General goal: get familiar with the code: where does what?

**Problem 6**

In this tutorial, you will implement the PDE of mixture fraction () in the simple chemical reacting system (SCRS) model.

Tips 1. List the new variables and constants

Tips 2. What are the initial and boundary conditions for (implement in *bound.m*)?

Tips 3. Make a new function file (*fcoeff.m*)

Simulate a laminar non-premixed diffusion flame as in the geometry shown below. Let us consider burning of a pure methane jet with co-flowing air.

CH4+2(O2+3.76N2) → CO2+2H20+(2×3.76)N2

L=10 cm

D=2.5 cm

Pure methane inlet

d=0.5 cm, u=0.2 m/s

Air inlet

u=0.2 m/s