CFD analysis of Flow around a Golf Ball

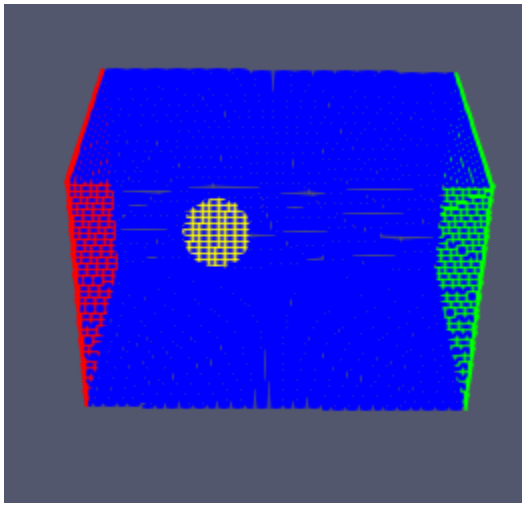
Rohan Gulve

B. Tech. Mechanical Engineering

Indian Institute of Technology, Bombay, Maharashtra, India

Abstract:

The objective of this project is to study aerodynamic characteristics of a Golf Ball by doing CFD analysis of the air flow around the golf ball using open source CFD package OpenFOAM. From the CFD analysis, the drag on the ball is to be determined for varying Reynolds number. And the results are compared to available results in the literature. Incompressible SimpleFoam solver is used for numerical analysis. The CAD of the golf ball is taken from grabcad. The mesh is generated using blockMesh and snappyHexMesh utility. Details of the computational domain are given below:



Diameter of the ball is 42mm

For the domain: Length = 320 mm

Width = 160 mm

Height = 160 mm

The ball is placed at a distance of 80mm from the inlet.