

# STRUCTURE OF THE INPUT FILE

## GLOBAL PROBLEM

Files

Topology

Level  
Set

Time  
Dependence

Convergence

Axis

Frames  
Of  
Reference

Probe  
Set

Stat  
Parameters

Restart

## DGFluid PROBLEM

### Physics

Properties

Boundary Conditions

Initial Conditions

Nondimensionalisation

Source Term

### Numerics

Spatial  
Discretisation

Temporal  
Discretisation

Non Linear Solver

### Outputs

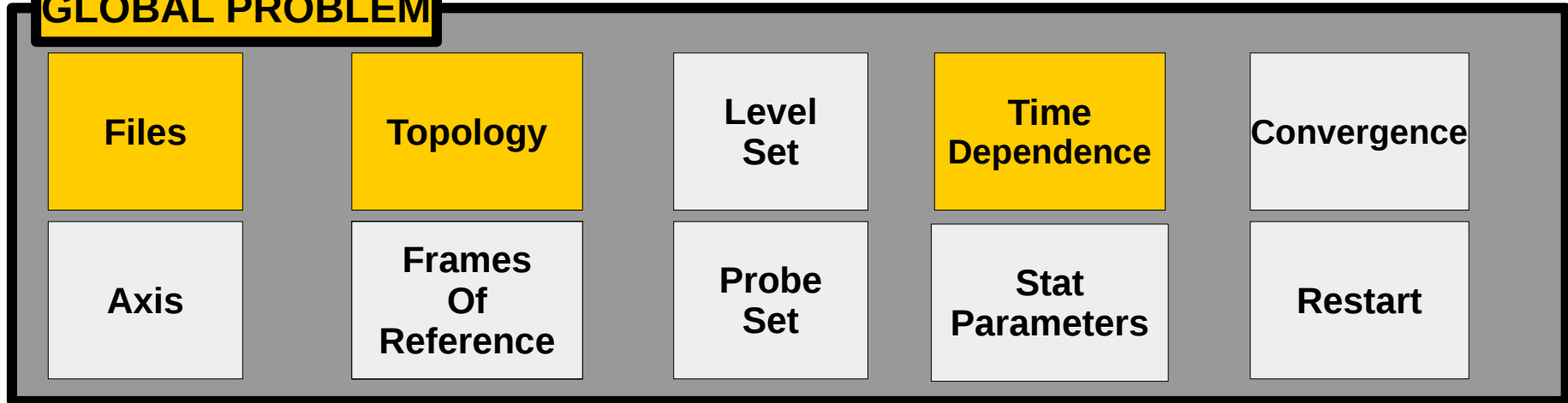
Field Exports

Cuts

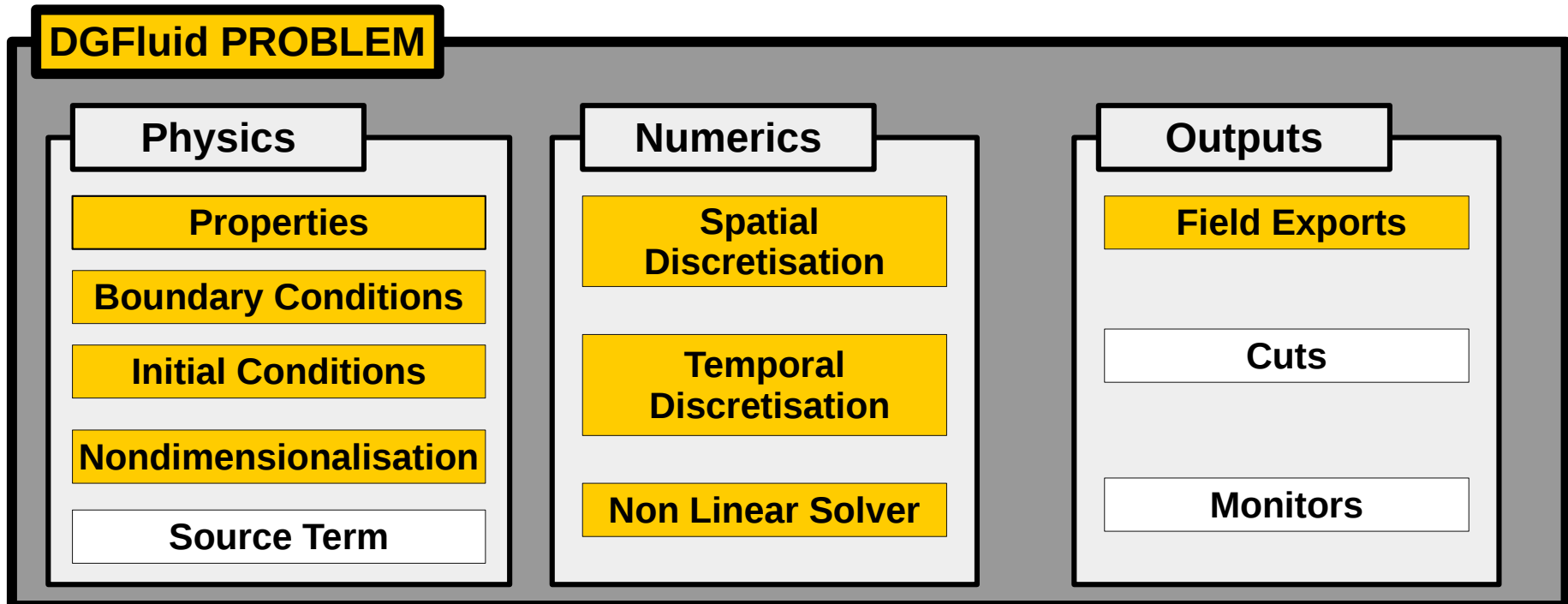
Monitors

## STRUCTURE OF THE INPUT FILE for our case

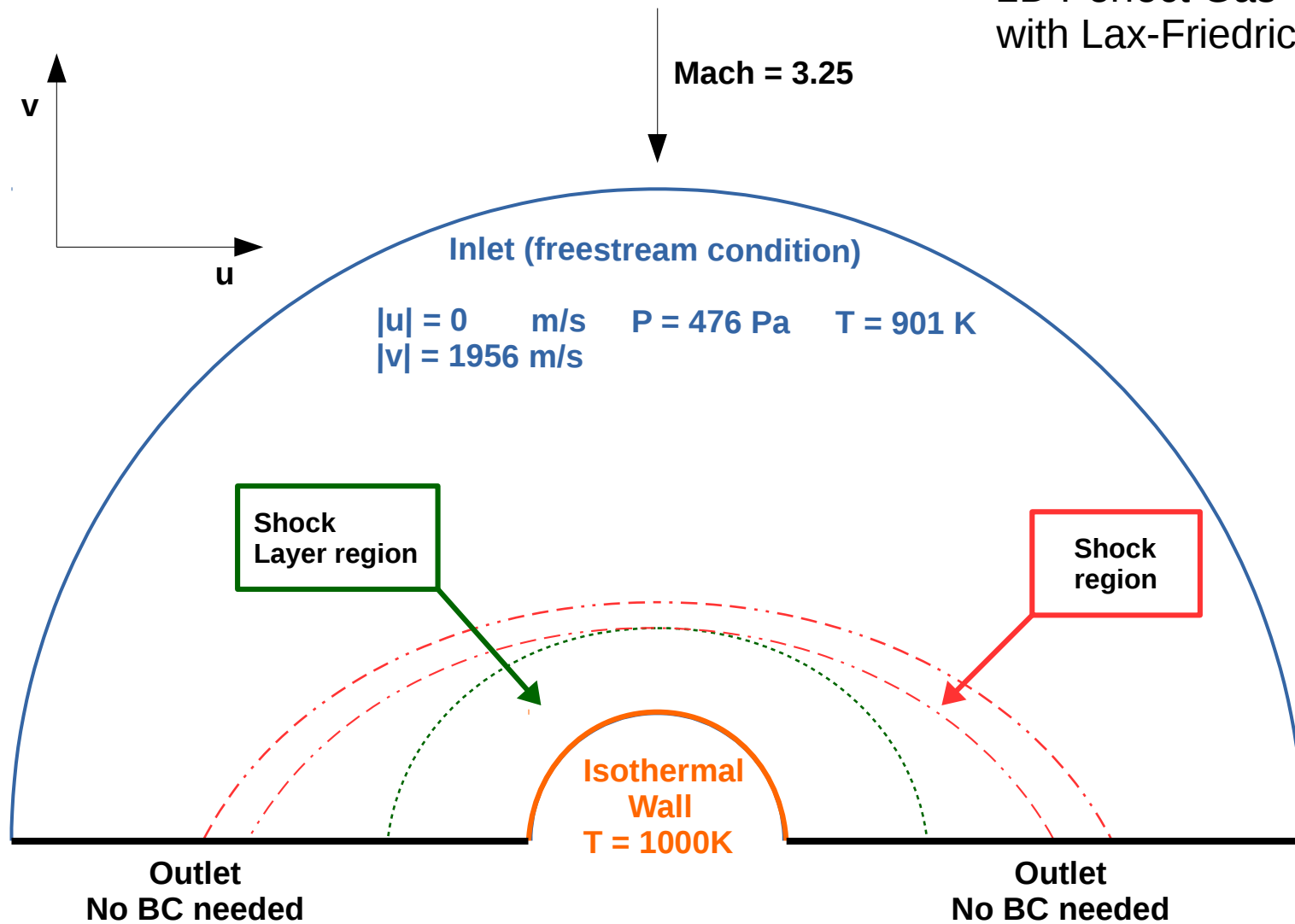
### GLOBAL PROBLEM



### DGFluid PROBLEM

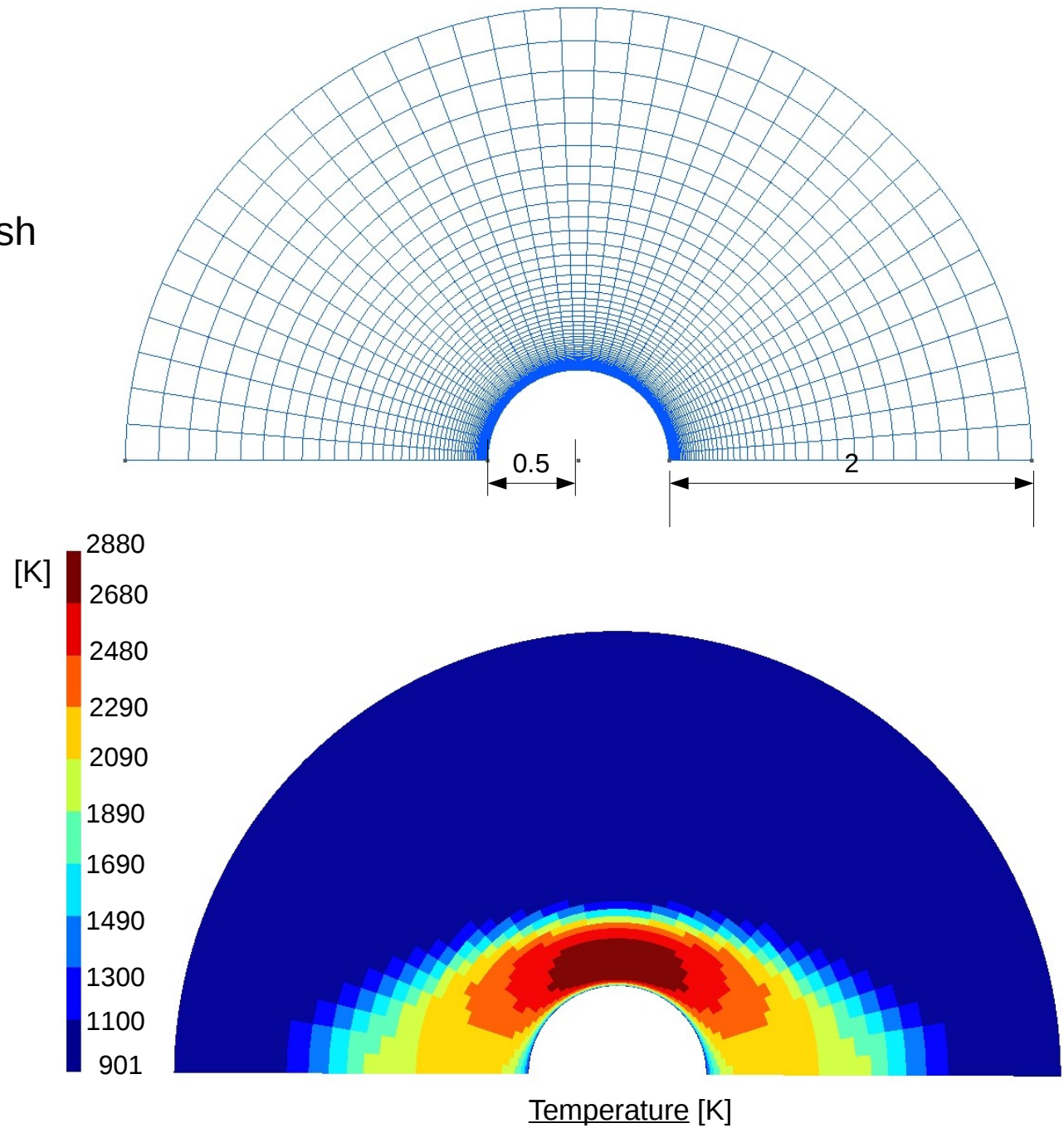


2D Perfect Gas  
with Lax-Friedrichs flux

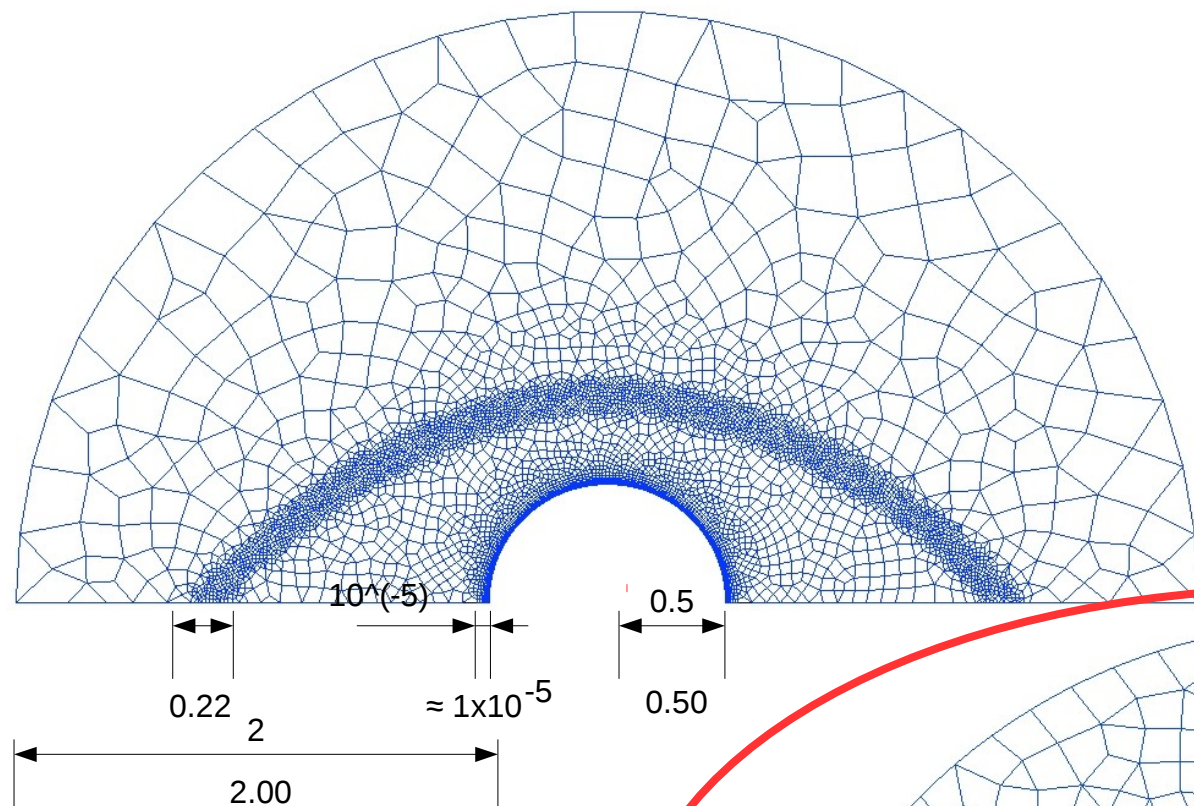
