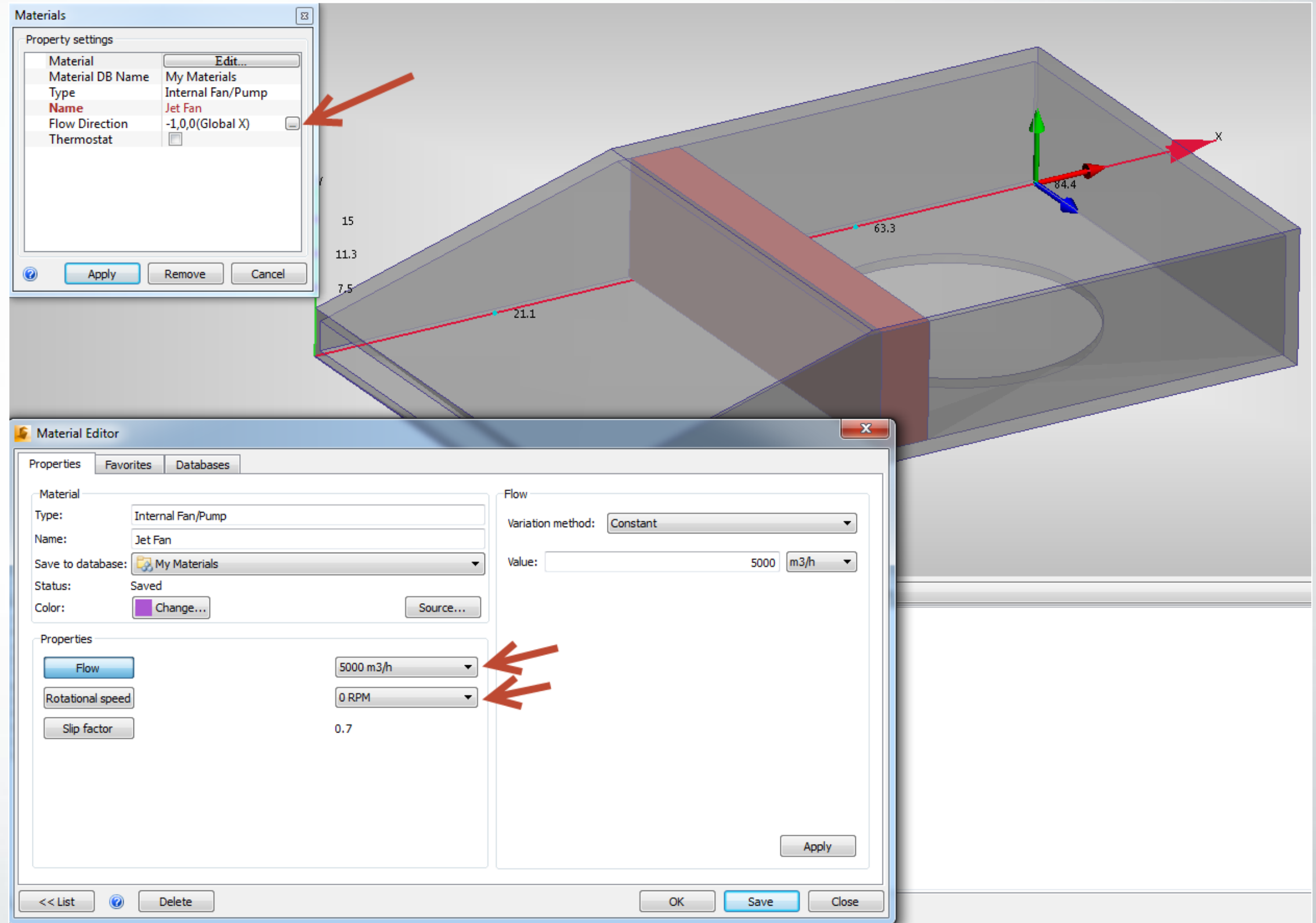
It is also possible to model the fan in the cylindrical inlet and assign a cylindrical fan material to it. The cuboid is simpler though.

# CFD Setup

Assign a fan material to the cuboid part. Using your known flowrate and a zero rotational speed.

Also set the correct flow direction, here that would be  $-x$ .

