

Laminar Flow Vortex Shedding Around the Cylinder

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Synopsis

This research migration project presents the results of numerical modeling of Karman vortex shedding laminar flow generation performed with OpenFoam package application. The influence of the mechanical elements located downstream of the bluff body on the vortex frequency. Two various geometrical configurations have been applied. Considerable differences in pictures of distributions of pressure, horizontal and vertical velocities have appeared for various configurations. Qualitative as well as quantitative results are presented in the report. They confirm the significant dependence of the Karman vortex street parameters on the meter configuration.

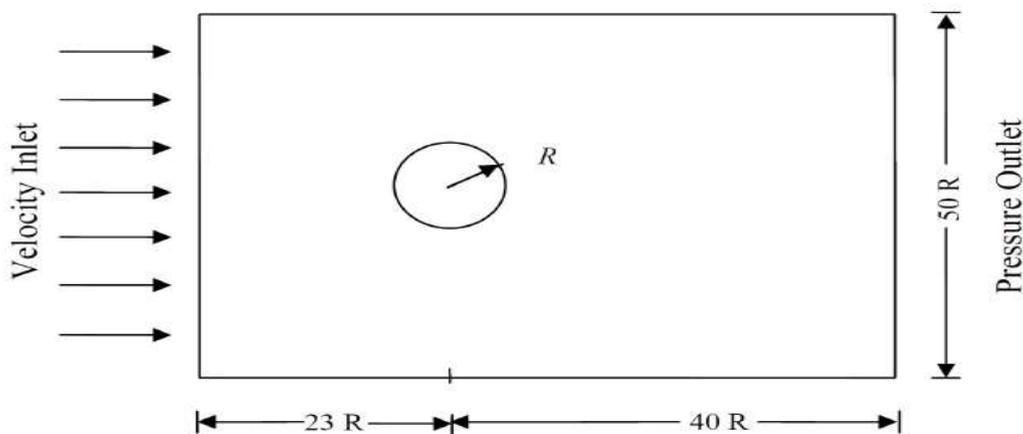


Figure 1: Geometry and Dimensions

dimensions of the geometry stated in the figure 1 are: $L = 63m$, $H = 50m$, $R=1m$.
Flowing fluid is entering from the inlet with a velocity of $1m/s$ and exiting from the outlet.

References

G. Pankanin, "Simulation of influence of mechanical elements on Karman vortex street parameters," International Journal of Electronics and Telecommunications, vol. 65, no. 2, pp. 229–234, 2019, doi: 10.24425/ijet.2019.126305.