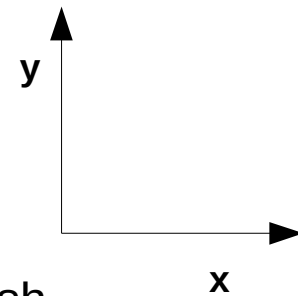


# Unrefined Meshes

Coarse structured mesh  
3323 elements

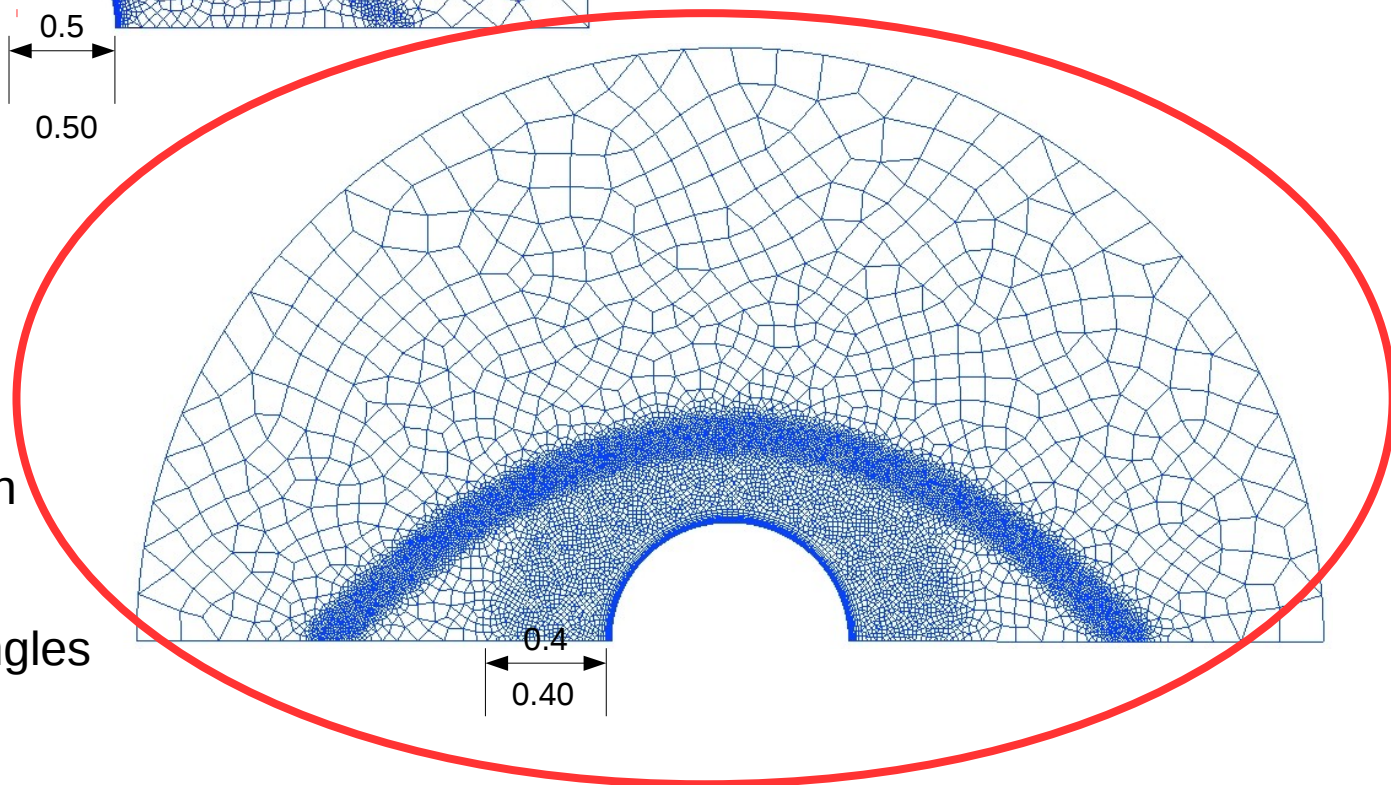


## Refined Meshes

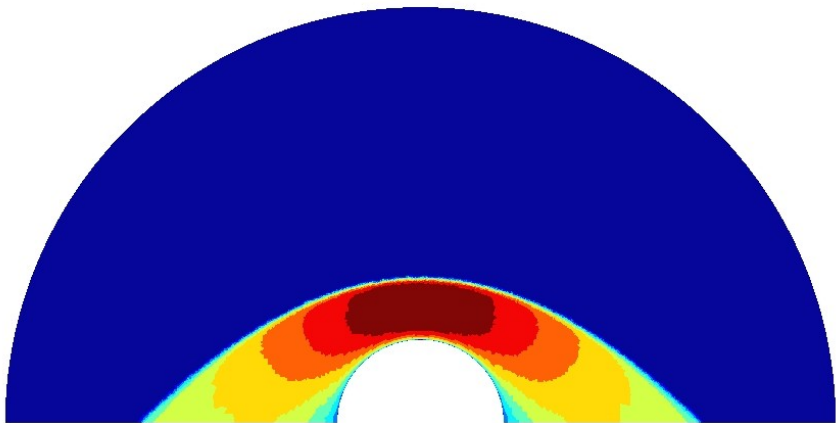


Unstructured mesh  
7424 elements  
- 1154 triangles  
- 5764 quadrangles

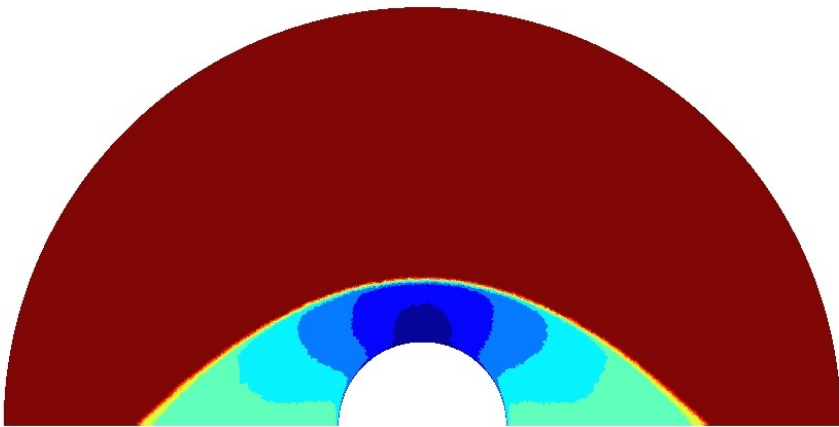
Unstructured mesh  
15 606 elements  
- 2865 triangles  
- 11652 quadrangles