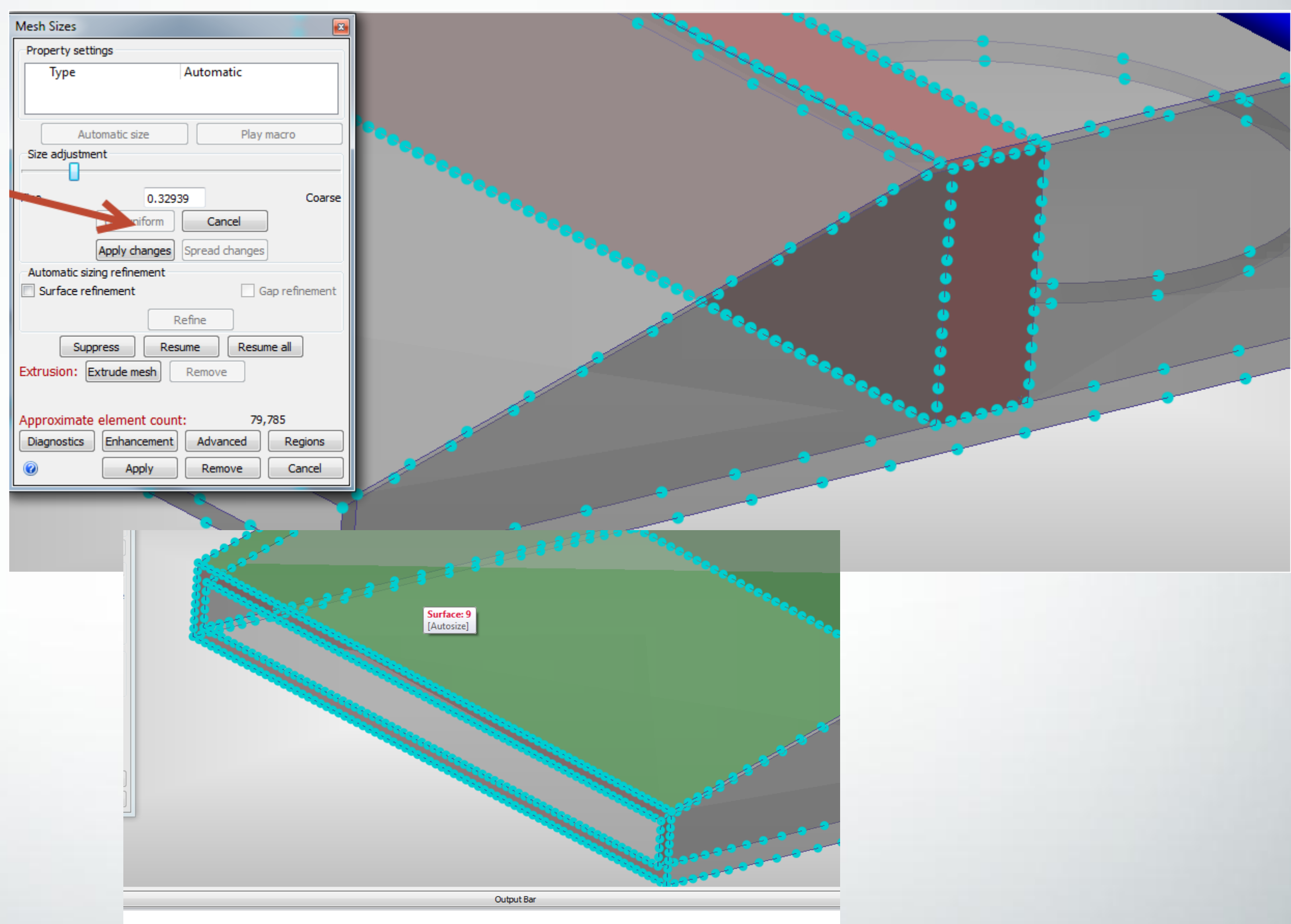
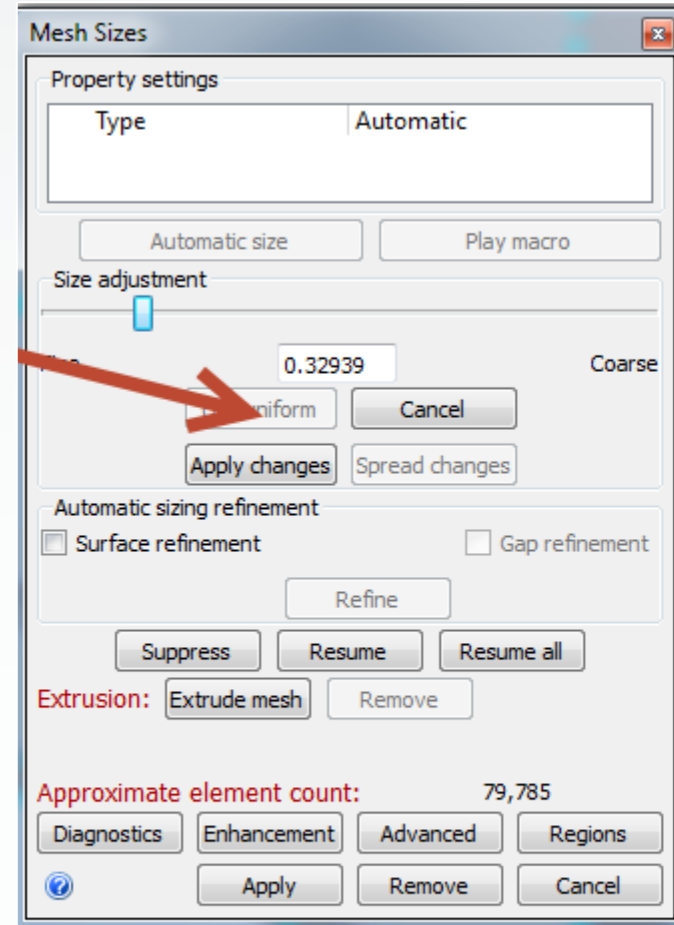
The alternative, cylindrical fan would instead require a 'cylindrical fan' model rather than an axial.



