

Model – Transport of Diluted Species considering diffusion and convection.

Velocity field defined as following

x component = $y*(1-y)*Pe$, where Pe is a constant
y component = 0

The figure below shows a surface plot of the velocity field after a run with a uniform density mesh. As expected!

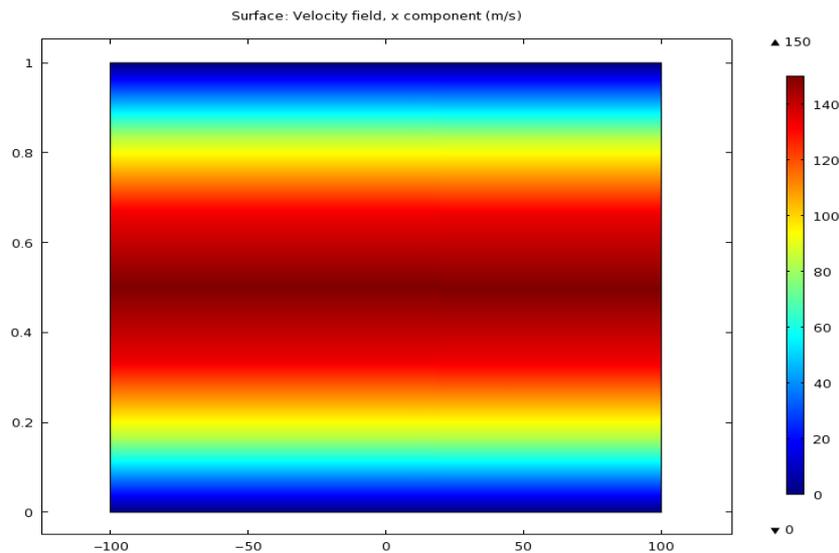


Figure 1

Figure 2 shows a surface plot of the velocity field after a run with a non uniform density mesh (resulted from a size feature in the boundary located between the points (-20,0) and (20,0)).

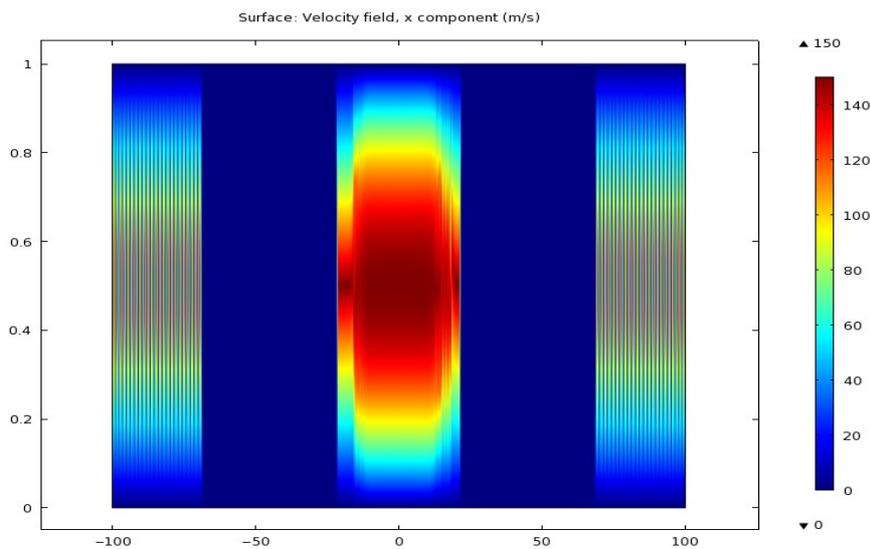
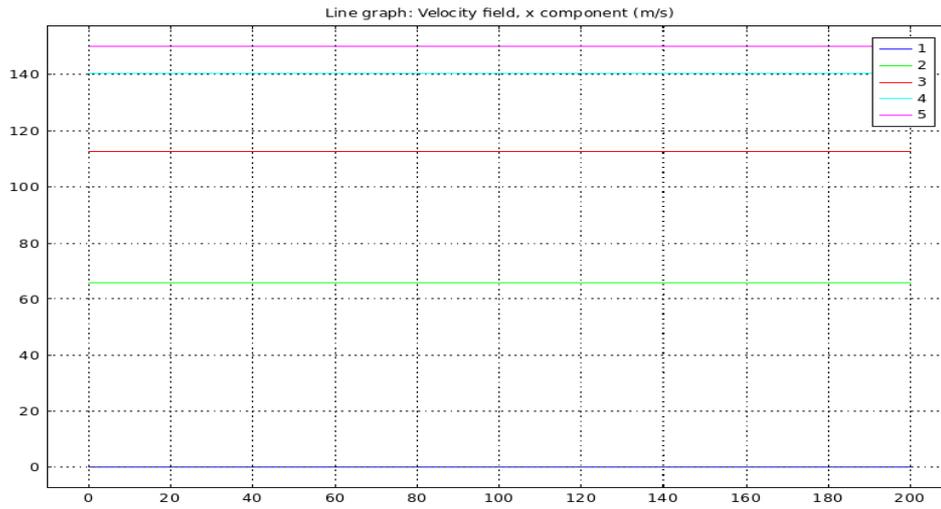


Figure 2.

This is clearly a wrong result, once the velocity field is uniform along x direction. Line graphs along x direction showed in the figure 3 retrieves the correct constant value of the velocity field



Line graphs along the y-direction shows the expected parabolic shape of the velocity field.