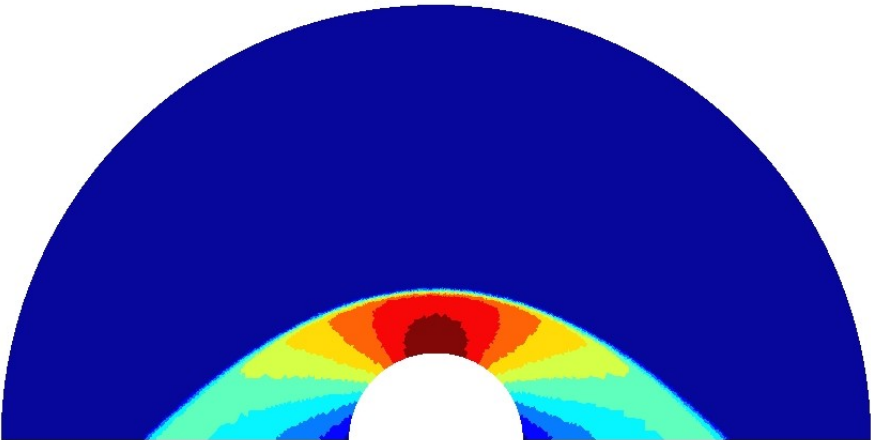
Solution on Refined 15606 elements mesh P0



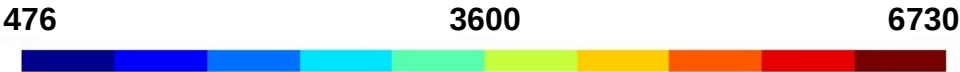
Temperature [K]



Mach Number

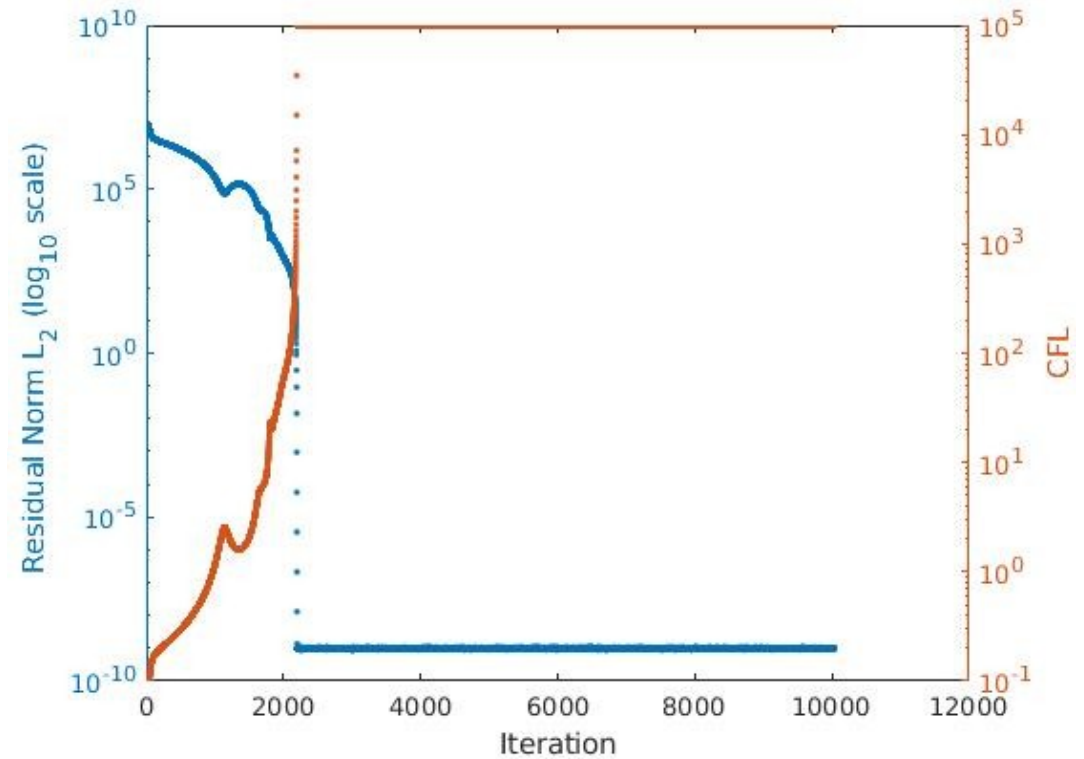
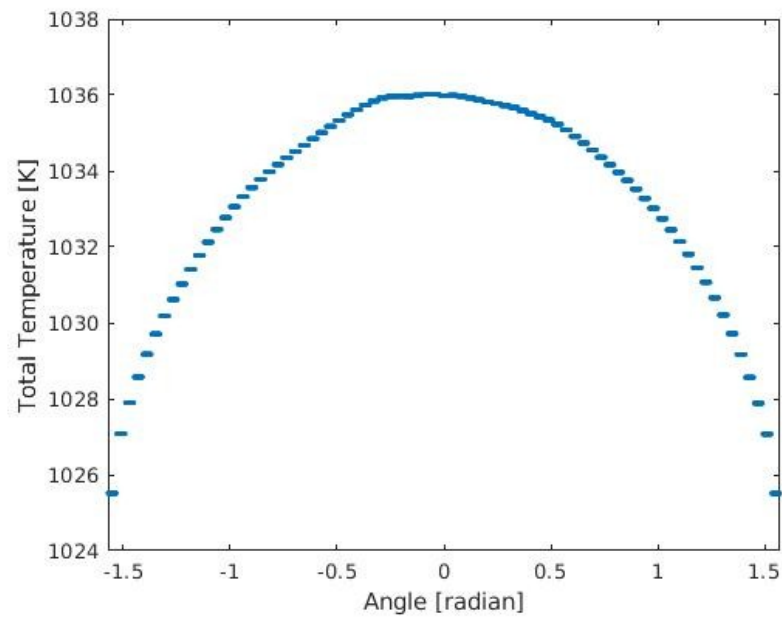
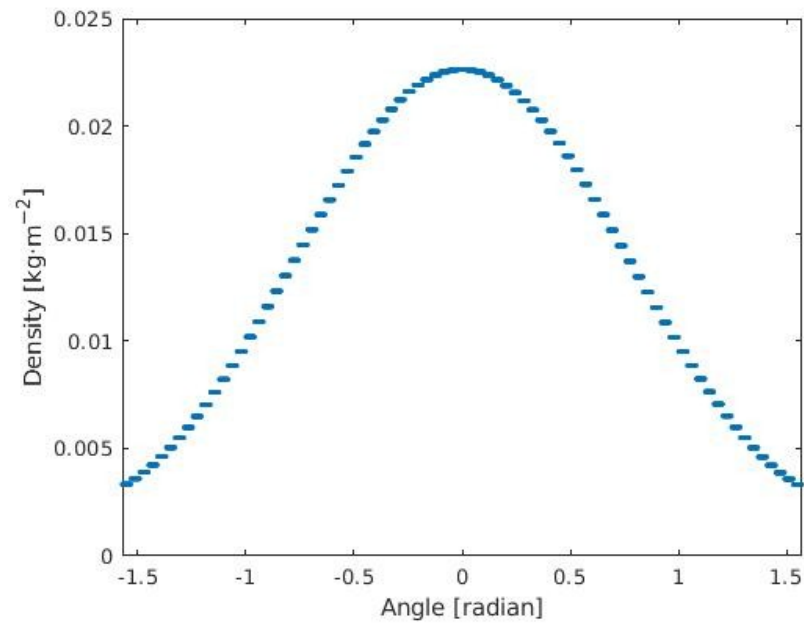