# Meshing

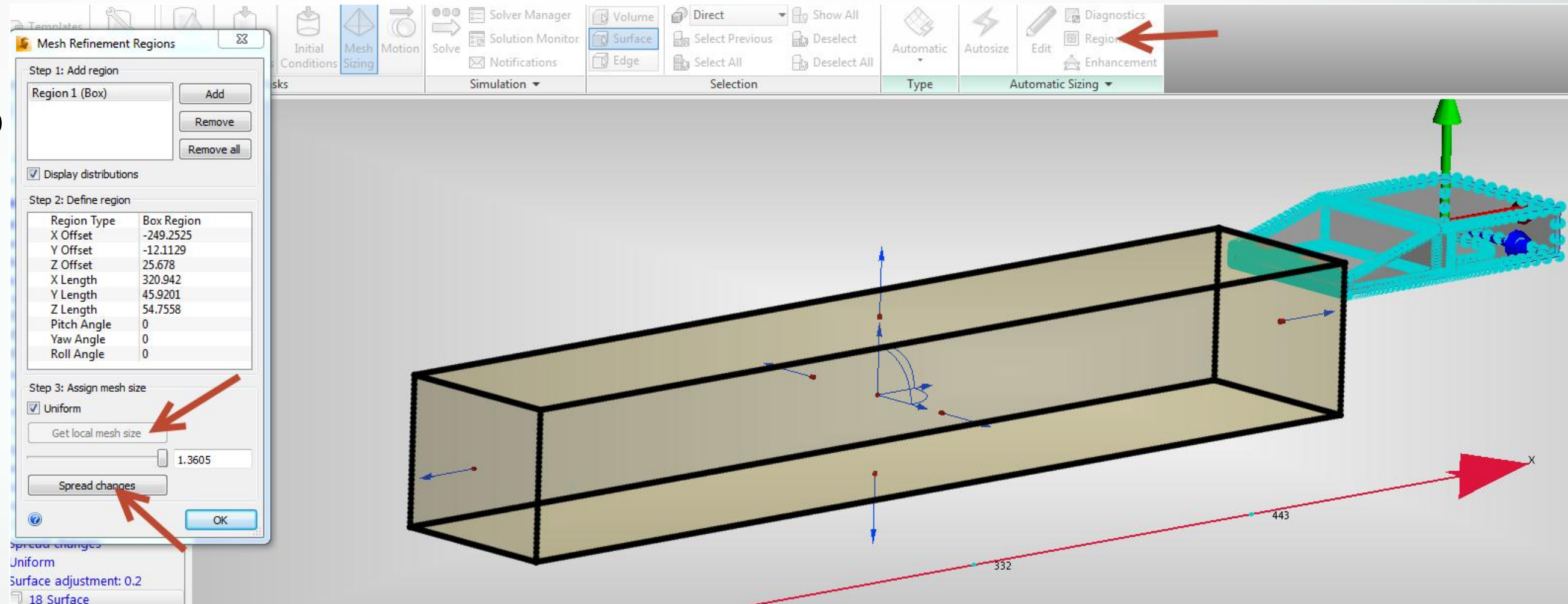
Assign a uniform mesh to the fan part and refine it until you have 5-6 elements through the thickness.

