FLUENT - Partially Premixed Combustion

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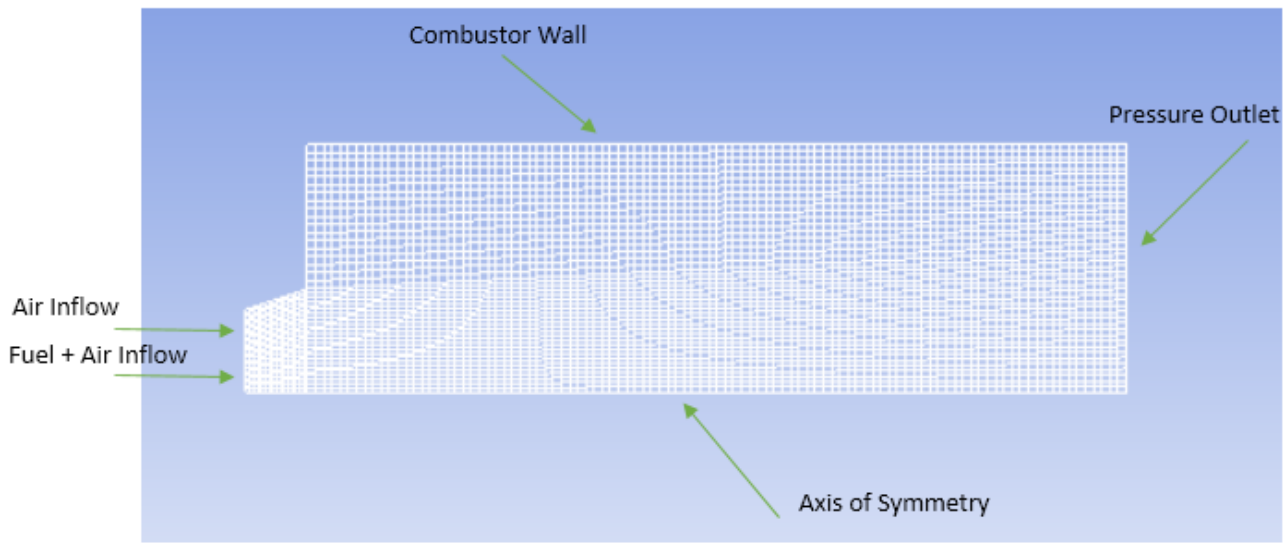
Problem Specification
1. Pre-Analysis & Start-Up
2. Geometry
3. Mesh
4. Physics Setup
5. Numerical Solution
6. Numerical Results
7. Verification & Validation
Exercises
Comments

Partially Premixed Combustion

Created using ANSYS 14.5

Problem Specification



This is a partially premixed combustion case, which has inflows that reflect both premixed (fuel inflow) and nonpremixed (fuel and air mixing) conditions.

The fuel (CH_4) and air mixture has an equivalence ratio of 0.8, defined in the Physics Setup. It is injected at T = 300K with an axial velocity of 50m/s and swirl velocity (direction) of 30m/s. The air inflow is at T = 650K and is injected at 10m/s axially, with no swirl. This case is axisymmetric and so the physical combustion chamber is assumed to be cylindrical; rotated about the axis of symmetry. The outflow is the pressure outlet at atmospheric pressure.

Go to Step 1: Pre-Analysis & Start-Up

Go to all FLUENT Learning Modules