Pressure [Pa]

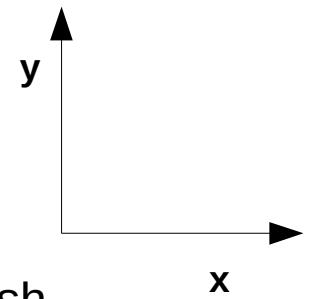




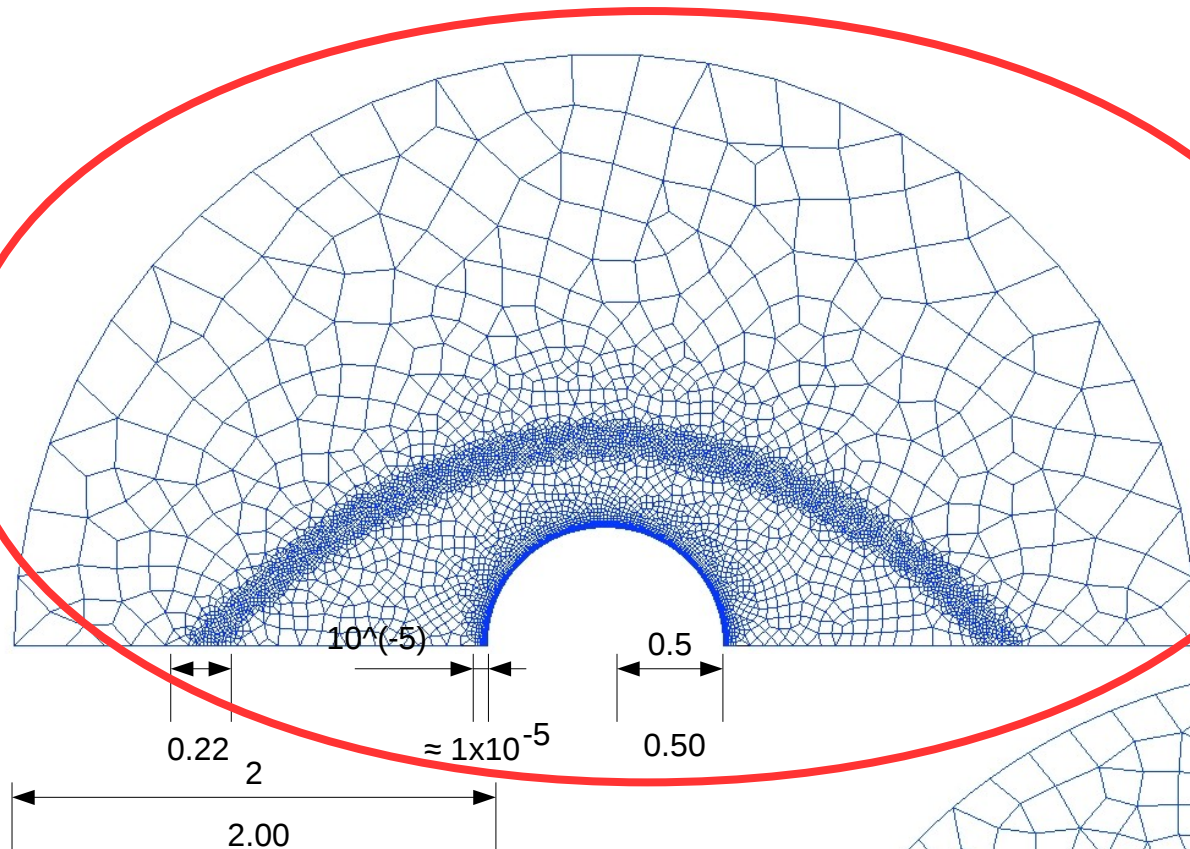
## Solution along the wall on Refined 15 606 elements mesh P0