Also refine the fan outlet surface, ready for the final step, the refinement region.



# Mesh Refinement Region

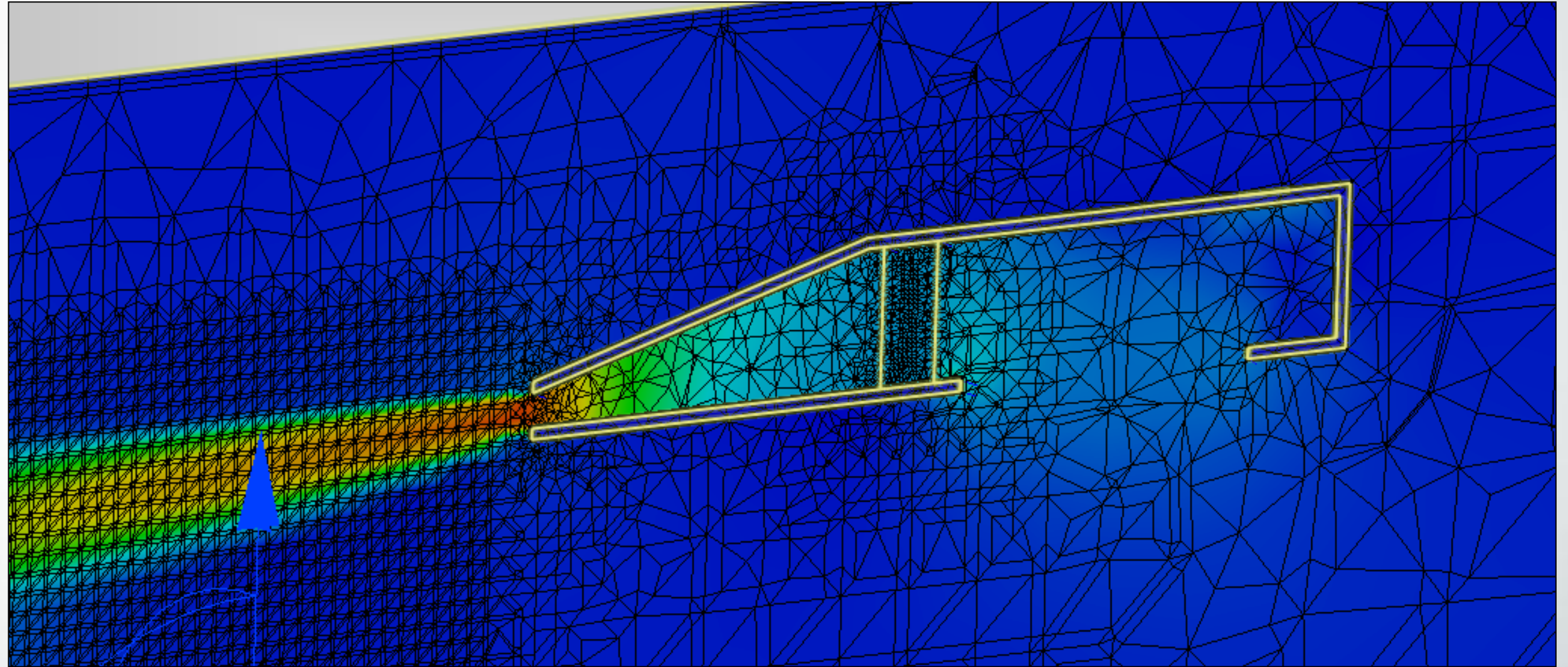
Add in a mesh refinement region to help capture the jet.  
A uniform mesh is ideal here, although it can be resource intensive.





# Results

Your results should look something like this, with a well formed jet of air.





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