Homework #1

Due April 22, 2007

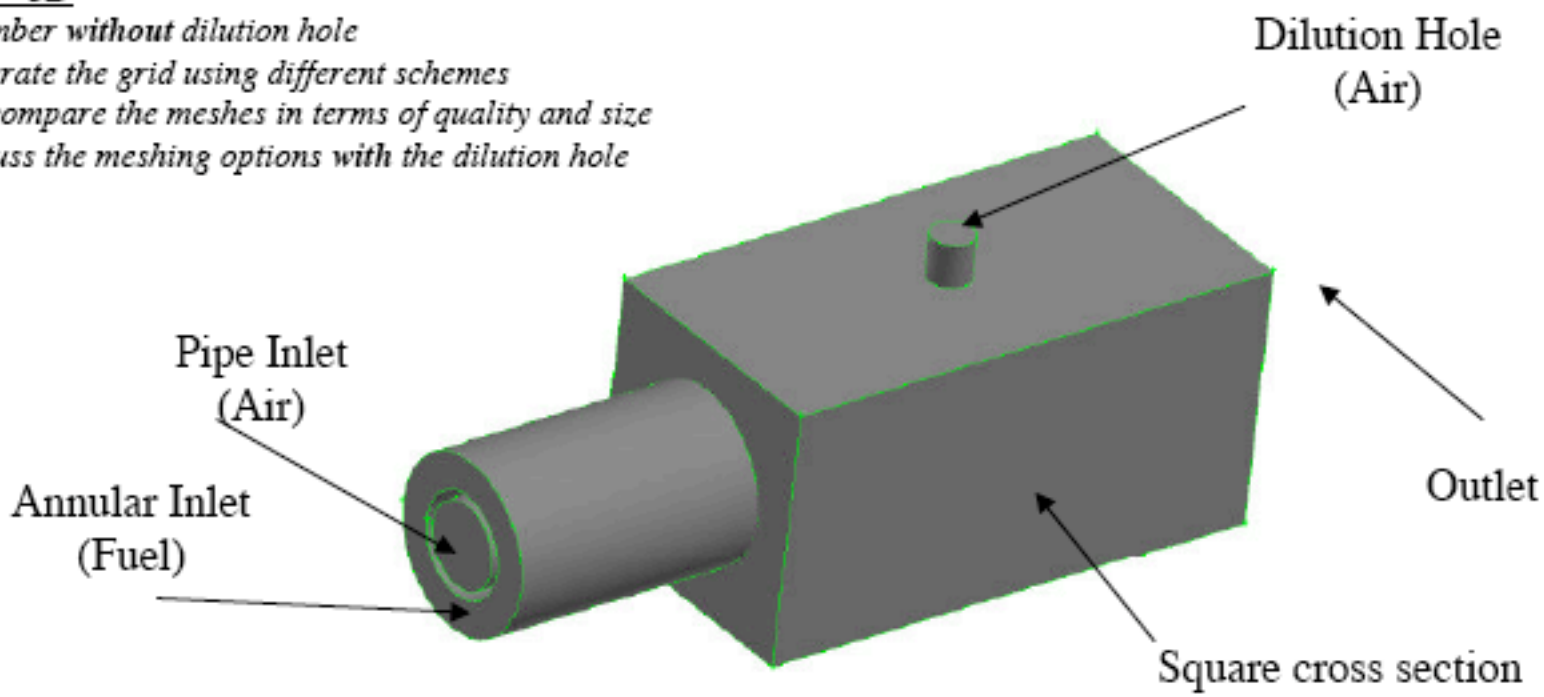
Objective: generation of a mesh in a combustion chamber

Part 1- 2D (chamber section)

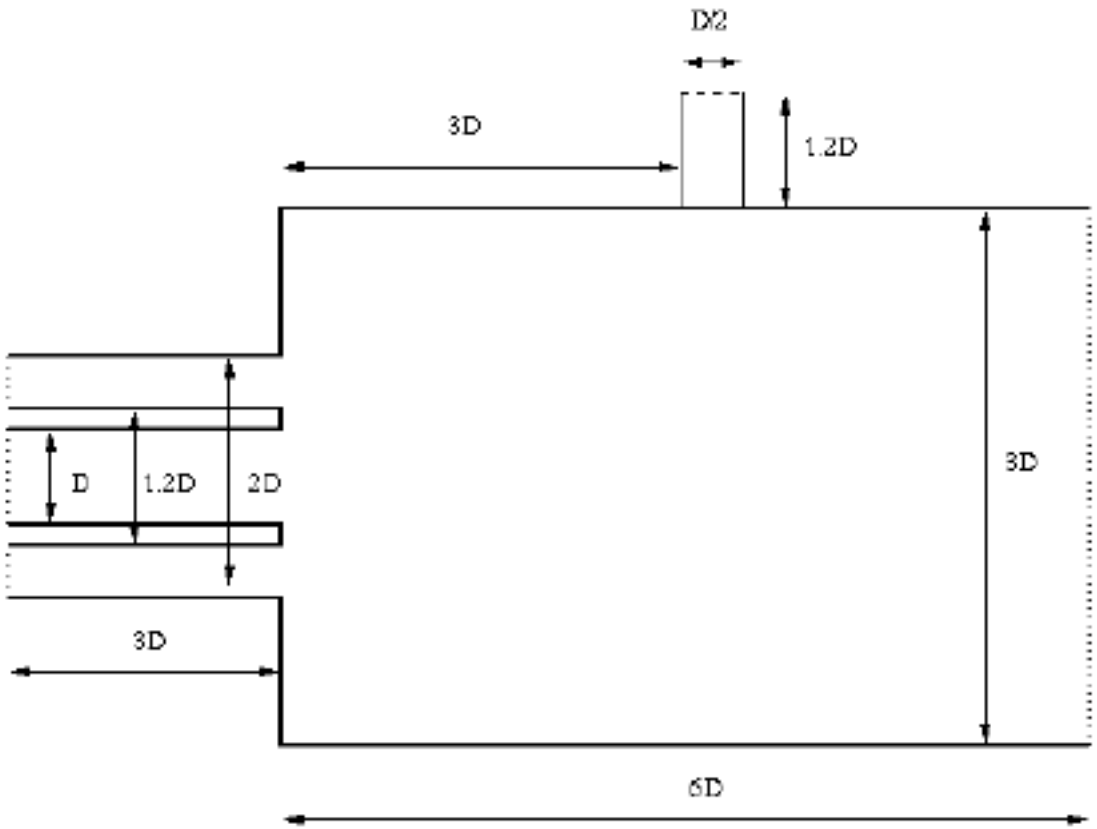
- *Chamber **with** the dilution hole*
- *Generate the grid using different schemes (mapping, triangular paving, quadrilater paving) and compare the meshes in terms of quality and size*
- *Cluster the grid point at the wall boundaries (viscous layers)*

Part 2 – 3D

- *Chamber **without** dilution hole*
- *Generate the grid using different schemes and compare the meshes in terms of quality and size*
- *Discuss the meshing options **with** the dilution hole*



Geometry of the chamber section



D = 2.5 inches

Average element size = 0.1D

Mesh clustering at the wall boundaries (thick lines) with size = 0.01D