

VISUALIZING TRANSIENT FLOW OVER A RIGHT CIRCULAR CYLINDER

Kamal S Kumar
Fourth Year B.Tech
Swami Vivekanand University
Date: 30//07/2020

Abstract:

This simulation is to study the changes in flow properties over the surface of a right circular cylinder placed in a laminar flow. The main objective of this simulation is to collect data on the variation of flow parameters (pressure and velocity) and force coefficients (C_d and C_l) about the cylinder at different mediums and inlet velocities as well as to visualize Kármán Vortex Street generated due to such interactions. This study is carried out using various FLOSS software.

Procedure-

- Generating a 3D mesh by Gmsh
- Set boundary/initial conditions (BC/IC)
- Mesh imported in to OpenFOAM
- Solver: pisoFoam
- Post-processing in Paraview and Gnuplot
- Comparing the data obtained

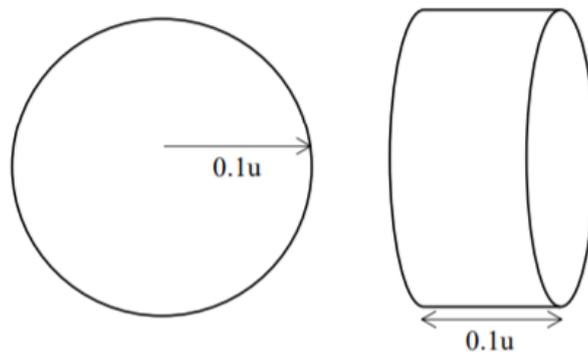


Fig.- Geometry of cylinder.