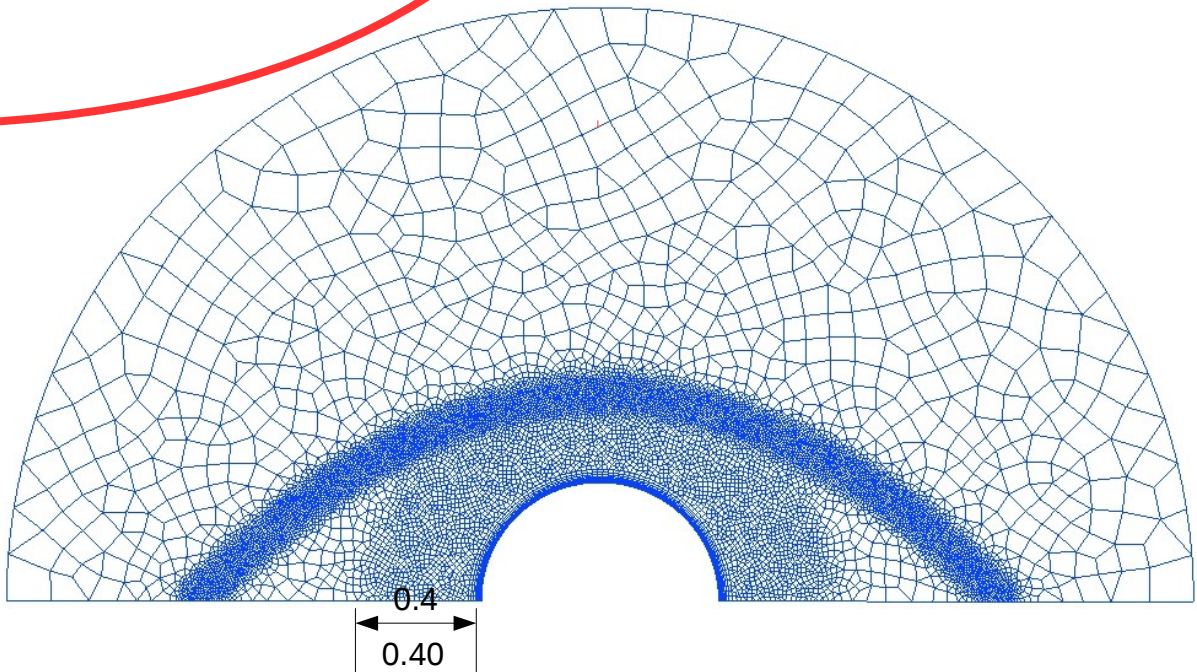
## Refined Meshes



Unstructured mesh  
7424 elements  
- 1154 triangles  
- 5764 quadrangles

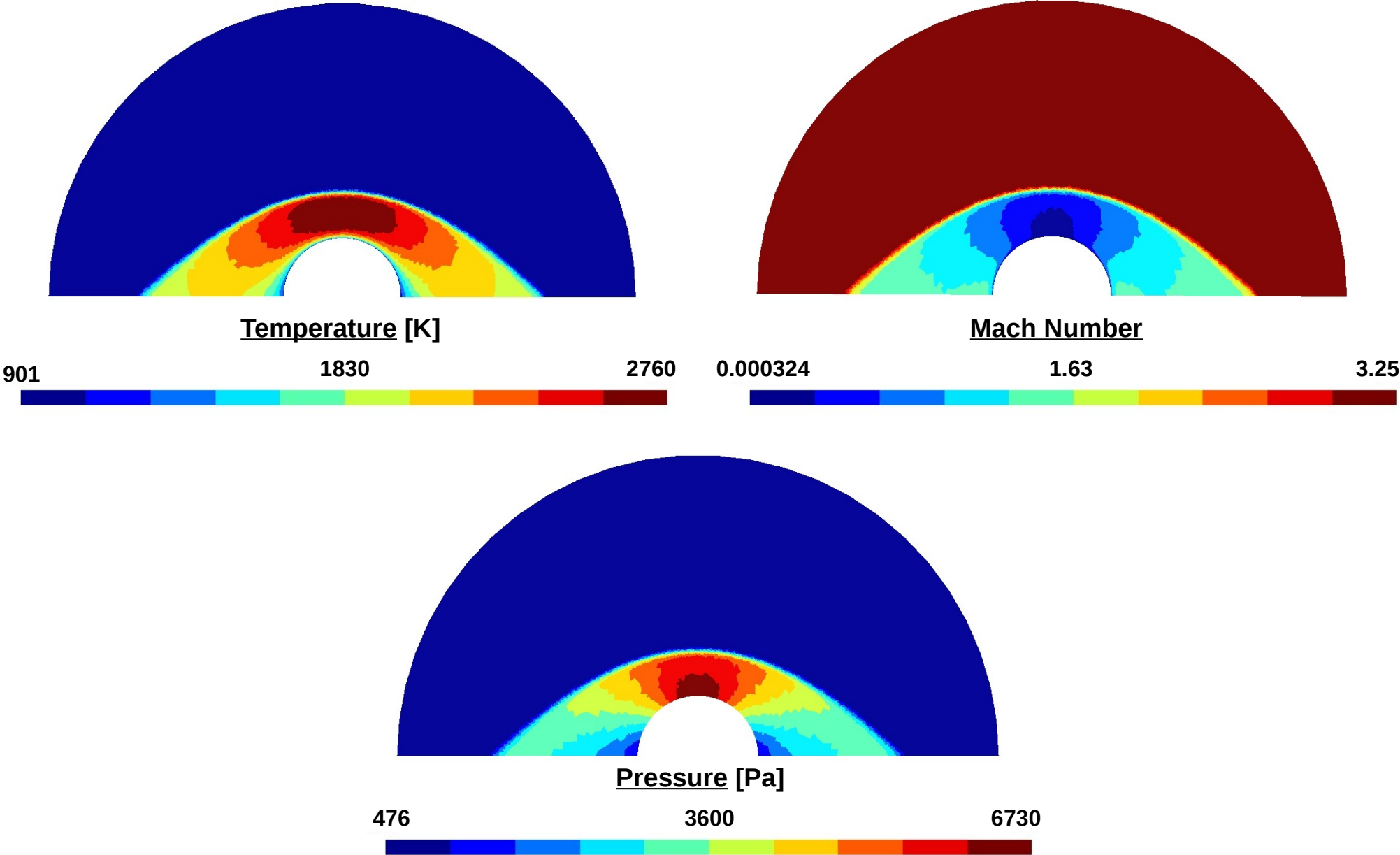


Unstructured mesh  
15 606 elements  
- 2865 triangles  
- 11652 quadrangles

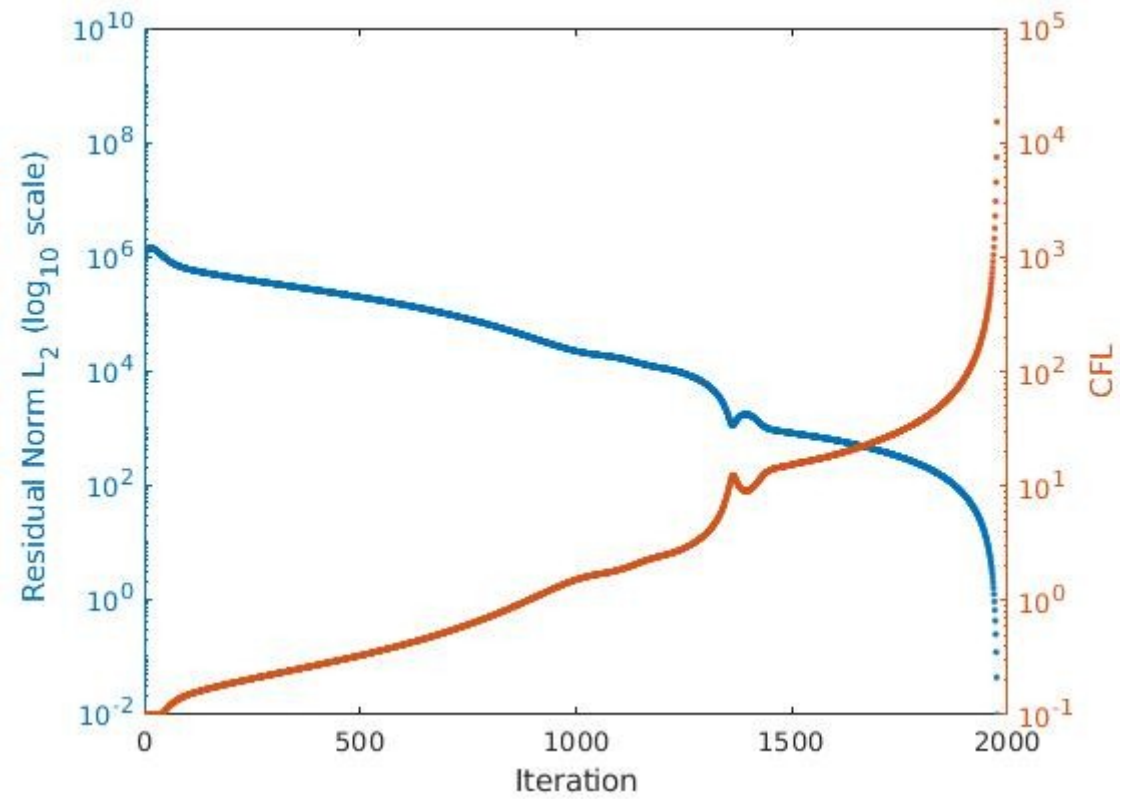
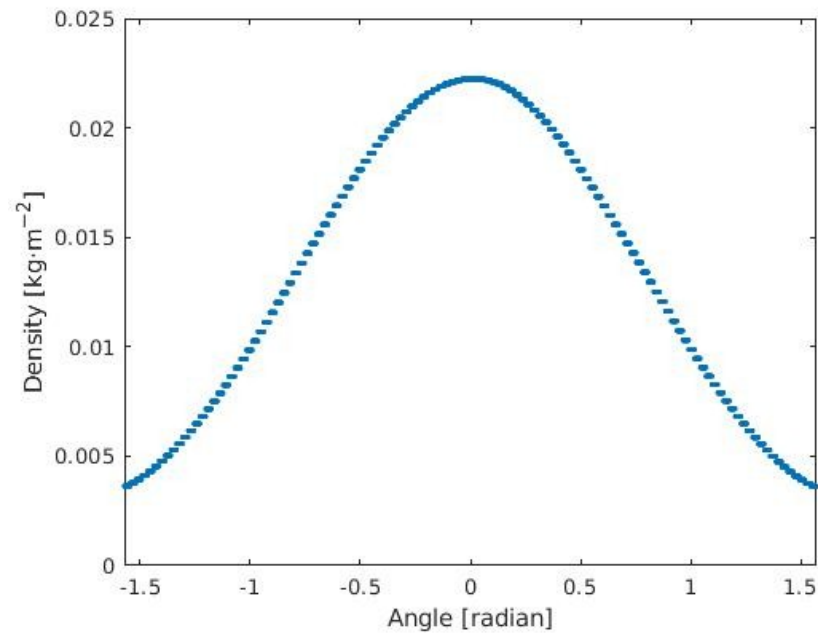
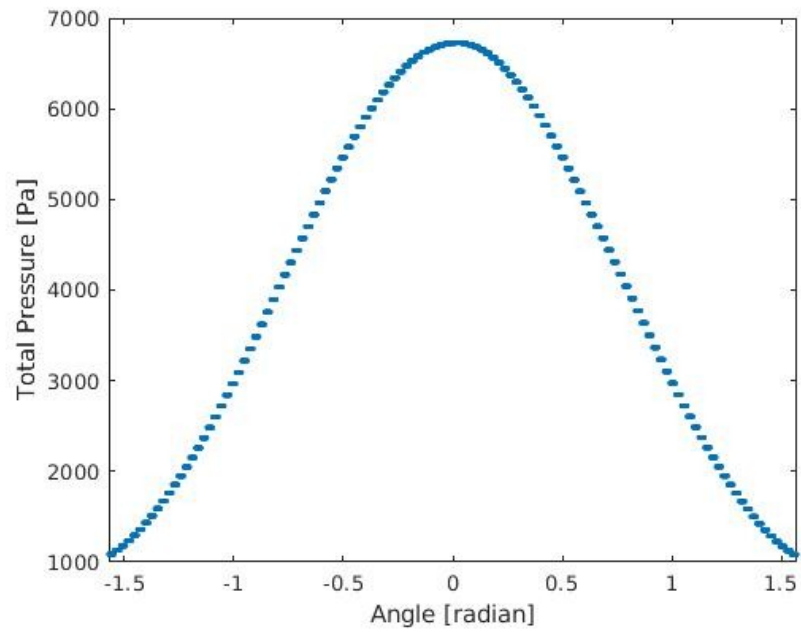




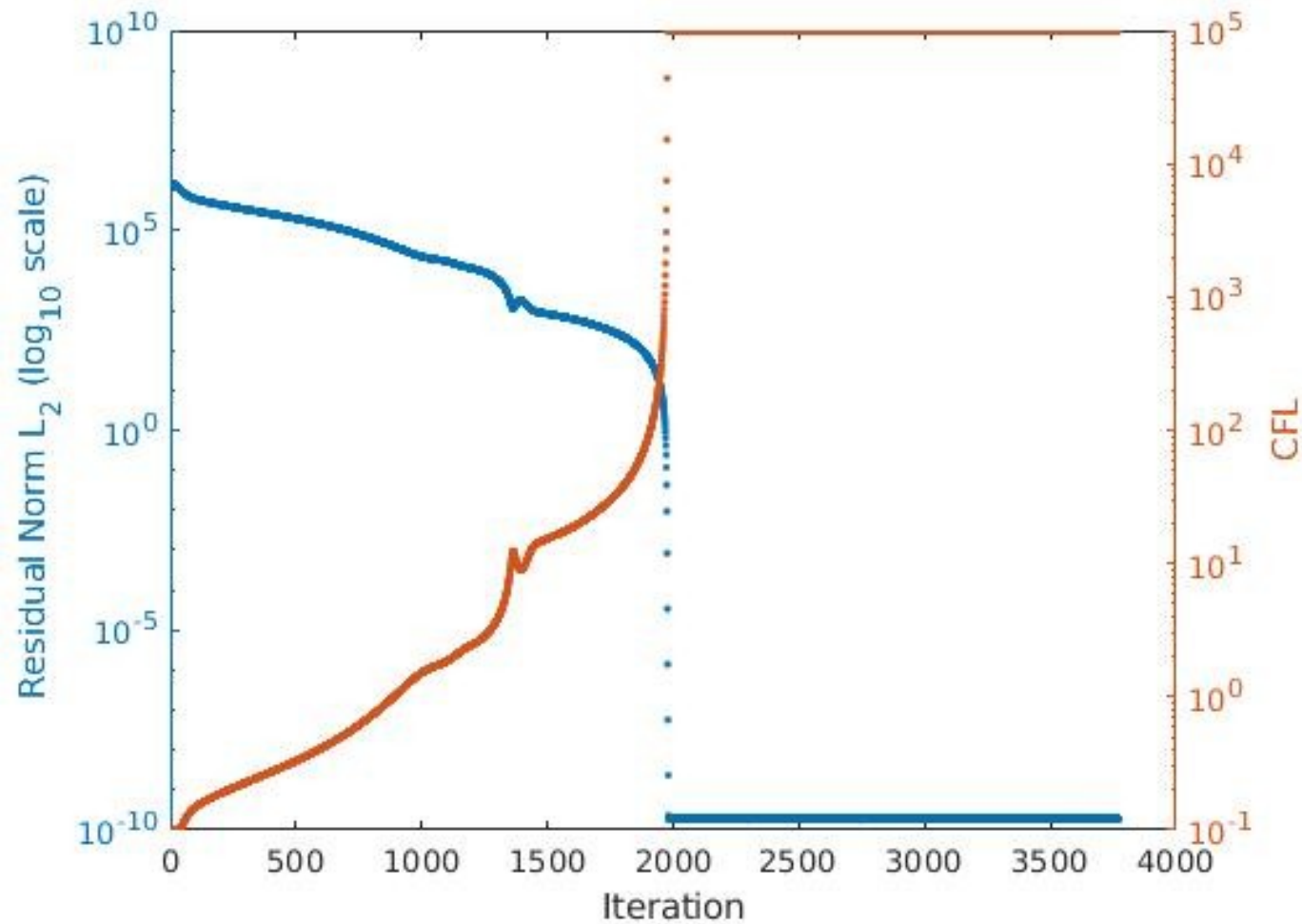
Solution on Refined 7424 element mesh P0



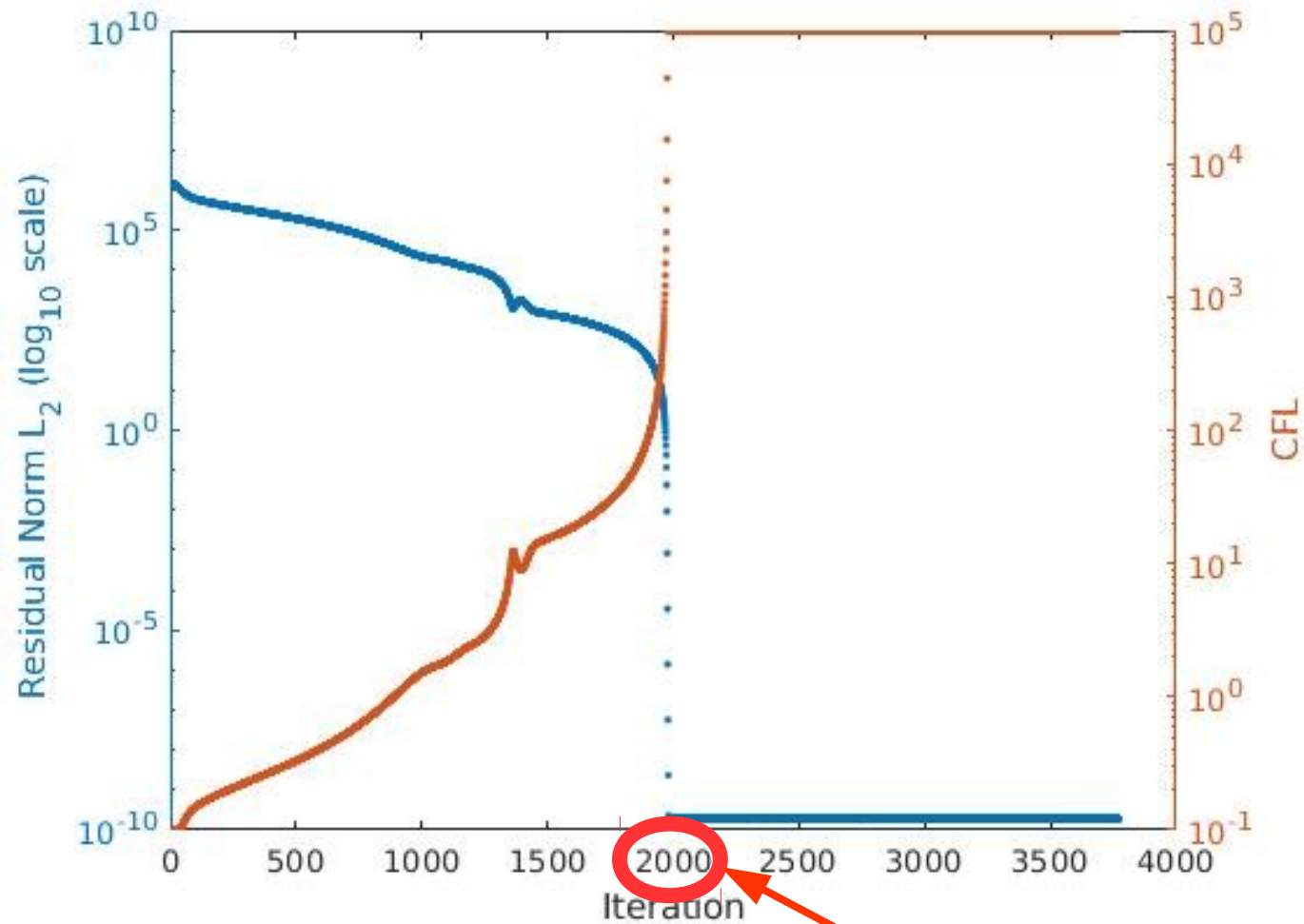
## Solution along the wall on Refined 7424 element mesh P0



Solution along the wall on Refined 7424 elements mesh P0  
try to get more precision... (ie increase the order of the  
polynomial to  $\text{deg}P=1$ )



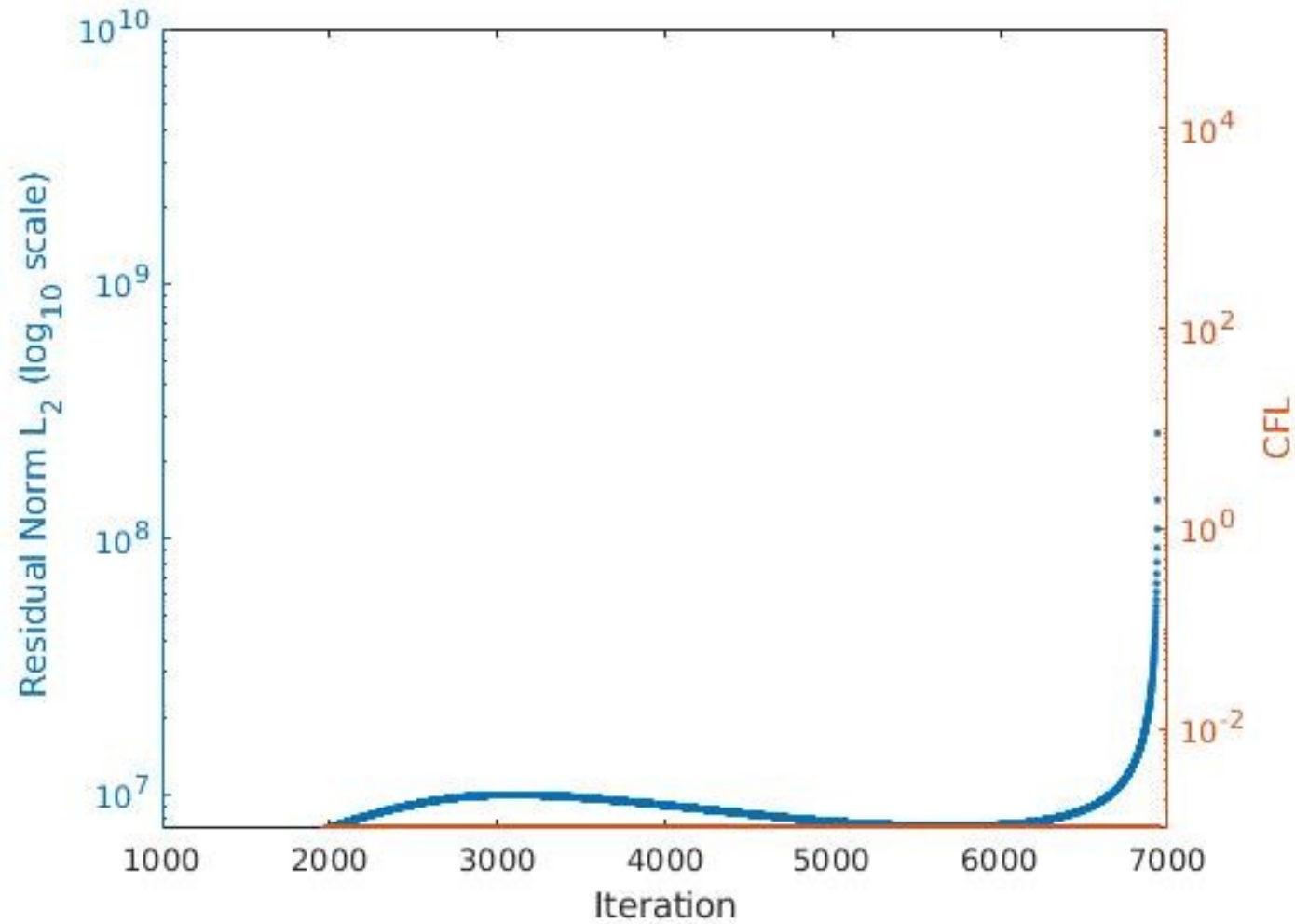
Solution along the wall on Refined 7424 elements mesh P0  
try to get more precision... (ie increase the order of the  
polynomial to  $\text{deg}P=1$ )



Restart from here in  
P1



Solution along the wall on Refined 7424 element mesh **P1**  
**without Artificial Viscosity**



Solution along the wall on Refined 7424 element mesh **P1**  
**WITH Artificial Viscosity**

COMING SOON !